

Bird Note

Observations of overwintering Great Knot, *Calidris tenuirostris* and Red Knot, *Calidris canutus* feeding on bi-valves (small molluscs) close to the shoreline at Thompson Beach

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INTRODUCTION

Great Knot and Red Knot are usually found together in mixed flocks along some South Australian coastlines, particularly in Gulf St Vincent. As Piersma (1991) and Menkhorst *et al.* (2017) note, both are specialist feeders on small bi-valves (molluscs) and will be found where such food items are generally abundant¹. Both feed by probing up to the length of the bill (Figure 1) and the molluscs are ingested whole with the shells crushed in the gizzard (van Gils *et al.* 2003).

OBSERVATIONS

While examining a flock of approximately 150 Red Knot and 30 Great Knot on 22 June 2018, I noticed some birds extracting, carrying (even in flight) and ingesting bi-valves. Two examples are illustrated in Figures 2 and 3. Menkhorst *et al.* (2017, p. 154) note that unlike other species, Red Knot in their third year develop extensive breeding plumage during the austral winter. Approximately 30% of the Red Knot in the observed flock were showing some degree of breeding plumage suggesting third-year birds. A number of the Great Knot were also in breeding plumage as illustrated in Figures 1 and 2.

Figure 2 illustrates a Great Knot showing some breeding plumage that extracted a bi-valve (species unknown)² and swallowed it whole as described by van Gils *et al.* (2003) and Menkhorst *et al.* (2017, 154).

Figure 3 illustrates a Red Knot showing extensive breeding plumage that has located a smaller bi-valve (species unknown) but the moment of swallowing was not captured. The technique is to slide the item between the upper and lower mandibles until it can be ingested. Zwartz and Blomert (1992) provide a comprehensive assessment of Red Knot feeding behaviour and note that they cannot ingest molluscs with a circumference of more than 30 mm (approximate diameter = 9 mm) and they cannot probe into the mud beyond a depth of 2-3 cm. Great Knot can take large items from a greater depth and that explains why they can often be found feeding together.

As a matter of interest Figure 3 also suggests why the bills of Red Knot and other shorebirds that feed on smaller bi-values have a small spoon-shaped tip.

1. Tulp and Goeij (1991) note that near Broome, Knot appear to have a more varied diet.

2. Piersma (1991) lists the species in his NZ study as: *Myadora boltoni*, *Nucula hartvigiana*, (small), and *Tellina liliana* (larger 5-20mm shell length).



Figure 1. Knot probing for bi-valves: Red Knot (L); Great Knot (R)



Figure 2. Got it!



Swallowed whole!



Figure 3. Red Knot manipulating a smaller bi-valve (species unknown). All images Colin Rogers

DISCUSSION

The observation that both Great and Red Knot are specialist bi-valve feeders is well known. In this case the activity was occurring no more than 80 metres from the Northern carpark at Thompson Beach reflecting the high level of productivity of the area. The area is slightly

elevated above the adjacent mudflats, so it is exposed first on a falling tide and covered last on a rising tide which is why it attracts birds both early on falling tides and late on rising tides.

Unfortunately, it is also an area that receives a lot of heavy traffic as crab hunters enter the water here, and recently additional activities have been

conducted in this area. As numbers of wader-watchers have noted, the recent practice of raking the beaches near the carpark at low tide to extract small molluscs or bi-valves represents a new source of pressure on the food supply of migrant shorebirds. These molluscs are removed for human consumption and the structures in which they are embedded are disturbed. This is particularly true in the case of Great Knot who take the larger molluscs also targeted by human harvesters.

CONCLUDING REMARKS

The relevance of the feeding behaviour reported in this note is the importance of the location at Thompson Beach as a part of the Adelaide International Bird Sanctuary (AIBS). Migrant shorebirds can put up with much disturbance, but the depletion of their food supply is a more serious matter. The recent practice of raking the beaches at low tide to extract small molluscs or bi-valves is a potentially serious threat to the food supply of migrant shorebirds the AIBS is meant to protect. As such it is a practice that should be discontinued.

Furthermore, in view of the importance of the AIBS to migrant shorebirds in Gulf St Vincent, a thorough study of the feeding resources available at Thompson Beach and adjacent areas, for example along the lines undertaken by Piersma (1991), Zwarts and Blomert (1992) and Sturbois *et al.* (2015), would make an important contribution to the management and conservation of the AIBS.

REFERENCES

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