

CONSERVATION-BASED EDUCATIONAL TOURISM PLANNING ON ADARANAN ISLAND, TUAL CITY, MALUKU PROVINCE

Bayu Chandra Suryadi^{1*}

*Universitas Padjadjaran Bandung
bayu22005@mail.unpad.ac.id*

Susanti Withaningsih²

*Universitas Padjadjaran Bandung
Susanti.withaningsih@unpad.ac.id*

Dina Oktavia³

*Universitas Padjadjaran Bandung
dina.oktavia@unpad.ac.id*

ABSTRACT

*Adaranan Island in Tual City has great potential in implementing a conservation-based educational tourism program. The tourism resources in this destination are ideal for developing the concept of sustainable educational tourism, but the involvement of tourists and the community are limited in environmental conservation. The purpose of this study to design tourism development that will be used as a conservation-based educational tourism program. The method used in this study was direct observation in the field and interviews with the Tual City Tourism Office. It was found that there are 11 types of birds, dominated by lemon bellied/white eye (*Zosterops chloris*) and five types of plants, dominated by pine trees (*Pinus merkusii*), as tourism resources. Other tourism resources include natural scenery, snorkelling or diving, fishing, and canoeing. Access to the tourist area is inadequate and lack of facilities. The results of the development in Conservation-Based Educational Tourism program at Adaranan Island indicate that the development of this area has great potential to become a sustainable educational destination among environmental, economic, and infrastructure aspects. This program balances the preservation of the coastal forest and seabird habitat ecosystem with the improvement of the local community's prosperity. Community involvement is training, management, and promotion of conservation tourism, as well as the application of zoning and environmentally friendly (eco-friendly) infrastructure, are the key for the success of the program.*

Keyword : *Education Tourism, Conservation, Adaranan Island, observation, interview.*

INTRODUCTION

Educational tourism is one of the fastest-growing tourism sectors in many countries, including Indonesia. This concept integrates tourism and learning, enabling visitors not only to enjoy natural or cultural attractions but also to gain new knowledge. The increasing interest in educational tourism has encouraged both tourists and local communities to prioritize destination sustainability. According to Suwantoro (2004), educational tourism refers to travel activities intended to provide insight, comparative studies, or information related to knowledge about the visited destination, often referred to as study tours or informational travel. This definition

is reinforced by Bodger (1998), who describes educational tourism as a program in which participants travel in groups to specific destinations with the primary purpose of obtaining relevant learning experiences directly from the visited sites.

One approach to achieving sustainable tourism is through conservation-based educational tourism, where visitors not only appreciate natural beauty but also acquire knowledge about the importance of environmental protection (Ballantyne et al., 2011). Conservation education aims to increase tourists' awareness of the environmental impacts of their behavior and to promote environmentally responsible actions (Ardoin et al., 2015). This is essential, as poorly managed tourism activities can cause severe and often irreversible environmental damage.

Tual City, located in Maluku Province, is renowned for its marine, coastal, and cultural attractions that are recognized nationally and internationally (Latupapua, 2007). The total area of Tual City is approximately 19,342.39 km², consisting of 254.39 km² of land and 19,088 km² of marine waters. The city comprises 66 islands grouped into three island clusters: Kur Islands, Tayando Tam Islands, and Dullah Islands (BPS Kota Tual, 2024).

Adranan Island, located in Dullah Laut Village, Tual City, Maluku Province, is a tourism attraction offering pristine white sandy beaches, clear seawater, and diverse biodiversity. These features have strong potential to attract tourists while fostering environmental awareness and conservation attitudes. Given its natural conditions and scenic beauty, Adranan Island has promising opportunities for sustainable development, as many of its natural resources remain underutilized. The dissemination of information regarding its natural attractions and ecological richness can further enhance its appeal. Additionally, the local government aims to promote coastal tourism as a leading sector to increase regional and community income (Latupapua, 2011).

Despite its high potential, maintaining a balance between environmental conservation and tourism development remains a major challenge. Biotic conservation and physical island management are crucial for ensuring ecosystem sustainability. According to Ham et al (2002), conservation-based tourism can provide ecological benefits while improving tourism management quality and visitor experiences. Therefore, structured and sustainable educational tourism programs are essential. This study focuses on three main aspects: (1) the potential of flora, fauna, and physical conditions of Adranan Island in the context of conservation, (2) conservation management efforts undertaken by local authorities, and (3) program designs supporting sustainable tourism development. The findings are expected to contribute significantly to the advancement of sustainable educational tourism on Adranan Island.

METHODOLOGY

This study employs a qualitative descriptive method to understand sustainable tourism practices that can strengthen natural resources in the Adranan Island area, Dullah Laut Village, Tual City. The qualitative method was chosen because it aims to describe and explain the research findings in a detailed and comprehensive manner. Creswell (2014) explains that qualitative research is generally used to

study social life, history, behavior, social issues, and related phenomena. This qualitative approach examines:

1. The condition of the area in terms of plant and bird species diversity on Adranan Island, Dullah Laut Village, Tual City this by observation.
2. Conservation efforts implemented by site managers on Adranan Island, Dullah Laut Village, Tual City. Involve local community members in tree planting and beach clean-up activities to encourage them participant in conserving the area (*Informant 1, peronal communication, 2025*)
3. The role of conservation in maintaining tourism sustainability in the Adranan Island tourism area, Dullah Laut Village, Tual City.

This research on conservation-based educational tourism was conducted on Adranan Island, Dullah Laut Village, Tual City, Maluku Province. Field data collection was carried out from January to March. Data were obtained through field studies, literature reviews, and interviews with relevant stakeholders to support the analysis. The data collection process began with a literature review, followed by field observations and interviews. This study employed an observation method in which data were collected based on direct observations of the physical characteristics of the research object (Wardiyanta, 2006).

The data analysis technique used to assess educational tourism in the Adranan Island area was qualitative analysis. Research data were grouped into three main components: tourism resources, development components, and tourism program planning.

In terms of tourism resources, the collected data included flora and fauna elements. Flora data consisted of tree species and the number of trees at the research site. Flora data were collected using vegetation analysis methods based on field data. Meanwhile, fauna data focused on birds, including bird species, number of Plants, and levels of bird diversity. Bird data were collected using the line transect method, with field data supported by the Field Guide to the Birds of Sumatra, Java, Bali, and Kalimantan by MacKinnon et al. (1998). Textual sources included books, journals, research reports, newspapers, official reports, and regulations, while visual sources consisted of photographs and maps (Zed, 2008).

Furthermore, within the development component, the data analysed focused on tourism attractions found at the research site. Attraction data were collected through direct observation and interviews, with data sources derived from site managers and field observations. These data were used to identify the potential and characteristics of attractions that could be developed as part of tourism activities.

In the tourism program planning aspect, the analysed data covered tourism planning stages, including the preparation of the Terms of Reference, determination of objectives and targets, survey implementation, analysis and synthesis, and plan formulation. Data collection was conducted through interviews and direct observation, with data sources obtained from site managers and field observations. In addition, data interpretation was carried out to support the formulation of integrated and sustainable tourism program recommendations.

The educational tourism program was implemented through collaboration between the site management, local tour guide, and several schools in Tual City. Participant were selected from school student with the aim of fostering conservation value and promoting environmental awareness from early age. Total of 25 student participated in teh program, this number was determinated based on the carrying

capacity of Adranan Islan to ensure that the educational affect the island biodiversity or ecological balance. Prior to the commencement of the study, approval for the program was obtained from the Tual City Tourism Office. Individual interviews were conducted with each participant, with each interview lasting approximately five minutes. No financial or material incentives were provided to the participants, as the primary purpose of the program was promote environmental education and instil conservation values, encouraging greater awarenss and reponsibility for protecting the natural environment.

RESULTS AND DISCUSSION

The research results and discussion Tual City Government Tourism Office cover three main aspects: plant species diversity, bird diversity, and tourism attractions on Adranan Island, as described below.

1. Plant Diversity

Based on field observations, Adranan Island in Tual City contains only one vegetation type, namely **coastal forest vegetation**. Flora refers to the collection of plant species found in a particular area, whereas vegetation refers to a plant community formed by various plant populations within a region or ecosystem, which may vary under certain environmental conditions (Fachrul, 2012). Coastal forests are commonly characterized by plant species such as tropical almond (*Terminalia catappa*), sea pandan (*Pandanus* spp.), and beach morning glory (*Ipomoea pes-caprae*). Adranan Island is classified as a coastal forest area, where several plant species dominate this vegetation type.

Table 1 Dominant Plant Species on Adranan Island

No.	Species	Scientific Name	Number of Plants
1	Pinus	<i>Pinus merkusii</i>	67
2	Patatas / Katang-katang	<i>Ipomoea pes-caprae</i>	51
3	Daun Tikar / Pandan laut	<i>Pandanus odorifer</i>	59
4	Bitori / Gagabusan	<i>Scaevola taccada</i>	30
5	Bintanggur	<i>Callophylum inophyllum</i>	26

The results show that pine trees (*Pinus merkusii*) are the most dominant plant species in the coastal forest of Adranan Island, with 67 Plants recorded. Pine trees play an important role in stabilizing sandy soils and reducing erosion. In addition to pine trees, Patatas (beach morning glory) (*Ipomoea pes-caprae*) is also



Figure 1 Pine Tree
Source : Private Document

widely found, with 51 plants. This species functions as ground cover that helps protect the sand surface and reduces coastal abrasion along the shoreline.

Another frequently observed species is sea pandan (*Pandanus odorifer*), with 59 plants, which is recognizable by its strong stilt roots and long distinctive leaves. Sea pandan plays a key role in protecting inland areas from wave impact. Further inland, bitori (*Scaevola taccada*) was recorded with 30 plants, and bintanggur (*Callophylum inophyllum*) with 26 plants. According to local residents, bintanggur seeds are traditionally used to relieve internal heat-related illness.

Overall, plant species diversity on Adranan Island is lower than that of other forest types. This is likely due to the sandy coastal soil conditions, coral rock substrates, and relatively high average temperatures of 26–32°C. The coastal forest floor is generally flat, and several fallen trees were observed without any management intervention. The coastal forest area is also limited in size because Adranan Island itself covers only approximately 500 m². This coastal forest is frequently visited by tourists for birdwatching, seeking shade from the sun, and informal barbeque activities. The coastal forest habitat is located close to the shoreline, approximately seven meters from the beach.

2. Bird Diversity

Overall, bird diversity on Adranan Island is relatively limited, with only 11 bird species recorded from 10 families. The bird species richness index on Adranan Island in Tual City is therefore not particularly high. As Adranan Island is an administrative area designated for tourism, human visitation activities do not appear to significantly disturb bird abundance. Compared to other islands in Tual City, Adranan Island is prioritized for tourism development and is easily accessible from the main administrative area of Tual City.

The bird species found on Adranan Island tend to be species that can adapt well to human activity, particularly the Great Egret, which is frequently observed flying around the island. Tourist activities on Adranan Island should be aligned with management efforts to ensure that bird habitats are not disturbed or degraded.

Table 2 Bird Species Recorded on Adranan Island

No	Family / Nama Jenis	Indonesian Name	Numbers	Location
1.	Accipitridae <i>Pandion heliaetus</i>	Elang Ikan	16	HHT
2.	Alcedinidae <i>Todiramphus chloris</i>	Cekakak Sungai	2	HHT
3.	Ardeidae <i>Ardea Alba</i>	Kuntul Besar	27	HHT
4.	Meliphagidae <i>Philemon buceroides</i>	Cikua Tanduk	1	HHT
5.	Nectariniidae <i>Cinyris jugularis</i>	Madu Sriganti	1	HHT
6.	Pandionidae <i>Pandion heliaetus</i>	Elang Tiram	2	HHT
7.	Pycnonotidae <i>Pycnonotus aurigaster</i>	Kutilang Raja Timur	4	HHT
8.	Rhipiduridae	Kipasan Belang	5	HHT

	<i>Rhipidura javanica</i>			
9.	Scolopacidae	Gajahan Pengala	41	HHT
	<i>Numenius phaeopus</i>			
10.	Zosteropidae	Pleci	11	HHT
	<i>Zosterops</i>			
11.	Zosteropidae	Kacamata Laut	122	HHT
	<i>Zosterops chloris</i>			

Note: (HHT) *Habitat Hutan Pantai* (Coastal Forest Habitat)

Source : Private Document

The highest index value on Adranan Island was recorded for the Lemon-bellied White-eye (*Zosterops chloris*) from the family *Zosteropidae*. This species achieved the highest index value (52.2), indicating a high encounter rate and that it was frequently observed. The coastal and marine environment of Adranan Island supports bird species that can adapt to such habitats. In addition, the Great Egret and Whimbrel (*Numenius phaeopus*), which can adapt and forage for small fish in marine environments, contribute to their dominance in the island's bird population.

Species from the family *Meliphagidae* (Cikua Tanduk and Madu Sriganti) were categorized as difficult to observe. Although several other species were also rarely encountered, these two species were recorded with only one plants each, and their diversity index value was 0.43, indicating very low encounter probability. The coastal forest habitat tends to be more frequently observed during afternoon observations.

Osprey and related raptor species are protected wildlife under Law No. 5/1990, Peraturan Pemerintah No. 7 (1999), and the Ministry of Environment and Forestry Regulation No. P.106. Furthermore, based on the IUCN Red List (International Union for Conservation of Nature, 2025), the species is categorized as low risk and listed under Appendix II of Cites (Convention on International Trade in Endangered Species of Wild Fauna and Flora, 2025).



Figure 2 Lemon-bellied White-eye (*Zosterops chloris*)

Source : Private Document

3. Tourism Attractions

Tourism attractions are objects of tourist appeal that include unique natural, cultural, or man-made features. According to the Tual City Tourism Development Master Plan (RIPPPDA) Pemerintah Kota Tual (2019), Adranan Island is designated as one of the priority tourism areas in Tual City. Tourism attractions on Adranan Island include the following:

a. Natural Scenery

Adranan Island offers scenic beauty that attracts tourists, as the Maluku region is widely known for its marine landscape. In addition to its underwater scenery, inter-island views provide an appealing panorama. Adranan Island is recognized as a leading marine tourism destination in Tual City, offering captivating natural scenery. This small uninhabited island features fine white sandy beaches combined with calm, clear blue seawater, creating a relaxing atmosphere.



Figure 3 View of Adranan Island
Source : Tual City Tourism Office

The sunrise and sunset views on Adranan Island are also remarkable. At certain times, particularly in the late afternoon, the island offers a stunning sunset panorama. From the shoreline, visitors can observe the vast open sea.

b. Snorkling / Diving

The clarity of the seawater around Adranan Island allows tourists to view coral reefs and marine biota directly from the surface, making the island an ideal site for snorkeling and diving. Another important factor is the natural ambience and minimal disturbance from human activities, as the island is uninhabited. This pristine environment enhances the snorkeling experience, offering a calmer setting with minimal noise pollution and reduced risk of water contamination. With these characteristics, Adranan Island not only provides impressive marine beauty but also has strong potential for sustainable snorkeling development based on coastal ecosystem conservation principles.



Figure 4 Diving Spot (Seafloor View)
Source : Tual City Tourism Office

c. Fishing

Adranan Island is one of the small islands in Tual City with significant potential for marine tourism and abundant fisheries resources. The surrounding waters are

rich in various fish species, including grouper, red snapper, rabbitfish, and other economically valuable reef fish. The Adranan Island area is also reported to host a rare fish species listed under the Decree of the Menteri kelautan dan Perikanan No. 37 (2013), namely the Napoleon wrasse, locally referred to as ikan mamin in Tual, which is believed by the local community to be a “sand-producing fish.”

These marine resources serve as a unique attraction for tourists and residents who enjoy fishing. The clear waters and varied seabed contours allow for multiple fishing techniques. Calm currents during certain periods also make fishing activities safer and more comfortable.



Figure 5 Fishing Spot
Source : Private Document

d. Birdwatching

Adranan Island, Dullah Laut village, Tual City, have unique potential as a birdwatching destination. The natural environment and minimal human disturbance make the island ideal for observing bird behavior directly in its native habitat. Bird species commonly observed include gulls, kingfishers, white and black egrets, and several migratory species that stop over during certain seasons. Coastal vegetation, white sandy beaches, and food-rich waters support bird population sustainability in the area.



Figure 6 Tourism Birdwatching
Source : Private Document

Birdwatching on Adranan Island not only provides an educational recreational experience but also offers research opportunities related to biodiversity, bird migration, and wildlife conservation. Given its calm natural characteristics, relatively easy accessibility from Tual City, and ecological richness, Adranan Island has strong potential for birdwatching tourism development. Appropriate management would deliver sustainable benefits to local communities.

e. Canoeing

Canoeing is another tourism attraction on Adranan Island, suitable for one or two people. Small canoes can serve as the main mode for recreational paddling. With relatively calm currents, canoeing is beginner-friendly and safe for tourists to explore the coastal waters around the island. During canoeing activities, tourists can enjoy underwater scenery visible from the clear water surface.



Figure 7 Canoeing Activity
Source : Private Document

Beyond recreation, canoeing can also be developed as an eco-friendly marine sports tourism attraction. This activity strengthens the image of Adranan Island as a natural and tranquil marine tourism destination while providing tourists with closer interaction with nature without damaging marine ecosystems.

4. Educational Tourism Program

The formulation of the Conservation-Based Educational Tourism Program is related to multi-disciplinary perspectives, objectives and targets, surveys and inventories, analysis and synthesis, and finally plan formulation (UNWTO, 2005). According to Rodger (1998), edu-tourism or educational tourism refers to a program in which tourism participants travel in groups to a specific location with the primary objective of gaining direct learning experiences related to the visited site.

a. Stage 1

The first stage was developed as the initial foundation for the planning process of the conservation-based educational tourism program on Adranan Island by adopting a systematic tourism planning approach. At this stage, the Terms of Reference (ToR) were established, encompassing the objectives, scope, planning boundaries, multidisciplinary perspective, and the formation of a planning team involving the Tual City Tourism Office, the Natural Resources Conservation Agency (BKSDA) and the local tourism awareness group (Pokdarwis). The preparation of the ToR aims to provide clear direction and planning boundaries,

ensuring that all planning activities are carried out within a consistent framework. This stage serves as the basis for the subsequent stages, as the objectives (stage 2), the implementation of resource survey and inventories (stage 3), the analysis of tourism demand and supply, opportunities, and development constraints (stage 4), and the formulation of development strategies, zoning plans, and sectoral planning integration (stage 5). Therefore, each stage is systematically interconnected, resulting in a comprehensive, integrated, and sustainable conservation-based educational tourism development plan.

The development of the Terms of Reference for the Conservation-Based Educational Tourism Program on Adranan Island includes:

1. Objectives, scope, and work area boundaries ($\pm 500 \text{ m}^2$ of Adranan Island).
2. A multidisciplinary perspective:
 - a) Environment—conservation of coastal vegetation (pine, pandanus, beach morning glory);
 - b) Economy—improving the economy of the Dullah Laut community through tourism services;
 - c) Infrastructure—improving basic facilities such as toilets, shelters, and tourism trails.

The planning team consists of the Tual City Tourism Office as the main coordinator, the Natural Resources Conservation Agency (BKSDA) for conservation aspects, and the Dullah Laut tourism awareness group (Pokdarwis) as the local implementing body.

b. Stage 2

The overall objective of the program is to develop Adranan Island as a conservation-based educational tourism destination that balances ecosystem preservation, community empowerment, and sustainable economic development. The target groups include international tourists, local tourists from Tual City and Southeast Maluku, and local communities. The expected benefits include:

1. Conserving coastal forest ecosystems and seabirds on Adranan Island.
2. Increasing awareness among tourists and local communities regarding the importance of conservation and educational ecotourism.
3. Encouraging active participation of local communities in tourism management.
4. Increasing regional and community income through ecotourism activities.

c. Stage 3

Based on field observations, several elements should be surveyed for program formulation (WTO, 2005):

1. Natural resources: dominant vegetation includes pine (67 plants), beach morning glory (51), sea pandan (59), bitor (30), and bintanggur (26). Dominant bird species include the Lemon-bellied White-eye (122 plants) with a moderate diversity level and a species encounter rate of 1.55.
2. Socio-economic conditions: nearby communities mainly depend on fishing; management on Adranan Island is not yet structured and conservation awareness remains low.
3. Existing facilities: simple shelters, swings, temporary toilets, wells, and photo spots.

4. Management and accessibility: the island is managed under the Tual City Tourism Office; access is by boat with approximately 15 minutes travel time.
5. Tourism potential: beach nature tourism, birdwatching, nature photography, and school-based educational tourism.

d. Stage 4

The demand–supply analysis indicates that current trends in nature tourism and conservation education are key attractions for tourists; however, Adranan Island faces limitations in facilities and supervision. The island has strong potential for marine ecotourism with unique vegetation diversity and seabirds (birdwatching). Opportunities for educational tourism development are widely open through marine ecotourism and birdwatching activities, supported by local government policies promoting sustainable tourism and by community involvement. Nevertheless, tourism attractions on Adranan Island have not been fully optimized due to limited facilities and inadequate on-site supervision.

Several constraints must be addressed, including the island’s small size with a visitor capacity of approximately 50 people, inadequate facilities, and low conservation awareness and education among tourists and the local community. To address these challenges, zoning and controlled tourism activities are required to prevent environmental degradation, along with training for conservation tour guides and the development of eco-friendly facilities. Furthermore, environmental education programs and routine biodiversity monitoring should be implemented to ensure the sustainability of conservation-based tourism on Adranan Island. Conservation education programs involving participatory activities such as beach clean-ups or coral reef rehabilitation can provide more meaningful tourist experiences while contributing directly to environmental preservation (Powell et al., 2008).

e. Stage 5

The final stage involves plan formulation and integration with sectoral planning. The proposed development concept is “Adranan Island Tourism Area as a Mini Natural Laboratory for Conservation Education Tourism”, which will be implemented through zoning as presented below.

Table 3 Zoning Allocation for the Program

No.	Zone	Function	Activities	Restrictions
1	Core Conservation Zone	Protection of vegetation and birds	Observation and monitoring	No unrestricted access
2	Education Zone	Environmental education and interpretation	Trails, educational signage, conservation discussions	Visitors limited to 25 people
3	Tourism Zone	Tourism and recreation activities	Photo spots, shelters, swimming/snorkeling	Must not disturb vegetation

There have been no structured or firmly documented conservation efforts implemented by site manager in Adranan Island. This condition indicates that environmental management in the area has not yet included specific conservation programs directly aimed at preserving the local ecosystem. That is why this program exists, aimed at preserving the sustainability of the local ecosystem.

CONCLUSION

The development of a Conservation-Based Educational Tourism Program on Adranan Island indicates that this area has strong potential to become a sustainable educational tourism destination that integrates environmental, economic, and infrastructure aspects. The program seeks to balance the preservation of coastal forest ecosystems and seabird habitats with improved local community welfare. Community involvement through training, management, and promotion of conservation tourism, as well as zoning implementation and eco-friendly infrastructure development, are key factors for program success. Thus, this program supports environmental conservation, visitor education, and the development of conservation-based tourism that is effective and sustainable in Tual City.

REFERENCES

- Andrasgoro, D., Hidayat, A., & Nugroho, S. (2015). *Pengembangan edu-tourism sebagai alternatif wisata berbasis pendidikan*. Jurnal Pariwisata, 2(2), 75–86
- Ardoyn, N. M., Wheaton, M., Bowers, A. W., Hunt, C. A., & Durham, W. H. (2015). *Nature-based tourism's impact on environmental knowledge, attitudes, and behavior: A review and analysis of the literature and potential future research*. Journal of Sustainable Tourism, 23(6), 838–858
- Ballantyne, R., & Packer, J. (2011). *Using tourism free-choice learning experiences to promote environmentally sustainable behaviour: The role of post-visit "action resources"*. Environmental Education Research, 17(2), 201–215.
- Bodger, D. (1998). Leisure, Learning, and Travel. Journal of Physical Education, Recreation & Dance, 69(4), 28–31. <https://doi.org/10.1080/07303084.1998.10605>.
- BPS. 2024. Kota Tual Dalam Angka 2019. BPS Kota Tual. Tual.
- Convention on International Trade in Endangered Species of Wild Fauna and Flora. (2025). *The CITES Appendices*. <https://cites.org/eng/app/appendices.php>. (Accessed January 2, 2026).
- Creswell, J. W. (2014). Research design: qualitative, quantitative, and mixed methods approaches. In *SAGE Publications* (4 Edition).
- Fachrul MF. 2012. *Metode Sampling Bioekologi*. Jakarta: Bumi Aksara.
- Ham, S. H., Weiler, B., Hughes, M., & Foxlee, J. (2002). *From theory to practice: Strategic interpretation in sustainable tourism*. Gold Coast: Cooperative Research Centre for Sustainable Tourism.

- International Union for Conservation of Nature. (2025). *The IUCN Red List of Threatened Species* (Version 2025-2). <https://www.iucnredlist.org>. (Accessed January 2, 2026).
- Kementerian Kelautan dan Perikanan Republik Indonesia. (2013). *Keputusan Menteri Kelautan dan Perikanan Republik Indonesia Nomor 37/KEPMEN-KP/2013 tentang Penetapan Jenis Ikan Dilindungi*. Jakarta: Kementerian Kelautan dan Perikanan.
- Kementerian Lingkungan Hidup dan Kehutanan Republik Indonesia. (2018). *Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia Nomor P.106/MENLHK/SETJEN/KUM.1/12/2018 tentang Jenis Tumbuhan dan Satwa yang Dilindungi*. Jakarta: Kementerian Lingkungan Hidup dan Kehutanan.
- Latupapua, Y.T. (2011). *Potensi dan Pengembangan Obyek Wisata Pantai di Kabupaten Seram Bagian Barat*. Jurnal Ekonomi, 6(2), 93–105.
- Latupapua Y.T. (2007). “Studi Potensi Kawasan Dan Pengembangan Ekowisata Di Tual Kabupaten Maluku Tenggara” dalam Jurnal Agroforestri Volume II (1) pp. 67-71). Ambon: Universitas Pattimura Ambon.
- MacKinnon, J., Phillipps, K., & van Balen, B. (1998). *Panduan lapangan burung-burung di Sumatera, Jawa, Bali, dan Kalimantan*. Yogyakarta: Gadjah Mada University Press.
- Pemerintah Kota Tual. 2019. Peraturan Daerah Kota Tual No 02 tahun 2019 tentang Rencana Pembangunan Jangka Menengah Daerah Kota Tual Tahun 2019-2024. Tual.
- Powell, R. B., Kellert, S. R., & Ham, S. H. (2008). *Interactional theory and the sustainable nature-based tourism experience*. Society & Natural Resources, 21(8), 761–776.
<https://doi.org/10.1080/08941920802017560>.
- Republik Indonesia. (1999). *Peraturan Pemerintah Republik Indonesia Nomor 7 Tahun 1999 tentang Pengawetan Jenis Tumbuhan dan Satwa*. Jakarta: Sekretariat Negara Republik Indonesia.
- Rodger, D. (1998). *Leisure, learning, and travel*. Journal of Physical Education, Recreation & Dance, 69(4), 28–31.
<https://doi.org/10.1080/07303084.1998.10605532>.
- Suwantoro, G. (2004). *Dasar - Dasar Pariwisata*. Penerbit Andi.
- United Nations Environment Programme, & World Tourism Organization. (2005). *Making tourism more sustainable: A guide for policy makers*. UNEP & UNWTO.
- Wardiyanta. 2006. *Metode Penelitian Pariwisata*. Andi, Yogyakarta.
- Zed, M. (2008). *Metode Penelitian Kepustakaan*. Yayasan Obor Indonesia.