

27 aprile 2020

(English text at the bottom)

Gentili Colleghi,

In questi giorni di isolamento abbiamo visto tutti le immagini di animali selvatici vagare indisturbati nelle nostre città svuotate dai decreti emessi per il contenimento della diffusione del coronavirus. Allo stesso modo anche le aree aeroportuali, con un traffico aereo ridotto ormai a pochi movimenti al giorno, favorite anche dell'arrivo della primavera, vedono sempre più spesso un pericoloso incremento di varie specie di uccelli aggirarsi indisturbate nei dintorni delle piste di atterraggio.

Come Dipartimento Tecnico, attraverso la nostra struttura di delegati aeroportuali, abbiamo sollecitato le società di gestione degli aeroporti dislocati lungo il territorio nazionale ad implementare ispezioni specifiche proprio in corrispondenza dell'arrivo di quei pochi voli giornalieri. Soprattutto in quei casi in cui dalla torre di controllo non è chiaramente visibile la porzione di pista utilizzata per l'atterraggio.

Cogliamo l'occasione per richiamare alcune raccomandazioni fornite da parte di enti regolatori e costruttori relativamente ad eventi di bird strike durante le fasi di decollo e atterraggio.

Infatti la maggior parte degli eventi accade ad altitudini inferiori ai 500" AGL e il 68% degli impatti con volatili avviene durante il giorno, mentre il 25% durante le ore notturne.

Inoltre, recenti studi hanno rivelato che approssimativamente solo il 50% delle ingestioni nei motori provoca l'effettivo danneggiamento degli stessi. Il rischio di guasti, poi, è direttamente proporzionale alla dimensione del volatile ed alla percentuale di spinta del motore al momento dell'ingestione.

Decollo

In caso di bird strike durante la corsa di decollo la decisione se interrompere o continuare il decollo va presa sempre nel rispetto di quanto riportato negli operation manual dei singoli aeromobili.

Ma se l'impatto con volatile avviene tra 80kts e la V1 e non vi è evidenza immediata di avaria ad uno dei motori (danneggiamento, fuoco, perdita di spinta o stallo), l'opzione più vantaggiosa è di continuare la corsa di decollo seguita, se necessario, da un rientro immediato.

Atterraggio

Durante questa fase di volo, i motori sono impostati ad un livello di spinta relativamente basso, al quale difficilmente gli uccelli ingeriti potranno influenzare il nucleo dei motori, riducendo quindi le

possibilità di causare danni significativi e consentendo all'aeromobile di atterrare in sicurezza mantenendo la spinta di avvicinamento selezionata.

In tali condizioni, la decisione di effettuare una manovra di go around, in cui in motori vengono selezionati alla loro massima potenza, potrebbe aumentare la probabilità di causare danni o malfunzionamenti con conseguente perdita di spinta disponibile agli stessi e con il rischio di compromettere il completamento sicuro della manovra di riattaccata.

Vi ricordiamo inoltre che gli eventi di bird strike vanno obbligatoriamente riportati attraverso la compilazione di apposito Safety Report, unico strumento in grado di consentire una analisi del fenomeno al livello statistico.

Allegati alla presente troverete due interessanti pubblicazioni. La prima relativa a 10 metodi adottati dalle società di gestione per prevenire la presenza di volatili nelle aree aeroportuali. La seconda è uno studio condotto da ICAO sugli eventi Bird Strike, al livello mondiale, nel periodo 2008-2015
Buona lettura.

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English Version

Dear Colleagues,

in these days of isolation, we all have seen pictures of wild animals wandering undisturbed in our cities emptied by the decrees issued to contain the spread of the coronavirus.

Similarly, airport areas, with air traffic reduced to just a few movements per day, also favored by the arrival of spring, are increasingly seeing a dangerous increase of various species of birds wandering undisturbed around the landing runways.

As Technical Department, through our structure of airport delegates, we have urged the Competent Authorities of all airports located throughout Italian territory to implement specific inspections in correspondence with the arrival of those few daily flights. Especially in those cases where the portion of the runway used for landing is not clearly visible from the control tower.

We take this opportunity to recall some recommendations provided by regulators and manufacturers regarding bird strike events during the take-off and landing phases.



Infect, most of the bird strikes occur at very low altitudes, below 500 feet AGL, and 68 per cent of the bird strikes occurred during the day, while 25 per cent occurred at night time.

Recent studies of engine bird strikes reveal that approximately 50% of engine bird strikes damage the engines. The risk of engine damage increases proportionally with the size of the bird and with increased engine thrust settings. When an engine bird strike damages the engine, the most common indications are significant vibrations due to fan blade damage and an EGT increase.

Take-off

If a bird strike occurs during takeoff, the decision to continue or reject the takeoff must be made according to the criteria found in the Rejected Takeoff maneuver of the Operation Manuals.

However, if a bird strike occurs above 80 knots and prior to V1, and there is no immediate evidence of engine failure (e.g: fire, power loss or surge/stall), the preferred option is to continue with the take-off followed by an immediate return, if required.

Landing

During this phase of flight, the engines are selected at a relatively low thrust level, at which possibly ingested birds may very likely not affect the core of engines therefore reducing the chances to cause significant damage to them and to permit the aircraft to land safely with the selected approach thrust.

In such conditions, the decision to carry out a go around maneuver, where maximum thrust is applied to engines, could increase the chance to cause engine damages and malfunctions with consequent loss of available thrust, which could prevent the go around maneuver from being safely completed.

We also remind you that bird strike events must be mandatory reported by filling in the appropriate Safety Report, which is the only tool capable of allowing an analysis of the phenomenon at a statistical level.

Attached below you will find two interesting publications.

The first one concerning 10 different ways to prevent bird concentration on aerodrome areas, the second is an interesting ICAO worldwide study about bird strike in the period 2008-2015.

Enjoy the reading.

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10 ways to prevent presence of birds on aerodrome areas

In recent years, bird-strike damage to aircraft in the vicinity of airports has fallen, because of success in dispersing the birds, and improving aircraft design. Here's a selection of methods already used or in the pipeline.

1. Every airport in the US, and many more across the world, use pyrotechnics daily to drive the birds away, says Michael Begier, national co-ordinator of the airport wildlife hazards programme at the US Department of Agriculture. "The flash, bang kind of stuff immediately gets their attention and pushes them away." Bangers and screamers make a loud explosion, others make a whistling sound, while some emit sparks - different birds respond to different things and some even take flight at the mere sight of the wildlife vehicle. A banger shot from a pistol cartridge can travel 30-40 yards before exploding, while a 12-gauge shotgun can reach 70-100 yards. Waterfowl respond fairly well and after two or three times they relocate. Raptors can be harder to move.

2. A population of Canada geese used to live between the two runways at Salt Lake City. Not any more, says Gib Rokich, who oversees the airport's wildlife programme, due to a system of egg addling. "The goose is scared from the nest and the eggs are addled or oiled pretty much in place by picking each egg up individually and shaking them or submerging them in vegetable oil. The goose continues to sit on them but they never have a successful hatch. If she lays 10 goslings, and five survive into adulthood, then they will want to come back to the same location to nest, so you can see how it can multiply. After four years, we broke the cycle, so we still get the occasional one but they're not established any more."

3. Bird distress signals are a pretty effective way of dispersing species that cause these problems, says David Randell, director of Scarecrow, which provides systems to 20-30 British airports. Speakers mounted on a car emit the sounds of up to 20 different species, operated by a driver using a tablet-style device.

4. A border collie called Sky has been chasing birds for five years at Fort Myers, Florida. Since 1999, when dogs were first used, there has been a 17% drop in bird strikes. While the egrets, herons and moorhens can get used to pyrotechnics, they never adapt to the presence of a natural predator like Sky, says Ellen Lindblad, director of planning and environmental compliance at Southwest Florida International Airport. "She seems to love it, day after day. This is what border collies are bred for."

5. Pigs have been used to disrupt the habitat of the 10-15 California gulls that used to routinely fly over Salt Lake City airport twice a day. Wildlife services had tried harassing

them without success, then someone came up with the idea of putting pigs on their island habitat, adjacent to the airport. The pigs trampled and ate the gulls' eggs and are now used for a few weeks every spring as a deterrent. The migrating gulls arrive, see the pigs waiting to eat their eggs, and then go to another location.

6. Eliminating vegetation removes a food source for birds and deters them from settling. At Salt Lake City, 70 acres of grassland was replaced this summer with ground-up asphalt. Grasshoppers, gnats and armyworms attract rodents which in turn attract raptors. An airport in Sandusky, Ohio, has experimented with different types of grass, to identify which mix is least attractive to Canada geese.

7. About 300-500 raptors are trapped and relocated each year at Salt Lake City, including red-tail hawks, barn owls and peregrine falcons. Some traps use a rodent to entice the bird and catch their feet in a noose. Others are self-operating, built on top of pigeon coops to attract larger birds - they swoop in, and a door slams shut behind them.

8. Achicken gun is used to test the durability of aircraft windscreens and engines. A thawed chicken is fired out of the gun using compressed air, in an effort to simulate the impact of a bird hitting the plane in flight.

9. Lights on aircraft could be used to increase their visibility to birds, says Begier. The idea is to manipulate the characteristics of the light by varying the pulse rates and wavelengths in the electromagnetic spectrum and tune these changes to specific bird species. The lights would provide an earlier warning so the birds can detect and avoid the aircraft. Some of these changes to the light might be imperceptible to humans. Evidence collected from dead birds in airports suggests they were trying to evade the planes when they were hit. "We realised that the birds are trying to make the right decision but don't have enough time so what we are trying to do with the light research is give them that time."

10. The Dutch air force is using a bird detecting radar that could eventually be adopted by civil aircraft. "We've known since WWII that radar can see birds, when they were coming across the Channel and they figured it was birds and not German bombers," says Begier. These bird detecting radars are small and mobile, and technology has come on in the last 10 years, but they can't yet identify the species or numbers. "The ability to delay a commercial flight with technology that's not quite there is the problem."



International Civil Aviation Organization

ELECTRONIC BULLETIN

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12 May 2017

2008 - 2015 WILDLIFE STRIKE ANALYSES (IBIS)

The analyses of wildlife strike reports for the years 2008 to 2015 are based on 97 751 reports, received from ninety-one States on strikes occurring in 105 States and territories as shown at Attachment A. A summary of wildlife strikes reported to the ICAO Bird Strike Information System (IBIS) for the years 2008 to 2015 is included at Attachment B, IBIS World Wildlife Strike Statistics at Attachment C and a list of wildlife types at Attachment D. The above attachments (available in English only) can be found at www.icao.int/IBIS.

The analyses of wildlife strike data and observing and monitoring of wildlife activities can reveal trends that will assist airport authorities in identifying areas of concern, which should be addressed through a well-managed wildlife control programme. Wildlife strike statistics can also be analysed to determine those times of year or day when wildlife control is needed the most.

In order to better facilitate occurrence reporting and data analysis, ICAO now has replaced the old IBIS computer-application with a new reporting system based on the European Co-ordination Centre for Accident and Incident Reporting Systems (ECCAIRS) platform. A User Manual and Software Installation Manual can be downloaded at www.icao.int/IBIS. States are encouraged to submit wildlife strike reports either via ECCAIRS e5f/e4f files, or via an ECCAIRS Excel-based form that can also be downloaded at www.icao.int/IBIS.

Enclosures:

- A — List of States and Territories for the years 2008 - 2015
- B — Summary of Wildlife Strikes reported to ICAO Bird Strike Information System (IBIS) for the years 2008 - 2015
- C — IBIS World Wildlife Strike Statistics 2008 - 2015
- D — List of wildlife types for the years 2008 - 2015

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ATTACHMENT A to EB 2017/25

LIST OF STATES AND TERRITORIES FOR THE YEARS 2008 - 2015

States Reporting (91 States)

Angola	Japan	South Korea
Armenia	Jordan	Spain
Australia	Kenya	Sri Lanka
Austria	Kyrgyzstan	Sweden
Bahrain	Latvia	Switzerland
Bangladesh	Lebanon	Tanzania
Barbados	Macedonia	Thailand
Belarus	Madagascar	Togo
Belgium	Maldives	Tonga
Bolivia	Malta	Trinidad & Tobago
Bosnia and Herzegovina	Mauritius	Tunisia
Brazil	Mexico	Turkey
Cameroon	Mongolia	Uganda
Cape Verde	Montenegro	Ukraine
Chile	Morocco	United Arab Emirates
China	Myanmar	United Kingdom
Croatia	Nepal	United States
Dominican Republic	New Zealand	Uruguay
Ecuador	Nicaragua	Uzbekistan
El Salvador	Nigeria	Venezuela
Estonia	Oman	
Fiji	Pakistan	
Finland	Paraguay	
France	Peru	
Georgia	Philippines	
Germany	Poland	
Greece	Portugal	
Hong Kong	Qatar	
India	Republic of Korea	
Indonesia	Republic of Moldova	
Iran	Romania	
Ireland	Russian Federation	
Israel	Rwanda	
Italy	Saudi Arabia	
Jamaica	Singapore	
Japan	Slovakia	

States/Territories of Occurrence (105 States)

Algeria	Finland	Norway
Argentina	French Antilles	Panama
Angola	French Guyana	Peru
Armenia	French Polynesia	Philippines
Australia	Gabon	Portugal
Austria	Germany	Puerto Rico
Bahamas	Greece	Reunion
Bahrain	Guinea	Romania
Belize	Haiti	Russian Federation
Belgium	Honduras	Saudi Arabia
Benin	Hong Kong	Senegal
British Virgin Islands	Hungary	Sierra Leone
Bolivia	Ireland	Singapore
Burkina Faso	India	Slovenia
Cambodia	Indonesia	Sri Lanka
Cameroon	Israel	Spain
Canada	Italy	Sweden
Canary Islands	Ivory Coast	Switzerland
Chad	Japan	Thailand
Chile	Kenya	Togo
China	Korea, South	Tunisia
Croatia	Latvia	Turkey
Colombia	Lebanon	Turks and Caicos Islands
Congo, the Republic of	Madagascar	Uganda
Congo, the Democratic Republic of	Malaysia	United Arab Emirates
Costa Rica	Mali	United Kingdom
Cyprus	Mariana Islands	United States of America
Czech Republic	Marshall Islands	Uruguay
Denmark	Mauritius	Vanuatu
Djibouti	Mexico	Venezuela
Dominican Republic	Midway	Vietnam
Egypt	Morocco	
Ecuador	Netherlands	
El Salvador	New Caledonia	
Estonia	New Zealand	
France	Niger	
Fiji	Nigeria	

ATTACHMENT B to EB 2017/25

SUMMARY OF WILDLIFE STRIKES REPORTED TO THE ICAO BIRD STRIKE INFORMATION SYSTEM (IBIS) FOR THE YEARS 2008 - 2015

1. INTRODUCTION

1.1 The ICAO Bird Strike Information System (IBIS) was created to collect and disseminate information on wildlife strikes to aircraft.

1.2 This statistical summary is intended to provide the reader with an overview of the global wildlife strike situation, as reported to ICAO for the years 2008 to 2015. It supplements the IBIS World Statistics in Attachment D to this Electronic Bulletin.

2. STATISTICAL ANALYSIS FOR THE YEARS 2008-2015

2.1 **Wildlife strikes at Global Level:** The previous data period covered the years 2001 to 2007, seven years in total. This data period covers the years 2008 to 2015, eight years in total. Although the change in data period is only of one year, the number of wildlife strikes reported to ICAO has increased significantly from 42 508 to 97 751. The global trend in terms of wildlife strike characteristics remains to be very similar, as shown further within this document.

2.2 **Wildlife strikes by ICAO Region:** For the years 2008 to 2015, the 97 751 wildlife strikes were reported to ICAO by 91 States. These occurred in 105 States and Territories throughout the world. Charts 1 and 2 below illustrate a comparison between the number of States and Territories of occurrence and States reporting, and reported strikes distributed by the Region in which they occurred.

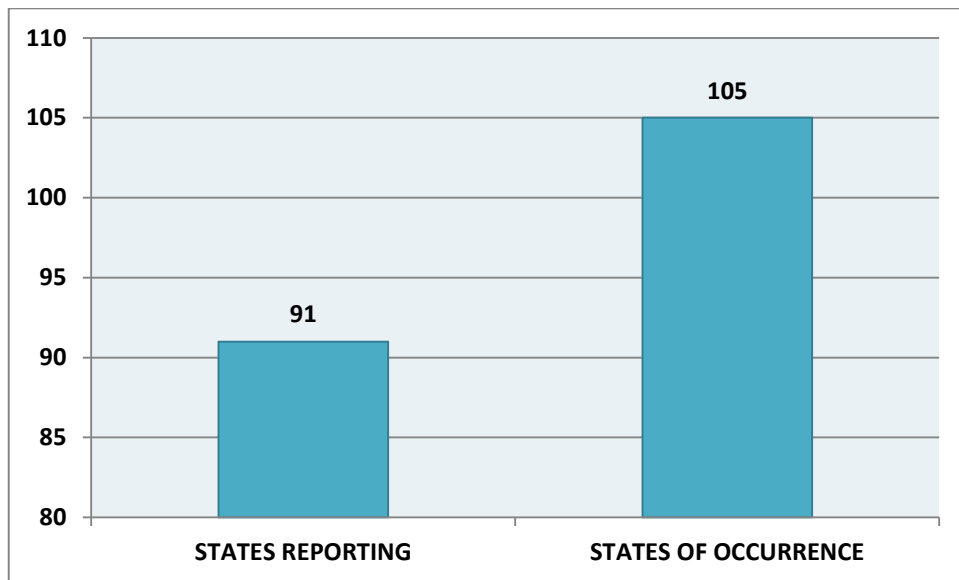


Chart 1: States/Territories of Occurrences and States Reporting

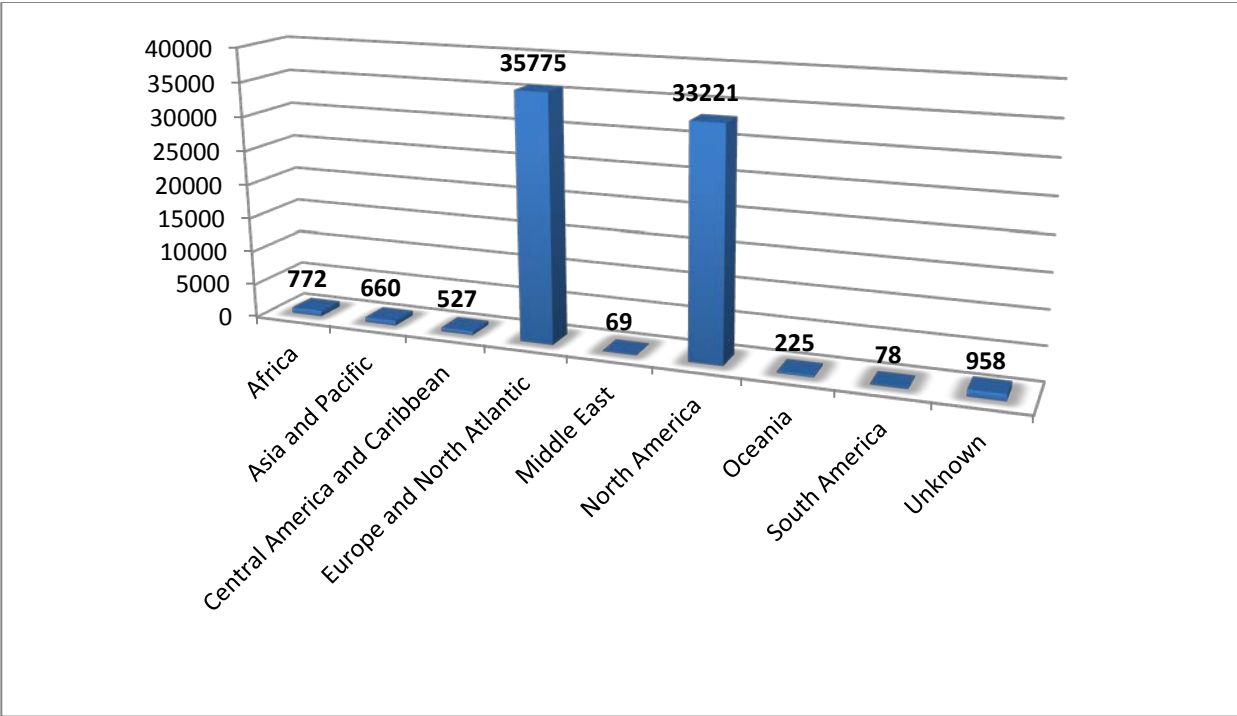


Chart 2: Strikes reported distributed by Region in which they occurred

2.3 **When the wildlife strikes occurred:** 68 per cent of the bird strikes occurred during the day and 25 per cent occurred at night time, as illustrated in Chart 3.

Day time remains to be the highest activity of wildlife strikes when compared with the previous data period 2001 to 2007. Although there is a sharp increase in the data gathered from 2008 to 2015 with twice the amount of wildlife strikes both during daytime and at night time, the pattern remains the same in terms of wildlife strikes in relation to the time of the day.

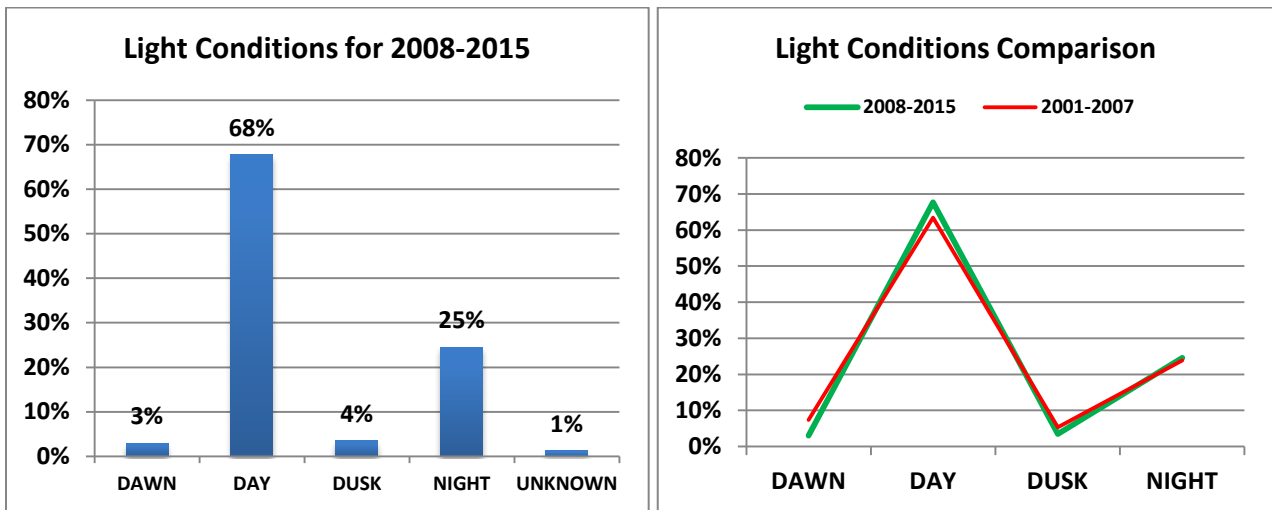


Chart 3: Light Conditions for Wildlife Strikes in 2008-2015 and Comparison

Although wildlife strikes occurred throughout the year, the busiest months are May through October, as illustrated in Chart 4. The months with the least reported number of wildlife strikes are January and February. August remains to be the month of the highest wildlife strike activity for both of the data periods of 2001 to 2007 and 2008 to 2015, which follow a similar pattern as shown below. This monthly distribution also reflects the fact that the majority of the wildlife strikes were reported by States located in the Northern Hemisphere.

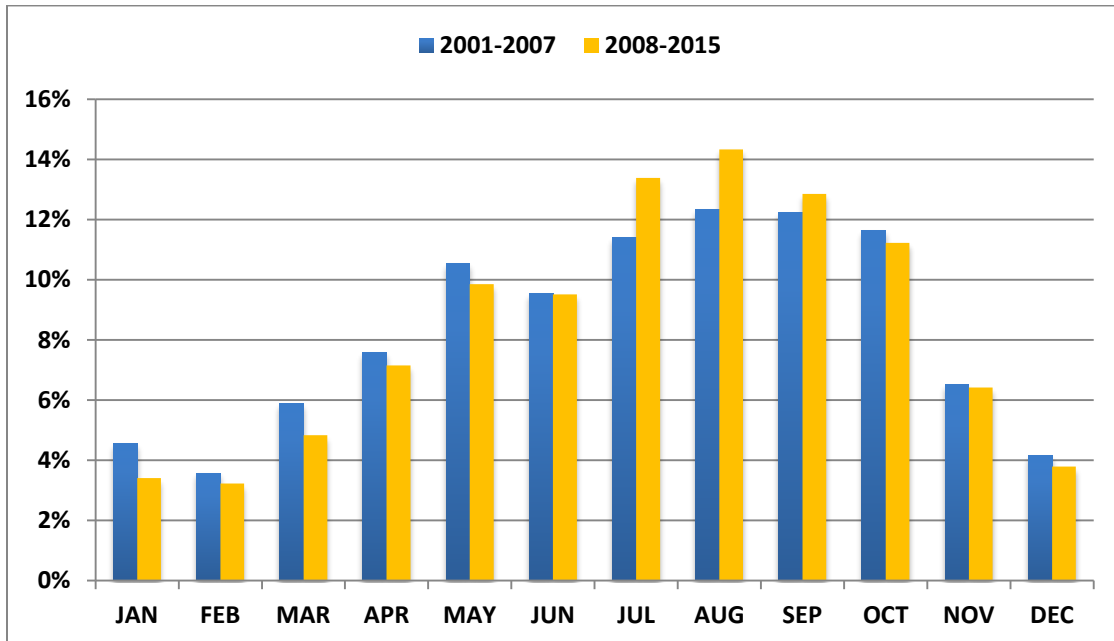
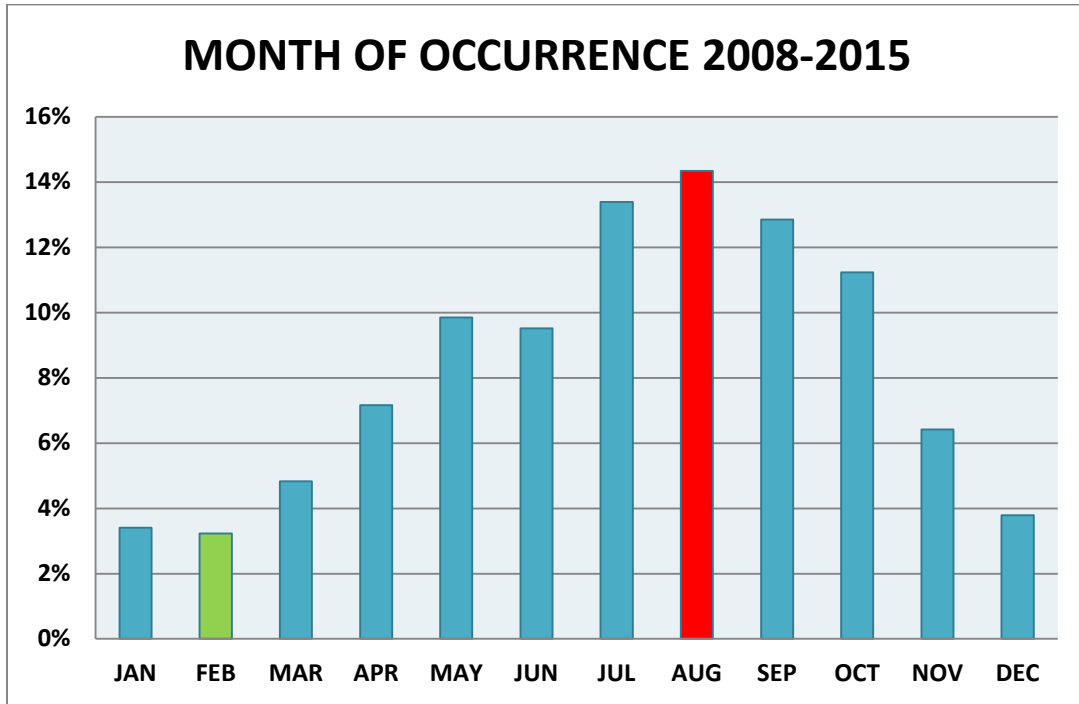


Chart 4 : Strikes reported according to season

2.4 **Where the wildlife strikes occurred:** Chart 5 illustrates that 91 per cent of the strikes for which location data was furnished occurred on or near the aerodrome. 31 per cent of these occurred during the take-off phase while 59 per cent occurred during the approach and landing phase. A similar pattern is followed, as compared with 2001 to 2007 data period.

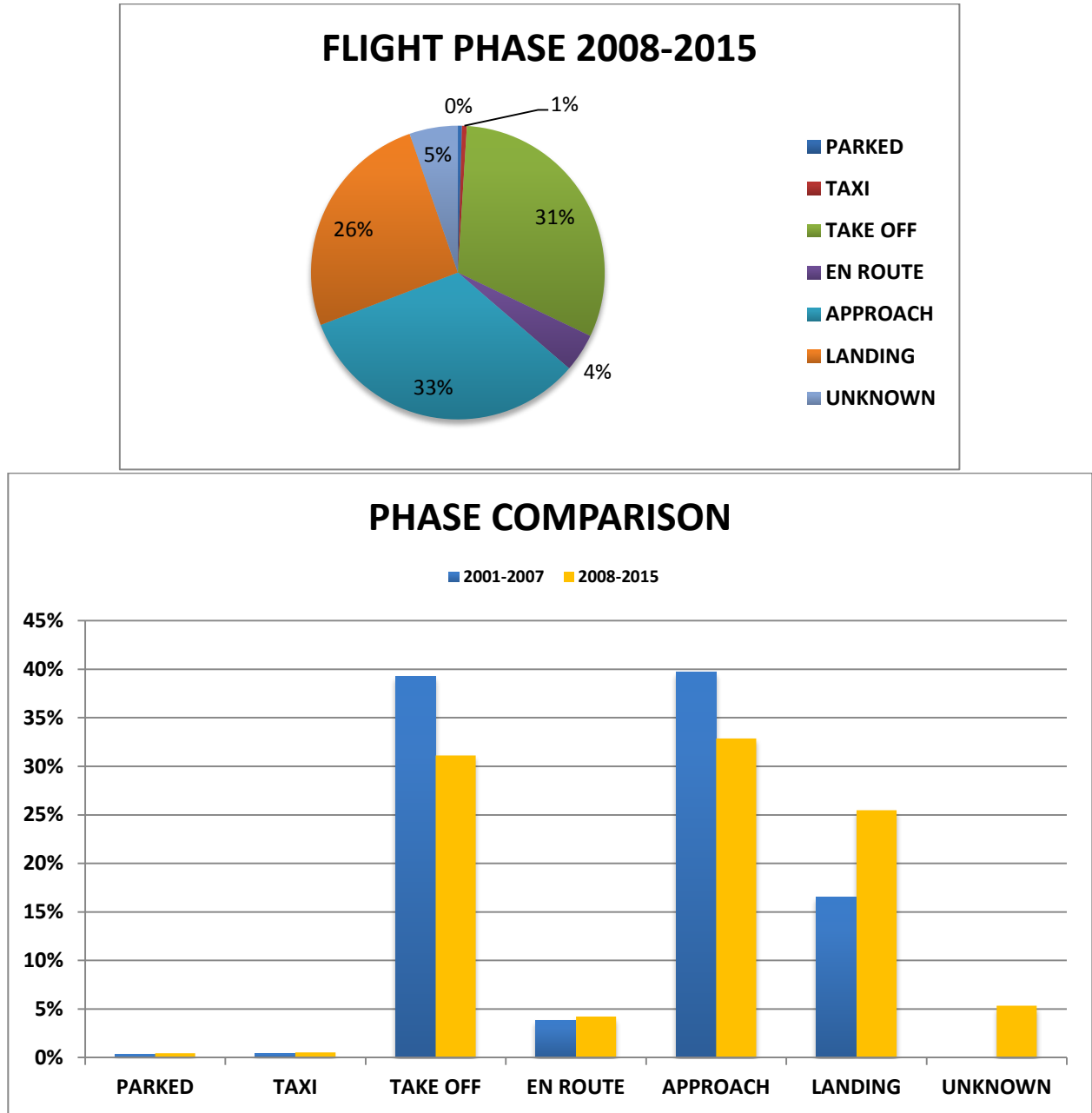


Chart 5: Strikes reported according to flight phase

2.5 **Damage to the aircraft:** The extent of damage to the aircraft was coded for 33 376 wildlife strikes, which is approximately 34 per cent of the total number of strikes reported. Of the wildlife strikes for which the damage was coded, seventeen aircraft were destroyed, 600 caused substantial damage to the

aircraft, 1 874 caused minor damage and 30 817 or approximately 92 per cent caused no appreciable damage.

2.6 **Wildlife types most frequently struck:** The wildlife type was reported in 47 748 cases. Most frequently struck species were: American Mourning Dove with 2 634 strikes which represents 6 per cent, then Barn Swallow with 2 592 strikes or 5.4 per cent, Gulls with 2 128 strikes or 4.5 per cent, Eurasian Kestrel with 1 923 strikes or 4 per cent and Killdeer with 1 773 strikes or 3.7 per cent. Mammals including bats, and non-flying including hares account for 2 378 or 5 per cent of total known occurrences. The percentages of wildlife types struck are shown in Chart 6.

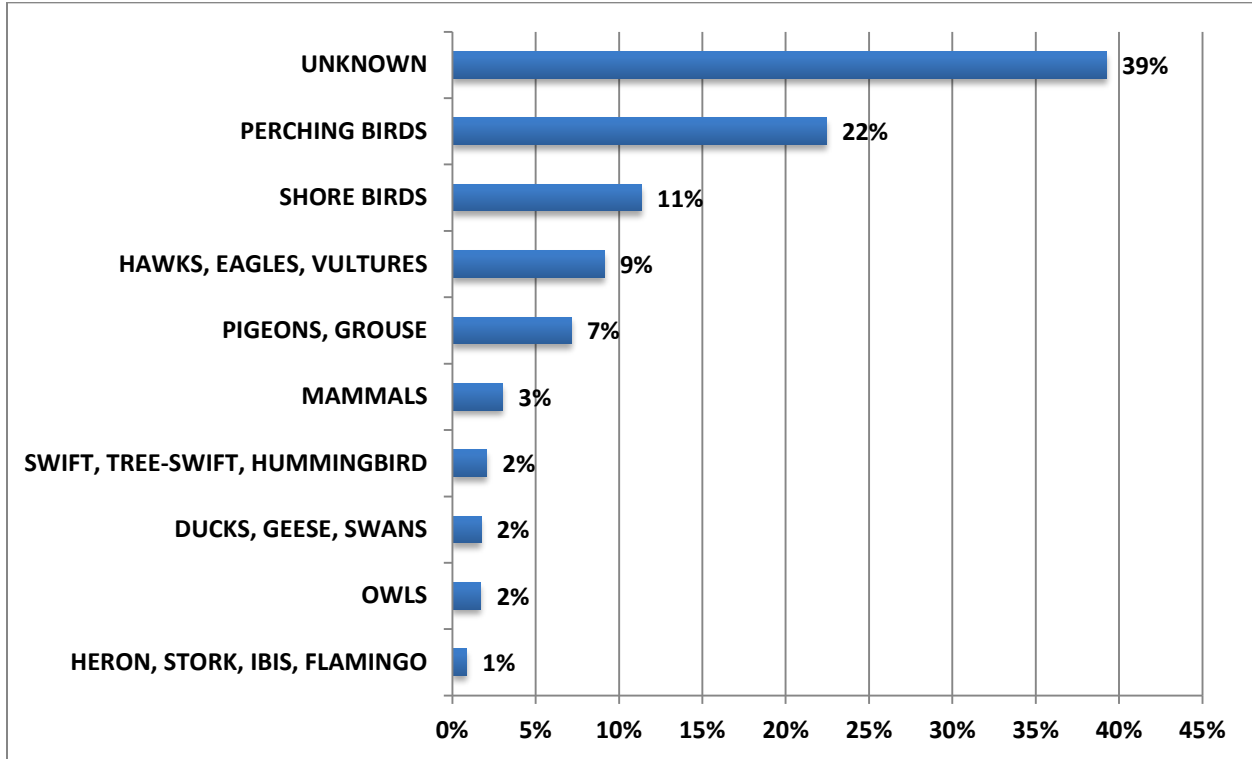


Chart 6: Comparison between wildlife struck among species

2.7 **Effects of the wildlife strike on flight:** The effect of the wildlife strike on the flight was reported 12 227 times. Out of those, 2 501 had a clear indication of an effect on the flight, while the rest had no effect or no clear indication. These 2 501 cases represent 20 per cent of the total number in which the effects were reported. There were 1 230 precautionary landings, which account for the highest number of effects. The effects also include 513 cases of aborted take offs and 63 cases of engine(s) being shut down. The other category includes but is not limited to flight delay, declaring technical emergency and aircraft return. Delayed flights were reported 211 times followed by declaring technical emergency 54 times and aircraft forced to return 137 times. Chart 7 shows the percentages of different effects of wildlife strikes on flights.

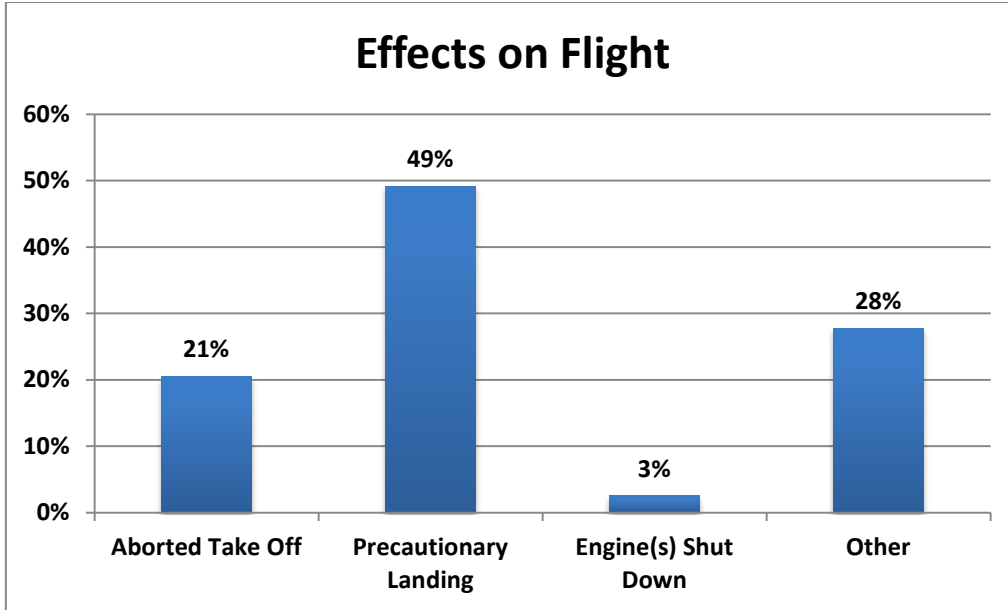


Chart 7: Effects on Flight

2.8 **Parts of Aircraft Struck and/or Damaged:** Parts of aircraft struck were reported 56,093 times. A 44 per cent increase compared to previous period of 2001 to 2007. The part struck most, as reported, remains to be the Windshield, with 8 296 strikes followed by the Wings with 7 955 strikes and then by the nose with 7 756 strikes. The following illustrations show the percentages of the parts struck by wildlife. Chart 8 illustrates the percentages of parts struck by wildlife. Chart 9 illustrates the percentages of the parts damaged by wildlife strikes. Chart 10 illustrates the comparison between the parts struck and the parts damaged by wildlife strikes.

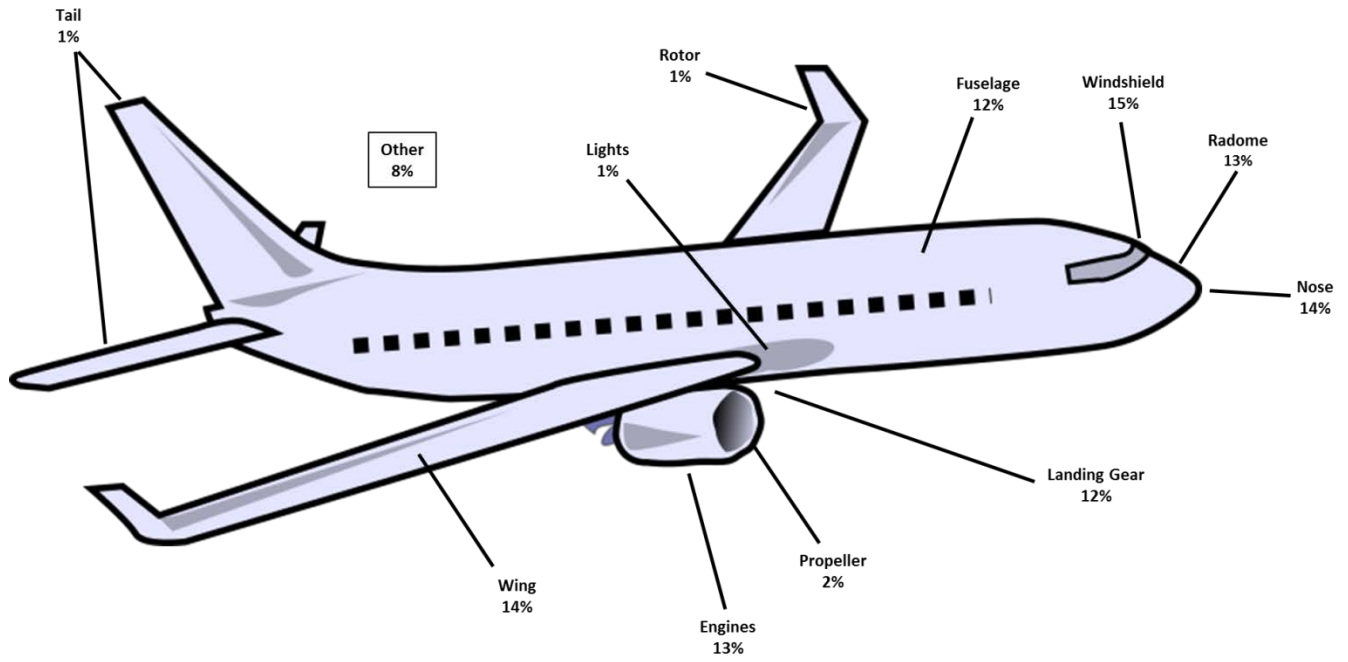


Chart 8: Parts of Aircraft Struck

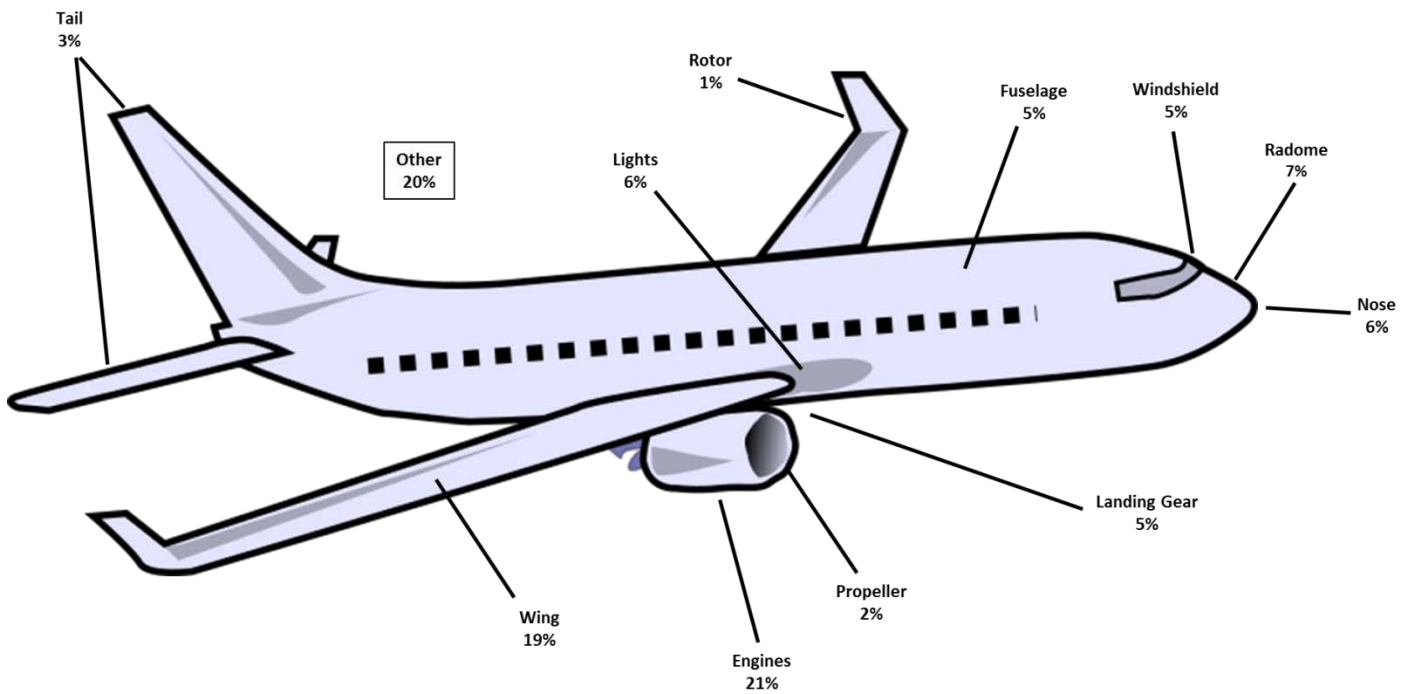


Chart 9: Parts of Aircraft Damage

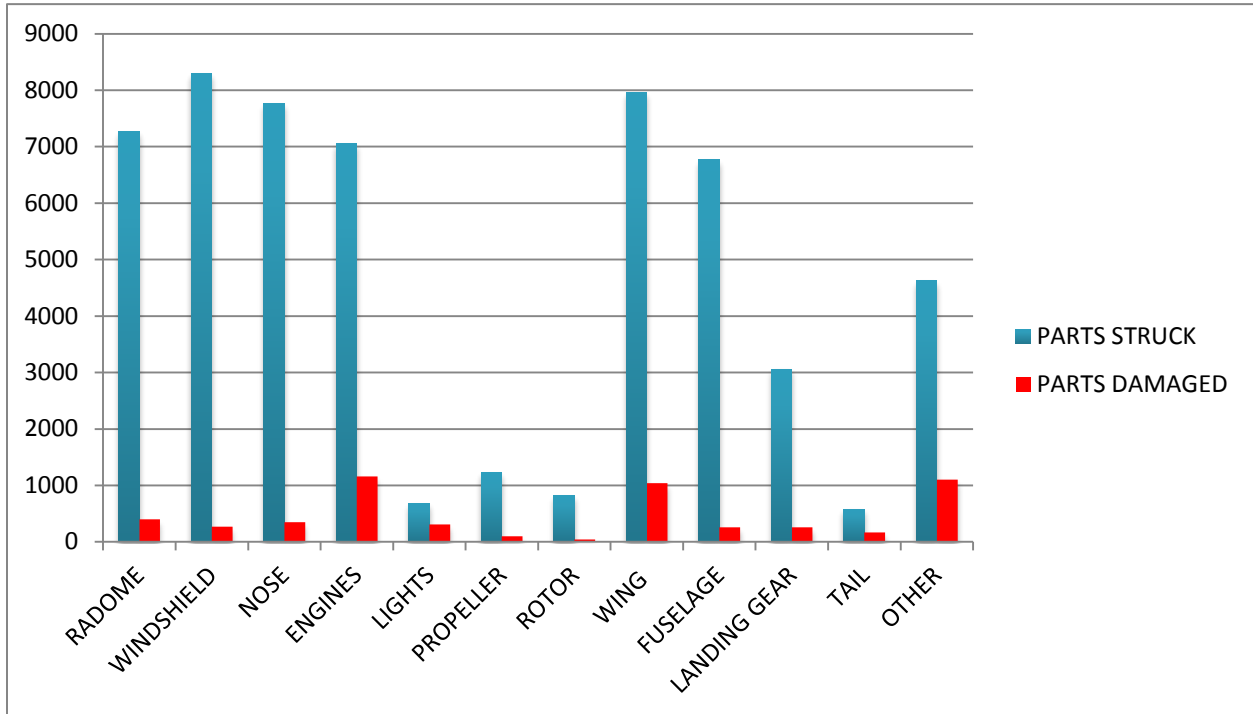


Chart 10: Comparison with Parts of Aircraft Damage and Struck

2.9 Table 1 below provides a brief summary of wildlife strike characteristics for the data periods of 2001 to 2007 and 2008 to 2015.

Data Comparison 2001-2007 to 2008-2015		
	<i>2001-2007</i>	<i>2008-2015</i>
No. of States Reporting	51	91
No. of States/Territories of Occurrence	145	105
No. of Strikes	42 508	97 751
Day Time Strikes	63%	68%
Night Time Strikes	24%	25%
Peak Month Activity	12% (August)	14% (August)
Strikes during Takeoff	39%	31%
Strikes during Approach	40%	33%
Strikes during Landing	17%	26%

Table 1: Data Comparison

ATTACHMENT C to EB 2017/25

**IBIS WORLD WILDLIFE STRIKE STATISTICS
2008-2015**

MONTH OF OCCURRENCE	TOTAL	1-2-2C	A-I	J-N	O-X	Y-Z	Unknown/Others
JAN	2681	106	155	782	286	412	940
FEB	2539	109	149	646	261	427	947
MAR	3797	163	207	1013	289	615	1510
APR	5628	164	225	1248	483	969	2539
MAY	7748	196	286	1300	874	1774	3318
JUN	7480	240	330	1253	1176	1983	2498
JUL	10527	301	375	2195	1297	2861	3498
AUG	11272	372	464	2344	1344	2777	3971
SEP	10105	288	390	2068	1115	1862	4382
OCT	8829	227	311	1914	713	1645	4019
NOV	5044	157	215	1152	529	893	2098
DEC	2980	105	163	832	333	420	1127
LIGHT CONDITIONS							
DAWN	1413	43	20	371	159	203	617
DAY	31809	240	376	7053	3218	7246	13676
DUSK	1648	63	16	359	185	260	765
NIGHT	11542	610	99	1303	719	796	8015
UNKNOWN	579	10	5	86	41	99	338
FLIGHT PHASE							
PARKED	250	4	4	28	21	16	177
TAXI	298	47	11	66	31	39	104
TAKE OFF	17346	307	243	3605	1789	3226	8176
EN ROUTE	2350	27	31	370	68	263	1591
APPROACH	18320	188	161	2714	979	2688	11590
LANDING	14204	507	133	3227	1625	3386	5326
UNKNOWN	2969	146	19	1020	622	646	516
PARTS STRUCK							
RADOME	7274	78	47	892	475	1432	4350

IBIS WORLD WILDLIFE STRIKE STATISTICS 2008-2015

	TOTAL	1-2-2C	A-I	J-N	O-X	Y-Z	Unknown/Others
WINDSHIELD	8296	72	78	991	578	1762	4815
NOSE	7756	77	63	1087	569	1661	4299
ENGINES	7047	61	130	1671	585	1120	3480
LIGHTS	688	18	7	116	39	127	381
PROPELLER	1220	57	29	414	159	189	372
ROTOR	817	7	19	134	30	134	493
WING	7955	134	102	1778	540	1401	4000
FUSELAGE	6764	67	63	1149	500	1121	3864
LANDING GEAR	3061	455	43	1001	314	424	824
TAIL	581	15	21	182	36	67	260
OTHER	4634	60	77	922	507	1222	1846
PARTS DAMAGED							
RADOME	396	1	12	132	27	28	196
WINDSHIELD	269	3	25	106	11	16	108
NOSE	350	15	19	143	22	16	135
ENGINES	1160	24	46	470	116	74	430
LIGHTS	309	8	5	84	23	42	147
PROPELLER	99	40	3	27	3	5	21
ROTOR	41	1	2	14	0	1	23
WING	1039	57	24	444	57	49	408
FUSELAGE	258	21	16	108	14	16	83
LANDING GEAR	255	78	10	93	16	7	51
TAIL	168	15	9	63	3	8	70
OTHER	1104	38	25	276	76	192	497
HEIGHT (FT)							
0-1000	28886	627	355	5668	2969	6094	13173
1001-2500	3458	22	30	486	124	315	2481
ABOVE 2500	3542	31	27	311	78	348	2747
SPEED IAS (KT)							
0-150	18377	294	209	3584	1473	3561	9256
151-250	5859	48	51	670	214	651	4225
ABOVE 250	160	2	2	28	3	8	117
PILOT WARNED							
NO	22364	372	214	4106	1645	3368	12659
UNKNOWN	876	13	10	112	48	98	595
YES	12199	194	191	2730	1057	3164	4863

IBIS WORLD WILDLIFE STRIKE STATISTICS 2008-2015

	TOTAL	1-2-2C	A-I	J-N	O-X	Y-Z	Unknown/Others
BIRD SEEN							
1	18505	423	247	3755	1537	3392	9151
11-100	2226	6	39	594	237	658	692
2 TO 10	9101	96	110	2155	939	2013	3788
MORE	963	4	7	61	34	180	677
UNKNOWN	4143	53	8	597	452	731	2302
BIRD STRUCK							
1	58101	1841	668	13152	6926	12940	22574
11-100	416	3	4	91	57	181	80
2 TO 10	7681	89	73	1849	1006	2356	2308
MORE	18	0	0	0	1	12	5
UNKNOWN	2377	26	1	177	75	134	1964

ATTACHMENT D to EB 2017/25

**LIST OF WILDLIFE TYPES FOR THE YEARS
2008 – 2015**

2008 - 2015CODE	SCIENTIFIC NAME	ENGLISH NAME	NUMBER OF CASES
1	MAMMALIA	MAMMALS	2295
1	MAMMALIA	MAMMALS	48
1A1	DIDELPHUS VIRGINIANU	OPOSSUM	81
1B1	DASYPUS NOVEMCINCTUS	ARMADILLO	11
1C	CHIROPTERA	BATS	144
1C1	MEGACHIROPTERA	OLD WORLD FRUIT BATS	7
1C2	MICROCHIROPTERA	ECHO LOCATING BATS	247
1C21	LASIURUS BOREALIS	RED BAT	35
1C22	TADARIDA BRASILIENSI	BRAZILIAN FREE-TAILED BAT	92
1C23	LASIURUS CINEREUS	HOARY BAT	13
1C25	MYOTIS LUCIFUGUS	LITTLE BROWN BAT	30
1C26	EPTESICUS FUSCUS	BIG BROWN BAT	27
1C27	LASIONYCTERIS NOCT.	SILVER-HAIRED BAT	17
1D	LAGOMORPHA	LAGOMORPHS (RABBITS, HARES)	1
1D1	SILVILAGUS SPP	HARES	358
1D11	LEPUS SPP	BLACK-TAILED JACKRABBIT	160
1D2	LAPORIDAE	RABBITS	160
1D21	SYLVILAGUS FLORIDANU	EASTERN COTTON TAIL RABBIT	15
1E	RODENTIA	RODENTS	4
1E3	SCURIDAE	SQUIRRELS	1
1E31	CYNOMYS SP	PRAIRIE DOG	42
1E32	MARMOTA MONAX	WOODCHUCK	37
1E41	CASTOR CANADENSIS	AMERICAN BEAVER	2
1E52	ONDATRA ZIBETHICUS	MUSKRAT	11
1E6	MURIDAE	OLD WORLD RATS	2
1E7	ERETHIZONTIDAE	NEW WORLD PORCUPINES	3
1E71	ERETHIZON DORSATUM	NORTH AMERICAN PORCUPINE	1
1E8101	MYOCASTOR COYPUS	NUTRIA	1
1F11	CANIS LATRANS	COYOTE	148
1F12	CANIS FAMILIARIS	DOMESTIC DOG	44
1F13	CANIDAE (FOXES)	FOX	113
1F131	VULPES FULVA	RED FOX	66
1F132	UROCYON CINEREOARGEN	COMMON GRAY FOX	4
1F31	PROCYON LOTOR	RACCOON	36

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1F4	MEPHITIDAE	SKUNKS	31
1F41	MEPHITIS MEPHITIS	STRIPED SKUNK	135
1F5	MUSTLIDAE	MUSTELIDS	4
1F52	TAXIDEA TAXUS	BADGER	5
1F6	FELIDAE	CATS	9
1F61	FELIS SILVESTRIS	HOUSE CAT	12
1F7	HERPESTIDAE	CIVETS (MONGOOSES)	1
1G1	ODOCOILEUS	DEER	8
1G11	ODOCOILEUS VIRGINIAN	WHITE-TAILED DEER	116
1G12	ODOCOILEUS HEMIONUS	MULE DEER	6
1G2	CERVIS ELAPHUS	WAPITI (ELK)	1
1G51	BOS TAURUS	CATTLE	4
1G51	BOVIDAE	CATTLE, SHEEP	1
1G71	SUS SCROFA	SWINE (PIGS)	1
2	REPTILIA	REPTILE	52
2	REPTILIA	REPTILE	1
2A	CHELONIA	TURTLES	25
2A1	TRIONYX SEROX	FLORIDA SOFT SHELL TURTLE	1
2A2	TERRAPENE CAROLINA	BOX TURTLE	4
2A3	CHELYDRA SERPENTINA	COMMON SNAPPING TURTLE	5
2A4	MALACLEMYS TERRAPIN	DIAMONDBACK TERRAPIN	12
2B1	ALLIGATOR MISSISSIPP	ALLIGATOR	4
C	APTERYGIFORMES	KIWI	19
E	GAVIIFORMES	LOONS	2
E1	GAVIIDAE	LOON	5
E1001	GAVIA IMMER	COMMON LOON	12
F	PODICIPEDIFORMES	GREBES	28
F1	PODICIPEDIDAE	GREBES	3
F1002	AECHMO. OCCIDENTALIS	WESTERN GREBE	7
F1003	PODILYMBUS PODICEPS	PIED-BILLED GREBE	13
F1004	PODICEPS AURITUS	HORNED GREBE	4
F1005	PODICEPS GRISEGENA	RED-NECKED GREBE	1
G	PROCELLARIIFORMES	ALBATROSS, SHEARWATERS, PETREL	26
G1	DIOMEDEIDAE	ALBATROSSES	2

G1001	PHOEB. IMMUTABILIS	LAYSAN ALBATROS	7
G21	PROCELLARIIDAE	PETRELS	2
G2101	PTERODROMA HYPOLEUCA	BONIN PETREL	7
G2302	PUFFINUS PACIFICUS	WEDGE-TAILED SHEARWATER	6
G2303	PUFFINUS AURICULARIS	TOWNSENDS SHEARWATER	2
H	PELECANIFORMES	PELICANS, CORMORANTS, BOOBIES	114
H	PELECANIFORMES	PELICANS, CORMORANTS, BOOBIES	1
H1	PHAETHONTIDAE	TROPICBIRDS	4
H1001	PHAETHON LEPTURUS	WHITE-TAILED TROPICBIRD	5
H2002	PELE. OCCIDENTALIS	BROWN PELICAN	17
H2003	PELECANUS ERYTHRORHY	AMERICAN WHITE PELICAN	9
H4	PHALACROCORACIDAE	CORMORANTS, SHAGS	1
H41	PHALACROCORACIDAE	CORMORANTS	5
H4101	PHALACROCORAX CARBO	GREAT CORMORANT	5
H4105	PHALA. AURITUS	DOUBLE CRESTED CORMORANT	48
H4201	PHALA. ARISTOTELIS	COMMON SHAG	2
H5101	ANHINGA ANHINGA	ANHINGA	10
H6	FREGATIDAE	FRIGATEBIRDS	6
H6003	FREGATA MINOR	GREAT FRIGATEBIRD	1
I	CICONIIFORMES	HERON, STORK, IBIS, FLAMINGO	628
I	CICONIIFORMES	HERON, STORK, IBIS, FLAMINGO	2
I1	ARDEIDAE	HERONS, BITTERNS, EGRETS	2
I11	ARDEIDAE	HERONS	37
I1101	ARDEA CINEREA	GREY HERON	57
I1102	ARDEA HERODIAS	GREAT BLUE HERON	112
I1103	ARD. NOVAEHOLLANDIAE	WHITE-FACED HERON	4
I1105	NYCTICORAX NYCTICORAX	BLACK-CROWNED NIGHT HERON	33
I1109	EGRETTA CAERULEA	LITTLE BLUE HERON	3
I1110	BUTORIDES VIRESCENS	GREEN HERON	7
I1111	NYCTANASSA VIOLACEA	YELLOW-CROWNED NIGHT-HERON	14
I12	ARDEIDAE	BITTERNS	2
I1202	BOTAUR. LENTIGINOSUS	AMERICAN BITTERN	2
I1203	IXOBRYCJIS SINENSIS	YELLOW BITTERN	6
I13	CICONIIFORMES	EGRET	80
I1301	BUBULCUS IBIS	CATTLE EGRET	162
I1302	EGRETTA ALBA	GREAT EGRET	27
I1303	EGRETTA GARZETTA	LITTLE EGRET	6
I1304	EGRETTA INTERMEDIA	INTERMEDIATE EGRET	3
I1305	EGRETTA SACRA	EASTERN REEF EGRET	1

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I1306	EGRET TA THULA	SNOWY EGRET	13
I5	CICONIIDAE	STORKS	20
I5001	CICONIA CICONIA	WHITE STORK	4
I5004	CICONIA NIGRA	BLACK STORK	3
I5006	MYCTERIA AMERICANA	WOOD STORK	6
I6104	PLEGADIS FALCINELLUS	GLOSSY IBIS	1
I6106	EUDOCIMUS ALBUS	AMERICAN WHITE IBIS	6
I6107	PLEGADIS CHIHI	WHITE-FACED IBIS	5
I6203	AJAIA AJAJA	ROSEATE SPOONBILL	1
I7	PHOENICOPTERIDAE	FLAMINGOS	4
I7001	PHOENICOPTERUS RUBER	COMMON FLAMINGO	5
J	ANSERIFORMES	DUCKS, GEESE, SWANS	1284
J2	ANATIDAE	DUCKS, GEESE, SWANS	11
J21	ANATIDAE	DUCKS	145
J2102	TADORNA TADORNA	COMMON SHELDUCK	2
J2103	ANAS AMERICANA	AMERICAN WIGEON	31
J2104	ANAS ACUTA	NORTHERN PINTAIL	74
J2106	ANAS CRECCA	GREEN-WINGED TEAL	30
J2107	ANAS DISCORS	BLUE-WINGED TEAL	11
J2108	ANAS PENELOPE	EUROPEAN WIGEON	1
J2109	ANAS PLATYRHYNCHOS	MALLARD	303
J2112	AYTHYA COLLARIS	RING-NECKED DUCK	11
J2113	AYTHYA MARILA	GREATER SCAUP	4
J2114	AIX SPONSA	AMERICAN WOOD DUCK	22
J2116	BUCEPHALA CLANGULA	COMMON GOLDENEYE	5
J2117	MERGUS SERRATOR	R. BREAST. MERGANSER	1
J2118	LOPHO. CUCULLA	HOODED MERGANSER	4
J2130	MERGUS MERGANSER	COMMON MERGANSER	2
J2131	ANAS CLYPEATA	SHOVELLER	32
J2132	AYTHYA FERINA	COMMON POCHARD	1
J2134	ANAS STREPERA	GADWELL	33
J2136	AYTHYA VALISINERIA	CANVASBACK DUCK	6
J2137	ANAS RUBRIPES	AMERICAN BLACK DUCK	20
J2138	ANAS FULVIGULA	MOTTLED DUCK	12
J2139	AYTHYA AFFINIS	LESSER SCAUP	21
J2140	OXYURA JAMAICENSIS	RUDDY DUCK	24
J2141	AYTHYA AMERICANA	REDHEAD	1
J2142	BUCEPHALA ALBEOLA	BUFFLEHEAD	5
J2143	CLANGULA HYEMALIS	LONG-TAIL DUCK	3
J2145	DENDROCYGNA AUTUMN	BLACK-BELIED WHISTLING DUCK	2
J2146	ANAS CYANOPTERA	CINNAMON TEAL	3

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J22	ANATIDAE	GEESE	49
J2201	ANSER ANSER	GREYLAG GOOSE	15
J2202	CHEN CAERULESCENS	SNOW GOOSE	38
J2204	BRANTA CANADENSIS	CANADA GOOSE	277
J2208	ANSER BRANCHYRHYNCHU	PINK-FOOTED GOOSE	12
J2209	BRANTA BERNICLA	BRENT GOOSE	8
J2210	ANSER ALBIFRONS	G. WHITE-FRONTED GOOSE	28
J2211	CHEN CANAGICA	EMPEROR GOOSE	1
J2212	CHLOEPHAGA PICTA	UPLAND GOOSE	4
J23	ANATIDAE	SWANS	1
J2302	CYGNUS OLOR	MUTE SWAN	25
J2303	CYGNUS COLUMBIANUS	TUNDRA SWAN	5
J2305	CYGNUS BUCCINATOR	TRUMPETER SWAN	1
K	FALCONIFORMES	HAWKS, EAGLES, VULTURES	6304
K	FALCONIFORMES	HAWKS, EAGLES, VULTURES	19
K1	CATHARTIDAE	NEW WORLD VULTURES	54
K1001	CORAGYPS ATRATUS	AMERICAN BLACK VULTURE	60
K1002	CATHARTES AURA	TURKEY VULTURE	196
K2	PANDIONIDAE	OSPREYS	1
K2001	PANDION HALIAETUS	OSPREY	105
K3	ACCIPITRIDAE	KITES, EAGLES, HAWKS	8
K31	ACCIPITRIDAE	KITES	52
K3102	MILVUS MIGRANS	BLACK KITE	114
K3103	MILVUS MILVUS	RED KITE	6
K3104	HALIASTUR INDUS	BRAHMINY KITE	2
K3108	ICTINIA MISSISSIPP.	MISSISSIPPI KITE	1
K3109	ELANOIDES FORFICATUS	SWALLOW-TAILED KITE	1
K32	ACCIPITRIDAE	EAGLES	81
K3201	HAL. LEUCOCEPHALUS	BALD EAGLE	53
K3204	ICTINAET. MALAYENSIS	INDIAN BLACK EAGLE	2
K3206	AQUILA CHRYSAETOS	GOLDEN EAGLE	5
K3208	HIERAETUS MORPHNOIDE	LITTLE EAGLE	1
K33	ACCIPITRIDAE	HAWKS	418
K3301	ACCIPITER GENTILIS	NORTHERN GOSHAWK	3
K3302	BUTEO JAMAICENSIS	RED-TAILED HAWK	785
K3303	BUTEO LAGOPUS	ROUGH-LEGGED HAWK	43
K3304	BUTEO LINEATUS	RED-SHOULDERED HAWK	16
K3305	BUTEO SWAINSONI	SWAINSON'S HAWK	38
K3307	ACCIPITER CIRRHOCYPH	COLLARED SPARROWHAWK	13
K3309	ACCIPITER NISUS	EUROPEAN SPARROW-HAWK	20
K3310	ACCIPITER STRIATUS	SHARP-SHINNED HAWK	9

K3311	ACCIPITER COOPERII	COOPER'S HAWK	37
K3312	BUTEO REGALIS	FERRUGINOUS HAWK	10
K3313	BUTEO PLATYPTERUS	BROAD-WINGED HAWK	8
K3314	PARABUTEO UNICINCTUS	HARRIS'S BAY-WINGED HAWK	2
K34	ACCIPITRIDAE	BUZZARD	43
K3401	BUTEO BUTEO	COMMON BUZZARD	317
K3402	PERNIS APIVORUS	HONEY BUZZARD	1
K35	ACCIPITRIDAE	HARRIER	12
K3501	CIRCUS AERUGINOSUS	MARSH HARRIER	10
K3502	CIRCUS CYANEUS	NORTHERN HARRIER	46
K3503	CIRCUS PYGARGUS	MONTAGU'S HARRIER	3
K3505	CIRCUS APPROXIMANS	SWAMP HARRIER	2
K3604	GYPS BENGALENSIS	INDIAN WHITE-BACKED VULTURE	1
K5	FALCONIDAE	FALCONS	163
K5002	FALCO PEREGRINUS	PEREGRINE FALCON	131
K5003	FALCO RUSTICOLUS	GYRFALCON	1
K5004	FALCO SUBBUTEO	NORTHERN HOBBY	20
K5005	FALCO COLUMBARIUS	MERLIN	31
K5009	POLYBORUS PLANCUS	CRESTED CARACARA	16
K5011	MILVAGO CHIMANGO	CHIMANGO	7
K5012	MILVAGO CHIMACHIMA	YELLOW-HEADED CARACARA	2
K5013	FALCO MEXICANUS	PRAIRIE FALCON	11
K5102	FALCO SPARVERIUS	AMERICAN KESTREL	1616
K5103	FALCO TINNUNCULUS	EURASIAN KESTREL	1708
L	GALLIFORMES	CHICKEN-LIKE BIRDS	209
L	GALLIFORMES	CHICKEN-LIKE BIRDS	1
L31	TETRAONIDAE	GROUSE	4
L3102	CENTRO. UROPHASIANUS	SAGE GROUSE	16
L3103	TYMPANUCHUS PHOSIANE	SHARP-TAILED GROUSE	3
L32	TETRAONIDAE	PTARMIGANS	1
L3201	LAGOPUS LAGOPUS	WILLOW PTARMIGAN	3
L4	PHASIANIDAE	QUAILS, PHEASANTS	13
L4001	FRANCO. FRANCOLINUS	BLACK FRANCOLIN	3
L41	PHASIANIDAE	QUAILS	5
L4101	COLINUS VIRGINIANUS	NORTHERN BOBWHITE	2
L4102	COTURNIX COTURNIX	COMMON QUAIL	2
L4103	COTURNIX JAPONICA	JAPANESE QUAIL	2
L42	PHASIANIDAE	PHEASANTS	41
L4201	PHASIANUS COLCHICUS	RING-NECKED PHEASANT	46
L43	PHASIANIDAE	PARTRIDGES	6
L4301	ALECTORIS RUFA	RED LEGGED PARTRIDGE	9

L4302	PERDIX PERDIX	GRAY PARTRIDGE	29
L4305	FRANC. PONDICERIANUS	GREY FRANCOLIN	2
L5	NUMIDIDAE	GUINEAFOWLS	3
L6001	MELEAGRIS GALLOPAVO	WILD TURKEY	18
M	GRUIFORMES	CRANES, RAILS	205
M4	GRUIDAE	CRANES	4
M4001	GRUS CANADENSIS	SANDHILL CRANE	35
M7	RALLIDAE	RAILS	5
M7001	PORZANA CAROLINA	SORA	20
M7003	GALLINULA CHLOROPUS	COMMON MOORHEN	6
M7005	FULICA AMERICANA	AMERICAN COOT	86
M7008	GALLINULA VENTRALIS	BLACK-TAILED NATIVE-HEN	1
M7010	FULICA ATRA	EURASIAN COOT	2
M7012	PORPHYRIO MARTINICA	PURPLE GALLINULE	1
M7013	RALLUS LIMICOLA	VIRGINIA RAIL	4
M7014	RALLUS LONGIROSTRIS	CLAPPER RAIL	2
MC	OTIDIDAE	BUSTARDS	5
MC002	OTIS TETRAX	LITTLE BUSTARD	34
N	CHARADRIIFORMES	SHORE BIRDS	8288
N	CHARADRIIFORMES	SHORE BIRDS	4
N4001	HAEMAT. OSTRALEGUS	OYSTERCATCHER	29
N5	CHARADRIIDAE	PLOVERS, LAPWINGS	2
N5103	PLUVIALIS APRICARIA	GREATER GOLD. PLOVER	57
N5104	PLUVIALIS DOMINICA	LESSER GOLDEN PLOVER	76
N5105	PLUVIALIS SQUATAROLA	BLACK-BELLIED PLOVER	72
N5106	CHARA. ALEXANDRINUS	SNOWY PLOVER	2
N5107	CHARADRIUS DUBIUS	LITTLE RINGED PLOVER	5
N5108	CHARADRIUS HIATICULA	COM. RINGED PLOVER	51
N5111	CHARA. VOCIFERUS	KILLDEER	1773
N5113	CHARADRIUS VEREDUS	ORIENTAL PLOVER	2
N5115	VANELLUS SPINOSUS	SPUR-WINGED PLOVER	4
N5122	PLUVIALIS FULVA	PACIFIC GOLDEN-PLOVER	250
N5124	CHARADRIUS MELODUS	PIPING PLOVER	1
N52	CHARADRIIDAE	LAPWINGS	61
N52	CHARADRIIDAE	PLOVERS	38
N5201	VANELLUS VANELLUS	COMMON LAPWING	138
N5202	VANELLUS CINEREUS	GREY-HEADED LAPWING	1
N5205	VANELLUS CHILENSIS	SOUTHERN LAPWING	85
N6	SCOLOPACIDAE	SANDPIPERS	72

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N6001	BARTRAMIA LONGICAUDA	UPLAND SANDPIPER	87
N6002	ACTITIS MACULARIA	SPOTTED SANDPIPER	13
N6006	CATO. SEMIPALMATUS	WILLETT	1
N6008	TRINGA TOTANUS	COMMON REDSHANK	3
N6009	GALLINAGO GALLINAGO	COMMON SNIPE	66
N6010	SCOLOPAX RUSTICOLA	EURAS. WOODCOCK	8
N6011	SCOLOPAX MINOR	AMERICAN WOODCOCK	30
N6012	CALIDRIS ACUMINATA	S.-TAILED SANDPIPER	103
N6013	CALIDRIS ALPINA	DUNLIN	34
N6014	CALIDRIS BAIRDII	BAIRD'S SANDPIPER	8
N6016	CALIDRIS MAURI	WESTERN SANDPIPER	42
N6017	CALIDRIS MELANOTOS	PECTORAL SANDPIPER	11
N6019	CALIDRIS ALBA	SANDERLING	15
N6020	TRY. SUBRUFICOLLIS	BUFF-BR. SANDPIPER	15
N6021	PHILOMACHUS PUGNAX	RUFF	1
N6022	ARENARIA INTERPRES	RUDDY TURNSTONE	11
N6024	CALIDRIS MINUTILLA	LEAST SANDPIPER	49
N6026	GALLINAGO HARDWICKII	JAPANESE SNIPE	1
N6028	CALIDRIS PUSILLA	SEMI-PALMATED PLOVER	35
N6028	CALIDRIS PUSILLA	SEMIPALMATED SANDPIPER	22
N6029	TRINGA FLAVIPES	LESSER YELLOWLEGS	7
N6030	LIMNODROMUS GRISEUS	SHORT-BILLED DOWITCHER	9
N6031	LIMOSA HAEMASTICA	HUDSONIAN GODWIT	4
N6032	TRINGA SOLITARIA	SOLITARY SANDPIPER	1
N6033	TRINGA MELANOLEUCA	GREATER YELLOWLEGS	2
N6035	CALIDRIS CANUTUS	RED KNOT	3
N6036	CALIDRIS FUSCICOLLIS	WHITE-RUMPED SANDPIPER	6
N6101	NUMENIUS ARQUATA	EUROPEAN CURLEW	35
N6103	NUMENIUS PHAEOPUS	WHIMBREL	11
N6104	NUMENIUS AMERICANUS	LONG-BILLED CURLEW	3
N7	PHALAROPODIDAE	PHALAROPES	10
N8102	RECURVIROSTRA AVOSET	PIED AVOCET	1
N8103	RECUVIROSTRA AMERICA	AMERICAN AVOCET	2
N82	RECURVIROSTRIDAE	AVOCETS	1
N82	RECURVIROSTRIDAE	STILTS	2
N8203	HIMANTOPUS MEXICANUS	BLACK-NECKED STILT	4
N9	BURHINIDAE	CURLEW	15
N9	BURHINIDAE	STONE CURLEWS	210
N9002	BURHINUS OEDICNEMUS	EURAS. STONE CURLEW	35
NA2	GLAREOLIDAE	PRATINCOLES	1
NA201	GLAREOLA MALDIVARUM	ORIENTAL PRATINCOLE	2
ND2	STERCORARIIDAE	JAEGERS	2
ND201	STER. PARASITICUS	PARASITIC JAEGER	4

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NE	LARIDAE	GULLS, TERNS	2
NE101	LARUS ARGENTATUS	HERRING GULL	609
NE102	LARUS CANUS	MEW GULL	282
NE104	LARUS DELAWARENSIS	RING-BILLED GULL	458
NE106	LARUS GLAUDESCENS	GLAUCOUS-WINGED GULL	57
NE107	LARUS GLAUROIDES	ICELAND GULL	1
NE108	LARUS MARINUS	G. BLACK-BACKED GULL	42
NE109	LARUS MELANOCEPHALUS	MEDITERRANEAN GULL	3
NE112	LARUS PIPIXCAN	FRANKLIN'S GULL	56
NE114	LARUS ATRICILLA	LAUGHING GULL	105
NE115	LARUS PHILADELPHIA	BONAPARTE'S GULL	13
NE117	LARUS FUSCUS	LESS BL-BACKED GULL	95
NE118	LARUS DOMINICANUS	KELP GULL	8
NE120	LARUS OCCIDENTALIS	WESTERN GULL	44
NE121	LARUS CALIFORNICUS	CALIFORNIA GULL	81
NE136	LARUS RIDIBUNDUS	BLACK-HEADED GULL	488
NE138	LARUS CACHINNAS	YELLOW-LEGGED GULL	184
NE2	LARIDAE	GULLS	2047
NE2	LARIDAE	TERNs	7
NE202	STERNA ALBIFRONS	LITTLE TERN	1
NE203	HYDROPROGNE CASPIA	CASPIAN TERN	4
NE204	STERNA HIRUNDO	COMMON TERN	6
NE205	STERNA SANDVICENSIS	SANDWICH TERN	1
NE207	STERNA NILOTICA	GULL-BILLED TERN	3
NE209	CHLIDONIAS NIGER	BLACK TERN	1
NE210	STERNA NERENSIS	FAIRY TERN	2
NE213	CYGIS ALBA	WHITE TERN	6
NE214	STERNA PARADISAEA	ARCTIC TERN	3
NE215	STERNA DOUGALLII	ROSEATE TERN	1
NE216	STERNA FORSTERI	FORSTER'S TERN	5
NE217	STERNA ANTILLARUM	LEAST TERN	11
NE219	ANOUS STOLIDUS	BROWN NODDY	3
NE220	STERNA MAXIMA	ROYAL TERN	1
NE221	STERNA FUSCATA	SOOTY TERN	2
NE301	RISSA TRIDACTYLA	BLACK-LEG. KITTIWAKE	5
NF101	RYNCHOPS NIGER	BLACK SKIMMER	3
O	COLUMBIFORMES	PIGEONS, GROUSE	5402
O	COLUMBIFORMES	PIGEONS, GROUSE	5
O1	PTEROCLIDAE	SANDGROUSE	5
O2	COLUMBIDAE	PIGEONS, DOVES	10
O21	COLUMBIDAE	PIGEONS	578

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O2109	COLUMBA PALUMBUS	COMMON WOOD-PIGEON	500
O22	COLUMBIDAE	DOVES	334
O2201	COLUMBA LIVIA	COMMON ROCK DOVE	1101
O2202	COLUMBA OENAS	COMMON STOCK DOVE	43
O2203	STREPT. DECAOCTO	COLLARED DOVE	8
O2204	STREPT. TURTUR	COM. TURTLE-DOVE	7
O2205	ZENAIDURA MACROURA	AM. MOURNING DOVE	2634
O2206	STREPT. ORIENTALIS	RUFOUS TURTLE DOVE	4
O2211	STREPT. CHINENSIS	SPOTTED DOVE	70
O2212	GEOPELIA STRIATA	BARRED GROUND DOVE	72
O2214	STREPTOP. BITORQUAT	PHILIPPINE TURTLE DOVE	1
O2215	ZENAIDA ASIATICA	WHITE-WINGED DOVE	25
O2216	STREPTOPELIA LUGENS	DUSKY TURTLE-DOVE	1
O2217	ZENAIDA AURICULATA	EARED DOVE	4
P	PSITTACIFORMES	PARROT, MACAW, PARAKEET, LORIE	17
P0004	MELOP. UNDULATUS	BUDGERIGAR	6
P1	PSITTACIDAE	PARROT, MACAW, PARAKEET, LORIE	1
P11	PSITTACHIFORMES	PARROTS	1
P14	PSITTACIDAE	LORIES	9
Q	CUCULIFORMES	CUCKOOS	31
Q21	CUCULIDAE	CUCKOOS	10
Q2101	COCCYZUS AMERICANUS	YELLOW-BILLED CUCKOO	14
Q2102	CUCULUS CANORUS	COMMON CUCKOO	4
Q2104	COCCYZUS ERYTHROP	BLACK-BILLED CUCKOO	1
Q2201	GEOCOCCYX CALIFORNIA	GREATER ROAD RUNNER	1
Q23	CUCULIDAE	COUCALS	1
R	STRIGIFORMES	OWLS	1313
R	STRIGIFORMES	OWLS	120
R11	TYTONIDAE	BARN OWLS	52
R1101	TYTO ALBA	COMMON BARN OWL	562
R2	STRIGIDAE	TYPICAL OWLS	75
R2001	NYCTEA SCANDIACA	SNOWY OWL	41
R2002	ATHENE NOCTUA	LITTLE OWL	22
R2003	STRIX ALUCO	TAWNY OWL	19
R2004	ASIO FLAMMEUS	SHORT-EARED OWL	233
R2005	ASIO OTUS	NORTH. LONG-EARED OWL	19
R2008	AEGOLIUS ACADICUS	NORTHERN SAW-WHET OWL	3

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R2008	ATHENE CUNICULARIA	BURROWING OWL	59
R2009	STRIX VARIA	BARRED OWL	11
R21	STRIGIDAE	SCOPS, SCREECH OWLS	2
R2101	OTUS ASIO	EASTERN SCREECH OWL	1
R2201	BUBO BUBO	EAGLE OWL	2
R2203	BUBO VIRGINIANUS	GREAT HORNED OWL	91
R2303	SURNIA ULULA	NORTHERN HAWK OWL	1
S	CAPRIMULGIFORMES	GOATSUCKER NIGHTJAR FROGMOUTH	226
S	CAPRIMULGIFORMES	GOATSUCKER NIGHTJAR FROGMOUTH	1
S5001	CHORDEILES MINOR	COMMON NIGHTHAWK	200
S5101	NYCTIDROMUS ALBICOLL	PAURAUQUE	2
S52	CAPRIMULGIDAE	NIGHTJARS	5
S5204	CAPRIMUL. VOCIFERUS	WHIP-POOR-WILL	4
S5208	CAPRIMULGUS EUROPAEU	NIGHTJAR	2
S5210	PHALAENOPT NUTTALLI	COMMON POORWILL	4
S5211	CHORDEILES ACUTIPEN.	LESSER NIGHTHAWK	3
S5212	CAPRIMULGUS CAROLIN.	CHUCK-WILL'S-WIDOW	5
T	APODIFORMES	SWIFT, TREE-SWIFT, HUMMINGBIRD	1570
T	APODIFORMES	SWIFT, TREE-SWIFT, HUMMINGBIRD	4
T1	APODIDAE	SWIFTS	477
T1001	CYPSELOIDES NIGER	BLACK SWIFT	3
T1002	CHAETURA PELAGICA	CHIMNEY SWIFT	179
T1003	APUS AFFINIS	HOUSE SWIFT	2
T1005	APUS PACIFICUS	FORK-TAILED SWIFT	3
T1006	APUS APUS	COMMON SWIFT	861
T1007	CHAETURA VAUXI	VAUX'S SWIFT	15
T1009	AERONAUTES SAXATALIS	WHITE-THROATED SWIFT	13
T3	TROCHILIDAE	HUMMINGBIRDS	4
T3001	ARCHILOCHUS COLUBRIS	RUBY-THROATED HUMMINGBIRD	5
T3003	CALYPTE ANNA	ANNA'S HUMMINGBIRD	4
W	CORACIIFORMES	KINGFISHERS, MOTMOTS, HORNBILL	24
W	CORACIIFORMES	KINGFISHERS, MOTMOTS, HORNBILL	2
W1	ALCEDINIDAE	KINGFISHERS	1
W1001	CERYLE ALCYON	BELTED KINGFISHER	2
W4	MEROPIDAE	BEE-EATERS	13
W4002	MEROPS APIASTER	EUROPEAN BEE-EATER	3
W8001	UPUPA EPOPS	HOOPOE	3

X	PICIFORMES	WOODPECKERS, TOUCANS, BARBETS	66
X6	PICIDAE	WOODPECKERS, PICULETS	7
X6001	COLAPTES AURATUS	NORTHERN FLICKER	37
X6002	SPHYRAPICUS VARIUS	YELLOW-BELLIED SAPSUCKER	21
X6005	PICOIDES PUBESCENS	DOWNY WOODPECKER	1
Y	PASSERIFORMES	PERCHING BIRDS	15626
Y2	FURNARIIDAE	OVENBIRDS, HORNEROS, SPINETAIL	1
Y9	TYRANNIDAE	TYRANT FLY CATCHERS	33
Y9003	MYIARCHUS CRINITUS	GREAT CRESTED FLYCATCHER	4
Y9004	TYRANNUS TYRANNUS	EASTERN KINGBIRD	11
Y9005	MUSCIVORA FORFICATA	SCISSOR-TAILED FLYCATCHER	81
Y9007	SAYORNIS SAYA	SAY'S PHOEBE	3
Y9008	TYRANNUS VERTICALIS	WESTERN KINGBIRD	98
Y9011	CONTOPUS SORDIDULUS	WESTERN WOOD-PEWEE	1
Y9013	SAYORNIS PHOEBE	EASTERN PHOEBE	4
YH	ALAUDIDAE	LARKS	27
YH001	GALERIDA CRISTATA	CRESTED LARK	4
YH003	ALAUDA GULGULA	SMALL SKYLARK	1
YH004	EREMOPHILA ALPESTRIS	HORNED LARK	1458
YH007	ALAUDA ARVENSIS	EURASIAN SKYLARK	506
YH007	ALAUDA ARVENSIS	SKYLARK	119
YI	HIRUNDINIDAE	SWALLOWS	1291
YI001	PROGNE SUBIS	PURPLE MARTIN	66
YI003	RIPARIA RIPARIA	BANK SWALLOW	414
YI005	HIRUNDO RUSTICA	BARN SWALLOW	2397
YI008	DELICHON URBICA	HOUSE MARTIN	190
YI009	HIRUNDO PYRRHONOTA	CLIFF SWALLOW	544
YI010	TACHYCINETA BICOLOR	TREE SWALLOW	255
YI011	THACHY. THALASSINA	VIOLET-GREEN SWALLOW	7
YI012	STELGID. SERRIPENNIS	NORTH. ROUGH-WINGED SWALLOW	17
YJ	DICRURIDAE	DRONGOS	8
YL	STURNIDAE	MYNA	7
YL	STURNIDAE	STARLINGS	104
YL001	STURNUS VULGARIS	EUROPEAN STARLING	1364
YL101	ACRIDOTHERES TRISTIS	COMMON MYNA	41
YM	CORVIDAE	CROWS	173
YM	CORVIDAE	CROWS, JAYS, MAGPIES	15
YM	CORVIDAE	JAYS	1
YM	CORVIDAE	MAGPIE	14
YM	CORVIDAE	RAVENS	2
YM002	CORVUS FRUGILEGUS	ROOK	54

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YM003	CORVUS MONEDULA	COMMON JACKDAW	9
YM102	CORV. BRACHYRHYNCHOS	AMERICAN CROW	98
YM103	CORVUS CORONE	CARRION CROW	132
YM104	CORV. CORONE CORNIX	HOODED CROW	14
YM108	CORVUS CAURINUS	NORTHWESTERN CROW	5
YM201	CYANOCITTA CRISTATA	BLUE JAY	8
YM202	GARRULUS GLANDARIUS	COMMON JAY	3
YM301	CORVUS CORAX	COMMON RAVEN	13
YM401	PICA PICA	EUROPEAN MAGPIE	43
YM403	PICA HUDSONIA	AMERICAN MAGPIE	1
YN	CRATICIDAE	BELL MAGPIE,BUTCHERBIRD,CURRAW	2
YO002	CORCORAX MELANORHAMP	WHITE WINGED CHOUGH	1
YR	PARIDAE	CHICKADEES	4
YR	PARIDAE	TITMICE, CHICKADEES	3
YR201	POECILE ATRICAPILLA	BLACK-CAPPED CHICKADEE	8
YS1	SITTIDAE	NUTHATCHES	1
Z	PASSERIFORMES	PERCHING BIRDS	238
Z1	PYCNONOTIDAE	BULBULS	2
Z1001	PYCNONTUS CAFER	RED-VENTED BULBUL	11
Z4	TROGLODYTIDAE	WRENS	21
Z4001	CISTOTHOR.PALUSTRIS	MARSH WREN	7
Z4003	TROGLODYTES AEDON	HOUSE WREN	14
Z4004	THRYOTHORUS LUDOVICA	CAROLINA WREN	2
Z51	MIMIDAE	THRASHERS	1
Z5101	TOXOSTOMA RUFUM	BROWN THRASHER	3
Z52	MIMIDAE	MOCKINGBIRDS	1
Z5201	MIMUS POLYGLOTTOS	NORTHERN MOCKINGBIRD	22
Z5301	DUMETELLA CAROLINESI	GRAY CATBIRD	32
Z6	TURDIDAE	THRUSHES	49
Z6001	SIALIA MEXICANA	WESTERN BLUEBIRD	12
Z6002	SAXICOLA RUBETRA	WHINCHAT	3
Z6003	OENANTHE OENANTHE	WHEATEAR	37
Z6004	CATHARAS USTULATUS	SWAINSON'S THRUSH	69
Z6005	TURDUS ILIACUS	REDWINGED THRUSH	5
Z6006	TURDUS MERULA	COMMON BLACKBIRD	24
Z6007	TURDUS MIGRATORIUS	AMERICAN ROBIN	321
Z6008	TURDUS PHILOMELOS	COMMON SONG THRUSH	16
Z6009	TURDUS PILARIS	FIELDFARE	17
Z6010	TURDUS VISCIVORUS	MISTLE THRUSH	8
Z6012	PHOENICURUS PHOENICU	WHITE-FRONTED REDSTART	1
Z6013	SAXICOLA TORQUATUS	STONECHAT	1
Z6014	CATHARUS GUTTATUS	HERMIT THRUSH	41
Z6015	SIALIA SIALIS	EASTERN BLUEBIRD	2

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Z6016	CATHARUS MINIMUS	GRAY-CHEEKED THRUSH	11
Z6018	HYLOCICHLA MUSTELIN	WOOD THRUSH	7
Z6019	REGULUS SATRAPA	GOLDEN-CROWNED KINGLET	11
Z8	SYLVIIDAE	OLD WORLD WARBLERS	22
Z8003	SYLVIA ATRICAPILLA	BLACK-CAPPED WARBLER	1
Z9	REGULIDAE	KINGLETS	27
ZA	MUSCICAPIDAE	OLD WORLD FLYCATCHERS	12
ZB001	PRUNELLA MODULARIS	DUNNOCK	1
ZC	MOTACILLIDAE	WAGTAILS, PIPITS	2
ZC1	MOTACILLIDAE	PIPITS	4
ZC1	MOTACILLIDAE	WAGTAILS	17
ZC101	MOTACILLA ALBA	WHITE WAGTAIL	85
ZC102	MOTACILLA FLAVA	YELLOW WAGTAIL	9
ZC202	AN. NOVAESEELANDIAE	RICHARD'S PIPIT	8
ZC203	ANTHUS PRATENSIS	MEADOW PIPIT	174
ZC204	ANTHUS SPINOLETTA	WATER PIPIT	43
ZC205	ANTHUS SPRAGUEII	SPRAGUE'S PIPIT	2
ZD101	BOMBYCILLA GARRULUS	BOHEMIAN WAXWING	1
ZD102	BOMBYCILLA CEDRORUM	CEDAR WAXWING	63
ZF	ARTAMIDAE	WOOD SWALLOWS	6
ZH	LANIIDAE	SHRIKES	7
ZH002	LANIUS LUDOVICAINUS	LOGGERHEAD SHRIKE	10
ZL	VIREONIDAE	VIREOS	4
ZL001	VIREO GRISEUS	WHITE-EYED VIREO	2
ZL004	VIREO GILVUS	WARBLING VIREO	11
ZL005	VIREO OLIVACEUS	RED-EYED VIREO	25
ZL006	VIREO CASSINII	CASSIN'S VIREO	1
ZQ002	ZOSTEROPS JAPONICUS	JAPANESE WHITE-EYE	2
ZS	PARULIDAE	WOOD WARBLERS	76
ZS001	WILSONIA CANADENSIS	CANADA WARBLER	10
ZS003	DENDROICA PINUS	PINE WARBLER	7
ZS004	MNIOTILTA VARIA	BLACK & WHITE WARBLER	8
ZS005	PARULA AMERICANA	NORTHERN PARULA WARBLER	3
ZS006	SEIURUS AUROCAPILLUS	OVENBIRD	26
ZS007	WILSONIA PUSILLA	WILSONS WARBLER	18
ZS008	GEOTHLYPIS TRICHAS	COMMON YELLOWTHROAT	20
ZS009	DENDROICA CORONATA	YELLOW-RUMPED WARBLER	54
ZS010	DENDROICA STRIATA	BLACKPOLL WARBLER	22
ZS011	OPORORNIS PHILADELPH	MOURNING WARBLER	2
ZS012	SETOPHAGA RUTICILLA	AMERICAN REDSTART	9
ZS013	VERMIVORA CELATA	ORANGE-CROWNED WARBLER	10
ZS014	DENDROICA PETECHIA	YELLOW WARBLER	17
ZS015	DENDROICA TIGRINA	CAPE MAY WARBLER	1

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ZS018	SEIURUS NOVEBOR	NORTHERN WATERTHRUSH	9
ZS019	VERMIVORA RUFICAP.	NASHVILLE WARBLER	8
ZS020	DENDROICA TOWNSENDII	TOWNSENDS WARBLER	5
ZS022	CATHARUS FUSCESCENS	VEERY	9
ZS023	DENDROICA PALMARUM	PALM WARBLER	10
ZS024	DENDROICA FUSCA	BLACKBURNIAN WARBLER	2
ZT000	STURNELLA	MEADOWLARK	250
ZT001	STURNELLA MAGNA	EASTERN MEADOWLARK	578
ZT002	STURNELLA NEGLECTA	WESTERN MEADOWLARK	416
ZT004	MOLOTHRUS ATER	BROWN-HEADED COWBIRD	71
ZT005	DOLICHO. ORYZIVORU	BOBOLINK	11
ZT1	ICTERIDAE	BLACKBIRDS	217
ZT1	ICTERIDAE	GRACKLES	46
ZT1	ICTERIDAE	ORIOLES	6
ZT101	AGELAIUS PHOENICEUS	RED-WINGED BLACKBIRD	102
ZT102	XANTHOCEPHALUS XANTH	YELLOW-HEADED BLACKBIRD	4
ZT103	EUPHAGUS CYANOCEPHAL	BREWER'S BLACKBIRD	15
ZT201	ICTERUS GALBULA	BALTIMORE ORIOLE	10
ZT301	QUISCALUS QUISCULA	COMMON GRACKLE	61
ZT303	QUISCALUS MAJOR	BOAT-TAILED GRACKLE	10
ZT304	QUISCALUS MEXICANUS	GREAT-TAILED GRACKLE	25
ZU	TERSINIDAE	SWALLOW-TANAGER	1
ZV001	PIRANGA OLIVACEA	SCARLET TANAGER	3
ZV002	PIRANGA LUDOVICIANA	WESTERN TANAGER	7
ZX	FRINGILLIDAE	CARDINALS, BUNTINGS, SPARROWS	8
ZX000	FRINGILLIDAE	CARDINALS	5
ZX000	FRINGILLIDAE	FINCHES	30
ZX000	FRINGILLIDAE	SPARROWS	982
ZX002	CALCARIUS LAPPONICUS	LAPLAND LONGSPUR	26
ZX003	CALCARIUS ORNATUS	CHES.-COLL. LONGSPUR	1
ZX004	JUNCO HYEMALIS	DARK-EYED JUNCO	53
ZX005	PHEU. LUDOVICIANUS	R.-BREASTED GROSBEAK	6
ZX006	FRINGILLA COELEBS	COMMON CHAFFINCH	7
ZX007	SERINUS CANARIA	COMMON CANARY	2
ZX008	CARDUELIS CARDUELIS	EUROPEAN GOLDFINCH	9
ZX009	CARDUELIS CHLORIS	EUROPEAN GREENFINCH	9
ZX010	CARDUELIS PINUS	PINE SISKIN	13
ZX011	ACANTHIS CANNABINA	EURASIAN LINNET	27
ZX012	ACANTHIS FLAMMEA	COMMON REDPOLL	1
ZX013	CARPODACUS PURPUREUS	PURPLE FINCH	2
ZX014	LOXIA CURVIROSTRA	RED CROSSBILL	2
ZX015	PYRRHULA PYRRHULA	COMMON BULLFINCH	2
ZX017	CARDUELIS TRISTIS	AMERICAN GOLDFINCH	26

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ZX018	CARPODACUS MEXICANUS	HOUSE FINCH	30
ZX019	CALCARIUS PICTUS	SMITHS LONGSPUR	1
ZX020	SPIZA AMERICANA	DICKCISSEL	7
ZX022	AMANDAVA AMANDAVA	RED AVADAVAT	3
ZX023	DIUCA DIUCA	COMMON DIUCA FINCH	11
ZX101	PAROARIA CORONATA	RED CRESTED CARDINAL	2
ZX2	FRINGILLIDAE	BUNTINGS	120
ZX201	EMBERIZA AUREOLA	YELLOW-BREASTED CHAT	4
ZX202	PLECTRO. NIVALIS	SNOW BUNTING	107
ZX203	PASSERINA CYANEA	INDIGO BUNTING	8
ZX205	EMBERIZA SCHOENICLUS	COMMON REED-BUNTING	2
ZX301	ZONOTRICHIA QUERULA	HARRIS'S SPARROW	2
ZX302	MELOSPIZA GEORGIANA	SWAMP SPARROW	19
ZX303	PASS. SANDWICHENSIS	SAVANNAH SPARROW	164
ZX304	PASSERELLA ILIACA	FOX SPARROW	19
ZX305	ZONOTRICHIA ALBICOLL	WHITE-THROATED SPARROW	61
ZX306	ZONOTRICHIA ATRICAPI	GOLDEN-CROWNED SPARROW	2
ZX307	SPIZELLA PUSILLA	FIELD SPARROW	22
ZX308	CHONDESTES GRAMMACUS	LARK SPARROW	12
ZX309	ZONOTRICHIA LEUCO.	WHITE-CROWNED SPARROW	15
ZX310	AMMODRAMUS SAVANARUM	GRASSHOPPER SPARROW	24
ZX311	PADDA ORYZIVORA	JAVA SPARROW	1
ZX312	POECETES GRAMINEUS	VESPER SPARROW	22
ZX313	SPIZELLA PASSERINA	CHIPPING SPARROW	24
ZX314	MELOSPIZA LINCOLNII	LINCOLN'S SPARROW	12
ZX315	MELOSPIZA MELODIA	SONG SPARROW	43
ZX316	AMPHISPIZA BELLI	SAGE SPARROW	4
ZX318	SPIZELLA ARBOREA	AMERICAN TREE SPARROW	9
ZX4	FRINGILLIDAE	TOWHEE	1
ZX401	PIPILO ERYTHROPHthal	RUFous-SIDED TOWHEE	4
ZY	ESTRILDIDAE	MANNIKINS	3
ZY	ESTRILDIDAE	WAXBILLS, MANNIKINS	36
ZY101	LONCHURA PUNCTULATA	NUTMEG MANNIKIN	34
ZY102	LONCHURA MALACCA	CHESNUT MANNIKIN	8
ZY103	LONCHURA MALABARICA	WARBLING SILVERBILL	3
ZZ	PASSERIFORMES - continued	PERCHING BIRDS (continued)	12
ZZ201	PASSER DOMESTICUS	HOUSE SPARROW	195
ZZ202	PASSER MONTANUS	TREE SPARROW	22

— END —