

# Survey of Wintering Waterbirds at Coastal Sites in the Sultanate of Oman.

## January-February 2008.

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## Introduction

The migration route that has become termed the West Asian Flyway, following the rivers of west and central Siberia to the Caspian and Black Seas and onwards to the Arabian Gulf, southern Arabia, East Africa, India and beyond has been shown in recent years to be of considerable importance to shorebirds breeding in Scandinavia and west and central Siberia (Summers et al 1987, Etheridge 1980, Uttley et al 1988, Green et al 1994). This route has been little studied compared with other routes, and counts from Arabia are incomplete.

The Ministry of Environment and Climate Affairs (MECA) (as it is now known, formerly the Ministry of Regional Municipalities, Environment and Water Resources - MMEWR) is responsible for conducting the annual winter waterbird counts in Oman. Until 2004 an employee of the Ministry was a member of the Oman Bird Records Committee and was the person who organised the annual count and wrote up the results. The survey work was carried out largely by volunteers from the Oman Bird Group working in their own time during weekends in January and early February. This meant that sites near Muscat in the north and Salalah in the south received good coverage while sites in the more remote areas of the coastline (parts of Dhofar and most of Al Wusta region) were either not covered at all or were only partially covered. However, in January 2001 and January 2002, much of the coastline was able to be covered in the two regions.

Certain sites along the Omani coast are known for their concentrations of waders, gulls and other waterbirds (Sargeant, Eriksen & Eriksen 2008) whilst other areas are relatively unexplored. There have been counts of key areas in the past, but no co-ordinated count of the Oman coastline during the important months of January/February when the wintering populations are relatively stable. To coincide with a detailed study of the highly important area that was being carried out by a separate team at Barr Al Hikman in January 2008 it was decided to conduct a count of the entire Oman coastline – the first time that this had been attempted.



Start of the Survey. Dalqut – Yemen in the background.

## Methods

Prior to the fieldwork, an assessment of the coast and wetland habitats of Oman was undertaken using the Oman Bird Group database and the field knowledge of Ian Harrison so that key areas for waterbirds could be identified. All known key areas were included in the survey itinerary and fieldwork was planned to cover as much of the open coast as possible between these sites. The overall coverage and key sites are shown in Fig 1. The survey took place between 24 January and 6 February 2008.

Key sites such as lagoons and mudflat areas were visited and all waterbirds counted. Note was also made of all raptors and any other birds considered of particular interest. Counts were made using telescopes and binoculars from vantage points. Large sites were counted section by section. Birds were counted to species level except in a few cases where conditions (inaccessibility of the site, distance from birds, heat haze etc) did not allow this and in these cases birds were counted to groups of species (small waders, medium sized waders etc). This was only the case with the smaller waders on a few occasions.



Khawr at Sowqrah.

The identification of large 'white-headed gulls' in Arabia presents a number of difficulties since no clear understanding currently exists as to the exact status and distribution of the various forms. Identification is particularly problematic when confronted with flocks of up to 5,000 birds and when time is limited. It is possible to differentiate between *Larus barabensis* and *Larus cachinnans* on the basis of bill

size/shape and head shape but this is difficult when constraints of time, distance as well as large numbers of birds are involved. We therefore decided to differentiate only *Larus (fuscus) fuscus* (Baltic Gull), *Larus heuglini* (Siberian Gull) and *Larus cachinnans* (Caspian Gull). Differentiation between *Larus heuglini* and *Larus cachinnans* was done mainly on structure – size and head shape – as well as back colouration and, in some cases, the amount and nature of the streaking/speckling on the head and nape. (In the event, no Baltic Gulls were recorded.)

Open sections of coast were counted either from the vehicle, where access allowed, or by walking in from access points and scanning sections of coast using telescopes. Where large concentrations of birds were encountered, the area was counted as for key sites.

The area of Barr Al Hikman was not included in this survey as it was being counted by a separate study at the same time. The Omani side of Khawr Kalba was also not counted due to border restrictions.

Species totals were recorded for each key site and by section along the open coast.



Caspian gulls feeding on discarded fish, Luqbi Fishing Harbour.

## Results

In total, 158,154 waterbirds were recorded over the survey. This included 29802 waders, 120287 gulls and terns, 2506 cormorants and 2505 egrets and herons. The full results by species, site and section are given in the table appended at the end of this report. When the results obtained by the separate expedition to Barr Al Hikman are combined with these figures (Klassen and de Fouw 2008), the numbers are even more impressive, showing that the Sultanate of Oman is of significant regional importance for wintering and migrating waterbirds. A total of 339,502 waders, 146,287 gulls and terns, and 31,711 cormorants egrets and herons were recorded in the Sultanate during this period. In addition, nearly 800 raptors, of 16 species, including over 100 ospreys and 60 marsh harriers were recorded.



Khawr Aynayn

## Key sites

The results show that some specific sites are of great regional importance for waterbirds, whether these are resident, wintering or on southerly or northerly migration. The following table lists these sites, together with coordinates. These sites are in addition to the Barr Al Hikman area (Khawr Barr Al Hikman, the mudflats on the east coast, Khawr al Milh, Filim, Mahawt Island) which is the most important feeding and roosting area on the Arabian peninsula. All sites are important for herons/egrets, waders, gulls, terns. However, some sites are particularly important for specific species or groups of species which are highlighted in the tables. (The majority of these sites are khawrs – creeks/lagoons - but it should be noted that the beach and intertidal zones in the vicinity of the khawrs are also usually important associated sites.) It is important these sites are afforded the protection they deserve.



Spoonbills at Khawr Aynayn.

#### 1. Dhofar

Site	Coordinates	Key species
Khawr Mughsayl	16°53'N 53°47'E	Brown Booby, Purple Heron, Glossy Ibis, Pheasant-tailed Jacana, duck including Cotton Teal & Ferruginous Duck, Black-tailed Godwit
West Khawr, Salalah	16°59'N 54°02'E	duck, Pacific Golden Plover
Khawr Salalah (Salalah Bird Sanctuary)	17°00'N 54°04'E	Cotton Teal, Ferruginous Duck
East Khawr, Salalah	17°01'N 54°11'E	Little Bittern, Yellow Bittern, Glossy Ibis, duck, crakes
Khawr Sawli	17°03'N 54°20'E	Greater Flamingo, duck, crakes, Pheasant-tailed Jacana
Khawr Taqah	17°02'N 54°23'E	Black Stork, crakes, Pheasant-tailed Jacana, waders including Black-tailed Godwit, gulls, terns
Khawr Rawri	17°02'N 54°26'E	Black Stork, duck

#### 2. Al Wusta

Khawr Sowqrah	18°09'N 56°32'E	herons, waders
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Khawr Ghawi (Al Kahil)	18°34'N 56°38'E	Large numbers of Spoonbill, Western Reef Heron, Great White Egret, Grey Heron, sandplover, Crab Plover, Caspian Tern, Saunders' Tern
Khawr Dirif	18°56'N 57°21'E	Greater Flamingo, duck, Avocet
Khawr Aynayn	18°38'N 56°41'E	duck, Spoonbill
Ras Madrakah	19°01'N 57°48'E	gulls, terns
A'Duqm intertidal area	19°39'N 57°42E	Grey Heron, Greater Flamingo, Osprey, Avocet
Ras Sidrah	19°53'N 57°46'E	Large flocks of roosting gulls, particularly Great Black-headed Gull. Lesser Crested Tern
Khawr Sirab	20°10'N 57°49'E	waders, gulls, terns
Al Khaluf beach and intertidal zone	20°29'N 58°03'E	gulls, terns

3. Masirah Island - intertidal zone on west coast from Hilf to Sur Masirah	20°39'N 58°52'E to 20°25'N 58°42'E	Crab Plover, sandplover, Oystercatcher, Curlew, Grey Plover, Bar-tailed Godwit
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#### 4. A'Sharqiya

Khawr Al Hajar (Ras al Hadd)	22°31'N 59°46'E	Crab Plover & other waders, Caspian Tern
Khawr Jirama	22°30'N 59°44'E	Crab Plover, Gull-billed Tern
Sur Lagoon	22°33'N 59°31'E	herons including Striated Heron, waders including Curlew, Terek Sandpiper, gulls, terns

#### 5. Capital Area

Qurayyat to Daghmar	23°16'N 58°55'E to 23°10'N 58°59'E	Indian Pond Heron, duck, waders including Avocet, gulls and terns including Great Black-headed Gull and Sandwich and Swift Terns
Qurm Park and lagoon	23°36'N 58°28'E	Indian Pond Heron, crakes, waders including Pacific Golden Plover
Al Ansab Lagoons	23°34'N 58°20'E	Dalmatian and White Pelicans, herons/egrets, duck, crakes, waders

#### 6. Al Batinah

Ras A'Sawadi	23°46'N 57°47'E	Sandplover, Great Black-headed Gull, Caspian Tern,
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Khawr Luwa	24°32'N 56°35'E	White-collared Kingfisher
Khawr Shinas	24°46'N 56°27'E to 24°43'N 56°28'E	herons/egrets, waders including Great Stone Plover, White-collared Kingfisher
Beach and intertidal zone from Shinas to Khawr Kalba	24°43'N 56°28'E to 24°59'N 56°22'E	Relatively undisturbed coastline – excellent for waders, gulls, terns.



Counting at Khawr Dirif

In addition a number of man-made sites have become important in a variety of ways for passage migrants, winter visitors, resident birds, visiting breeders. These include the beaches above and below the high tide line as well as the waters in the vicinity of fishing villages which are host to very high concentrations of wintering gulls due to the large quantity of unwanted fish items. It is important that this artisanal fishing industry does not suffer from over-industrialization of fishing fleets or from excessive levels of over-fishing. Without sustainable levels of fish exploitation which is generally a feature of such artisanal fisheries, the numbers of birds dependent on the industry as a food source will decrease. Indeed, a previous expedition (March 2001) which trapped wintering gulls for satellite tagging research purposes noted the low body masses of a number of the birds caught - indicating that already the amount of fish offal available through artisanal fishing may not be sufficient for the number of birds present. (Ian Harrison *pers. obs.*)

Further specific man-made sites are:

Salalah Sewage Treatment Plant & Rubbish Tip 16°59'N 53°56'E  
Sahanawt Farms, Salalah 17°02'N 54°12'E  
Al Garzeiz Farm, Salalah 17°02'N 54°08'E  
Sur Sewage Treatment Plant 22°36'N 59°28'E  
Al Ansab Sewage Treatment Plant (Muscat) 23°34'N 58°20'E  
Quriyat Sewage Treatment Plant 23°12'N 58°55'E  
Barka Sewage Treatment Plant & Rubbish tip 23°35'N 57°52'E  
Sohar Sun Farms 24°19'N 56°45'E



Greater Flamingos on Khawr Dirif

The sewage treatment plants contain a number of different habitats such as open water lagoons with rushes and other vegetation as well as mud margins. The agricultural farms also contain a number of different important habitats for different species – grassland, slurry ponds, water sources. All are important in their different ways and attract large numbers of herons, crakes, waders, gulls and terns as well as passerines. It is pleasing to note that Al Ansab Lagoons in Muscat is being conserved, improved and protected as part of Haya Water's redevelopment of the sewage treatment plant – hopefully other sites can enjoy such development and protection in the future.



Mixed flock of sooty and caspian gulls, Ras A' Ruwais

## Discussion

Coastal habitats throughout the Middle East are under great pressure from development (eg Green and Richardson 2008) and Oman is no exception with a number of major coastal developments already started or planned. It is therefore important that the key sites, especially those mentioned above are given adequate protection to ensure that habitats for wintering and migrating waterbirds remain intact and undisturbed. Given developments elsewhere in the region and as available habitat diminishes, these key sites are likely to become even more important in the future. The results of this survey show the overall importance of the whole Oman coastline as a habitat for waterbirds, particularly gulls and terns but also waders. (This is in addition, of course, to the exceptional numbers of waterbirds present on Barr Al Hikman.) This survey focussed on wintering populations but all sites are also extremely important staging areas for migrating birds using the West Asian flyway. As sites disappear under development or come under increasing pressure from human disturbance, migrating birds find it more and more difficult to find areas in which to rest and feed in order to 'recharge their batteries' on the long journeys to and from their breeding grounds in, for example, Siberia.

The numbers are relatively low compared to the massive concentrations found at Barr Al Hikman (Green *et al* 1994 and Klassen and de Fou 2008) but are still significant in a regional context. The waders particularly were concentrated at a few key sites which are

currently unprotected. It is important that a variety of sites, over a geographical range, are available to cater for the differing needs of various species and to provide adequate staging posts during migration.

Whilst it is unlikely that this survey could easily be repeated on an annual basis, it is recommended that the key sites are subject to regular monitoring counts.



Work on the new port at A'Duqm leading to loss of important mudflats.

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Western reef heron on beach near Sohar

## Results

The detailed results of the survey are presented in the following table. These are organised in groups of species.

Co-ordinates (Degrees/minutes) for the count sections are as follows:

Dalqut (16°42'N 53°15'E) to Salalah (17°00'N 54°06'E)  
Salalah to Mirbat (16°59'N 54°42'E)  
A'Shuweimiyah (17°53'N 55°33'E) to Khawr Abaytham (18°57'N 57°36'E)  
Ras Madrakah (19°01'N 57°48'E) to Al Khaluf (20°28'N 58°04'E)  
Ras A'Ruwais (22°11'N 59°47'E) to Ras Sagala (21°30'N 59°22'E)  
Al Ashkara (21°51'N 59°35'E) to Sur Sewage Treatment Plant (22°34'N 59°27'E)  
Masirah Island (20°40'N 58°52'E) (Hilf)  
Tiwi (22°49'N 59°16'E) to Seeb (23°38'N 58°16'E)  
Barka (23°43'N 57°53'E) to Khawr Sallan (24°24'N 56°43'E)  
Majees (24°28'N 56°39'E) to Khawr Kalba (24°59'N 56°22'E)



Rubbish collection on Masirah Island.

		Dalqut to Salalah	Salalah to Mirbat	A'Shuweimiyah to Khawr Abaytham	Ras Madrakah to Al Khaluf	Ras A'Ruwais to Ras Sagala	Al Ashkara to Sur Sewage Treatment Plant	Masirah Island	Tiwi to A'Seeb	Barka to Khawr Sallan	Majees to Khawr Kalba	TOTALS
Cormorant	<i>Phalacrocorax carbo</i>	0	12	1	2	1631	126	0	386	13	55	2226
Socotra Cormorant	<i>Phalacrocorax nigrogularis</i>	13	24	0	7	8	1	227	0	0	0	280
Cattle Egret	<i>Bubulcus ibis</i>	1	35	9	0	0	0	7	12	6	0	117
Western Reef Heron	<i>Egretta gularis</i>	21	16	872	31	13	96	295	26	37	44	1451
Little Egret	<i>Egretta garzetta</i>	1	3	0	0	0	0	0	2	0	1	7
Intermediate Egret	<i>Egretta intermedia</i>	3	0	0	0	0	0	0	0	0	0	3
Great White Egret	<i>Egretta alba</i>	2	0	7	1	1	21	5	6	3	3	49
Grey Heron	<i>Ardea cinerea</i>	21	111	264	65	57	194	84	36	17	28	878
White Stork	<i>Ciconia ciconia</i>	110	0	0	0	0	0	0	0	0	0	129
Glossy Ibis	<i>Plegadis falcinellus</i>	3	0	0	0	0	0	0	1	0	0	4
Spoonbill	<i>Platalea leucorodia</i>	1	3	115	7	0	22	0	17	0	3	168
Greater Flamingo	<i>Phoenicopterus ruber</i>	76	73	1422	307	1	75	57	30	4	1	2046

		Dalqut to Salalah	Salalah to Mirbat	A'Shuweimiyah to Khawr Abaytham	Ras Madrakah to Al Khaluf	Ras A'Ruwais to Ras Sagala	Al Ashkara to Sur Sewage Treatment Plant	Masirah Island	Tiwi to A'Seeb	Barka to Khawr Sallan	Majes to Khawr Kalba	TOTALS
Wigeon	<i>Anas penelope</i>	48	18	41	0	0	0	0	12	0	0	119
Gadwall	<i>Anas strepera</i>	0	0	0	0	0	0	0	4	0	0	4
Teal	<i>Anas crecca</i>	34	11	0	0	0	0	1	82	6	0	134
Mallard	<i>Anas platyrhynchos</i>	26	16	8	0	0	0	0	32	11	0	93
Pintail	<i>Anas acuta</i>	29	12	30	0	0	0	0	4	1	0	76
Garganey	<i>Anas querquedula</i>	3	22	2	0	0	0	0	0	0	0	27
Shoveler	<i>Anas clypeata</i>	55	8	2	0	0	0	2	2	1	0	70
Red-crested Pochard	<i>Netta rufina</i>	0	0	0	0	0	0	0	4	0	0	4
Pochard	<i>Aythya ferina</i>	1	3	0	0	0	0	0	6	0	0	10
Ferruginous Duck	<i>Aythya nyroca</i>	8	0	0	0	0	0	0	1	0	0	9
Tufted Duck	<i>Aythya fuligula</i>	2	25	3	0	0	0	0	3	0	0	33
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	0	0	0	0	0	0	0	0	0	0	1
Moorhen	<i>Gallinula chloropus</i>	58	8	0	0	0	0	0	2	2	0	70
Coot	<i>Fulica atra</i>	5	13	5	0	0	10	0	1	2	0	36

		Dalqut to Salalah	Salalah to Mirbat	A'Shuweimiyah to Khawr Abaytham	Ras Madrakah to Al Khaluf	Ras A'Ruwais to Ras Sagala	Al Ashkara to Sur Sewage Treatment Plant	Masirah Island	Tiwi to A'Seeb	Barka to Khawr Sallan	Majes to Khawr Kalba	TOTALS
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	1	0	0	0	0	0	0	0	0	0	1
Oystercatcher	<i>Haematopus ostralegus</i>	0	18	293	32	198	90	205	0	39	4	879
Black-winged Stilt	<i>Himantopus himantopus</i>	74	4	0	0	0	15	0	32	219	0	344
Avocet	<i>Recurvirostra avosetta</i>	0	0	17	0	0	0	0	0	0	0	17
Crab Plover	<i>Dromas ardeola</i>	0	0	1	9	0	30	621	0	0	0	661
Cream-coloured Courser	<i>Cursorius cursor</i>	0	0	0	0	0	0	0	0	0	3	3
Little Ringed Plover	<i>Charadrius dubius</i>	0	4	0	0	0	0	0	1	8	0	13
Ringed Plover	<i>Charadrius hiaticula</i>	0	51	16	0	1	1	2	6	13	1	91
Kentish Plover	<i>Charadrius alexandrinus</i>	40	187	358	7	144	15	38	20	43	9	861
Lesser Sand Plover	<i>Charadrius mongolus</i>	1	21	1333	22	6335	175	414	60	221	236	8818
Greater Sand Plover	<i>Charadrius leschenaultii</i>	0	4	253	0	25	126	176	23	37	0	644
Pacific Golden Plover	<i>Pluvialis fulva</i>	55	0	0	0	19	0	1	1	0	0	76
Grey Plover	<i>Pluvialis squatarola</i>	3	18	568	9	55	4	164	3	5	31	860

		Dalqut to Salalah	Salalah to Mirbat	A'Shuweimiyah to Khawr Abaytham	Ras Madrakah to Al Khaluf	Ras A'Ruwais to Ras Sagala	Al Ashkara to Sur Sewage Treatment Plant	Masirah Island	Tiwi to A'Seeb	Barka to Khawr Sallan	Majes to Khawr Kalba	TOTALS
Red-wattled Plover	<i>Hoplopterus indicus</i>	2	1	0	0	0	0	0	24	97	0	124
White-tailed Plover	<i>Chettusia leucura</i>	0	0	0	0	0	0	0	3	2	0	5
Sanderling	<i>Calidris alba</i>	0	34	171	6	289	16	2	0	186	112	816
Little Stint	<i>Calidris minuta</i>	10	38	577	4	1	38	9	39	101	0	817
Temminck's Stint	<i>Calidris temminckii</i>	1	6	0	0	0	0	0	1	3	0	11
Curlew Sandpiper	<i>Calidris ferruginea</i>	0	0	504	0	6	7	42	0	0	0	559
Dunlin	<i>Calidris alpina</i>	14	63	2750	0	186	38	82	12	59	23	3227
Ruff	<i>Philomachus pugnax</i>	10	133	0	0	0	2	0	11	36	0	192
Common Snipe	<i>Gallinago gallinago</i>	0	1	0	0	0	0	1	2	13	0	17
Pintail Snipe	<i>Gallinago stenura</i>	0	0	0	0	0	0	0	0	0	0	0
Black-tailed Godwit	<i>Limosa limosa</i>	0	16	13	0	0	0	0	0	0	0	29
Whimbrel	<i>Numenius phaeopus</i>	0	0	84	0	0	0	239	4	0	1	328
Curlew	<i>Numenius arquata</i>	8	30	188	49	2	69	372	7	13	20	758

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Redshank	<i>Tringa totanus</i>	11	42	235	1	0	24	9	7	2	4	335
Marsh Sandpiper	<i>Tringa stagnatilis</i>	7	0	0	0	0	0	0	0	0	0	7
Greenshank	<i>Tringa nebularia</i>	42	67	375	1	0	23	48	9	14	11	590
Green Sandpiper	<i>Tringa ochropus</i>	1	0	0	0	0	0	0	3	6	0	10
Wood Sandpiper	<i>Tringa glareola</i>	0	0	0	0	0	1	0	1	6	0	8
Terek Sandpiper	<i>Xenus cinereus</i>	0	0	1	0	0	6	0	2	4	0	13
Common Sandpiper	<i>Actitis hypoleucos</i>	7	26	19	0	1	2	15	11	22	2	105
Turnstone	<i>Arenaria interpres</i>	0	0	203	11	34	2	66	13	2	0	331
Small waders sp.	<i>Charadrius/Calidris</i>	0	0	4060	300	0	110	400	0	0	0	4870
Red-necked Phalarope	<i>Phalaropus lobatus</i>	0	0	1	0	0	0	0	3002	0	0	3003
Sooty Gull	<i>Larus hemprichii</i>	395	1327	3335	1971	10899	469	2118	729	4573	962	26778
Great Black-headed Gull	<i>Larus ichthyaetus</i>	0	5	26	1287	1636	647	174	4	226	48	4053
Black-headed Gull	<i>Larus ridibundus</i>	42	1	0	0	0	0	0	211	227	22	503
Slender-billed Gull	<i>Larus genei</i>	126	64	1634	822	265	681	1569	280	2185	575	8201

		Dalqut to Salalah	Salalah to Mirbat	A'Shuweimiyah to Khawr Abaytham	Ras Madrakah to Al Khaluf	Ras A'Ruwais to Ras Sagala	Al Ashkara to Sur Sewage Treatment Plant	Masirah Island	Tiwi to A'Seeb	Barka to Khawr Sallan	Majes to Khawr Kalba	TOTALS
Siberian Gull	<i>Larus heuglini</i>	952	4958	4901	4075	20173	1510	1472	302	26	11	38380
Caspian Gull	<i>Larus (cachinnans) cachinnans</i>	108	437	42	80	1094	555	4	426	2193	386	5325
'large white-headed gull'	<i>Larus fuscus/heuglini /cachinnans</i>	1475	202	30	0	12315	6571	670	1534	6064	451	29312
Gull-billed Tern	<i>Gelochelidon nilotica</i>	0	20	3	0	0	0	0	0	0	0	23
Caspian Tern	<i>Sterna caspia</i>	0	13	92	2	85	25	5	7	9	6	244
Swift Tern	<i>Sterna bergii</i>	40	68	1907	1038	1082	99	269	241	152	119	5015
Lesser Crested Tern	<i>Sterna bengalensis</i>	0	7	168	133	9	0	26	8	165	179	695
Sandwich Tern	<i>Sterna sandvicensis</i>	0	1	621	18	54	5	70	67	505	126	1467
Common Tern	<i>Sterna hirundo</i>	0	18	1	6	0	0	0	0	38	25	88
Saunders's Tern	<i>Sterna saundersi</i>	0	0	179	0	0	0	0	0	3	2	184
Whiskered Tern	<i>Chlidonias hybridus</i>	5	2	0	0	0	0	0	0	5	0	12
White-winged Black Tern	<i>Chlidonias leucopterus</i>	0	0	0	0	0	1	0	0	6	0	7