Latham's Snipe counts at Irrawang Swamp, NSW

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During the Austral summer Latham's Snipe *Gallinago hardwickii*, a cryptic species, is typically encountered in small numbers widely distributed across the landscape. However, these birds also congregate in large numbers on shallow lagoons with muddy edges. This note places on record historical counts of large congregations in the Hunter Region of NSW. The reasons for recent decreases, often exceeding 50%, in the size of these congregations are discussed. Variations in the seasonal occurrence of peak numbers of snipe at Irrawang Swamp near Raymond Terrace demonstrate the importance of water levels, with snipe attracted by muddy margins.

INTRODUCTION

Maddock (2008) in his overview of the degradation of the wetlands of the Hunter Region used Latham's Snipe as a case study. His publication is the most comprehensive compilation of historical information on the species for the Hunter Region of NSW. However, although referenced in Cooper *et al.* (2016) this publication is not widely known. In view of the current national interest in Latham's Snipe (Hansen 2017; https://lathamssnipeproject.wordpress.com/) and concerns about the species' trajectory, the purpose of this note is to make the data more readily available and comment on its current implications.

Latham's Snipe breeds in Japan and migrates to Australia during the Austral summer, where it is widely distributed in freshwater wetlands. While often encountered in small numbers dispersed across wetlands and marshy areas Latham's Snipe sometimes congregates in large numbers at favoured wetlands (Maddock 2008). Irrawang Swamp 32.724°S 151.748°E, a wetland of approximately 10 ha area, which is located between Raymond Terrace and Seaham in NSW is an example. Arguably the Irrawang data set, which is the focus of this note, is the most comprehensive source of information on the manner in which snipe congregate at suitable wetlands in the Hunter Estuary.

METHODS

It is difficult to conduct comprehensive counts of Latham's Snipe, a cryptic species prone to hiding in dense vegetation and remaining invisible unless flushed. However, under favourable conditions, when water levels fall and extensive areas of mud are exposed, Irrawang Swamp provides good opportunities to obtain accurate counts of the number of snipe present.

Surveys were conducted by walking the circumference of the swamp and noting all birds on the mudflat and flushed from peripheral vegetation. Surveys were first conducted in 1985/86 and have been repeated intermittently since that time. In years when monitoring occurred, surveys were conducted between August and March, often at approximately monthly intervals. A number of partial counts, made from Newline Road adjacent to the swamp, were excluded from the analysis.

A number of observers were involved including Wilma Barden and Geoff Winning in 1986/86, Anne Heinrich in 1986/87, Max Maddock from 2002/03 to 2006/07 and Bruce Watts in 2017/18.

RESULTS

Peak annual counts of Latham's Snipe at Irrawang Swamp for the 31-year period 1986/87 to 2017/18 are shown in **Table 1**. In six summers multiple surveys were conducted (*n* ranged from 3 to 7). The month in which peak numbers occurred varied from October to March, although most of the peak counts were made in November. Although comprehensive records of water levels are not available, conditions ranged from full to completely dry with no snipe present. Counts involving high numbers of snipe were characterised by conditions involving extensive areas of drying mud.

Table 1. Summary of Latham's Snipe survey results for Irrawang Swamp

Period	Peak numbers	Peak Month	Number of surveys
1986/87	32	Jan	5
1987/88	61	Nov	6
2001/02	35		
2002/03	40	Mar	3
2004/05	73	Nov	7
2005/06	24	Nov	6
2007/08	4		
2017/18	21	Oct	7

In **Table 2** (copied from Maddock 2008) the peak counts at Irrawang Swamp are compared with those at other wetlands where large numbers of Latham's Snipe occurred historically. These peak counts demonstrate the manner in which key wetlands in the Hunter Valley can hold very large numbers of Latham's Snipe.

Table 2. Records of Latham's Snipe maximum counts Lower Hunter key wetlands 1978-2007/08

Year	Lorna St (NWR/MSw)	Wetlands Centre	Cedar Hill (PNR)	Seaham Swamp	Irrawang Swamp
1978				105	
1984	100+	12+			
1985/86	104	9	44	30	32
1987/88	55				61
1988/89	47	5	115		
1996/97	20 (MSw)				
1997/98			475		
1998/99			230		
1999/00			115	1	
2000/01			66	11	
2001/02			35	0	
2002/03			7	0	40
2003/04	30	9	35	0	
2004/05			45	0	73
2005/06	34		66	1	24
2006/07			97	0	23
2007/08			5	0	4

Derived from Anon (1984), Crawford (2008), Gilligan (1980), Barden (1988, 1989), Barden and Winning (1986), Maddock (unpublished data), Stuart (1994-2006).
Abbreviations: NWR Newcastle Wetlands Reserve, MSw Market Swamp, PNR Pambalong Nature Reserve.

DISCUSSION

During the Austral summer lagoons in the lower Hunter Valley progressively dry out, but can be rapidly filled by storms resulting in highly variable annual conditions. At Irrawang Swamp the occurrence of snipe was favoured by drying conditions which resulted in extensive muddy margins. It is a shallow wetland with many trees and small islands of vegetation providing opportunities for snipe to loaf when not actively foraging, a feature which facilitates counting the numbers present. Indeed the functions of these lagoons may be to provide diurnal shelter, because the Latham's Snipe are crepuscular and nocturnal feeders and may disperse to forage in other areas at dusk (Newman 2008; B. Hansen pers. comm.). The variable conditions at the lagoons result in fluctuations in the timing of peak numbers, a result which, as discussed later, has implications for snipe monitoring programs.

In the area surrounding Irrawang Swamp and the other locations mentioned in **Table 2** there are many small dams, ephemeral marshy areas and extensive flood plains which support snipe dispersed in small numbers. Under dry conditions these wetlands may become unsuitable for Latham's Snipe resulting in the progressive movement and concentration of birds at the larger wetlands as water levels drop and muddy margins are exposed. Conversely, following storms

involving torrential rain, the lagoons rapidly fill to capacity, the muddy margins disappear and snipe must seek other foraging options. At this stage they disperse and exploit ephemeral water meadows and marshy areas on the surrounding flood plains of the Lower Hunter Valley (Newman 2008). In extreme drought conditions, when even the larger lagoons such as Irrawang Swamp are dry, the snipe must seek other opportunities which include foraging in dry paddocks, where they probe for spiders and other insects (Newman 2008).

The peak counts listed in **Table 2** demonstrate the manner in which key wetlands in the Hunter Valley can hold very large numbers of Latham's Snipe. Indeed the 475 recorded at Pambalong Nature Reserve in 1997/98 in December is one of only two sites in the East Asian-Australasian Flyway where more than 1% of the population of the species has been recorded in a count (Bamford *et al*. 2008). The other was a count of 430 at the Powling Street Wetlands, at Port Fairy in Victoria in 2010 (B. Hansen pers. comm.).

The results in **Table 2**, particularly those conducted at Cedar Hill Drive, now Pambalong Nature Reserve, provide clear evidence of a decrease at that location. During the past decade the highest count at any wetland in the Hunter Region was 53 on 15 Jan 2015 at Wallsend Wetlands (Stuart 2017). While this contemporary evidence suggests that the species has decreased, at least within the Hunter Region (Cooper *et al*. 2016), it may be prudent to consider the possibility that these decreases are the consequence of the degradation of habitat with invasive aquatic vegetation encroaching on areas of open water (Maddock 2008) at locations where snipe used to congregate in large numbers as water levels fell.

The variation in the timing of peak counts at Irrawang Swamp (**Table 1**), which is driven by fluctuations in water levels, exacerbates the difficulty in using such counts to estimate regional population levels and their trends. For instance, the Pambalong Nature Reserve counts were conducted during December, and may not have represented the peak population for the summer if water levels were unsuitable.

CONCLUSIONS

Contemporary records of Latham's Snipe at wetlands in the Lower Hunter Valley where they congregate are considerably lower (typically < 50%) than in previous decades when numbers in the range 100 to 500 were recorded at several locations (**Table 2**). Surveys at Irrawang Swamp demonstrate that snipe are most numerous when shallow lagoons are drying out and the timing of optimal conditions varies between years.

ACKNOWLEDGEMENTS

I thank Heather Maddock and Michele Maddock Keith for providing access to Max's notes and records. Bruce Watts provided recent data for Irrawang Swamp. Many people have contributed to the snipe counts, particularly at Pambalong Nature Reserve. They are thanked for their efforts, conducted under demanding conditions. Birgita Hansen is thanked for helpful comments on the manuscript.

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