A. - Jessop

VICTORIAN WADER STUDY GROUP

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BULLETIN No 9 MAY 1985

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EDITORIAL

The table on page 9 shows that a total of 5317 birds were banded during 1984. This demonstrates that the VWSG has lost none of its drive. The figure exceeds quite comfortably those for the previous two years and the 1985 results, if numbers banded during the first six months are any indication may well be better still. Expeditions to N.W. Australia by those with deep pockets and ample free time (or whose professional activities demand that they be there) may hit the headlines but the unremitting year-round work of catching, pro - cessing and recording goes quietly on.

Of course the quality of a catch is every bit as important as the numbers caught and increasing attention is being given to this so that gaps may be filled and less common species (and those more difficult to catch) may not be overlooked.

We look forward to the day when analysis of results begins to appear and be available for publication.

The Influence of Tide Height on Waders' Choice of Roost Sites

E. L. JONES

School of Economics

La Trobe University

Bundoora 3083, Vic.

Very high tides are well known to cause waders to shift roosts as their preferred sites are flooded. There seems however to be no Australian publication reporting the regularity of the effect or drawing attention to the implications. This note accordingly comments on the distinct see-saw effect about a given tide height at Shallow Inlet, Vic., in 1984: at or above a high tide of 1.28 metres the bulk of small waders resorted to roosting on the sand spit at Sandy Point; at or below a high tide of the next interval down, 1.24 metres, the vast majority remained to roost on islands or salicornia fringes of the upper tidal basin, where they feed on the mudflats at low tide. This is apparent from table 1.

Shallow Inlet consists of a large tidal basin and a long winding inlet leading off Waratah Bay. At the southern end between the Inlet and Waratah Bay is a large sand spit - Sandy Point - which includes various dune systems. The tidal basin and the dune systems operate as a single system as far as wader occupation is concerned, but as this note points out they do so most crucially at the highest tides.

The species considered in Table 1 are Red-necked Stints, Curlew Sandpipers, and unidentified small waders. The last category

Table 1

Choice of roosting sites on the sandy Point or in the tidal basin by small waders at Shallow Inlet in 1984 (arranged by ascending height of tide)

1. Height of tide	2. Percentage of Red-necked Stints, Curlew Sandpipers, and unidentified small waders on the Point	3. Total number waders of all species present	4. Total of species in 2 as percentage of 3	5. Month	6. Time of high tide	7. Wind Direction	8. Wind Strength
1.12 m.	6	4,722	78	Mar.	11.40	SE	1-2
1.14	1	2,715	80	Nov.	18.49	SW,W	2-3
1.16	1	10,934	92	Feb.	15.00	W	2
1.18	8	3,768	87	Dec.	18.00	W	3-4
1.24	1	16,092	97	Jan.	11.50	NE	1
1.28	96	1,986	72	Oct.	14.20	WSW	3-4
1.36	100	928	78	Sep.	16.30	E,S	2-4
1.38	89	1,260	58	Apr.	11.40	E	4
1.43	100	302	13	Jun.	13.06	SSE,SSW	4-6
1.43	100	127	28	Jul.	11.40	W	5
1.79	100	490	14	May	13.55	WNW	1

is almost certainly made up of stints and Curlew Sandpipers on most occasions, being chiefly distant flocks seen on the mud flats where these species feed. Altogether these birds make up from 72 per cent. to 97 per cent. of all waders present except in the winter when total numbers are low and sizeable flocks of Double-banded Plover and Sanderling affect the proportion.

Observations were made monthly (except for August) and I particularly acknowledge the help of Brett Lane, Mike and Pauline Tarrant and Jim Wilson in keeping the count series going. It is difficult to decide what high tide time to report; published times are for Waratah Bay and the peak is considerably later in the upper basin. However the ranking of tide heights is preserved in any series.

Typically stints and Curlew Sandpipers feed on the mud flats in the main basin. As the tide rises they congregate, often still feeding, on exposed banks. If the tide is a low one they may remain on these banks, which remain uncovered, and spread out to feed again on the dropping tide. As somewhat higher tides rise they cluster on the salicornia on the west side of the basin or on islands on either side - the choice of side seeming to depend mainly on wind direction, if the wind is at all strong, though in detail the behaviour is complicated. If the tide is a high one (see table 1) they eventually leave and fly in small and medium-sized flocks low over the water towards sheltered spots among the dunes on the Point, some 5-7 kilometres away. They are rarely seen on these flights (which do not last long) by observers along the route, nor are they often seen actually arriving on the Point. Sometimes other species such as Lesser Golden Plover and at very high tides Eastern Curlew make a similar move. Obviously this exchange between the mid-Basin and the Point, a return journey of up to 14 kilometres, imposes a

heavy extra demand on energy, presumably of some significance for small waders in particular.

Various influences may impinge on the switch of roosting sites. It is cold season rather than warm season behaviour; but not entirely, since 96 per cent. of 1,431 birds moved to the Point in October and only one per cent. of 2,171 birds in November. It is strong wind behaviour; but not entirely, since only eight per cent. moved in December when the wind strength was force 3-4 but 100 per cent. moved in May when the wind force was only 1. Wind direction seems immaterial as regards exit from the basin, although as mentioned it does affect choice of the side of the basin to roost on when the birds stay there. Time of tide seems unimportant. Height of tide does seem to be the main determining factor, with a very sharp alteration indeed in basin/Point preferences either side of the 1.24m. - 1.28 m. range. As the height of high tide moves across that range there is an immediate tilt one way or the other in the location of the preferred roosts.

The importance of the dry sand spit for small regular roosts and major overflow roost sites has already been mentioned in this Bulletin, in an article which contains further details of the counts and of Shallow Inlet waders in general. [1] The sand spit, or Point, is of great importance to several species which make it their main home at any tide. A Fisheries & Wildlife study recommended that the mud flats of the basin be made a reserve, but it is clear that the Point also needs to be included.

The Point is under increasing recreational pressure, the main cause of increasing disturbance being wind-surfing but also including horse-riding, walking, fishing and driving. Should these or other activities disturb the sheltered roost sites on the Point too much, waders may be obliged to occupy unfavourable sites high up

against vegetation in the basin, where one of the hazards is predation by foxes. Similar conservational considerations probably apply in other locations where overflow roosts are resorted to at very high tides. Marginal roost sites need to be preserved as well as regular ones.

1. E. L. Jones, 'Shallow Inlet, Victoria, as a wader resort', Victorian Wader Study Group Bulletin 8 (1984), pp. 26-39.

WADER BANDING TOTALS - VICTORIA - 1984

	JANUARY TO JUNE			JULY TO DECEMBER		
	NEW	RETRAP	TOTAL	NEW	RETRAP	TOTAL
Pied Oystercatcher	4	10	14	-	-	-
Masked Lapwing	1	-	1	12	-	12
Grey Plover	2	-	2	-	-	-
Lesser Golden Plover	8	-	8	17	4	21
Mongolian Plover	1	-	1	-	-	-
Doublebanded Plover	98	18	116	58	12	70
Redcapped Plover	36	25	61	-	-	-
Rednecked Avocet	36	1	37	34	-	34
Ruddy Turnstone	4	-	4	1	1	2
Eastern Curlew	-	-	-	48	2	50
Greytailed Tatler	3	-	3	-	-	-
Terek Sandpiper	-	-	-	1	1	2
Latham's Snipe	20	-	20	-	-	-
Bartailed Godwit	-	-	-	44	1	45
Red Knot	41	1	42	63	-	63
Great Knot	4	-	4	32	3	35
Sharptailed Sandpiper	55	2	57	32	2	34
Rednecked Stint	1066	446	1512	1149	265	1414
Curlew Sandpiper	666	106	772	736	145	881
	2045	609	2654	2227	436	2663

VICTORIAN WADER CATCHES
1975 TO 31 DECEMBER 1984

	NEW	RETRAP	TOTAL
Pied Oystercatcher	193	85	278
Sooty Oystercatcher	4	1	5
Masked Lapwing	122	3	125
Grey Plover	29	-	29
Lesser Golden Plover	63	8	71
Redkneed Dotterel	116	11	127
Hooded Plover	12	1	13
Mongolian Plover	53	2	55
Doublebanded Plover	910	85	995
Large Sand Plover	11	-	11
Redcapped Plover	361	129	490
Blackfronted Plover	47	2	49
Blackwinged Stilt	9	-	9
Rednecked Avocet	128	1	129
Ruddy Turnstone	79	1	80
Eastern Curlew	93	2	95
Greytailed Tatler	6	-	6
Greenshank	1	-	1
Terek Sandpiper	9	1	10
Latham's Snipe	51	-	51
Bartailed Godwit	361	1	362
Red Knot	500	19	519
Great Knot	156	6	162
Sharptailed Sandpiper	2032	44	2076
Little Stint	1	-	1
Rednecked Stint	19259	3813	23072
Longtoed Stint	1	-	1
Curlew Sandpiper	6822	873	7695
Sanderling	13	-	13
29 Species	31442	5088	36530

In addition, the Group has been involved in handling a further 11,544 waders during joint operations with local groups in other States. If these are included the VWSG has now been involved in the catching of 48,074 waders.

ANNUAL WADER BANDING TOTALS BY VWSG IN VICTORIA

CALENDAR YEAR	NEW	RETRAPS	TOTAL
1975	9	-	9
1976	616	4	620
1977	482	12	494
1978	1296	42	1338
1978	7436	486	7922
1980	6121	1206	7327
1981	4561	869	5430
1982	3774	796	4570
1983	2875	628	3503
1984	4272	1045	5317
Total catches in Vic to end 1984	31442	5088	36530

LOCATION OF WADERS CAUGHT IN VICTORIA

	TO DEC 1984	1984	TOTAL
Werribee	20,174	1,014	21,188
Westernport Bay	4,922	2,149	7,071
Queenscliff/ Pt Lonsdale	3,065	1,511	4,576
Corner Inlet	1,458	-	1,458
Anderson's Inlet (Inverloch)	988	623	1,611
Altona	307	-	307
Bendigo (Sewage Farm)	143	-	143
Seaford Swamp	98	-	98
Mud Island	35	-	35
Geelong (Point Henry)	5	20	25
Seaspray (Lake Reeve)	18	-	18
	31,213	5,317	36,530

Totals include 31,442 newly banded birds and 5,088 retraps of 29 species.

RECOVERIES OF BANDED BIRDS

Pied Oystercatcher

100-81172	Adult	28.4.79	Werribee	
	Found dead	7.9.84	Swan Island, Queenscliff	25 km SSE

This is another recovery illustrating the regular movement of Pied Pystercatchers between Werribee and Queenscliff.

Doublebanded Plover

New Zealand B-31752	Juvenile	28.12.82	Cass River, Lake Tekapo, New Zealand	
	Recaptured	2.6.84	Queenscliff	2000 km WNW

This is the first New Zealand-banded Doublebanded Plover which has been caught in Australia. There have previously, however, been a number of sightings of colour-banded birds which have moved between the Lake Tekapo area (centre of South Island of New Zealand) and Victoria - and vice versa.

Sharptailed Sandpiper

040-94391	Adult	27.1.79	Werribee	
	Recovered	16.6.80	Liaoning, China (41°N 123°E)	9000 km NNW

This is the first overseas recovery of a VWSG-banded Sharptailed Sandpiper. There have, however, been recoveries in Indonesia, China and Siberia of birds banded elsewhere in Australia.

051-11062	Adult	21.3.81	Stockton, Newcastle, NSW	
	Recaptured	26.2.84	Queenscliff	890 km SW
	"	27.1.85	"	

This is the longest movement of a banded Sharptailed Sandpiper within Australia. Another bird banded on the same date was recaptured at Werribee in December 1982. These recoveries could indicate that Sharptailed Sandpipers summering in Victoria originally move in a N.E. direction on their return migration to their Arctic breeding grounds.

Rednecked Stint

032-18052	Juvenile	13.4.79	Werribee	
	Recaptured	30.12.82	Hobart, Tasmania	605 km SSE
	"	27.11.83	"	
032-35890	Adult	3.10.82	Werribee	
	Recaptured	18.12.83	Hobart, Tasmania	610 km SSE
032-33570	Juvenile	15.11.81	Inverloch, Anderson's Inlet	
	Recaptured	18.3.84	Hobart, Tasmania	500 km SSE
032-26374	Adult	9.11.80	Werribee	
	Recaptured	18.3.84	Hobart, Tasmania	620 km SSE

Rednecked Stint (cont)

032-38867	Juvenile	9.1.83	Barry Beach, Corner Inlet	
	Recaptured	18.3.84	Hobart, Tasmania	490 km SSE
032-35634	1 year old	2.10.82	Werribee	
	Retrapped	18.3.84	Hobart, Tasmania	620 km SSE
032-36299	Juvenile	4.12.82	Yallock Creek	
	Retrapped	26.2.84	Queenscliff	74 km W
	"	26.12.84	Yallock Creek	74 km E
032-35371	Juvenile	24.4.82	Stockyard Point, Westernport	
	Retrapped	18.2.84	Werribee	67 km WNW
032-36299	Juvenile	4.12.82	Yallock Creek	
	Recaptured	26.2.84	Queenscliff	74 km W
032-45862	Juvenile	15.11.81	Inverloch, Anderson's Inlet	
	Recaptured	29.1.84	Yallock Creek	52 km NNW
032-26816	F/F	27.1.80	Mud Island	
	Recaptured	18.2.84	Werribee	32 km NW
032-11760	F/F	12.12.74	Stockyard Point	
	Recaptured	27.3.82	Yallock Creek	22 km ENE
	"	26.12.84	" "	

N.B. Latest recapture is 10 years since banding

Some of the movements between Victoria and Tasmania relate to birds which were probably on migration when banded. However, at least one (and most of the movements within Victoria) appears to relate to a bird which has changed its'summering area'. It is significant that most of the movements refer to birds banded as juveniles - again indicating that the strong site faithfulness of Rednecked Stints may not be fully developed until a bird becomes adult.

Curlew Sandpiper

041-05498	Adult	18.2.84	Werribee	
	Captured	mid 4.84	Patani, Thailand (7°N 101°E)	6500 km NW

This is the first Australian-banded bird to be recovered in Thailand. The circumstances of recovery were most unusual. Jonathan Starks, a VWSG member participating in the Interwader 84 studies, found the band on the leg of a Blacktailed Godwit which was being used by villagers as a live decoy in a "walk-in" trap. It is presumed that the Curlew Sandpiper to which the band had originally been fitted had been trapped, killed and eaten - and the band then placed on the Blacktailed Godwit!

Note that the recovery was only two months after the bird had been originally banded at Werribee.

Curlew Sandpiper (cont)

040-97759	Adult	26.1.80	Werribee	
	Captured	5.5.84	Fujian, China (26°N 119°E)	7700 km NNW

This provides further evidence that the main northward migration route of Curlew Sandpipers is through China.

041-01052	Adult	7.12.80	Werribee	
	Recaptured	17.3.84	Hobart, Tasmania	600 km SSE
040-76138	F/F	16.11.79	Newcastle, N.S.W.	
	Recaptured	30.12.84	Queenscliff	890 km SW
041-04433	Juvenile	2.1.83	Hobart, Tasmania	
	Recaptured	18.2.84	Werribee	620 km NNW
041-13307	Juvenile	6.11.83	Hobart, Tasmania	
	Recaptured	5.5.84	Yallock Creek	560 km NNW
041-01118	Juvenile	7.12.80	Werribee	
	Recaptured	26.2.84	Queenscliff	25 km SSE
041-05677	Adult	4.9.83	Werribee	
	Recaptured	26.2.84	Queenscliff	25 km SSE
041-05690	Adult	4.9.83	Werribee	
	Recaptured	26.2.84	Queenscliff	25 km SSE
040-93559	Adult	17.3.78	Werribee	
	Recaptured	29.12.84	Queenscliff	25 km SSE

The most interesting of the movements within Australia is 041-13307 - the northward movement of a juvenile bird from Hobart to Werribee in the same year. There is increasing evidence that many first year birds move somewhat northward for the winter even though they do not return to their Arctic breeding grounds.

Otherwise the movements between locations follow a similar pattern to those of Rednecked Stints - some relate to birds on passage when banded or recaptured; a few relate to birds, mainly juveniles, which appear to have changed their summering area.

Fairy Tern

040-68661	Pullus	19.1.82	Werribee	
	Recaptured	30.6.84	Queenscliff	25 km SSE
041-05123	Pullus	7.1.84	Werribee	
	Found dead	24.5.84	Point Henry	14 km SW

Two more recoveries of Fairy Tern chicks from the colony on South Spit, Werribee, which have remained within the confines of Port Phillip Bay.

Crested Tern

071-51104	Adult	28.3.82	Queenscliff	
	found dead	5.4.84	Rosebud	24 km ESE
070-15715	Pullus	19.12.65	Beachport, South Australia	
	Recaptured	3.6.84	Queenscliff	415 km ESE
071-51253	Adult	25.2.84	Queenscliff	
	Found dead	6.10.84	Brighton	53 km NNE
071-51174	Adult	26.6.83	Queenscliff	
	Found dead	28.10.84	Apollo Bay	100 km WSW

Note the age of 070-15715 - 18½ years.

SOME 'OLDIES'

In addition to the 10-year old Rednecked Stint retrapped at Yallock Creek on 26 December 1984 and detailed in the 'Recoveries' section, the following recaptures of old birds have been made.

Redcapped Plover

032-11939	Adult	7.3.76	Werribee	
	Retrapped	19.5.84	"	(8 yrs 2 mths)
032-12881	Adult	20.11.76	Werribee	
	Retrapped	19.5.84	"	(7 yrs 6 mths)
032-13963	Adult	22.1.77	Werribee	
	Retrapped	19.5.84	"	(7 yrs 4 mths)

Curlew Sandpiper

040-91210	Adult	13.3.76	Werribee	
	Retrapped	18.2.84	"	(7 yrs 11 mths)

FURTHER SIGHTINGS OF COLOUR-MARKED BIRDS

Colour-banded and/or colour-dyed birds sighted away from their banding locations are detailed below:

Pied Oystercatcher

-	23.8.82	Altona Saltworks One blue colour-banded bird from Werribee (moved 30 km NE) - in a group of six birds	Angela Jessop
-	18.12.83	Avalon Saltworks One orange colour-banded bird from Rhyll, Phillip Island (moved 85 km NW) - in a group of four birds	Angela Jessop
-	27.4.84	Altona Saltworks One pale green colour-banded bird from Queenscliff (moved 45 km N) - in a group of 12 birds	Angela Jessop
-	21.12.83	Mud Islands One blue colour-banded bird from Werribee (moved 32 km SE), in a group of 18 of which two others had page green colour bands from Queenscliff.	Peter Menkhorst
-	11.2.84	Mud Islands Two blue colour-banded birds from Werribee (moved 32 km SE), in a group of 21 of which five others had pale green colour bands from Queenscliff.	Peter Menkhorst
-	12.8.84	Sorrento/Portsea Back Beach One blue colour-banded bird from Werribee (moved 37 km SE), and two pale green colour-banded birds from Queenscliff (moved 10 km SE).	Mike Carter
-	30.6.84	Tortoise Head, French Island One page green colour-banded bird from Queenscliff (moved 55 km ESE).	David Ap-Thomas
-	30.6.84	Hastings One blue colour-banded bird from Werribee (moved 67 km ESE), one red colour-banded bird from Yallock Creek/Stockyard Point (moved 25 km W) and one orange colour-banded bird from Rhyll (moved 17 km NNW).	Val Curtis
-	29.10.84	Rams Island, French Island One orange colour-banded bird from Rhyll (moved 5 km NE)	Juris Ozols
-	17.11.85	Little River, Werribee One orange colour-banded bird from Rhyll, French Island (moved 82 km NW). It was paired to an unbanded bird.	Clive Minton

This good number of sightings further illustrates the quite extensive movement of Pied Oystercatchers within Victoria, particularly in and between Port Phillip and Westernport Bays.

Sooty Oystercatcher

- 30.6.84 Hastings — Val Curtis
  One black colour-banded bird (right leg - metal band on left leg) had been banded as a chick on 4.1.80 at Seal Rocks, Phillip Island, and had previously been seen at Hastings on 1.8.81.

- 15.10.84 Shoreham — Graeme Hosken
  One pale green colour-banded bird (in a group of four) which had been banded as an adult on 25.6.83 at Queenscliff (moved 40 km ESE).

The latter is the longest movement so far recorded of a Sooty Oystercatcher in Victoria.

Doublebanded Plover

- 11.8.84 Point Wilson, Werribee — Clive Minton
  One yellow colour-dyed bird, with red colour bands on the right leg (left leg not seen) had been banded/dyed at Queenscliff on 30.6.84 (moved 25 km WNW).

- 1.7.84 off Mann's Beach, Corner Inlet — Clive Minton
  The colour-banded bird (left leg yellow/yellow right leg metal/ green first seen on 5-6.3.82 was again wintering in the same area (in a flock of 120 birds). It had been banded originally as a chick on 13.11.81 at Lake Tekapo, New Zealand (South Island) and had also been seen there again on 12.11.83.

Ornithologists in New Zealand have greatly increased their intensity of searching for colour/dyed banded Doublebanded Plovers in the 1984/85 spring/ summer with spectacularly successful results, as detailed below. All sightings were in the central area of South Island and were made by Ray Pierce and Ken Hughey.

Sighting details (New Zealand)		Banding details (Australia)	
1.9.84	Cass River, Lake Tekapo Female, feeding (same bird as seen 16.9.83)	6.8.83	Werribee
29.8.84 11-19.9.84	Cass River, Lake Tekapo Male, being chased. Then establishing territory (NB. First sighting is only 18 days after the bird had been banded)	11.8.84	Werribee
6.10.84	12 km S of Lake Tekapo Female, nesting	11.8.84	Werribee
22.9.84	Cass River, Lake Tekapo Female, alone	12.8.84	Yallock Creek

Doublebanded Plovers(cont)

Sighting details (New Zealand)		Banding details (Australia)	
13.10.84	Cass River, Lake Tekapo Male, holding territory	11.8.84	Werribee
14.11.84	Godley River Male, paired	11.8.84	Werribee
9.11.84	Lower Tekapo River Female, in flock	June-Aug 84	Werribee or Yallock Creek or Queenscliff
31.10.84	Ahuriri River, Mackenzie Basin Male, probably nesting	11.8.84	Werribee
1.11.84	Ahuriri River (2 km upstream of other bird) Male, probably nesting	12.8.84	Yallock Creek

This brings to 20 the number of birds recorded moving between Victoria and the South Island of New Zealand (a distance of c. 2000 km). All but one record relates to colour dyed/banded birds.

RESULTS OF COLOUR-DYEING WADERS IN JAN/FEB 1985

As part of the "Northward Migration Project" of the Australasian Wader Studies Group most of the migratory waders caught in Victoria in Jan/Feb 1985 were colour-dyed yellow on their underparts. The principal objective was to use subsequent sightings to gain insight into the departure route of these birds on their northward migration back to their Arctic breeding grounds. In particular, the N.W. Australia Wader Expedition, which will be operating in the Broome/80 Mile Beach/Port Hedland area from 22 March to 20 April, will be searching for these birds to see if that route is used (as it is on the southward migration).

During Jan/Feb the VWSG colour dyed nearly 1900 birds as detailed below:

		Sharptailed Sandpiper	Curlew Sandpiper	Rednecked Stint
13.1.85	Werribee	2	3	c. 300
26-27.1.85	Queenscliff	400	245	c. 650
23.2.85	Yallock Creek	-	25	c. 250
		402	273	c. 1200

In addition 7 Eastern Curlew, 2 Mongolian Plover and 1 Large Sand Plover were dyed at Queenscliff (or 26-27 Jan). As well as many 'local' sightings there have been a number of observations of colour dyed birds in Victoria away from the banding locations.

2 Feb	Lake Connewarre	2 Curlew Sandpipers 2 Sharptailed Sandpipers	Jenny Zimmerman
2-3 Feb	Hospital Lake	1 Sharptailed Sandpiper	Margaret Cameron
11 Feb	Barry Beach, Corner Inlet	1 Rednecked Stint	Jim Wilson
16 Feb	Bunyip River, Westernport	1 Curlew Sandpiper	Andrew Corrick
16 Feb	Stockyard Point	2 " "	Irene Svans
17 Feb	North Spit, Werribee S.F.	1 Mongolian Plover	Mark & Lisa Barter
17 Feb	Mud Island	" " " 6 Sharptailed Sandpipers	Peter Menkhorst
17 Feb	Altona Saltworks	1 Rednecked Stint	Brenda Murlis

This is a surprising number of movements considering the banding retrap evidence of strong site faithfulness by most of these species, both within and between seasons. Of particular interest are the two Mongolian Plovers colour dyed at Queenscliff on 26 January; on 16 February one was at Mud Island (within normal 'commuting' range of Queenscliff) but the other had moved to Werribee (25 km WNW) - where it remained into early March.

Observations on Wader Communities in Central Canada and Eastern Siberia

Stewart Holohan, 267 Talbot Avenue, Winnipeg, Manitoba, Canada

I have studied waders in Ireland, U.S.A., Canada, Australia, U.S.S.R. and Mongolia, but perhaps the most interesting places are Lake Baikal (53 30' N, 108 00E), U.S.S.R. particularly Irkutsk, and the Winnipeg (49 58' N, 97 10'W) area of Canada.

The Lake Baikal area is probably the most western district visited by the Palarctic waders which visit Australia. Winnipeg has a climate somewhat similar to the city of Irkutsk (52 16' N, 104 20'E) on the Angara River of the south end of Baikal. Both areas usually have sub-zero temperatures, and snow cover from early November to April. I have done field work in Irkutsk and southern Baikal and have consulted the Russian literature (Belik, Belyaev, Gagina, Komarov, Krivenko, Tolchin) but I can give more specific details for Winnipeg where I now reside. Much habitat in both areas is similar in appearance, but Lake Baikal has a higher elevation (434 M) than Lake Winnipeg (217 M) and is surrounded in many areas by high mountains on which Dotterel, Long-toed Stint and probably Grey-tailed Tattler nest. Both Lake Baikal and Winnipeg areas share 11 passage migrants including Grey Plover, Sanderling, Dunlin, Ruddy Turnstone, and Red-necked Phalarope. Closely related species that do not occur in both areas, but occupy similar ecological niches are Semipalmated Sandpiper, and Red-necked Stint, Curlew Sandpiper and Stilt Sandpiper, Greenshank and Greater Yellowlegs. The migration times for Lake Baikal waders are very similar to those of equivalent species migrating through Winnipeg.

For inland areas like Winnipeg, or Lake Baikal, wader counts must be done frequently at expected peak migration times (10 May-10 June, 5 July - 5 September), ideally at least once every five days, otherwise certain species will be missed, especially during the short period of northward migration. Counting in inland areas has a great advantage over tidal regions due to the observer never being dependent on tide times. A disadvantage is that a good study area can dry up when an important series of counts is expected; this frequently happens at the time of the southward migration (July - September). Botulism also can affect waders and waterfowl at this

time.

A popular way to study wader migration is to obtain first and last dates for a species every year. Some people think these figures are meaningful but more detailed study reveals they represent only a small fraction of the total population of a given species. At least five years of systematic counting is required for predictable patterns to emerge. To avoid this pitfall my Winnipeg wader studies were planned to provide the following: 1. dates for extremes, and mean periods of northward and southward migration, 2. peak migration numbers for each species, and mean flock sizes, 3. dates when peak numbers occur, 4. seasonal variations in numbers in different habitat types, 5. composition of wader communities and relative ranking of species in different habitat types e.g., cattail marshes, short grass pasture, boreal (taiga) forest wetlands, sewage farms, river banks, lawn grass farms, grain stubble, sandy lake shores, mud flats, etc., 6. observations on feeding ecology.

For local nesting species around Lake Baikal, or Winnipeg, arrival of some birds occurs when snow cover has just melted in early April. Killdeer, Lapwing, Common Snipe and American Woodcock are the first species to arrive, they are also among the latest species departing southwards. Other species such as Upland Sandpipers, Marbled Godwits, American Avocets and Asian Dowitchers go southwards in August. For Arctic nesting species the main northward migration time around Winnipeg and Lake Baikal is from approximately 10 May - 10 June, with most species reaching peak numbers 20-31 May. The southward migration time is more extended as many adults migrate south in July, but more adults and most juveniles move south in August to early September. Minimal numbers of waders of most species linger into October or early November. Due to sub-zero temperatures, or snow, Winnipeg and Lake Baikal usually have no waders between November and early April. Weather is of critical importance for those species which arrive northwards early (April - early May), or leave late (October - early November) in areas with severe winters like Winnipeg, or Lake Baikal. Winnipeg occupies approximately the same position in relation to South American "Austral summering" waders that southern Lake Baikal occupies in relation to South Asian, and Australian waders.

In Canada we have no organized nation-wide scheme of wader counts and data collection such as exists in Australia. There is a long-standing wader migration research project in eastern Canada under the capable guidance of Dr. Guy Morrison of the Canadian Wildlife Service. The. C.W.S. group has done a great deal of banding and colour-marking of waders on James Bay (53 30'N, 80 00'W) and has had sightings, or recoveries in eastern North and South America. The C.W.S. group has had satisfactory findings so far, and have published preliminary results. There are many people doing wader counts for the C.W.S. project on the east coast of Canada, but few in the rest of the country. On the Canadian Prairies, which is two-thirds the size of Australia, there are less than 10 people doing systematic wader counts.

Large-scale wader banding schemes outside the C.W.S. James Bay project are almost non-existant in Canada; there are small schemes in Ontario and British Columbia, and there was formerly a large scheme in Quebec and Nova Scotia (McNeil and Burton). However graduate students frequently undertake banding projects on individual species in short-term studies. A large scale wader banding project is badly needed in the Winnipeg area, but I doubt it will be carried out in the near future as wildlife biologists will generally concentrate on waterfowl. They are extremely reluctant to grant banding permits to "amateurs" no matter what their experience, or worthy their aims.

No accurate, detailed data exists on what routes Winnipeg's different wader species follow on their northward and southward migrations due to the absence of banding. It is known, however, that some species such as White-rumped Sandpipers and Hudsonian Godwits, follow the American interior on their northward migration, and the Atlantic coast on their southward migration. Other species such as Lesser Yellowlegs, Pectoral Sandpipers and Semipalmated Sandpipers occur in good numbers on both routes.

Habitat destruction is a major problem in western Canada, especially that suitable for waterfowl and waders. In Manitoba 33 percent of the wetlands have disappeared over the last 50 years and with larger machinery the rate of destruction per year is increasing. In an attempt to slow down the rate of habitat destruction, a privately funded organization, Ducks Unlimited (Canada) is doing great work. Ducks

Unlimited attempts to create and restore waterbird habitat. It is financed primarily by U.S. duck hunters, but has many naturalist members. The organization has constructed over 2300 waterbird projects, representing over 726,000 hectares. Ducks Unlimited builds water control structures with the cooperation of governments (e.g. Manitoba for Oak Hammock Marsh) and farmers, and actively manages these wetlands to produce the maximum number of birds. The prime aim is to produce successful duck broods, but countless waders also are helped. Ducks Unlimited projects provide nesting areas for American Avocet, Killdeer, Common Snipe, Marbled Godwit, Upland Sandpiper, Spotted Sandpiper, Willet, Wilson's Phalarope and other species plus staging areas for over 30 wader species.

The greatest concentrations of waders occur when local wetlands are on "drawdown". This is done by draining water from the man-made ponds of D.U. projects in a controlled sequence every few years to stimulate the growth of desirable plant species. Research has shown that the greatest density of breeding ducks occurs where there is a 50/50 mix of open water and vegetation. During the periods of "drawdown", excellent mud flats are created and are used as staging areas by great numbers of waders. In the Winnipeg area most of our big wader flocks occur on a joint Ducks Unlimited and government project known as Oak Hammock Marsh Wildlife Management Area. Oak Hammock has 1420 hectares of wetlands in four ponds, and is a classic example of a destroyed habitat restored to maximum wildlife production. The area looks similar to Werribee with dyked ponds surrounded by grain fields or grass lands. On the marsh 30 wader species are regular migrants and six species breed. In similar type marshes near Irkutsk, I found 18 wader species but would have found many more had I been around longer as the locally based ornithologists have found 49 species over many years.

In the Winnipeg area there are over 80 sewage farms, over 40 D.U. projects, many small rivers, the southern shores of Lakes Manitoba and Winnipeg, plus the remnants of two large marshes, Delta and Netley-Libau. The problem is not lack of wader haunts, but of people interested in waders. The same situation exists across the Canadian Prairies. I have tried to persuade people to study waders on a regular basis, but with limited success, here they are looked on as species to add to the

day list, or because flocks may contain a rare bird.

It is difficult to obtain data on habitat destruction in the U.S.S.R., but from personal experience and comments in the literature (Gagina, Komarov) it is obvious destruction is great in some areas. The creation of agricultural land and holiday resorts around Lake Baikal has caused the destruction of wader habitat in many places, especially on the deltas of the 336 rivers, or streams which enter the lake. The Selenga and Angara river valleys provide the most prime wader habitat in the Baikal area. The cutting down of woodlands, silting of streams, and principally the continuing development of agriculture and industry on the east side of Baikal in the Selenga Valley has destroyed a great amount of wader habitat. The Selenga Valley is the nesting area for over 11 wader species including good numbers of Asian Dowitchers (Krivenko).

In eastern Siberia there are few ornithologists (Dr. V. Sonin pers. comm.) but these people have produced some comprehensive regional bird faunas, including some excellent work on wader breeding biology (Kondratgev, Panov, Portenko). Little wader banding is done at present.

Study of the literature on Lake Baikal region (Belik, Belyrev, Gagina, Krivenko, Tolchin) shows that 49 wader species have occurred including 15 Common Arctic nesting migrants. Eleven of the Arctic species do not occur, or are rare on their northwards route in May-June, but all 15 occur on the southward route (July-September). This indicates that many species probably migrate northwards by an eastern route and southwards by a western route. Recoveries of Australian-banded waders also appear to back up this elliptical migration route. Among the species which do not occur or are rare around Lake Baikal in May-June, are Grey Plover, Lesser Golden Plover, Red-necked Stint, Sharp-tailed Sandpiper, Curlew Sandpiper, and Little Curlew, but all are common on their southward migration.

Baikal Wader Community

The Lake Baikal wader community consists of 49 species, comprising 18 breeding species, 15 regular migrants, and 16 rare migrants or vagrants. The species are as

follows (sequence Voous).

Nesting species = 18, Little Ringed Plover *Charadrius dubius*, Dotterel *Charadrius morinellus*, Lapwing *Vanellus vanellus*, Long-toed Stint *Calidris subminuta*, Ruff *Philomachus pugnax*, Common Snipe *Gallinago gallinago*, Pin-tailed Snipe *Gallinago stenura*, Swinhoe's Snipe *Gallinago megala*, Solitary Snipe *Gallinago solitaria*, Asian Dowitcher *Limnodromus semipalmatus*, Eurasian Woodcock *Scolopax rusticola*, Black-tailed Godwit *Limosa limosa*, Eurasian Curlew *Numenius arquata*, Marsh Sandpiper *Tringa stagnatilis*, Greenshank *Tringa nebularia*, Green Sandpiper *Tringa ochropus*, Wood Sandpiper *Tringa glareola*, Common Sandpiper *Actitis hypoleucos*.

Regular migrants = 15, Ringed Plover *Charadrius hiaticula*, Lesser Golden Plover *Pluvialis dominica*, Grey Plover *Pluvialis squatarola*, Sanderling *Calidris alba*, Red-necked Stint *Calidris ruficollis*, Little Stint *Calidris minuta*, Temnick's Stint *Calidris temminckii*, Sharp-tailed Sandpiper *Calidris acuminata*, Curlew Sandpiper *Calidris ferruginea*, Dunlin *Calidris alpina*, Little Curlew *Numenius minutus*, Spotted Redshank *Tringa erythropus*, Grey-tailed Tattler *Tringa brevipes*, Ruddy Turnstone *Arenaria interpres*, Red-necked Phalarope *Phalaropus lobatus*.

Vagrants or rare migrants = 15, Avocet *Recurvirostra avosetta*, Oriental Pratincole *Glareola maldivarum*, Snowy Plover *Charadrius alexandrinus*, Mongolian Plover *Charadrius mongolus*, Large Sand Plover *Charadrius leschenaultii*, Oriental Plover *Charadrius veredus*, Red-wattled Lapwing *Hoplopterus indicus*, Red Knot *Calidris canutus*, Broad-billed Sandpiper *Limosa lapponica*, Whimbrel *Numenius phaeopus*, Eastern Curlew *Numenius madagascariensis*, Redshank *Tringa totanus*, Terek Sandpiper *Tringa terek*, Grey Phalarope *Phalaropus fulicarius*.

Winnipeg Wader Community

In the Winnipeg area 40 wader species have occurred comprising 10 breeding species, 21 regular migrants, and nine rare migrants or vagrants. The species are as follows:

Nesting Species = 10, American Avocet *Recurvirostra americana*, Killdeer *Charadrius*

vociferus, Piping Plover Charadrius melodus, Common Snipe Gallinago gallinago, American Woodcock Scolopax minor, Marbled Godwit Limosa fedoa, Upland Sandpiper Bartramia longicauda, Spotted Sandpiper Actitis macularia, Willet Catoptrophorus semipalmatus, Wilson's Phalarope Phalaropus tricolor.

Regular Migrants = 21, Semipalmated Plover Charadrius semipalmatus, Lesser Golden Plover Pluvialis dominica, Grey Plover Pluvialis squatarola, Red Knot Calidris canutus, Sanderling Calidris alba, Semipalmated Sandpiper Calidris pusilla, Least Sandpiper Calidris minutilla, White-rumped Sandpiper Calidris fuscicollis, Baird's Sandpiper Calidris bairdii, Pectoral Sandpiper Calidris melanotos, Dunlin Calidris alpina, Stilt Sandpiper Micropalama himantopus, Buff-breasted Sandpiper Tryngites subruficollis, Short-billed Dowitcher Limnodromus griseus, Long-billed Dowitcher Limnodromus scolopaceus, Hudsonian Godwit Limosa haemastica, Greater Yellowlegs Tringa melanoleuca, Lesser Yellowlegs Tringa flavipes, Solitary Sandpiper Tringa solitaria, Ruddy Turnstone Arenaria interpres, Red-necked Phalarope Phalaropus lobatus.

Vagrants or Rare Migrants = 9, Black-winged Stilt Himantopus himantopus, Western Sandpiper Calidris mauri, Curlew Sandpiper Calidris ferruginea, Purple Sandpiper Calidris maritima, Ruff Philomachus pugnax, Eskimo Curlew Numenius borealis, Whimbrel Numenius phaeopus, Long-billed Curlew Numentus americanus, Grey Phalarope Phalaropus fulicarius.

The area around southern Lake Baikal is a mirror image of the Winnipeg area in many aspects of climate and physical appearance and in the wader families there are many similarities also. From the Snipe tribe Winnipeg has three species while Baikal has five including Swinhoe's Snipe. I spent three interesting mornings in Irkutsk watching this species displaying. It has a complicated display flight including a "drumming" dive from a great height and an upwards glide while making "twittering " sounds. For Tringine sandpipers, Baikal has

has greater diversity than Winnipeg with nine species compared to five. I am unable to find which species are the most common in Siberia as little quantitative data is available, but for Winnipeg, Lesser Yellowlegs is the most common Tringine sandpiper on both up and down migration routes. For Calidris sandpipers, Baikal has 11 species while Winnipeg has 14 sepcies. This group includes the most numerous waders in both areas. From my Winnipeg count data I have found White-rumped Sandpiper are the most common species on northward migration, but on the southward migration Pectoral Sandpipers and Semipalmated Sandpipers are the most numerous waders. Pectorals are more common on drier areas including grain stubble and grasslands. Baikal has eight Plover species compared to five for Winnipeg The Piping Plover around Winnipeg is a threatened species due to human use of beaches and sandy shores of lakes. Both areas have six species of the Curlew and Godwit tribe. Whimbrel and Eastern Curlew are rare at Baikal. Whimbrel is also rare at Winnipeg and Long-billed Curlew no longer occur due to habitat destruction for grain farming. The Eskimo Curlew is almost extinct but one was seen near Winnipeg in May, 1980. For the Phalaropes Winnipeg has three species and Baikal two. Both areas have one Avocet species but it is a rare vagrant at Baikal and a widespread nester in Winnipeg since 1934. From the other wader families, there are three species in Winnipeg and seven in Baikal. However the species involved occupy equivalent habitats, for instance grasslands are used frequently by Killdeer in Winnipeg, while Baikal in similar habitat has at least three species including Lapwing, bub American Woodcock and Woodcock occupy identical habitat types in both places.

I wish to thank Marion Steeves for providing references and translations from the Russian, and Dr. J. B. Steeves, Dr. Bob Nero and Michel Gosselin for providing helpful suggestions.

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NOTES ON THE DIET OF THE RUDDY TURNSTONE (*Arenaria interpres*)

Martin Schulz

The diet of the Ruddy Turnstone has been examined in some detail at the breeding grounds (eg. Nettleship, 1973) and feeding sites (eg. MacDonald and Parmalee, 1982; Jones, 1975) in the northern hemisphere. In Australia little data exists on the Turnstone's diet. Simpson (1972) stated that "this species is frequently seen turning over shells, seaweed and other small objects in search of sandhoppers, worms and small animals which form the bulk of its diet". This paper reports on some more detailed dietary observations made on this species in Victoria.

Two birds were observed foraging in the lower littoral zone on the extensive reef system between Thorny Beach and Kitty Miller Bay, Phillip Island, on the 6 June 1984. Both individuals fed at a rapid rate. This rate was measured using an electronic counter and averaged 46 pecks/minute over a 15 minute period. While foraging the birds moved slowly and pecked as they progressed.

Ten fresh faeces were collected from the feeding site. Analysis of these showed that the diet consisted almost entirely of molluscs (Table 1). The shell fragments found in the faeces were identified by comparison with a reference collection. However, soft-bodied prey do not leave traces in faeces and this fact may bias these results.

TABLE 1. Analysis of ten faeces collected from a feeding site, Thorny Beach reef, Phillip Island.

PREY SPECIES	INDIVIDUAL FAECES									
	1	2	3	4	5	6	7	8	9	10
Rock Barnacle (*Cthalamus antennatus*)	-	-	+	-	-	-	+	-	-	-
Tiny Rock Barnacle (*Chamaesipho columna*)	-	1	-	1	-	-	-	-	1	-
Banded Periwinkle (*Littorina unifasciata*)	-	-	1	2	-	1	-	1	1	-
Little Black Horse Mussel (*Modiolus pulex*)	4	4	3	3	4	4	4	4	3	4
Unidentified Gastropod	1	Tr	1	Tr	Tr	Tr	Tr	Tr	1	1

Key: + = Trace (single species); Tr = Trace (more than one species);
1 = 25% of contents; 2 = 25 to 50% of contents;
3 = 50 to 75% of contents; 4 = > 75% of contents.

The dominant prey species was the Little Black Horse Mussel, which formed > 50% of fragmentary remains in all ten faeces examined, and over 75% in seven pellets. The Banded Periwinkle was represented in five faeces, several unidentified gastropod species in small amounts in ten faeces, and the two barnacle species in three and two faeces respectively.

Table 2. Invertebrates present in two 0.25^2 m. randomly selected areas at the feeding site.

SPECIES	AREA	
	ONE	TWO
Cirripedia		
Surf Barnacle (*Catomerus polymerus*)	2	4
Tiny Rock Barnacle (*Chamaesipho columna*)	100	100
Rock Barnacle (*Cthalamus antennatus*)	50	30
Bivalvia		
Little Black Horse Mussel (*Modiolus pulex*)	100	100
Gastropoda		
Scaly Limpet (*Patellanax peroni*)	30	10
Chapman's Limpet (*Patellanax chapmani*)	1	4
Variegated Limpet (*Cellana tramoserica*)	2	4
Lateral-striped Limpet (*Patelloida latistrigata*)	2	8
Petterd's Limpet (*Notoacmea petterdi*)	-	12
Black Nerite (*Nerita atramentosa*)	1	-
Striped-mouth Conniwink (*Bembicium nanum*)	8	10
Triton Purple (*Agnewia tritoniformis*)	-	4
Banded Periwinkle (*Littorina unifasciata*)	100	100

At the feeding site counts of invertebrates occurring within two randomly selected $0.25m^2$. areas separated by a distance of five metres were made (Table 2). All prey species represented in the faeces were abundant in the sample sites. It is noteworthy that several gastropod and limpet species occurring in low densities could not be identified with certainty from the faeces examined.

Turnstones were also observed feeding amongst beach wrack on the higher levels of two ocean beaches. At Darby Beach, Wilsons Promontory, two birds were observed foraging on the high tide line on the 8 June 1984. Here the feeding methods employed were quite different to those on the reef. The birds confined their efforts to clumps of beachwashed kelp (*Macrocystis angustifolia*).

Decaying kelp is a prime habitat of the sandhopper (Amphipoda: *Orchestria* sp.), where large numbers congregate to feed on the decaying matter. This species is nocturnal and shelters under the kelp during the daytime. During the day it is not uncommon to expose over five hundred sandhoppers on turning over a single kelp clump. To make use of this rich food source a predator must be able to expose sheltering individuals.
The Turnstones did this by usig their bills to turn over *Macrocystis* strands on the edge of clumps. This feeding action exposed sheltering sandhoppers, which then were pecked at. On several occasions an individual was observed to chase and snatch at escaping sandhoppers.

The Turnstones fed either singly of for some of the time in close proximity to each other, taking advantage of sandhoppers exposed by the other's movements.

Two birds were also observed feeding in close proximity to a group of six Hooded Plovers (*Charadrius cucullatus*) amongst beach wrack at Thorny Beach, Phillip Island, on the 6 June 1984. The feeding methods displayed here were similar to those observed on Darby Beach.

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New Colour Band Combinations for Doublebanded Plovers (1/6/1983)

	Left leg	Right leg
Werribee	2 blue over 2 white	2 red
Queenscliff	2 green over 2 white	2 red
Altona	2 green over 2 blue	2 red
Yallock Creek/ Stockyard Point	2 green over 2 red	2 white
Corner Inlet	2 red over 2 blue	2 white

Metal band always to be placed on RIGHT TIBIA.

Oystercatcher Colour Band Combinations

Left leg	-	METAL band only
Right leg	-	Dark blue (Werribee) Light green (Queenscliff) Red (Yallock Creek) Orange (Phillip Island) Dark green (Corner Inlet) White (not allocated)

FAIRY TERNS AT WERRIBEE S.F. - SUMMER 1984/85

As in previous years (see previous VWSG Bulletins) the vegetation on the centre of a small (40 m. diameter) island off South Spit at Werribee S.F. was cleared in order to create a satisfactorily bare shingle/shell area for Fairy Terns to nest.

This year the clearing operation was carried out rather later than usual - mid September instead of July/August. In contrast the Fairy Terns returned and bred much earlier than usual with most chicks being hatched in November instead of late December/January.

On 12 November, 54 nests were located - the same number as in 1983/84. Thirty still contained eggs, but from the others 30 newly-hatched chicks were banded. A further 26 chicks were banded on 26 November, by which time three nests still contained eggs. The earliest hatched young banded on the previous visit, were just about able to fly.

By late December, no birds remained at the colony - whereas, for example, on 31 December 1983 only about half the nests had even hatched. The reasons for the 1984/85 season being so much earlier than previous years is not clear. There is no obvious relationship to the vegetation-clearing programme or the weather. The site is not subject to flooding and therefore undetected early 'wash-outs' in previous years seems unlikely.

A closer watch will be maintained in 1985/86. Clearing will again be carried out in September. A larger area, however, will be made bare to test whether the breeding space has still been a limiting factor or whether the breeding population has now stabilised due to other factors.

C.D.T. MINTON

AN ESTIMATION OF WADER NUMBERS IN SOUTH-EASTERN SWAN BAY

Lisa and Mark Barter.

During the 1985 Australia Day weekend (25th - 27th January) the VWSG Cannon-netted 823 Red-necked Stint, 400 Sharp-tailed Sandpiper and 245 Curlew Sandpiper in two separate catches at Queenscliff. All the Sharp-tailed Sandpiper and Curlew Sandpiper and the adult Red-necked Stint (650 birds) were colour-dyed yellow as part of the Northward Migration Project.

On the 30th and 31st January we obtained counts under good conditions of the dyed and non-dyed waders in parts of Swan Bay within a kilometre or so of the catch sites (see fig. for the catch sites and count areas). The counts were made about four hours after high-tide (1.3m) at Port Phillip Heads, that is as birds were feeding close to the roosts but before appreciable numbers would have flown to the more distant parts of Swan Bay. The pooled counts from the two days, which were in good agreement with each other, showed the following percentages of the three species to be colour-dyed:

13.5% of Red-necked Stint	(600 Birds counted)
12.1% of Curlew Sandpiper	(265 Birds counted)
and 54.0% of Sharp-tailed Sandpiper	(160 Birds counted)

The count data can be used to estimate the numbers of these species feeding in the south-eastern portion of Swan Bay on the assumptions that:

1. All the colour-dyed birds were in the general area being counted.
2. There was good mixing of the dyed and non-dyed birds.

If dyed birds had moved to other parts of Swan Bay since the catch, the estimates will tend towards being those of the total Swan Bay population of the three species. However, it seems more probable that the species are likely to remain faithful to the south-eastern Swan Bay feeding area at least in the short term. The consistency of the proportion of dyed birds (for each species) in each of the minor counts making up the grand totals indicated that mixing was good.

The resulting population esitmates are:

Red-necked Stint

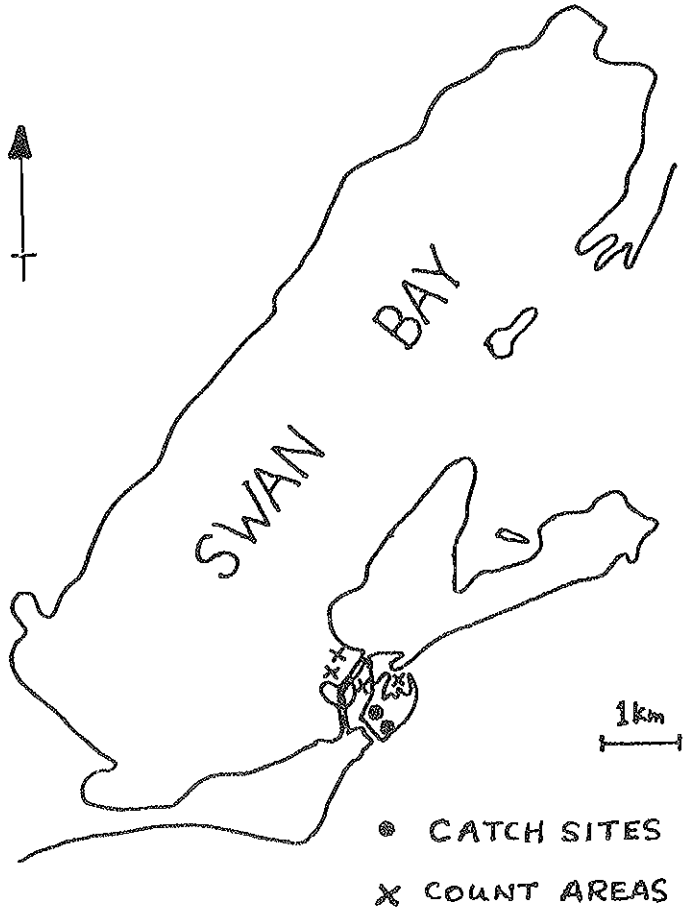
$$650 \times \frac{100}{13.5} = 4815$$

Curlew Sandpiper

$$245 \times \frac{100}{12.1} = 2025$$

Sharp-tailed Sandpiper

$$400 \times \frac{100}{54} = 741$$



VICTORIAN WADER STUDY GROUP

DATES FOR FIELDWORK MAY TO AUGUST 1985

DATE	PLACE (& OBJECTIVES)	TIDE: TIME	TIDE: HEIGHT
May 18th	Werribee S.F. Doublebanded Plover and Redcapped Plover	Sat 1423	0.8m
June 1-2nd	Queenscliff a) Overwintering waders b) Doublebanded Plover	Sat 0948* Sun 1101 *Time at Port Philip Heads - 2 hours later in Swan Bay	1.4m 1.5m
June 29th	Altona (Pt. Cook) Doublebanded Plover	Sat 1129	0.7m
July 20th	Queenscliff Doublebanded Plover	Sat 1359* *Time at Port Philip Heads - 2 hours later in Swan Bay	1.5m
Aug 3rd	Werribee S.F. Doublebanded Plover	Sat 1726	0.8m
Aug 18th	Yallock Creek a) Late departing Doublebanded Plover b) Early arriving Eastern Curlew	Sat 1420	2.7m

In addition to the above there will be:

a) Mist netting for Japanese Snipe at Pt Henry and Seaford Swamp (contact Brett Lane/John Dawson).

b) National wader counts on February 9/10 or 16/17 (summer count) and 29/30 June or 6/7 July (winter count) - (contact Brett Lane).

c) Other banding operations set up at shorter notice if a particular opportunity presents itself.

The normal meeting time will be 5 hours before high tide. Please however phone CDTM, or one of the other contacts listed below, a few days before each planned date to advise of your availability and to obtain final details of the rendezvous time and location. It is most desirable that people do phone in in this way rather than waiting for CDTM et al to make 20 or 30 phone calls before each field work weekend!

CONTACTS:

Clive Minton	- 589 4901 (home) 661 2892 (office)
Mark Barter	- 233 3330 (home) 658 3966 (office)
Brett Lane	- 428 4694 (home) 370 1272 (RAOU office)
Ira Savage	- 052 - 21 6253 (home)
Peter Dann	- 059 - 56 8395 (home)
Brenda Murlis	- 874 2860 (home)
John Dawson	- 787 2082 (home)
Ken Rogers	- 714 8433 (home) 419 9511 (office)

C.D.T. MINTON

M.A. BARTER (1.1.85)

VICTORIAN WADER STUDY GROUP

Financial Statement from 1/7/84 to 25/5/85

INCOME	$	EXPENDITURE	$
Members' Subscriptions	380.00	Bank Fees	7.00
Sale of Bulletins	31.00	Stationery	4.40
Donations	19.00	Radio Repairs	27.80
Proceeds of Trading Table at A.G.M.	40.00	Keeping Cages	134.40
		Postage	39.10
Bank Interest	15.10	Equipment - shackles, gunpowder, fuses, etc	269.00
		Fed. and State Taxes	.71
	485 .10		482.41
Cash in Bank 30/6/84	203.99	Cash in Bank, 25/5/85	150.78
Cash in hand 30/6/84	13.96	Cash/ch.in hand "	69.86
	703.05		703.05

Brenda Murlis,

Hon Treasurer.

MEMBERSHIP FORM

Mrs. Brenda Murlis,
Treasurer,
Victorian Wader Study Group,
34 Centre Road,
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I wish to * join/renew membership of the Victorian Wader Study Group as a * Full/Country/Interstate/Associate/ Student member.

I enclose a cheque/money order for $.....
fee for the year ending 30 June 19 .

Name .....
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VICTORIAN WADER STUDY GROUP

OFFICE BEARERS

Convenor :	Dr. Clive Minton, 165-167 Dalgetty Road, Beaumaris, 3193 Tel. 589 4901 Tel. (office) 661 2892.
Treasurer :	Mrs. Brenda Murlis, 34 Centre Road, Vermont, 3133 Tel. (home) 874 2860
Equipment Officer :	Ira Savage, 42 Heytesbury Street, Herne Hill, Geelong, 3218 Tel. (home) (052) 216253
Editor :	John Dawson, 13 Allambi Court, Mt. Eliza, P.O. Box 107, Mt. Eliza, 3930 Tel. (home and office) 787 2092
Assistant Editor :	Mark Barter, 21 Chivalry Avenue, Glen Waverley, 3150 Tel. (home) 233 3330
Committee :	The above officers and Peter Dann Brett Lane Ken Rogers
SUBSCRIPTIONS :	Full Member $10.00 Student, Associate, Country or Interstate Member $5.00 Subscriptions include cost of all Bulletins and are payable on 30th June to the Treasurer.
CONTRIBUTIONS :	Original papers, articles which may be reprinted, short notes and other suitable

Vermont, 3133
Tel. (home) 874 2860

Equipment Officer : Ira Savage,
42 Heytesbury Street,
Herne Hill,
Geelong, 3218
Tel. (home) (052) 216253

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13 Allambi Court, Mt. Eliza,
P.O. Box 107, Mt. Eliza, 3930
Tel. (home and office) 787 2092

Assistant Editor : Mark Barter,
21 Chivalry Avenue,