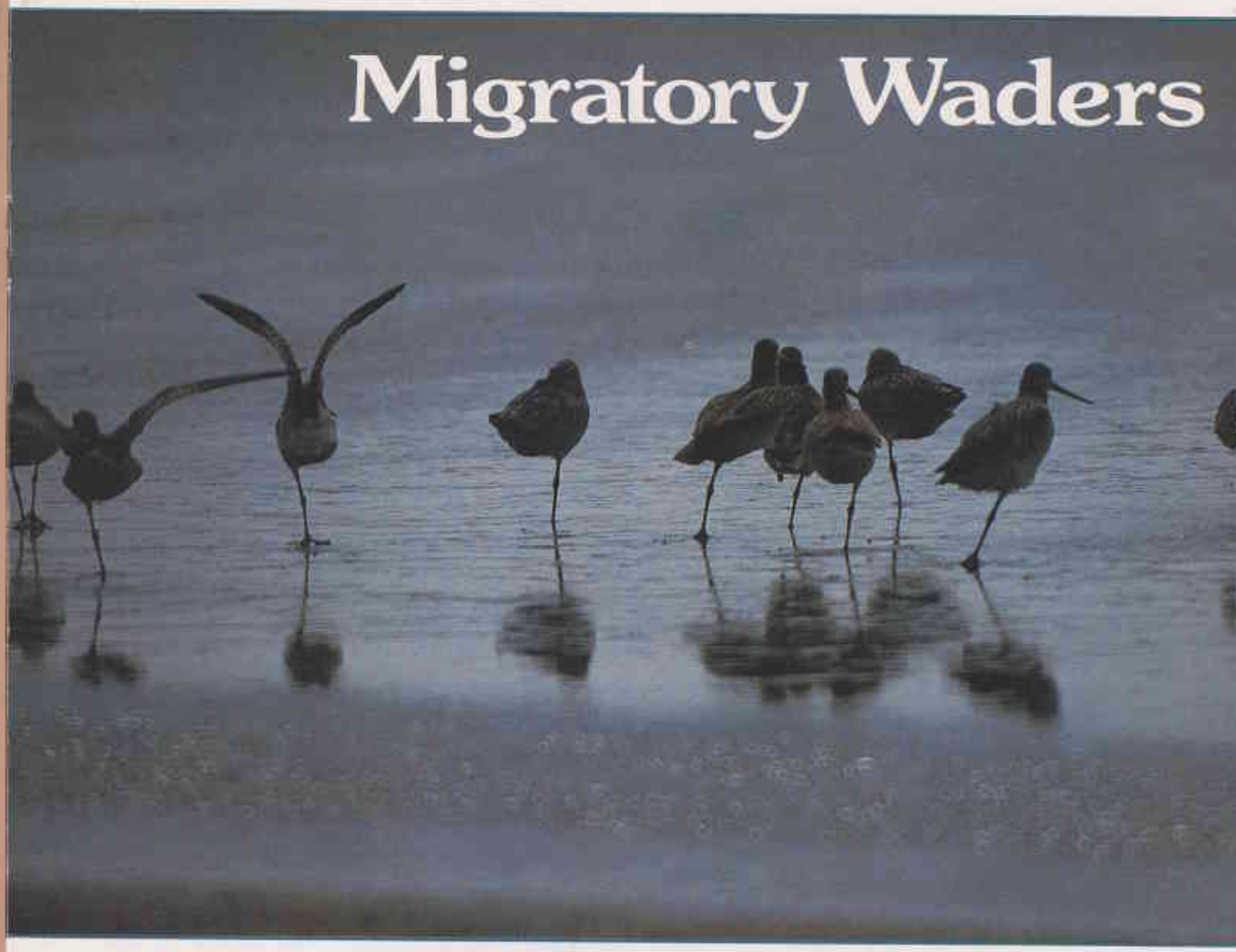
Migratory Waders



by Jim Lane

The vast expanses of the arctic tundra are the breeding grounds of dozens of bird species collectively called migratory waders. For the summer months of June and July the breeding birds and their young thrive on a protein-rich diet of midge and mosquito larvae. But the season of plenty is short in the arctic; as summer ends and the tundra freezes over so these birds are forced to fly south in search of food.

Every year, from August to October, several million birds wing their way more than 10 000 km from the Siberian icelands, through densely populated China and Japan, to the mudflats and estuaries of Vietnam and Thailand, further still to the islands of Malaysia and Indonesia, across the Timor and Arafura Seas to the northern shores of Australia. Here many stay until the shortening days of autumn send them back to their breeding grounds in Russia. Some thousands more, however, journey onwards to the shallow lakes and estuaries of southern Australia.

People strolling along the banks of Perth's Swan River at the right season may be lucky enough to spot some of these visitors to our shores. The intertidal flats of Alfred Cove/Point Waylen, the Como foreshore and Point Pelican provide a home for 3 000-4 000 waders each year. Birds captured on the Swan River, identified with bands and released have later been found as far afield as Russia, China, Indonesia and New Zealand. One bird banded on the nest by a Russian scientist in far eastern Siberia has subsequently been captured and released on the Swan River.

Epic Journeys

Most of us can only marvel at the epic journeys

undertaken by these sometimes small, otherwise unremarkable birds. But scientific curiosity and conservation demand answers to questions: What are the birds' precise routes? How long does the migration take? Where do they 'refuel' along the way? What distances do they fly non-stop?

Finding answers to these questions has been an epic itself, involving thousands of people, amateur and professional, united by their fascination for migratory waders. For instance, 'The Atlas of Australian Birds', a five-year field study, involved nearly 3 000 bird watchers and covered even the most remote regions of Australia.

We were fortunate to have one of the United Kingdom's foremost experts on waders, Dr Clive Minton, as the founder of the Australian Wader Study Group (AWSG). Formed in 1981, the AWSG has undertaken a daunting program of research, including five major banding expeditions to the north-west of W.A..

In August-September 1981, with the assistance of the Commonwealth Departments of Health and Transport, two members of AWSG joined in low-level, coastal surveillance flights from Darwin to Wyndham and Mitchell Plateau to Derby. Private charters covered the southern shores of the Gulf of Carpentaria, and the W.A. coastline from Derby to Broome, and on to Port Hedland. These flights confirmed the presence of huge flocks of migratory waders at the bottom of the Gulf, near the mouth of the Norman River, and on the north-west coast from Broome to Port Hedland.

Work Begins

The largest and most accessible flocks were at Roebuck Bay and Eighty Mile (actually 130 mile) Beach. A ground team of 20 volunteers from W.A. and Victoria, with logistic support from the [then] Department of Fisheries and Wildlife, established base near the shores of Roebuck Bay on the 27 August 1981. Then began an intensive campaign of counting, capturing, weighing, measuring, ringing and release.

Within eight days more than 150 000 waders of 25 species were counted, and 1 190 waders of 12 species were cannon-netted, ringed and released. Counts of the Great Knot (18 000 at Roebuck Bay and 21 800 at Eighty Mile Beach) dramatically increased previous estimates of the Australian population, and even exceeded estimates of the total world population!

Most of the waders seen on the north-west coast remain there from September to March; others, however, are 'passage migrants'. After crossing the Timor Sea, they 'refuel' on the north-west coast before moving south-east across Australia. Banding and colour-dyeing studies, as well as measurements of body fat reserves, have revealed that many birds fly from the north-west coast to the shores of south-eastern Australia in a single trans-continental flight - more than 2 500 km non-stop.

Some of the most interesting studies on return migration were conducted at Port Hedland and Broome in March and April, 1985. These involved a combination of daily counts, radar observations (courtesy of the Bureau of Meteorology) and fat estimations of cannon-netted waders. The radar revealed that most wader flocks leaving this stretch of the northern coastline fly NW to NNW. Large birds (100-140 g) such as the Great Knot, Tattler, Turnstone and Large Sand Plover carried fat deposits sufficient for non-stop flights of 4 300 km to the extensive mudflats of the south China coast. Medium-sized waders, such as Curlew Sandpipers and Terek Sandpipers could reach the intertidal flats of the Malacca Strait and the Gulf of Thailand (3 700 km). The smallest species, the Red-necked Stint (around 35 g), could make the mudflats of southern Borneo in one flight.

Dangers

Even though birds carry enough fat 'fuel' to fly

The total number of waders which migrate to Australia each year (an estimate based on results of the past five years of wader counts conducted by the AWSG) is believed to be in excess of 1.7 million. These comprise 34 species from northern Eurasia (including at least 23 species which breed in Siberia) and one, the Double-banded Plover, from New Zealand.

Waders which regularly migrate between Russia and Australia may live to 10 years or more, though most would proably not live more than 3-5 years.

One of the longest elapsed times between first banding and last recovery for an Australian-banded wader (Red-necked Stint) is 10 years. During its lifetime this sparrow-sized bird is likely to have flown more than a quarter-million kilometres on migration.

The north-west coast of Western Australia is regularly visited by more than half-a-million migratory waders of more than 30 species - more than 30 per cent of the total number of migratory waders counted in the whole of Australia.

In terms of numbers of birds the north-west coast is ranked as the seventh most important wader site in the world.

Above Left: Preparing the explosive charges.

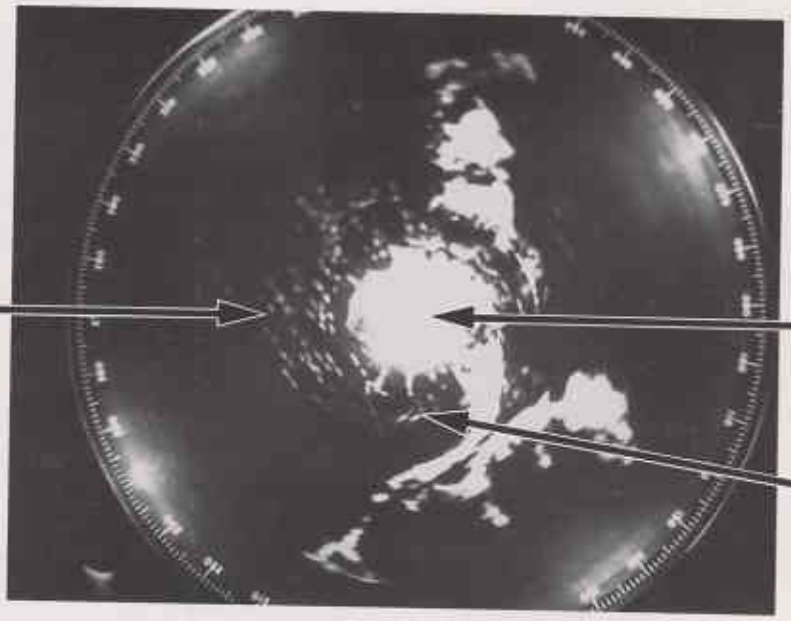
Above Right: Setting a cannon.

Right: Firing.

Below Left: Recovering birds from the net.

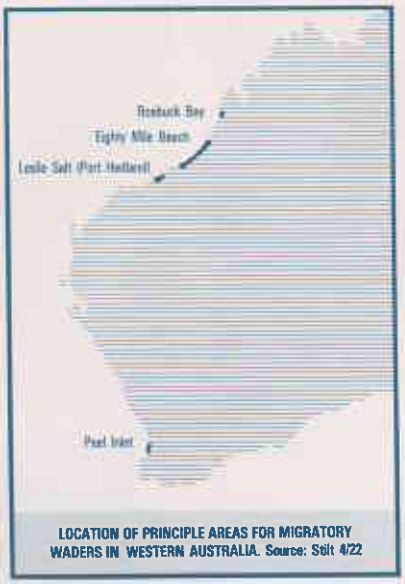
Below Right: Holding cages.

Bottom: Time-lapse photography showing paths of migrating wader flocks on Broome weather radar.

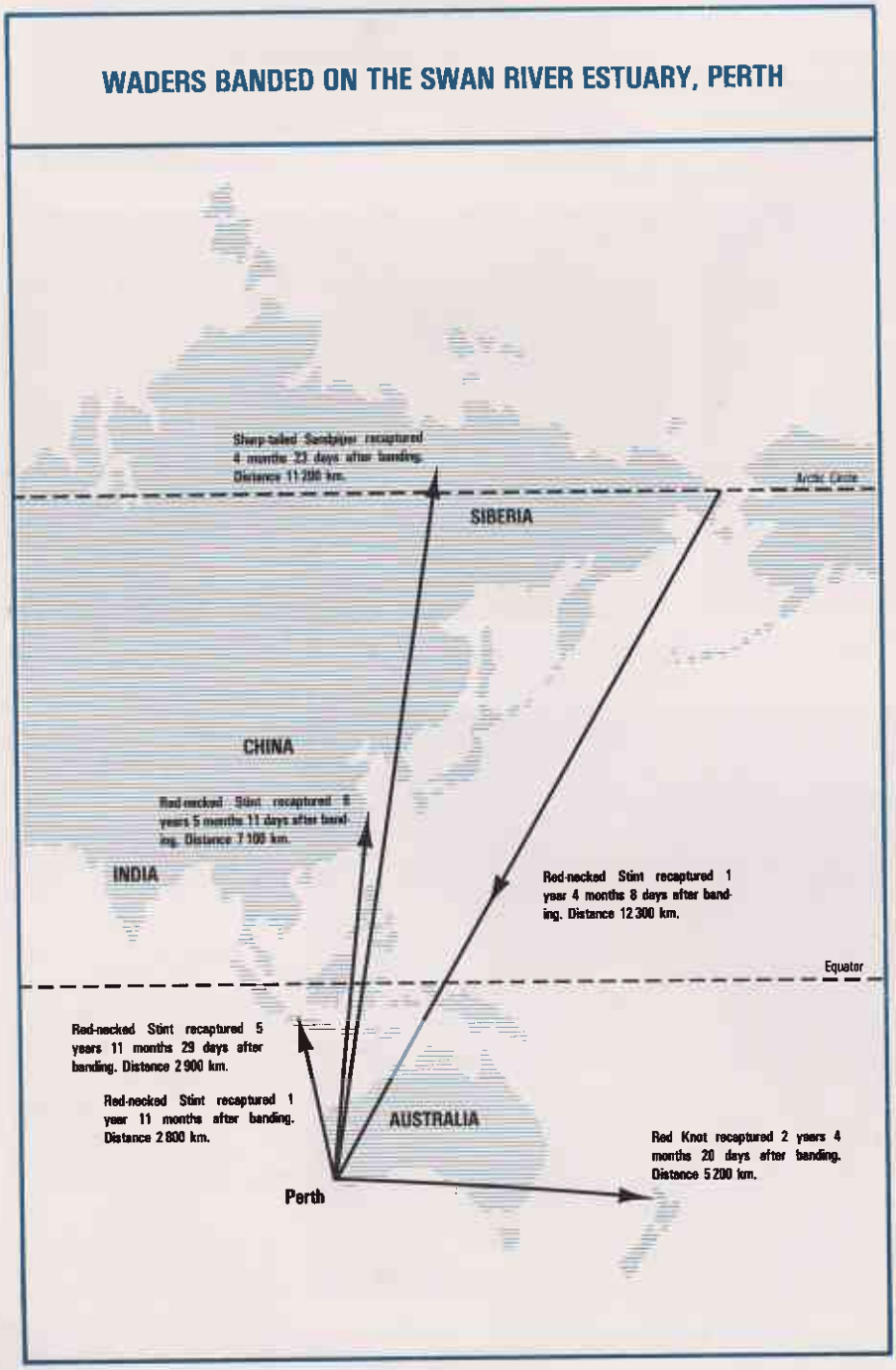


B. Lane

Common Sandpiper (*Tringa hypoleucos*)



LOCATION OF PRINCIPLE AREAS FOR MIGRATORY WADERS IN WESTERN AUSTRALIA. Source: Stilt 4/22



awesome distances they have no guarantee of safe passage home. A recent report from Thailand shows that many migratory waders face the risk of being eaten. Villagers near wader sites in Thailand often have at least one household deriving all or part of their income from the capture and sale of waders. Smaller species such as stints and sandpipers may fetch from 15 cents; larger species like whimbrels and curlews can cost up to $1.50. Most Asian countries consider waders a legitimate consumable resource. One estimate puts the numbers being taken each year at 250 000 to 1.5 million.

Predation is not the only problem facing waders. Duncan Parish, Singapore-based coordinator of an ambitious east-Asia research project called 'Interwader', has estimated that about 50 per cent of wader habitat in Asia has been destroyed through development, and a further 20 per cent is threatened within the next decade.

International Cooperation

Because migratory waders are likely to cross many national borders in their yearly passage, ensuring their conservation presents an interesting challenge requiring international cooperation. The Japan Australian Migratory Birds Agreement (JAMBA) is a sound bilateral treaty, but an 'umbrella' agreement will have to be negotiated amongst all the nations which play host to migratory waders. Of particular importance is a sub-clause of JAMBA which allows 'the hunting and gathering of specified birds or their eggs by the inhabitants of certain regions who have traditionally carried on such activities for their own food, clothing or cultural purposes' **only on the condition** that 'the population of each species is maintained in optimum numbers and that

adequate preservation of the species is not prejudiced'.

Adequate conservation of migratory birds also relies on continually improving our knowledge of their numbers, distribution, habitat requirements and migratory pathways. Gaining this information is a joint effort involving volunteer-based organizations such as AWSG, as well as Commonwealth and State governments. Public companies such as Dampier Salt Co., Humes Ltd, and Hamersley Iron have also helped.

The Department of Conservation and Land Management and its predecessor the Department of Fisheries and Wildlife have provided continuous support for wader studies in W.A. since the early 1970s. While the cost of this assistance has been small, the transport, radio communications, technical expertise and other logistic support, mainly provided by Grant Pearson of the Wildlife Research Centre and Kevin Marshall, Karratha District Wildlife Officer, have at times played a key role in ensuring the success of some of the more demanding undertakings, such as the North-west Wader Expeditions.

Why do Departments such as CALM contribute? Because a thorough understanding of the numbers, distribution, habitat requirements and migratory pathways of our northern visitors is crucial to the development of plans to ensure their continued survival, and because low-key support of competent and energetic, volunteer-based organizations such as the Australian Wader Studies Group is the most cost-efficient and effective means of achieving this end.

Any person interested in becoming involved in wader studies in W.A. may contact Mike Bamford or Doug Watkins, through the Royal Australasian Ornithologists Union's Perth office, 30/15 Ogilvie Road, Canning Bridge, W.A. 6153. Phone (09) 364 6202.

Above: Red-necked Stint (*Calidris ruficollis*).
Below: Sharp-tailed Sandpiper (*Calidris acuminata*).

Landscope

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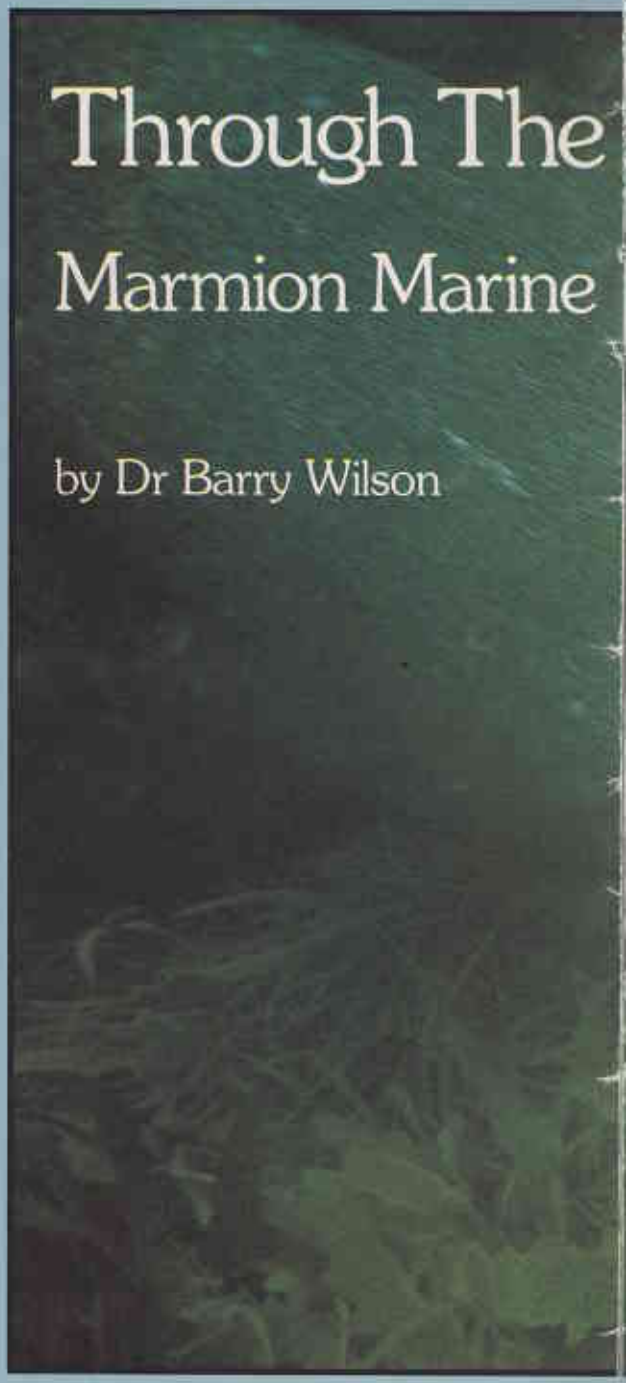
Cover

The Caspian Tern (*Sterna caspia*) is a good advertisement for the value of islands (see article p. 25). It breeds on islands all along W.A.s coast from Recherche Archipelago in the south to Lacepede Island near Broome. Cover photo by Cliff Winfield.



Through The Marmion Marine

by Dr Barry Wilson

To the land-bound observer standing on the dunes of the Whitford Nodes, on Perth's north coastline, the surface of the sea beyond may be still or turbulent, but it is always two-dimensional. It is hard to realise that below the surface, on the other side of the mirror, is a three-dimensional counter-world, with varied relief and diverse habitats. This world is populated by an alien array of the most impossibly grotesque and stunningly beautiful creatures, in such abundance and variety as to leave a snorkel-diver breathless in more ways than one.