

**Appendix 6a.** The congregatory waterbird species (*sensu* Rose and Scott 1997) that occur regularly in the Afrotropics, together with the corresponding '1% of population' thresholds that govern selection of IBAs under the A4i criterion. The derivation of the 1% figures is explained in Appendix 6b.

**A** – 1% estimate for a species which, in the Afrotropics, is exclusively either a resident or a non-breeding visitor.

**B** and **C** – 1% estimates for a species which, in the Afrotropics, is both a resident and a seasonal (usually non-breeding) visitor. Threshold **B** applies to the resident (breeding) population only and is, therefore, applicable (mostly) during the boreal summer. Threshold **C** applies to the combined resident and visiting populations and is, therefore, applicable (mostly) during the boreal winter.

All population thresholds are given as numbers of individuals. To convert between individuals and pairs, a multiplying/dividing factor of 3 was used.

Scientific name	English name	1% thresholds			Scientific name	English name	1% thresholds		
		A	B	C			A	B	C
<i>Tachybaptus ruficollis</i>	Little Grebe	500	—	—	<i>Phoenicopterus ruber</i>	Greater Flamingo	1,250	—	—
<i>Tachybaptus rufolavatus</i>	Alaotra Grebe	1	—	—	<i>Phoenicopterus minor</i>	Lesser Flamingo	20,000	—	—
<i>Tachybaptus pelzelni</i>	Madagascar Grebe	75	—	—	<i>Dendrocygna bicolor</i>	Fulvous Duck	4,500	—	—
<i>Podiceps cristatus</i>	Great Crested Grebe	50	—	—	<i>Dendrocygna viduata</i>	White-faced Duck	18,000	—	—
<i>Podiceps nigricollis</i>	Black-necked Grebe	250	—	—	<i>Thalassornis leuconotus</i>	White-backed Duck	220	—	—
<i>Pelecanus onocrotalus</i>	White Pelican	1,800	—	—	<i>Oxyura maccoa</i>	Maccoa Duck	430	—	—
<i>Pelecanus rufescens</i>	Pink-backed Pelican	1,000	—	—	<i>Alopochen cyanopterus</i>	Blue-winged Goose	100	—	—
<i>Phalacrocorax africanus</i>	Reed Cormorant	5,000	—	—	<i>Alopochen aegyptiacus</i>	Egyptian Goose	3,500	—	—
<i>Phalacrocorax coronatus</i>	Crowned Cormorant	53	—	—	<i>Tadorna ferruginea</i>	Ruddy Shelduck	4	—	—
<i>Phalacrocorax neglectus</i>	Bank Cormorant	180	—	—	<i>Tadorna cana</i>	South African Shelduck	420	—	—
<i>Phalacrocorax carbo</i>	White-breasted Cormorant	5,000	—	—	<i>Plectropterus gambensis</i>	Spur-winged Goose	3,750	—	—
<i>Phalacrocorax capensis</i>	Cape Cormorant	5,500	—	—	<i>Pteronetta hartlaubii</i>	Hartlaub's Duck	300	—	—
<i>Phalacrocorax verrucosus</i>	Kerguelen Shag	330	—	—	<i>Sarkidiornis melanotos</i>	Knob-billed Duck	8,000	—	—
<i>Phalacrocorax (atriceps) melanogenis</i>	Crozet Shag	25	—	—	<i>Nettapus auritus</i>	Pygmy Goose	2,000	—	—
<i>Anhinga rufa</i>	Darter	500	—	—	<i>Anas penelope</i>	Wigeon	5,500	—	—
<i>Egretta vinaceigula</i>	Slaty Egret	80	—	—	<i>Anas strepera</i>	Gadwall	1,000	—	—
<i>Egretta ardesiaca</i>	Black Egret	500	—	—	<i>Anas crecca</i>	Teal	10,000	—	—
<i>Egretta garzetta</i>	Little Egret	—	1,000	2,500	<i>Anas capensis</i>	Cape Teal	3,500	—	—
<i>Egretta gularis</i>	Reef Heron	500	—	—	<i>Anas bernieri</i>	Madagascar Teal	8	—	—
<i>Egretta dimorpha</i>	Dimorphic Egret	250	—	—	<i>Anas undulata</i>	Yellow-billed Duck	1,700	—	—
<i>Casmerodius albus</i>	Great White Egret	500	—	—	<i>Anas melleri</i>	Meller's Duck	35	—	—
<i>Mesophoyx intermedia</i>	Yellow-billed Egret	1,000	—	—	<i>Anas sparsa</i>	African Black Duck	600	—	—
<i>Ardea cinerea</i>	Grey Heron	—	5,000	7,000	<i>Anas acuta</i>	Pintail	15,000	—	—
<i>Ardea melanocephala</i>	Black-headed Heron	5,000	—	—	<i>Anas eatoni</i>	Eaton's Pintail	250	—	—
<i>Ardea humbloti</i>	Madagascar Heron	50	—	—	<i>Anas erythrorhyncha</i>	Red-billed Teal	10,000	—	—
<i>Ardea goliath</i>	Goliath Heron	250	—	—	<i>Anas hottentota</i>	Hottentot Teal	3,500	—	—
<i>Ardea purpurea</i>	Purple Heron	—	500	1,200	<i>Anas querquedula</i>	Garganey	20,000	—	—
<i>Bubulcus ibis</i>	Cattle Egret	10,000	—	—	<i>Anas smithii</i>	Cape Shoveler	350	—	—
<i>Ardeola ralloides</i>	Common Squacco Heron	—	500	1,300	<i>Anas clypeata</i>	Northern Shoveler	7,000	—	—
<i>Ardeola idae</i>	Madagascar Squacco Heron	100	—	—	<i>Marmaronetta angustirostris</i>	Marbled Teal	30	—	—
<i>Ardeola rufiventris</i>	Rufous-bellied Heron	250	—	—	<i>Netta erythrophthalma</i>	Southern Pochard	500	—	—
<i>Butorides striatus</i>	Green-backed Heron	1,000	—	—	<i>Aythya ferina</i>	Northern Pochard	10,000	—	—
<i>Nycticorax nycticorax</i>	Black-crowned Night Heron	—	500	2,000	<i>Aythya nyroca</i>	Ferruginous Duck	100	—	—
<i>Gorsachius leuconotus</i>	White-backed Night Heron	250	—	—	<i>Aythya innotata</i>	Madagascar Pochard	1	—	—
<i>Tigriornis leucolophus</i>	White-crested Tiger Heron	250	—	—	<i>Aythya fuligula</i>	Tufted Duck	6,000	—	—
<i>Ixobrychus minutus</i>	Little Bittern	—	500	1,200	<i>Balearica pavonina</i>	Northern Crowned Crane	700	—	—
<i>Ixobrychus sturmii</i>	Dwarf Bittern	500	—	—	<i>Balearica regulorum</i>	Southern Crowned Crane	1,000	—	—
<i>Botaurus stellaris</i>	Common Bittern	50	—	—	<i>Grus virgo</i>	Demoiselle Crane	300	—	—
<i>Balaeniceps rex</i>	Shoebill	140	—	—	<i>Grus carunculatus</i>	Wattled Crane	145	—	—
<i>Scopus umbretta</i>	Hamerkop	5,000	—	—	<i>Grus grus</i>	Common Crane	300	—	—
<i>Mycteria ibis</i>	Yellow-billed Stork	500	—	—	<i>Grus paradisea</i>	Blue Crane	210	—	—
<i>Anastomus lamelligerus</i>	Openbill Stork	1,000	—	—	<i>Sarothrura pulchra</i>	White-spotted Flufftail	—	—	—
<i>Ciconia nigra</i>	Black Stork	—	15	200	<i>Sarothrura elegans</i>	Buff-spotted Flufftail	—	—	—
<i>Ciconia abdimii</i>	Abdim's Stork	5,000	—	—	<i>Sarothrura rufa</i>	Red-chested Flufftail	—	—	—
<i>Ciconia episcopus</i>	Woolly-necked Stork	500	—	—	<i>Sarothrura lugens</i>	Long-toed Flufftail	—	—	—
<i>Ciconia ciconia</i>	White Stork	—	1	4,500	<i>Sarothrura boehmi</i>	Streaky-breasted Flufftail	50	—	—
<i>Ephippiorhynchus senegalensis</i>	Saddle-billed Stork	150	—	—	<i>Sarothrura affinis</i>	Red-tailed Flufftail	—	—	—
<i>Leptoptilos crumeniferus</i>	Marabou Stork	1,000	—	—	<i>Sarothrura insularis</i>	Madagascar Flufftail	—	—	—
<i>Plegadis falcinellus</i>	Glossy Ibis	—	1,000	1,450	<i>Sarothrura ayresi</i>	White-winged Flufftail	10	—	—
<i>Bostrychia hagedash</i>	Hadada	1,000	—	—	<i>Sarothrura watersi</i>	Slender-billed Flufftail	10	—	—
<i>Bostrychia carunculata</i>	Wattled Ibis	100	—	—	<i>Himantornis haematopus</i>	Nkulengu Rail	—	—	—
<i>Bostrychia olivacea</i>	Green Ibis	50	—	—	<i>Canirallus oculus</i>	Grey-throated Rail	—	—	—
<i>Bostrychia rara</i>	Spot-breasted Ibis	50	—	—	<i>Canirallus kioloides</i>	Madagascar Grey-throated Rail	—	—	—
<i>Geronticus calvus</i>	Southern Bald Ibis	65	—	—	<i>Rallus caerulescens</i>	African Water Rail	—	—	—
<i>Lophotibis cristata</i>	Madagascar Crested Ibis	100	—	—	<i>Rallus madagascariensis</i>	Madagascar Rail	—	—	—
<i>Threskiornis aethiopicus</i>	Sacred Ibis	2,000	—	—	<i>Dryolimnas cuvieri</i>	White-throated Rail	—	—	—
<i>Platalea leucorodia</i>	European Spoonbill	—	65	100	<i>Crex crex</i>	Corncrake	1,000	—	—
<i>Platalea alba</i>	African Spoonbill	150	—	—	<i>Rougetius rougetii</i>	Rouget's Rail	—	—	—

**Appendix 6a ... continued.** The congregatory waterbird species (*sensu* Rose and Scott 1997) that occur regularly in the Afrotropics, together with the corresponding '1% of population' thresholds that govern selection of IBAs under the A4i criterion. The derivation of the 1% figures is explained in Appendix 6b.

Scientific name	English name	1% thresholds			Scientific name	English name	1% thresholds		
		A	B	C			A	B	C
<i>Atlantisia rogersi</i>	Inaccessible Rail	84	—	—	<i>Vanellus superciliosus</i>	Brown-chested Wattled Plover	100	—	—
<i>Amaurornis olivieri</i>	Sakalava Rail	—	—	—	<i>Vanellus gregarius</i>	Sociable Lapwing	50	—	—
<i>Amaurornis flavirostra</i>	Black Crake	10,000	—	—	<i>Vanellus leucurus</i>	White-tailed Plover	50	—	—
<i>Porzana parva</i>	Little Crake	1,000	—	—	<i>Gallinago gallinago</i>	Common Snipe	20,000	—	—
<i>Porzana pusilla</i>	Baillon's Crake	—	—	—	<i>Gallinago media</i>	Great Snipe	300	—	—
<i>Porzana porzana</i>	Spotted Crake	—	—	—	<i>Gallinago nigripennis</i>	Ethiopian Snipe	500	—	—
<i>Aenigmatolimnas marginalis</i>	Striped Crake	—	—	—	<i>Gallinago macrodactyla</i>	Madagascar Snipe	50	—	—
<i>Porphyrio porphyrio</i>	Purple Gallinule	100	—	—	<i>Lymnocyptes minimus</i>	Jack Snipe	1,000	—	—
<i>Porphyrio alleni</i>	Lesser Gallinule	—	—	—	<i>Limosa limosa</i>	Black-tailed Godwit	6,000	—	—
<i>Gallinula chloropus</i>	Moorhen	1,000	—	—	<i>Limosa lapponica</i>	Bar-tailed Godwit	8,000	—	—
<i>Gallinula comeri</i>	Gough Moorhen	75	—	—	<i>Numenius phaeopus</i>	Whimbrel	6,000	—	—
<i>Gallinula angulata</i>	Lesser Moorhen	1,000	—	—	<i>Numenius arquata</i>	Curlew	3,500	—	—
<i>Fulica atra</i>	European Coot	20,000	—	—	<i>Tringa erythropus</i>	Spotted Redshank	900	—	—
<i>Fulica cristata</i>	Red-knobbed Coot	5,000	—	—	<i>Tringa totanus</i>	Redshank	1,750	—	—
<i>Podica senegalensis</i>	African Finfoot	—	—	—	<i>Tringa stagnatilis</i>	Marsh Sandpiper	550	—	—
<i>Actophilornis africanus</i>	African Jacana	10,000	—	—	<i>Tringa nebularia</i>	Greenshank	2,300	—	—
<i>Actophilornis albinucha</i>	Madagascar Jacana	50	—	—	<i>Tringa ochropus</i>	Green Sandpiper	10,000	—	—
<i>Microparra capensis</i>	Lesser Jacana	500	—	—	<i>Tringa glareola</i>	Wood Sandpiper	11,000	—	—
<i>Rostratula benghalensis</i>	Painted Snipe	1,000	—	—	<i>Tringa hypoleucos</i>	Common Sandpiper	15,000	—	—
<i>Dromas ardeola</i>	Crab Plover	300	—	—	<i>Arenaria interpres</i>	Turnstone	350	—	—
<i>Haematopus ostralegus</i>	European Oystercatcher	9,000	—	—	<i>Calidris canutus</i>	Knot	5,000	—	—
<i>Haematopus meadewaldoi</i>	Canary Islands Oystercatcher	1	—	—	<i>Calidris alba</i>	Sanderling	2,200	—	—
<i>Haematopus moquini</i>	African Black Oystercatcher	48	—	—	<i>Calidris minuta</i>	Little Stint	10,000	—	—
<i>Himantopus himantopus</i>	Black-winged Stilt	—	1,000	1,500	<i>Calidris temminckii</i>	Temminck's Stint	5,000	—	—
<i>Recurvirostra avosetta</i>	Avocet	—	250	1,300	<i>Calidris alpina</i>	Dunlin	20,000	—	—
<i>Burhinus oedicephalus</i>	Stone Curlew	1,500	—	—	<i>Calidris ferruginea</i>	Curlew Sandpiper	7,500	—	—
<i>Burhinus senegalensis</i>	Senegal Thick-knee	300	—	—	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	50	—	—
<i>Burhinus vermiculatus</i>	Water Dikkop	500	—	—	<i>Philomachus pugnax</i>	Ruff	20,000	—	—
<i>Burhinus capensis</i>	Spotted Dikkop	500	—	—	<i>Larus leucophthalmus</i>	White-eyed Gull	200	—	—
<i>Pluvianus aegyptius</i>	Egyptian Plover	200	—	—	<i>Larus hemprichii</i>	Hemprich's Gull	400	—	—
<i>Rhinoptilus africanus</i>	Double-banded Courser	5,000	—	—	<i>Larus dominicanus</i>	Kelp Gull	300	—	—
<i>Rhinoptilus cinctus</i>	Three-banded Courser	5,000	—	—	<i>Larus fuscus</i>	Lesser Black-backed Gull	6,000	—	—
<i>Rhinoptilus chalcopterus</i>	Bronze-winged Courser	5,000	—	—	<i>Larus cirrocephalus</i>	Grey-headed Gull	1,000	—	—
<i>Cursorius cursor</i>	Cream-coloured Courser	5,000	—	—	<i>Larus hartlaubii</i>	Hartlaub's Gull	250	—	—
<i>Cursorius rufus</i>	Burchell's Courser	5,000	—	—	<i>Larus ridibundus</i>	Black-headed Gull	20,000	—	—
<i>Cursorius temminckii</i>	Temminck's Courser	5,000	—	—	<i>Larus genei</i>	Slender-billed Gull	100	—	—
<i>Glareola pratincola</i>	Common Pratincole	—	1,000	1,600	<i>Sterna nilotica</i>	Gull-billed Tern	270	—	—
<i>Glareola nordmanni</i>	Black-winged Pratincole	100	—	—	<i>Sterna caspia</i>	Caspian Tern	—	135	250
<i>Glareola ocularis</i>	Madagascar Pratincole	50	—	—	<i>Sterna maxima</i>	Royal Tern	500	—	—
<i>Glareola nuchalis</i>	Rock Pratincole	300	—	—	<i>Sterna bengalensis</i>	Lesser Crested Tern	250	—	—
<i>Glareola cinerea</i>	Grey Pratincole	200	—	—	<i>Sterna bergii</i>	Swift Tern	500	—	—
<i>Pluvialis squatarola</i>	Grey Plover	1,700	—	—	<i>Sterna sandvicensis</i>	Sandwich Tern	1,500	—	—
<i>Charadrius hiaticula</i>	Ringed Plover	3,000	—	—	<i>Sterna dougallii</i>	Roseate Tern	—	400	450
<i>Charadrius dubius</i>	Little Ringed Plover	3,000	—	—	<i>Sterna sumatrana</i>	Black-naped Tern	2	—	—
<i>Charadrius thoracicus</i>	Madagascar Plover	10	—	—	<i>Sterna hirundo</i>	Common Tern	—	8	8,000
<i>Charadrius sanctaehelenae</i>	St Helena Plover	3	—	—	<i>Sterna paradisaea</i>	Arctic Tern	13,000	—	—
<i>Charadrius pecuarius</i>	Kittlitz's Plover	1,000	—	—	<i>Sterna vittata</i>	Antarctic Tern	70	—	—
<i>Charadrius tricollaris</i>	Three-banded Plover	1,000	—	—	<i>Sterna virgata</i>	Kerguelen Tern	50	—	—
<i>Charadrius forbesi</i>	Forbes's Plover	250	—	—	<i>Sterna albitrons</i>	Little Tern	—	50	1,000
<i>Charadrius pallidus</i>	Chestnut-banded Plover	400	—	—	<i>Sterna saundersi</i>	Saunders's Tern	200	—	—
<i>Charadrius alexandrinus</i>	Kentish Plover	1,000	—	—	<i>Sterna balaenarum</i>	Damara Tern	130	—	—
<i>Charadrius marginatus</i>	White-fronted Plover	1,000	—	—	<i>Sterna repressa</i>	White-cheeked Tern	3,000	—	—
<i>Charadrius mongolus</i>	Mongolian Plover	250	—	—	<i>Sterna anaethetus</i>	Bridled Tern	5,000	—	—
<i>Charadrius leschenaultii</i>	Sand Plover	650	—	—	<i>Sterna fuscata</i>	Sooty Tern	20,000	—	—
<i>Charadrius asiaticus</i>	Caspian Plover	200	—	—	<i>Chlidonias hybridus</i>	Whiskered Tern	—	150	1,000
<i>Vanellus crassirostris</i>	Long-toed Plover	1,000	—	—	<i>Chlidonias leucopterus</i>	White-winged Tern	2,000	—	—
<i>Vanellus armatus</i>	Blacksmith Plover	5,000	—	—	<i>Chlidonias niger</i>	Black Tern	1,700	—	—
<i>Vanellus spinosus</i>	Spur-winged Plover	5,000	—	—	<i>Gygis alba</i>	Fairy Tern	5,000	—	—
<i>Vanellus tectus</i>	Black-headed Plover	5,000	—	—	<i>Anous minutus</i>	Black Noddy	4,500	—	—
<i>Vanellus melanocephalus</i>	Spot-breasted Plover	50	—	—	<i>Anous stolidus</i>	Common Noddy	7,500	—	—
<i>Vanellus albiceps</i>	White-crowned Plover	250	—	—	<i>Anous tenuirostris</i>	Lesser Noddy	15,000	—	—
<i>Vanellus senegallus</i>	Wattled Plover	750	—	—	<i>Rynchops flavirostris</i>	African Skimmer	100	—	—
<i>Vanellus lugubris</i>	Lesser Black-winged Plover	1,000	—	—					
<i>Vanellus melanopterus</i>	Black-winged Plover	1,000	—	—					
<i>Vanellus coronatus</i>	Crowned Plover	5,000	—	—					

**Reference**

ROSE, P. M. AND SCOTT, D. A. (1997) *Waterfowl population estimates*. Second edition. Wageningen, Netherlands: Wetlands International (Publication 44).

**Appendix 6b.** The derivation of 1% population threshold figures for congregatory waterbirds of the Afrotropical region.

The '1% of population' figures for congregatory Afrotropical waterbirds, used as thresholds to identify IBAs under the A4i criterion (and listed in Appendix 6a), were compiled initially during 1994–1995 and then revised in August 1996. In general, the figures are taken, or derived from, those given in Rose and Scott (1994, 1997), to which reference must be made to interpret fully the following explanations.

In that publication, thresholds are given either as figures, or as letters indicating size ranges, or are left blank. For cases where a letter and not a figure was given, see Tables 1 and 2 for the thresholds used by the Africa IBA programme.

**Table 1.** The population ranges used by Rose and Scott (1994, 1997), the corresponding 1% range, and the 'mid-point' within the range, which was adopted by the Africa IBA programme as the 1% threshold in many cases.

Letter	Population range	1% threshold range	'Mid-point' threshold
A	<10,000	0–100	50
B	10,000–25,000	100–250	150
C	25,000–100,000	250–1,000	500
D	100,000–1,000,000	1,000–10,000	5,000
E	>1,000,000–10,000		

**Table 2.** The thresholds that were followed by the Africa IBA programme, in cases where Rose and Scott (1994, 1997) give two range letters (e.g. B/C) or where unpublished data suggested that the populations tended towards the top of the published range (e.g. B+).

Letter	1% threshold
A/B or A+	100
B/C or B+	250
C/D or C+	1,000
D/E or D+	10,000

In Table 2, a range given as, for example, 'C/D' may mean one of two things—either that the population was on the cusp of the two ranges or that different population estimates varied widely from between the bottom of C to the top of D. Unpublished data indicated which of these two situations applied.

For some species, where no threshold figures are given by Rose and Scott (1994), discussions in 1996 with Wetlands International,

drawing upon their unpublished data and a draft of Rose and Scott (1997), enabled estimates of the 1% thresholds to be made. Unpublished information was also helpful in allocating the appropriate proportion to the Afrotropics of populations shared between the Afrotropics and other regions, e.g. in the case of a species with an East Africa/South-west Asia flyway population. In some cases, use was made of the total numbers of individuals of a species in Wetland International's African Waterbird Censuses (January and July counts) to inform decisions. Mostly unpublished data only were available for migratory species.

In a few cases, threshold figures different from those given in Rose and Scott (1994, 1997) were used. This was to ensure consistency of approach between the European and African IBA programmes for relevant populations of those Palearctic migrant species which spend the northern winter in the Afrotropics and for which the European IBA programme uses revised threshold figures. These are usually based on population estimates published in Tucker and Heath (1994), Heath and Evans (2000) and Heath *et al.* (2001).

For several Palearctic duck species, part of whose populations spend the boreal winter in the northern Afrotropics, data for north-east Africa are taken from Urban (1993), upon which Rose and Scott (1997) largely based the appropriate part of their West Siberia/South-west Asia/North-east Africa flyway population estimates (P. Rose, pers. comm.). Corresponding West African estimates come from Monval and Pirot (1989).

For those mostly resident species, for which not even range estimates are given by Rose and Scott (1994), figures were arrived at, in some cases, from the recent literature, but more often by educated guess work (at the order-of-magnitude scale) based on personal experience, analogy with (perceived) similarities to other species, etc.—but many estimates are unlikely to be accurate. For some species, such as rails (Rallidae), etc., not even guesses were attempted.

The estimate for each species is discussed below. In these, the reference indicates where the figure is taken from:

- 'Mid-point' refers to the figures given in Table 1.
- 'New' indicates the threshold is not given by Rose and Scott (1994, 1997).
- 'Estimate of A given' means Rose and Scott (1994) give a range estimate of A (see Tables 1 and 2).
- 'Estimate of A made' means the range estimate is not given by Rose and Scott (1994), and has been estimated by other means (see above).

**Species list**

<i>Tachybaptus ruficollis</i> New—estimate of C given by Rose and Scott (1997); mid-point chosen.	<i>Phalacrocorax capensis</i> Rose and Scott (1997).	<i>Ardea cinerea</i> New—both figures. Breeding population estimated as mid-point D; non-breeders include proportion of N. African/Europe population (estimate as 2,000 of 4,500). 5,000 + 2,000 = 7,000.
<i>Tachybaptus rufolavatus</i> Rose and Scott (1994).	<i>Phalacrocorax verrucosus</i> Rose and Scott (1994).	<i>Ardea melanocephala</i> New—population estimate D; mid-point chosen.
<i>Tachybaptus pelzelinii</i> Rose and Scott (1994).	<i>Phalacrocorax (atriceps) melanogenis</i> Rose and Scott (1994).	<i>Ardea humbloti</i> Rose and Scott (1997).
<i>Podiceps cristatus</i> New—estimates of A given by Rose and Scott (1997) for eastern and southern African populations, summed range retained as A; mid-point chosen.	<i>Anhinga rufa</i> New—estimate of C made (includes threshold of 30 given for West African population); mid-point chosen.	<i>Ardea goliath</i> New—estimate of B/C given; B+ chosen.
<i>Podiceps nigricollis</i> New—estimate of B/C made, B+ threshold chosen.	<i>Egretta vinaceigula</i> Rose and Scott (1994).	<i>Ardea purpurea</i> New—both figures. Breeding population estimated as mid-point of C; the non-breeding population includes two significant additional breeding populations, one given as B (with actual figure c.20,000 on advice, hence 1%=200), the other given as D, split between Afrotropics and Asia (estimate of proportion in Africa conservatively c.50,000, hence 1%=500. 500+200+500=1,200).
<i>Pelecanus onocrotalus</i> New—two thresholds given by Rose and Scott (1994) are summed.	<i>Egretta ardesiaca</i> New—estimate of B/C given, but true figure thought to be nearer top end of this range, hence mid-point C chosen.	<i>Bubulcus ibis</i> Estimate of D/E given by Rose and Scott (1997); D+ threshold chosen.
<i>Pelecanus rufescens</i> New—estimate of D given, but threshold chosen, on advice, at bottom of this range.	<i>Egretta garzetta</i> New—both figures. Breeding population estimated as C+; non-breeding population includes the majority of two additional breeding populations, one estimated as given by Rose and Scott (1997), other estimated as C, for which threshold at lower limit chosen.	<i>Ardeola ralloides</i> New—both figures. For breeding population, estimate of C given; mid-point chosen. Non-breeding population includes two additional breeding populations, for which Rose and Scott (1997) give estimates of B and C. However, the Europe IBA programme use revised figure of 360 rather than 150 for NWAfr/Med population (Heath and Evans 2000). Therefore, combined total 500+360+500=1,300 (rounded down).
<i>Phalacrocorax africanus</i> New—estimate of D made (includes West African population, for which estimate of 600 is given); mid-point chosen.	<i>Egretta gularis</i> New—both population estimates B+, summed.	
<i>Phalacrocorax coronatus</i> Rose and Scott (1997).	<i>Egretta dimorpha</i> New—population estimates A/B/C; B+ chosen.	
<i>Phalacrocorax neglectus</i> Rose and Scott (1997).	<i>Casmerodius albus</i> New—estimate of C given by Rose and Scott (1997); mid-point chosen.	
<i>Phalacrocorax carbo lucidus</i> New—estimates of D and B given by Rose and Scott (1997); mid-point D chosen.	<i>Mesophox intermedia</i> New—population estimates C/D; C+ chosen.	
<i>Phalacrocorax nigrogularis</i> Rose and Scott (1994).		

**Appendix 6b ... continued.** The derivation of 1% population threshold figures for congregatory waterbirds of the Afrotropical region.

<i>Ardeola idae</i> New—estimate of A given; A. F. A. Hawkins (pers. comm.) suggests A+.	<i>Bostrychia olivacea</i> New—estimate of A given; mid-point chosen.	<i>Anas crecca</i> New—Rose and Scott (1997) give an estimate of 15,000 for the West Siberia/South-west Asia/North-east Africa population. African component of this figure derived from Urban (1993) who, excluding figures for Egypt, gives a range estimate of 21,000–55,000; mid-point of 30,000 chosen, hence 1%=300 (West African population negligibly small).
<i>Ardeola rufiventris</i> New—estimate of B/C given, B+ chosen.	<i>Bostrychia bocagei</i> Rose and Scott (1994).	<i>Anas capensis</i> Rose and Scott (1997) thresholds, summed.
<i>Butorides striatus</i> New—main Afrotropical population estimated as c.100,000 birds, other populations in region much smaller, hence 1%=1,000.	<i>Bostrychia rara</i> New—estimate of A given; mid-point chosen.	<i>Anas bernieri</i> Rose and Scott (1997).
<i>Nycticorax nycticorax</i> New—both figures. Breeding population estimated as mid-point C; non-breeding population includes two additional breeding populations, the first given as 1,500, the second given as B/C, with B+ (250) chosen. Most, not all, winter in Afrotropics, hence combined estimate for these two breeding populations remains 1,500. 500+1,500 = 2,000.	<i>Geronticus calvus</i> Rose and Scott (1994).	<i>Anas undulata</i> Rose and Scott (1997) thresholds, summed.
<i>Gorsachius leuconotus</i> Rose and Scott (1997).	<i>Lophotibis cristata</i> New—estimate of A/B given; A+ chosen.	<i>Anas melleri</i> Rose and Scott (1997).
<i>Tigrionis leucolophus</i> New—estimate of C given; mid-point chosen.	<i>Threskiornis aethiopicus</i> New—estimate of >200,000 given; conservatively 1%=2,000.	<i>Anas sparsa</i> Rose and Scott (1997) thresholds, summed and rounded.
<i>Ixobrychus minutus</i> New—both figures. Estimate of C given for main breeding population (other very much smaller); mid-point chosen. Two additional breeding populations occur in boreal winter, both with estimates of C given and mid-points chosen; not all winter in Afrotropics, hence combined estimate is 700. 500+700=1,200.	<i>Platalea leucorodia</i> New—both figures. Breeding threshold threshold is a combination of estimates given for Mauritanian and Red Sea populations (65). Non-breeding population includes parts of two additional populations, one with threshold given as 30, the other with range estimate given as 5,000–15,000 by Rose and Scott (1997), hence, conservatively, 1%=50 (European IBA programme uses 130 for this population—see Heath and Evans 2000). Most of both of these populations winter north of the Afrotropics, so combined figure of 30 chosen. 65+30=100 (rounded up).	<i>Anas acuta</i> New—parts of two populations involved; Rose and Scott (1997) give estimate of 1,200,000 for West Siberia/North-east, east and south Europe/West Africa population, of which 1,000,000 winter in West Africa (Rose and Scott 1994). Rose and Scott (1997) give an estimate of 700,000 for the West Siberia/South-west Asia/North-east Africa population. African component of this figure derived from Urban (1993) who, excluding figures for Egypt, gives a range estimate 31,000–108,000, for which ‘mid-point’ of 50,000 chosen. 1% of former population = 10,000, of latter 500—combined figure rounded back down to 10,000.
<i>Ixobrychus sturmii</i> New—estimate of B/C given; C thought more realistic, mid-point used.	<i>Platalea alba</i> New—estimate of A/B given, but true figure thought to be nearer top end of this range, so mid-point of B chosen as threshold.	<i>Anas eatoni</i> Rose and Scott (1997) thresholds, summed and rounded.
<i>Botaurus stellaris</i> New—southern African population estimated at c.5,000; 1%=50.	<i>Phoenicopterus ruber</i> New—thresholds of 400, 350 and 500 given by Rose and Scott (1997) for the three sub-Saharan populations, totalling 1,250.	<i>Anas erythrorhyncha</i> Rose and Scott (1997) thresholds, summed and rounded.
<i>Balaeniceps rex</i> Rose and Scott (1994).	<i>Phoenicopterus minor</i> Rose and Scott (1994) (following Ramsar Convention, where for populations >2 million, threshold of 20,000 applies).	<i>Anas hottentota</i> Rose and Scott (1997) thresholds, summed and rounded.
<i>Scopus umbretta</i> New—estimate of D for all populations combined; mid-point used.	<i>Dendrocygna bicolor</i> Rose and Scott (1997) thresholds, summed and rounded.	<i>Anas querquedula</i> Rose and Scott (1997)—one of the component thresholds was revised, but total remains >2,000,000, hence ‘1%’ threshold is unchanged.
<i>Mycteria ibis</i> New—estimate of C given; mid-point used.	<i>Dendrocygna viduata</i> Rose and Scott (1997) thresholds, summed and rounded.	<i>Anas smithii</i> Rose and Scott (1997).
<i>Anastomus lamelligerus</i> New—estimate of C/D given for main population (other very much smaller); C+ used.	<i>Thalassornis leuconotus</i> Rose and Scott (1997) thresholds, summed.	<i>Anas clypeata</i> New—parts of two populations involved; Rose and Scott (1997) give estimate of 450,000 for West Siberia/North-east, east and south Europe/West Africa population, of which an estimate of 15,000 (1%=150) in West Africa (Monval and Pirot 1989). Rose and Scott (1997) give an estimate of 700,000 for the West Siberia/South-west Asia/North-east Africa population. African component of this figure derived from Urban (1993) who, excluding figures for Egypt, gives a range estimate 100,000–240,000; ‘mid-point’ of 150,000 chosen, hence 1%=1,500. Summing and rounding gives a 1% figure of 1,600.
<i>Ciconia nigra</i> Rose and Scott (1994) followed for breeding population. Non-breeding estimate is new—350 is given, but European IBA programme uses 200 for this population (Heath and Evans 2000), thus latter figure used here.	<i>Oxyura maccoa</i> Rose and Scott (1997) thresholds, summed.	<i>Marmaronetta angustirostris</i> Rose and Scott (1997).
<i>Ciconia abdimii</i> Estimate of D given by Rose and Scott (1997); mid-point chosen.	<i>Cyanochen cyanopterus</i> Rose and Scott (1997).	<i>Netta erythrophthalma</i> Rose and Scott (1997).
<i>Ciconia episcopus</i> Estimate of C given; mid-point used.	<i>Alopochen aegyptiacus</i> Rose and Scott (1997) thresholds, summed and rounded.	<i>Aythya ferina</i> New—Urban (1993), excluding Egypt component, gives a range estimate of 1,000–3,000. Only a vagrant to West Africa. Hence, given context and common sense, this species was considered ineligible for the selection of IBAs under the A4i criterion in the Afrotropics.
<i>Ciconia ciconia</i> Rose and Scott (1994) followed for breeding population; non-breeding estimate is a combination of the two Rose and Scott (1994) figures, rounded down.	<i>Tadorna ferruginea</i> Rose and Scott (1994).	<i>Aythya nyroca</i> New—parts of two populations are now recognized to be involved (Rose and Scott 1997). One (West Mediterranean/West Africa) with population estimate of 10,000, of which approximately half found south of Sahara (P. Rose pers. comm.); the second (West and south-west Asia/North-east Africa) with estimate of 5,000. African component of latter derived from Urban (1993) who, excluding figures for Egypt, gives a range estimate 0–500, i.e. negligibly small. Hence, 1%=50.
<i>Ephippiorhynchus senegalensis</i> New—population estimated as B; mid-point used.	<i>Tadorna cana</i> Rose and Scott (1994).	<i>Aythya innotata</i> Rose and Scott (1994).
<i>Leptoptilos crumeniferus</i> Rose and Scott (1994).	<i>Plectropterus gambensis</i> Rose and Scott (1997) thresholds, summed.	
<i>Plegadis falcinellus</i> New—both figures. Estimate of C/D made for breeding population; C+ chosen. This non-breeding population is joined by parts of two additional populations—for one a threshold of 325 is given by Rose and Scott (1997), for the other an estimate of B is given (mid-point chosen). Some of latter winter in Asia, so combined figure of 450 chosen. 1,000+450=1,450.	<i>Pteronetta hartlaubii</i> Rose and Scott (1997) thresholds, summed and rounded.	
<i>Bostrychia hagedash</i> New—estimates available vary from B to D, of which figure of 100,000 seemed best guess, hence 1%=1,000.	<i>Sarkidiornis melanotos</i> Rose and Scott (1997) thresholds, summed and rounded.	
<i>Bostrychia carunculata</i> New—estimate of A given, but Ethiopian Wildlife and Natural History Society advised that threshold should be set as A+.	<i>Nettapus auritus</i> Rose and Scott (1997) thresholds, summed and rounded.	
	<i>Anas penelope</i> New—estimate of 250,000 given by Rose and Scott (1997) for the West Siberia/South-west Asia/North-east Africa population. The African component of this figure is derived from Urban (1993) who, excluding figures for Egypt, gives a range estimate of 10,000–62,000; ‘mid-point’ of 30,000 chosen, hence 1%=300 (West African population negligibly small).	
	<i>Anas strepera</i> New—estimate of 1,300 given by Rose and Scott (1997) for the West Siberia/South-west Asia/North-east Africa population; Urban (1993), excluding Egypt component, gives a figure of 300 or less. Species is only a vagrant to West Africa. Hence, given context and common sense, this species was considered ineligible for the selection of IBAs under the A4i criterion in the Afrotropics.	

**Appendix 6b ... continued.** The derivation of 1% population threshold figures for congregatory waterbirds of the Afrotropical region.

<i>Aythya fuligula</i> New—Rose and Scott (1997) give an estimate of 200,000 for the West Siberia/South-west Asia/North-east Africa population. African component of this figure derived from Urban (1993) who, excluding figures for Egypt, gives a range estimate 1,500–6,000. West African population negligibly small. Hence, given context and common sense, this species was considered ineligible for the selection of IBAs under the A4i criterion in the Afrotropics.	<i>Porphyrio porphyrio</i> New—estimate of A/B made; A+ mid-point chosen.	<i>Rhinoptilus cinctus</i> New—estimate of D made for combined populations; mid-point chosen.
<i>Balearica pavonina</i> Rose and Scott (1997) thresholds, summed and rounded .	<i>Porphyrio alleni</i> No figure.	<i>Rhinoptilus chalcopterus</i> New—estimate of D made for combined populations; mid-point chosen.
<i>Balearica regulorum</i> Rose and Scott (1997) thresholds, summed and rounded.	<i>Gallinula chloropus</i> New—Rose and Scott (1994) omit sub-Saharan population; estimate of C/D made, with C+ mid-point chosen.	<i>Cursorius cursor</i> New—estimate of D made for combined populations; mid-point chosen.
<i>Grus virgo</i> Rose and Scott (1997) thresholds, summed and rounded down, since some of largest component populations spend boreal winter in Asia.	<i>Gallinula angulata</i> New—estimate of C/D made, with C+ mid-point chosen.	<i>Cursorius rufus</i> New—estimate of D made for combined populations; mid-point chosen.
<i>Grus carunculatus</i> Rose and Scott (1997) thresholds, summed.	<i>Gallinula comeri</i> Rose and Scott (1994).	<i>Cursorius temminckii</i> New—estimate of D made for combined populations; mid-point chosen.
<i>Grus grus</i> Part of one population spends northern winter in Afrotropics; Rose and Scott (1997) give threshold of 600, estimate about half remain extra-limital so threshold of 300 chosen.	<i>Fulica atra</i> Rose and Scott (1994).	<i>Glareola pratincola</i> New—both figures. Estimate of D made for African breeding population, but thought nearer to lower end of this range so a threshold of 1,000 chosen. Three additional breeding populations migrate to Afrotropics in boreal winter. For these, Rose and Scott (1994) give estimates of B, B and B/C respectively. Mid points taken for the first two and B+ mid-point for the third, summed and rounded up to give a figure of 600; 1,000+600=1,600.
<i>Grus paradisea</i> Rose and Scott (1997) thresholds, summed and rounded.	<i>Fulica cristata</i> New—estimate of D given; mid-point chosen.	<i>Glareola nordmanni</i> New—estimate of A/B given; A+ mid-point chosen.
<i>Sarothrura pulchra</i> No figure.	<i>Podica senegalensis</i> No figure.	<i>Glareola ocularis</i> New—estimate of A made; mid-point chosen.
<i>Sarothrura elegans</i> No figure.	<i>Actophilornis africana</i> New—estimate of E made; mid-point chosen.	<i>Glareola nuchalis</i> New—estimates of B made for both populations; mid-points chosen for each and summed.
<i>Sarothrura rufa</i> No figure.	<i>Actophilornis albinucha</i> New—estimate of A made; mid-point chosen.	<i>Glareola cinerea</i> New—estimate of B made, towards the upper end of the range; a threshold of 200 chosen.
<i>Sarothrura lugens</i> No figure.	<i>Microparra capensis</i> New—estimate of C made; mid-point chosen.	<i>Pluvialis squatarola</i> New—parts of two populations are involved, with thresholds of 1,500 and 500 respectively; some of latter spend boreal winter in Asia, so a combined figure of 1,700 chosen.
<i>Sarothrura boehmi</i> New—population estimate as A; mid-point chosen.	<i>Rostratula benghalensis</i> New—estimate of C/D made; C+ mid-point chosen.	<i>Charadrius hiaticula</i> New—three populations involved, with thresholds of 500, 2,000 and 2,000 respectively; a proportion of two of these do not spend boreal winter in Afrotropics. Thus, a combined figure of 3,000 chosen.
<i>Sarothrura affinis</i> No figure.	<i>Dromas ardeola</i> New—Rose and Scott (1994) give threshold of 430, of which perhaps 70% spend northern winter in Afrotropics (M. R. W. Rands, pers. comm.); hence threshold of 300 chosen.	<i>Charadrius dubius</i> New—two populations involved, one with an estimate of D given, but thought to be nearer the lower end of this range—figure of 3,200 used by European IBA programme (Heath and Evans 2000); no estimate given for the other population, but thought to be B/C, so a B+ threshold chosen. About half of this latter population spends northern winter in Asia, so threshold halved and then rounded down because relatively small compared with other populations—resulting in a figure of 3,000 being chosen.
<i>Sarothrura insularis</i> No figure.	<i>Haematopus ostralegus</i> Rose and Scott (1994)—no attempt was made to estimate the proportion of this population that winters south of Sahara.	<i>Charadrius thoracicus</i> Rose and Scott (1994).
<i>Sarothrura ayresi</i> Rose and Scott (1997).	<i>Haematopus meadewaldoi</i> Rose and Scott (1994).	<i>Charadrius sanctaehelenae</i> Rose and Scott (1997).
<i>Sarothrura watersi</i> Rose and Scott (1997).	<i>Haematopus moquini</i> Rose and Scott (1994).	<i>Charadrius pecuarius</i> New—three populations involved, for which a combined estimate of C+ made and this threshold chosen.
<i>Himantornis haematopus</i> No figure.	<i>Himantopus himantopus</i> New—both figures. Breeding population estimated as C/D; C+ mid-point chosen. Non-breeding population includes parts of two additional breeding populations which have thresholds of 400 and 450 respectively, but the European IBA programme uses threshold of 350 for the latter population (Heath and Evans 2000). Not all of these birds, however, move to the Afrotropics, so a combined figure of 500 chosen. 1,000+500=1,500.	<i>Charadrius tricollaris</i> New—two populations, for which combined estimate of C+ made; this threshold chosen.
<i>Canirallus oculus</i> No figure.	<i>Recurvirostra avosetta</i> New—both figures. Breeding population estimated as B/C; B+ mid-point chosen. Non-breeding population includes parts of three additional breeding populations, with threshold and estimates of 700, C and B respectively. Mid-points of latter two chosen, but former revised down to 400, in line with figure used for this population by Heath and Evans (2000). A combined figure for these of 1,000 chosen, since not all move to Afrotropics; added to breeding population, after rounding, gives 1,300.	<i>Charadrius forbesi</i> New—estimate of B/C made; B+ threshold chosen.
<i>Canirallus kioloides</i> No figure.	<i>Burhinus oedincnemus</i> New—estimate of B/C/D for the three populations involved made, with a threshold of 1,500 chosen.	<i>Charadrius pallidus</i> New—two populations, estimate B/C for Southern Africa, B for East Africa; B+ and B mid-points chosen and summed.
<i>Rallus caerulescens</i> No figure.	<i>Burhinus senegalensis</i> New—estimates of B made for both populations; mid-points chosen for each and summed.	<i>Charadrius alexandrinus</i> New—parts of three populations are involved, with threshold and estimates of 700, C and C/D given respectively. Afrotropical components of latter two populations estimated at B+ and C mid-points respectively. These, plus about half of the first population threshold, rounded down=1,000.
<i>Rallus madagascariensis</i> No figure.	<i>Burhinus vermiculatus</i> New—estimate of C made for combined populations; mid-point chosen.	
<i>Dryolimnas cuvieri</i> No figure.	<i>Burhinus capensis</i> New—estimate of C made for combined populations; mid-point chosen.	
<i>Crecopsis egregia</i> No figure.	<i>Pluvianus aegyptius</i> New—estimate of B made for West/East African population and of A for Angola/DR Congo population; mid-points chosen and summed.	
<i>Crex crex</i> New—estimate of C/D given; C+ threshold chosen.	<i>Rhinoptilus africanus</i> New—estimate of D made for combined populations; mid-point chosen.	
<i>Rougetius rougetii</i> No figure.		
<i>Atlantisia rogersi</i> Rose and Scott (1997).		
<i>Amaurornis olivieri</i> No figure.		
<i>Amaurornis flavirostra</i> New—estimate of E given; mid-point chosen.		
<i>Porzana parva</i> New—estimate of C/D given; C+ threshold chosen.		
<i>Porzana pusilla</i> No figure.		
<i>Porzana porzana</i> No figure.		
<i>Aenigmatolimnas marginalis</i> No figure.		

**Appendix 6b ... continued.** The derivation of 1% population threshold figures for congregatory waterbirds of the Afrotropical region.

<i>Charadrius marginatus</i> New—estimate for all populations combined C/D; C+ threshold chosen.	<i>Numenius arquata</i> Rose and Scott (1994)—only a small proportion of the second population mentioned by Rose and Scott (1994) winters in Afrotropics, and this ignored.	<i>Limicola falcinellus</i> New—the population involved is split (during boreal winter) between Asia and Africa at ratio of c.4:1. Hence, threshold of 250 given, drops to 50 for Africa.
<i>Charadrius mongolus</i> Rose and Scott (1994).	<i>Tringa erythropus</i> New—parts of two populations are involved, one with threshold of 1,200 given, but for which a figure of 720 is used by the European IBA programme (Heath and Evans 2000), while 700 used here for sub-Saharan element; for other population, an estimate of B/C is given, of which c.90% winter in Afrotropics and for which a threshold of 200 therefore chosen. Summing gives 900.	<i>Philomachus pugnax</i> New—parts of two populations are involved, estimate at E and D/E; combined threshold of 20,000 chosen.
<i>Charadrius leschenaultii</i> Rose and Scott (1994).	<i>Tringa totanus</i> New—parts of two populations are involved, for one a threshold of 1,500 given; a further threshold of 250 chosen for Afrotropical component of second population. Summing gives 1,750.	<i>Larus leucophthalmus</i> Rose and Scott (1994).
<i>Charadrius asiaticus</i> New—estimate given as B/C; population thought to be c.20,000, hence threshold of 200.	<i>Tringa stagnatilis</i> New—parts of two populations are involved, for which estimates of C/D and C are given respectively; for these, thresholds of 300 (used by European IBA programme: Heath and Evans 2000) and 250 thought appropriate. Summing gives 550.	<i>Larus hemprichii</i> Rose and Scott (1994).
<i>Vanellus crassirostris</i> New—estimate for all populations combined C/D; C+ mid-point chosen.	<i>Tringa nebularia</i> New—parts of two populations are involved, for which estimates of D and C/D are given. For former, threshold of 1,800 used by European IBA programme (Heath and Evans 2000), for latter a C mid-point was chosen for Afrotropical element. Summing gives 2,300.	<i>Larus dominicanus</i> New – Crawford <i>et al.</i> (1982) estimate a breeding population of 22,400—including non-breeding population, say 30,000—hence threshold of 300.
<i>Vanellus armatus</i> New—estimate of D made; mid-point chosen.	<i>Tringa ochropus</i> New—parts of two populations are involved, for which D/E estimate given for one; a D+ threshold chosen for the combined elements.	<i>Larus fuscus</i> New—parts of two populations are involved, with thresholds of 2,500 and 4,500; however, European IBA programme uses revised figures of 2,000 and 4,000 respectively=6,000.
<i>Vanellus spinosus</i> New—estimate of D made; mid-point chosen.	<i>Tringa glareola</i> New—two populations are involved, of which one split with Asia, with estimates of E and D/E respectively; a threshold of 10,000 initially selected, but increased to 11,000 to conform with European IBA programme (Heath and Evans 2000).	<i>Larus cirrocephalus</i> New—population estimated at C/D; C+ threshold chosen.
<i>Vanellus tectus</i> New—combined estimate of D made; mid-point chosen.	<i>Tringa cinerea</i> New—threshold of 440 given, but majority of this population winters in SW Asia; figure of 100 chosen.	<i>Larus hartlaubii</i> Rose and Scott (1994).
<i>Vanellus melanocephalus</i> New—estimate of A made, on advice of Ethiopian Wildlife and Natural History Society; mid-point chosen.	<i>Tringa hypoleucos</i> New—parts of two populations are involved, with an estimate of E given for one. A combined threshold of 15,000 chosen.	<i>Larus ridibundus</i> New—parts of three populations involved, combined total well in excess of 2 million; 20,000 threshold chosen.
<i>Vanellus albiceps</i> New—combined estimate of B/C; B+ threshold chosen.	<i>Arenaria interpres</i> New—parts of two populations are involved, one with a threshold of 300 given, while for the other, of which c 90% occur in Asia, an estimate of C given. Ten percent of C threshold is 50; 300+50=350.	<i>Larus genei</i> Rose and Scott (1994).
<i>Vanellus senegallus</i> New—combined estimate of C made; thought to be towards upper end of range, hence threshold of 750 chosen.	<i>Calidris canutus</i> Rose and Scott (1994).	<i>Sterna nilotica</i> New—two populations are involved, with thresholds of 120 and 200. For latter, European IBA programme uses revised figure of 150 (Heath and Evans 2000); 120+150=270.
<i>Vanellus lugubris</i> New—estimate of C/D made; C+ threshold chosen.	<i>Calidris alba</i> New—parts of two populations are involved, with thresholds of 1,000 and 1,200 given. European IBA programme uses 1,200 for the former (Heath and Evans 2000), but offset by equivalent decrease of latter for relatively small proportion of this population wintering in South-west Asia.	<i>Sterna caspia</i> New—both figures. Breeding population threshold is sum of three separate breeding population thresholds, two given by Rose and Scott (1994), the third, Madagascan, estimate to be in range A with, conservatively, the threshold chosen to be 10; total 135. Non-breeding population augmented by parts of two additional populations: the European one has threshold of 60 given, but European IBA programme uses revised figure of 50 (Heath and Evans 2000), while the Caspian population estimate by Rose and Scott (1994) is given as 10,000, of which advised that c.3,000 winter in Asia; 1% of remaining 7,000 therefore 70. 135+ 50+70=255, rounded down to 250.
<i>Vanellus melanopterus</i> New—combined estimate of C/D made; C+ threshold chosen.	<i>Calidris temminckii</i> New—parts of two populations are involved. BirdLife International and Wetlands International data are at considerable variance over estimates for this species. For conformity, threshold of European IBA programme is used (Heath and Evans 2000).	<i>Sterna maxima</i> Rose and Scott (1994).
<i>Vanellus coronatus</i> New—combined estimate of D made; mid-point chosen.	<i>Calidris alpina</i> New—parts of up to five populations are involved, the combined total of which pass 2 million. Threshold of 20,000 chosen.	<i>Sterna bengalensis</i> Rose and Scott (1994).
<i>Vanellus superciliosus</i> New—estimate of A/B made; A+ mid-point chosen.	<i>Calidris ferruginea</i> New—two populations are involved, both almost exclusively Afrotropical during the boreal winter; thresholds given—4,500 and 3,100—summed and rounded down to give 7,000.	<i>Sterna bergii</i> New—three populations are involved, of which one is split with Asia; Rose and Scott (1994) give thresholds of 150, 12 and 400. Summing and rounding down gives 500.
<i>Vanellus gregarius</i> New—estimate of A given; mid-point chosen.		<i>Sterna sandvicensis</i> Rose and Scott (1994).
<i>Vanellus leucurus</i> New—estimate of B/C given, but most of these spend boreal winter in Asia, perhaps 5,000 in Africa, hence threshold of 50.		<i>Sterna dougallii</i> New—both figures. Afrotropical breeding population thresholds given by Rose and Scott (1994) sum to 418, rounded down to 400. These are augmented by non-breeders from Europe for which threshold given is 50, hence 450.
<i>Gallinago gallinago</i> Rose and Scott (1994).		<i>Sterna sumatrana</i> New—Indian Ocean breeding population given by Feare (1984) gives 70 pairs for Aldabra and 10 pairs on African Banks, the only two confirmed nesting sites in Afrotropics. 80 pairs=c.240 birds, hence 1%=2.
<i>Gallinago media</i> New—two populations, one with threshold of 75 given, other estimated as B/C, for which B+ threshold chosen; combined and rounded down to give a threshold of 300.		<i>Sterna hirundo</i> New—both figures. Breeding population in Afrotropics estimated at 400 pairs (Cooper <i>et al.</i> 1984), hence 1%=8 birds. Non-breeding population made up of elements of three separate populations, with thresholds and estimates of 1,800, 6,000 and C/D respectively. A combined figure of 8,000 chosen for threshold.
<i>Gallinago nigripennis</i> New—combined estimate of C made; mid-point chosen.		
<i>Gallinago macrodactyla</i> New—estimate of A made (A. F. A. Hawkins, pers. comm.); mid-point chosen.		
<i>Lymnocyptes minimus</i> New—estimate of C/D given; C+ threshold chosen.		
<i>Limosa limosa</i> New—parts of two populations involved, one with threshold of 3,500, other estimate given as D, for which, on advice a threshold of 2,500 chosen for the Afrotropical element. Summing gives 6,000.		
<i>Limosa lapponica</i> New—two populations involved, part of one of which spends boreal winter in Asia. For one, threshold of 7,000 given, for the other range estimate of C/D given; on advice, C+ threshold chosen for Afrotropical element. Summing gives 8,000.		
<i>Numenius phaeopus</i> New—two populations involved, part of one of which (with threshold of 6,500 given, but for which European IBA programme use a threshold of 5,300: Heath and Evans 2000) remains north of Afrotropics during boreal winter; for the other, a C+ threshold was estimated. For former, a value of 5,000 chosen and summed with 1,000 for the latter, to give 6,000.		

**Appendix 6b ... continued.** The derivation of 1% population threshold figures for congregatory waterbirds of the Afrotropical region.

<p><i>Sterna paradisaea</i> New—estimate of E given; European IBA programme uses a figure of 13,000 (Heath and Evans 2000), which is also used here.</p> <p><i>Sterna vittata</i> New—sum of Rose and Scott (1994) thresholds for Kerguelen, Crozet and Tristan.</p> <p><i>Sterna virgata</i> Rose and Scott (1997).</p> <p><i>Sterna albirostris</i> New—both figures. Breeding population estimated as A; mid-point chosen. Non-breeding population augmented by two additional populations, for which thresholds of 340 and 600 given; summing gives 1,000.</p> <p><i>Sterna saundersi</i> New—threshold of 400 given, but this population shared more or less equally with Asia, so 200 chosen.</p> <p><i>Sterna balaenarum</i> Rose and Scott (1994).</p>	<p><i>Sterna repressa</i> New—threshold of 6,000 given; it was estimated that this population is split more or less equally with Asia, hence figure of 3,000 chosen.</p> <p><i>Sterna anaethetus</i> Rose and Scott (1994)—West African population very small and hence threshold not changed.</p> <p><i>Sterna fuscata</i> Rose and Scott (1994).</p> <p><i>Chlidonias hybridus</i> New—both figures. Breeding population estimate at B; mid-point chosen. Non-breeders of this population are augmented by two additional populations, with thresholds of 250 and 750 given; combined total rounded down to 1,000.</p> <p><i>Chlidonias leucopterus</i> New—threshold of 2,300 given, but some of this population spends boreal winter in Asia, so figure rounded down to 2,000.</p>	<p><i>Chlidonias niger</i> New—threshold of 2,000 given, but European IBA programme uses revised figure of 1,700 (Heath and Evans 2000); this figure used here.</p> <p><i>Gygis alba</i> New—estimate of D given; mid-point chosen.</p> <p><i>Anous minutus</i> <i>Anous stolidus</i> <i>Anous tenuirostris</i> Rose and Scott (1994, 1997) do not consider noddy terns (<i>Anous</i> spp.). All estimates and thresholds are therefore new and derive from figures and range estimates given in papers in Croxall <i>et al.</i> (1984).</p> <p><i>Rynchops flavirostris</i> New—estimate of B made, but more recent estimate for total population is '&lt;10,000 birds' (del Hoyo <i>et al.</i> 1996); threshold therefore set at 100.</p>
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**Appendix 6c.** The congregatory waterbird species (*sensu* Rose and Scott 1997) that occur in North Africa, together with the corresponding '1% of population' thresholds that govern selection of IBAs under the A4i criterion. As North Africa is part of the Western Palearctic region, the 1% estimates are those used, except for a few additional species, in the European IBA programme—for details of their derivation, see Heath and Evans (2000).

All population thresholds are given as numbers of individuals. To convert between individuals and pairs, a multiplying/dividing factor of 3 was used.

Scientific name	English name	1% threshold	Scientific name	English name	1% threshold
<i>Tachybaptus ruficollis</i>	Little Grebe	1,000	<i>Pluvialis squatarola</i>	Grey Plover	1,700
<i>Podiceps cristatus</i>	Great Crested Grebe	10,000	<i>Vanellus spinosus</i>	Spur-winged Plover	100
<i>Podiceps nigricollis</i>	Black-necked Grebe	1,000	<i>Vanellus vanellus</i>	Lapwing	70,000
<i>Phalacrocorax carbo</i>	White-breasted Cormorant	4,250	<i>Calidris canutus</i>	Knot	8,500
<i>Phalacrocorax aristotelis</i>	Shag	2,700	<i>Calidris alba</i>	Sanderling	1,200
<i>Pelecanus onocrotalus</i>	White Pelican	800	<i>Calidris minuta</i>	Little Stint	2,100
<i>Pelecanus crispus</i>	Dalmatian Pelican	25	<i>Calidris temminckii</i>	Temminck's Stint	3,000
<i>Nycticorax nycticorax</i>	Black-crowned Night Heron	1,500	<i>Calidris ferruginea</i>	Curlew Sandpiper	4,500
<i>Ardeola ralloides</i>	Common Squacco Heron	360	<i>Calidris alpina</i>	Dunlin	22,000
<i>Bubulcus ibis</i>	Cattle Egret	2,100	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	400
<i>Egretta garzetta</i>	Little Egret	1,000	<i>Philomachus pugnax</i>	Ruff	33,000
<i>Casmerodius albus</i>	Great White Egret	120	<i>Lymnocyptes minimus</i>	Jack Snipe	660
<i>Ardea cinerea</i>	Grey Heron	3,900	<i>Gallinago gallinago</i>	Common Snipe	54,000
<i>Ciconia nigra</i>	Black Stork	200	<i>Gallinago media</i>	Great Snipe	300
<i>Ciconia ciconia</i>	White Stork	4,500	<i>Limosa limosa</i>	Black-tailed Godwit	4,200
<i>Geronticus eremita</i>	Northern Bald Ibis	4	<i>Limosa lapponica</i>	Bar-tailed Godwit	1,000
<i>Plegadis falcinellus</i>	Glossy Ibis	450	<i>Numenius phaeopus</i>	Whimbrel	5,300
<i>Platalea leucorodia</i>	European Spoonbill	160	<i>Numenius tenuirostris</i>	Slender-billed Curlew	3
<i>Phoenicopterus ruber</i>	Greater Flamingo	800	<i>Numenius arquata</i>	Curlew	3,500
<i>Anser anser</i>	Greylag Goose	3,500	<i>Tringa erythropus</i>	Spotted Redshank	720
<i>Tadorna ferruginea</i>	Ruddy Shelduck	225	<i>Tringa totanus</i>	Redshank	3,000
<i>Tadorna tadorna</i>	Shelduck	3,750	<i>Tringa stagnatilis</i>	Marsh Sandpiper	300
<i>Anas penelope</i>	Wigeon	18,000	<i>Tringa nebularia</i>	Greenshank	1,800
<i>Anas strepera</i>	Gadwall	1,300	<i>Tringa ochropus</i>	Green Sandpiper	10,000
<i>Anas crecca</i>	Teal	14,000	<i>Tringa glareola</i>	Wood Sandpiper	11,000
<i>Anas platyrhynchos</i>	Mallard	83,000	<i>Tringa cinerea</i>	Terek Sandpiper	440
<i>Anas acuta</i>	Pintail	12,600	<i>Tringa hypoleucos</i>	Common Sandpiper	15,000
<i>Anas querquedula</i>	Garganey	20,000	<i>Arenaria interpres</i>	Turnstone	700
<i>Anas clypeata</i>	Northern Shoveler	4,650	<i>Larus melanocephalus</i>	Mediterranean Gull	5,500
<i>Marmaronetta angustirostris</i>	Marbled Teal	30	<i>Larus minutus</i>	Little Gull	680
<i>Netta rufina</i>	Red-crested Pochard	750	<i>Larus ridibundus</i>	Black-headed Gull	65,000
<i>Aythya ferina</i>	Northern Pochard	13,500	<i>Larus genei</i>	Slender-billed Gull	1,200
<i>Aythya nyroca</i>	Ferruginous Duck	600	<i>Larus audouinii</i>	Audouin's Gull	390
<i>Aythya fuligula</i>	Tufted Duck	16,000	<i>Larus canus</i>	Common Gull	16,000
<i>Melanitta nigra</i>	Common scoter	16,000	<i>Larus fuscus</i>	Lesser Black-backed Gull	6,000
<i>Mergus serrator</i>	Red-breasted Merganser	1,850	<i>Larus cachinnans</i>	Yellow-legged Gull	4,500
<i>Oxyura leucocephala</i>	White-headed Duck	140	<i>Larus armenicus</i>	Armenian Gull	300
<i>Gallinula chloropus</i>	Moorhen	10,000	<i>Sterna nilotica</i>	Gull-billed Tern	270
<i>Fulica cristata</i>	Red-knobbed Coot	50	<i>Sterna caspia</i>	Caspian Tern	150
<i>Fulica atra</i>	European Coot	40,000	<i>Sterna bengalensis</i>	Lesser Crested Tern	40
<i>Grus virgo</i>	Demoiselle Crane	1	<i>Sterna sandvicensis</i>	Sandwich Tern	2,800
<i>Grus grus</i>	Common Crane	2,000	<i>Sterna dougallii</i>	Roseate Tern	50
<i>Haematopus ostralegus</i>	European Oystercatcher	11,000	<i>Sterna hirundo</i>	Common Tern	7,800
<i>Himantopus himantopus</i>	Black-winged Stilt	700	<i>Sterna paradisaea</i>	Arctic Tern	13,000
<i>Recurvirostra avosetta</i>	Avocet	1,100	<i>Sterna albitrons</i>	Little Tern	900
<i>Glareola pratincola</i>	Common Pratincole	200	<i>Chlidonias hybridus</i>	Whiskered Tern	1,000
<i>Charadrius dubius</i>	Little Ringed Plover	3,200	<i>Chlidonias niger</i>	Black Tern	1,700
<i>Charadrius hiaticula</i>	Ringed Plover	2,500	<i>Chlidonias leucopterus</i>	White-winged Tern	2,300
<i>Charadrius pecuarius</i>	Kittlitz's Plover	?			
<i>Charadrius alexandrinus</i>	Kentish Plover	950			
<i>Charadrius morinellus</i>	Dotterel	1,000			
<i>Pluvialis apricaria</i>	Golden Plover	18,000			

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**Appendix 6d.** The congregatory seabird species that occur regularly in the area of coverage of the Africa IBA programme, together with the corresponding '1% of population' thresholds that govern selection of IBAs under the A4ii criterion. The derivation of the 1% figures is explained in Appendix 6f.

All population thresholds are given as numbers of pairs. To convert between individuals and pairs, a multiplying/dividing factor of 3 was used.

Scientific name	English name	1% threshold (pairs)	Scientific name	English name	1% threshold (pairs)
<i>Aptenodytes patagonicus</i>	King Penguin	10,000	<i>Procellaria aequinoctialis</i>	White-chinned Petrel	22,000
<i>Pygoscelis papua</i>	Gentoo Penguin	2,600	<i>Procellaria cinerea</i>	Grey Petrel	2,000
<i>Pygoscelis antarctica</i>	Chinstrap Penguin	40,000	<i>Calonectris diomedea</i>	Cory's Shearwater	2,000
<i>Eudyptes chrysocome</i>	Rockhopper Penguin	35,000	<i>Puffinus carneipes</i>	Flesh-footed Shearwater	1,000
<i>Eudyptes chrysolophus</i>	Macaroni Penguin	110,000	<i>Puffinus pacificus</i>	Wedge-tailed Shearwater	15,000
<i>Spheniscus demersus</i>	Jackass Penguin	1,700	<i>Puffinus gravis</i>	Great Shearwater	55,000
<i>Diomedea exulans</i>	Wandering Albatross	200	<i>Puffinus griseus</i>	Sooty Shearwater	27,500
<i>Diomedea amsterdamensis</i>	Amsterdam Albatross	15	<i>Puffinus yelkouan</i>	Yelkouan Shearwater	225
<i>Diomedea melanophris</i>	Black-browed Albatross	5,500	<i>Puffinus assimilis</i>	Little Shearwater	2,500
<i>Diomedea chrysostoma</i>	Grey-headed Albatross	800	<i>Puffinus lherminieri</i>	Audubon's Shearwater	300
<i>Diomedea chlororhynchus</i>	Yellow-nosed Albatross	800	<i>Oceanites oceanicus</i>	Wilson's Storm Petrel	30,000
<i>Phoebastria fusca</i>	Sooty Albatross	150	<i>Garrodia nereis</i>	Grey-backed Storm Petrel	100
<i>Phoebastria palpebrata</i>	Light-mantled Sooty Albatross	300	<i>Pelagodroma marina</i>	White-faced Storm Petrel	10,000
<i>Macronectes giganteus</i>	Southern Giant Petrel	360	<i>Fregetta grallaria</i>	White-bellied Storm Petrel	30
<i>Macronectes halli</i>	Northern Giant Petrel	70	<i>Fregetta tropica</i>	Black-bellied Storm Petrel	1,000
<i>Fulmarus glacialisoides</i>	Southern Fulmar	20,000	<i>Hydrobates pelagicus</i>	British Storm Petrel	2,800
<i>Daption capense</i>	Pintado Petrel	10,000	<i>Oceanodroma castro</i>	Madeiran Storm Petrel	250
<i>Pterodroma brevirostris</i>	Kerguelen Petrel	1,000	<i>Pelecanoides urinatrix</i>	Common Diving Petrel	70,000
<i>Pterodroma arminjoniana</i>	Herald Petrel	100	<i>Pelecanoides georgicus</i>	South Georgia Diving Petrel	60,000
<i>Pterodroma barau</i>	Barau's Petrel	15	<i>Phaethon aethereus</i>	Red-billed Tropicbird	25
<i>Pterodroma macroptera</i>	Great Winged Petrel	2,000	<i>Phaethon rubricauda</i>	Red-tailed Tropicbird	160
<i>Pterodroma incerta</i>	Atlantic Petrel	30	<i>Phaethon lepturus</i>	White-tailed Tropicbird	250
<i>Pterodroma aterrima</i>	Mascarene Black Petrel	1	<i>Morus capensis</i>	Cape Gannet	900
<i>Pterodroma mollis</i>	Soft-plumaged Petrel	300	<i>Sula dactylatra</i>	Masked Booby	1,000
<i>Pterodroma feae</i>	Fea's Petrel	6	<i>Sula sula</i>	Red-footed Booby	3,000
<i>Pterodroma lessonii</i>	White-headed Petrel	1,000	<i>Sula leucogaster</i>	Brown Booby	1,000
<i>Halobaena caerulea</i>	Blue Petrel	10,000	<i>Fregata magnificens</i>	Magnificent Frigatebird	1,000
<i>Pachyptila vittata</i>	Broad-billed Prion	5,000	<i>Fregata aquila</i>	Ascension Frigatebird	10
<i>Pachyptila salvini</i>	Salvin's Prion	60,000	<i>Fregata minor</i>	Greater Frigatebird	1,600
<i>Pachyptila desolata</i>	Antarctic Prion	250,000	<i>Fregata ariel</i>	Lesser Frigatebird	1,000
<i>Pachyptila turtur</i>	Fairy Prion	10,000	<i>Chionis minor</i>	Lesser Sheathbill	65
<i>Pachyptila belcheri</i>	Thin-billed Prion	10,000	<i>Catharacta antarctica</i>	Subantarctic Skua	130
<i>Bulweria bulwerii</i>	Bulwer's Petrel	1,300			

**Appendix 6e.** The congregatory landbird species that occur regularly in the area of coverage of the Africa IBA programme, together with the corresponding '1% of population' thresholds that govern selection of IBAs under the A4ii criterion. The derivation of the 1% figures is explained in Appendix 6f.

Population thresholds are given as numbers of individuals or pairs, as indicated. In general, to convert between individuals and pairs, a multiplying/dividing factor of 3 was used.

Scientific name	English name	1% threshold	Scientific name	English name	1% threshold
<i>Neophron percnopterus</i>	Egyptian Vulture	110 pairs	<i>Agapornis nigrigenis</i>	Black-cheeked Lovebird	100 individuals
<i>Gyps rueppellii</i>	Rüppell's Griffon	110 pairs	<i>Merops apiaster</i>	European Bee-eater	40,000 individuals
<i>Gyps fulvus</i>	Eurasian Griffon	180 pairs	<i>Merops malimbicus</i>	Rosy Bee-eater	870 individuals
<i>Gyps coprotheres</i>	Cape Griffon	44 pairs	<i>Merops nubicus</i>	Northern Carmine Bee-eater	24,000 individuals
<i>Falco naumanni</i>	Lesser Kestrel	600 individuals	<i>Merops nubicoides</i>	Southern Carmine Bee-eater	6,000 individuals
<i>Falco vespertinus</i>	Western Red-footed Falcon	1,500 individuals	<i>Riparia riparia</i>	European Sand Martin	250,000 individuals
<i>Falco amurensis</i>	Eastern Red-footed Falcon	1,000 individuals	<i>Hirundo rustica</i>	Barn Swallow	800,000 individuals
<i>Falco eleonorae</i>	Eleonora's Falcon	50 pairs	<i>Motacilla flava</i>	Yellow Wagtail	460,000 individuals
<i>Falco concolor</i>	Sooty Falcon	10 pairs			

**Appendix 6f.** The derivation of 1% population threshold figures for congregatory seabirds and landbirds.

The '1% of population' figures for congregatory seabirds and landbirds, used as thresholds to identify IBAs under the A4ii criterion (and listed in Appendix 6d and 6e), were compiled in 1995, except for the additional seabird species which breed only on Bouvetøya (Bouvet Island), which were added in 1998. The main references used to obtain global population estimates are given for each species with, for seabirds, an

indication of the range states and territories in Africa in which breeding colonies occur. Words such as 'several' and 'a few' prefixing figures that appear in literature sources are usually interpreted conservatively to mean three, unless otherwise stated (hence, several thousand = 3,000). Comments made in Appendix 6b about the likely inaccuracy of some of the estimates apply equally here.

**Seabirds (breeding populations)**

- King Penguin *Aptenodytes patagonicus*  
Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn >1 million pairs (del Hoyo *et al.* 1992); **1% = 10,000 pairs.**
- Gentoo Penguin *Pygoscelis papua*  
Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn at least 260,000 pairs (del Hoyo *et al.* 1992); **1% = 2,600 pairs.**
- Chinstrap Penguin *Pygoscelis antarctica*  
Bouvetøya. World popn c.4,000,000 pairs (Woehler 1993, Convey *et al.* 1999); **1% = 40,000 pairs.**
- Rockhopper Penguin *Eudyptes chrysocome*  
Tristan group (St Helena); St Paul–Amsterdam Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn 3,500,000 pairs (del Hoyo *et al.* 1992); **1% = 35,000 pairs.**
- Macaroni Penguin *Eudyptes chrysolophus*  
Bouvetøya; Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn >11,000,000 pairs (del Hoyo *et al.* 1992); **1% = 110,000 pairs.**
- Jackass Penguin *Spheniscus demersus*  
Namibia, South Africa. World popn 171,710 (Brown *et al.* 1982), 170,000 pairs (Avian Demography Unit, University of Cape Town, South Africa); **1% = 1,700 pairs.**
- Wandering Albatross *Diomedea exulans*  
Tristan group (St Helena); Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). **Vulnerable.** World popn c.21,000 pairs (del Hoyo *et al.* 1992), <20,000 pairs (Collar *et al.* 1994); **1% = 200 pairs.**
- Amsterdam Albatross *Diomedea amsterdamensis*  
St Paul–Amsterdam Islands (French Southern Territories). **Critical.** World popn 15 pairs (Collar *et al.* 1994). **1% = 1 pair.**
- Black-browed Albatross *Diomedea melanophris*  
Crozet & Kerguelen Islands (French Southern Territories). World popn at least 550,000 pairs (del Hoyo *et al.* 1992); **1% = 5,500 pairs.**
- Grey-headed Albatross *Diomedea chrysostoma*  
Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn c.80,000 pairs (del Hoyo *et al.* 1992); **1% = 800 pairs.**
- Yellow-nosed Albatross *Diomedea chlororhynchus*  
Tristan group (St Helena); Crozet Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn 80,000–100,000 pairs (del Hoyo *et al.* 1992); **1% = 800 pairs.**
- Sooty Albatross *Phoebastria fusca*  
Tristan group (St Helena); Crozet, Kerguelen & St Paul–Amsterdam Islands (French Southern Territories); Prince Edward Islands (South Africa). **Near Threatened.** World popn 15,000–21,000 pairs (del Hoyo *et al.* 1992); **1% = 150 pairs.**
- Light-mantled Sooty Albatross *Phoebastria palpebrata*  
Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn c.30,000 pairs; **1% = 300 pairs.**
- Southern Giant Petrel *Macronectes giganteus*  
Tristan group (St Helena); Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn c.36,000 pairs (del Hoyo *et al.* 1992); **1% = 360 pairs.**
- Northern Giant Petrel *Macronectes halli*  
Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn 7,000–12,000 pairs (del Hoyo *et al.* 1992); **1% = 70 pairs.**
- Southern Fulmar *Fulmarus glacialis*  
Bouvetøya. Minimum world popn 2,000,000 pairs (Enticott and Tipling 1997); **1% = 20,000 pairs.**
- Pintado Petrel *Daption capense*  
Bouvetøya; Crozet & Kerguelen Islands (French Southern Territories). World popn 'several million birds' (del Hoyo *et al.* 1992); **1% = 30,000 birds or 10,000 pairs.**
- Kerguelen Petrel *Pterodroma brevirostris*  
Tristan group (St Helena); Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn 'probably several hundred thousand birds' (del Hoyo *et al.* 1992); **1% = 3,000 birds or 1,000 pairs.**
- Herald Petrel *Pterodroma arminjoniana*  
Mauritius. World popn 'widespread but probably uncommon' (del Hoyo *et al.* 1992); between 10,000 and 100,000 pairs inferred, but 40,000–50,000 pairs at Pitcairn Island alone (M. de L. Brooke pers. comm.) so let 1% = 1,000 pairs, but Sibley and Monroe (1990) split nominate from *heraldica*, with *arminjoniana* confined to Round Island (Mauritius) and Trinidad (Brazil), in which case popn much less, say 10,000 pairs; **1% = 100 pairs.**
- Barau's Petrel *Pterodroma barau*  
Réunion; Rodrigues (Mauritius). **Critical.** World popn 1,500 pairs (Collar *et al.* 1994). **1% = 15 pairs.**
- Great-winged Petrel *Pterodroma macroptera*  
Tristan group (St Helena); Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn c.210,000 pairs (del Hoyo *et al.* 1992); **1% = 2,000 pairs.**
- Atlantic Petrel *Pterodroma incerta*  
Tristan group (St Helena). **Vulnerable.** World popn 'a few hundreds of pairs on Tristan and some thousands on Gough' (del Hoyo *et al.* 1992, Collar *et al.* 1994); inferred minimum 3,000 pairs; **1% = 30 pairs.**
- Mascarene Black Petrel *Pterodroma aterrima*  
Réunion. **Critical.** World popn 'extremely small' (del Hoyo *et al.* 1992); **1% = 1 pair.**
- Soft-plumaged Petrel *Pterodroma mollis*  
Tristan group (St Helena); Crozet & St Paul–Amsterdam Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn 'tens of thousands of breeding pairs' (del Hoyo *et al.* 1992); **1% = 300 pairs.**
- Fea's Petrel *Pterodroma feae*  
Cape Verde. **Vulnerable:** World popn c.650 pairs (Collar *et al.* 1994); **1% = 6 pairs.**
- White-headed Petrel *Pterodroma lessonii*  
Crozet & Kerguelen Islands (French Southern Territories). World popn 'probably c.100,000 breeding pairs' (del Hoyo *et al.* 1992); **1% = 1,000 pairs.**
- Blue Petrel *Halobaena caerulea*  
Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn 'several million birds' (del Hoyo *et al.* 1992); **1% = 30,000 birds or 10,000 pairs.**
- Broad-billed Prion *Pachyptila vittata*  
Tristan group (St Helena). World popn 'several hundred thousand birds' (del Hoyo *et al.* 1992), '300,000 too low' (M. de L. Brooke pers. comm.); **1% = 5,000 pairs.**
- Salvin's Prion *Pachyptila salvini*  
Crozet Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn >6 million pairs (del Hoyo *et al.* 1992); **1% = 60,000 pairs.**
- Antarctic Prion *Pachyptila desolata*  
Bouvetøya; Crozet & Kerguelen Islands (French Southern Territories). World popn 'of many millions' inc. 22 million pairs South Georgia, 2–3 million pairs on Kerguelen (del Hoyo *et al.* 1992); **1% = 250,000 pairs.**
- Fairy Prion *Pachyptila turtur*  
Crozet & St Paul–Amsterdam Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn 'probably several million birds' (del Hoyo *et al.* 1992); **1% = 30,000 birds or 10,000 pairs.**
- Thin-billed Prion *Pachyptila belcheri*  
Crozet & Kerguelen Islands (French Southern Territories). World popn >1 million pairs (del Hoyo *et al.* 1992); **1% = 10,000 pairs.**
- Bulwer's Petrel *Bulweria bulwerii*  
Cape Verde; Mauritius. World popn >100,000 pairs in Pacific, several tens of thousands of pairs in Atlantic (del Hoyo *et al.* 1992); total c.130,000 pairs?; **1% = 1,300 pairs.**
- White-chinned Petrel *Procellaria aequinoctialis*  
Tristan group (St Helena); Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn 'several million birds—2 million pairs South Georgia, 100,000's Kerguelen' (del Hoyo *et al.* 1992), minimum inferred popn therefore 2.2 million pairs; **1% = 22,000 pairs.**
- Grey Petrel *Procellaria cinerea*  
Tristan group (St Helena); Crozet, Kerguelen & St Paul–Amsterdam Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn minimum 200,000 pairs (del Hoyo *et al.* 1992); **1% = 2,000 pairs.**
- Cory's Shearwater *Calonectris diomedea*  
Cape Verde; Tunisia; Algeria. World popn 'few million birds' (del Hoyo *et al.* 1992); 1% = 30,000 birds. Tucker and Heath (1994) give range 140,000–210,000 pairs; Heath and Evans (2000) use global threshold of **1% = 2,000 pairs.**
- Flesh-footed Shearwater *Puffinus carneipes*  
St Paul–Amsterdam Islands (French Southern Territories). World popn 'several hundred thousand birds' (del Hoyo *et al.* 1992); **1% = 3,000 birds or 1,000 pairs.**
- Wedge-tailed Shearwater *Puffinus pacificus*  
Seychelles; Madagascar; Réunion; Mauritius. World popn 'well over 1,000,000 pairs' (del Hoyo *et al.* 1992), '1.2 million too conservative' (M. de L. Brooke pers. comm.); **1% = 15,000 pairs.**
- Great Shearwater *Puffinus gravis*  
Tristan group (St Helena). World popn minimum 5,500,000 pairs (del Hoyo *et al.* 1992); **1% = 55,000 pairs.**

**Appendix 6f ... continued.** The derivation of 1% population threshold figures for congregatory seabirds and landbirds.

- Sooty Shearwater *Puffinus griseus*  
Tristan group (St Helena). World popn minimum 2,750,000 pairs (del Hoyo *et al.* 1992); **1% = 27,500 pairs.**
- Yelkouan Shearwater *Puffinus yelkouan*  
Tunisia. European total 18,000–57,000 pairs (Tucker and Heath 1994); Balearic popn minimum 1,800 pairs, Levantine popn several thousand pairs (del Hoyo *et al.* 1992); Heath and Evans (2000) use global threshold of **1% = 225 pairs.**
- Little Shearwater *Puffinus assimilis*  
Cape Verde; Tristan group (St Helena); St Paul–Amsterdam Islands (French Southern Territories). World popn total perhaps between 100,000 and 1,000,000 pairs (del Hoyo *et al.* 1992); **1% = 2,500 pairs.**
- Audubon's Shearwater *Puffinus lherminieri*  
Seychelles; Comoros; Red Sea. World popn 'several tens of thousands of breeding pairs' (del Hoyo *et al.* 1992); **1% = 300 pairs.**
- Wilson's Storm Petrel *Oceanites oceanicus*  
Bouvetøya; Crozet & Kerguelen Islands (French Southern Territories). World popn 'several million pairs' (del Hoyo *et al.* 1992); **1% = 30,000 pairs.**
- Grey-backed Storm Petrel *Garrodia nereis*  
Tristan group (St Helena); Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn 10,000–50,000 pairs (del Hoyo *et al.* 1992); **1% = 100 pairs.**
- White-faced Storm Petrel *Pelagodroma marina*  
Cape Verde; Tristan group (St Helena). World popn 'several million birds' (del Hoyo *et al.* 1992); **1% = 30,000 birds or 10,000 pairs.**
- White-bellied Storm Petrel *Fregatta gallaria*  
Tristan group (St Helena); St Paul–Amsterdam Islands (French Southern Territories). World popn 'a few thousand breeding pairs' (del Hoyo *et al.* 1992); **1% = 30 pairs.**
- Black-bellied Storm Petrel *Fregatta tropica*  
Bouvetøya; Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn 'c.100,000–150,000 breeding pairs' (del Hoyo *et al.* 1992); **1% = 1,000 pairs.**
- British Storm Petrel *Hydrobates pelagicus*  
Morocco; Tunisia. World popn minimum 280,000 pairs (Tucker and Heath 1994); **1% = 2,800 pairs.**
- Madeiran Storm Petrel *Oceanodroma castro*  
Cape Verde; Ascension & St Helena; São Tomé & Príncipe. World popn: 'many islands hold several thousand breeding pairs' (del Hoyo *et al.* 1992). Total therefore perhaps between 10,000 and 100,000 pairs; **1% = 250 pairs.**
- Common Diving Petrel *Pelecanoides urinatrix*  
Tristan (St Helena); Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn minimum 7,000,000 pairs (del Hoyo *et al.* 1992); **1% = 70,000 pairs.**
- South Georgia Diving Petrel *Pelecanoides georgicus*  
Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn at least 6,000,000 pairs (del Hoyo *et al.* 1992); **1% = 60,000 pairs.**
- Red-billed Tropicbird *Phaethon aethereus*  
Egypt; Somalia; Eritrea; Djibouti; Cape Verde; Senegal; Ascension & St Helena. World popn 'under 10,000 pairs' (del Hoyo *et al.* 1992); **1% <100 pairs, say 25 pairs.**
- Red-tailed Tropicbird *Phaethon rubricauda*  
Seychelles; Comoros; Madagascar; Réunion; Mauritius. World popn minimum 16,000 pairs (del Hoyo *et al.* 1992); **1% = 160 pairs.**
- White-tailed Tropicbird *Phaethon lepturus*  
São Tomé & Príncipe; Annobón (Equatorial Guinea); Ascension (St Helena); Seychelles; Comoros; Madagascar; Réunion; Mauritius. World popn minimum 25,000 pairs (del Hoyo *et al.* 1992); **1% = 250 pairs.**
- Cape Gannet *Morus capensis*  
Namibia; South Africa. World popn c.90,000 pairs (Avian Demography Unit, University of Cape Town, South Africa); **1% = 900 pairs.**
- Masked Booby *Sula dactylatra*  
Eritrea; Somalia; Tanzania; Seychelles; Comoros; Réunion; Mauritius; Ascension (St Helena). World popn 'several hundred thousand individuals' (del Hoyo *et al.* 1992); **1% = 3,000 birds or 1,000 pairs.**
- Red-footed Booby *Sula sula*  
Ascension (St Helena); Comoros; Madagascar. World popn 'over a million birds' (del Hoyo *et al.* 1992); **1% = 10,000 birds or 3,000 pairs.**
- Brown Booby *Sula leucogaster*  
Cape Verde; Guinea-Bissau; Guinea; Ascension & St Helena; Egypt; Sudan; Eritrea; São Tomé & Príncipe; Madagascar. World popn 'several hundred thousand individuals' (del Hoyo *et al.* 1992); **1% = 3,000 individuals or 1,000 pairs.**
- Magnificent Frigatebird *Fregata magnificens*  
Cape Verde. World popn 'several hundred thousand birds' (del Hoyo *et al.* 1992); **1% = 3,000 individuals or 1,000 pairs.**
- Ascension Frigatebird *Fregata aquila*  
Ascension (St Helena). **Critical.** World popn c.1,000 pairs (del Hoyo *et al.* 1992, Collar *et al.* 1994); **1% = 10 pairs.**
- Great Frigatebird *Fregata minor*  
Comoros; Madagascar. World popn 'half to one million birds' (del Hoyo *et al.* 1992); **1% = 5,000 birds or 1,700 pairs.**
- Lesser Frigatebird *Fregata ariel*  
Seychelles; Comoros; Madagascar. World popn 'several hundred thousand birds' (del Hoyo *et al.* 1992); **1% = 3,000 birds or 1,000 pairs.**
- Lesser Shearwater *Chionis minor*  
Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn '6,500–10,000 pairs' (HBW3); **1% = 65 pairs.**
- Subantarctic Skua *Catharacta antarctica*  
Bouvetøya; Tristan group (St Helena); Crozet & Kerguelen Islands (French Southern Territories); Prince Edward Islands (South Africa). World popn (including *lonnbergi*) 13,000–14,000 pairs' (HBW3); **1% = 130 pairs.**

**Terrestrial species**

- Egyptian Vulture *Neophron percnopterus*  
Breeding popn: Heath and Evans (2000) use global threshold of **1% = 110 pairs.**
- Rüppell's Griffon *Gyps rueppellii*  
World popn 11,000 pairs, 30,000 birds (Mundy *et al.* 1992). Breeding popn: **1% = 110 pairs, 300 birds.**
- Eurasian Griffon *Gyps fulvus*  
World popn: 9,300 pairs in Europe (Tucker and Heath 1994) which covers between a quarter and half breeding range; total popn at least double (?), say 18,000 pairs. North Africa 100–150 pairs (Mundy *et al.* 1992). Breeding popn: **1% = 180 pairs.**
- Cape Griffon *Gyps coprotheres*  
**Vulnerable.** World popn 4,400 pairs, 12,000 birds (Mundy *et al.* 1992, Collar *et al.* 1994). Breeding popn: **1% = 44 pairs, 120 birds.**
- Lesser Kestrel *Falco naumanni*  
Traditional communal roost sites in South Africa: average size c.1,000 birds, can be up to 30,000–50,000 birds (Brown *et al.* 1982). European popn 10,000–17,000 pairs (Tucker and Heath 1994); this covers about half of breeding range of species, so infer 20,000–40,000 pairs in all, multiplied by 3 to include immatures, thus 60,000–120,000 birds globally. Non-breeding popn: **1% = 600 birds** ('a reasonable estimate', D. Peplar pers. comm.).
- Red-footed Falcon *Falco vespertinus*  
Communal roosts in Africa, sometimes of 1,000s (Brown *et al.* 1982). European popn 18,000–44,000 pairs (Tucker and Heath 1994). This covers about one-third of breeding range, thus infer 56,000–132,000 pairs in all, multiplied by 3 to include immatures, 150,000–360,000 birds. European IBA threshold is 360 pairs = 1,000 birds (Heath and Evans 2000). Non-breeding popn: **1% = 1,500 birds.**
- Eastern Red-footed Falcon *Falco amurensis*  
Traditional communal roost sites (sometimes with *F. naumanni* and *F. vespertinus*) of up to 4,000–5,000 birds. No world or regional popn estimates known. Not threatened, but breeding range smaller than *F. vespertinus*, thus minimum popn estimated at 100,000 birds. Non-breeding popn: **1% = 1,000 birds.**
- Eleonora's Falcon *Falco eleonorae*  
Morocco c.250 pairs (C. Bowden pers. comm.); Algeria 25–30 pairs; 3,800–4,500 pairs in Europe (Tucker and Heath 1994); thus world popn c.4,000 pairs, but European IBA programme already set 1% threshold: breeding popn (Heath and Evans 2000): **1% = 50 pairs.**
- Sooty Falcon *Falco concolor*  
Egypt 150–300 pairs (Goodman *et al.* 1989), but total known world breeding popn under 1,000 pairs (Gaucher *et al.* 1995). Breeding popn: **1% = 10 pairs.**
- Black-cheeked Lovebird *Agapornis nigrigenis*  
Dodman (1995) estimates world population at 10,000 individuals. Breeding/Non-breeding: **1% = 100 birds.**
- European Bee-eater *Merops apiaster*  
Non-breeding popn (Heath and Evans 2000): **1% = 40,000 birds.**
- Rosy Bee-eater *Merops malimbicus*  
Only six nesting colonies are known, all of which can be assumed to hold more than 1% of population. Four of the colonies comprised 8,000, 8,000, 18,500 and 23,700 nest-holes respectively. Last-mentioned colony thought to represent 25,000–50,000 adults (Fry 1984, Fry *et al.* 1988, Fry *et al.* 1992). Minimum total for four colonies therefore c.58,000 birds. Taking mean of these four (14,500) for the other two colonies gives them a size of 29,000 birds. Minimum total therefore 87,000 birds. Breeding: **1% = 870 birds**, or a similar number of nest-holes.
- Northern Carmine Bee-eater *Merops nubicus*
- Southern Carmine Bee-eater *Merops nubicoides*  
Colonies of up to 10,000 nests, usually 100–1,000; pre-breeding popn up to 5 million birds (Fry 1984, Fry *et al.* 1988). Conservatively, infer one million pairs. This estimate applies, because of different taxonomic treatment, to both species combined; no estimate found for relative numbers of each. So, breeding distribution, as mapped by Birds of Africa, of *nubicus* appears to cover c. four times the area of *nubicoides*. Hence, infer that *nubicus*: *nubicoides* numbers also split 4:1 or 800,000:200,000 pairs; 1% therefore 8,000 and 2,000 pairs respectively. **M. nubicus 1% = 24,000 birds. M. nubicoides 1% = 6,000 birds.**

**Appendix 6f ... continued.** The derivation of 1% population threshold figures for congregatory seabirds and landbirds.

 European Sand Martin *Riparia riparia*

Threshold used for European popn was 120,000 birds (Heath and Evans 2000), which covers about one half of the breeding range of the birds that winter in Africa. Tucker and Heath (1994) estimate 2.8–14 million pairs in Europe, which might imply a range of 5.6–28 million pairs across relevant range. Non-breeding popn: **1% = 250,000 birds.**

 Barn Swallow *Hirundo rustica*

Tucker and Heath (1994) estimate 13–33 million pairs in Europe. This covers about one third of the breeding range of birds that winter in Africa, which might imply a minimum of c.40 million pairs. Moreau (1972) estimated 220 million individuals leave breeding range for Africa in autumn. Non-breeding popn: **1% = 800,000 birds.**

 Yellow Wagtail *Motacilla flava*

Moreau (1972) estimated 70 million individuals leave breeding range to winter in Africa. On basis of average clutch size of 4–6 and only 1 brood per year, assume 4 imm to every breeding pair which implies about 23 million pairs. Non-breeding popn: **1% = 460,000 birds.**

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**Appendix 6g.** The species of pelican, stork, raptor and crane which migrate between the Palearctic and Afrotropical regions and which congregate at migration ‘bottleneck’ sites (identifiable as IBAs under the A4iv criterion).

Scientific name	English name	Scientific name	English name
<i>Pelecanus onocrotalus</i>	White Pelican	<i>Aquila pomarina</i>	Lesser Spotted Eagle
<i>Ciconia nigra</i>	Black Stork	<i>Aquila clanga</i>	Greater Spotted Eagle
<i>Ciconia ciconia</i>	White Stork	<i>Aquila nipalensis</i>	Steppe Eagle
<i>Pernis apivorus</i>	Honey Buzzard	<i>Aquila heliaca</i>	Imperial Eagle
<i>Milvus migrans</i>	Black Kite	<i>Hieraetus pennatus</i>	Booted Eagle
<i>Gyps fulvus</i>	Eurasian Griffon	<i>Pandion haliaetus</i>	Osprey
<i>Neophron percnopterus</i>	Egyptian Vulture	<i>Falco naumanni</i>	Lesser Kestrel
<i>Aegypius monachus</i>	Black Vulture	<i>Falco tinnunculus</i>	Common Kestrel
<i>Circus gallicus</i>	Short-toed Eagle	<i>Falco vespertinus</i>	Western Red-footed Falcon
<i>Circus aeruginosus</i>	Eurasian Marsh-harrier	<i>Falco amurensis</i>	Eastern Red-footed Falcon
<i>Circus cyaneus</i>	Hen Harrier	<i>Falco columbarius</i>	Merlin
<i>Circus macrourus</i>	Pallid Harrier	<i>Falco subbuteo</i>	European Hobby
<i>Circus pygargus</i>	Montagu’s Harrier	<i>Falco cherrug</i>	Saker Falcon
<i>Accipiter nisus</i>	Eurasian Sparrowhawk	<i>Falco peregrinus</i>	Peregrine Falcon
<i>Accipiter brevipes</i>	Levant Sparrowhawk	<i>Grus grus</i>	Common Crane
<i>Buteo buteo</i>	Steppe Buzzard	<i>Grus virgo</i>	Demiseille Crane
<i>Buteo rufinus</i>	Long-legged Buzzard		