



Recent Observation of False Gharial (*Tomistoma schlegelii*) in the Sembilang National Park (TNS) Area, Banyuasin Regency, South Sumatera Province

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Abstract

A research about False Gharial (*Tomistoma schlegelii*) which is a protected animal based on National Government Regulation Number 7 of 1999 and renewal of Permen LHK No. P92/MENLHK/SETJEN/KUM.1/8/2018 has been conducted on 15 until 19 September 2017 located in the region of SPTN 3 Hulu Benu River Muara Merang Village 3 Pancuran Village, and on 27 February until 04 March 2018 located in the region of SPTN 3 area Hulu Benu River Tanah Pilih Village, Berbak Sembilang National Park (TNBS), South Sumatra. This research aims to monitoring the conditions of habitat and its populations for the purpose of conservation and management of TNBS areas to be more optimal. The methods used is direct monitoring during the day and night, indirect monitoring through information and interviews with citizens, as well as secondary data collection. The results obtained, were that there was an encounter and information about the existence of False Gharials measuring ± 1 to 5 meters in the upper reaches of the Benu River in the Merang River, Rasau River, Bagan 2, Bagan 6 through Bagan 9. This resulted in the determination of the Benu River TNBS as an important habitat False Gharials that needs to be managed appropriately as conservation areas.

Keywords : Sembilang Berbak National Park (TNBS), False Gharial, South Sumatra, Benu River, Conservation

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1. Introduction

Sembilang National Park (TNS) is located in the coastal of South Sumatra Province, Indonesia. Position 1 is at 1°08'- 1°43' LS, and 104°05'-104°26' BT. Place height 0–20 mdp (meters above sea level). This area is designated based on Minister of Forestry No. 76 / Kpts-II / 2001 with an area of 205,750 hectares, located around 2,051 km² from Musi Banyuasin Regency, South Sumatra Province (TFC Sumatra, 2018). Sembilang National Park is an area with mangrove ecology. Mangroves in this area have a habitat that is influenced by river estuaries originating from freshwater swamp forest and peat swamp forest in the upstream section (Wardoyo & Iqbal, 2003).

Berbak Sembilang National Park (TNBS) is one of the 7 (seven) National Park (TN) which are included in the park policies and management of marine in Indonesia. To achieve the goal of managing conservation areas influenced by the tata region boundaries. In addition, the

lack of continuous research and management can be optimal management, such as monitoring of peat swamp forests in the Berbak-Sembilang area (Wibowo, 2002).

The distribution area of *Tomistoma* ranging from low-land areas in East Sumatra, Kalimantan, and west of Java (Indonesia) to Sarawak and Peninsular (Malaysia), which are about 50 from the north-south of the equator [Stuebing et al., (2006) in Bezuijen et al., (2010)]. Berbak Sembilang National Park (TNBS) is a habitat for various kinds of wildlife, in this case pisces (fish), aves (birds) including migratory bird areas, mammals (mammals), and herpetofauna (reptiles-amphibians). One of the key animals in this area is one of the habitats for False Gharial (*Tomistoma schlegelii*) on the island of Sumatra.

False Gharial (*Tomistoma schlegelii*) or Senyulong CrCrocodyle is protected under Government Regulation Number 7 of 1999 and renewal of LHK Regulation No. P92 / MENLHK / SETJEN / KUM.1 / 8/2018 regarding protected plants and animals. In addition, international

Status is a vulnerable categories according to CITES, and Appendix I according to IUCN RedList. False Gharial and Saltwater Crocodile is a similar species but is not a true genus of Crocodile, with a smaller and shorter body size while the length is not more than 3.5 meters. Characterized by a long, pointed and narrow snout feature. The other names from Senyulong Crocodile: Julung Crocodiles, Black Crocodiles, Freshwater Crocodile Fish Crocodile, Sapit and many other names, for the researchers from abroad called False Gharial. These crocodiles belonging to the Gavialidae family include shy or not aggressive crocodiles and their habitat in Fresh water swamp forest and upstream river in Peat water swamp forest.

This monitoring activity aims to conduct regular monitoring of False Gharial populations and habitats in the TNBS area in South Sumatra Province. The expected output of this activity is to obtain the latest data and reports about the population condition of False Gharials and the condition of other animals in the TNBS in South Sumatra and their habitat.

2. Materials and Methods

This monitoring activity was carried out twice at the SPTN 3 area of Hulu Benu River, the first was carried out on 15 to 19 September 2017 in the Muara Merang Village of 3 Pancuran. The second monitoring was carried out on 27 February to 04 March 2018 in the Tanah Pilih Village, Banyuasin, South Sumatra.

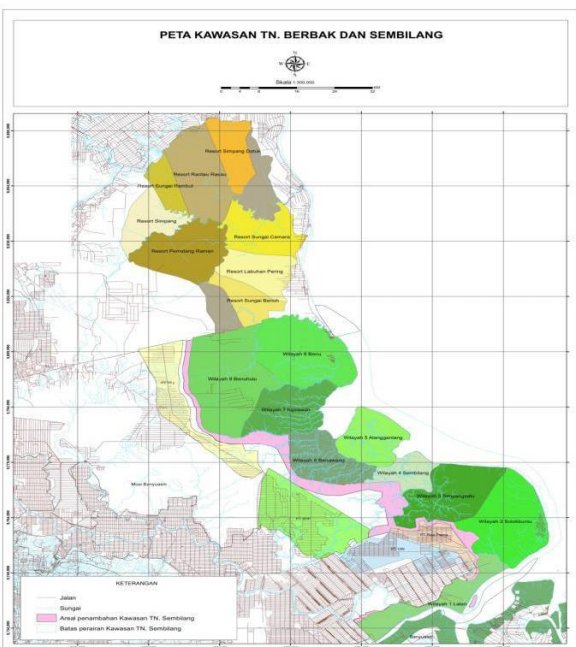


Figure 1. Map of location. Monitoring Area of Berbak Sembilang National Park

Tools and Objects

The tools used in this activity are 12 volt batteries,

stationery, Global Positioning System (GPS), Head Lamp, Digital Camera, Flashlight, Spotlights, and Sleeping Bag. Meanwhile, access to the monitoring location is taken using a boat through the waterway.

Monithoring Method

Monitoring activities use 2 (two) methods, as follows:

2.1 Direct Observation

This observation is carried out at the time of day and night (eye shine survey) a method that rely on irradiation from a lamp or head lamp to be able to see the point of crocodile, also called with spotlight. The method is adapted to the behavior of Crocodiles. This method aims to see the nest and habitat conditions of False Gharials. Each observation and finding point records the coordinates into the GPS. According to [(Web et al., (1984); Fukuda et al., (2013)], that the application of the spotlight method had been carried out starting in 1971 and was implemented in 1975 to monitor the population of crocodiles especially saltwater crocodiles. This method is well used for long-term monitoring with the application of tidal river habitat to make is clearer and optimal.

3. Results and Discussion

3.1 False Gharials on the Benu River Muara Merang Village of 3 Pancuran

The initial survey of False Gharial activities was intended as the first step to carry out regular and long-term monitoring. At the time of the implementation, one individual was found, but it was not documented. This can be a reference for further monitoring by adding the area of observation until the downstream of the main river, the Benu River (Figure 2), in order to obtain data on the distribution and population estimate of monitored False Gharial

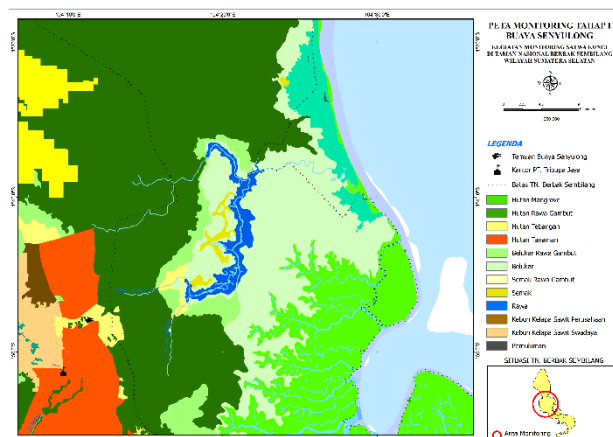


Figure 2. Map of Initial Survey, September 15-19, 2017

The condition of the existence of False Gharials that was observed in the summer (September 2017) is difficult to find, it can be said that crocodiles are in a state trapped in the waterways of plantation companies/industrial plantations (PT. Tri Pupa Jaya). In the dry season, the natural river water discharge will suffer drought, so the location of the monitoring as a refuge area for animal as False Gharials (Senyulong).

river catfish). False Gharials are often seen by fishermen, often found a number of eggs in a particular month.

False Gharials found at this location are important information that was still found in the Merang River in 2002 by the monitoring report of Mark Bezuijen and Khadarisman, successfully captured for identification in the observation and research activities, for determination of conservation policies and management of the TNS

Table 1. Data on False Gharial Monitoring, September 15-19, 2017

No	Date	Number of individuals	Size (m)	Location	Information
1	September 2002	1	5,6	Merang River	Secondary data, literature (Mark & Kadarisman.R)
2	September 2002	38*		Merang River	Secondary data, literature (Mark & Kadarisman.R)
3	2007			Benu River	Sayuti (Head of Village), Interview
4	August 2009	4		DAS watershed Merang River, Medak River and Kepahyang River	Secondary data, literature (LSM Bakau)
5	April 2017	1	±1,5	Benu River	Gendro, interview
6	16 September 2017	1	1,5-2,0	Parit/Kanal GN.24 areal PT.TPJ TNBS	Team, direct monitoring, this research
7				The Nature River encounter in several places along approximately 3 kilometers upstream of the Benu River towards the Nature River	Damri, interview
8		2		Upstream of Benu River	Wadong, interview
9		10		Upstream of Benu River	Chairperson of the fisherman group, interview

*Note: Findings of eggs suspected of False Gharials

Based on the monitoring data (Table 1) that has been done, it can be seen the findings of the existence of False Gharials on the Benu River, Muara Merang Village, Village of 3 Pancuran, TNBS. Through the method applied, the direct method (field observations) carried out during the day and night aims to adjust to the active time of False Gharials. In addition, a search for the presence of crocodile nesting was carried out, considering that in September each year the mother of a crocodile usually waits for their nest to reach December, which at that time is when Crocodile eggs hatch. The nesting locations are forested areas with vegetation canopies or canopies with a percentage of tree cover of 60–80% of solar irradiation that penetrates hard floors and ideal forest floor temperature for nesting is 30-31 °C.

Indirect methods are carried out by interviewing local people with the target of Head of Village, Head of Religion Leaders, group leaders and fishermen (with the main livelihood of fish: cork, giant snakehead/giant mudfish, Channa, wallago, Kissing Gourami, whiskered

area. Data on False Gharial observations on the Benu River in Muara Merang Village, Village of 3 Pancuran, are presented in Table 1 below:

Based on this information, it can be indicated that False Gharial habitat on the Benu River has been fragmented due to water dams, so individuals are trapped and difficult to find during the dry season (September-December) until the arrival of the rainy season.

3.1 False Gharials on the Benu River Tanah Pilih Village

Based on the lack of False Gharial collected data in the initial survey (September 2017), further second stage monitoring was carried out in February-March 2018 which lasted for 6 days. The monitoring location is considered from the upstream part of the Benu River to the Tanah Pilih Village. The location and path of the second stage monitoring can be seen in Figure 2. At this time, monitoring time is added to increase the intensity of

meetings. Direct monitoring is carried out during the day and night, the monitoring starting from 22.00 to 04.00 WIB adjusted based on the local information. In addition, indirect monitoring is also done to fill the gap in the data by collecting information/ interviews with local residents, especially those who work as fishermen.

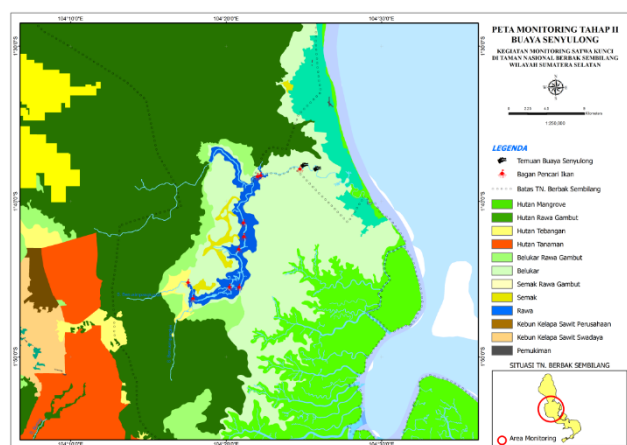


Figure 3. Map of False Gharial Second Monitoring, February 27-March 4, 2018

Tabel 2. Data on False Gharial-Second Monitoring February 27-March 4, 2018

No	Date	Individual of Number	Size (m)	Location	Information
1	24 February 2018	1	±3-4	Bagan 2, Bagan 9	Fisherman, night seen, interview (Bahar & Sangkut)
2	25 February 2018	1	±4	Bagan 7 to Bagan 8	Fisherman, night seen, interview (Irawan),
3	25 February 2018	1	±2,5-3	Bagan 7	Fisherman, night seen, interview (Andi & Sika)
4	26 February 2018	1		Bagan 2	Fisherman, night seen, in 2017 first of Ramadahn False Gharial entry into the lane had been maintained and then died, interview (Yusuf & Mira):
5	27 February 2018	1		Bagan 6	Seen when collecting tanger fish, False Gharial eaten that fish, interview (Dela)
6	27 February 2017	1		Upstream of Benu River until Tanah Pilih Village	Team, direct observation, this research
7	27 February 2017	5*	±1,5	Upstream of Benu River	Team, direct observation, this research
8	03 March 2017	1	±3	Benu River, Bagan 2	Team, direct observation (night), this research
9	03 March 2017	5		Benu River	The team, direct observation (night) looks floating and red eyes, this study

*Note: found 5 individuals, one of whom was identified as False Gharial

The picture above (Figure 3) is the location of second monitoring. The Benu River is a natural boundary between the South Sumatra and Jambi Province, there is settlements of catching fishing around the mouth of the River with a separate village administration. The settlements on the right side part of Benu River-Village, Sadu District, Tanjung Jabung Timur Regency, while the settlements on the left of the River are included in the administration of Tanah Pilih Village, Banyuasin II District, Banyuasin Regency. Along the River from the estuary to the Simpang Kanan River is the boundary of the two Provinces, then starting from the Simpang Kanan River towards the upstream is the area of South Sumatra Province and is the area of Berbak Sembilang National Park (TNBS). Based on the monitoring carried out at that location, there are 9 existance data of False Gharials (Senyulong) at the location which can be seen in Table 2.

Based on the recapitulation of monitoring data (Table 2), False Gharial (Senyulong) its can be seen that the high intensity of the encounter at night. At the time of the encounter, during the day crocodiles are sunbathing. Whereas at night False Gharials tend to bring their heads up to the water to breathe, so that what is seen is a part of the muzzle and the reflection of red light from the eyes (Figure 4).



Figure 4. False Gharials (*Tomistoma schlegelii*) in TNBS, Benu River, Area of SPTN 3

The intensity of crocodile encounters that are relatively higher at night is indicated by their behavior. Generally, during the day before in the afternoon the local activities of residents around the monitoring site are relatively higher compared to residents' activities at night which are relatively only for fishing. The correlation between False Gharial behavior and human activity causes a higher level of encounter. According to Indrarto et al., (2010), that every behavior of crocodiles will be influenced by comfort factors of habitat, natural wilderness and artificial (captive) habitat which is where the crocodiles can interact with their environment.

The difficulty of this research is the lack of encounter during the day so that the team must carry out monitoring which is focused at night, requires high concentration, sensitivity, and vigilance to be able to be aware of the existence of False Gharials. Based on the observations that have been made, the SPTN 3 region, upstream area of the Benu River was designated as an important area for the survival of False Gharials. The area can be described as the central area of False Gharial habitat. For this reason, appropriate management must be carried out by involving various parties in this area so that the population and value of False Gharial conservation can be maintained. According to Bezuijen et al., (2005) again research of False Gharial on the island of Borneo, there is a need for collaborative research and implementation of conservation with various parties such as forestry management area, and community-based to aware the importance of habitat and animal conservation for the benefit of crocodile conservation.

The maceration results that have been filtered using filter paper and funnel are then evaporated at 40-50 °C to obtain a dry extract in the form of a blackish brown paste, which is then weighed. The weight of extracts from evaporation is presented in Table 2 below.

4. Conclusion

Monitoring activities that have been carried out on the existence of False Gharials (*Tomistoma schlegelii*) in the TNBS area SPTN 3 Benu River Merang Village, Village of 3 Pancuran and Tanah Pilih Village. Based on these two observations that has been done, data obtained from the direct encounter and the indirect results of information/interviews. False Gharial found in the upstream area are at night with the relatively size ± 1 to 5 meters. This make the upstream of Benu River becomes an important area as a habitat for False Gharial conservation, which is an observation area is the last fortress for False Gharial species which has very minimum information on its existence and is unknown. From the results obtained, it is recommended that regular monitoring with start points from the estuary towards the upstream of the Benu River and be carried out when the water level is sufficient so that the implementation is more effective by focusing on the night observation method (eye shine survey).

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