GEOTOURISM POTENTIAL ON GEOSITES IN NATUNA GEOPARK

Prisca Nurul Pratiwi[1], Mega Fatimah Rosana[1], and Kurnia Arfiansyah[1]

[1]Faculty of Geological Engineering, Padjadjaran University

Email: priscanrl@gmail.com

ABSTRACT

Natuna is a district located in the Riau Islands Province. The Natuna area, consist of several islands. The main island namely Bunguran island, where the capital city of Natuna Regency is located. The islands have several rare geological heritages that has national and international significant value. The islands also have been designated as Natuna National Geopark since 2018. The purpose of this research is to analyze the potential of geotourism in several geological site of the Natuna Geopark. The research method used is data collection and data analysis method using primary and available secondary data and information. The geotourism components category are used classification by Newsome & Dowling (2010), there are Activity and Interpretation. Some geological diversities are used as geosites that has potential to be development as geotourism area. The results show that several geological sites in the Natuna Geopark can be developed and used as geotourism activities including: geosites for sightseeing; geo-sports; geo-study; geo-conservation and geo-education; and geo-festival. But from the observations, there are no laboratories or educational facilities that are directly related to conservation and there is no utilization of geological heritage that used for health and wellness tourism in this Geopark area. Therefore, in Natuna Geopark there are 11 geosites that have the potential to develop geotourism components, including Bukit Gundul, Gunung Ranai, Tanjung Senubing, Tanjung Datuk, Pantai dan Gua Kamak, Gugus Pulau Tiga, Pulau Senoa, Bukit Kapur, Pulau Akar, Pusat Informasi Geologi, and Batu Rusia. Some of the sites are already facilitated with infrastructure for tourism.

Keywords*: Geotourism, Geosite, Geological Heritage, Natuna Geopark.*

INTRODUCTION

Natuna Regency located the northernmost archipelago in the Karimata Strait. The main island called Bunguran island, is also know as Natuna Islands have a unique and diverse geological diversity. This geological diversity includes rock types, geomorphology, and landscape. Broadly speaking, the rock types in this area are composed of ultramafic igneous rocks, granite, deep-sea sedimentary rocks, sedimentary rocks resulting from river deposits, and metasedimentary rocks. The geomorphology of this area is classified into several different units such as high hills, wavy hills, islands, beaches, and unique tor morphology of granite.

The Natuna area has been designated a National Geopark at the end of November 2018 in order protect and improve the function of its natural heritage. There are 9 geosites within in the Natuna Geopark, namely Pulau Akar, Pantai Batu Kasah, Gunung Ranai, Pantai dan Gua Kamak, Pulau Senoa, Pulau Setanau, Tanjung Senubing, Alif Stone Park, and Tanjung Datuk are classified as geoheritage site by geological agency of the ministry of energy and mineral resources.

The diversity of geological heritage, and several other locations in the Natuna Geopark Area are already well-known as tourism destination, such as waterfalls, beaches, valleys, canyons, tor granite, and others. Those are resulting from natural geological processes. Natural tourism, in general, do not just rely on nature, however, it is often combined with other tourist attractions to increase the selling value of tourist activities. Therefore, the development of geotourism in Geoparks is important.

Geotourism comes from the word "geo" which means earth and "tourism" which means tourism. Geotourism is an interesting type of tourism that uses all the potential of natural resources, so the enrichment of insight and understanding of the process of natural physical phenomena it is necessary to increase (Nainggolan, 2016b). Geotourism offers the concept of nature tourism that emphasizes the beauty, uniqueness, rarity, and wonder of a natural phenomenon described in popular or simple language that is closely related to geological phenomena (Kusumahbrata, 1999 in Hidayat, 2002).

A person's desire to visit tourist areas that have landscapes and unique natural areas and

E-ISSN : 2579 – 3136

different from where they live have encouraged the emergence and development of geotourism. The development of geotourism is also supported by the increasing demand by tourists who have special interests, namely tourists who like unusual tourist destinations and unusual tourist activities (Hermawan, 2017).

Newsome and Dowling (2010) categorize the components in geotourism into 2 (two): Activity and Interpretation.

1. Activity

Involves geological and geomorphic features that create a 'sense of place' for each geosite. These features include various types of landscapes, landforms, rock outcrops, and types of sediments, soils, and crystals. (Newsome & Dowling, 2010). The following are types of geotourism activities, including:

a) *Geo-site sightseeing*, recreation, or sightseeing of the unique geological formations by enjoying their landscape.
b) *Geo-sports*, sports-related to the topography of the earth.
c) *Geo-study*, study activities in the open area, including geological heritage observations, geo-landscape photography, and field trip for geological purposes.
d) *Geo-conservation and Geo-education*, conservation programs for the potential of the earth for conservation or educational purposes.
e) *Geo-festival*, an event created for the sustainability of geological resources or a promotion platform for the form of a conservation program.
f) *Geo-tours facilities*, self-interpretation forms (geotourism maps), or tourist guide facilities.
g) *Health and Wellness Geotourism*, in the form of health or relaxation facilities such as spa, stone, and mud therapy.

2. Interpretation

Tilden (1977) in Newsome & Dowling (2010) defines the interpretation process as "an educational activity that aims to reveal meaning and relationships through the use of real objects by direct experience, and illustrated media, not just to convey factual information. Therefore, interpretation concentrates on providing visitors with information about their site and encouraging them to appreciate the value of the existing site (Moscardo, 1998). Therefore, interpretation can play an important role in increasing tourists' awareness of the intrinsic value of geoheritage and geosites.

Meanwhile, the visitor center can contribute to improving the interpretation process for geological tourism sites and developing efforts to preserve and maintain geological heritage sites. According to Herbert (1989), the interpretation process has three main goals: educating visitors about the different sites they visit; offer an interesting and enjoyable travel experience for visitors. Therefore the two objectives contribute together to enhance visitors' appreciation, care, and respect for the existing geological heritage. Newsome & Dowling (2010) mention that there are three important pillars of a good form of interpretation in tourist destinations, those are: Visitor Centres, Guided and Self Guide Trails, Pamphlets.

Therefore, geotourism is a type of tourism that takes advantage of the various dynamics of geological wealth for economic activities and eco-friendly tourism. The purpose of this research is to identify the potential of geotourism on geological sites in the Natuna Geopark Area to be recommended as a tourism object based on geological education.

RESEARCH METHODS

The method used in this research is data collection and data analysis method using primary and available secondary data and information.

The data collection method is carried out by collecting data from field surveys conducted to provide information about aspects of geology and tourism in the Natuna Regency area.

The secondary data analysis method was obtained from studies on the regional geology of the research area, reports, and other sources from previous researchers covering the research area as well as geological literature related to the boundaries of the research problem.

RESULT AND DISCUSSION

Based on the geotourism component characterization according to Newsome and Downling (2010), geotourism activities at the Natuna Geopark Geosite are d divided into several activities that can be carried out those are (figure 1):

E-ISSN : 2579 – 3136

1. Activity

a. Geosite sightseeing

The Natuna area has many viewpoints to see and enjoy the beauty and uniqueness of the earthly landscape. There are Bukit Gundul, Gunung Ranai, Tanjung Senubing, and Tanjung Datuk.

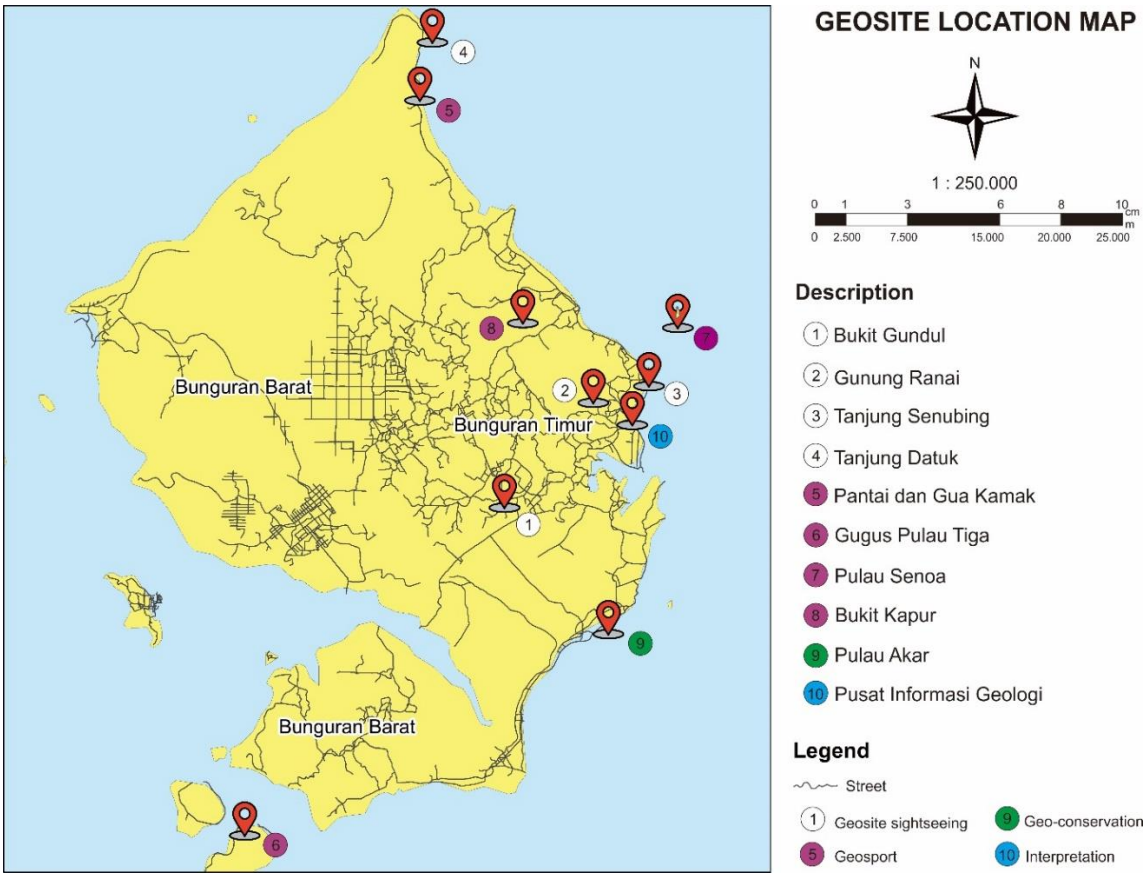

Figure 1. Geosite map of Bunguran and surrounding Islands.

• **The Bukit Gundul Geosite**.

This geosite is located on Bunguran Island, more precisely in Harapan Village, Central Bunguran subdistrict. This location is approximately 16 km from Ranai City and can be reached by car with rocky road conditions approaching the location then can be continued with a little trekking to get to the top.

This hill is composed of conglomerate rock with various components. There are a garden and beautiful photography spots here, and at the top, there is a place where visitors can enjoy the view of the sunrise and sunset (figure 2). There is also a camping ground provided for visitors who intend to spend the night at this geosite.

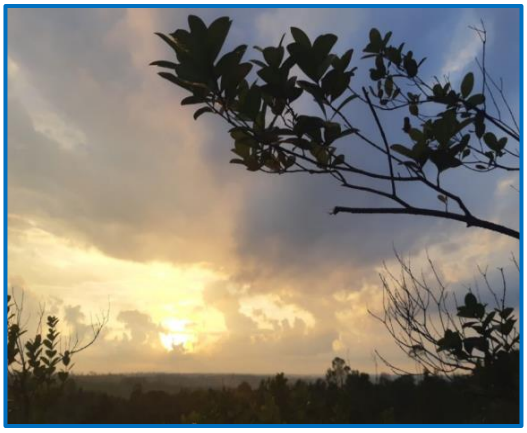

Figure 2. Bukit Gundul (Photo by Ronald Augusta, 2017)

E-ISSN : 2579 – 3136

- **Gunung Ranai.**

This geosite is located on Bunguran Island, more precisely in Ranai Darat Village, East Bunguran subdistrict. The journey to Ranai Mount from Ranai Kota is approximately 3.2 km with a travel time of 8 minutes and can be reached by motor vehicle to the foot of the mountain then followed by trekking with relatively uphill track conditions. In the top Gunung Ranai there is an open area of huge granite body (figure 3). and from there you can see views of Ranai starting from the Great Mosque, residential areas, sea landscapes, to Pulau Senoa.

Figure 3. Gunung Ranai (Photo by Ilham Fahd, Instagram berandanatuna)

- **Tanjung Senubing.**

Figure 4. The view on Batu Sindu, from the top of the hill towards the beach (www.mytrip.co.id)

This geosite is located on Bunguran Island, more precisely in Ranai Village, East Bunguran subdistrict. It is located about 4.6 km from Alif Stone Park with a travel time of approximately 8 minutes from Ranai City and can be reached by car with a steep and sandy road approaching the location. On the top of this location is Batu Sindu, a giant granite rock patterned by natural tendrils in this geosite (Figure 4). From the top of this hill, you can see an offshore panorama, a coastline littered with boulders, and Senoa Island shaped like a pregnant woman lying down. This hill is also a navigation area belong to the Ministry of Transportation.

- **Tanjung Datuk.**

This promontory cape is surrounded by sea on three sides so that when it is at its peak, these three sides of the sea can be observed (figure 5). This geosite is located on Bunguran Island, more precisely in Teluk Buton Village, North Bunguran subdistrict. Tanjung Datuk is one of those located in the northern corner, approximately 45 km from Ranai City, and can be reached by car with good road conditions. Access to the top of the bay is quite limited because it is the TNI headquarters.

Figure 5. Cliff on Tanjung Datuk (Arief Naen, www.mytrip.co.id)

All of these areas are equipped with adequate facilities for visitors, those are seats, stalls, best vantage points, and others.

b. Geo-sport

There are already several land and sea sports activities carried out in the Natuna Geopark area, namely: Pantai dan Gua Kamak which is a cave in the coastal area that provides recreational sports activities exploring caves or caving.

In addition, there is a marine area around Gugus Pulau Tiga and Pulau Senoa which is rich in underwater beauty which provides snorkeling activities for tourists. There is also the potential for sports activities such as paragliding in Bukit Kapur.

E-ISSN : 2579 – 3136

- **Pantai dan Gua Kamak.**

Gua Kamak is located on Bunguran Island, precisely in Pengadah Village, East Bunguran subdistrict. Access to Gua Kamak is 40 km from Ranai City and followed by a tracking route for approximately 10 minutes to reach the location of Gua Kamak. Gua Kamak is formed due to erosion by seawater which is directly opposite the offshore coast. This Geosite presents two natural beauties in the form of rocks as cave walls and a beach that will be found a few meters after exploring the cave (figure 6).

Figure 6. Gua Kamak (https://disparbud.natunakab.go.id/)

- **Gugus Pulau Tiga.**

This geosite is located in the South of Bunguran Island. This location is approximately 14 km from the port of Tanjung Kumbik and can be reached by pompong (passenger ship) for ± 1 hour. This geosite is a group of small islands that are close to each other. One of the popular island is Setanau island with its white sand beach (figure 7).

Figure 7. Pulau Setanau in Gugus Pulau Tiga (Photo by Ronald Augusta, 2017)

- **Pulau Senoa.**

Pulau Senoa is a mandatory destination for the Natuna Geopark, which is included in the Bunguran Timur subdistrict, precisely across from Sepempang Village. The journey starts from Ranai city to Teluk Baruk port which is located between the Senubing geosite and Batu Alif geosite, about a 20-minutes' drive. After arriving at the port, the journey continues by renting a car to go to Pulau Senoa, the time taken to divide the Senoa strait is around 25-40 minutes. This island is an uninhabited island located in the west of the main island. This island has a unique shape, when it is viewed from far away is shaped like a pregnant mother (Figure 8).

Figure 8. Pulau Senoa (https://wisatalova.com/)

- **Bukit Kapur.**

Figure 9. Bukit Kapur (Photo by Ronald Augusta, 2017)

This geosite is located on Bunguran Island, more precisely in Ceruk Village, Northeast Bunguran subdistrict. This location is approximately 16 km from Ranai City and can be reached by car with rocky road conditions. This geosite originated from the creative idea of the residents of Ceruk Village, Northeast Bunguran subdistrict. Located on top of a hill that offers panoramic views of the high seas in

E-ISSN : 2579 – 3136

the northwest and Mount Ranai in the northeast. This hill has the potential for paragliding because it is flat at the bottom. In addition, Bukit Kapur has a very beautiful view, the landowners at the Bukit Kapur location have built several gazebos or pavilions and high bridges for rest and selfie spots provided for visitors (figure 9).

c. Geo-study

Geo-study is closely related to educational facilities and scientific research in the Natuna Geopark area. From the observations, there are no laboratories or educational facilities that are directly related to geological or earth science studies in this area.

However, in 2021 Hendriyansyah (Head of the Natuna Regency Tourism and Culture Office) said a special regulation would be made for education in the Natuna Geopark Area as one of the concepts of geopark development. The educational concept is School to Geopark and Geopark to School, in 2019 Geopark to School has been implemented where BP Geopark (Geopark Management Agency) visits schools to socialize and educate about Geoparks. Almost of the geosite at the Natuna geopark can be used as geo-study, depending the level or grade and field of interest of student.

d. Geo-conservation and Geo-education

From the observations, there are no laboratories or educational facilities that are directly related to conservation. However, according to Kardiman, in 2021, there are plans for Geopark management by making the Geosite a place of conservation and education, namely the Akar Island Geosite. The location of this geosite is located on Bunguran Island, more precisely in South Cemaga Village, South Bunguran subdistrict. This location is approximately 50 km from Ranai City and can be reached by car with smooth road conditions.

Due to the area of the Geosite which is not too large, which is under half a hectare, so this geosite cannot be used as a tourist spot for large groups. This island is composed of basaltik rock, the oldest rock formation in Natuna. As for the facilities already available at this Geosite, such as gazebos and canteens, there is also a bridge that makes access easier (figure 10).

Figure 10. Pulau Akar (https://disparbud.natunakab.go.id/)

e. Geo-festival

There are several festivals at the Natuna Geopark, including the Sahur Music Festival, the Pelite Lamp Festival, the Yacht Rally Sail to Natuna, the Sisi Beach Festival, the Funtouristic Festival, and the Senoa Island Festival. One of the festivals that attracts attention is the Senoa Island Festival, this festival presents a variety of water sports, folk arts, to traditional Natuna cuisine (figure 11).

In addition, in the Natuna Region every year an international festival is also held for the ship from abroad.

All these festivals are one of the efforts of Natuna residents to be able to introduce the beauty of Natuna to the world.

Figure 11. Pulau Senoa Festival in Natuna Regency, Kepri, 2018 (Photo by Dinas Pariwisata Natuna)

f. Geo-tours Facility

At Natuna Geopark, there are already many tours and travels that provide services, to arrange group tour plans for tourists.

E-ISSN : 2579 – 3136

However, for individual tours, the facilities are still minimal. Starting from the absence of guide books, complete directions, and no tourist information center scattered in several places. The Geopark Information Center is also available that is located in Ranai city. This center provide brief information, diorama and standing video teather about the Natuna Geopark, as well as rocks specimen from geoheritage areas. While in several geosite also already provided by simple panel information rabout the geosite.

g. Health & Wellness Geotourism

At present, there is no utilization of geological heritage that used for health and wellness tourism in this Geopark area. Therefore its is neccesary to explore other geosite which can be utilized for wellness and health tourism which is now being popular destination in others countries.

2. Interpretation

One form of interpretation in the Natuna Geopark Area is the Visitor Information Center, namely the Tourist Information Center which was recently inaugurated as the Natuna Geological Information Center (PIG). The location is right on the side of Jalan Datok Kaya Wan Mohd or in front of the entrance to the Great Mosque of Natuna. A building which is abbreviated as PIG provides geological information or about rocks and geological process that formed the Natuna islands. It aims to support the Natuna National Geopark where various types and ages of rocks in Natuna are presented in the form of graphic and visual information contained in PIG (figure 12).

Figure 12. Pusat Informasi Geologi Natuna (Photo/Dinas Pariwisata Natuna)

The Guided and Self Guide Trails that already exist in this area are in the form of interpretation panels of geological sites that have been in several places. One of them is found in the Batu Rusia Geosite (figure 13).

Figure 13. One of the Built-in Interpretation Panels in Batu Rusia (natunakab.go.id)

CONCLUSION

Based on the research results, there are 11 geosites that have the potential to develop geotourism components, including Bukit Gundul, Gunung Ranai, Tanjung Senubing, Tanjung Datuk, Pantai dan Gua Kamak, Gugus Pulau Tiga, Pulau Senoa, Bukit Kapur, Pulau Akar, Pusat Informasi Geologi, and Batu Rusia. The Natuna Geopark already has a geotourism component with high potential, but various activities and supporting facilities for the tourism component must be developed better through management following geotourism principles. Therefore, the existing potential must be developed to maintain or increase the level of tourist visits.

ACKNOWLEDGEMENT

The author would like to thank all who have participated in this research. Especially to the Survey Team carried out by the Natuna Regency Tourism Office and the Geopark and Geological Disaster Research Center (Pusris GKG) Universitas Padjadjaran in 2017.

The author hopes that this article can be useful for anyone who reads it, especially for the future development of the Natuna Geopark.

REFERENCES

Dipowiguno, A. P., Setiawan, V. E., Arifin, A. S., & Kusworo, A. Geological History of Natuna Island: Geodiversity, Geoheritage, and Sustainable Development Based on Geodiversity Inventory and Geoheritage Assessment.

Disparbud Natuna. 2021. Dinas Pariwisata dan Kebudayaan Kabupaten Natuna. Website

E-ISSN : 2579 – 3136

Resmi Dinas Pariwisata dan Kebudayaan Kabupaten Natuna (natunakab.go.id).

Dowling, R. K., & Newsome, D. (2010). Geotourism: the tourism of geology and landscape. Goodfellow Publishers Limited.

Dowling, RK. 2010. Geotourism's Global Growth. Australia: Geoheritage, Springer-Verlag 2010

Hermawan, H., & Brahmanto, E. (2017). Geowisata: Perencanaan Pariwisata Berbasis Konservasi.

Hermawan, H., & Ghani, Y. A. (2018). Geowisata: Solusi Pemanfaatan Kekayaan Geologi Yang Berwawasan Lingkungan.

Nainggolan, R. (2016b). Informasi Geologi Lingkungan Berbasis Partisipasi Masyarakat sebagai Kawasan Geowisata Danau Toba di Kabupaten Samosir. Jurnal Penelitian Pendidikan Sosial Dan Humaniora, 1(1), 22–28.

Website:

https://disparbud.natunakab.go.id/

https://wisatalova.com/

www.mytrip.co.id

Instagram: berandanatuna

Personal Communication :

Hendriyansyah, 2021: Head of the Natuna Regency Tourism and Culture Office

Kardiman, 2021: Head of Natuna Geopark Management Agency

E-ISSN : 2579 – 3136