The Miracle of Wader Migration

Rog Standen
Chair, VWSG
Victorian Marine & Coastal Forum,
June 13, 2019
wader = shorebird
• Waders breed in the northern hemisphere
• Stay here for our summer
• Use one of nine global flyways

East Asian – Australasian Flyway
of migratory waterbirds

Migratory waterbirds need international cooperation
• 22 countries (18 joined EAAF partnership) = complex co-ordination

• 4.5 billion people = lot of competition
Resident waders are readily identified.
Migratory waders can be confusing to identify in their non-breeding plumage.
Resident and migratory birds can mix together
Red-necked Stint

30gm

Breeds 12,000km away
Feeding habitat is mudflat
Roosting habitat is above the high tide mark – preferably undisturbed
Tools used to understand movements & population dynamics

bANDING
LEG FLags
geolocATORS
satellite transMITTERS
Banding alone was valuable, but limited in what it showed.

1900 – banding
Biometrics/ageing/movements

Many catching methods:
Drop nets
Clap nets
Mist nets
Cannon nets
Banding alone was valuable, but limited in what it showed.

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Many catching methods:
Drop nets
Clap nets
Mist nets
Cannon nets
Large nets used at high tide roosts
Cannons – buried behind the net
Teams quickly extract the birds
Birds are processed and released

All these components need large teams of volunteers
Clive Minton
instigator, driver, planner, doer
Chair 1978-2017
Birds are banded and colour marked
Birds are measured and recorded.
Birds are aged, generally by moult.
Three main catching regions in Victoria
Plain flags revolutionised our understanding of migration.

1900 – banding
Biometrics/ageing/movements

1990 – plain leg flags
Stopover sites
Biased by where humans are
Victorian birds are flagged orange
All regions have their own colour.
Red-necked Stint

- Confirmed many stopover sites
- Breed in the high arctic

- Red-necked Stint on the arctic breeding grounds
- The timing of migration is critical
Ruddy Turnstone
Ruddy Turnstone

- Stopover sites as shown from flag sightings and recoveries
Ruddy Turnstone

- Stopover sites as shown from flag sightings and recoveries
- None from the breeding grounds
## Ruddy Turnstone flag sightings

<table>
<thead>
<tr>
<th>Country</th>
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<th>southward</th>
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<tbody>
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Ruddy Turnstone

- Northward westerly
- Southward easterly
- Leap-frog Australia when on northward migration

1900 – banding
Biometrics/ageing/movements
1990 – plain leg flags
Stopover sites

2003 – engraved flags
Individually known birds/duration of stopover/
age at migration
Curlew Sandpiper (H0)

Western treatment Plant, Werribee
Curlew Sandpiper (H0)

- Banded when aged 1 on 28 Dec ‘13
- Seen 7 Jul ‘14 (first overwintering here as too young to migrate)
- 24 Nov ‘14 (photo)
- 24 Oct ‘15 (after first migration)
- 17 Feb ‘18 (after three migrations)
Bar-tailed Godwit
Bar-tailed Godwit

Bar-tailed Godwit ‘T0’

Andreas Kim
Bar-tailed Godwit

‘T0’ sightings

Stopover duration: 20-45 days

Banded: Corner Inlet aged 1, 2009

Observed: Aphae Island
April 2011, 12, 13, 14, 15, 16, 17, 18, 19?

New Zealand
November 2013

Andreas Kim, Dr Kim Seok-Yee/Tony Habraken
Bar-tailed Godwit

‘T0’ sightings

8, 500km – finds it everytime
Bar-tailed Godwit

‘T0’ sightings

Mudflats galore
Need:
• site-faithful birds
• Need to retrieve the device
• Not accurate locations

1900 – banding
Biometrics/ageing/movements
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Stopover sites
2003 – engraved flags
Individually known birds/duration of stopover/age at migration

2009 – geolocators
Complete journey/breeding success/migration speeds
Geolocator fitted for a Ruddy Turnstone - tiny
Ruddy Turnstone

- Geolocator tracks
- Confirm flag sightings
- Go to breeding sites
Ruddy Turnstone

- Temperature recorded
- Tells us the likelihood of incubation
1900 – banding
Biometrics/ageing/movements

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Individually known birds/duration of stopover/age at migration

2009 – geolocators
Complete journey/breeding success/migration speeds

• expensive
• real-time
• very accurate

2014 – Satellite transmitters
Far Eastern Curlew

- Internationally threatened species
- Western Port

Andrew Browne
Far Eastern Curlew

• Very large bird >600gm

• Solar panel to run the transmitter

Andrew Browne
Far Eastern Curlew

Andrew Browne
Far Eastern Curlew

Andrew Browne
VWSG

Far Eastern Curlew

Andrew Browne
Far Eastern Curlew

- Just see the solar panel and transmitter back pack

Andrew Browne
Far Eastern Curlew

- Feeding and roosting sites
- Western Port
- Near Koo Wee Rup
Far Eastern Curlew ‘Koo’, ‘Wee’ & ‘Rup’

- Two left together for China
- One delayed (green ‘RUP’)
Far Eastern Curlew ‘Koo’

- Refuelling near Zhoushan (South of Shanghai)
Far Eastern Curlew ‘Rup’

- Battled its way below the cyclone to rest on the Queensland coast
- Tired, too late to migrate, returned to Western Port

ABC website 22 March 2019
Yellow Sea migrants decline more quickly

$r^2 = 0.90$, $P < 0.001$

Studds et al 2017
*Nature Comm.*

Richard Fuller
Population counts decrease more quickly.
Coastal Collapse in East Asia

- Loss of feeding areas in tidal flats

Arctic breeders

- Face similar predators to our resident beach nesting birds
Thank you for the opportunity to talk about these amazing birds

- Please get in touch if you or someone you know is interested in joining our group (pick up a card from me)

www.vwsg.org.au
A Big Thanks To

• Clive Minton for his drive and resilience

• The thousands of VWSG day volunteers and backroom servants

• Birders sending in sightings

• ABBBS for approvals and recovery records

• State departments and associated ethics committees for permits to catch and handle the birds

• Parks Victoria and PINP for logistical support and access approval

• Private landholders for access permission

• Coastcare, Wettenhall Foundation, corporations, university partners and private supporters for funding