

*Short Communication*

**NEW DISTRIBUTIONAL RECORD OF ASIAN OPENBILL *Anastomus oscitans* IN SUMATRA, INDONESIA: AN UPDATE TO AMINUDDIN *et al.* (2020)**

**CATATAN SEBARAN BARU BANGAU NGAGA *Anastomus oscitans* DI SUMATRA, INDONESIA: PEMBAHARUAN TERHADAP AMINUDDIN *et al.* (2020)**

**Syahrhas Fathin Aminuddin<sup>1\*</sup>, Chairunas Adha Putra<sup>2</sup>, Prayitno Geonarto<sup>3</sup>, Taufik Ardiansyah<sup>4</sup>, Tedi Setiadi<sup>1</sup>**

<sup>1</sup>Bird Conservation Society, Bandung, West Java, Indonesia

<sup>2</sup>Wild Heritage of Sumatra Foundation, Jalan Tempuling No. 169, Medan 20222, North Sumatra, Indonesia

<sup>3</sup>Restorasi Ekosistem Riau, Pangkalan Kerinci, Riau, Indonesia

<sup>4</sup>Komunitas Serindit Melayu, Riau, Indonesia

E-mail: [yayasfathin19@gmail.com](mailto:yayasfathin19@gmail.com)

(received August 2021, reviewed October 2021, accepted June 2022)

**ABSTRACT**

The occurrence of Asian Openbill *Anastomus oscitans* has been confirmed in Indonesia, specifically in the Sumatra region. Its first two confirmed observations were in December 2019 at Abang Island (Riau Islands) and in September 2020 at Bagan Percut (North Sumatra). We conducted more observations to record its presence in the eastern side of Sumatra Island for several months in 2020. We observed Asian Openbill at three new locations in Riau province. There are many aspects from the occurrences of these birds in the Sumatra region that need to be investigated, especially to picture its current distribution and status, ecological requirement, and potential role as rice pest control.

**Keywords:** Southward range expansion, Stork, water bird.

**ABSTRAK**

Keberadaan Bangau Nganga *Anastomus oscitans* di Indonesia telah terkonfirmasi, yaitu di wilayah Sumatra. Dua catatan pertama keberadaan burung ini, yaitu di Pulau Abang (Kepulauan Riau) pada Desember 2019 dan di Bagan Percut (Sumatra Utara) pada September 2020. Kami mengadakan pemantauan lainnya untuk mendata kehadiran burung ini di beberapa lokasi di bagian timur Pulau Sumatra pada beberapa bulan di tahun 2020. Kami mencatat keberadaan Bangau Nganga di tiga lokasi baru di Provinsi Riau. Berbagai aspek terkait kehadiran burung ini di wilayah Sumatra perlu untuk diteliti, terutama untuk mendapatkan data distribusi dan status, kebutuhan ekologis, dan potensi peran burung ini sebagai pengendali hama pertanian padi.

**Kata kunci:** ekspansi jangkauan ke arah selatan, Stork, burung air.

**INTRODUCTION**

The Asian Openbill *Anastomus oscitans* is a species belonging to the Ciconiidae or Stork family. Asian Openbill has a relatively small body size compared to Milky Stork and Lesser Adjutant (the most common stork species on the eastern coast of Sumatra). The species had dirty greyish-white plumage and a dull bill with an open gap between the mandibles as the main feature which distinguished it from other Stork family

(Robson, 2002). The species has a wide range expanding from mainland South-East Asia to the Indian Subcontinent (BirdLife International, 2020).

In recent years, the Asian Openbill has rapidly dispersed both northward and southward from its previously known range. To the south, there was an increasing number of Asian Openbill visiting Peninsular Malaysia and Singapore. For instance, the total count of Asian Openbill recorded in a month was

100,000 individuals in November 2019 (Sin *et al.* 2020).

The ongoing birds' dispersal from mainland South-East Asia to Malaysia and Singapore has been documented as it continues rapidly southward (Low *et al.* 2013). Meanwhile, the status of the Asian Openbill in Indonesia was still doubtful (van Marle & Vous 1988; Eaton *et al.* 2016), until the first confirmed records in December 2019, in Pulau Abang, Riau Archipelago. Several months later, in September 2020, more birds were observed in Bagan Percut, North Sumatra province. These two records have been reported by Aminuddin *et al.* (2020).

During the publishing process of that report (Aminuddin *et al.*, 2020), additional information confirming the observation of Asian Openbill began to emerge. The birds were observed in several locations in Riau province further south of the North Sumatra province, closer to Pulau Abang and Singapore. Here we compiled the new locality records and the previous records reported by Aminuddin *et al.* (2020).

## MATERIALS AND METHODS

The observation was carried out in several locations in Riau province, Indonesia, at the following location: Teratak Buluh, Kampar Regency in May and August 2020; Pangkalan Kerinci, Pelalawan Regency in August 2020; and, Kampar River, Pelalawan Regency in February 2020. The observation was conducted during a routine bird monitoring as performed by Taufik Ardiansyah (TA) in Teratak Buluh Village and during an Asian Water Bird Census event as conducted by Prayitno Geonarto (PG) and co. in Pangkalan Kerinci and Kampar River. We recorded time of occurrence, number, activity, location, and habitat.

## RESULTS AND DISCUSSION

1. *Teratak Buluh Village, Kampar Regency, Riau.* From 9 May to 7 June 2020, during a bird watching routine, TA encountered several Asian Openbills in a swamp area inside an oil palm plantation on five different days (Table 1). On 16 May 2020 at 18h00,

**Table 1.** Observation records of Asian Openbill in Sumatra, Indonesia, during 2019-2020.

Location	Date	Lat	Long	Observation notes	Count	Ref <sup>1</sup>
Abang Island, Riau Island	Dec 2019	0°34'N	104°12'E	Fly over	>	A
Teratak Buluh Village, Riau	9 May 2020	0°23'N	101°26'E	Swamp inside oil palm plantation	27	B
	16 May 2020				38	
	21 May 2020				2	
	6 Jun 2020				25	
	7 Jun 2020				25	
Pangkalan Kerinci City, Riau	2 Aug 2020	0°26'N	101°51'E	Fly over a mix land cover	1	B
Pantai Labu Village, North Sumatra	2 Sep 2020	3°39'N	96°53'E	Fly over	1	A
Bagan Percut Village, North Sumatra	23 Oct 2020	3°41'N	98°46'E	Fly over a vast paddy field plantation	146	A
	24 Nov 2020				17	A
	25 Nov 2021				29	B
	30 Nov 2021				66	B
Kampar River, Riau	18 Feb 2021	0°14'N	102°39'E	River sandbank and riparian scrub	2	B
Pematang Lalang Village, North Sumatra	25 Dec 2021	3°42'N	98°47'E	Fly over a oil palm plantation	112	B

Note: <sup>1</sup>A, A. Aminuddin *et al.*, 2020; B Primary Data.



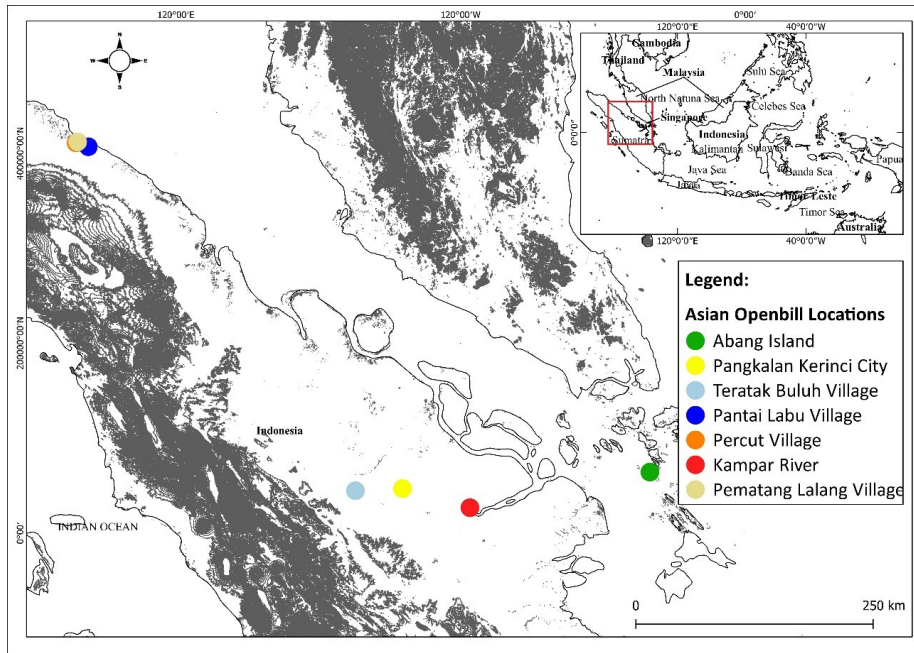
**Figure 1.** Records of Asian Openbill *Anastomus oscitans* in Sumatra, Indonesia: **A**, roosting site on high voltage transmission tower at Teratak Buluh Village (TA); **B**, flock on the tree about 200m to a roosting site at Teratak Buluh Village, 16 May 2020 (TA); **C**, an adult Asian Openbill at Kampar River, 18 February 2020 (PG); **D**, The habitat passed by Asian Openbill when in Pelalawan (PG).

around 38 individuals were observed using a high voltage transmission tower as a roosting (Fig. 1A) site while some birds chose a nearby tree instead (Fig. 1B). During bad weather conditions such as storms, the bird was not observed using the tower as its roosting location. Later in August 2020, none of the birds were resighted in this area despite several days of effort.

2. *Pangkalan Kerinci City, Pelalawan Regency, Riau*. On 2 August 2020 at 09h30-10h30, a single adult Asian Openbill was flying over an open area between secondary forest, oil palm plantation, man-made pond, and housing in Pangkalan Kerinci City, Pelalawan Regency, Riau (Fig. 1D). The bird was spotted in-flight by PG and Muhammad Iqbal, the distinct open space bill was observed

but unfortunately the bird did not land and no photographs were taken.

3. *Kampar River, Riau*. On 18 February 2021, PG encountered two adult Asian Openbills. An individual foraged on an open sandbank on the river adjacent to a patch of dense-tall scrub cover (Fig. 1C). It was handling unidentified prey. Shortly after, this individual retreated and flew up into the air flushing another individual which was hiding in the dense vegetation. Eventually, visual contact was lost when both individuals flew northwards and landed further away.
4. *Bagan Percut Village*, On 25 & 30 November 2021, CAP count 29 and 66 Asian Openbill fly from the west to east at the main road in Percut Village.



**Figure 2.** Map of locality records of Asian Openbill in Sumatra and its satellite islands.

5. *Pematang lalang Village*, On 25 December 2021, CAP saw a total 112 Asian Openbill soaring and fly over the oil palm plantation. *Bubo sumatranus* (barred eagle owl/beluk jampuk)

The recent appearance of Asian Openbills at several more locations in Sumatra (Fig. 2) has been a valuable additional information to understand the dispersal patterns of the bird in recent times. The record of the Asian Openbill at Kampar is also the first record of the species during AWC-Indonesia, which also highlights

the potential benefit of large-scale participatory citizen science programs.

The result shows that Asian Openbills were recorded almost throughout the year as early as December 2019 in Sumatra. Similar pattern also appeared in other new dispersal range including Malaysia and Singapore (southward range expansion), and China (northward) (Zainul-Abidin *et al.* 2017; Liu *et al.* 2015). In Malaysia, the bird was observed nearly every month since 2016 (Table 2). This phenomenon may indicate that the bird dispersal

**Table 2.** Observation recorded in Malaysia (M), Singapore (S), and Indonesia (I).

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Jan</b>					S			M	M	M	M;S	M;S	M;S	M;S
<b>Feb</b>		M				M		M	M		M	M;S	S;I	M;S
<b>Mar</b>					M	M		M	M		M;S	M;S	M	M;S
<b>Apr</b>						M	M	M	M	M	M;S	M;S	M	M
<b>May</b>											M;S;I	M;S;I	M	
<b>Jun</b>								M			M	M;S;I	M	
<b>Jul</b>										M	M	M;S	M	
<b>Aug</b>	M	M						M	M	M	M	M;S;I	M	
<b>Sep</b>						M			M	M	M	M;S;I	M	
<b>Oct</b>								M	M	M	M	M;I	M	
<b>Nov</b>									M	M	M	M;I	M;I	
<b>Dec</b>								M		M	M;S;I	M;S	M;I	

Note: Data for Malaysia and Singapore were extracted from eBird (2022) and data for Indonesia based on this study and Aminuddin *et al.* (2020); grey painted columns show that the Asian Openbill was recorded each month in a year calendar in the Malaysia region.

into a new range is not a climatic driven migration. The driver of its dispersal can be explained by some factors i.e., high adaptation capacity towards wide range of ecological and environmental conditions, strong dispersal capabilities, rapid population growth in its core range, habitat degradation in the tropical lowland as its native range (*see Liu et al.* 2015), and tolerance niche expansion (Lei & Liu, 2020).

Recent species niche and potential distribution modelling shows that the southern population of Asian openbill tends to expand its range towards a wetter environment, and several islands near the equator were more suitable (Lei & Liu, 2021). Based on these findings, Sumatra Island appears to fit with it. Moreover, Asian Openbill has been recognized as a freshwater mollusc specialist with its main habitat was freshwater ecosystem such as paddy field, river, and swamp (Round & Gardner, 2008; Low *et al.* 2013; Liu *et al.* 2015; Zainul-Abidin *et al.* 2017). There are still large areas of paddy fields and freshwater ecosystems along the eastern coast of Sumatra that offer potential habitat for Asian Openbill.

## CONCLUSION

Recent observations of Asian Openbill in several locations in the eastern side of Sumatra Island have confirmed the occurrence of this bird in Indonesia and become additional valuable information on its southward range expansion. However, there is still a wide gap of knowledge that needs to be filled. In the future, more surveys are required to: (i) record as many localities as possible to establish its current distribution and status; (ii) investigate habitat preference, habitat use and ecological requirements; and (iii) explore the potential

benefit of this bird as pest control on rice production.

## ACKNOWLEDGEMENT

We are grateful to WAG Burung-Migrasi\_ID for the discussion on preliminary information of Asian Openbill occurrence. We thank Zaini Rakhman & Yusron Saaroni for their guidance during last year's airport's bird risk assessment. We extend our gratitude to Dian, Donni, Ijal, Iqbal, Muhammad Iqbal, and Sultan for their participation in AWC 2021 along the Kampar River and for the RER team's continued support.

## REFERENCES

- Aminuddin, S. F., Chairunas, A. P., Tedi, S., Zaini, R. & Yusron, S. 2020. First confirmed record of Asian Openbill *Anastomus oscitans* in Indonesia. *BirdingAsia*, 34, 127-128.
- BirdLife International. 2020. Species factsheet: *Anastomus oscitans*. Accessed at <http://www.birdlife.org> on 21 September 2020.
- Eaton, J. A., van Balen, B., Brickle, N. W. & Rheindt, F. E. 2016. *Birds of the Indonesian Archipelago: Greater Sundas and Wallacea*. Barcelona: Lynx Edicions.
- eBird. 2022. *eBird: An online database of bird distribution and abundance*. Cornell Lab of Ornithology, Ithaca, New York. Available at <http://www.ebird.org>. Accessed 10 April 2022.
- Lei, Y. & Liu, Q. 2021. Tolerance niche expansion and potential distribution prediction during Asian openbill bird range expansion. *Ecology and Evolution*, 11(10), 5562-5574. <https://doi.org/10.1002/ece3.7456>

- Liu, Q., Buzzard, P. & Luo, X. 2015. Rapid range expansion of Asian Openbill *Anastomus oscitans* in China. *Forktail*, 31, 118-120.
- Low, B. W., Lim, K. S., Yap, F., Lee, T. K., Lim, K. C. & Yong, D. L. 2013. First record of the Asian Openbill, *Anastomus oscitans* (Aves: Ciconiidae) in Singapore, with notes on foraging and dispersive movements. *Nature in Singapore*, 6, 25–29.
- Robson, C. 2002. *A Field Guide to the Birds of South-East Asia*. London: New Holland Publishers (UK) Ltd.
- Round, P. D & Gardner, D. 2008. *Birds of the Bangkok Area*. Bangkok: White Lotus.
- Sin, Y. C. K., Ng, D. & Kennewell, M. 2020. An unprecedented influx of vagrants into Malaysia and Singapore during the 2019–2020 winter period. *BirdingASIA*, 33, 142–147.
- van Marle, J. G. & Vous, K. H. 1988. *The birds of Sumatra*. Tring, UK: British Ornithologists' Union (Check-list No. 10).
- Zainul-Abidin, M. K., Mohd-Taib, F. S. & Md-Nor, S. 2017. Distribution and habitat selection of the Asian Openbill (*Anastomus oscitans*) in Peninsular Malaysia. *Malay. Nat. J.*, 69(3), 169–181.