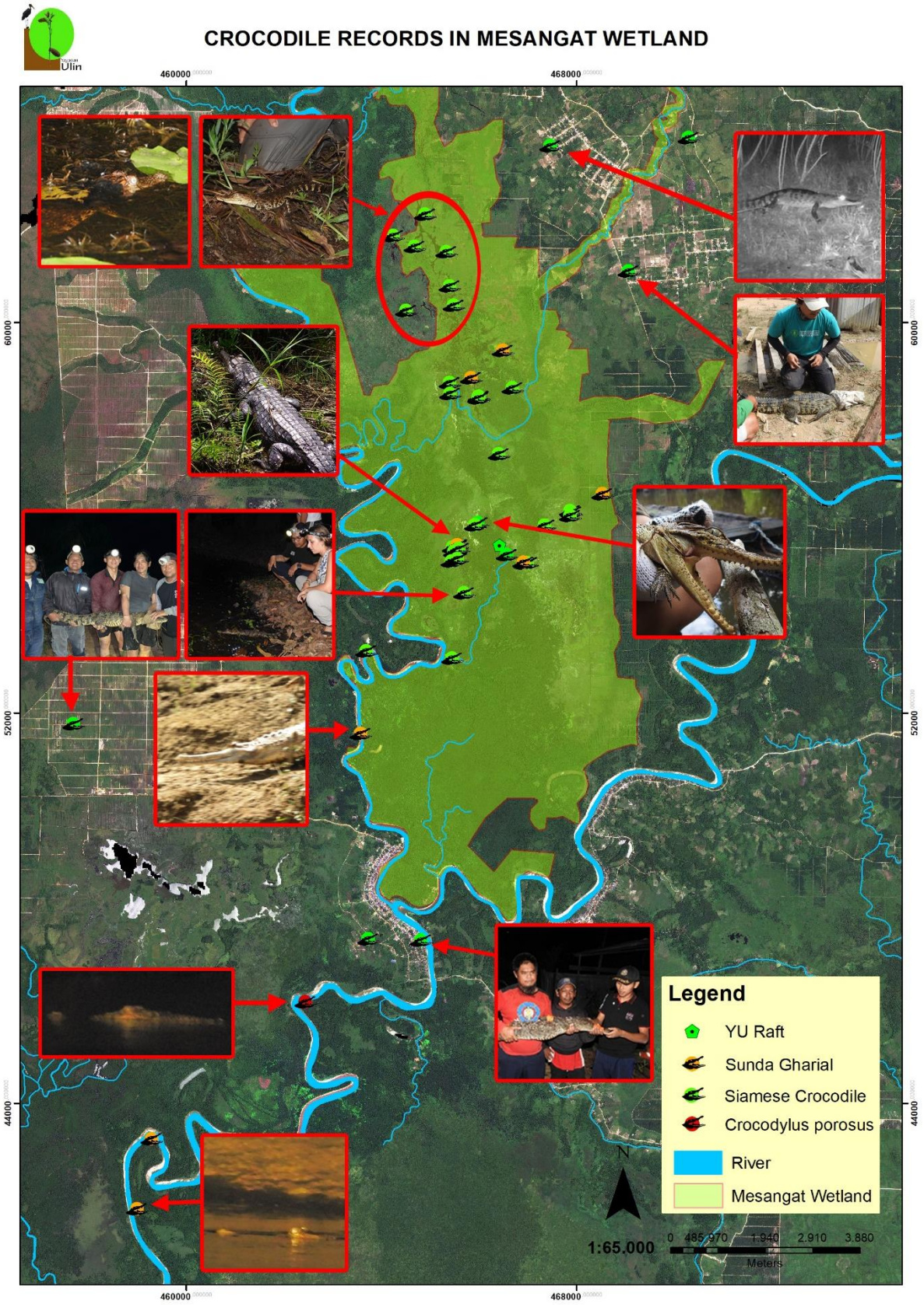
YAYASAN ULIN 2019 to 2022

From all total observation of crocodile survey from 2019 to 2022 is recorded about 45 crocodile location, 8 crocodile confirm crocodile nest, and 7 crocodile recue.



From 2019 we successfully record 8 location of sighting of Siamese (in Loa Toh) , two Sunda Gharial location in Mesangat river, one rescue/ Release, and 2 nest location (False Gharial and Siamensis)

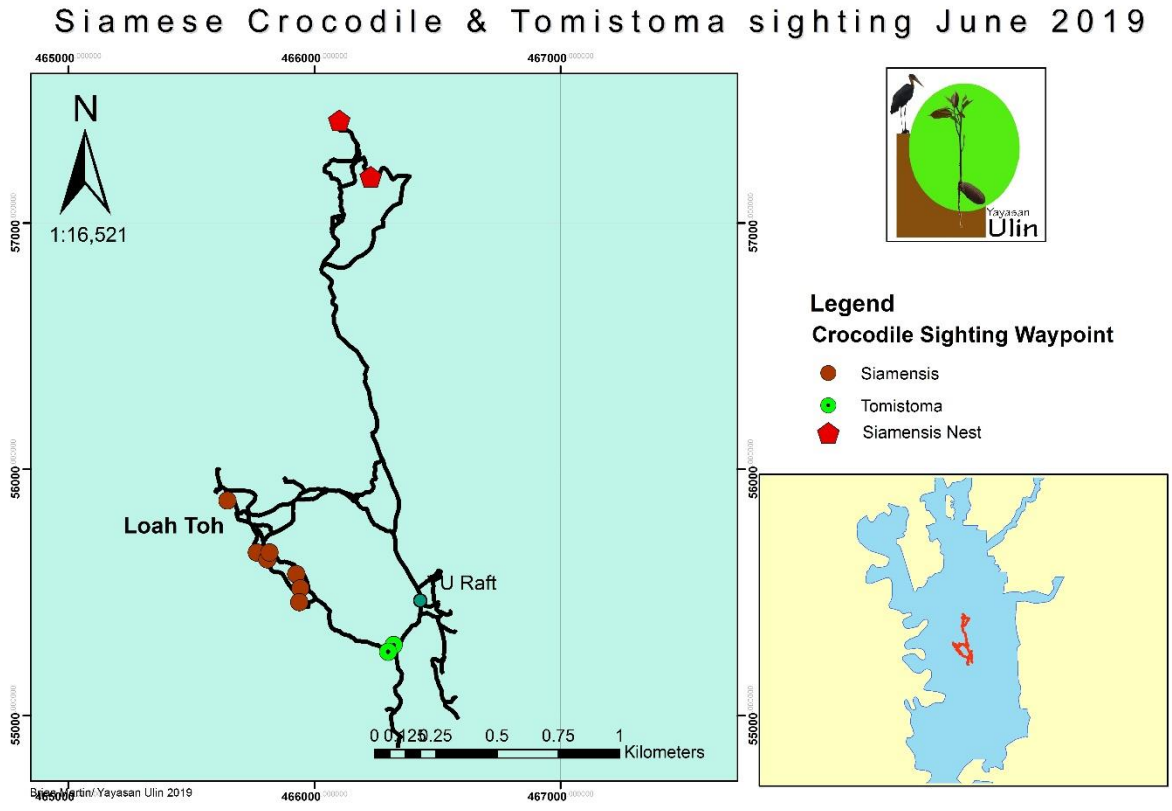
In 2019 before the long dry season (2020-2021 el nino) there is only 2 location of crocodile nest that recorded well

Camera trap record about 0 activity on siamensis nest and about 11 day trap night from Tomistoma nest from 25 June 2019 until 5 July 2019, Number of pictures processed is 24 (successful photo), Number of pictures used in activity calculation is 7, with a number of independent pictures used in the analysis is 6 with a 60-minute period of independent picture. Tomistoma schlegelii on this camera trap result is mostly active at 10:00- 11:00, in Fig 14 shows that Tomistoma schlegelii is put her snout into the nest

Unfortunately Siamese nest is not get any good photograph, because the nest is following the water level then the Camera trap is in stationary.

Location

CS Nest 01	CT Nest 01	0.519455	116.6953
TS Nest 01	CT Nest 02	0.517423	116.6965



From 2019 we successfully record 8 location of sighting of Siamese (in Loa Toh) , two Sunda Gharial location in Mesangat river, about three case of Siamese rescue/ Release, and 2 nest location (False Gharial and Siamensis)

Mesangat Wetland Field Survey July 2019

Yayasan Ulin

464000 000000 467000 000000

59000 000000

56000 000000

53000 000000

Kelan Dimut

CS Nest 01 & CS CT 01

Kelan Dimut open wetland

TS Nest 01 & TS CT 01

Loah Toh

Mesangat river banks

Otter footprints and Camera Trap 03

N

W E

S

0 0.25 0.5 1 1.5 2

Kilometers

1:30,000

Brian Martin/ Yayasan Ulin 2019

From about November to December 2019 Mesangat is entering the drought season, the water level keep on recede every day

Fig 5. Mesangat hilir November 2019

Fig 6. Releasing Siamese in Mesangat ulu (Near Rakit)

Fig 7. Condition of Mesangat (Rakit) November 2019, 1 meter water level

Fig 8. Released Siamese croc in Mesangat

Yayasan Ulin 2020

The drought is continue until 2020, and the water level is continue to recede, we cannot doing any survey inside the Wetland even to visit YU raft, but we improving the survey to explore Mesangat Hilir in terrestrial way, doing a camera trap survey around the Mesangat hilir (dry area) to identify the mammals community that hide around our sight.

Fig 9. Condition in Mesagat Hilir March 2020

Fig 10. Mesangat Hilir March 2020

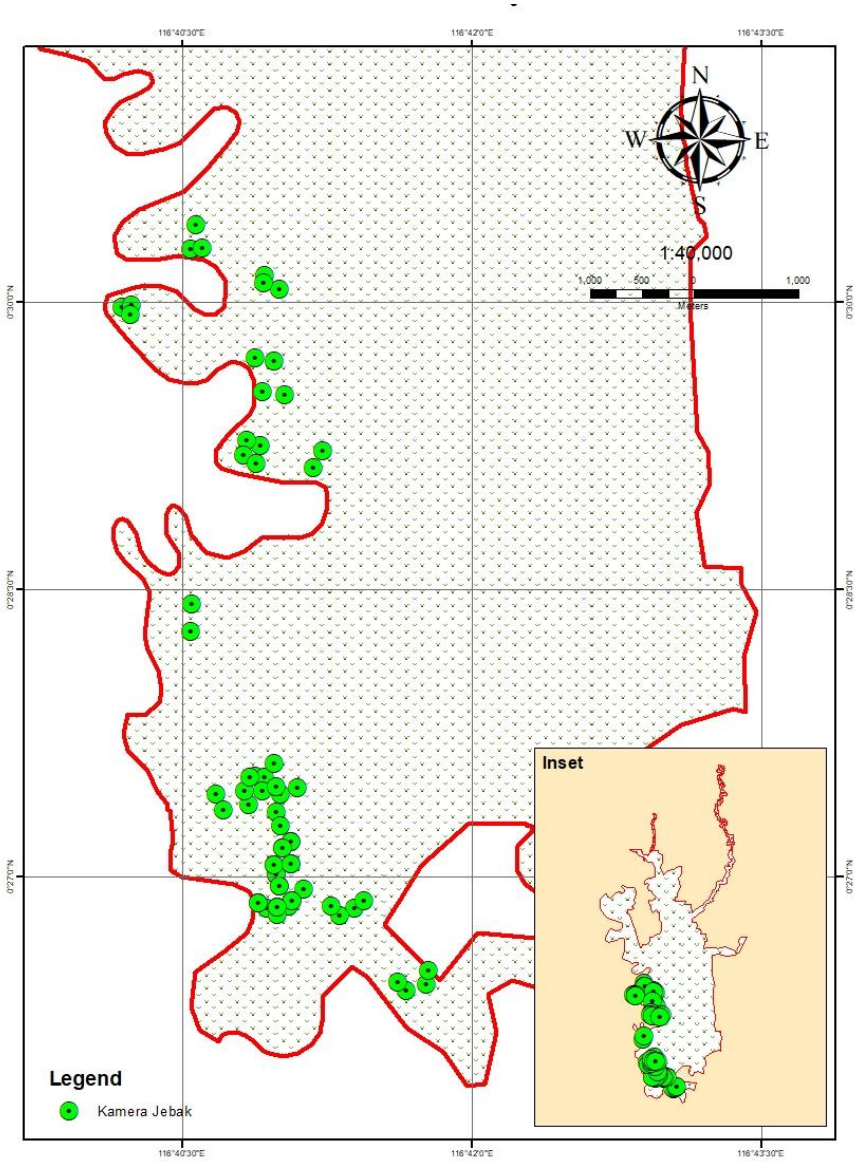


Fig 11. Camera Trap 2020 YU

About 66 location camera traps were set up in the Mesangat (Hulu & Hilir), From the results of approximately 11 months, it has been recorded that 31 species consisting from three main taxa, namely; Mammals, Aves, and Reptile, have been recorded since January 2020 the number of camera points installed is around 66, with camera error / empty as many as 4 cameras, this can happen due to several factors, namely: the battery problem, sensor mallfunction, and the memory is damaged (data corrupted) so that the data cannot be used optimally.

long-tailed Macaca is a very dominant animal and is very often recorded in camera traps, with a dominance value of up to 26%, this result is taken from the comparison of the number of independent photos of animals in each activity, the total active photos (has the presence of non-empty animals) are 11181 images of which and 968 independent/activities data; Photos will be identified as independent data with a duration or interval of 60 minutes.

Full information of Camera Trap in 2020 is in Camera trap 2020 report.

Fig 12. Camera Trap documentation summary 2020

Fig 13. Camera Trap Set up with YU UNMUL Student (Internship)

YAYASAN ULIN 2021

In 2021 is the end of long drought season in Mesangat, water level is continue to rising, but some of the area is already covered with dense scrub, grass and other water plant vegetatin, access to Raft in 2021

Loa Toh

2019 **2021**

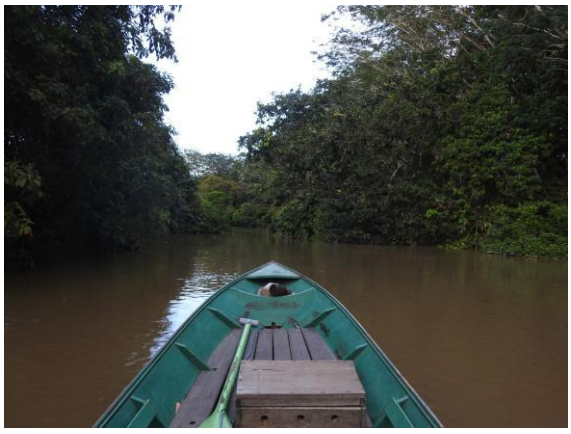
Abang

2019 2021

Mesangat River (Main)

2019 2021

2020



2021

2020

2021

2020

2021

Fig 15. Mesangat Hilir condition

March 2021

Since there is a record from BKSDA and YASIWA (January) that there is Estuarine croc (*Crocodylu porosus*) is sighted in downstream of kelianjau river that near to the Suwi estuary, Ulin team decide to follow up the report and re-check the area for more information. The survey is implemented in 3 days start from Kelinjau village to the Suwi estuary from 8PM until finished, from the survey team sight 3 location and only one location that confirmed Estuarie croc, the other two is confirmed False Gharial (*Tomistoma schlegelii)*

Table 1. Crocodiles location (UTM)

No	Species	location	Note
1	***Tomistoma schlegelii***	Sungai Kelinjau-Suwi	River bank
2	***Tomistoma schlegelii***	Sungai Kelinjau-Suwi	River bank
3	***Crocodylus porosus***	Sungai Kelinjau-Suwi	River bank
4	***Crocodylus siamensis***	Mesangat	Evacuated from Local's pond
5	***Crocodylus siamensis***	Mesangat	Evacuated from Local's pond

Documentation:

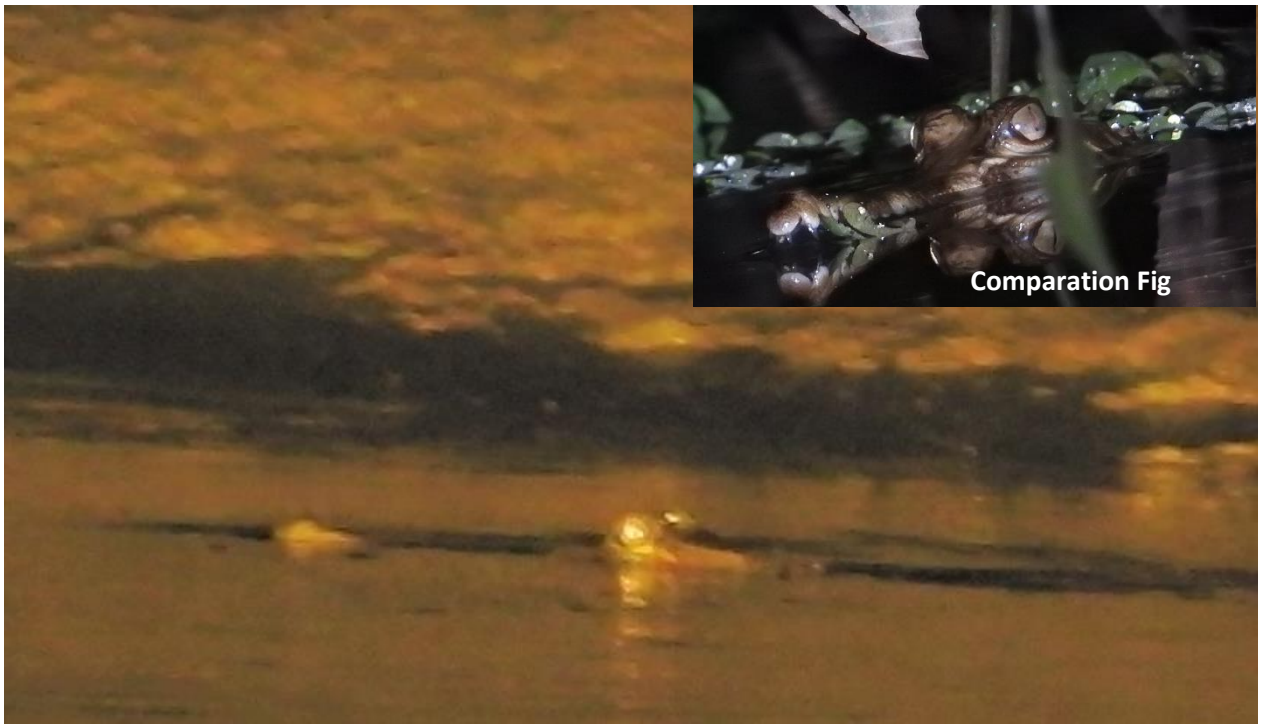


Fig 16. *Tomistoma schlegelii*

The eyes and typical head and snout is identical to the False Gharial, two big individual is found is more downstream from the Estuarine Croc, with a estimated size from 3 to 4 meter both, ther is also some video to be more convincing.

Fig 17. *Crocodylus porosus*

With naked post occipitals this is confirmed Crocodylus porosus, this individual with estimated size of 3 meter, and has the character of the Estuarine croc not really shy but still observe us from distance, we also got some video for this individual.

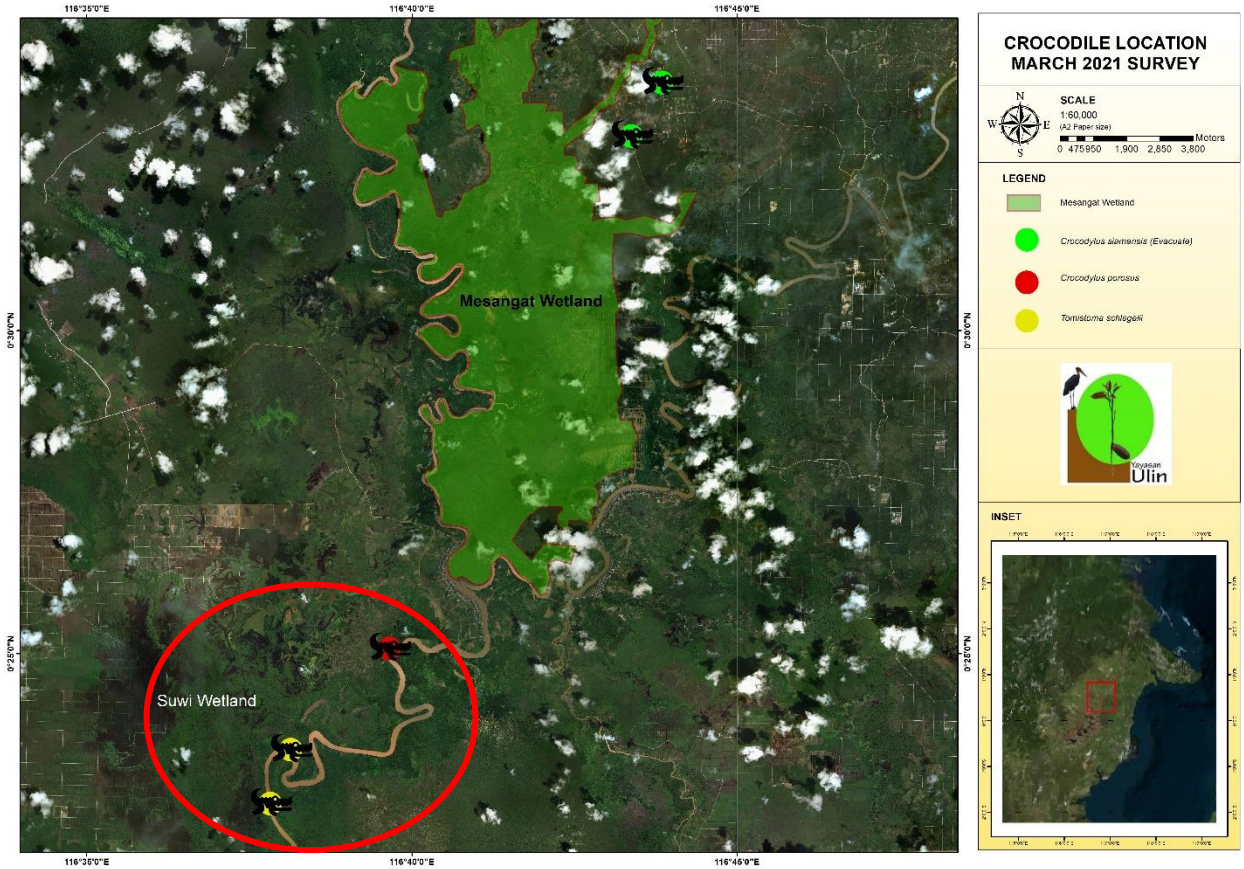


Fig 18. Map of Crocodile location

Fig 3. Shows that evacuated Siamese crocodile (Green), Estuarine Croc (Red), and False Gharial (Yellow), Porosus is Kelinjau river between Mesangat and Suwi, there is still potential of this species spread in upstream or downstream of Kelinjau river and still need for more further observation on this species.

Crocodile Evacuation April 2021

The evacuation of crocodiles was carried out in Mesangat sub-district, species that Ulin Team and CDF staff evacuated is Siamese crocodile, there is 8 records total in this area, but only 5 that successfully evacuated (four individual by BKSDA, YU, and PT. CDM, and one individual by Local Mesangat Govern). From last evacuation team handles two case. First croc was found in local pond that's lies in paddy fields that surrounding by oil palm plantation, the last one is from pak Yonatan's Pond all sepecies tahat evacuated are Siamese Crocodile and released in Mesangat river.

q

Fig 19. First rescued Siamese crocodile

This individual was sighted in Local's pond, and after being caught by local, YU and CDM team evacuate and relocated, we assume this croc was travel when the floods hits in December to January and get stranded around paddy fields in local settlement.

Fig 20. First crocodile rescue location

Table 2. Measurement of rescued Siamese Croc in Mesangat

ID	Weight (KG)	Length (cm)				Circumference (cm)	
		Full body	Tail	Head	STH	Chest	Tail
SP7	9	158	80	6	23	49	36
Yonatan's	2.9	106	53	5	16	32	19

STH (Snout to Head)

Fig 20. Crocodile rescue in SP4

Fig 21. Crocodile Release location (Mesangat river)

Fig 22. Siamese crocodile that we release in Mesangat wetland

April –May 2021

In april we continue to doing Camera Trap survey and in May Yayasan Ulin team doing a observational survey with Dhanu (Konklusi Team) to sampling the location in Mesangat for them to collect remain Crocodile DNA in the Mesangat Wetland

A think maybe we got luck and sighted a Tomisoma is basking on the Kelinjau riverbank after we get back from Temaring, that was really quick sight, soon after it's sees our group boat it just galloping and disappear into the river, but I manage to photographed the croc right before it's gone.

Fig 23. *Tomistoma schlegelii*

The basking location is near the Mesangat wetland estuarine/ entrance of Mesangat river from Kelinjau river, it was around 2-3 PM in the noon.

Table 3. Tomistoma sight location in Kelinjaur river

Species	Coordinate UTM (50N)	
	E	N
Tomistoma schleglii	464854.5	53107.02

The result of Camera Trap in April-May is really surprising for me, although the species that are present are not as many as in other location, we get a good photo and vidio of Storm stork/ Siau (Ciconia stormi), not only one individu but a pair or maybe a couple, from this photo I think we start to understand this species; how they fishing, when, where, and they habitat preference, this data is really useful for any future conservation program or research.

Fig 24. *Ciconia stormi* in a pool after flood

Fig 25. A pair *Ciconia stormi* fishing in dry-up pool

June 2021 Crocodile Evacuation and Survey at Mesangat district

In 8 June team got an information from Pak Emanuel (Sub-district Head), there is crocodile that recently record around local plantation and cowshed, the day after (9 June) team decide to doing a evacuation and crocodile survey around the area from SP 7 to SP 3, team successfully recorded the location that people usually sight a crocodile, the species that local confirmed is Siamese croc, unfortunately when team got in the location, we do not encounter any crocodile sign, even the location is very potential and nice for crocodile for hunt, hide and roaming.

Fig 26. Location 1 (Note: the Red dot is Crocodile encounter)

location 1 is located in SP7 that near the sub-district office, the crocodile encounter is around the canal, this canal is connecting to the paddy waterways and small tributary of Sei Goi, from local information the encounter around 2020-2021 is more significant than other year, this may be happen cause of long drought in the wetland, and the crocodile try to follow the remain water body and got stranded around the canal and paddy waterway, from then until now only juvenile to sub-adult individual that mostly recorded around this area.

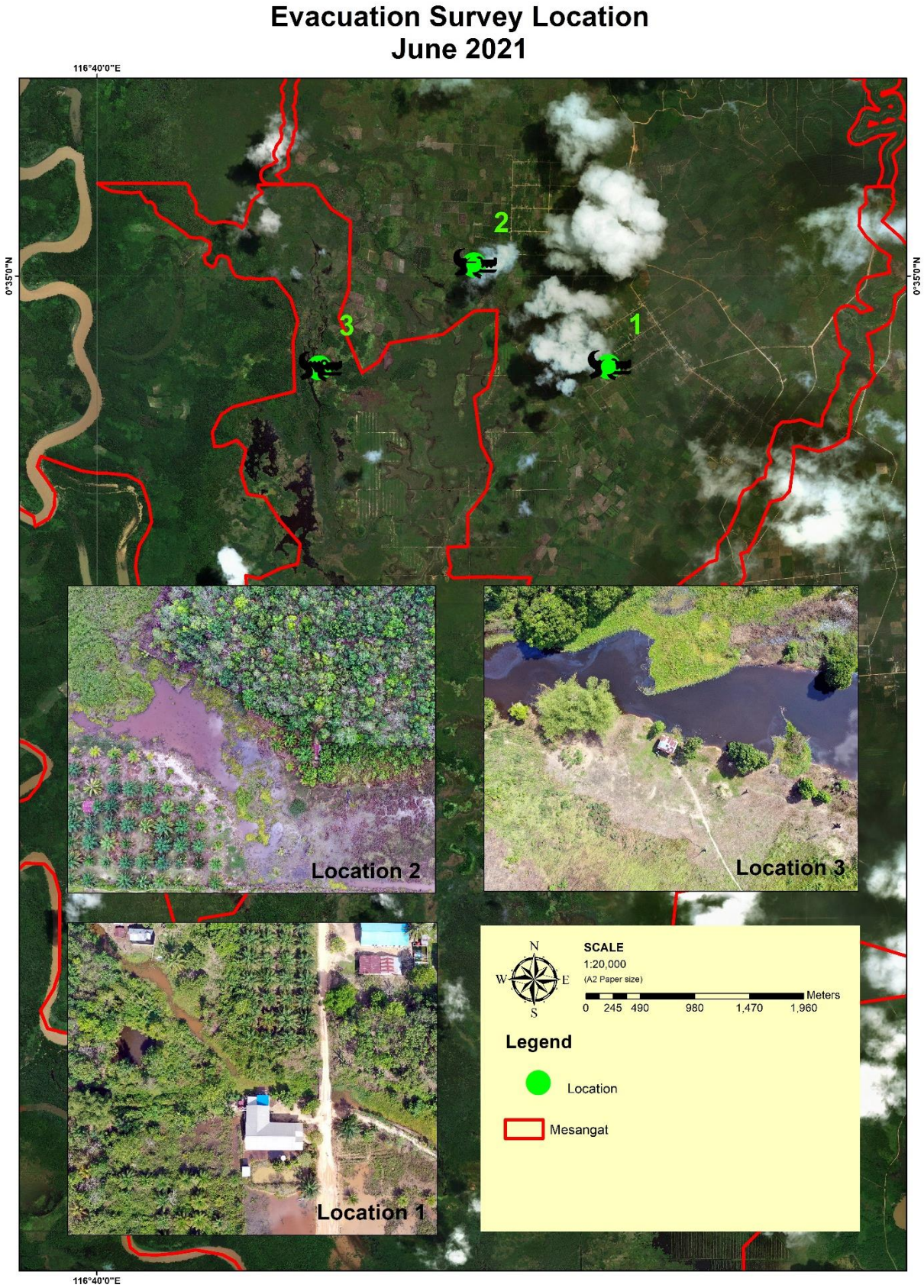


Fig 27. Crocodile Evacuation and Survey map

JULY 2021

In July 2021 YU team with Yasiwa (Konsorsium) continue to seting up CT, and Biodiversity monitoring, the highlight of this month is footage of storm stork in Mesangat hilir that we never get the record of this species around this location.

Fig 28. *Ciocnia stormi* in the Mesangat riverbanks

Fig 29. In this footage the Storm stork fly away to the Wahau riverbanks

From our observation Ciconia stormi is quiet docile and calm when we try to approach and get a good picture of it, we can get close about 20 meters and when we try to get closer it will walk away, and when we start to get close about ten meters it's fly away from mesangat river to wahau river, not very far (less than 200 meters).

AUGUST 2021

Fig 30. Rescue in Kelinjau village

In August 2021, Consortium Team (YU & Yasiwa) successfully rescued the Siamese crocodile that hiding below the local's house basement.

Team also doing a crocodile survey in mesangat wetland that also sight 2 location of Siamese crocodile

Table 1. Koordinat satwa kunci

x	y	Keterangan
463147	52879	Buaya
464978	48903	Buaya

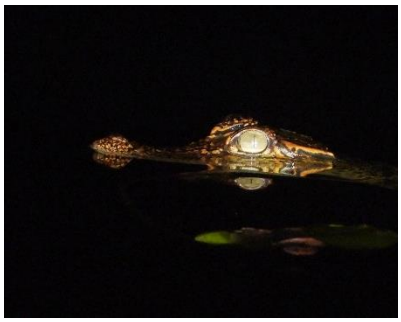
September 2021

September 2021, the Ulin Foundation team and the TFCA Program carried out the same routine activities as in the previous months, which is biodiversity monitoring in the Mesangat wetland and surrounding areas, some general observation methods carried out are, observations for all taxa the main ones are; mammals, birds, and herpetofauna, for specific surveys such as crocodiles a spotlight survey must be carried out at night in swamp and river areas in the Mesaat wetlands, in addition, there is also a camera trap technique, but in September 2021, with the condition of the water level is still rising and we are worried that the camera trap will soak and broke the camera trap, so the team temporarily decided not to install the camera trap this month, waiting for low and stable water level conditions.

Mesangat, 19 September 2021- our team (Yayasan Ulin – TFCA staff) is successfully documented a group of Siamese crocodile hatchling around the was potentially their former nest, from our observation we count about **thirty-one** hatchling at that time, we also believe that maybe even more, we estimate this hatchling group was hatch around two week or a month ago, with the average body length of 35cm (They are 7 to 10 inches (17.8 to 25.4 centimeters) new hatchling size average). our survey is start from 6 PM until around 11 PM, there is maybe even more because we not fully survey the area near Long Dimut, and the upstream of Sei Goi.

Sei Goi is located in the northern area of Mesangat, Sei goi is one of a main river body that have a big area of open swamp surrounding and also flows into the Mesangat wetland. I can say that this area of Sei Goi is really big open swamp, maybe a half a hectare wide in one open swamp, there is only two open swamp area that we survey, and we travel around six kilometers at one night.

Individual 1



Individual 2

Individual 3

Fig 31. Hatchling in Sei Goi

Behavior

In our observation we notice that the group is swarming around the area, sometime there is 3 -4 individual that about 1 meter dense, they always near the floating vegetation, but maybe

about only 1 or 2 individual roaming in the middle of the swamp, but there is only one individual that we sight walking and roaming on the scrub.

Fig 32. Substrate

Mostly they lean and hiding on the floating vegetation, at the edge/ side of the swamp, the area is really shallow about 40-50 cm deep, because it was to shallow the boat got stuck and we had to walk to observe they closely, they not really sensitive, but when they disturbed they try to hide beneath the lotus, mud or floating vegetation. (picture Above).

Fig 33. Siamese hatchling observation

Fig 34. Water leven in Sei Goi

“At every night we can sight (average) about 20 eye shine in shallow water level, and when flood they (crocs) suddenly gone” said pak pak Alamsiah as the local fisherman in SP4 that guide us there, they also claim that on the open swamp area in normal condition is about 1 to 1.5 meters deep, and about 3-4 meters in the main river path of Sei goi.

Fig 35. Siamese croc survey location

October 2021

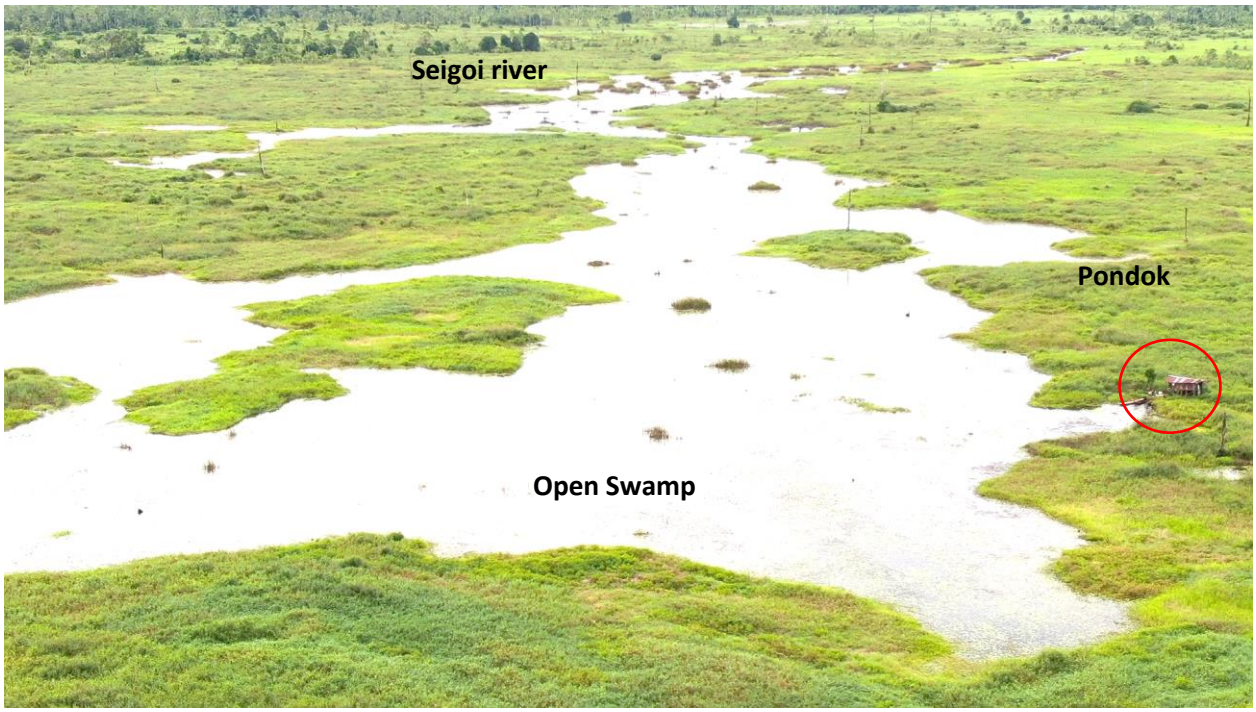
Crocodile survey in Mesangat wetland (Sei Goi)

Mesangat, October 2021- our team (Yayasan Ulin , KONKLUSI, and TFCA staff) is successfully documented a group of Siamese crocodile hatchling, from our observation we count about **fifteen** hatchling at that time, we also believe that maybe even more, we estimate this hatchling, with same average body length of 35cm (They are 7 to 10 inches (17.8 to 25.4 centimeters) new hatchling size average). our survey is start from 6 PM until around 11 PM, there is maybe even more because we not fully survey the area near Long Dimut, and the upstream of Sei Goi, and surrounding area that we does not identified.Sei Goi is located in the northern area of Mesangat, Sei goi is one of a main river body that hava a big area of open swamp surrounding and also flows into the Mesangat wetland. I can say that this area of Sei Goi is really big open swamp, maybe a half a hectare wide in one open swamp, there is only two open swamp area that we survey

Fig 36. Croc in Sei goi

Sei Goi Condition

Sei Goi is one of main river that flows into the Mesangat Wetland, on this current situation is the capable area for crocodile survey is only around Sei Goi open swamp and small tributary in the west of Sei Goi, there is more open water area to survey waterbirds and crocodile here. The distance from nearest plantation is only about 100 meters, and distance from near village SP4 is about 4-5 Kilometers, the only access is by motorcycle, the road condition is not really good specially at the rain season right now.



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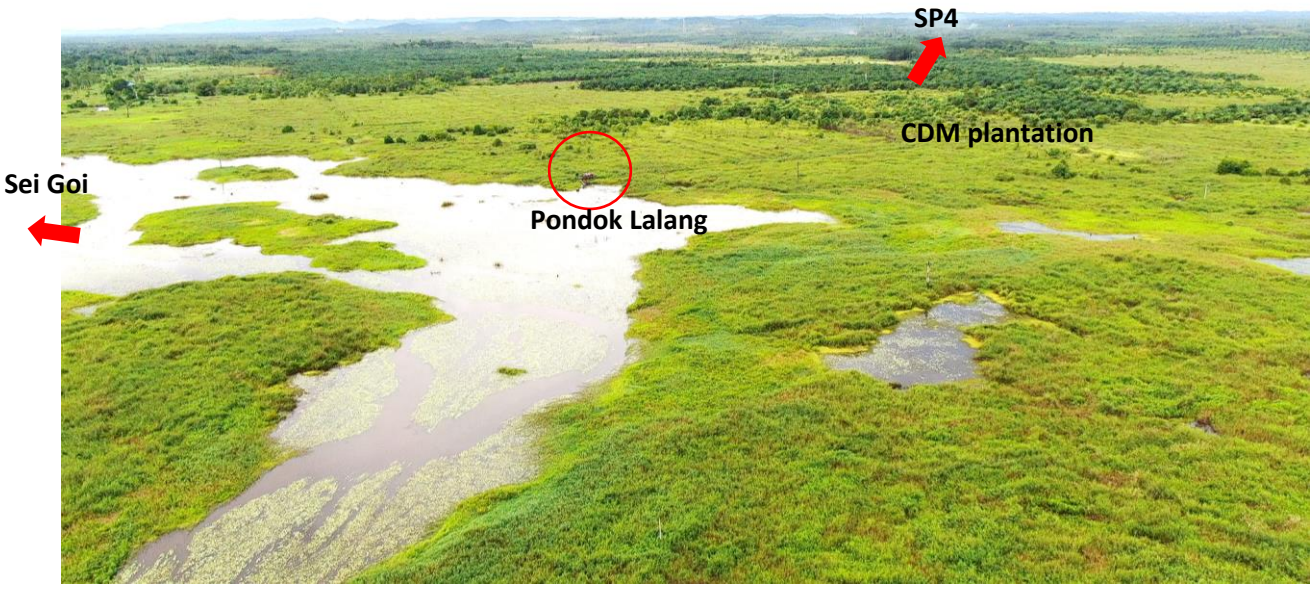
Kelan Dimut direction
or to YU Raft


Loa Pagar
Sei Goi
Pondok
Kelan dimut



Swamp formation

Team Survey

Team Survey

NOVEMBER 2021

This month me conduct a collaboration survey with Konklusi and Consortium to doing a drone survey around mesangat wetland

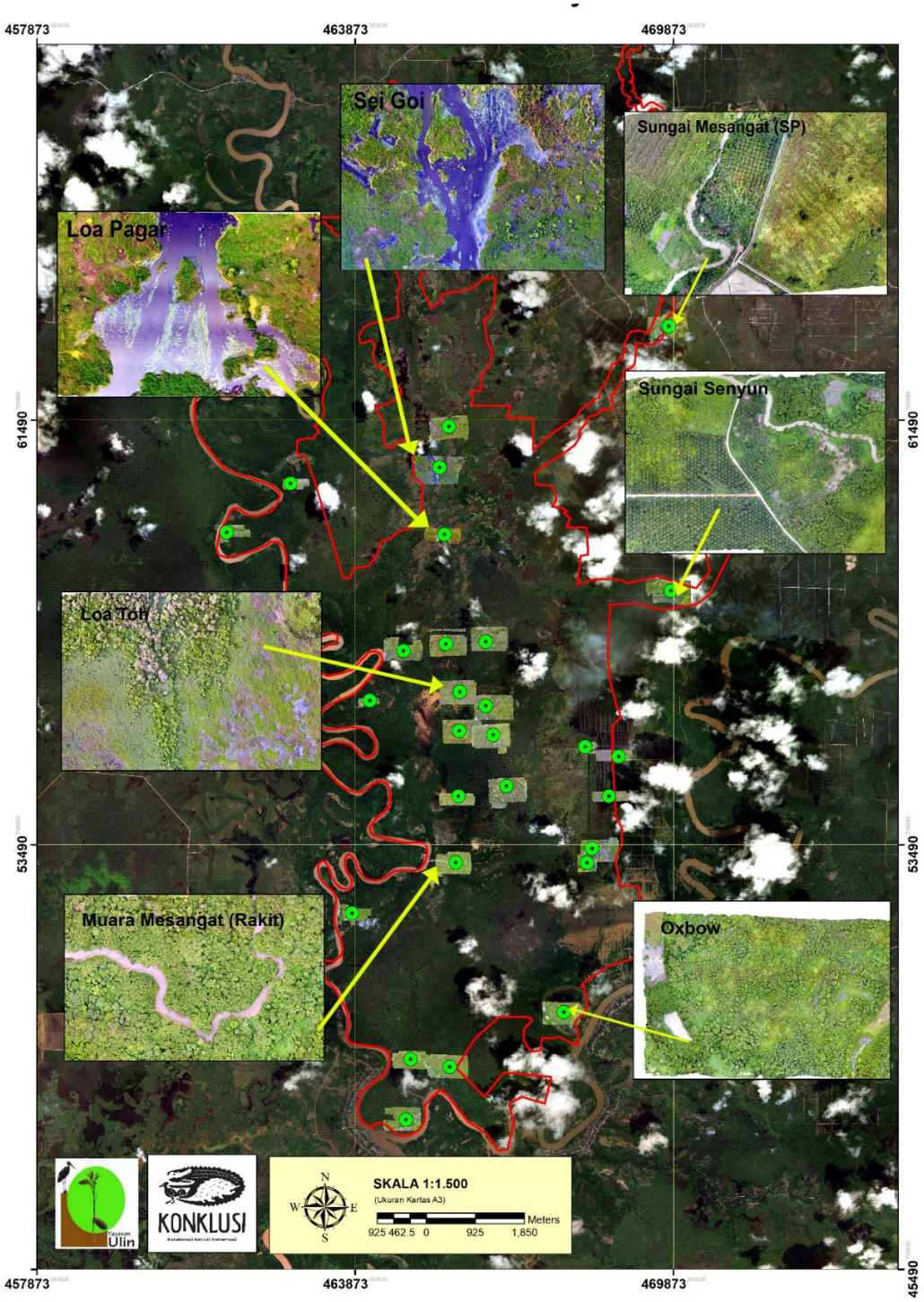


Fig 45. Drone survey location in Mesangat

Table 4. Drone survey UTM

Id	X	Y
1	469782	63257
2	465635	61368
3	462656	60291
4	461448	59373
5	465556	59333
6	465464	60593
7	469822	58270
8	464782	57142
9	465582	57273
10	466330	57312
11	465845	56367
12	466330	56105
13	466475	55553
14	465832	55632
15	466724	54595
16	468837	55147
17	468207	55330
18	468653	54399
19	468338	53414
20	465819	54399
21	468243	53144
22	463811	52197
23	465767	53150
24	464830	48305
25	464914	49446
26	465658	49302
27	467807	50334
28	464149	56204

The location for taking drone documentation has an average area of 400x400 to 500x500 (meter) from a height of 200m, where the capture is carried out at different times so that some data have different color contrasts, the time for drones to be carried out is during the day until the afternoon, in the same location it is carried out drone survey, Conclusion also takes water samples (Genetic data collection), and checks humidity, water quality; PH, Temperature and Brightness of water.

Fig 45. Drone survey in Kelan Dimut

Fig 46. Water quality sample