

## **REPORT ON POPULATION MONITORING COUNTS WINTER 2008 AND SUMMER 2008-09**

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Shorebird populations continued to decline according to reports released this year from northwest Western Australia, Queensland, and the Coorong. Similarly reports of habitat loss throughout the flyway have continued, and a recent review by Birds Australia found evidence that 21 shorebird species have decreased in at least one area in Australia. As shorebird numbers and available shorebird habitat continue to decline, it is critical that we are able to increase the confidence with which we can report national and local population changes. In this past year significant steps were made toward meeting the objectives of the Shorebirds 2020 Program which will build on the data collected for the last 29 years. Without these data trends in shorebird populations in Australia would be poorly understood and the importance of many areas for shorebirds would never have been recognised.

The expansion of the program this year exceeded our expectations. Incredibly, in the summer of 2008-09 between 500 to 1000 volunteers conducted shorebird counts at 155 known shorebird areas, with additional less methodical counts done at another 225 areas. The largest expansion of areas surveyed occurred in South Australia, where population monitoring counts were organised at 44 shorebird areas, and many additional opportunistic counts were submitted. The expansion of counts in Western Australia was similarly impressive with organised counts in 28 shorebird areas. Many of these areas are comparatively larger than those in much of the country, and require large teams to complete. The number of areas being surveyed in New South Wales and Queensland continued to grow this year, and impressively many of these areas have volunteers or organisations conducting monthly counts. The counts in Tasmania continued and there was a large increase in the amount of historic data processed. The areas around Darwin in the Northern Territory continue to be surveyed regularly with an increase in the frequency of counts in many count areas. In Victoria, the number of areas counted also grew, and the frequency of counts grew markedly in the Melbourne region. Data reported here include counts from 155 shorebird areas collected during the winter 2008 and summer 2009.

There are a few slight changes to the way in which shorebird count data were reported in Stilt this year. We have continued to report the maximum number of individuals for each species counted in either summer or winter. However, maximum summer counts this year were taken from December through February, with counts from November or March reported only when no other summer counts were available. Winter still included the months of May to July.

Data also continued to be reported by shorebird area. The boundary of each of these areas is meant to include all the areas where a group of shorebirds may be found in the peak summer or winter months, but as we learn more from shorebird experts throughout the country, these boundaries will continue to be refined. Analysis of the

data in some areas suggests that improved identification of shorebird areas will reduce annual count variation.

Last year analysis revealed that statistically significant declines in shorebird populations (50% over 5 years for some species) could be obtained if around 149 areas were monitored around the country (Haslem et al. 2008). Additional analysis done this year based on this past summers data suggests that continued monitoring at 113 areas would yield sufficient statistical power (80%) to detect “national” trends of: 25-52% change in five years for 19 shorebird species and 50-80% change for seven species in ten years (Clemens et al. 2009).

For site-based population trends we have found that the best way to determine population trends for more species would be to reduce the annual count variation at each shorebird area. We are still learning how best to do this. Fortunately, the repeat counts done this summer, and in previous years give us some data to investigate. A quick look at the repeated counts done over the summer of 2008 suggests that repeated counts would reduce annual count variation if we take a maximum count over multiple counts. The degree of reduction in variation appears to be dependent on local site characteristics, and the way shorebirds use each area. It is likely that areas with high count variation would benefit most from more surveys.

This was a remarkable year in terms of survey coverage throughout the country, but considerably more work is needed in order to ensure that enough trained observers are available to participate in the counts. In some areas the expanded count coverage simply fell on the same observers. If this project is going to be sustainable in the long term, new counters will need to be added rather than simply increasing the work load of existing counters. Along with recruiting enough counters, the largest challenge for the program is to ensure that data within each shorebird area will be collected consistently from now on. The data will only be useful for population monitoring if the same areas are counted by similarly skilled personnel, in the same way, under the same conditions, covering the same area on each count. While some areas would benefit from changes to the area covered or counting method, it is important that the method for counting each year become as fixed as possible, so any changes to how an area is surveyed need to either be made this year or not at all.

For more detailed information on the work we've been doing, for maps of the areas we need counted, data sheets, and ID or counting training information please visit the revised website [www.shorebirds.org.au](http://www.shorebirds.org.au)

### **What the data is telling us:**

In the short term the data is telling a great deal about the distribution and abundance of shorebirds throughout Australia, and in some cases the changes that have occurred over time are obvious.

The most obvious example of changes in Australian shorebird distributions have been the declining abundance of shorebirds at non-coastal wetlands in southern Australia in the last 20 years. After nearly 10 years of drought, many wetlands have dried out, while others are becoming degraded due to a lack of freshwater inflows. It is,

therefore, not surprising that shorebirds are less abundant in the non-coastal wetlands of Australia (Nebel et al. 2008). However, this summer's remarkable count coverage allowed us to further quantify those changes. Twenty-nine non-coastal shorebird areas were identified in southern Australia that had been counted in the 1980's and again this past summer (Figure 1). This past summer's count marked the first in many years that most of these areas had been surveyed. In the 1980's the number of surveys varied between sites, so the average maximum summer count from 1980-89 was used for comparison. The results of this simple comparison suggest that in southern Australia, shorebird numbers at non-coastal wetlands have decreased by nearly 80% (Table 1), and declines by species have ranged from 50% to 99%. The only exception to this was the Pacific Golden Plover, which may have been recorded in higher numbers in wetlands adjacent to the coast this past summer because coverage was better, and there was less water around so there was less potential habitat to search for what can be an elusive species. The Coorong data (not included in these comparisons) is showing similarly large declines in many migratory shorebird species. The Coorong data was not included here because there is much better data and discussion available elsewhere (Brookes et al. 2009, Gosbell 2005).

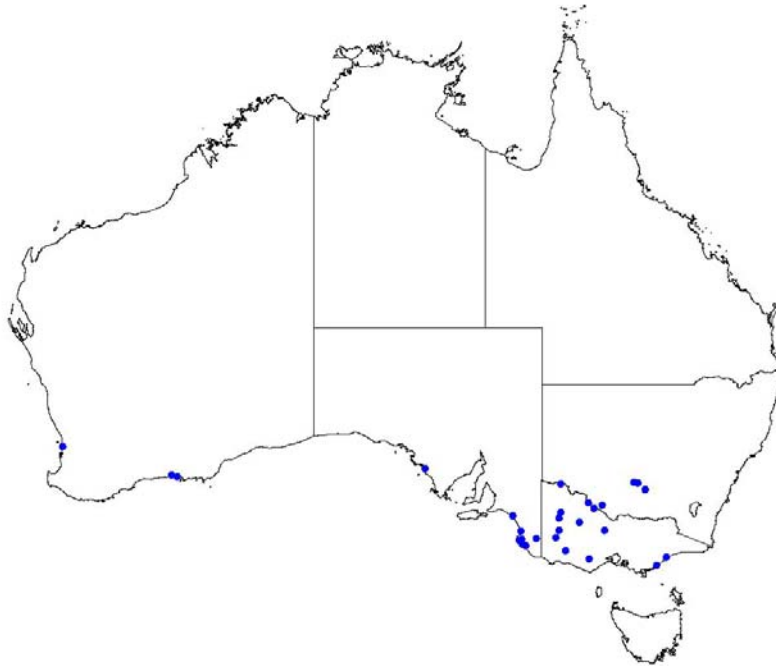


Figure 1. Location of 29 non-coastal wetlands where shorebird counts were compared between the 1980's and the summer of 2008-2009.

Table 1. Comparison of counts in the 1980's with those recorded in the summer of 2008-2009 at 29 inland wetlands for selected species.

Species	Average max annual summer count 1980's, averaged across 29 areas			Summer 2008-2009 count		
	Mean per area (N=29)	SE	Total	Mean per area (n=29)	SE	Total
Black-fronted Dotterel	6.0	2.0	171	1.4	1.0	41
Black-winged Stilt	153.9	69.6	4379	29.3	13.5	850
Common Greenshank	15.5	4.0	416	2.8	1.2	82
Curlew Sandpiper	107.1	43.0	3107	0.2	0.2	5
Marsh Sandpiper	8.5	2.9	245	0.6	0.4	16

Masked Lapwing	101.1	37.2	2930	24.3	6.9	706
Pacific Golden Plover	0.2	0.2	7	5.8	4.0	169
Red-capped Plover	136.4	29.1	3955	73.0	31.3	2116
Red-kneed Dotterel	15.0	4.4	418	1.8	0.9	53
Red-necked Avocet	94.3	26.1	2733	12.7	7.6	367
Red-necked Stint	457.1	156.2	13256	267.6	124.4	7759
Sharp-tailed Sandpiper	396.5	124.0	11417	28.1	20.4	814
TOTAL all shorebirds	2373.4	563.3	68595	487.6	164.8	14140

For the areas where changes have not been as drastic, it will take up to five years to generate enough data to report national shorebird trends with confidence. In the meantime there are many things that can be reported that will add to the evidence regarding how shorebird populations are tracking. First, in areas where standardised counts are happening, simply reporting on the changes in the numbers seen each year will allow some understanding of how much shorebird populations are being affected by things like habitat destruction in the flyway. The recent count of the whole of 80-mile beach in northwest Australia provides an excellent example of the power in simply reporting changes in two complete annual counts (Rogers et al. 2009). Second, continuing to report trends from the individual shorebird areas where historic data is available will build on the evidence of population changes and several areas have data sets that are now ready for additional analysis. As this process continues a more completely vetted set of data from each shorebird area will become available. Where data at individual sites has been collected in the same way for long periods more rigorous reporting has been possible, and there are encouraging signs from new analytical techniques (Fuller et al. 2009, Rogers et al. 2009). While we work to make more conclusive data available, these steps will help increase our understanding of shorebird population trends in Australia.

The number of areas visited this last summer, and the amount of data generated will provide a useful foundation for years to come. The increasingly spatial explicit data will be especially useful for planners, and those looking to do habitat analysis in order to further explore what is driving population changes.

The need to determine what precisely is happening to shorebird populations is growing. Given the large population declines being reported in shorebirds and the increasing threats to shorebird habitat it is critical that we build on the evidence of what is happening so that improved knowledge can guide management and conservation of shorebird habitat (Gosbell and Clemens 2006, Oldland et al. 2009).

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## WINTER 2008

## NSW (listed from north to south)

## NT

## Qld

Species	Tweeds Estuary	Brunswick River estuary	Richmond River estuary	Clarence River	Hastings River	Manning River Estuary	Port Stephens	Hunter Estuary	Lake MacQuarie entrance	Tuggerah Lakes	Parramatta River	Botany Bay	Lake Illawarra	Shoalhaven Estuary	North Darwin	Moreton Bay	Great Sandy Straight	Gladstone	Kinka Beach	Mackay	Bowen	Lake Moondarra
Asian Dowitcher																						
Australian Pratincole																						
Banded Lapwing																						
Banded Stilt																						
Bar-tailed Godwit	29	2	45	166	35	32	354	461	19	8	30	173	11	128		2751	N		14	N	N	
Beach Stone-curlew			1			3											O		13	O	O	
Black-fronted Dotterel		7						23		6	31					5	T		18	T	T	1
Black-tailed Godwit								33						1								
Black-winged Stilt	281	4	2	25				894		5	173	12	31		7	419	C		179	C	C	3
Broad-billed Sandpiper																1	O			O	O	
Bush Stone-curlew																	U			U	U	
Common Greenshank								18								172	N		41	N	N	
Common Sandpiper																3	T			T	T	
Curlew Sandpiper			4			1										61	E			E	E	
Double-banded Plover		3	47	46	16	121				3		15		114		179	D		2	D	D	
Eastern Curlew	4		17	52	5	2	52	184				112	2	23	3	947		1	20			
Great Knot			1	15											40	211						
Greater Sandplover															191	2						
Grey Plover																10						
Grey-tailed Tattler	2		11				1	5				5			52	388			136			
Hooded Plover																						
Latham's Snipe																1			1			
Lesser Sandplover																970		22	10			
Little Curlew																			2			
Long-toed Stint																						
Marsh Sandpiper																10			36			
Masked Lapwing	2	17		5	6	6	23	140	12	10	37	7	11	4	21	22			30			3
Oriental Plover																						
Oriental Pratincole																						
Pacific Golden Plover								2								138			39			
Pectoral Sandpiper																1			3			
Pied Oystercatcher	2	6	4	15		13	154	6	6			73	24	16	1	159		2	4			
Red Knot																49			2			
Red-capped Plover		4	11	7	4	30		91		10		2	22	39	26	113		6	251			
Red-kneed Dotterel											1					3			6			
Red-necked Avocet	5					3		2000			5								113			
Red-necked Stint			9			55						13	5	2	5	578			403			
Ruddy Turnstone			6									6			19	7		5				
Ruff																						
Sanderling			2												17							
Sharp-tailed Sandpiper																225			72			
Sooty Oystercatcher			8				14	9		2		10	1			3		2				
Terek Sandpiper			2				11	1							2	28			7			
Wandering Tattler																						
Whimbrel			1	9	1		10	37				4		5	9	374		12	27			
Wood Sandpiper																			2			
Unidentified small wader																9						
Unidentified medium wader																						
Unidentified large wader																						
<b>TOTAL</b>	<b>325</b>	<b>33</b>	<b>171</b>	<b>340</b>	<b>51</b>	<b>222</b>	<b>619</b>	<b>3229</b>	<b>32</b>	<b>44</b>	<b>212</b>	<b>383</b>	<b>107</b>	<b>205</b>	<b>393</b>	<b>7839</b>	<b>--</b>	<b>50</b>	<b>1431</b>	<b>--</b>	<b>--</b>	<b>7</b>
<b>No. of species</b>	<b>7</b>	<b>7</b>	<b>16</b>	<b>9</b>	<b>6</b>	<b>10</b>	<b>8</b>	<b>15</b>	<b>3</b>	<b>7</b>	<b>6</b>	<b>12</b>	<b>8</b>	<b>9</b>	<b>13</b>	<b>30</b>	<b>--</b>	<b>7</b>	<b>25</b>	<b>--</b>	<b>--</b>	<b>3</b>

**WINTER 2008**

**SA**

**SA**

**Tas (from Hobart region north)**

**Vic (froi**

Species	Townsville	Cairns area	Port MacDonnell	Carpenter Rocks	Gulf of St Vincent	Sleaford Bay (EYRE)	Gonyah Beach (EYRE)	Derwent	Marion Bay	Moultling Lagoon	Scamander	Maurouard Beach	Georges Bay	Cape Portland	George Town Reserve	Kelso, Tamar Estuary	Narantapu National Park	Moorland Point	Robbins Passage	Corner Inlet	Anderson Inlet
Asian Dowitcher																					
Australian Pratincole																					
Banded Lapwing								1						4	10			9			
Banded Stilt					2000																
Bar-tailed Godwit	<b>N</b>	257						45	24	1		21				8			24	787	1
Beach Stone-curlew	<b>O</b>	3																			
Black-fronted Dotterel	<b>T</b>	2						2					3	4							
Black-tailed Godwit		60																			
Black-winged Stilt	<b>C</b>				100																
Broad-billed Sandpiper	<b>O</b>	12																			
Bush Stone-curlew	<b>U</b>	4																			
Common Greenshank	<b>N</b>	5			37			2							3						
Common Sandpiper	<b>T</b>	4																			
Curlew Sandpiper	<b>E</b>	50	2	1	8														19	5	
Double-banded Plover	<b>D</b>		105		3		3	43	62		3	18	82	28	47	420	41	660	691	50	
Eastern Curlew		48						1		3									3	18	15
Great Knot		260																		10	
Greater Sandplover		85																			
Grey Plover					6		9														1
Grey-tailed Tattler		48																			
Hooded Plover						37	26		1			28	11	41			3		58	3	
Latham's Snipe		30																			
Lesser Sandplover		121																			
Little Curlew																					
Long-toed Stint																					
Marsh Sandpiper		2																			
Masked Lapwing		8	5	7	10			70		27	9		85	15	117	24	20	65	14	9	28
Oriental Plover																					
Oriental Pratincole																					
Pacific Golden Plover		20																			
Pectoral Sandpiper																					
Pied Oystercatcher		6	2	10	4	3	55	642	228	229	3	26	141	57	25	46	190	3	594	744	5
Red Knot		2																		80	
Red-capped Plover		4	55	2	100	19	91	135	34	34	16	14	11	71	6	31	160	2	100	26	20
Red-kneed Dotterel					6																
Red-necked Avocet					300																
Red-necked Stint		1000	8		250		20	70		1			40		7	14			109	595	
Ruddy Turnstone		4		8	12		4							6				18	58		
Ruff																					
Sanderling							562														
Sharp-tailed Sandpiper		40																			
Sooty Oystercatcher		6	3	8		42	17	90	18	3		6	11	46	5	13	2	3	238	325	
Terek Sandpiper		15																			
Wandering Tattler																					
Whimbrel		200			2															3	1
Wood Sandpiper																					
Unidentified small wader																					30
Unidentified medium wader																					
Unidentified large wader																					
<b>TOTAL</b>		2296	180	36	2838	101	610	966	309	321	15	60	290	366	167	186	649	141	1764	3297	138
<b>No. of species</b>		27	7	6	14	4	9	11	5	7	5	4	8	10	6	8	7	7	11	14	8

**WINTER 2008**

**n east to west)**

**Vic (from east to west)**

**WA**

Species	Western Port Bay	East Port Phillip	Laverton/Altona	Werribee / Avalon	Begola	Belmont Common	Black Rocks / Breamlea	Lake Lorne	Point Richards	Moolap Saltworks	Swan Bay & Mud Islands	Lake Connewarre area	Port Fairy	Fitzroy River Mouth	Discovery Bay to Glenelg	80 Mile Beach	Roebuck Bay	Bush Point (Roebuck Bay)	Shark Bay	Swan River & Rottnest Is.	Swan Coastal Plain Lakes
Asian Dowitcher																	6	6			
Australian Pratincole																					
Banded Lapwing																					14
Banded Stilt			51							33											1504
Bar-tailed Godwit	98										117					3992	518	4114	267		
Beach Stone-curlew																					
Black-fronted Dotterel		282		151			1	1					20							4	
Black-tailed Godwit																	126	2			
Black-winged Stilt		177	75	217						8	5	235	54				814		78	2	
Broad-billed Sandpiper																	13				
Bush Stone-curlew																					
Common Greenshank	5	1	2	2						1	15	2				257	51	41	13		
Common Sandpiper																				2	
Curlew Sandpiper	13		1	481							5	95				1136	1889	122			
Double-banded Plover	597	11	128	296			53			65	90	237	105	164	109						
Eastern Curlew	24										49					109	11	66	48		
Great Knot																4151	1399	5448	3		
Greater Sandplover																1694	293	2871	20		
Grey Plover											14					250	1	160	18	1	
Grey-tailed Tattler											4					1759	300	382	8		
Hooded Plover							3				10		61	86	44						
Latham's Snipe																					
Lesser Sandplover																322	17	155			
Little Curlew																					
Long-toed Stint																					
Marsh Sandpiper																					
Masked Lapwing	102	66	5	111	2	2		13	12	51	131	85	32	23							
Oriental Plover																					
Oriental Pratincole																					
Pacific Golden Plover			1													1					
Pectoral Sandpiper																					
Pied Oystercatcher	233			35						19	26	6	23	40	93	21	48	156		4	
Red Knot	36										47	33		1		686	460	515			
Red-capped Plover	89	18	42	240			24		5	37	68	105	169	26	35	7038	340	5430	38	42	45
Red-kneed Dotterel		2		17									1							4	
Red-necked Avocet		47	58	49						105							145			1	
Red-necked Stint	209	11	46	648			1				81	136	21			3628	1149	770	3		
Ruddy Turnstone	5										7		23	2		20	179	113			
Ruff																					
Sanderling														99	13	230					
Sharp-tailed Sandpiper											143										
Sooty Oystercatcher	1			4							1		5	10			12				
Terek Sandpiper																164	51	86	2		
Wandering Tattler																					
Whimbrel																87	477	165	28		
Wood Sandpiper																					
Unidentified small wader			1																		
Unidentified medium wader																					2
Unidentified large wader																					
<b>TOTAL</b>	<b>1412</b>	<b>461</b>	<b>410</b>	<b>2251</b>	<b>2</b>	<b>2</b>	<b>82</b>	<b>14</b>	<b>17</b>	<b>319</b>	<b>621</b>	<b>955</b>	<b>493</b>	<b>451</b>	<b>181</b>	<b>25545</b>	<b>7740</b>	<b>20602</b>	<b>398</b>	<b>1569</b>	<b>45</b>
<b>No. of species</b>	<b>12</b>	<b>9</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>8</b>	<b>17</b>	<b>11</b>	<b>9</b>	<b>9</b>	<b>5</b>	<b>18</b>	<b>22</b>	<b>18</b>	<b>16</b>	<b>7</b>	<b>1</b>

**WINTER 2008**

Species	Peel & Yaigorup Lakes	Nuytsland Nature Reserve	ALL shorebird areas
Asian Dowitcher			12
Australian Pratincole			
Banded Lapwing			38
Banded Stilt	456		4044
Bar-tailed Godwit	4		14536
Beach Stone-curlew			20
Black-fronted Dotterel			561
Black-tailed Godwit			222
Black-winged Stilt	323		4123
Broad-billed Sandpiper			26
Bush Stone-curlew			4
Common Greenshank	4		672
Common Sandpiper			9
Curlew Sandpiper	9		3902
Double-banded Plover			4657
Eastern Curlew			1819
Great Knot			11538
Greater Sandplover			5156
Grey Plover			470
Grey-tailed Tattler	1		3102
Hooded Plover	24		436
Latham's Snipe			32
Lesser Sandplover			1617
Little Curlew			2
Long-toed Stint			
Marsh Sandpiper			48
Masked Lapwing			1504
Oriental Plover			
Oriental Pratincole			
Pacific Golden Plover			201
Pectoral Sandpiper			4
Pied Oystercatcher	10	40	4252
Red Knot			1911
Red-capped Plover	89	64	15491
Red-kneed Dotterel			40
Red-necked Avocet	6		2837
Red-necked Stint	31	94	10012
Ruddy Turnstone		1	503
Ruff			
Sanderling			923
Sharp-tailed Sandpiper			480
Sooty Oystercatcher		6	924
Terek Sandpiper			369
Wandering Tattler			
Whimbrel	2		1454
Wood Sandpiper			2
Unidentified small wader			40
Unidentified medium wader			2
Unidentified large wader			
<b>TOTAL</b>	949	167	97995
<b>No. of species</b>	12	5	42

Species	Tweeds Estuary	Brunswick River estuary	Richmond River estuary	The Broadwater	Clarence River	Barren Box Swamp	Hastings River	Manning River / Farquhar	Dubbo Sewage Ponds	Port Stephens	Hunter Estuary	Lake Macquarie Entrance	Parkes Sewage Farm	Tuggerah Lakes	Parramatta River	Botany Bay	Nericon Swamp	Fivebough Swamp	Lake Illawarra	Shoalhaven Estuary	Tullakool Saltworks	Ulladulla	North Darwin	Darwin Harbour
Asian Dowitcher																								
Australian Pratincole																								
Banded Lapwing																								
Banded Stilt												3121						4						
Bar-tailed Godwit	105	20	200		540		131	295		641	936	84		114	290	480			7	448			433	
Beach Stone-curlew							2	2															2	1
Black-fronted Dotterel		6		1		7			4		3		10	3	7									
Black-tailed Godwit					40					6	165			5									878	
Black-winged Stilt	48	27	10	31		10			20		68		338	32	132	2				7	250			
Broad-billed Sandpiper																								
Bush Stone-curlew	2																							
Common Greenshank		1	4	4	6	7				13	119		10	35		5				6	2		3	1
Common Sandpiper		1											1			1							4	10
Curlew Sandpiper			16					1			185			70	11	1				1			1	
Double-banded Plover							2	4						1						6				
Eastern Curlew	42	6	52		15	40	47		551	328	6					129				124			34	24
Great Knot			22		120		2				2					1							3376	
Greater Sandplover			16																				1001	5
Grey Plover								1					3			1							30	26
Grey-tailed Tattler	8	13	91		36	6	1		18	19	2			8		51				11			33	2
Hooded Plover																								
Latham's Snipe		10									11		1	5	3									
Lesser Sandplover							2		1														52	
Little Curlew																								
Long-toed Stint																								
Marsh Sandpiper				1							47								20		1	9		
Masked Lapwing	3	22	2	24	8	25	5	26	14	29	114	3		77	92	7		37	6	54	2	16	7	8
Oriental Plover																								
Oriental Pratincole																								
Pacific Golden Plover		22	186		12			84		28	169		2	16	2	23				144			27	16
Pectoral Sandpiper																								
Pied Oystercatcher	2	12	4		18		6	19		134	11	14	139	6		48				23		2	12	
Red Knot											15			1		2							500	
Red-capped Plover		5	3		2	25		76		37	6		380	10		7		2	21	94	100		24	
Red-kneed Dotterel						2					37				1			14		1	7			
Red-necked Avocet	9					1				2702					61									
Red-necked Stint			80		2			150		41		15		169		165			14	72	300		131	
Ruddy Turnstone		1	21		3					2			2	34		23							58	
Ruff																								
Sanderling			9					73					60											112
Sharp-tailed Sandpiper		6			162	3		12					222	72	99	4		200		6	70			
Sooty Oystercatcher	2	1	5		7					13	10		4	18		7				1			1	
Terek Sandpiper		1	13		7						3			1									9	1
Wandering Tattler		1														1								
Whimbrel	20	2	26		69	35	2		40	1	1					71				5			68	84
Wood Sandpiper													3											
Unidentified small wader																					3			200
Unidentified medium wader																								200
Unidentified large wader																								
<b>Max summer TOTAL</b>	<b>241</b>	<b>147</b>	<b>726</b>	<b>61</b>	<b>1047</b>	<b>51</b>	<b>201</b>	<b>625</b>	<b>38</b>	<b>1554</b>	<b>4381</b>	<b>109</b>	<b>4296</b>	<b>637</b>	<b>659</b>	<b>916</b>	<b>0</b>	<b>220</b>	<b>48</b>	<b>654</b>	<b>740</b>	<b>18</b>	<b>5508</b>	<b>136</b>
<b>No. of species</b>	<b>10</b>	<b>18</b>	<b>18</b>	<b>5</b>	<b>16</b>	<b>8</b>	<b>8</b>	<b>17</b>	<b>3</b>	<b>14</b>	<b>21</b>	<b>7</b>	<b>15</b>	<b>19</b>	<b>10</b>	<b>20</b>	<b>0</b>	<b>6</b>	<b>4</b>	<b>17</b>	<b>8</b>	<b>2</b>	<b>23</b>	<b>11</b>
<b>Years of summer Data</b>	<b>18</b>	<b>8</b>	<b>24</b>	<b>3</b>	<b>24</b>	<b>4</b>	<b>13</b>	<b>7</b>	<b>9</b>	<b>13</b>	<b>23</b>	<b>6</b>	<b>11</b>	<b>18</b>	<b>29</b>	<b>29</b>	<b>5</b>	<b>10</b>	<b>27</b>	<b>29</b>	<b>5</b>	<b>2</b>	<b>23</b>	<b>6</b>

**SUMMER 29**

**Qld (from south to north)**

**SA (from east to west)**

Species	Moreton Bay	Great Sandy Straight	Mackay	Gladstone	Bowen	Burdekin River Delta	Charon Point	Bar Plain Beach - Broad Sound	Houghton River	Townsville	Bushland Beach	Cairns area	Port MacDonnell	Carpenter Rocks	Bool Lagoon	Canunda National Park	Rivoli Bay	Beachport	Lake George	Lagoes Swamp	Lake St Clair	Lake Eliza	Lake Robe	
Asian Dowitcher																								
Australian Pratincole																								
Banded Lapwing																								
Banded Stilt																								
Bar-tailed Godwit	9380	N	8	N	N	147	70	43	86	120	100	213												
Beach Stone-curlew		O	6	O	O							2												
Black-fronted Dotterel	1	T		T	T																			
Black-tailed Godwit	473					12						11												
Black-winged Stilt	468	C		C	C																			
Broad-billed Sandpiper	1	O		O	O																			
Bush Stone-curlew		U		U	U																			
Common Greenshank	167	N		N	N				6			16							25					
Common Sandpiper		T		T	T	1																		
Curlew Sandpiper	1548	E		E	E							101		2									5	
Double-banded Plover		D		D	D											1	1							
Eastern Curlew	1436		192			7	25	13	9	7	18	21		1										
Great Knot	727					5310	2300	340	1100	4000	2004	569												
Greater Sandplover	289					12			21			73												
Grey Plover	32					6			14	5														
Grey-tailed Tattler	991					126			18	18		72												
Hooded Plover														2		15		6	2					
Latham's Snipe	4																							
Lesser Sandplover	1069					40	60	240	32			37												
Little Curlew																								
Long-toed Stint																								
Marsh Sandpiper	21																							
Masked Lapwing	78											41	32	30			10	2	26		23	49	16	
Oriental Plover																								
Oriental Pratincole																								
Pacific Golden Plover	515									24				1		23						78	90	
Pectoral Sandpiper																								
Pied Oystercatcher	341					7	2	2		2	20	7	19	17		8	3	16						
Red Knot	21					350	11		22			5												
Red-capped Plover	201					80	5	5					56	11		43	21	1	93		33	259	25	
Red-kneed Dotterel																								
Red-necked Avocet																								1
Red-necked Stint	4380					350		110				171	502	481		50	65		1081		13	692		
Ruddy Turnstone	28												27	148		23	71	37						
Ruff																								
Sanderling						2										261		50						
Sharp-tailed Sandpiper	1868											7	30	60									50	
Sooty Oystercatcher														4				3						
Terek Sandpiper	8					5			6			26												
Wandering Tattler																								
Whimbrel	1139		3			26	4		24	50		14												
Wood Sandpiper																								
Unidentified small wader	17																		8					
Unidentified medium wader													120											
Unidentified large wader																								
<b>Max summer TOTAL</b>	25203	--	209	--	--	6481	2477	753	1338	4226	2142	1368	786	757	0	424	171	115	1236	0	147	1145	41	
<b>No. of species</b>	25	--	4	--	--	16	8	7	11	8	4	17	6	11	0	8	6	7	6	0	4	6	2	
<b>Years of summer Data</b>	29	22	22	11	20	1	1	1	1	16	7	26	28	28	7	6	7	1	16	2	9	11	9	

**SUMMER 29**

**SA (from east to west)**

Species	Lake Hawdon	Fox and Pub Lakes	Guichen Bay	Boatswain Point	Wright Bay	Nadzab Lagoon	Coorong	Kangaroo Island	Gulf of St Vincent	Pine Point (Yorke)	Black Point	Stansbury / Oyster Point	Coobowie Inlet	Troubridge Island / Shoal	Goldsmith Beach to Wattle Pt	Port Victoria	Munderoo Bay to Tickera Bay	Port Pirie Coast	Winninowie CP	Telowie Beach	Port Augusta Saltfields	Franklin Harbour	Sleaford Bay	
Asian Dowitcher																								
Australian Pratincole																								
Banded Lapwing									90											15				
Banded Stilt							170024		3252								39				4500			
Bar-tailed Godwit							58	16	533							50		156						2
Beach Stone-curlew																								
Black-fronted Dotterel		3																						
Black-tailed Godwit									3															
Black-winged Stilt	1						341	58	358													4		
Broad-billed Sandpiper																								
Bush Stone-curlew																								
Common Greenshank	11	2					382	30	525	18	18	11	1	2	8	20		1		25			11	
Common Sandpiper								2	4															1
Curlew Sandpiper							41	82	473	4	2	29		47		14		96	91					
Double-banded Plover			3				1		9		1					1								
Eastern Curlew							47	3	29									15	3	2			2	
Great Knot								43	207					7		43		4						
Greater Sandplover									8		1							4						
Grey Plover								92	237					9	3	46		65					59	
Grey-tailed Tattler									4															
Hooded Plover							30	21	5		5												26	
Latham's Snipe		17																						
Lesser Sandplover									8							1								
Little Curlew																								
Long-toed Stint																								
Marsh Sandpiper							1		15		15													
Masked Lapwing	84	3					402	234	142		2					2				3			8	
Oriental Plover																								
Oriental Pratincole																								
Pacific Golden Plover							24		2		1				2			1						
Pectoral Sandpiper									1															
Pied Oystercatcher			2				343	280	125		1		2	9	8	18		24	26	48		19	3	
Red Knot								23	2682					48		749		775						
Red-capped Plover	37	4	34					112	3112	150	650		7	3	50	460	11	370	770	384	54		16	
Red-kneed Dotterel		22						4	121															
Red-necked Avocet							186		696															
Red-necked Stint		160	18				3355	424	7757	310	830	163	45	500	457	630	28	800	1021	800	58	236	152	
Ruddy Turnstone			7	50				112	84		21			57	44	40		62						
Ruff																								
Sanderling							87																	101
Sharp-tailed Sandpiper		200					3009	18	1749			5		5		56		18	1			81		
Sooty Oystercatcher			3				11	87	166	2	6	18		11	3				8			2	21	
Terek Sandpiper									2															
Wandering Tattler																								
Whimbrel								2	26															
Wood Sandpiper							1		2															
Unidentified small wader							313		200															
Unidentified medium wader									160							451								
Unidentified large wader																								
<b>Max summer TOTAL</b>	133	407	67	50	0	0	178356	1122	22787	484	1534	226	55	698	554	2107	39	1976	1920	1277	4616	421	297	
<b>No. of species</b>	4	8	6	1	0	0	19	18	32	5	13	5	4	11	8	14	2	16	7	7	4	10	6	
<b>Years of summer Data</b>	9	7	3	2	4	4	14	6	26	3	5	29	1	4	3	6	7	2	2	1	3	4	4	

## SUMMER 29

## SA (from east to west)

## Tas (from Hobart region north)

Species	Gunyah Beach	Sensation Beach	Kellidie Bay	Horse Peninsula	Long Nose	Lake Newland	Venus Bay	Baird Bay	Sceale Bay	Streaky Bay	Eyre Island	St Peter Island	Murat Bay	Tourville Bay	Derwent	Marion Bay	Lake Dulverton	Moulting Lagoon	Scamander	Maurouard Beach	Georges Bay	Policemans Point	
Asian Dowitcher																							
Australian Pratincole																							
Banded Lapwing						2	3																
Banded Stilt						304			1100			35		7									
Bar-tailed Godwit								5	1	44	101	571		72	85	7		12		1		22	
Beach Stone-curlew																							
Black-fronted Dotterel																							2
Black-tailed Godwit											2	6											
Black-winged Stilt						5																	
Broad-billed Sandpiper																							
Bush Stone-curlew																							
Common Greenshank			10		4		17	113	27	46	64	135	139	190	17			22				6	
Common Sandpiper												2											
Curlew Sandpiper					5			70	114	50		645	35	26	19								
Double-banded Plover																			1	2	6	23	
Eastern Curlew												15	2	5	30			9				30	
Great Knot					22			144	1	90	350	274		269									
Greater Sandplover								6				1		4									
Grey Plover				1	40	5	66	360	5	263	99	112	70	141									
Grey-tailed Tattler												4		1									
Hooded Plover	16					6	3			6		5		7		11			5	35	2	4	
Latham's Snipe																							
Lesser Sandplover					3	6		1	1														
Little Curlew																							
Long-toed Stint																							
Marsh Sandpiper										3													
Masked Lapwing			10			72	22	4			21	61	18		67		21	84				62	3
Oriental Plover																							
Oriental Pratincole																							
Pacific Golden Plover										9		5			30								
Pectoral Sandpiper																							
Pied Oystercatcher	56		18	43	84	25	155	47	5	96	186	258	88	225	520	114		206	16	7	264	26	
Red Knot					27			78		70	280	497		553	2								
Red-capped Plover	15		65	5	28	90	17	119	79	167		128			42	19		29	30	7	36	14	
Red-kneed Dotterel																							
Red-necked Avocet						142				34													
Red-necked Stint			40	2	251	444	272	788	721	1137	478	951	635	1429	971	600			140		660	52	
Ruddy Turnstone					14			35	222	25	56	101	23	63						23		31	
Ruff																							
Sanderling		245	60		224	304		2	451		9			7									170
Sharp-tailed Sandpiper					133		32	133	160	82		136	196	773									
Sooty Oystercatcher	32	3	1	31	33	16	83	71	4	32	61	129	119	98	10	3		1		5	2	1	
Terek Sandpiper												1											
Wandering Tattler																							
Whimbrel									1														
Wood Sandpiper																							
Unidentified small wader				1	58	37	4	15															
Unidentified medium wader				1	30	11		65			10												
Unidentified large wader				2		3					51												
<b>Max summer TOTAL</b>	119	248	204	86	956	1472	674	2056	2935	2132	1747	4072	1325	3870	1793	754	21	363	155	78	1056	321	
<b>No. of species</b>	4	2	7	5	13	13		16	18	14	11	22	10	17	11	6	1	7	5	7	11	9	
<b>Years of summer Data</b>	9	1	3	5	6	5	4	9	10	13	2	2	3	4	37	28	3	21	5	7	9	3	

**SUMMER 29**

1)

**Tas (from Hobart region north)**

**Vic (from east to west)**

Species	Great Musselroe Bay	Cape Portland	Lades Beach	George Town Reserve	Keiso, Tamar Estuary	Narantapu National Park	Moorland Point	Robbins Passage	King Island	Mallacoota	Lake Reeve	Jack Smith Lake	Corner Inlet	Shallow Inlet	Anderson Inlet	Western Port Bay	East Port Phillip	Laverton/Altona	Werribee / Avalon	St. Leonards Salt Lake	Swan Bay & Mud Islands	
Asian Dowitcher																						
Australian Pratincole																						
Banded Lapwing		20			5																	
Banded Stilt																						
Bar-tailed Godwit		8		24				350	1	33			10070	58		402					449	
Beach Stone-curlew																						
Black-fronted Dotterel									1								13		27			
Black-tailed Godwit														5					6		10	
Black-winged Stilt														3			207	42	294		29	
Broad-billed Sandpiper																						
Bush Stone-curlew																						
Common Greenshank	15								3				77	95	146	67	2	9	18		56	
Common Sandpiper																	3		1			
Curlew Sandpiper		112		1	15			72	22				295	417	40	1415	1	774	1103		430	
Double-banded Plover		2			1			4	20			2	6	2		4			49		4	
Eastern Curlew				23		15		89		2			857	219	154	675			1		42	
Great Knot								2					5	42							18	
Greater Sandplover													4									
Grey Plover								65					250								52	
Grey-tailed Tattler								5						2		39					23	
Hooded Plover		3	2		2	1		49	34				7		2						6	
Latham's Snipe									1								57					
Lesser Sandplover								1					10			3					1	
Little Curlew																						
Long-toed Stint																						
Marsh Sandpiper									1					19				19	1			
Masked Lapwing	6	45	3	21	200	4	15	311	311	5	16	30	5	57	29	170	222	28	245	15	64	
Oriental Plover																						
Oriental Pratincole																						
Pacific Golden Plover		98	8				4	93	12					204		13		22	5		21	
Pectoral Sandpiper																			4			
Pied Oystercatcher	56	56	48	28	89	63	2	663	44	13			1037	4	5	357		15	57	2	14	
Red Knot								819					110	4		7					20	
Red-capped Plover	4	57	11		69	12	6	56	48			55	20	35	6	97	13	25	103	10	407	
Red-kneed Dotterel																	23		13			
Red-necked Avocet																3		55	175			
Red-necked Stint	180	1070	44	25	420	115		10975	1217		2212	37	15489	3024	2128	5477	11	2068	7900		2850	
Ruddy Turnstone		28		11	14		120	1355	459				30			18		1			34	
Ruff																						
Sanderling								5	35				150	270								
Sharp-tailed Sandpiper		4	21					57	2				25	91	200	275	1503	304	2884		361	
Sooty Oystercatcher	11	29	3	4	19			332	57	3			549	35	1						2	
Terek Sandpiper																						
Wandering Tattler																						
Whimbrel				4					1				8	2		19						
Wood Sandpiper																						
Unidentified small wader															4							
Unidentified medium wader																						
Unidentified large wader																						
<b>Max summer TOTAL</b>	272	1454	140	141	827	210	147	15304	2268	56	2228	124	29004	4588	2616	8719	1049	3362	12886	27	4197	
<b>No. of species</b>	6	13	8	9	10	6	5	20	17	5	2	4	20	20	10	17	11	12	18	3	21	
<b>Years of summer Data</b>	2	35	17	30	13	14	5	23	4	7	13	7	29	10	15	29	29	28	29	29	29	

**SUMMER 29**

**Vic (from east to west)**

**WA (from n. to**

Species	Point Richards	Lake Lorne	Begola	Lake Connewarre area	Moolap Saltworks	Black Rocks / Breamlea	Belmont Common	Bendigo Sewage Farm	Kerang Lakes	Lake Corangamite area	Swan Hill	Lake Bulloke	Port Fairy	Hamilton	Fitzroy River Mouth	Douglas area (Wimmera)	Lake Wyn Wyn area	Lake Hindmarsh	Lake Albacutya	Mildura	Discovery Bay to Glenelg R.	Dampier Peninsula	Broome	Roebuck Bay	
Asian Dowitcher																									
Australian Pratincole																									
Banded Lapwing											149														
Banded Stilt																									
Bar-tailed Godwit				6																		1	52	9879	
Beach Stone-curlew																									
Black-fronted Dotterel	14	9	6	7	8		15	29													7	2			
Black-tailed Godwit				4																				685	
Black-winged Stilt	1	5		400	245		11	26		40	58		91	4							260	1	23	381	
Broad-billed Sandpiper																								131	
Bush Stone-curlew																									
Common Greenshank			2	154	67	1					5		19	1	2							9	5	5	560
Common Sandpiper																							9	17	26
Curlew Sandpiper				833	211																		1	15	1403
Double-banded Plover				8									20		3										
Eastern Curlew				1																				5	638
Great Knot																							1	211	21342
Greater Sandplover																							179	1244	4513
Grey Plover																							24	31	254
Grey-tailed Tattler																							102	8	2765
Hooded Plover						6							63		46							3			
Latham's Snipe		13	15	5	3		31						25		5										
Lesser Sandplover																							2	73	34
Little Curlew																								727	1229
Long-toed Stint																									
Marsh Sandpiper				79	62						7														2
Masked Lapwing	47	13	2	120	97	23	6			168	43		202	56							54	18		44	
Oriental Plover																								14	1373
Oriental Pratincole																									81
Pacific Golden Plover													2		1								21	14	39
Pectoral Sandpiper				1																					
Pied Oystercatcher				12	20								40		13							105	7	29	36
Red Knot				3																			27		3171
Red-capped Plover	17			229	107	30		15		472	32		327		39						82	12	50	109	1682
Red-kneed Dotterel				48				19						10								14	2		
Red-necked Avocet					1					15	108											173			39
Red-necked Stint	53			5033	1028	410		5		2791	63		1984		223						130		83	302	4384
Ruddy Turnstone													45										39	157	287
Ruff																									
Sanderling													320		2							283	23	251	
Sharp-tailed Sandpiper	7			2995	491					592	12		246	15	65						64	14	5	3	263
Sooty Oystercatcher					1								3										33	6	33
Terek Sandpiper																								2	726
Wandering Tattler																									
Whimbrel																							34	25	1188
Wood Sandpiper																									
Unidentified small wader				250																					
Unidentified medium wader				500																					
Unidentified large wader																									
<b>Max summer TOTAL</b>	<b>139</b>	<b>34</b>	<b>25</b>	<b>10688</b>	<b>2341</b>	<b>470</b>	<b>63</b>	<b>94</b>	<b>0</b>	<b>4059</b>	<b>477</b>	<b>0</b>	<b>3387</b>	<b>86</b>	<b>399</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>611</b>	<b>448</b>	<b>647</b>	<b>3369</b>	<b>51371</b>
<b>No. of species</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>18</b>	<b>13</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>9</b>	<b>0</b>	<b>14</b>	<b>5</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>10</b>	<b>19</b>	<b>25</b>	<b>27</b>
<b>Years of summer Data</b>	<b>29</b>	<b>28</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>14</b>	<b>11</b>	<b>12</b>	<b>9</b>	<b>5</b>	<b>11</b>	<b>8</b>	<b>8</b>	<b>13</b>	<b>9</b>	<b>9</b>	<b>5</b>	<b>9</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>20</b>	

**SUMMER 29**

s.)

**WA (from north to south)**

Species	Roebuck Plains Lakes	Bush Point (Roebuck Bay)	Cape Gordon to Cape Villaret	Coast north of 80 Mile	80 Mile Beach	Shark Bay	Hutt Lagoon	Swan River & Rottnest Island	Woodman Point	Garden Island	Swan Coastal Plain Lakes	Peel & Yalgorup Lakes	Vasse-Wonnerup Estuary	Broadwater (Busselton)	Wagin Lake	Wilson Inlet	Albany	Stokes Inlet	Barker Inlet (WA)	Harry Davies Farm	Lake Gore	Lake Banje-Benjenup
Asian Dowitcher		3			2																	
Australian Pratincole	35				1																	
Banded Lapwing								12	7													
Banded Stilt							60	10			4	15	3		1080						32	70
Bar-tailed Godwit		19103	10	842	51719	3056		6				13						14				
Beach Stone-curlew																						
Black-fronted Dotterel	21					113	2				3		2	12								
Black-tailed Godwit		1			52							6										
Black-winged Stilt	252	2			10	126	46	78			1500	2027	800			78					5	4
Broad-billed Sandpiper		1			35																	
Bush Stone-curlew																						
Common Greenshank	9	3		6	2534	316	5	22	2		23	95	83		1	176	58				6	
Common Sandpiper	2	3	2	8	6	21	9	1			1	8						7			1	
Curlew Sandpiper	1	27			3292	89	35	30				135	1		30			1				50
Double-banded Plover																						
Eastern Curlew		196		22	423	167						11										1
Great Knot		9489		415	128653	1099	3	7	4			10				2	119					
Greater Sandplover		5258	5	928	22885	529						1										24
Grey Plover	14	260		74	1146	64	3	24	8			21										65
Grey-tailed Tattler		196	30	113	7950	577		1	2			5										10
Hooded Plover												102								52	9	
Latham's Snipe																						
Lesser Sandplover		124	2	7	7	30		2	1													4
Little Curlew	330	37			784																	
Long-toed Stint	35					8					2	5										
Marsh Sandpiper	177				127	1	2					3	1									
Masked Lapwing	3																					
Oriental Plover	14	5364			17452																	
Oriental Pratincole	180	20960			1100																	
Pacific Golden Plover	1	33		1	73	3		2			2											21
Pectoral Sandpiper	1										1											1
Pied Oystercatcher		365		78	809	287	11	84		2		8										21
Red Knot		27			23123	312						14										1
Red-capped Plover	24	1480	5	543	6752	624	139	162	44	12	1603	163	200	69	55	98	23				39	23
Red-kneed Dotterel	3					21					1											
Red-necked Avocet						1	1	13	4		29	356	25									6
Red-necked Stint	21	1905	25	458	28443	4227	89	1225	2		132	6191	802	207	195	368	535			17	78	127
Ruddy Turnstone		189		237	2433	164	11	55	16													2
Ruff	2						1															
Sanderling		1129		208	3605	43	6	64	10	1												33
Sharp-tailed Sandpiper	430			1	205	330	18	1			4	2507	21		87	16	56			14	14	4
Sooty Oystercatcher			4	1	25	4				2						3	1					
Terek Sandpiper		199		4	4628	19		2														1
Wandering Tattler																						
Whimbrel		379		96	363	155	1					5										5
Wood Sandpiper	138	267				24	2															
Unidentified small wader						120										5						
Unidentified medium wader						138		5										8				
Unidentified large wader						150																
<b>Max summer TOTAL</b>	1693	67000	83	4042	308637	12621	284	1640	82	24	1961	11675	1938	288	1448	765	1105	0	83	140	71	278
<b>No. of species</b>	21	27	8	19	30	28	19	20	11	5	13	22	10	3	6	10	20	0	3	4	6	6
<b>Years of summer Data</b>	1	6	3	1	16	5	4	24	8	6	15	10	8	3	1	26	24	3	1	1	4	2

## SUMMER 29

## WA

Species	Helm's Lake	Warden Lakes (Esperance)	Lake Bannitup	Nuytsland Nature Reserve	ALL shorebird areas
Asian Dowitcher					5
Australian Pratincole					36
Banded Lapwing					303
Banded Stilt		200	2		183862
Bar-tailed Godwit					112723
Beach Stone-curlew					15
Black-fronted Dotterel		2			340
Black-tailed Godwit					2370
Black-winged Stilt					9259
Broad-billed Sandpiper					168
Bush Stone-curlew					2
Common Greenshank				4	6946
Common Sandpiper		1			153
Curlew Sandpiper			8		14644
Double-banded Plover					187
Eastern Curlew					6860
Great Knot					182749
Greater Sandplover				1	37014
Grey Plover					4146
Grey-tailed Tattler					13361
Hooded Plover	39	6			644
Latham's Snipe					206
Lesser Sandplover					1854
Little Curlew					3107
Long-toed Stint					50
Marsh Sandpiper					634
Masked Lapwing		7			4918
Oriental Plover					24217
Oriental Pratincole					22321
Pacific Golden Plover					2229
Pectoral Sandpiper					9
Pied Oystercatcher				21	8906
Red Knot					34349
Red-capped Plover	73	18	27	45	25197
Red-kneed Dotterel					363
Red-necked Avocet				2	4842
Red-necked Stint	130	10	2000	42	155309
Ruddy Turnstone					7253
Ruff					3
Sanderling					8666
Sharp-tailed Sandpiper			11	2	23878
Sooty Oystercatcher				11	2321
Terek Sandpiper					5664
Wandering Tattler					2
Whimbrel					3998
Wood Sandpiper					437
Unidentified small wader					1235
Unidentified medium wader					1699
Unidentified large wader					206
<b>Max summer TOTAL</b>	<b>242</b>	<b>220</b>	<b>2048</b>	<b>116</b>	<b>904406</b>
<b>No. of species</b>	<b>3</b>	<b>7</b>	<b>5</b>	<b>8</b>	<b>46</b>
<b>Years of summer Data</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>27</b>	