An early Australian specimen of Hudsonian Godwit (Scolopacidae: *Limosa haemastica*), with a review of recent records

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Abstract

Australian records of the New World Hudsonian Godwit (Limosa haemastica) *are reviewed, with emphasis on the first, a specimen in the South Australian Museum collected on the south Great Barrier Reef in 1910, and previously identified as a Black-tailed Godwit* (Limosa limosa). *The data indicate that Hudsonian Godwits migrate to Australia in very small numbers with some regularity. A possible path of southward migration is discussed, as well as apparent preferences for association with other species of godwits over-wintering in Australia.*

INTRODUCTION

Three of the four global species of godwit occur in Australia as non-breeding migrants. The main populations of Black-tailed Godwit (*Limosa limosa melanuroides*, east Siberia) and Bar-tailed Godwit (*Limosa lapponica baueri* west Alaska and north-east Siberia, *L. l. menzbieri* Siberia) winter across Australasia, using it as their primary non-breeding home range (Peters 1934: 263-264; Higgins and Davies 1996; Dickinson and Remsen 2013). The third species, the Hudsonian Godwit (*Limosa haemastica*), is a Nearctic allospecies of the Palaearctic Black-tailed (Gibson and Baker 2012); it breeds in Alaska and Canada with its main population over-wintering in southerly regions of South America (Hellmayr and Conover 1948: 100-102; Higgins and Davies *l.c.*; Dickinson and Remsen *l.c.*).

Vagrant Hudsonian Godwits have been found as far afield as the western Palaearctic region and South Africa (Higgins and Davies 1996). There are records of single birds in 1981 and 1982 in Fiji (Skinner 1983), a single bird on Norfolk Island in November 1980 (Moore 1981), and two birds in the South Shetland Islands in 2008 and two on the nearby Antarctic Peninsula in 2005 (Juáres *et al.* 2010). In Australia, the Hudsonian is also considered a vagrant (Higgins and Davies *l.c.*; Menkhorst *et al.* 2019). In New Zealand, however, it is evidently a regular visitor in small numbers at many coastal and estuarine locations throughout North and South Islands, apparently as frequent as the Black-tailed (Gill *et al.* 2010). It has been found there in ones and twos since 1902, with up to nine recorded in any one year, mostly from September to May but occasionally in winter (Higgins and Davies *l.c.*).

The earliest documented record of the Hudsonian Godwit in Australia was in 1982 at Kooragang Island Nature Reserve, New South Wales (Morris 1991). However, the recent reidentification of a museum specimen collected more than 100 years ago demonstrates that the species, not surprisingly, has visited Australia previously. We discuss this historic specimen in this paper. In order to place its occurrence in context we also review Australian sight records of Hudsonian Godwits, and discuss possible implications relating to the sociality, feeding ecology and status of the species in Australia.

DIAGNOSTIC FEATURES OF GODWITS

In non-breeding plumage the Hudsonian and Black-tailed share a plain fawn-grey dorsum

and breast, clear white upper wing bar and bold white upper tail coverts and tail base contrasting with a broad black tail tip that immediately distinguishes them from the Bar-tailed, with its mottled dorsum, plain upper-wing and dull barred lower rump and tail. Hudsonians are separated in turn from Black-tailed Godwits by proportionally shorter legs, reduced white bar on the upper surface of the wing and, most distinctively, by almost completely blackish under wing and axillaries except for a variably light and narrow white line through the secondaries to inner primaries. In Black-tailed Godwits, the under wing and axillaries are brilliant white with a narrow darker border on the margins of the wing. Bill lengths are comparable in Hudsonian and Black-tailed subspecies *melanuroides*, while in the extra-limital nominate Black-tailed subspecies the bills are longer (Hayman *et al.* 1986). Bill shape is also distinctive, being slightly upturned in Hudsonian and Bar-tailed, and straight in Black-tailed (Figure 1b), and this is the easiest way to detect a Hudsonian in a landed flock of Black-tailed when all are in non-breeding plumage (J. Cox, pers. comm.).

THE SOUTH AUSTRALIAN MUSEUM SPECIMEN

In November 2008 one of us (RS), when reviewing godwit specimens in the S.A. White Collection at the South Australian Museum (SAMA), discovered that one labelled as '*Limosa limosa* Black-tailed Godwit' was in fact a Hudsonian, identified by its sooty grey axillaries and blackish underwing coverts. It was taken in October 1910 on North West Island in the Capricorn Group, south Great Barrier Reef, Queensland (23°18' S, 151°42' E) by Samuel Albert White. It was sexed as a male. White collected it while participating in a Royal Australasian Ornithologists' Union (RAOU) expedition to the Capricorn Group of islands during October 1910, and it became part of his large private collection of Australian birds. After his death in 1954, White's widow curated the collection until she donated it to SAMA in 1988 (Horton *et al.* 2018). There it was finally databased and registered by 2007, the Hudsonian as B51674.

The specimen (Figure 1) appears to be a first-year bird from its juvenile, rounded wing coverts and buff-notched tertials, and also by its tawny cast although this may be at least partly due to the age of the specimen. The dorsum, fairly worn, is grey-brown with faint pale fringes and dark centres to the feathers, these being more prominent on the wing coverts; the tertials are dark grey-brown with buff fringes and towards the tip have a muted pattern of blackish bars and buff notches that are deep enough to almost form bars. The chin and abdomen are white, and the foreneck and breast pale grey-brown with faint dark centres to the feathers. The forehead and crown are boldly streaked blackish to form a distinct cap; the supercilium is white and extends less prominently behind the eye. Measurements (in mm) are: wing 200, tail 65, bill 75 and tarsus 56. The wing, tail and bill measurements are all indicative of a male bird rather than a larger female, and the short wing and tail suggest an immature rather than a larger adult (Higgins and Davies 1996). Bill length is average for adult males, and as juvenile Bar-tailed Godwits apparently have fully grown bills upon arrival in Australia (Wilson *et al.* 2007), the same might be expected for Hudsonian Godwits. The tarsus is apparently long compared with measurements given by Higgins and Davies (*l.c.*) but is at the lower end of the range of tarsus lengths (ages and sexes combined) recorded by Hayman *et al*. (1986).

Campbell and White (1910) wrote up the birds of the Capricorn Group identified on the RAOU expedition. In their notes for Black-tailed Godwit they stated that several were seen and a specimen procured, and that on North West Island 'on one occasion when the camp was deserted, some Godwits were observed walking about between the tents, almost lost in the high grass.' They added that there 'appears to be a variation of this form, or else the male bird is much smaller and shows a strongly defined line of white from the

a)

b)

c)

Figure 1. Study skins of the three species of godwit that occur in Australia. Top: SAMA B23887 adult Black-tailed Godwit *Limosa limosa*, **male?, Meningie, SA, 29 March 1949, L.H. Mincham; middle: B51674 first-year Hudsonian Godwit** *Limosa haemastica*, **male, North West Island, Capricorn Group, Queensland, October 1910, S.A. White; bottom: B30766 adult Bar-tailed Godwit** *Limosa lapponica*, **female, Smoky Bay, Eyre Peninsula, SA, 14 January 1977, W.A. Head; a) dorsal, b) lateral, c) ventral. Note: bill lengths cannot be compared in these images because the bills lie at different angles. Images: P. Horton**

base of the bill to the back of the head.' In non-breeding Black-tailed Godwits (*L. l. melanuroides*), the white supercilium is usually faint or non-existent behind the eye (Hayman *et al.* 1986; Higgins and Davies 1996), whereas in B51674 it is fairly prominent; Campbell and White's male was evidently this SAMA specimen. In godwits, males are indeed slightly smaller than females (Lane 1987; Higgins and Davies *l.c.*), and as B51674 is immature, it may have appeared even smaller to Campbell and White. Unfortunately, they did not describe the bill shape of any of the godwits they observed, but it is puzzling that they made no mention of the upturned bill of B51674 compared with the straight bills of the Black-taileds.

Were the other godwits in fact Black-tailed? They may have been females of that species, which, while slightly less bulky in appearance than Hudsonians (Higgins and Davies 1996), are longer in the leg, so they would have stood taller than B51674. The RAOU camp-out was held between the 8th and 17th of October, and White's party camped for the duration on North West Island, arriving there on the 8th and visiting other islands later (Barrett 1910). So, the godwits were presumably recently arrived from migration. Black-tailed Godwits (*melanuroides*) migrate along the East Asian Australasian (EAA) Flyway, arriving on the north-west coast of Australia in late August (Lane 1987). In November they pass through Darwin, reaching maximum numbers in the Gulf of Carpentaria in December, and between September and November small numbers pass through the Mount Isa region (north-western Queensland) and down the east coast (Lane 1987). It would therefore be feasible for them to reach Great Barrier Reef islands by the first half of October.

The possibility that some of the birds were female Hudsonians cannot be ruled out, however. It is more probable that some may have been Bar-tailed, although the supercilium of this species is prominent behind the eye in non-breeding plumage (Figure 1). Campbell and White (1910) stated that solitary individuals or pairs of Bar-tailed Godwits were also observed during the expedition, and of the five Bar-tailed specimens in SAMA collected by White, four were, like B51674, also from North West Island, the fifth from Tryon Island. In some regions, Bar-tailed Godwits commonly occupy grassy areas (Higgins and Davies 1996), and in Queensland they often walk through long grass at high tide (J. Cox, pers. comm.), as described by Campbell and White in their notes for Black-tailed Godwit. In 1910 field identification was still problematic and Campbell and White (*l.c.*) may have assumed that all the godwits with or near B51674 likewise were of a species with black tails. There is in fact no concrete evidence that Black-tailed Godwits were seen on the expedition.

This record of a Hudsonian Godwit in Australia, 72 years before the first of the later suite of observations, indicates that the occurrence of this species in Australia is not a recent phenomenon. The similarity of Hudsonians to the more common Black-tailed Godwit could easily have led early observers to overlook it. In addition, the two were regarded by some at the time as conspecific (e.g. Mathews and Iredale 1913) so it is possible that a few early Hudsonian records may have been named Black-tailed (*sensu lato*) without identification to the then subspecies. S.A. White had no specimens of Black-tailed in his collection and so no material for direct comparison. Campbell and White's (1910) notes indicate that they were puzzled by the distinctiveness of the Hudsonian but, because it was not expected, it remained hidden in plain sight. To our knowledge, this study skin remains the only museum specimen of Hudsonian Godwit collected in Australia.

AUSTRALIAN OCCURRENCES OF HUDSONIAN GODWIT

Australian records of Hudsonian Godwits, other than the SAMA specimen, have all been sightings within the last 40 years. They have all been of single individuals, and in a number of

cases, it appears likely that it is the same bird that, after its initial sighting, has been recorded subsequently by multiple observers at the same site in the same or even successive years. The first documented record at Kooragang Island Nature Reserve, New South Wales (Morris 1991) was followed by several unverified reports from the same locality in subsequent years (Higgins and Davies 1996). Those records and other observations that we are aware of are detailed in Table 1 and discussed below.

ECO-GEOGRAPHIC ASPECTS OF AUSTRALIAN OCCURRENCES OF HUDSONIAN GODWITS

Although a number of reports may have been of the same individual, there have been at least 26 records of Hudsonian Godwits in Australia in separate summers since 1982: 9 in SA, 7 in NSW, 6 in Victoria, 3 in Tasmania and 1 in WA (Table 1). Together with the 1910 specimen from the south Barrier Reef, all are from the east and southeast coast of Australia except for the single record from southwest Australia. While this might be expected given the breeding range of the Hudsonian Godwit, it also provides an indication of the main wintering range of those individuals that do reach Australia.

The reports have ranged from a single-day observation to a set of observations from one locality spanning six years. Observers of the godwit at Kooragang, NSW felt that it could have been the same individual seen over more than three years (Morris 1991). Cox (1990) considered it highly probable that the 1986-87 and the 1987-88 Dry Creek records were the same male individual. The female observed in repeated seasons from 2002 to 2008, also at Dry Creek, was likewise assumed to be same individual (Rogers 2009, 2010a). The several sightings at Lake Wollumboola may also be of the one individual, as could be those at Swan Bay in Victoria. Site fidelity in migrant Scolopacidae, including godwits, is well-documented (Lane 1987; Higgins and Davies 1996). This is evident in banding recoveries, such as those of a Bar-tailed Godwit banded at Roebuck Bay, Broome, WA in 1996 and recaptured and released at the same location twice, the second occasion in 2019 almost 23 years after original banding (ABBBS 2019). Coleman and Milton (2012) similarly found a high return rate of leg-marked Bar-tailed Godwits to Moreton Bay, south-east Queensland. Senner (2010) noted that there had been no studies of site fidelity of Hudsonian Godwit at their non-breeding grounds in South America, but that a small group banded at Tierra del Fuego in 2001 continued to return to that location year after year. It seems highly probable then that repeated sightings of Hudsonian Godwit at the same location in Australia are often of the same bird.

Moreover, even allowing for repeats in reporting, the geographic and temporal spread of records suggest that Hudsonian Godwits reach Australia regularly enough to be viewed as more than just very rare, accidental vagrants. We note however that, apart from the south Barrier Reef specimen, there are no records from the estuaries of coastal eastern Queensland, the region closest to the likely path and destination of godwits migrating directly to Australia from the Nearctic. Whether or not this absence is real can only be answered with continued observational work in the region; but a possible explanation is offered below.

ASSOCIATION AMONG SPECIES OF GODWITS

In almost all instances, Hudsonian Godwits in Australia have been recorded in association with either or both Black-tailed and Bar-tailed Godwits (Table 1), and in either small or large flocks of them. Associations with other waders, such as Banded Stilt (*Cladorhynchus leucocephalus*), Red-necked Avocet (*Recurvirostra novaehollandiae*), Far Eastern Curlew (*Numenius madagascariensis*) and Grey Plover (*Pluvialis squatarola*), are much less frequent. Hudsonian Godwits in South Australia have been found almost entirely with Black-tailed Godwits, as also was the individual in WA (Table 1). Those

Table 1. Australian records of the Hudsonian Godwit to 2020. In each case only a solitary individual was observed. Birds Australia Rarities Committee (BARC) acceptance is of one submitted record, not of every observation over the whole time period; information is taken from the BARC Index of Cases downloaded from www.birdlife.org.au/conservation/science/rarities-committee April 2020. Records obtained from Eremaea Birdlines www.eremaea.com and BirdLife Australia's Birdata https://birdata.birdlife.org.au/ downloaded March 2020. NSW = New South Wales, SA = South Australia, SARC = South Australian Rarities Committee (of Birds SA), WA = Western Australia.

Date of records	Location of records	Association with other godwits	Reference or source	BARC
Dec 1982 to Dec 1983; 21 Jan, 7 April & 11 Nov 1984; 5 Jan & 7 April 1985	Kooragang Island, Hunter River estuary, NSW	Bar- and Black-tailed	Morris 1991	accepted
Sept 1986 to April 1987; Sept 1987 to April 1988	Dry Creek Saltfields, NW of Adelaide, SA	Black-tailed	Cox 1990	accepted
July 1991 to March 1992	Lauderdale and Orielton Lagoon, Tasmania	Bar-tailed	Patterson *et al*. 1994	accepted
13 Jan 2000	Werribee, Port Phillip Bay, Victoria	—	BARC index	accepted
Mar-Apr 2002, Mar-Apr 2003, Nov 2003 to Jan 2004, April 2004, Dec 2004, Feb-Apr 2005, Nov 2005, Jan-Apr 2006, Sept-Nov 2006, Mar-Apr 2007, Oct 2007, Mar-Apr 2008	Dry Creek Saltfields and Buckland Park Lake, NW of Adelaide, SA	Black-tailed	Rogers 2004, 2006, 2008a, 2008b, 2009, 2010a, 2010b	[not submitted to SARC or BARC]
Jan-Feb 2009; May-Sept 2009	Cheetham salt works; mouth of Laverton Creek, Altona; Western Treatment Plant Werribee. All NW Port Phillip Bay, Victoria	Bar-tailed	Eremaea Birdlines	accepted
Feb 2012	Picnic Cove, Lake Joondalup, ca 25 km N of Perth, WA	Black-tailed	Eremaea Birdlines	accepted
Dec 2015 to Jan 2016	Lake Wollumboola, Illawarra, NSW	Bar- and Black-tailed	Eremaea Birdlines	accepted
Oct-Dec 2017	Reef Island Nature Conservation Reserve, Westernport, Victoria	Bar-tailed	Eremaea Birdlines; Birdata	not listed
9 March 2018, 1 Oct 2018	Orielton Lagoon – Greenshank Bay, Tasmania	Bar-tailed	Eremaea Birdlines	accepted

Table 1 continued

Date of records	Location of records	Association with other godwits	Reference or source	BARC
July-Aug 2018	Lake Wollumboola, Illawarra, NSW	Bar-tailed	Eremaea Birdlines	accepted
18 Dec 2017; 24 June 2018; 17 Jan 2019	Swan Island and Sand Island, Swan Bay, Bellarine Peninsula, Victoria	Bar-tailed	Eremaea Birdlines; Birdata	not listed
March 2019	Lake Wollumboola, Illawarra, NSW	Bar-tailed	Eremaea Birdlines	accepted
Sept-Oct 2019	Blakehurst/Kogarah Bay, Sydney, NSW	Bar-tailed	Eremaea Birdlines	accepted

in NSW, Victoria and Tasmania, in contrast, have been recorded mostly in association with Bar-tailed Godwits. In the latter cases, this may be due simply to the far greater abundance of Bar-tailed Godwits over-wintering on the Australian east coast. Analysis of records from the *Atlas of Living Australia* (https://biocache.ala.org.au/search#tab_simpleSearch) shows that for NSW, Victoria and Tasmania combined, numbers of Black-tailed Godwit records are 10% to 21% of Bar-tailed Godwit records per decade from the 1980s to 2010s. For South Australia, where numbers of over-wintering Bar-tailed Godwits are far fewer (Lane 1987; Barrett *et al*. 2003), Black-tailed records are as much as 25% to 58% of those for Bar-taileds.

Such patterns of association in Australia may also be influenced by mixing among godwit species at staging grounds immediately prior to migration. Correlating observations of small numbers of Hudsonians among large flocks of Bar-tailed at principal Alaskan pre-migratory gatherings, Gill *et al.* (2005) presented evidence suggesting that New Zealand Hudsonians may accompany Bar-tailed Godwits *L. lapponica baueri* on their southward migration from Alaska to New Zealand. Nearctic *L. lapponica baueri* can accomplish this in a direct, non-stop flight across the Pacific Ocean to either eastern Australia or New Zealand, in contrast with the EAA Flyway route taken by Palaearctic *L. lapponica menzbieri* from Siberia to north-western Australia (Wilson *et al.* 2007; Battley *et al.* 2012). Hudsonians in coastal east to southeast Australia, where *L. lapponica baueri* is the overwhelmingly dominant Bar-tailed immigrant (Higgins & Davies 1996; Minton *et al.* 2011), may simply become caught up in the larger flocks of Bar-taileds migrating from Alaska. Should this be at all frequent, the status of Hudsonian Godwits in Australia would be much the same as in New Zealand (Gill *et al.* 2010). The apparent absence of Hudsonian records from coastal eastern Queensland (apart from the 1910 specimen) might be explained if most Australian Hudsonians migrate south with Bar-taileds first to New Zealand. Leg flag sightings show that there is considerable cross-Tasman movement of immature Bar-taileds, with Australian destinations largely in Victoria and NSW (Minton *et al.* 2011). This may also be the route taken by many of the Hudsonians, which would then be present in eastern Queensland only briefly, if at all, the following autumn during their northward migration with Bar-tailed Godwits.

The association of South and Western Australian Hudsonians with Black-tailed Godwits is more difficult to explain. The subspecies of Black-tailed Godwit occurring in Australia, *L. limosa melanuroides* (see Condon 1975; Higgins and Davies 1996; Dickinson and Remsen 2013), breeds in east Siberia, from Mongolia and the Lena River drainage east to western Bering Sea islands; it would not normally encounter Hudsonian Godwits on breeding or staging

grounds. If some Australasian Hudsonians do associate with Australasian Black-taileds at pre-migratory stagings, it probably results from a few far west Alaskan Hudsonians first passing a little further westwards through the west Bering Sea islands to link there with larger groups of Black-taileds at the head of the EAA Flyway. This would eventually land many of them, post migration, on the northwest coast of Australia in the Broome region (Minton *et al.* 2011). After intra-Australian dispersal, it would account for the co-occurrence of the two species west of the main Australian range of over-wintering Bar-tailed and Hudsonian Godwits. However, in more than three decades of intensive wader monitoring at the Birdlife Australia Observatory at Broome there have been no records of Hudsonian Godwits so, if any come that way, it must be a very rare event. The Lake Joondalup sighting is probably an example of it, and Cake *et al.* (2016) described the recent history of Lake Joondalup, south-west WA, as 'a trap for southward-migrating vagrants'.

Cox (1990) described the September build-up of Black-tailed Godwits in 1986 and 1987 at the Dry Creek Saltfields, from about two dozen that over-wintered to about double the number by 20 September, on which date the Hudsonian Godwit was first observed in both years. Numbers of Black-taileds increased over summer to a peak in autumn (Cox 1990), fairly consistent with Close and McCrie's (1986) study showing that their main arrival was around November or December. It is possible that this Hudsonian also migrated with the vanguard of Black-tailed Godwits. The Hudsonian visiting the Dry Creek Saltfields from 2002-2008 (Table 1 and references therein) was first observed in each season from November to March, with one occasion in late October; like the 1986-7 bird it too always appeared when Black-tailed Godwits arrived (C. Rogers, pers. comm.). If these Hudsonians did migrate with Black-tailed, they probably flew from north-western Australia across inland regions to SA. As discussed by Rogers and Cox (2018) many ephemeral wetlands of inland SA have attracted thousands of migratory shorebirds in spring and early summer. Badman and May (1983) noted 11 Black-tailed Godwits in the Coongie Lakes area (North East SA) on 29 August 1979, Carpenter *et al.* (2003) listed an August record in the North East and two November records in the North West of SA, and J. Reid observed 15 in the Coongie Lakes area in April 2012 (Carpenter and Horton 2019), this presumably being during northward migration.

Another explanation for association of Hudsonian with Black-tailed Godwits could be ecological. Lone individuals, as Australian Hudsonians apparently are, may have more difficulty finding food sources than a prospecting flock; and, as godwits are gregarious birds at their over-wintering grounds (Hayman *et al.* 1986), they are probably safer from predators when in flocks. Hudsonians are also the sister species of the Black-tailed, not Bar-tailed (Gibson and Baker 2012), and so may share with the former more compatible foraging behaviour, food preferences and habitat requirements on over-wintering grounds.

Senner and Coddington (2011) noted that detailed information on feeding habits and habitats and foraging ecology for Hudsonian Godwits was lacking. Their study demonstrated that in South American over-wintering sites Hudsonians used a variety of habitats, both freshwater and marine. But each habitat had in common the presence of soft sediments where the godwits could probe the sediment deeply. Black-tailed Godwits in Australia also use a variety of habitats including freshwater and inland, and prefer sites with muddy substrates (Menkhorst *et al.* 2019; Higgins and Davies 1996). Australian Bar-tailed Godwits in contrast are mainly coastal and prefer to forage on large, intertidal sandflats (Lane 1987; Menkhorst *et al.* 2019). Differences in habitat preferences of Black-tailed and Bar-tailed can be discerned even within one area, for example at Moreton Bay, Queensland, where Black-tailed were limited to muddy habitats in the upper reaches of estuaries,

while Bar-tailed ranged more widely, particularly favouring saline island shores (Thompson 1998). In the Strathalbyn-Goolwa area, Eckert (2000) recorded flocks of Black-tailed Godwit at freshwater sites on Lake Alexandrina, whereas small numbers of Bar-tailed Godwits frequented the more saline area around the mouth of the River Murray but rarely visited freshwater locations further inland.

The preparedness of Hudsonian Godwits to accompany Black-tailed in freshwater habitats is demonstrated by the WA record at Lake Joondalup (Table 1) and the SA records at Buckland Park Lake (which abuts the Dry Creek Saltfields). Cox (1990) noted that the 1986-7 Hudsonian and Black-taileds occupied this shallow, freshwater lake when it was at optimum levels for wading birds, remaining there to feed throughout the day, until it dried during summer. The 2002-8 Hudsonian, together with the Black-tailed, likewise had a preference for the lake when available (C. Rogers, pers. comm.). In circumstances where Black-tailed Godwits are close to Bar-tailed in local abundance, in periods where communalism is more readily tolerated than on breeding grounds, and in situations of preferred foraging habitat, solitary Hudsonian Godwits could be expected to associate with Black-tailed rather than Bar-tailed Godwits.

CONCLUSION

Our findings highlight several points. The discovery of the Hudsonian Godwit specimen demonstrates the value of museum collections and the need for their continued research. The frequency of recent observations of this godwit, particularly in the last decade, suggests that it may be a regular, if rare, visitor to Australia rather than a vagrant. The distribution of Hudsonian records in eastern and south-eastern Australia indicates that their usual southward migration is likely to be trans-Pacific, perhaps, even probably, with Bar-tailed Godwits *L. lapponica baueri*. The association of Hudsonians with Black-tailed Godwits, in SA in particular, suggests that in situations where Black-tailed are close to Bar-tailed in abundance, the former is the preferred species with which solitary Hudsonians seek flock support.

Much of the discussion above is speculative, but it raises questions to test with research that will be essential for better understanding of migration pathways and social interaction of Hudsonian Godwits on their over-wintering grounds in Australia and the southwest Pacific. Knowledge of these factors, furthermore, is important for the conservation and management of Hudsonian Godwits here and in the Americas, amid significant declines in numbers of most shorebird species, including godwits, at local, national and international levels (Clemens *et al.* 2016; Murray *et al.* 2018; Rogers and Cox 2018). The northward migration path of Australia's Hudsonian Godwits is unknown but most likely via the EAA Flyway, as for both Black-tailed and Bar-tailed (Minton *et al.* 2011). As with all other shorebirds using this flyway, they face enormous conservation challenges for survival (Szabo *et al.* 2016).

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