

System of Environmental Governance in the Sun Bear Conservation Area in KWPLH Balikpapan City

Dede Augustira Hermawan¹, Sudaryono Sudaryono²

¹Master of Urban and Regional Planning Postgraduate School Gadjah Mada University Yogyakarta, INDONESIA

²Professor of Master Urban and Regional Planning Postgraduate School Gadjah Mada University Yogyakarta, INDONESIA

E-mail: dedeaugustira22@mail.ugm.ac.id

Submitted: December 19, 2022 | Revision: February 01, 2023 | Accepted: April 27, 2023 |

Published: October 06, 2023

ABSTRACT

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The existing environmental management system in a conservation area containing wild animals, in this case the sun bear, has so far been managed by the Environmental Education Tourism Area (KWPLH) and needs more support to realize all the plans and developments that have been prepared by the management. . One of the efforts presented in this study to provide support to the manager is to provide a perspective from an external party. How far has the management of governance been carried out by KWPLH in carrying out the plans they have made. Of course this can be new ammunition for the managers in their journey to develop this tourist area. With this research, KWPLH can help find out what things they still lack or haven't done in developing this tourist area. Research that focuses on examining this has never been done before. Not only the development of the area, but also the maintenance of this conservation area will be discussed. In addition to knowing the shortcomings of the manager so far in managing this conservation area, the manager can also find out what advantages they have done for this sun bear habitat. The habitat of the sun bear is one of the assets that must be properly guarded considering that physical development is increasingly widespread in urban areas with the aim of development that can prosper and prosper people's lives, but in the development process it has caused its own problems because there are plans that are considered to be still not good or enough.

Keywords: governance; environment; conservation area; sun bear; Balikpapan.

INTRODUCTION

An environmental management system is of course very much needed, especially for a conservation area such as the Environmental Education Tourism Area (KWPLH). The habitat of the sun bear is one of the assets that must be properly guarded considering that physical development in urban areas is increasingly widespread with the aim of development that can prosper and prosper people's lives, but in the development process it has caused its own problems because there are plans that are considered to be still not good or enough. There has been development from the increase in population and also the construction of several infrastructures aimed at supporting the movement of the economy in urban areas such as toll road construction projects which have caused damage to the surrounding environment. This is what must be considered so that the habitat of the sun bear is not touched by this continuous development. In addition to this, the Covid-19 pandemic has also become a significant obstacle for KWPLH because for almost 2 years this tourist area has been closed to the public due to the high rate of spread of Covid-19 and what should be done is to provide protection for the habitat of the sun bear so that stay safe and be able to provide a sustainable life for these few remaining sun bears.

With the development that can be done with several approaches, it is considered that it will be able to save the sun bear's habitat from damage in the hope that it can keep the remaining sun bear population safe and far from extinction. The sun bear is a wild animal that is currently registered as a wild animal that is officially protected by the government. This happened because the population was very small. Then for breeding it is also still difficult because the original habitat of the sun bear is also decreasing and is threatened by fire or forest destruction. Therefore the sun bear's habitat must be saved in order to anticipate the extinction of this Balikpapan City mascot.

One effort that can be made to anticipate the extinction of the sun bear population is conservation. In addition to conservation, this can also be done by fixing the system aspects of governance for this tourism conservation area. This is also considered to be a solution to the problems faced by the management, namely the KWPLH itself. Of course, in making improvements to the management system, there are also several things in it that are used as parameters to achieve the initial goal, which is to provide proper sustainability for the remaining sun bear population.

Based on this matter, the Mayor of Balikpapan issued a decree through the Balikpapan Mayoral Policy No. 188.45-72 Tahun 2005 which stated that the location which was KM 23 in the city of Balikpapan was originally a location known as Agrotourism with a land area of about 15 hectares which is on the upstream side of the Manggar River Protected Forest, and has strategic aspects and has uses as an area used as a example for procedures for caring for wild animals such as sun bears or commonly referred to as enclosures. Meanwhile, the basis for the main problem of this research is how to form a good wildlife habitat management system so that all the needs needed for the life of the animals can be met and problems that become obstacles or disturbances for the animals can also be minimized or can even be overcome by management. and proper arrangement according to the activities and needs of wild animals, in this case the sun bear.

From the background above, there are two research problems that will be discussed. (1) What is the management system for sun bears in the KWPLH area of Balikpapan City. (2) What kind of conservation efforts can be made at KWPLH with a long term sustainable concept.

The objectives to be achieved in this study are to formulate recommendations and management systems for sun bear habitat management based on the theoretical basis of sun bear governance in the KWPLH area.

RESEARCH METHODS

In this study using an approach with a qualitative type and inductive method. The inductive method is the right tactic if the main question in research is related to the question why (Why) or the question how (How). Then next is the focus of research is a phenomenon that is contrary to history or contemporary, for example a case. And also in this inductive method the researcher has little or no power to control the events that occur. Finally, this research has two problem formulations or research questions, namely regarding developments regarding the habitat and fate of sun bears in the city of Balikpapan, especially sun bears in KWPLH and the factors that can influence the implementation of the planned development program. Apart from that, researchers have absolutely no power to control the development of the sun bear's original habitat which is being planned and has a very close relationship between the past and the present for the survival of the sun bears.

In the book (Yin, 2018) it is also stated that among the various types of particular case studies, there are four main types or main types. Related to this, this study uses a variety of intertwined single case studies. This was chosen because in this study it will look at the implementation of the development of the sun bear's natural habitat in a coherent and overall manner. Apart from that, this study also identified regulations and collaboration between management parties (KWPLH) and the Balikpapan city government itself in particular.

This research is located in Agrotourism or what is now called KWPLH which is in Balikpapan City which is located in Jalan. Soekarno Hatta KM. 23, No. 185 RT. 42, Karang Joang, North Balikpapan, Balikpapan City, East Kalimantan.

The choice of location in this study was based on several ideas. (1) KWPLH is the place where the sun bear is currently located. The original habitat of the sun bear or its wild nature is in tropical rain forest areas, precisely in Southeast Asia. The distribution of this sun bear is on the islands of Borneo, Indochina, Sumatra, the Malay Peninsula and South China. In the past, sun bears were known to have spread throughout almost all parts of the Asian continent, but now their existence is difficult to find because sun bears have lost the fragmentation of their original habitat. (2) KWPLH has the main objective of providing a place for all levels of society to learn about the importance of ecosystem functions, and to start appreciating the wealth of biodiversity in Indonesia, especially on the island of Kalimantan. With so many educated and knowledgeable people, the greater the hope to be able to protect the beauty of the ecosystem and the existence of wild life in Indonesia.

In a research data collection technique is a method for obtaining data that will be used by researchers. In qualitative research, data is an important role that must be in-depth, specific and also clear. Primary data collection is by direct observation in the field and also conducting interviews with agro-tourism as the manager who is trusted in the development of this sun bear habitat. Meanwhile, secondary data collection is data generated from documentation that functions to complement data with the implementation of programs in the field that are commonly obtained and can be used as sources of theory such as literature, reports, books, archives, websites on the internet, and other documents that are assessed. can provide support for this research so that what is obtained from this data with a strong theoretical basis will produce proven and quality conclusions. Then the next stage is to process the data and then analyze the data obtained.

The method used is an inductive method, but using a qualitative approach. Qualitative here is data that has been collected from research sites that have been grouped into several aspects, namely location history, sun bear characteristics, sun bear behavior, diet, habitat management system to its conservation status. This category is obtained from data collection through internet media and through journals that are read and will later be linked to the results of observations in the field. The process of qualitative research includes a question posed and stages, then detailed data collection, themes that emerge specifically from the general through inductive analysis and how the meaning of the data is interpreted. The final report on qualitative research tends to be in the form of a flexible framework.

Determining a method in research is very important to the success of a research itself, while in this study using inductive-qualitative research. Patterns of thinking based on specific events in building general theories, laws, concepts. The inductive method emphasizes the previous inspection activities which are continued by drawing conclusions based on the examination. An inductive qualitative approach starts from previous data, is not a source of theory and is not aimed at testing a theory. This method is done by describing in detail the condition or process being studied as to what is actually in the field. And the qualitative research method is a method used to provide illustrations, understanding, and development of meaning to individuals/groups in social issues.

Good environmental planning will influence conditions in the field. Environmental conditions, especially environments that are not open to the public, must always pay attention to the beauty of the environment. A well-organized environment will be able to control the form of activities that do not change according to good conditions. These environmental conditions influence environmental development so that the maximum form of appropriate planning is required. Form an environment that adapts to conditions in the field (Vianthi NPYL et.al, 2022; Kusuma IGW et.al, 2021; Putri NNS, Dwijendra NKA, 2021; Aritama AAN et.al, 2022; Mahendra IGI, Putra IDGAD, 2022).

The scope is appropriate to the form of a well-maintained environment and adapts appropriate steps in environmental management, both limited and unlimited environments, which are free from noise,

sounds of people passing by and noise from the surrounding environment Darwin D et.al, 2021; Putra GEK et.al, 2022; Syaiful S et.al, 2022; Vianthi YL, Widiastuti W, 2021).

RESULTS AND DISCUSSION

Initial idea of KWPLH

KWPLH is one of the implementing units of the Sungai Wain Protected Forest Management Agency and the Manggar River Basin Area or commonly abbreviated as BPHLSW and DAS Manggar. KWPLH was established with the aim of growing and developing awareness of the importance of good environmental quality through education and open campaigns aimed at all levels of society, especially in the city of Balikpapan. KWPLH was formed in 2005 based on the Decree of the Mayor of Balikpapan Number: 188.45-72/2005 which contains the Designation of KM 23 Agrotourism Area as an Environmental Education Tourism Area. There are several things that are the goal of establishing this KWPLH, first, as a tourist area for education and training on the environment. KWPLH in the city of Balikpapan will also be specifically used as a tourist area in which there are education and training activities regarding the environment that focus on saving a sustainable environment. Meanwhile, for the second purpose of establishing this KWPLH, this area will be specifically used as a media introduction to protected wild animals such as the sun bear as the mascot of Balikpapan city and also includes the life and natural habitat of sun bears.

Within this area, sun bears have been selected to become the main residents based on community opinion. The sun bear was selected from several other animals on offer, such as dolphins and dugongs. The sun bears were chosen because at that time their existence was liked by the local community, and at that time the sun bears were also being prepared to become the mascot of the city of Balikpapan. Of course, as a mascot, the characteristics of the sun bear will be a motivation and inspiration for the city of Balikpapan. The sun bear's physique is stocky, clean, beautiful, strong but agile, and its independent, unyielding, and intelligent character is contained in the city of Balikpapan. The sun bear has been a mascot since 2001, then it was inaugurated on the basis of Balikpapan Mayor Regulation number 04 of 2005.

Development of KWPLH

Currently, KWPLH is still continuing to develop related to additional functions and public facilities. Due to the effects of the Covid-19 pandemic and the drastic decline in the number of tourists, the development and planning of KWPLH to be further developed is a bit hampered, because income from visitors, which so far has been one of the sources of income from this place, has not been obtained for almost 2 years during the pandemic.

The closure of tourist attractions was the main thing that caused this to happen, practically for 2 years this place was closed to the public, the source of income from KWPLH only relied on donors who in fact mostly came from abroad who were very concerned about the survival of this sun bear.

JUMLAH KUNJUNGAN WISATAWAN DI KWPLH Th.2016-2021							
NO	WISATAWAN	2016 (ORANG)	2017 (ORANG)	2018 (ORANG)	2019 (ORANG)	2020 (ORANG)	2021 (ORANG)
1	MANCANEGERA	465	386	298	462	75	19
2	DOMESTIK	35.124	37.485	42.874	43.077	12.065	15.286
3	LUAR KOTA BALIKPAPAN	5.384	7.825	7.753	5.747	1.714	1.822
	JUMLAH	40.973	45.696	50.925	49.286	13.854	17.127

Figure 1. Number of Tourists in KWPLH in 2016-2021 (KWPLH Archive, 2021)

Meanwhile, the process of breeding sun bears is actually influenced by the main factor, namely the area of the enclosure they occupy. Due to biological factors, the sun bear requires an area of approximately 15 hectares to potentially breed, while the enclosure currently available at KWPLH is only 1.3 hectares in area. Of course, this factor plays a significant role in the potential for breeding sun bears which is very difficult to create, while the management and government are eager to breed these sun bears to avoid extinction.

Development Efforts

The management of KWPLH must also think about ways and stages to achieve the success of the environmental development of the conservation area from the addition of several existing facilities in this environmental tourism area. There are several parties who can play an important role in realizing this development, namely from internal and external KWPLH.

The internal parties referred to here are the city government and companies in the city of Balikpapan to provide support for the realization of this development program. Meanwhile, external parties come from companies from outside Balikpapan or individuals who have often contributed directly to the life of sun bears and the area around the enclosure which is still under development as well.

Dynamics of Management

Since the inauguration of KWPLH as a tourist spot, of course this area has experienced and is experiencing several problems that have arisen, but the management of KWPLH is also always looking for solutions to solve problems that arise. Not only does it have a fairly good governance management system, but the KWPLH management also plans the arrangement and management of this tourist area quite well. This is evident from the planning and design that has been made and carried out by the management to this day. What they are planning is also included in the good category and has sufficient impact on the continuation of this tourist area. In 2006, in February to be precise, 5 sun bears in KWPLH were moved from the bars to the enclosure which will become a new "forest" for these sun bears. The enclosure which is designed with an area of 1.3 hectares is made with a concept that resembles a secondary forest which is equipped with electric fences and wire fences with the aim of minimizing interaction between sun bears and humans. Remarkably, the enclosure that was made from the inauguration of the KWPLH has survived to this day in a condition that is still strong and very suitable to be a carrying capacity for the sun bears inside. The manager's hope regarding this enclosure is that it can increase the area of the enclosure itself in order to have the possibility of sun bears being able to breed and achieve the initial goal of preserving sun bears.

Inside the sun bear enclosure, there are also several types of fruit plants that are the sun bear's favorite in this enclosure. Then there are also two long structures that are placed near the edge of the enclosure with the aim of providing a great opportunity for visitors who want to see sun bears being fed and their process of foraging in this enclosure as well, visitors will have two opportunities to see sun bears directly eat their food, because the food is distributed by the management twice a day (except for the bears looking for their own food).



Figures 2. Pagar listrik dan berkawat (Writer Documentation, 2021)

With this climbing structure, visitors will be able to observe sun bears from the provided visitor boardwalk around the enclosure.



Figure 3. Climbing Structure (Writer Documentation, 2021)

Because of the planning that has been realized so far, the facilities are also as expected and useful for visitors who come here. Not only are the visitors feeling the impact of this plan, but the lives of the sun bears are also feeling the impact.

Because in this area there are also several facilities that are specifically intended for sun bears to provide life support, such as an orchard that is in this KWPLH. This garden is of course very useful for

sun bears, especially during the past pandemic, where it was very difficult for them to get daily food donors. The role of this orchard is maximized to provide daily food for sun bears so they can stay in good health. But what really needs to be regretted is the lack of management carried out at these facilities. The placement and arrangement of these enclosures is also intended to provide good benefits for sun bears and their visitors.

Cages that are made as natural as possible by exposing the natural behavior of the sun bears are very beneficial for the life of the sun bears themselves. At the same time, visitors can also get benefits in the form of new knowledge about the behavior of sun bears and their habitat. Usually by seeing animals directly like this, people will tend to be unhappy if the animal is locked in a small cage or the animal is even chained so that it does not give freedom for the sun bears to enjoy their life. But by making this enclosure, visitors will see that sun bears can live freely like in the natural forest where they come from.

While the main purpose of having sun bear enclosures is to instill a more positive mindset or mindset towards sun bears and also provide knowledge about their conservation status among local residents which in turn can reduce the amount of wildlife trade, and can also invite interest in provide support regarding forest and wildlife conservation. So far, KWPLH is still continuing to develop and improve the quality of the area through several of their planning programs.

Furthermore, this section will describe an analysis related to the criteria for managing animals that have been stipulated in LHK Number P.22/MENLHK/SETJEN/KUM.1/5/2019, which contains criteria for wildlife rescue centers, from the existing criteria an analysis will be carried out from the criteria to the existing conditions.

Having a collection of certain types of animals

In this case, the sun bear.

Have adaptation facilities

Such as equipment for adaptation of animals and places for adaptation of animals as well.

For this point, the KWPLH location already has adaptation equipment and adaptation places for animals so that it can help accelerate the process of adaptation at this KWPLH. An example of equipment that can support the adaptation process of sun bears is radio tracking or radio telemetry which is useful for researching a bear's home range, this can be done by installing a radio collar that allows following the bear's movements through radio beams. But for now this can also be done using satellite technology, GPS, or cell phone networks. For this purpose, the bear must be caught first to be paired with a radio device that transmits the signal (transceiver). Meanwhile, researchers must have equipment capable of receiving signals (receivers). To this day sun bears are studied with a tool in the form of a VHF radio collar. The signal from this tool does not radiate far and researchers have to often walk around the forest to be able to receive signals from the bears. Each bear is equipped with a radio transmitter with different frequency levels so that the signals from each bear can be distinguished. The type of sun bear that has a wide home range is equipped with a satellite/GPS collar, this is done because bears that have a wide home range tend to be difficult to follow via radio signals.



Figure 4. Forms of Radio Tracking (Author's Documentation, 2021)

Having facilities for adaptation and care of animals

Consisting of habituation cages (enclosures), maintenance cages, transport cages according to the criteria for the animals themselves.

At this point, KWPLH already has or is completed by the listed criteria. Because the KWPLH already has a habituation enclosure in the form of a sun bear enclosure covering an area of 1.3 hectares. Meanwhile, the maintenance cages are also available at this KWPLH. This maintenance cage is used when the bears want to be collected in an area. Usually this method is done to provide the bears with food or honey. Pawing bears will call the sun bears with a special bell and lead the sun bears to enter the enclosure. The sun bears also sometimes go into the cage by themselves when they want to take a nap and relax in the cage.



Figure 5. Sun Bear Cage (Author Documentation, 2021)

Has health facilities

Such as a quarantine place, a collection of animal medicines, and a special clinic for animals.

For this point, KWPLH does not actually have special facilities for the health of sun bears. So far, if there are health problems in sun bears, only health workers from the area such as veterinarians and animal nurses are called in. Even though this health facility is very important and must be available at KWPLH, bearing in mind that this area will be a long-term projected sun bear habitat, moreover the existence of the city of Balikpapan which is very close to the new National Capital and of course this is a big opportunity for KWPLH managers to complete aspects that are not yet available to perfect this tourist area.

Have a permanent workforce according to their fields and expertise

Consisting of veterinarians, medical personnel, animal nurses, administrative staff, and security personnel.

For this point, KWPLH is still incomplete in terms of medical personnel who work specifically within the management team. Meanwhile, for administrative and security personnel, this area already has both. KWPLH is also very useful for local residents to become jobs, because 80% of the workers in KWPLH are local residents around KWPLH.

Has management office facilities.

Meanwhile, for this point, KWPLH also has a permanent management office. So every day, the manager is always in his office to work on developing this KWPLH continuously in accordance with the vision and mission that already exists on the part of the manager himself.

Has waste management facilities.

Then for this point, KWPLH also has a waste management area which is located at the back of this area, so that its position is not directly exposed when visitors come. Because usually this waste can emit an unpleasant odor, especially for wet waste which usually has a stronger and sharper smell. Of course this is highly anticipated in order to prioritize the comfort of the visitors and of course the comfort of the sun bears in order to create environmental conditions that are always healthy and can also support the survival of the sun bears and the development of this KWPLH with many visitors wanting to come here with the desire to see bears in person Honey, even though they cannot interact directly, can interact visually with sun bears.

CONCLUSION

The problems that exist at this research site such as the lack of land area for the enclosure which is needed by sun bears to survive and even breed in it. Considering that the existing enclosure is only 1.3 hectares in area, whereas according to theory and also said by the management, a good enclosure that can be a carrying capacity for present and future life for sun bears is an area of 15 hectares. It all comes from the behavior patterns of sun bears who like to hunt in their natural habitat. If the area of the enclosure they occupy is still insufficient, then the possibility for sun bears to breed is also very small. Not only the expansion of the enclosure, environmental planning and management of conservation areas related to other things that can support the survival of the sun bear must also be planned to save the remaining population of this animal that is nearing extinction. The environment of the KWPLH broadly must also be considered, such as from the aspect of road infrastructure whose conditions are quite apprehensive at the moment due to the impact of the construction of the toll road that connects the cities of Balikpapan and Samarinda. Of course access also has a crucial role in attracting visitors to come to this KWPLH. If access is fairly good and smooth, then visitors don't need to think long about visiting to see sun bears directly at KWPLH.

REFERENCES

Darmanto. (2014). *Tata Kelola dalam Pengelolaan Hutan Lindung*. Universitas Terbuka.

KWPLH. (n.d.). Tentang KWPLH.

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MIPL. (2010). *Konservasi*. Purwokerto: STMIK AMIKOM.

Rapoport, Amos. (1980). *Human Aspects-In Urban Forum-Towards a Man Environment Aproach to Urban Form and Design*. Oxford: Pergoman International Library Of Science, Technology Engineering and Social Science.

Saefullah. (2017). *Pengelolaan Kawasan Konservasi Berkelanjutan Melalui Skema Partisipasi dan Kolaborasi* (Volume IX). Jambi: Kementerian Lingkungan Hidup dan Kehutanan.

Watiniasih, N, Rohmah, M. (2019). Daily Activity of Sun Bear (*Helarctos malayanus* Ursidae) in Bali Animal Rescue Centre. *Journal of In Trop. Biodiv. And Environment*, 37–40.

NPYL Vianthi, IDGAD Putra. 2022. Evaluation of Architectural Components in Bayung Gede Village Settlement, Bali as a Tourism of Special Interest. *ASTONJADRO* 11 (1), 174-197.

IGW Kusuma, NKA Dwijendra, NM Yudiantini. 2021. Development Strategy Port of Bias Munjul in Tourism Recovery at the Post Covid-19. *ASTONJADRO* 11 (1), 108-117.

NNS Putri, NKA Dwijendra. 2021. Dominant Factors Change of Land Function in Rapuan Road Corridor Ubud Bali Due to Tourism Activities. *ASTONJADRO* 11 (1), 118-129.

AAN Aritama, GW Laskara, MW Satria. 2022. Identification of Green Architectural Characteristics of Tenganan Pegringsingan Village, Karangasem, Bali. *ASTONJADRO* 11 (2), 458-467.

IGI Mahendra, IDGAD Putra. 2022. Tourism-Based Urban Agricultural Integrated Food Market (Case Study: Sindu Market, Sanur, Bali). *ASTONJADRO* 11 (1), 219-232.

D Darwin, G Prajati, Y Adicita, IWK Suryawan, A Sarwono. 2021. Evaluation of Wastewater Treatment in Nusa Dua Tourism Area and their Challenges to Algae Bloom. *ASTONJADRO* 10 (2), 346-351.

GEK Putra, W Widiastuti, NK Agusintadewi. 2022. Quality of Public Space Safety at Kumbasari Tukad Badung Park, Denpasar. *ASTONJADRO* 11 (3), 692-697.

S Syaiful, RS Aminda, R Rulhendri, H Haldiana. 2022. Analysis of traffic volume due to the sound of motor vehicle in front of SMA Taruna Terpadu Boash during Covid-19. *ASTONJADRO* 11 (3), 588-599.

YL Vianthi, W Widiastuti. 2021. Compatibility Study and Supporting Capacity of Tourism at Pererenan Beach Badung, Bali. *ASTONJADRO* 11 (1), 130-143.