

# Survey and Hunting Assessment of Shorebirds with special focus on Spoon-billed Sandpiper in Northern Sumatra (Aceh Province), Indonesia



**Report to The East Asian-Australasian Flyway Partnership (EAAFP)**



**Reported by  
Chairunas (Nchay) Adha Putra and Desy Hikmatullah  
Conservationt Biologist – Warisan Hidup Sumatera Foundation (WHIS)**

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## **Introduction and Objectives of the project**

The Eastern Coast of Aceh Province is the westernmost part in Indonesia region, which stretch more than 350 km from Aceh Tamiang District to Banda Aceh. Aceh Province consists of 7 districts, from Aceh Tamiang (the easternmost part) to Aceh Besar district which is located in the capital of Aceh Province. Aceh's coastline is dominated by sandy beaches, and several locations has an intertidal mudflat as well as aquaculture/fishpond and oil palm plantation area. The Eastern Coast of Aceh, which is has a diverse wetland habitat, it's also has a potential to support migratory waterbirds on the East Asian-Australasian Flyway. But, there is very little information regarding the species richness and number of population of migratory shorebirds on the Eastern Coast of Aceh. A comprehensive survey was conducted by Iqbal *et al.* 2010, successfully visited 8 locations along the Eastern coast of Aceh and recorded at least 13 species of migratory shorebirds with a total of 716 individuals. The first sighting of Grey-headed Lapwing in Indonesia was recorded at those surveys. In the 1980s (Ollington, R.F. and D. Parish. 1989), also noted the first sighting of Lesser Yellowlegs as well as the first record for the island of Sumatra, Indonesia. The recent information regarding migratory shorebirds in Eastern Coast of Aceh is in 2018, Putra *et al.* 2019 recorded very first sighting of Spoon-billed Sandpiper (one of the most endangered shorebirds in the world) lime 07 with a satellite tracking in North Aceh district. During 3 days of observation around the sighting location, the survey team counted a total of 9,791 individual shorebirds from 24 species.

Indonesia's first ever Spoon-billed Sandpiper (SBS) was reported on the 3 November 2018 in a fishpond area along the north Aceh Coast (Putra *et al.* 2019). This record is important because it's prove that some of the Spoonies may winter along the coast of Sumatera. The Eastern Coast of Sumatera is not only interesting for Spoon-billed Sandpiper but also for other globally important species, such as Nordmann's Greenshank and Great Knot which has been recorded quite a lot in Eastern Coast of North Sumatera Province. The wintering area of the Spoon-billed Sandpiper is still not fully understood despite enormous field survey efforts around Asia. Information about important site for shorebirds in the North-eastern tip of Sumatera (especially\Aceh Province) is lack and limited. The aim of the shorebird surveys on the Eastern Coast of Aceh Province was to conduct a comprehensive survey during migration season in October 2019 to February 2020, the results would provide a baseline account of waterbird populations in the Aceh Province. In particular, the most important sites would be identified so that conservation efforts and resources could be designated to these areas accordingly. Therefore, the project will focus on the following objectives:

**Objective 1: To survey all possible shorebird areas in northern sumatra (Aceh Province)**

**Objective 2: To identify key shorebird areas for possible protected areas/ FNS**

**Objective 3: To explore and determine the scale of shorebird hunting in Aceh Province**



**Shorebirds flock while resting at the fishpond area in Ulee Matang Village.**

## Method

The survey was conducted in three phase, phase-1 on 18-31 October 2019, phase-2 on 4-9 December 2019 and phase-3 on 26-31 January 2020. We surveyed 29 locations, consisting 19 fishpond area and 10 mudflat. Administratively, the entire survey location (29 locations) belongs to 7 districts, namely, Aceh Tamiang Regency (the easternmost district bordering with North Sumatera Province), East Aceh, North Aceh, Bireun, Pidie Jaya, Pidie and Aceh Besar Regency with a total coastline of 413 km (Figure 1).



**Figure 1. Survey location in the Eastern coast of Aceh Province, Indonesia.**

Before conducting the field survey, we collected every location that potentially support the presence of migratory shorebirds, based on information from scientific publications, data from the Asian Waterbird Census, and information from birdwatching communities and individuals. In addition, we

use satellite imagery from Google Earth Image to see the potential mudflats and another potential habitats. The main transportation used is a car to access roads in coastal area or remote areas will use a boats. The selection of survey locations is carried out with consideration of some of the information above as well as the possibility of locations that can be surveyed based on conditions in the field. We used drone to covering large areas or difficult to reach by walk or car from the landside.

Species counted and identification directly using monocular and binoculars (Figure 2). Scanning quickly carried out at a radius of 200 m from the observer point at each location visited, if we did not find any birds we will move to the next location. Scanning flocks from as close as possible without disturbing them and putting birds to flight. Where possible, birds were counted individually, but large flocks and groups of birds in flight were block counted in multiples of 50 or 100. Where possible, birds were counted individually, but large flocks and groups of birds in flight were block counted in multiples of 10 or 50. Count results are provided as total number of birds of each species observed, per site, on each survey day. In addition, the data that we are collect include geographic coordinates and the type of habitat. Bird names and taxonomy follow Gill and Donsker. 2018. We used Nikon Fieldscope ED50, Kowa Fieldscope TSN-664ED, Opticron Fieldscope 80mm, Nikon Monarch Binocular 10x42 mm and Olympus Binocular 8x42 mm for scanning and counting. The coordinates of the survey location marked using the Garmin 64s GPS and documentation of shorebirds and field activities used Nikon Coolpix P900 camera. Teams are divided into 2 or 3 teams depending on the size of the area. Usually two personnel on each team, with one or two observers counting birds while another took a notes.



**Figure 2. Survey team scanning a flock of shorebirds at the Ulee Matang area (first record of Spoonbilled Sandpiper on November 2018).**

Species identification followed field guides of “Waterbirds of ASEAN” by Woo-Shin Lee *et al.* 2018, “Birds of the Indonesian Archipelago” by Eaton *et al.* 2016, and an identification field guide of “Shorebirds” by Hayman *et al.* 1986.

## Results

### Survey Location

Surveys were conducted at 29 locations including 7 districts (a total coastline around 413 km with an area of 1277.06 ha) from Aceh Tamiang District to Aceh Besar District (Table 1). Fishpond area is the most visited area (19 location) and followed by intertidal mudflat (10 location). The beach substrate dominated by solid sand mix with mud. Several locations are beach tourism area and in some estuaries or river mouth area there are a small seaport with a busy traffic transportation. Water source in the fishpond area comes from river and rain, local people make a floodgates from one pond to another pond (Figure 3). Fishponds are not filled with water thoroughly every month, usually the ponds that are not flooded entirely by water will attract shorebirds to feeding or resting. This happened in the fishpond area at the Ule Matang, Kuala Parek and Cinta Raja Village. The type of fish that become commodities are mostly milkfish, tilapia and shrimp.



**Figure 3. Above; Typical of fishpond area with a water source from river in the Eastern coast of Aceh Province. Below; Typical of a mudflat area at the river mouth of Kuala Tari Village.**

**Table 1. Coordinate and type habitat of survey location at the Eastern Coast of Aceh Province, Indonesia.**

No.	Name of location	Date	Coordinate	Type of habitat	Survey area	Note
1	Ujung Pancu	23/10/2019	5°33'10.66"N 95°14'28.83"E	Mudflat	131 ha	
2	Bact	22/10/2019	5°35'43.74"N 95°21'33.32"E	Fishpond	28.4 ha	
3	Meunasah		5°18'5.15"N 96° 3'44.96"E	Fishpond	15.7 ha	
4	Kuala Tari		5°17'33.42"N 96° 4'41.72"E	Mudflat	45 ha	River Mouth
5	Kuala Bate	25/10/2019	5°25'39.76"N 95°54'52.08"E	Mudflat	25 ha	River Mouth
6	Bate		5°24'49.53"N 95°55'12.82"E	Fishpond	28.3 ha	
7	Manohara	24/10/2019	5°15'48.67"N 96°15'30.18"E	Mudflat	22 ha	River Mouth
8	Kuala Ulim	21/10/2019	5°14'31.57"N 96°17'40.55"E	Fishpond	13 ha	
9	Jangka	26/10/2019	5°14'32.69"N 96°45'18.55"E	Fishpond	77.6 ha	
10	Kuala Pawon		5°16'8.00"N 96°49'23.97"E	Fishpond	20.5 ha	
11	Kuala Pawon		5°16'25.13"N 96°49'26.22"E	Mudflat	1 ha	
12	Kuala Pawon		5°15'55.11"N 96°49'29.51"E	Fishpond	0.13 ha	Breeding Site
13	Kuala Keureutoe Barat	27/10/2019	5° 9'5.56"N 97°15'54.01"E	Fishpond	35.2 ha	
14	Seunobok Rawang	28/10/2019	4°43'49.59"N 97°56'20.80"E	Fishpond	142 ha	
15	Alue Bugeng		4°42'53.24"N 97°56'49.04"E	Fishpond	8.74 ha	Breeding Site
16	Kuala Parek		20/10/2019 5/12/2019 27/01/2020	4°40'31.67"N 97°57'19.40"E	Fishpond	214.7 ha
17	Ulee Matang	21/10/2019 8/12/2019 31/01/2020	5°13'0.68"N 97°26'51.46"E	Fishpond	250 ha	
18	Tanjung Keramat 1	29/10/2019 29/01/2020	4°27'32.63"N 98°10'21.45"E	Fishpond	24.6 ha	
19	Pantai Blang Mameh	6/12/2019	5°14'32.62"N 97° 2'45.40"E	Mudflat	2.32 ha	River Mouth
20	Muara Kuala Meraksa		5° 9'11.11"N 97° 8'54.25"E	Mudflat	16.8 ha	River Mouth
21	Muara Kuala Keureutow	7/12/2019	5° 9'50.64"N 97°16'4.84"E	Fishpond	34.1 ha	
22	Kuala Cangko	8/12/2019	5°10'3.15"N 97°18'6.04"E	Fishpond	38.4 ha	
23	Lhok Puuk		5°12'9.76"N 97°24'5.67"E	Fishpond	56.9 ha	
24	Teupyin Keuyun		5°13'26.24"N 97°26'34.79"E	Fishpond	19.6 ha	
25	Cinta Raja	28/01/2020	4°27'59.82"N 98° 1'45.19"E	Fishpond	12.7 ha	
26	Seruway 1	30/01/2020	4°29'22.17"N 98°11'46.24"E	Mudflat	8.20 ha	
27	Seruway 2		4°28'33.36"N 98°12'52.78"E	Mudflat	0.98 ha	
28	Seruway 3		4°27'54.85"N 98°14'32.31"E	Mudflat	0.78 ha	
29	Tanjung Keramat 2		4°25'57.78"N 98° 9'36.22"E	Fishpond	3.41 ha	
<b>Total Area</b>					<b>1277.06 ha</b>	



Whiskered Tern	2	3	4	7		4	50	3	14	145										
White-winged Tern			1	1	3		47	250	9	7	180									
Little Tern			1				1				3									
Common Tern																				
Un ID Shorebirds																				
<b>Total Count</b>	<b>36</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>11</b>	<b>0</b>	<b>8</b>	<b>95</b>	<b>360</b>	<b>12</b>	<b>406</b>	<b>42</b>	<b>1394</b>	<b>55</b>					

Continued.

Common Names	Location*																			
	16-1	16-2	16-3	17-1	17-2	17-3	18-1	18-2	19	20	21	22	23	24	25	26	27	28	29	
Lesser Whistling Duck	4																			
Little Cormorant	63	32		30	53	3						1	4	3	3					7
Purple Heron			2	1	2	2														1
Grey Heron				1				1												
Great Egret	455	280	650	150	420	87		7		4	17		28	56						315
Yellow-billed Egret	40	26	154	10	45	31								1	15					280
Little Egret	250	275	485	250	375	156		11	2	9	6	4	21	37	3					430
Pacific Reef Egret																				
Cattle Egret												7								
Sriated Heron	2	1	1	2	3	1		1			1			1	1					1
Black-crowned Night-heron					7															
Milky Stork	10	3	3	35	97	38						9	2	1	2					3
Lesser Adjutant	1		1																	
Slaty-breasted Rail					1															
Grey Plover		3		1	37	6									1					
Pacific Golden Plover	25	180	34	200	153	127	24	45	8			29	6	44	9	11				
Little Ringed Plover	5											4								
Lesser Sand Plover	15	1455	157	1200	345	85	44	31				69	3	9	21	27				
Greater Sand Plover	1	50	4	200	120	42		5				14			4	4				
Kentish Plover				10																
Grey-headed Lapwing	4																			2
Whimbrel	2	28	3	6	21	19	39	23						2	2	12	5	3		
Eurasian Curlew		4			4															
Far-eastern Curlew		1																		
Black-tailed Godwit					182															
Bar-tailed Godwit					89											7				
Common Redshank	220	250	218	100	257	54		33							36	2	3			
Marsh Sandpiper	104	4	180	50	18	14														
Wood Sandpiper	48		2		79	36						7			3					
Sharp-tailed Sandpiper					2	1														
Common Greenshank		1	1		1	1								1						
Terek		7		3	25	10	15	12				9			8	28				

Sandpiper																			
Common Sandpiper	13	1	1	5	1	2	1	1	1	1	1	1	1	2	1	1			
Ruddy Turnstone	1	3			2	1													
Asian Dowitcher	26	29			98														
Grey-tailed Tattler																			
Red-necked Stint	7	112	23	2000	367	95						211		17					
Long-toed Stint	15		4	30	294	29						34							
Curlew Sandpiper	237	280	15	400	120	16						5			6				
Sanderling					1														
Ruff					2	1													
Broad-billed Sandpiper		28		300	54	34						2							
Red-necked Phalarope	7																		
Oriental Pratincole				3															
Black-winged Stilt	154	55	35	80	495	77													
White-headed Stilt		11	4	10	162	12													
Whiskered Tern	490	125	87	300	230	45	26	10	7	3	7	43	7	38	34	3	9	4	
White-winged Tern	300	89	149	150	175	31	3		14			12	1	2	5		2		
Little Tern	25	54	17	20	16	21						4						2	
Common Tern		2				2													
Un ID Shorebirds	20															32	50		
<b>Total Count</b>	<b>2544</b>	<b>3389</b>	<b>2230</b>	<b>5548</b>	<b>4354</b>	<b>1077</b>	<b>152</b>	<b>180</b>	<b>31</b>	<b>4</b>	<b>22</b>	<b>484</b>	<b>28</b>	<b>149</b>	<b>254</b>	<b>106</b>	<b>43</b>	<b>65</b>	<b>1044</b>
<b>Total Individual</b>	<b>24142</b>																		
<b>Total Species</b>	<b>50</b>																		

**Note;\*** Information about location refer to Table 1. Kuala Parek (16-1, 16-2 and 16-3) and Ulee Matang (17-1, 17-2 and 17-3) were visited 3 times because both location potentially support a big number of waterbirds.

Potential important locations as stopover spot for migratory shorebirds are fishpond area in Ulee Matang and Kuala Parek village. The total number of individual of waterbirds at the Ulee Matang Village is 10.979 individuals (3 time surveys, on 21 October 2019, 8 December 2019 and 31 January 2020). The total number individual of waterbirds at the Kuala Parek Village is 8.163 individuals (3 time surveys, on 20 October 2019, 5 December 2019 and 27 January 2020). Ulee Matang village was visited 3 times because this location was the location of the first sighting of Spoon-billed Sandpiper for Indonesia in November 2018. But on these survey, we did not find any Spoonbilled Sandpiper on the site or another location.

Pacific Golden Plover, Common Redhsank and Common Sandpiper almost found in each location, Pacific Golden Plover spread from mudflat area, ponds and marsh while Common Sandpiper from mudflat, riverine area, ponds and ricefields area. We counted a total around 2000 individuals of Red-necked Stint on the fishpond area at Ulee Matang village on 21 October 2019. Putra *et al.* 2019, on the same location counted a total 2033 individuals of Red-necked Stint from 2-4 November 2018. Those record indicates that fishpond area in Ulee Matang village is important location as wintering area for Red-necked Stint in Northern Sumatera (Aceh and North Sumatera Province) and detailed observation is needed to find individual of Spoonbilled Sandpiper as similar spesies as Red-necked Stint.

**Table 3. Shorebirds abundant recorded in Eastern Coast of Aceh Province, Indonesia.**

No.	Scientific Name	Common Name	Total count	1% of EAAF population	% Populasi EAAF
1	<i>Charadrius mongolus</i>	Lesser Sandplover	3603	1800	2,00
2	<i>Calidris ruficollis</i>	Red-necked Stint	2864	4750	0,60
3	<i>Tringa totanus</i>	Common Redshank	1434	750	1,92
4	<i>Calidris ferruginea</i>	Curlew Sandpiper	1120	900	1,24
5	<i>Pluvialis fulva</i>	Pacific Golden Plover	992	1200	0,83
6	<i>Himantopus himantopus</i>	Black-winged Stilt	913	-	-
7	<i>Charadrius leschenaultii</i>	Greater Sandplover	466	2000	0,23
8	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	430	300	1,43
9	<i>Calidris subminuta</i>	Long-toed Stint	410	2300	0,18
10	<i>Tringa stagnatilis</i>	Marsh Sandpiper	370	1300	0,28
11	<i>Himantopus leucocephalus</i>	Pied Stilt	199	-	-
12	<i>Tringa glareola</i>	Wood Sandpiper	198	1300	0,15
13	<i>Limosa limosa</i>	Black-tailed Godwit	182	1600	0,11
14	<i>Numenius phaeopus</i>	Whimbrel	167	650	0,25
15	<i>Limnodromus semipalmatus</i>	Asian Dowitcher	153	140	1,09
16	<i>Xenus cinereus</i>	Terek Sandpiper	131	500	0,26
17	<i>Limosa lapponica</i>	Bar-tailed Godwit	96	3250	0,03
18	<i>Pluvialis squatarola</i>	Grey Plover	48	800	0,06
19	<i>Actitis hypoleucos</i>	Common Sandpiper	39	1900	0,02
20	<i>Numenius arquata</i>	Eurasian Curlew	14	400	0,035
21	<i>Charadrius alexandrinus</i>	Kentish Plover	10	1100	0,009
22	<i>Charadrius dubius</i>	Little Ringed Plover	9	1500	0,006
23	<i>Arenaria interpres</i>	Ruddy Turnstone	8	300	0,027
24	<i>Phalaropus lobatus</i>	Red-necked Phalarope	7	1000	0,007
25	<i>Vanellus cinereus</i>	Grey-headed Lapwing	6	250	0,024
26	<i>Tringa nebularia</i>	Common Greenshank	6	1100	0,005
27	<i>Philomachus pugnax</i>	Ruff	3	250	0,012
28	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	3	850	0,003
29	<i>Glareola maldivarum</i>	Oriental Pratincole	3	20000	0,0015
30	<i>Tringa brevipes</i>	Grey-tailed Tattler	2	500	0,004
31	<i>Numenius madagascariensis</i>	Far-eastern Curlew	1	350	0,002
32	<i>Calidris alba</i>	Sanderling	1	220	0,004
<b>Un Identification Shorebirds</b>			<b>102</b>		
<b>Total Count</b>			<b>13.990</b>		

Catatan; Criterion derived from Bamford et al. (2008) and Hansen et al. (2016). For % EAAF Population value we divided total species count with 1 % of flyway population in each species.

Based on the results, there are 5 species of shorebirds which more than 1% of the EAAF population, they are Lesser Sandplover (2 %), Common Redshank (1,92 %), Curlew Sandpiper (1,94 %), Broad-bille Sandpiper (1,43 %) and Asian Dowitcher (1.09 %). Based on our observations in the field, shorebirds presence and abundant on the fishpond area if we compare to intertidal mudflat. The mud substrate on the intertidal zone/coastline is like solid sand so the potential for food diversity/abundance very low. During our boat surveys on the coastline (location at Seruway 1, Seruway 2 and 3), on the low tide there are not many shorebirds doing foraging or resting on the mudflat (see the details on Table 2).

### Conservation Status of Waterbird Species

We recorded 2 Endangered (EN) waterbird species such as Far Eastern Curlew and Milky Stork (Table 4). We counted a total 1 individual of Far Eastern Curlew at the fishpond area in Kuala Parek and we counted a total 158 Milky stork, mostly at fishpond area in Ulee Matang village with the highest count 97 individuals on 8 December 2019. We counted a total 8 individual of the vulnerable species Lesser Adjutant at the Kuala Parek, Seunobok Rawang and Alue Bugeng fishpond area. We recorded 7 Near Threatened (NT) species, such as Eurasian Curlew, Bar-tailed Godwit, Black-tailed Godwit, Asian Dowitcher, Grey-tailed Tattler, Red-necked Stint and Curlew Sandpiper. We found 16 waterbirds species that include on the list of protected species in Indonesia Legislations (P.106/MENLHK/SETJEN/KUM.1/12/2018).

**Table 4. Conservation status of waterbird species based on IUCN, Cites, and Indonesian Legislation.**

No	Scientific Names	Common Names	Coservation Status		
			IUCN	CITES	Ind-leg
1	<i>Dendrocygna javanica</i>	Lesser Whistling Duck	LC	-	UP
2	<i>Microcarbo niger</i>	Little Cormorant	LC	-	UP
3	<i>Ardea purpurea</i>	Purple Heron	LC	-	UP
4	<i>Ardea cinerea</i>	Grey Heron	LC	-	UP
5	<i>Ardea alba</i>	Great Egret	LC	-	P
6	<i>Ardea intermedia</i>	Intermediate Egret	LC	-	UP
7	<i>Egretta garzetta</i>	Little Egret	LC	-	UP
8	<i>Egretta sacra</i>	Pacific Reef Egret	LC	-	UP
9	<i>Bubulcus ibis</i>	Cattle Egret	LC	-	UP
10	<i>Butorides striata</i>	Striated Heron	LC	-	UP
11	<i>Nycticorax nycticorax</i>	Black-crowned Night-heron	LC	-	UP
12	<i>Gallirallus striatus</i>	Slaty-breasted Rail	LC	-	UP
13	<i>Mycteria cinerea</i>	Milky Stork	EN	APP I	P
14	<i>Leptoptilos javanicus</i>	Lesser Adjutant	VU	-	P
15	<i>Pluvialis squatarola</i>	Grey Plover	LC	-	UP
16	<i>Pluvialis fulva</i>	Pacific Golden Plover	LC	-	UP
17	<i>Charadrius dubius</i>	Little Ringed Plover	LC	-	UP
18	<i>Charadrius mongolus</i>	Lesser Sandplover	LC	-	UP
19	<i>Charadrius leschenaultii</i>	Greater Sandplover	LC	-	UP
20	<i>Charadrius alexandrinus</i>	Kentish Plover	LC	-	P
21	<i>Vanellus cinereus</i>	Grey-headed Lapwing	LC	-	P
22	<i>Numenius phaeopus</i>	Whimbrel	LC	-	P
23	<i>Numenius arquata</i>	Eurasian Curlew	NT	-	P
24	<i>Numenius madagascariensis</i>	Far Eastern Curlew	EN	-	P
25	<i>Limosa limosa</i>	Black-tailed Godwit	NT	-	UP
26	<i>Limosa lapponica</i>	Bar-tailed Godwit	NT	-	UP
27	<i>Tringa tetanus</i>	Common Redshank	LC	-	UP
28	<i>Tringa stagnatilis</i>	Marsh Sandpiper	LC	-	UP
29	<i>Tringa glareola</i>	Wood Sandpiper	LC	-	UP
30	<i>Tringa nebularia</i>	Common Greenshank	LC	-	UP
31	<i>Tringa brevipes</i>	Grey-tailed Tattler	NT	-	UP
32	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	LC	-	UP
33	<i>Calidris ruficollis</i>	Red-necked Stint	NT	-	UP
34	<i>Calidris subminuta</i>	Long-toed Stint	LC	-	UP
35	<i>Calidris ferruginea</i>	Curlew Sandpiper	NT	-	UP

36	<i>Calidris alba</i>	Sanderling	LC	-	UP
37	<i>Xenus cinereus</i>	Terek Sandpiper	LC	-	UP
38	<i>Actitis hypoleucos</i>	Common Sandpiper	LC	-	UP
39	<i>Arenaria interpres</i>	Ruddy Turnstone	LC	-	UP
40	<i>Limnodromus semipalmatus</i>	Asian Dowitcher	NT	-	P
41	<i>Philomachus pugnax</i>	Ruff	LC	-	UP
42	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	LC	-	UP
43	<i>Phalaropus lobatus</i>	Red-necked Phalarope	LC	-	P
44	<i>Glareola maldivarum</i>	Oriental Pratincole	LC	-	P
45	<i>Himantopus himantopus</i>	Black-winged Stilt	LC	-	P
46	<i>Himantopus leucocephalus</i>	Pied Stilt	LC	-	?
47	<i>Chlidonias hybridus</i>	Whiskered Tern	LC	-	P
48	<i>Chlidonias leucopterus</i>	White-winged Tern	LC	-	P
49	<i>Sterna albifrons</i>	Little Tern	LC	-	P
50	<i>Sterna hirundo</i>	Common Tern	LC	-	P

Note; Red list IUCN criteria (2019); EN= Endangered, VU= Vulnerable, NT= Near Threatened, DD= Data Deficient, LC= Least Concern, CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora); Appendix I= species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances. Appendix II= species not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival. Indonesia Legislations (Ministry of Forest, P.106/MENLHK/SETJEN/KUM.1/12/2018, concerning the Protection of Flora and Fauna); UP= Un-Protected, P= Protected.

### Note on Illegal Hunting, Trading and Killing of Waterbirds species during the bird surveys

Based on the field finding, we did not find any mistnet or hunting activities during bird survey. On previous surveys (November 2018), Putra *et al.* 2019, found 2 mist-nets on 2 different location on the fishpond area at Ulee Matang Village. On these surveys, we visited Ulee Matang fishpond 3 times (October 2019, December 2019, and January 2020) and did not found any mist-nets. During the surveys period, we also educated and try to make a public awareness to the local community, head of village and now they are more aware about migratory shorebirds. Based on short interview to the some of local people around survey area, bird hunting does exist, but it is occasionally.

### Note on birds with leg-flag which found during the surveys

On 21 October 2019 we found 1 individual of Red-necked Stint with a leg-flag combination Black-Yellow. The bird presume an adult with non-breeding plumage. Unfortunately, we can't managed a photo of it. The data will be send to AWSG for confirmation about detail on banding information.

## **Conclusions and Recommendations**

A total of 29 locations covering 7 districts (Aceh Tamiang, East Aceh, North Aceh, Bireun, Pidie Jaya, Pidie and Aceh Besar) with a total coastline of 413 km have been successfully surveyed. The total area have been surveyed around 1277.06 ha with the most habitat being surveyed was fishponds (19 locations) and followed intertidal mudflat (10 location). The total number of waterbirds counted 24.142 individuals of 50 species and the total number of shorebirds species counted 13.990 individuals included 32 species. Based on the results, we record 2 "Endangered" birds species namely the resident Milky Stork and a migratory species Far Eastern Curlew. In addition, We recorded 7 Near Threatened (NT) species, such as Eurasian Curlew, Bar-tailed Godwit, Black-tailed Godwit, Asian Dowitcher, Grey-tailed Tattler, Red-necked Stint and Curlew Sandpiper. On these surveys, we did not found any Spoon-billed Sandpiper, including at the first sighting location (Ulee Matang village). We tried to do 3 time surveys at the SBS location, first on 21 October 2019, second on 8 December 2020 and the last on 31 January, mostly Red-necked Stint and Lesser Sandplover dominated the group of shorebirds.

We found 16 waterbirds species that include on the list of protected species in Indonesia Legislations. The fishponds area on the villages of Ulee Matang, Kuala Parek and Cinta Raja are potential locations for migratory shorebirds on the Eastern Coast of Aceh province. Based on the findings of this survey we recommend to :

- 1) Do regular monitoring in Ulee Matang, Kuala Parek and Cinta Raja fishpond, we needed to know population fluctuation in every month and the changes of species diversity both migratory shorebirds and residents which valuable for conservation plan.
- 2) Bird watching is a new activities for local NGOs, Universities and Local Government (BKSDA) at Eastern coast of Aceh. Furthermore, we need to do a training on bird identification and counting techniques for these parties in an effort to obtain quality data that supports the success of further conservation efforts.
- 3) On these surveys, 5 locations of intertidal mudflat that generally located at the mouth of the river have been surveyed. The location mostly is a beach tourism area for local people. Generally, the mangrove area is very small, fragmented and crowded with fisheries activities. Some locations of intertidal mudflat area in the Eastern coast of Aceh have not yet been successfully visited, because at wheater condition. Further surveys are needed, especially in the mudflat area in the coastal of mangrove forests in Langsa.

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## Appendix 1. Survey Team.

This program carried out by the Warisan Hidup Sumatera/Sumatra Living Legacy Foundation (WHiS) and consist of 20 people including BKSDA Staff (local Forest Ministry) in Aceh Province, Samudera University, Panca Budi University and Nahdlatul Ulama University, local NGO Bale Jurong-Langsa, Local NGO Alam Raya Nusantara-Medan, Local Community "Oxygen-Medan" and local people in Aceh Tamiang, East Aceh and North Aceh Districts. International survey team, Sayam U. Chowdhury (Spoon-billed Sandpiper Task Force), Yong Ding Li (Birdlife International) and Yann Muzika (The Wilderness Alternative).

### List of survey team

No	Name	Institution
1	Chairunas Adha Putra M.Sc	NGO Warisan Hidup Sumatera/WHiS
2	Muhammad Ilham Manik	NGO Warisan Hidup Sumatera/WHiS
3	Daulay Bahry	NGO Warisan Hidup Sumatera/WHiS
4	Muhammad Imam	BKSDA Aceh (resort Langsa and beyond)
5	Zulfan Arico M.Sc	Samudera University - Langsa
6	Tengku Gilang Pradana M.Sc	Panca Budi University - Medan
7	Juhardy Sembiring M.Sc	Nahdlatul Ulama University - Medan
8	Feriadi	NGO Bale Jurong-Langsa
9	Dedi Arfianto	NGO Alam Raya Nusantara
10	Raja Banggas Rambe	Nature Lover Community Oksigen-Medan
11	Wiro Noto Triatmojo	Nature Lover Community Oksigen-Medan
12	Fajarudin	Student of Biology - Samudera University
13	Tami	Student of Biology - Samudera University
14	Sayed	Student of Biology - Samudera University
15	Rudi	Local people at Aceh Tamiang District
16	Sayuti	Local people at North Aceh District
17	Sudirman	Local People at North Aceh District
18	Sayam U. Chowdhury M. Phil	Spoon-billed Sandpiper Task Force
19	Dr. Yong Ding Li	Birdlife International
20	Yann Muzika	The Wilderness Alternatives



## Appendix 2. Timeline Project

Project activities start from October 2019 until February 2020.

Activities	Program Plan (October 2019 – February 2020)				
	October	November	December	January	February
<b>First step</b>					
Preparing Team Survey	■				
Introduction and Surveyor training	■				
Implementation and evaluation	■				
<b>Survey time</b>					
Preparing the equipment.	■				
Do Survey	■		■		
<b>Analysis and Reporting</b>					
Entry and analysis Data		■		■	■
Reporting					■

**Appendix 3. Documentation activities during the survey.**



**Bird survey on the fishpond area of Kuala Parek village**



**Bird Survey on the fishpond area of Ulee Matang village**



Presenting the migration of Spoon-billed Sandpiper Lime 07 to local people and the Head of Ulee Matang village



Team survey with local people around Ulee Matang village, North Aceh, Sumatera.



Communicating and short introduction about surveys programme to lectures of Biology Department, Samudera University, Langsa, Aceh Province.



Distributing “Waterbirds of ASEAN” book to local NGO Bale Jurong



Distributing “Waterbirds of ASEAN” book to local forest ministry staff (BKSDA) Aceh Tamiang.



Presenting the results of the surveys and build a commitment together to conserve and research study about migratory shorebirds with Biology Department, Samudera University, Aceh Province.

Appendix 4. Documentation of waterbirds species which found during the surveys.



Wood Sandpiper



Long-toed Stint



Pacific Golden Plover



Far Eastern Curlew



Common Redshank



Ruff



Milky Storks are resting on the fishpond area at Ulee Matang, North Aceh District, Aceh Province



A flock of Egrets are searching for a fish on the fishpond area at Kuala Parek, East Aceh District, Aceh Province.



A flock of Terns are foraging on the fishpond area at Kuala Pawon, Bireun District, Aceh Province.

## Appendix 5. Financial Report

We get support from EAAFP Small Grant Fund 2019 with a total amount **5000 USD** for this project.

Item	Date	Note	\$ Budget (in USD)
<b>Survey I (18-30 October 2019)</b>			
Consumable items			
Food during survey	18-24 October	7 days/ 10 person	737,5
	25-30 October	6 days/5 person	407,14
Travel and accommodation			
Standart Hotel	18-24 October	7 days/10 person/5 rooms	821,42
	25-30 October	6 days/ 5 person/2 rooms	300
Rent a car & gasoline	18-24 October	7 days/10 people/2 cars	1021,42
	25-30 October	6 days/5 people/ 1 car	543,57
Datasheet print out, Banners, maps, pins and Posters			110,02
<b>Total Cost Survey I</b>			<b>3941,07</b>
<b>Survey II (4-9 December 2019)</b>			
Consumable items			
Food during survey	4-9 December	6 days/ 4 person	188,57
Travel and accommodation			
Standart Hotel	4-9 December	6 days/4 person/2 rooms	250
Rent a car & gasoline	4-9 December	6 days/4 person/1 car	541,42
<b>Total Cost survey II</b>			<b>979,99</b>
<b>Survey III (26-31 January 2020)</b>			
Consumable items			
Food during survey	26-31 January	6 days/5 person	217,64
Travel and accommodation			
Standart Hotel	26-31 January	6 days/5 person/3 rooms	375
Rent a car & gasoline	26-31 January	6 days/5 person/1 car	553,57
Rent a boat	29-30 January	2 days	150
<b>Total Cost survey III</b>			<b>1296,21</b>
<b>Total Survey Cost I + II + III</b>			
<b>Consumable Items</b>			<b>1550,85</b>
<b>Travel and Accomodation</b>			<b>4556,4</b>
<b>Datasheet print out, Banners, maps, pins and Posters</b>			<b>110,02</b>
<b>Principal investigator &amp; local guide honorarium</b>			<b>1914,28</b>
<b>Total Cost</b>			<b>8131,55</b>

The total cost of the project is **8131,5 USD** and we got support from EAAFP Small grant **5000 USD** to covering **Consumable items, Travel and Accomodation items**. Lack of fund from this project was supported by other resource such as other grants, personal donation and our financial foundation.



North Sumatera, Indonesia\_March 2020