



Sea Turtle Captivity as Tourism Education Media in Jengglunharjo, Tanggunggunung Tulungagung Regency

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Abstract: This research aims at captivating sea turtles as one media which was used as tourism education to teach children around the Jengglunharjo Village. The rescue efforts for sea turtles were conducted to protect them as one of endangered animals. The data were gained through displaying direct observations of how turtle imprisonment was made from bamboo on the Sanggar Beach. According to the findings of the investigation, the villagers boasted an intriguing and unspoiled tourist destination that features three different species of turtles, including belimbing, green, and shell turtles. The children around of village could learn them as tourism education media as realia. By captivating the sea turtles not only the adults but also the children was aware how important these different species of turtle to balance of the sea habitat, then by preserving the sea turtles eggs inside bamboo fence could be one media of tourist destination and environment harmony



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Introduction

Ancient reptiles known as turtles have played an essential part in maintaining the harmony of marine ecosystems, helping to carry vital nutrients from the ocean to the coast and sustaining a rich coral reef ecology, among other things.¹ The Law No. 5 of 1990 on the Conservation of Natural Resources and Its Ecosystems safeguards turtle survival in Indonesia.² Additionally, Government Regulation No. 7 of 1999 on the Conservation of Plants and Animals protects turtle existence.³ Six of the seven turtle species found worldwide—the leopard (*lepidochelys olivacea*), tempayan (*caretta caretta*), green turtle

¹ Nurul Komarudin and Fahrunnisa, "Implementation of Turtle Conservation Policy in the Nipah Essential Ecosystem Area for the Sustainability of Aquatic Resources and Environment," *Jurnal Biologi Tropis* 23, no. 1 (January 26, 2023): 360–368.

² Febrian, Lusi Apriyani, and Vera Novianti, "Rethinking Indonesian Legislation on Wildlife Protection: A Comparison between Indonesia and the United States," *Sriwijaya Law Review* 5, no. 1 (2021): 143–160.

³ Cok Dian Laksmidewi, "The Legal Framework for the Protection of Turtles as Protected Animals from Culinary Business Production," *Substantive Justice International Journal of Law* 5, no. 1 (June 22, 2022): 11.

(*chelonta mydas*), fowl tortoise (*natator depressus*), bulldozer (*dermochels coriacea*), and chick turtleneck (*eretmochelisimbricata*)—can be found in Indonesia.⁴

The environment in which turtles settle and lay eggs with particular traits or traits is known as the turtle habitat.⁵ The habitat is preferably a beach that is accessible from the sea; it should be high enough to prevent water from covering the eggs; have reasonably loose beach sand; and be of a size that prevents the nest hole from collapsing as it is being formed. selecting this place such that the substrate is moist, low fertility, and the eggs are.⁶ Additionally, turtle habitat must be far from human activities like noise and bright light.⁷ When there is noise and bright light offshore, turtles that land and lay eggs at night will abandon their plans to lay eggs because these disturbances will prevent them from successfully laying their eggs. Additionally, the turtle habitat's beach position should be landy or not too sloped.⁸

The majority of Indonesia's beaches, however, have changed in recent years due to erosion and sloping beaches, which makes it harder for turtles to lay their eggs.⁹ The majority of a turtle's life is spent at sea. The mother turtle will travel to the shore during breeding season to lay her eggs, creating holes in the beach sand.¹⁰ Threats to turtles change over the course of their lives. Turtles were hunted by wild hunters while they were still eggs in order to sell them.¹¹ This is because tales regarding the use of eating turtle eggs as "medicine" exist in some civilizations. Furthermore, the skin that remains after scratching serves a crucial role as a natural vegetation balancer (fertility /

⁴ Dewi Fitriani et al., "Kajian Kondisi Lingkungan Tempat Peneluran Penyu Di Desa Pasie Lembang, Aceh Selatan Study of the Environmental Conditions of Turtle Breeding Places in Pasie Lembang Village, South Aceh," *Journal of Aceh Aquatic Science* 5, no. 1 (2021): 2021, <http://jurnal.utu.ac.id/JAAS/issue/archive>.

⁵ Samsu Adi Rahman et al., "STUDI KARAKTERISTIK HABITAT PENELURAN PENYU DI PANTAI SINORANG, DESA SINORANG, KECAMATAN BATUI SELATAN, KABUPATEN BANGGAI SEBAGAI DASAR KELESTARIANNYA CHARACTERISTIC STUDY OF THE TURTLE-NESTING HABITAT AT SINORANG BEACH, SINORANG VILLAGE, BATUI SELATAN SUB DISTRICT, BANGGAI REGENCY, AS A BASIS OF ITS SUSTAINABILITY" (2022), <http://ejournal-balitbang.kkp.go.id/index.php/bawal>.

⁶ Dwi Rosalina and Muji Prihajatno, "UPAYA KONSERVASI PENYU LEKANG (*Lepidochelys Olivacea*) DI WILAYAH KONSERVASI EDUKASI MANGROVE DAN PENYU PANTAI CEMARA, BANYUWANGI, JAWA TIMUR," *Jurnal Kebijakan Perikanan Indonesia* 14, no. 1 (May 14, 2022): 1.

⁷ Alan F. Rees et al., "The Potential of Unmanned Aerial Systems for Sea Turtle Research and Conservation: A Review and Future Directions," *Endangered Species Research* 35 (2018): 81–100.

⁸ Harfiandri Damanhuri et al., "Biophysical Characteristics of Nesting Habitat of Green Turtle *Chelonia Mydas* In the Coastal Zone of Kasiak, Bindalang and Karabak Ketek Island Of West Sumatra Indonesia," *International Journal of Agricultural Sciences* 3, no. 2 (2019): 44.

⁹ Holly J. Stokes, Nicole Esteban, and Graeme C. Hays, "Nest Site Selection in Sea Turtles Shows Consistencies across the Globe in the Face of Climate Change," *Animal Behaviour* 208 (2024): 59–68, <https://doi.org/10.1016/j.anbehav.2023.12.001>.

¹⁰ Vindy Rilani Manurung, "Egg Laying Characteristics and Hatching Habitat of Lekang Turtle (*Lepidochelys Olivacea*) in Binasi Beach Turtle Conservation Area, Central Tapanuli North Sumatera Province," *AQUACOASTMARINE: Journal of Aquatic and Fisheries Sciences* 2, no. 1 (2023): 1–7.

¹¹ Apridyanita Pratiwi Tarigan, La Syarifudin, and Agustina Wati, *Penegakan Hukum Terhadap Perdagangan Telur Penyu*, vol. 16, 2020, <https://investor.id/archive/hukum-berat-pemburu-satwa-liar-dilindungi>.

nutrition).¹² The turtle eggs peel after 45 to 60 days, the turtle will emerge from its nest and head back to the water.

One could describe its regeneration as sluggish. Only every 2-4 years will the mother turtle lay eggs, and she will return to the same spot 4–7 times to do so. Although hundreds of eggs can be laid in a single egg-laying cycle, only few of them are used for survival. Only one of the 1,000 squirrels that return to the sea will reach adulthood, according to study. This happens as a result of the sea's turtle or turtles being harassed and endangered by predators. Sea trash poses a threat to adult turtles. Turtles are the primary food for turtles. Oceanic plastic trash frequently looks like frogs.¹³ The sea turtles will eat anything you see when you see one.

According to some research, the biofuelled process, involving the formation of algae and bacteria in the water to pollute it with plastic trash, produces an aroma that is similar to that of food and may attract turtles.¹⁴ In the end, this plastic waste causes a lot of sick and dead turtles. The extinction of turtles is a serious issue, despite their relatively high economic value.¹⁵ This is closely comparable to the threat that predatory creatures like cockroaches, crabs, dogs, pigs, and ants pose to turtle eggs in their natural nests.¹⁶ Additionally, human activity such as environmental pollution, harm to the turtles' natural habitat, hunting of turtles for their meat, and egg harvesting for commercial purposes all contribute to the fall in turtle numbers.

Due to reducing the number of humans who might desire to take the turtle and its eggs for sale or personal use, the government awarded it protection from turtle existence.¹⁷ Real attitudes and actions are needed to restore or at least preserve the current population of turtles because current efforts fall short of those goals.¹⁸ Turtles won't always visit Indonesian beaches to lay their eggs. There are notable tourist attractions in the village of Jengglunharjo Tanggunggunung District Tulungagung

¹² Vivek Choudhary, Mrunal Choudhary, and Wendy B. Bollag, "Exploring Skin Wound Healing Models and the Impact of Natural Lipids on the Healing Process," *International Journal of Molecular Sciences* 25, no. 7 (2024).

¹³ Mabilia Hossain Shetu, Fahmida Parvin, and Shafi M. Tareq, "Identifying the Presence of Microplastics in Frogs from the Largest Delta of the World," *Environmental Advances* 11, no. October 2022 (2023): 100355, <https://doi.org/10.1016/j.envadv.2023.100355>.

¹⁴ Wen Yi Chia et al., "Nature's Fight against Plastic Pollution: Algae for Plastic Biodegradation and Bioplastics Production," *Environmental Science and Ecotechnology* 4 (2020): 100065, <https://doi.org/10.1016/j.es.2020.100065>.

¹⁵ C.a. Tisdell and Clevo Wilson, "Economics, Ecology and the Environment: Benefits of Sea Turtle Based Ecotourism. A Study on Mon Repos," *Environment*, no. 52 (2000): 1–41, <http://ageconsearch.umn.edu/bitstream/53632/2/WP8.PDF>.

¹⁶ Dominika Drzewiecka, "Significance and Roles of Proteus Spp. Bacteria in Natural Environments," *Microbial Ecology* 72, no. 4 (2016): 741–758, <http://dx.doi.org/10.1007/s00248-015-0720-6>.

¹⁷ Gwendolyn Ingrid Utama, Shinta Pangesti, and Laura Cindy Vatesia, "Preserving the Existence of Sea Turtles: The Government Policies and Roles on Conservations," *Law Review* 22, no. 3 (2023): 360.

¹⁸ Rudianto Rudianto and Gatut Bintoro, "Future Turtle Management: Opportunities for Habitat Restoration Governance in East Java, Indonesia," *International Journal of Environment, Agriculture and Biotechnology* 3, no. 5 (2018): 1721–1731.

Regency, including beach tourism and educational tourism in the form of turtle conservation.¹⁹ The beaches of Gebang Pathok and Ujung Pakis, as well as turtles caught in villagers' settlements, are where turtle conservation takes place.

Turtle beetles, green turtles, and shark tortoises are the three different species of turtles that may be found in the village of Jengglunharjo. The three turtle species were listed as belonging to the critical category of its extinction rate by the World Wide Fund (WWF) in 2017.²⁰ Consequently, unique protection measures are needed to protect the turtle population.²¹ Through nature tourism, children gain a deeper understanding of the importance of environmental conservation and sustainability. Nature provides a variety of sensory stimuli that help children's cognitive development.²² Interacting directly with nature helps children develop a sense of love and helps strengthen the human connection with the natural environment, raising awareness of the importance of maintaining and preserving nature.

Nature is a great teacher. Visiting natural places provides opportunities to learn about ecosystems, flora, fauna and environmental conservation.²³ By educating the next generation about the significance of the balance of an extinct natural ecosystem as a legacy of science and love of nature, it will be possible to continue the efforts to protect and save sea turtles in Indonesia, particularly in the Jengglunharjo district.²⁴ The beach location in the community of Jengglunharjo is in a protected area, where there may be a youth network concerned with turtle conservation. The presence of turtle hunting relocation in safeguarding turtles and their eggs from the hunting of predators and wild hunters demonstrates the community's high degree of care for the turtle hunting habitat in the hamlet of Jengglunharjo.²⁵

¹⁹ Rohmatin Alfianistiawati et al., "Destination Branding of Marine Ecotourism in Trenggalek Regency: A Study on Kili-Kili Beach Turtle Conservation," *Prospect: Jurnal Pemberdayaan Masyarakat* 2, no. 1 (2023): 12–22.

²⁰ Mohd Hairul Mohd Salleh et al., "Turtles in Malaysia: A Review of Conservation Status and a Call for Research," *Animals* 12, no. 17 (2022): 1–18.

²¹ Yesha Ainesis El Gracianita Pelupessy et al., "Status, Trends, and Potentials of Turtle Conservation in Bali: A Mini Review," *Jurnal Medik Veteriner* 4, no. 2 (2021): 256–268.

²² Reni Amiliya and Harun Harun, "Natural Based Learning for Early Childhood Cognitive Development" 296, no. Icsie 2018 (2019): 274–278.

²³ Nurul Inayah, Lely Ana Ferawati Ekaningsih, and M. Alaika Nasrulloh, "Empowering Santri to Create Sustainable Economy at Pondok Pesantren Munzalan Mubaroka Siliragung Banyuwangi through Asset-Based Community Development (ABCD)," *Engagement: Jurnal Pengabdian Kepada Masyarakat* 7, no. 1 (2023): 151–165.

²⁴ Taurus Zeno Adi Eti Harnino et al., "Efektifitas Pengelolaan Konservasi Penyu Di Turtle Conservation and Education Center Serangan, Denpasar Bali Effectiveness of Sea Turtle Conservation Management at the Turtle Conservation and Education Center of Serangan, Denpasar Bali," *Journal of Marine and Coastal Science* 10, no. 1 (2021), <https://e-journal.unair.ac.id/JMCS>.

²⁵ Denisa Melanesia et al., "TURTLES : THE THREATS , THE CONSERVATION PRACTICES AND THE COMMUNITY EXPECTATIONS IN MUBRANI DISTRICT TAMBRAUW REGENCY PENYU : ANCAMAN , UPAYA KONSERVASI DAN HARAPAN MASYARAKAT" 32, no. 2 (2023): 98–110.

Community empowerment by providing knowledge and understanding to the community that is adjusted to follow developments, especially in technology related to sea turtle conservation, can have an impact on natural preservation by maintaining the sea turtle ecosystem, especially in the Jengglungharjo Village Beach area.²⁶ On February 14, 2023, the researcher conducted the observation at Sanggar Beach Village Jengglungharjo in the Tulungagung regency. In addition to conducting this observation, the researcher worked to improve turtle conservation in the community of Jengglungharjo in an effort to facilitate turtle catch with village volunteers.

In order for eggs to carry out the process of fermenting that is hidden from predators, animals, or tourist prison hands, semi-natural turtle fermentation locations are manufactured and placed in the location of capture. Building a turtle capture area with bamboo requires the preparation of a 1.5-meter square of soil. The bamboo is then smashed to the ground and, laying bamboo one with the other. Bamboo on the bandage using the rope that has been prepared. After completing the capture of turtles then the place/box of capture the turtle on the inside of it filled with sand using the sand of the Sanggar Beach to lay the tortoise eggs that will be placed in this capture.

Related research on the habitat characteristics of turtles has been carried out by Bima Anggara Putra (2014) in Paloh Beach.²⁷ Based on the results of his research entitled Study of Biophysical Characteristics of Green Turtle (*Chelonia mydas*) Nesting Habitat in Paloh Beach, Sambas, West Kalimantan, shows that the physical condition of Paloh Beach supports it as a nesting habitat for green turtles (*Chelonia mydas*) where the beach length is 15.1 km and The average total beach width is 30.12 m, the average beach slope is 6.81°, the substrate temperature ranges from 26.3°- 32.1°C, the nest humidity ranges from 75% to 93%, the nest substrate texture is dominated by sand. 93.38% and the rest is dust with an average of 5.36% and clay with an average of 1.26%. It is necessary to develop a turtle hatchery in the coastal area which is located in Jengglungharjo Village, the result of which could bring to develop the turtle population and also as a preservation of marine ecosystems. Therefore, Turtle captive assistance is carried out as one of the educational media for student tourism in the neighborhood of Patuk Gebang Beach, Jengglungharjo Village, Tanggunggunung Tulungagung.

Method

The analysis used in exploring and identifying the characteristics of turtle captivity as one of the educational media for student tourism in the Jengglungharjo

²⁶ Rizqi Nur Azizah et al., "Assistance in the Production of Healthy Drink Krokotea Halal and Thayyiban for SMEs in Panakukkang District, Makassar," *Engagement: Jurnal Pengabdian Kepada Masyarakat* 7, no. 1 (2023): 166–173.

²⁷ Sri Rejeki Bima Anggara Putra, Edi Wibowo K., "STUDI KARAKTERISTIK BIOFISIK HABITAT PENELURAN PENYU HIJAU (*Chelonia Mydas*) DI PANTAI PALOH, SAMBAS, KALIMANTAN BARAT," *Journal of Marine Research* 3, no. 3 (2014): 173–181.

Village environment is a qualitative descriptive analysis in which facts, circumstances and phenomena that occur when the assistance takes place are displayed and presented as they are. According to the stages - what stages must be fulfilled. The steps that must be taken are to list the variables to be observed. The list was obtained through a process of synthesizing literature review from theories regarding turtle captivity as a medium for tourism education. Furthermore, observation or direct observation is carried out in the assistance area. From these observations, it can be presented how turtle breeding is one of the educational media for student tourism in the Patuk Gebang Beach area, Jengglungharjo Village, Tanggunggunung Tulungagung.²⁸

Result

The management of insufficient conservation strategies, the egg trade, tortoise capture, and microbiological attacks are just a few of the problems that the turtle conservation program works to manage and conserve. Various organizations, such as the Sadar Tourist Group and the Community Controller Group, participate in the conservation effort created by the Tulungagung community in the Jengglungharjo Village of the Tulungagung area.²⁹ The village of Jengglungharjo has protected species as its aim for conservation.³⁰ The main goal of this activity is to look after turtle eggs and inform the public about the value of preserving the richness of turtle species.³¹ There are various things to consider while determining where turtles will be, including the position of the turtle or the beach has a sloping slope because the ability of the Turtle to reach the location of clearance with a fairly large slope require more energy.³²

In addition, the limited turtle's eye could not see at a 150° angle below so the sloping slopes and the breadth of the coast that is not too far away would be preferred to the turtles. Vegetation also develops in the process of turtling turtles. On the beach, there shouldn't be an excessive amount of open or dense vegetation. Vegetation serves as a sign of protection for turtle eggs from predators and seawater discharges, and it also slows down the process of sunlight's heat transfer to the sand's surface. As sunlight is absorbed by flora before reaching the surface of the sand, it slows down and absorbs more slowly. Turtles favor quiet areas over tourist attractions. The comfort of the turtle to engage in

²⁸ Dwi Astuti Wahyu Nurhayati, *Research Methodology* (Tulungagung: Akademia Pustaka, 2020).

²⁹ Rini Andari, Ahmad Hudaiby Galih Kusumah, and Caria Ningsih, "The Role of Local Champion in Achieving an Integrated Rural Tourism: A Case Study of Alamendah Tourism Village, West Java," *Sodality: Jurnal Sosiologi Pedesaan* 11, no. 3 (2024): 291–304.

³⁰ L. P. Suciati and S. Agusta, "Application of Eucalyptus Agroforestry to Reduce Poverty in Rural Areas in Jember Regency, East Java, Indonesia," *IOP Conference Series: Earth and Environmental Science* 1315, no. 1 (2024).

³¹ Juliaeta AB Mamesah et al., "Turtle Biology Conservation at Taman Kili Kili Beach, Wonocoyo Village," *Jurnal Penelitian Pendidikan IPA* 10, no. 6 (2024): 2935–2947.

³² Meilisha Putri Pertiwi and Suci Siti Lathifah, "CONDITIONS OF HILLING HABITAT OF CHELONIA MYDAS (GREEN TURTLE) IN PANGUMBAHAN BEACH UJUNG GENTENG, SUKABUMI SELATAN," *JOURNAL OF SCIENCE INNOVARE* 01, no. 02 (2018), <https://journal.unpak.ac.id/index.php/jsi>.

looting is frequently diminished by the intense and difficult to regulate tourist activities.

Discussion

The only type of tourism practiced in the settlement of Jengglunharjo is nature tourism. The excursion includes both a beach and a turtle conservation tour. Tours available in Jengglunharjo village are managed by POKDARWIS. The educational tour:

The Belimbing Turtle

The Belimbing Turtle is a species of turtle whose population is small in the world and is declared at risk of extinction. It has the scientific name *Dermochelys coriacea*. Belimbing turtles have an elongated back in the shape of a belimbing fruit, have a medium and curved head, and have long front legs with a black back almost entirely accompanied by a bitnik - white bitnik. This turtle has the largest body morphology compared to other turtles. Belimbing turtles are about 17-22.3% wide of the total length of the carapace, have a weak half, but sharp shape, have no food-destroying or lubricating surface.³³ The body shape of the adult male turtle is shallower compared to the female turtles, the plastron has an inward anchor, the hips are narrowed and the corset is not so deep in the females.³⁴ The color of the adult turtle carapace is develop-black or old brown. At the top with white and white spots with black spots at the bottom. This turtle can weigh up to 1 ton with a length from the end of its tail to its mouth is more than 215 cm, while other types of turtles are about 100 cm.



Picture of 1. The Belimbing Turtle
Source: DARILAUT.ID

³³ Donan Satria Yudha, Fidelis Aritona Triki Sadewa, and Rury Eprilurahman, "Characteristics of Shell Bone as an Identification Tool for Turtle Species (Reptiles: Testudines) in Java, Borneo, and Sumatra," *Journal of Tropical Biodiversity and Biotechnology* 5, no. 1 (2020): 35–43.

³⁴ Hanif Mustafa et al., "Comparative Anatomy of Axial Skeleton of Red-Eared Turtle (*Trachemys Scripta Elegans*, Wied 1838) and Softshell Turtle (*Amyda Cartilaginea*, Boddaert 1770)," *Proceeding International Conference on Science and Engineering* 2 (2019): 97–100.

A place to lay eggs of turtles on large and long beaches as well as in tropical areas. The tail of the turtle egg has a depth of > 100 cm and has a diameter of 30 – 35 cm. The turtle's egg time is in the evening, which is from 20:00 – 03.00 and the turtles' egg period is almost 2 years.³⁵ Habitat characteristics of the locations of turtles nesting have similarities as the green turtle, *i.e.* on the beach there are waru trees, ketapang trees and thorn pandan trees with kinds of beach sand I think (mineral quartz).³⁶ According to Grüss et al., (2014), a way of conservation that can be done to reduce the rate of fertilization is by limiting the level of direct exploitation of eggs and females that results in extinction as well as preventing the development of areas around the coast of the nursery, which has a destructive impact on habitat.

WWF (2013) adds that the ways to save turtles are to promote and facilitate the creation of a Sea Turtle-based Water Conservation Area (CCP), the establishment of a Policy of "Concession to Refuse Eggs", the formation of an agreement with the community against the hunting of Turtles, increased concern for the conservation status of Turtles at Jamursba Medi Beach, the implementation of Sea Tortoise-friendly catch tools and the handling of Sea Turtles as a direct bycatch on fishing vessels, as well as the signing of a number of memorandums of understanding in the framework of protection and commitment by various parties related to the survival of the sea turtle.

The Green Turtle

The green turtle has the scientific name *Chelonia mydas*. Its name is derived from the green-colored fat located under their shells. The green turtle is one of the most common types of sea turtles and is more numerous than some of the other. Although it is more numerous than other species of turtles, the population of this green turtle is decreasing year by year by catching and killing both intentionally and accidentally. The green turtle has a backbone (carapace) consisting of non-overlapping cracks. The color of the carapace on the dorsal part of the turtle is black green, at the time of adolescence it becomes brown with radiating streaks (spread yellowish spots) and the color becomes very varied when it is grown up.

Green turtles have a smooth surface, oval-shaped karapacs, with four laterals on each side, and small heads with a pair of prefrontal spikes, thin laminate karapacs, in contrast to the thin-spicy turtle.³⁷ The green turtle is the largest of all species of turtles,

³⁵ Berman Manurung and Slamet Rifanjan, *KARAKTERISTIK HABITAT TEMPAT BERTELUR PENYU DI KAWASAN TAMAN WISATA ALAM TANJUNG BELIMBING KECAMATAN PALOH KABUPATEN SAMBAS* *Habitat of Spawning Turtle in The Nature Park Tanjung Belimbing Park Paloh, District Of Sambas*, vol. 4, 2015.

³⁶ Vani Oktavia Siahaan and Afrizal Tanjung, "Habitat Characteristics Nesting Environment of Green Turtle (*Chelonia Mydas*) Pandan Island of West Sumatera," *Journal of Coastal and Ocean Sciences e-issn 1*, no. 1 (2020): 2745–4355.

³⁷ D. R. Hidayatulloh, Y. Dhamayanti, and M. T.E. Purnama, "Species Determination Based on Head Scutes, Carapace, and Plastron of Turtle Hatchlings at Boom Beach, Banyuwangi," *IOP Conference Series: Earth and Environmental Science* 718, no. 1 (2021).

the carapace size is 55.5 inches. An adult turtle weighs 600kg. Although it is called a green turtle, its color is not always green. There are typical bright peripherals on the spikes above the head and feet, and on the scales around the edges of the carapace shaped shield.



Picture of 2. The green turtle
Source: UNAIRNEWS

Not much regeneration a turtle produces, of the hundreds of eggs produced by a female tortoise, the most 1–3% succeeded in reaching adulthood. Tortoises marry in the sea, except for tempayan turtles who will marry even in captivity when the marriage time has arrived. The wedding usually takes place in the morning, at sunrise. The tortoise marries the male turtle on the back of the female.³⁸ At the time of marriage, the genitals of the male turtle in the shape of a tail will stretch backwards while swimming. During marriage, the male turtle is on the back of the female turtles by crushing the female's shoulder with the nails located on the front leg. Copulation is done with different couples during the wedding season. The time it takes the turtle to marry from the beginning to the completion of copulation is about 4-6 hours.

The female can store the sperm obtained from several males. A few weeks after copulation, the female turtle climbed to the sandy beach and dug a hole as deep as 45 cm for the place to lay eggs. The habitat characteristics of the location of green turtles are on the beach where there are waru trees, ketapang trees and pandan duri trees with the type of beach sand I think. One hole is filled with an average of 100 eggs the size of a pimpong and soft-skinned ball. The eggs will decay after 55 days. The green turtle egg time is between 21:00 and 2:00 p.m.³⁹ The time interval between the breeding season is 2-3 years and the turtle lays eggs more than once in a season (2-3 times), while the time interval to lay eggs on the beach is 2-3 weeks.⁴⁰

³⁸ Carol L. Dougherty, "Why Does Aphrodite Have Her Foot on That Turtle?," *Arion - Journal of Humanities and the Classics* 27, no. 3 (2020): 25–48.

³⁹ Dewi Elfidasari et al., "Distribution and Nesting Habitat of Green Sea Turtles (*Chelonia Mydas*) in Pangumbahan Turtle Conservation Area, Sukabumi, Indonesia," *AACL Bioflux* 15, no. 5 (2022): 2329–2338.

⁴⁰ Daniel Paskah Ginting, Syafruddin Nasution, and Yusni Ikhwan Siregar, "THE EFFECT OF

When the turtles get to the beach. Only female turtles come to the breeding area, while the male turtle is in the subtidal area. Naturally, the eggs left by the mother turtle in the sand of the beach will crack. That the percentage of turtle egg hacking was x.90% and when it comes to the sea, it will go to the ocean. Initially for a moment the tukik will be in the sea waters near the shore and then travel to the open sea. The roadside of the sea is no longer known. Experts call it a "lost year". Turtles lay eggs with different behaviors according to each species. Green turtles have a time (time) when the sun begins to sink, and many are found when the dark atmosphere rolls. (21.00 – 02.00).

The Sick Turtle

It has the scientific name *Eretmochelys imbricate*. Chestnut turtles are characterized by a carapace shape like the heart, sliding on the back, as well as having a brown carapace color with some shiny bright variations. The eggs of the tortoise are beaches that have coral sand or granite sand. It has the shallowest hole depth if seen from the other types of turtles is 35 – 42 cm and the diameter of the nest is 18 – 22 cm.⁴¹ The egg-laying time of the frog turtle is day and night, and the egg-legation of a frog tortoise is almost 2 years. The habitat character of the localization of the shark turtle is on the beach location that has the character of coral sand details resulting from wave/wave impact, as well as having a white or yellow sand color.⁴²



Picture of 3. The Sick Turtle
Source: National Geographic Indonesia

TEMPERATURE DIFFERENCES ON HATCHING RATES OF LEKANG TURTLE (*Lepidochelys Olivacea*) EGGS IN SEMI-NATURAL NESTS," *Asian Journal of Aquatic Sciences* 6, no. 2 (2023): 224–228.

⁴¹ Dira Meritha Wiyaga, Jabang Nurdin, and Indra Junaidi Zakaria, "The Management Of Turtle Nesting In Protected Areas On Bando Island And Kasiak Island, Pariaman, West Sumatera," *International Journal of Progressive Sciences and Technologies (IJPSAT)* 35, no. 2 (2022): 345–349.

⁴² W. Isoni et al., "Characteristics of Turtle Laying Habitat on Vemara Beach, Banyuwangi Regency, East Java," *IOP Conference Series: Earth and Environmental Science* 1036, no. 1 (2022): 9–12.

According to the World Wide Fund WWF 2017, stated that the three species of turtles belong to the critical category of its extinction rate. Therefore, special protection efforts are needed to protect the population of turtles.⁴³ One form of effort to save sea turtles in Indonesia in particular is to raise public awareness on turtle protection. The conservation and rescue efforts of turtles in line with the development of the economy of the community can be carried out through ecological development.⁴⁴

The community of Jengglungharjo Village still uses methods and tools that are manual in the search for turtle eggs. The search for turtle eggs is done at night by staying on the beach waiting for the turtles to lay eggs. When not overnight, the search for eggs is done in the morning by observing the footprints of turtles that are in the area of sand - sand beach but if such a way is not also found traces of feet, then it is done by crushing the sand using wood precisely in the sand that there is a panda tree. The people of Jengglungharjo Village already know the difference between the sand in which there are eggs or not. Usually, the sand that contains eggs has an untouched solidity.



Picture of 4. The Turtle Egg

Source: iStock

Turtle eggs are generally found to be female, so the community of Jengglungharjo village initiated genetic engineering to obtain male turtles by laying eggs deeper than other eggs usually eggs depth about ≥ 80 cm and carried out for 15 days. They are then taken to the home of the people and should not suffer excessive shock. The laying of turtle eggs should be in accordance with the actual conditions at the time in nature (in the sand) when the harvesting of the eggs is more than 24 hours. After the egg becomes dotted, it

⁴³ Utama, Pangesti, and Vatesia, "Preserving the Existence of Sea Turtles: The Government Policies and Roles on Conservations."

⁴⁴ Ni Kadek Dwi Agustini et al., "Rescue Inventory and Turtle Rehabilitation at the Turtle Education and Conservation Center Denpasar-Bali," *East Asian Journal of Multidisciplinary Research* 2, no. 9 (2023): 3689-3698.

is placed in a bathtub that is already filled with water and there is an aerator. In the water filling if the size of the tukik is still small then the water used in the bathtub is not too high, nor vice versa. The size used should be large. Water replacement should be done as often as possible, at least 2x a day depending on the amount of food remains and turtle dirt to avoid infestation on the turtles.

The ideal temperature in the development of the tick is between 34 – 35 °C. Once the eggs have grown, it takes 1 or 2 days to feed them. Food is given 2x a day and depends on the amount of food. The types of foods consumed by tukik are usually sea grass, lumps and centrates (pellet). The type of food should be made from natural or inorganic materials when made from chemicals will kill the turtles. Puppies that are ready to release count – approximately 1 – 3 months old. Discharge is done during the day when the time is set. When the path is slow or not moving at all, it is carried back and treated until it moves actively. Tukik – Tukik which moves slowly is caused because of the shelter (bak) Tukik that is too small but does not fit the number of tukik.

The problems found in the conservation of turtles in the village of Jengglungharjo, Tanggung Sub-district, Tulungagung Regency are:

- a. Social society, the economic conditions of the community in particular who are involved in conservation activities have a burden to exploit their families because the conservation activity in the village Jengglungharjo has not been granted subsidies and related community groups have not received a response from the submission of proposals to government agencies.
- b. Bycatch, a fishing gear used in the village of Jengglungharjo, includes pancing, mesh, pursein that drives the occurrence of turtle bycatch.
- c. Treatment of turtle disease, a disease that has been identified so far, includes the physical form of mushrooms and bacteria that are only cured by simple methods as well as the psychic of the turtles that are sometimes reluctant to return to the sea when released.
- d. Transportation, access routes to difficult and distant conservation areas thus increasing the stress level of eggs when carried to distant captivity.

Preserving sea turtle ecosystems requires critical thinking and continuous analysis of the challenges in sea turtle conservation. Community empowerment provides an opportunity to develop greater insight, awareness, sensitivity, and willingness to act and turn problems into solutions. With each action taken by the community, they will evaluate and reflect on themselves to broaden their perspectives and prevent unwanted actions in the future. This continuous problem-solving thinking is the key to success in facilitating communities to face challenges with diverse community perspectives.⁴⁵

⁴⁵ Achmad Room Fitrianto, Ignatia Martha Hendrati, and Nuruni Ika Kusuma Wardhani, "Empowering Galuh Surabayan Contemporary Woven Fabric Artisans in Community Development for Creative Tourism in Surabaya," *Engagement: Jurnal Pengabdian Kepada Masyarakat* 7, no. 1 (2023): 184–

Conclusion

With landscapes and beaches that are still in their natural state, the settlement of Jengglungharjo provides attractive tourist attractions. The settlement of Jengglungharjo, which serves as a shelter area for turtles, might serve as a tourist destination and educational site. The green turtle, the sisik turtleneck, the long tortoise, and the belimbing Turtle are the several species of turtles that may be found in the village of Jengglungharjo. A commitment to the community to preserve the biodiversity of turtle species in the vicinity of Jengglunghargo Village's coastal area is made along with protecting turtles from eggs until they are ready to be released by returning them to the habitat of a good conservation area. Additionally, turtle eggs are sometimes taken in communal villages. The issues found in the Conservation of Turtles Village Jengglungharjo Tulungagung are social community, bycatch, treatment of turtle disease, and transportation to the place of tortoise egg capture.

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