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Dear Ladies and Gentlemen of the EUAC Committee,

The Vienna Zoo wants to thank you for your support for the Project *Batagur baska*. We have received EUAC funding for the Project *Batagur baska* in September 2017, but the planned satellite monitoring had to be postponed until 2018 because we waited for a reevaluation and project approval by the Bangladesh ministry. After this local approval was granted we defined October 2018 as time period best for release of males equipped with transmitter. During this time the breeding period of the terrapin's starts and males look for mates. On October 2nd the Vienna Zoo staff attached satellite transmitters on 5 males and together with local partner organizations released them in the Western part of the Sundarbans.

Attached please find our final project report 2018 (and movement information in the supplementary material) for the granted funding.

We are grateful for your support and wish you happy holidays!

Sincerely,


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Vienna, 18. 12. 2018

Project *Batagur baska* – Satellite Monitoring

Anton Weissenbacher & Doris Preininger (Vienna Zoo)

The current project is part of the long-term conservation and in situ breeding Project *Batagur baska* in Bangladesh. Previously, in February 2017 two males were released with transmitters in the vicinity of the Karamjal station in the Sundarbans. In the 2017 trial release, the signal of one animal was lost 3 days later, the individual was presumed captured or dead. The second male was caught by fishermen within two weeks and with the help of the Forest Department was brought back to the station. To take the next necessary steps for the conservation of the critically endangered Northern River terrapin and search for secure habitats for a reintroduction a different release site was selected in the west Sundarbans. This area is less populated and more difficult to reach for fishermen and the western river system and the coastal area of the delta and adjacent islands comprise prospective beach habitats for nesting.

The project coordinator Rupali Ghosh together with staff from the Vienna Zoo, the Prokriti O Jibon Foundation (POJF) and the Forest Department released 5 males equipped with satellite transmitter's right before the breeding season on 2nd October 2018 in the Sundarbans.

End of September 2018 we applied Telonics satellite transmitters (SeaTrkr-4370-4) on five male individuals (Fig. 1) and traveled by boat to the release site (Fig. 2) in the west Sundarbans. Transmitters were attached on the carapace of individuals with Epoxy glue and as security measure Forest Department and POJF contact numbers were attached clearly visible in case terrapins are captured. The new transmitters weigh 190 g and have an operational life period of 1.2 years. The transmitters' weight is less than 2% of the body weight of the terrapins that were released.



Figure 1. One of five males with satellite tag before release. Phone numbers of POJF and Forest Department officials are attached on the transmitter.

The release location in the Sundarbans and adjacent islands in the mangrove, coastal ecosystem consists of a complex river system with brackish water and freshwater and is only accessible by boat.



Figure 2. Satellite signals transmitted during boat travel from the Karamjal station to the release site. Release on 2nd October 2018.

At the point of writing, two of five males have been found dead in the Sundarbans in October and November 2018. One of these males got caught in a permanent net close to the ocean and the other got stuck in the mangrove forest and we noticed that the signals were consistently sent from the same location and observed no movement pattern. The individuals were discovered by the Forest Department. Both transmitters have been recovered by the Forest Department and were shut off. One male traveled to India and the Forest Department in India is constantly informed about the activity of the terrapin. Two males are using the river system of the Bangladesh Sundarbans to forage and currently send constant signals (See also supplementary material for tracking information).

Conclusion

Conservation breeding and head-starting in both the Bhawal National Park and the Karamjal station are the foremost importance to secure the survival of the critically endangered species. Nevertheless we aim to eventually reintroduce the species in the river system of the Sundarbans. It is still unknown if the terrapin breeds and nests in the brackish river system or in coastal areas. First quantitative and qualitative observation of migration routes of the released males show differing movement up- and downstream from the release site of the terrapins and are yet highly uncertain to determine habitats for reintroduction. According to the current observation a sustainable reintroduction of terrapins remains unsecure and is only appropriate if, terrapins can be protected to a certain amount and monitoring shows that the terrapins can survive in the Sundarbans. First results demonstrate the precarious situation of the natural habitat of the terrapins however only a sufficient sample size of released animals will allow us to make constructive future implementation for the species.

Project costs for satellite monitoring of five males:

Equipment	Transmitter Telonics (à 1740 x 5)		EUR
	Data converter, freight, service fees until 12/2018		10688
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Field visit for transmitter release - 1 trip to West Sundarbans		BDT	EUR
	Car, toll, ferry	81112	855
	Fuel for Boat	16800	177
	Food	21529	227
	Boat	152000	1602
	Flight (Rupali Ghosh)	(INR) 44002	544
	Flight (Rupali Ghosh)	5300	56
	Accommodation	44400	468
	Turtle catch, misc. (tips, tools etc.)	28307	298
			<hr/>
			4227
<hr/>			
	Total for satellite transmitter release of 5 males Sep./Oct. 2018		<hr/> 14915
	Equipment funded by EUAC to the Vienna Zoo		-5000
	Equipment funded by DGHT & ZGAP to the Vienna Zoo		-5000
	TCF funded to the project partner Turtle survival alliance		<hr/> -3300
	Remaining costs covered by the Vienna Zoo		<hr/> 1615
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Project Batagur Baska

Male 600

Released : 2.Oct.2018

Last location signal:

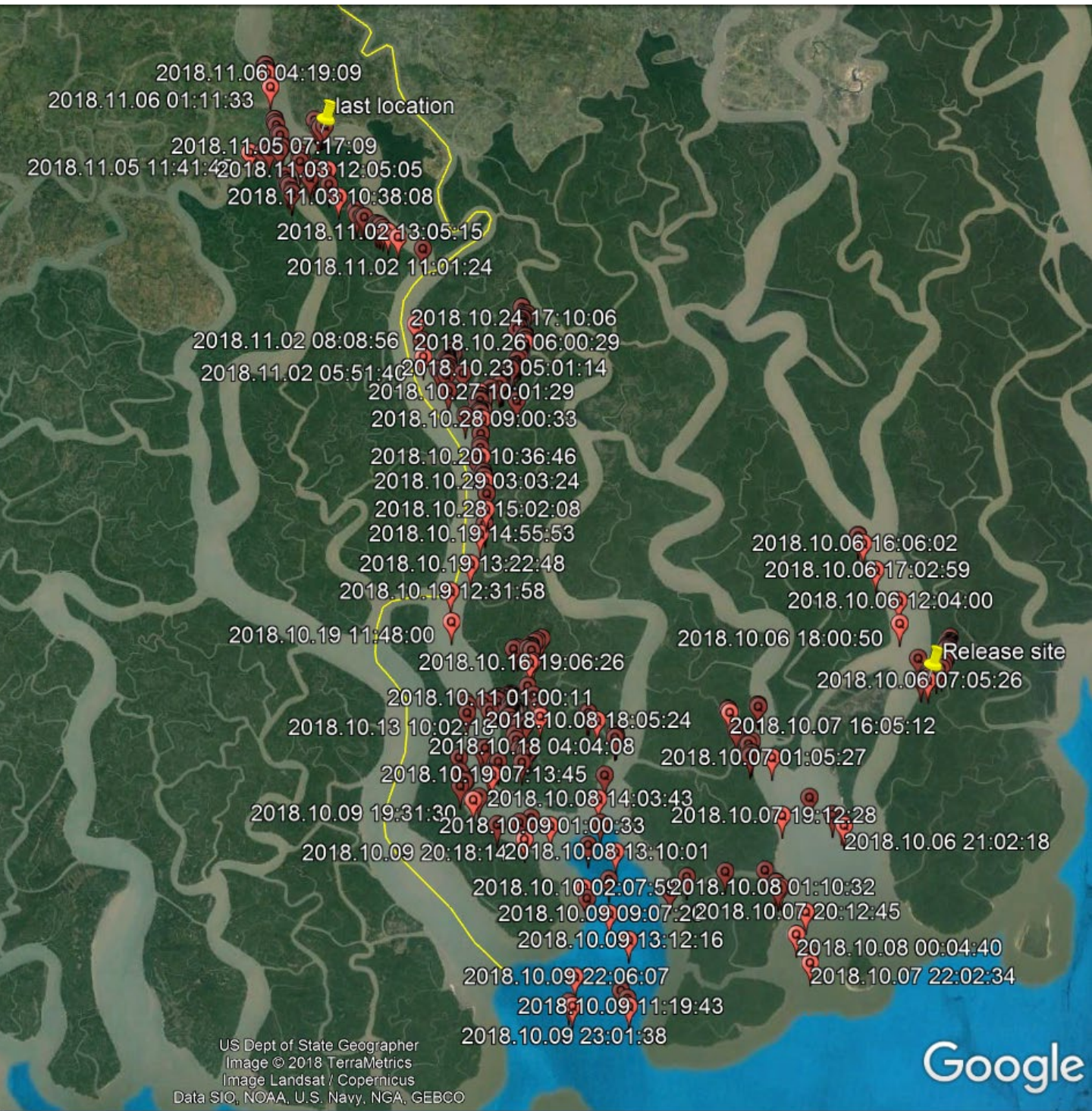
12.Nov. 2018

Last location:

Hemnagar, India

Travel route:

- South to Bay of Bengal (10.Oct)
- North upstream
- Across Indian border (2. Nov)



Project Batagur Baska

Location:

North Sundarbans

Male 597

Travel route:

Released : 2.Oct.2018

- Continuous travel upstream (3. Dez)
- Movement south approx. 8km (10.Dez)

Last location signal:

15. Dec. 2018



Project Batagur Baska

Location:

Mid-West Sundarbans

Male 598

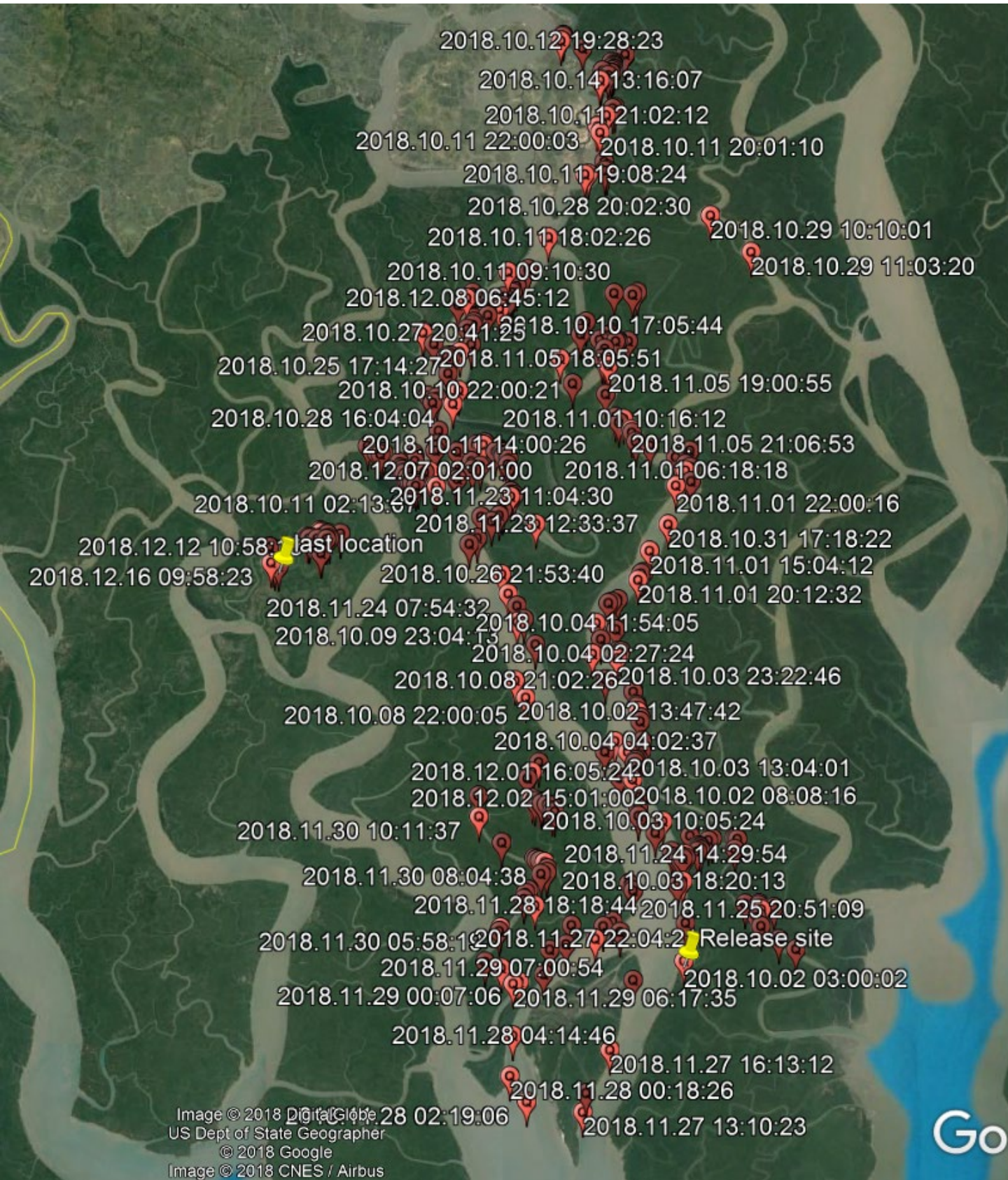
Travel route:

Released : 2.Oct.2018

- Upstream to urban area (16. Oct)
- Up and down mov. in the northern area (5.Nov)
- No signal until 22. Nov – still in northern area
- 34 km downstream (26. Nov)
- North movement (8.Dec)
- South movement to last location

Last location signal:

16. Dec. 2018



Project Batagur Baska

Location:

South-west coastline

Male 571

Released : 2.Oct.2018

Last location signal:

17.Nov.2018

Travel route:

- Upstream movement north of release site (23.Oct)
- Movement south to coast of Bay of Bengal (28.Oct)
- Movement along coast westward ((8. Nov)
- Along coast to urban area (14. Nov)
- Found along coast, caught in net (17. Nov)

Transmitter recovered on 17. Nov



Project Batagur Baska

Male 571

Released : 2.Oct.2018

Last location signal:
23.Oct.2018

Location:

Close to release site

Travel route:

- Movement south from release site
- Stuck in mangrove forest, constant signals from same location
- Found by Forest Department staff
- Transmitter recovered on 23. Oct

