International Journal of Ecophysiology Vol. 04, No. 02, 2022 |77 – 82

Internasional Journal of Ecophysiology

Conservation Management : Study Of Turtle Conservation Pangumbahan Beach, Sukabumi.

***Muhammad Haikal Fahmi*[1], *Febri Rizki*[2]**

[1,2][*Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Sumatera Utara*]

Abstract. This article review Conservation Management research: Pangumbahan Beach Turtle Conservation Study, Sukabumi Regency. In this article, author discusses the conservation of the Green Turtle (*Chelonia mydas*). and a conservation area management system that refers to: Sustainable turtle conservation, an ecotourism-based conservation system and sustainable turtle habitat management on Pangumbahan beach, Sukabumi Regency.

Keyword : *Green Turtle* (*Chelonia mydas*),*Turtle Conservation, Pangumbahan Beach*

Received [20 June 2022] | Revised [19 July 2022] | Accepted [27 August 2022]

1 Introduction

In the world there are 7 species of turtles and in Indonesia there are only 6 species. The types of turtles in Indonesia are the Green Turtle (*Chelonia mydas*), Hawksbill Turtle (*Eretmochelys imbricata*), Olive ridley Turtle (*Lepidochelys olivacea*), Leatherback Turtle (*Dermochelys coriacea*), Flatback Turtle (*Natator depressus*) and Loggerhead Turtle (*Caretta caretta*). Sea turtles are one of the protected animals in the category of CITES Appendix I (*Convention on International Trade in Endangered Species*) so that all forms of their use and distribution receive worldwide attention and protection, especially in the field of conservation [1].

One of the turtle conservation areas that has become a national pilot area is the Pangumbahan Turtle Beach Coastal Park and is a form of Coastal and Small Island Conservation Area (KKP3K) which was established through Regent Decree Number: 523/Kep.639-Dislutkan/2008. Pangumbahan Turtle Beach Coastal Park is one of several turtle conservation areas that have become national pilot areas. This area is also a Coastal and Small Islands Conservation Area (KKP3K) which was established through District Head Decree Number: 523/Kep.639-Dislutkan/2008. The turtle conservation management location on Pangumbahan Beach is located in Pangumbahan Village, Ciracap District, Sukabumi Regency, Province West Java. The

*Corresponding author at:[Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Sumatera Utara]

E-mail address: [muhammadhaikalfahmi11@gmail.com]

DOI: 10.32734/ijoep.v4i2.11391
Journal Homepage: http://ijoep.usu.ac.id

area of the beach management area is 58.43 hectares with a length of beach which is a turtle nesting habitat of ± 2,300 m [3].

The characteristics of Pangumbahan Beach are the type of beach with thick sloping sand and a dense vegetation background which is one of the green turtle nesting beaches (Chelonia mydas). Generally the green turtle (Chelonia mydas) chooses Pangumbahan beach as a nesting site because this coastline faces the Pacific Ocean which is an open ocean and has beach physical conditions that support green turtle (Chelonia mydas) nesting [2].

2 Research Purposes

The aim of the research is to find out the management system for the Pangumbahan Beach Turtle Conservation area and the realization of sustainable turtle conservation that can improve the welfare of the community around the Pangumbahan beach area.

3 Methods

This research was conducted from June 17 to July 26 2019 (for 30 days) at the Pangumbahan Beach Turtle Coastal Park Service Unit located in Pangumbahan Village, Ciracap District, Sukabumi Regency, West Java Province using the active participation method. Data collection is done by primary and secondary data. Primary data collection was carried out by observation, interview, documentation and active participation methods. The primary data needed is data on turtle landing and nesting, hatchling release and the average hatching success rate at the Pangumbahan Coastal Park Service Unit. This primary data was obtained through observation with direct observation and participation along with interviews with related parties in the agency. Secondary data was obtained from information collected by other parties, namely the Pangumbahan Beach Turtle Coastal Park Service Unit, used to increase knowledge and support discussion of the research conducted.

4. Results And Discussion

A. General condition of the research location

Geographically, the Pangumbahan Beach Turtle Coastal Park Service Unit is located at coordinates 106ÿ20'8.37”BT-07ÿ21'7.88"LS and 106ÿ22'58.96”E7-07ÿ19'5.57” LS. Administratively it is bordered by the Cikepuh Nature Reserve (BKSDA) and Gunung Batu Village to the north, to the east by Gunung Batu Village and Ujung Genteng Village, and to the south by the Indian Ocean. The Pangumbahan Beach turtle conservation area has an area of 58.43 hectares with a length of nesting ground of ± 2,300 m. This conservation area has 6 patrol

zones or posts (each zone or post has a length of 300 – 400 meters) and 2 supervisors with each officer from each post guarding the turtle nesting area..

B. Monitoring of Turtles Landing and Laying Eggs

At the time of the research, data were obtained on the number of turtles that landed and laid eggs dominantly at the post or zone II as many as 47 mother turtles while at Post VI there was only 1 turtle that landed and laid eggs. This is also supported by the abundance of Pandan Laut (*Pandanus tectorius*) vegetation which can provide a sense of security for turtle mothers when laying eggs. Post or zone II is dominated by Pandan Laut vegetation (*Pandanus tectorius*), while in post or zone IV there is only mangrove vegetation that surrounds it. The trend in the number of turtles landing and laying their eggs can be seen in Figure 1.

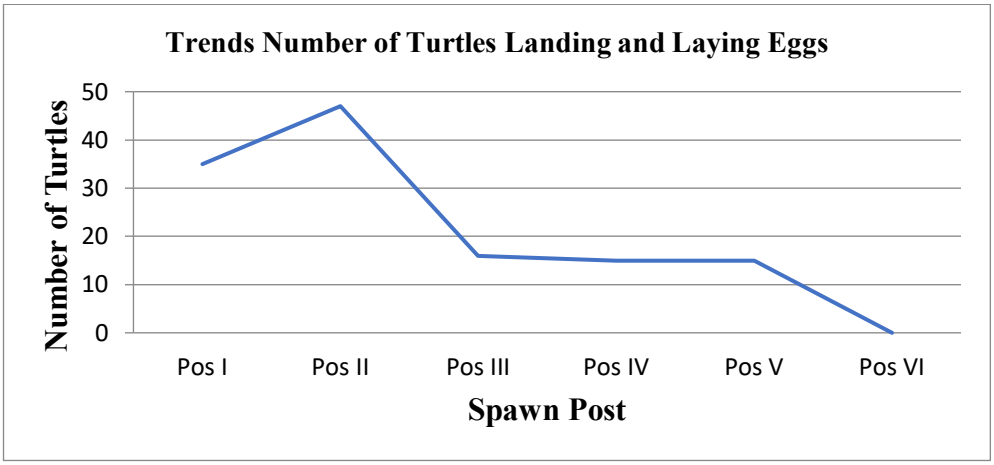

Figure 1. Trends in the number of turtles landing and laying eggs

The things that must be considered when conducting turtle landing patrols are to regulate movement to a minimum and regulate the use of light because it can interfere with the turtle landing process.

C. Releasing Hatchlings

One of the conservation-based tourism education activities at Pangumbahan Beach is the release of hatchlings into the sea. According to experts, when hatchlings are released into the sea, an imprinting process occurs whereby the hatchlings remember the conditions in their environment in memory. The natural GPS (*Global Positioning System*) on the hatchlings' heads will ensure that the hatchlings can return to the beach where they hatched. The main factor that needs to be considered when releasing hatchlings is to release them when the sun is not hot or when the sun is about to set because the temperature of the sea water is not hot and can avoid predators. Trends in the number of hatchlings released can be seen in Figure 2.

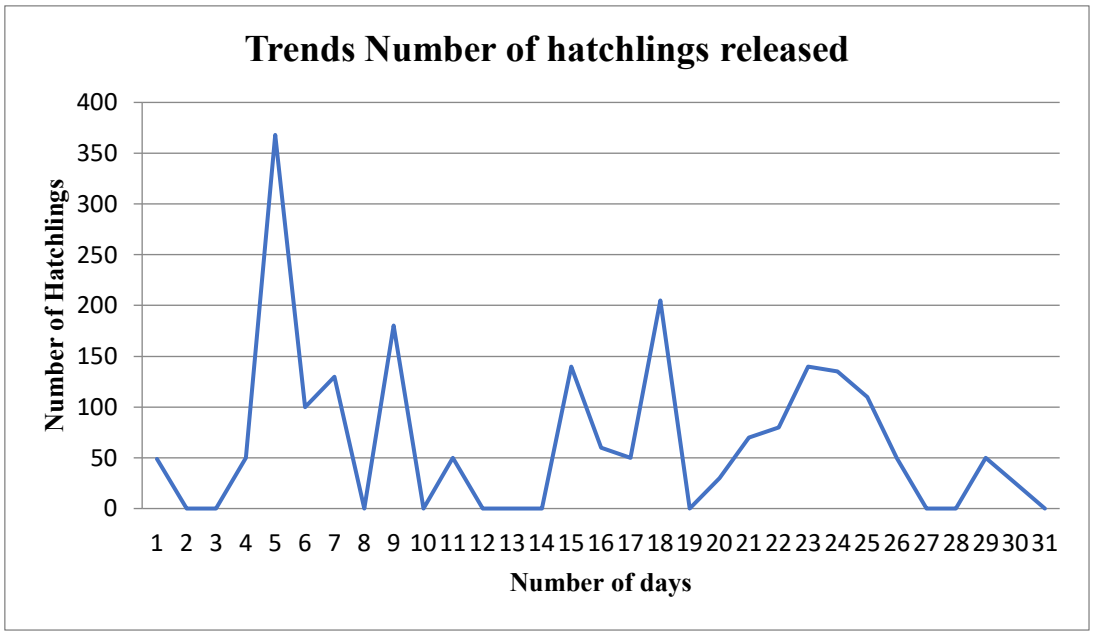

Figure 2. Trends in the Number of Hatchlings Released

The highest number of hatchlings released into the sea was on June 21 2019 (fifth day) with 368 hatchlings. The dominant hatchlings released into the sea are the Green Turtle (*Chelonia mydas*) and are the dominant hatchlings in the Pangumbahan Beach Conservation Area. The release of hatchlings was carried out in zone II. This is also supported by the large number of Green Turtles (*Chelonia mydas*) who often land and lay their eggs on Pangumbahan Beach.

D. Vegetation of Pangumbahan Beach

The coastal forest vegetation on Pangumbahan Beach has distinctive characteristics and is composed of mixed vegetation. From the results of observations, pandanus or sea pandanus (*Pandanus tectorius*) is a type of plant that dominates Pangumbahan Beach and other vegetation which is a mixed vegetation area which can be seen in table 1. This factor supports the mother green turtle (*Chelonia mydas*) tends to prefer thick sandy beaches with a vegetation background as a nesting site because it provides calm and a sense of security for turtle eggs..

E. Hatching Success Rate

Semi-natural hatching is carried out at the Pangumbahan Beach Turtle Park Service Unit by transferring the eggs from their original nest or hole to an artificial hole close to the turtle quarantine room. The shape and depth of the hole is designed according to its natural design. Semi-natural hatching of eggs is carried out in order to avoid beach abrasion and sea tides and facilitate the control and supervision of predators or predators and hunting by humans. If there is no disturbance to the eggs, turtle eggs will hatch after 7-12 weeks or 40-60 days. The success rate of hatching turtle eggs can be seen in Figure 3.

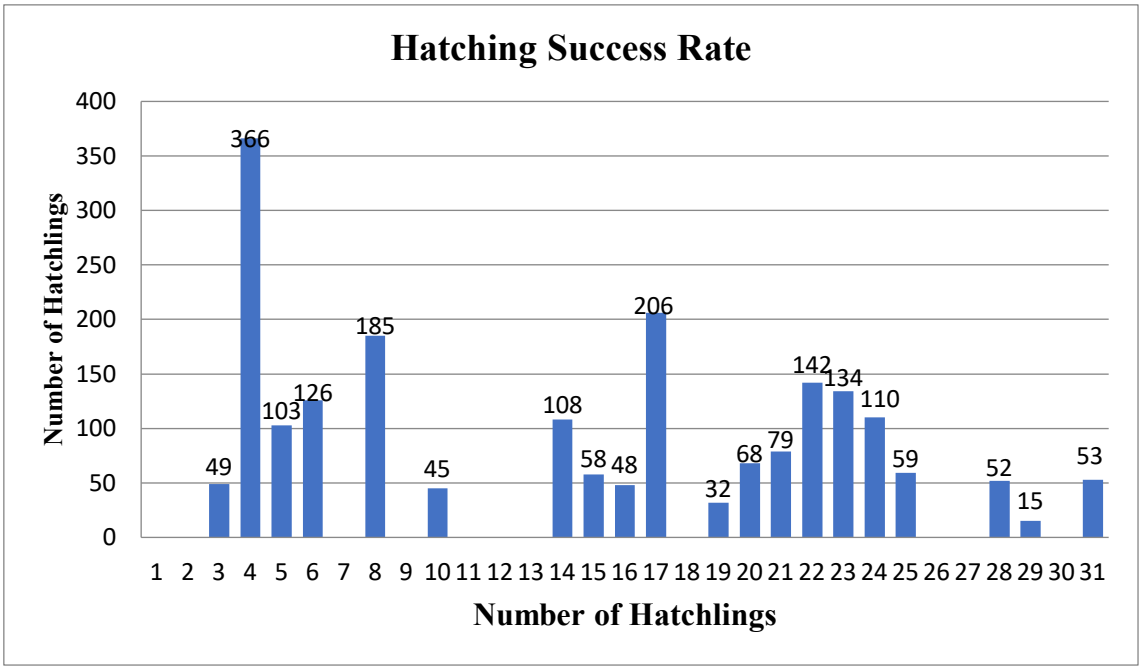

Figure 3. Hatching Success Rate

From the diagram on the side, the highest number of hatchlings that lived from hatching eggs was obtained on 20 June 2019 (day 4) with 366 eggs and the lowest was on 10 July 2019 with 110 out of 183 turtle eggs. Turtle eggs that are damaged or don't hatch are caused by red ant predators that swarm the turtle egg cages. In addition, the dry season also causes the soil to become dry and prone to landslides, thus disrupting the process of hatching turtle eggs.

5. Conclusion

The management of the turtle conservation area at the Pangumbahan Beach Turtle Park Service Unit has 6 observation zones with each post having a length of 300-400 m. The process of hatching turtle eggs on Pangumbahan Beach is carried out using a semi-natural hatching process. For the care process, newly hatched hatchlings are kept in the quarantine room to be released in the afternoon. The types of turtles found at the Pangumbahan Coastal Park Service Unit during the implementation of the activity were the Green Turtle (*Chelonia mydas*), the Hawksbill Turtle (*Eretmochelys imbricate*), and the Lekang Turtle (*Lepidochelys olivaceae*).

The results of this study can provide information about turtle conservation efforts to increase turtle populations in the Pangumbahan Beach Turtle Conservation Area, Sukabumi Regency. and can provide insight and public awareness of the importance of conservation, especially for protected wild animals. There are no Raster and vector maps to find out the initial position of the turtle rearing, the researchers only display the coordinates. Researchers do not display visualization of the process of observation and participation to add credibility to research results. Because this type of research is a case study. Researchers do not add to the source of reference to enrich the theory to strengthen research results. Researchers did not display data on

abiotic or biotic environmental factors. Because this is related to conservation research. lack of important theoretical foundations to answer research results.It is hoped that the data provided will be more detailed to improve the quality of this article.

6. Reference

[1] Ario, R. *et al*., "Pelestarian Habitat Penyu Dari Ancaman Kepunahan Di Turtle Conservation And Education Center (TCEC) , Bali", vol. 19, no. 1, pp. 60–66. 2016.

[2] Bara, D. A. *et al*., '*Journal Of Marine Research*.', 2, pp. 147–155. 2013.

[3] Elya Putri Panea, Ismail Noer Muhamada, DGR. Wiadnyab, "Pengelolaan Konservasi: Studi Kasus Konservasi Penyu Pantai Pangumbahan Kabupaten Sukabumi," in *Prosiding Seminar Nasional Perikanan dan Kelautan* VIII. ISBN : 978-602-72784-3-1. 2019.