

# A Bird Conservation for Educational Tourism in National Park Aketajawe Lolobata Halmahera, Indonesia

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**Abstract** Birds have been a source of inspiration for mankind for centuries and have a special value in various cultural communities. Birds are also a very good indicator for the health of the environment and biodiversity values as a whole. Bird populations and diversity can be used as a measure of sustainability of development activities and the utilization of natural resources. Travel bird diversity based education is an activity that uses the tourist attraction of birds as the main attraction. A form of tourism activities undertaken is the observation of birds in the wild (birdwatching). These activities are generally carried out by the researchers, a group of bird lovers, students and the community with a focus on the continuity of bird life. This research method is a survey by observing birds at the point of concentration. The results showed that the conservation of birds as an educational tour in the national park consists of several Aketajawe Lolobata observation points in the area and regions of Tayawi Lolobata. The types of birds were observed are *Semioptera wallacii* and *Habroptila wallacei*. The second type of bird is a bird endemic to the island of Halmahera, Indonesia.

**Keywords** Bird conservation, Educational tourism, Halmahera, Indonesia

## 1. Introduction

Indonesia, with more than ten thousand islands, has a tropical climate and almost all of the land is covered by tropical rain forest. Indonesia has become one of the most important countries in the world in terms of biodiversity. Besides the birds that originally live and breed in Indonesia, there are also birds which migrated in the winter. This list will continue to grow and change because there are still many regions left unexplored, especially in the eastern part of Indonesia that is in the province of North Maluku. Observations and data collection of various types of birds in Indonesia must continue to be made. One of the ways to make an inventory of the various birds species in Indonesia is the birdwatching. Birdwatching is an appropriate activity to study and observe birds' types as well as birds' population and habitus in their natural habitat. One of the conservation areas as a destination for local and international tourists to do the Birdwatching is Aketajawe Lalobata National Park (ALNP).

ALNP region falls into three districts/cities, namely Central Halmahera, East Halmahera, and Tidore Islands. This region is astronomically located between 127° 17' 20" - 127° E Long. 3° 56' 16.96" 0 - 0 20.17' N Lat 52° and 128° d from 47.64 to 128° 45' 31.5" E Long and 0° 57' 8.44" - 1° 30

5.72' S Lat. Geographically, Northern ALNP borders with the concession of PT. Nusapadma Corporation and PT. Barito, west side with a concession area of PT. TAIWI unit I, next to the South by the concession area of PT. TAIWI unit I, and the East of the concession area of PT. TAIWI unit I. Based on Oldeman climate classification, region D1 ALNP includes agro climatic zone with an average annual rainfall of 2356 mm and a rainy day 122 days per year. Lolobata region, the average maximum rainfall occurs in June (293 mm) and a minimum in Okttober (111 mm). The average monthly temperatures range from 25.20 C (in June) to 26.30 C (January, March, May, November). Wet period (rainfall > 200 mm) lasts for 4 months (April-July) in the absence of a dry month. While in the area Aketajawe based on the weather monitoring stations PT. Weda Bay Nickel (2001), the average maximum of 545.2 mm rainfall occurs in July and a minimum of 57.5 mm in January, the average monthly temperature ranged from 21.90 C (in June) to 35.50 C (August), relative humidity ranges from 48% (February) to 98% (July, Agustus). Wet period (rainfall > 200 mm) lasted for 3 months (May-July) and dry months (rainfall).

ALNP is a protection forest that consists of two separate core areas (Group of Protection Forest Aketajawe and Group of protection Forest Lolobata) which have a wide series of habitats and species of Halmahera biogeographical units under a single management division. It is expected that the combination of these two areas can provide a complete protection for the representatives from ecosystems and biodiversity from lowland to mountains, which includes representatives from all types of native terrestrial habitats

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Published online at <http://journal.sapub.org/plant>

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that are important on Halmahera island. In addition, they can hopefully protect the water catchment areas that are needed to supply water for agriculture, industry and others. Finally, this region is an option for the Togutil tribe who lives in the forest to continue running their traditional way of life (Martodirdjo, 1996).

Active in monitoring birds in Indonesia in 2011, *Burung Indonesia* suggests that the priority should be put on the conservation in order to prevent the growing pressure on the habitats. It can be done through the management of protected areas by communities and conservation agreements with land-owners. This approach provides an opportunity for more flexible use of natural resources in a sustainable manner. On the other hand, an alternative approach can make a major contribution to the reduction of poverty in the surrounding region, which relies heavily on the available natural resources. Additionally, strengthening community capacity can be done through establishing *Kelompok Masyarakat Pelestari Hutan* (Forests Conserver Community), which consists of people who come from several villages in the conservation area nearby. Community groups and the government can put together a management strategy based on an agreement between the stakeholders. Armed with community capacity strength, the priority areas are expected to be managed in a participatory and sustainable way to improve the people's living.

Both biological and non biological natural resources found in ALNP have an important role in human life in terms of economics, research, education and culture, as well as for recreation and tourism interests. The wildlife, especially birds (Aves) are crucial in increasing the productivity of agricultural, plantation and forestry. Ecologically, birds play an important role in the process of pollination and seed dispersal to various places. The nature of birds is very sensitive to environmental changes; thus, the presence of bird species within a region can be considered as a bio-indicator of the environmental conditions. The Aketajawe Lolobata National Park area that is located on the Halmahera Island, North Maluku. This province (North Maluku) is popular for "A Thousand Islands Province" since it consists of 1,027 large and small islands. Lying on the oriental area which is located on the east side and west side of the Wallacea line Mayr line, Maluku has rich biodiversity and distinctive flora and fauna (endemic) classified into Wallacea biogeographical unity of which characters are influenced by the Oriental and Australasia components (Odum, 1971).

The fauna diversity depends on environmental conditions and other factors. Species diversity has something to do with the stability of the community: the community with a high diversity will have complicated networks. Fauna diversity tends to be higher in the older community and lower in communities that have not been formed yet (Odum, 1971). Birds have been a source of inspiration for mankind for centuries and have a special value in various cultural communities. Birds are also a very good indicator of the environment health and the overall biodiversity value. Bird

populations and diversity can be used as a measure of sustainability of development activities and the utilization of natural resources (Coates & Bishop, 1997).

Birds are animals that can be found in almost all habitats; ranging from aquatic habitats, the forest to the mountains. In addition, urban or residential areas also can provide the necessities of life for many species of birds. The birds are able to interact and adapt to existing habitat conditions. Various species of birds make good use of various forms of human creation, such as buildings, parks, artificial forest, and so on for living, foraging, nesting and breeding. Bird diversity is a great potential that should be pursued in an optimal utilization. Such efforts must be done in a planned and directed way of which the pattern of use does not damage the bird diversity and affect its existence. One form of bird diversity utilizations is birdwatching. Birdwatching activities are mostly done by the foreign tourists. These tourism activities are not managed properly so that they cannot bring many benefits to the economy of the local revenue. The preparation of travel planning strategy which is based on the bird diversity needs to be done to increase the economic value of the people living in Halmahera, North Maluku.

## 2. Method

The research method is a survey that was conducted in May-July 2013. An observation was done in Aketajawe and Lolobata National Park. Research tools used were binoculars, bird identification books, plastic ropes, machetes, stationery, GPS, and cameras. I went on a journey and asked the local people some information about the birds' concentration points. Then, the observation on birds was done in the morning, especially at the time when they are out of their nests and also at noon or in the evening when they came back to the nests. The location of the birds were then listed.

## 3. Results and Discussion

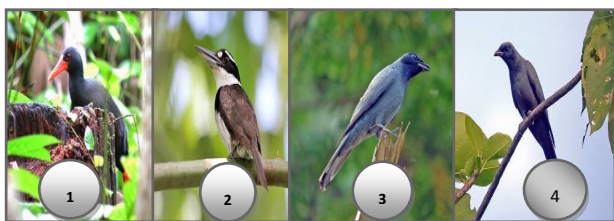
### Tourism Potential in Aketajawe Lolobata National Park

The information contained in this study covers strategic locations at which the potential biodiversity of bird can be found as an educational tourism in Aketajawe Lolobata National Park. The birds are concentrated in Halmahera, North Maluku. They specifically inhabit these villages: Koli, Payahe, Binagara, Woda, and Lolobata which mainly consists of Labi-labi, Dorosagu, Wasileo, Gogaili, and Miaf. Those areas are the habitats for birds with curved beak, such as *Cacatuiinae* and *Loriinae*. The results of this survey are supported by the results of previous related surveys conducted by the Aketajawe Lolobata National Park Hall Center. They came across five locations on Lolobata blocks and four locations on Aketajawe blocks as the focus at which birds' are potential for the tourist attractions i.e. education as described in table 1.

**Table 1.** Locations for birdwatching as a educational tourism

No	Location	Time/Month	Information
<b>A Blok Lolobata</b>			
1	Labi-labi	Throughout the year (January to December)	Crooked-beak birds found
2	Maratanajaya	Throughout the year (January to December)	Crooked-beak birds found
3	Telaga Gogaili	Throughout the year (January to December)	Crooked-beak birds found
4	Miaf	Throughout the year (January to December)	Crooked-beak birds found
5	Tukur-tukur	Throughout the year (January to December)	Crooked-beak birds found
<b>B Blok Aketajawe</b>			
1	Koli Tayawi	Throughout the year (January to December)	Halmahera fairy birds ( <i>Semioptera wallacii</i> )
2	Woda Rorai	Throughout the year (January to December)	Crooked-beak birds found
3	Binagara Kulo	Transitional season (July to September)	Mandar Gendang ( <i>Habroptila wallacei</i> ) found
4	Kobe	Transitional season (July to September)	Migratory birds found

The result of this study can be a reference for bird lovers to know the exact location of birdwaching. Furthermore, it is also beneficial for the educational tourism in ALNP. The observation of several bird species endemic to Halmahera is presented in Figure 1.

**Figure 1.** Halmahera endemic birds (Source; *Bird Indonesia.org*)

There are four Halmahera endemic bird species found on the observation sites, namely; 1) Drummer Rail (*Habroptila wallacii*), 2) Sombre kingfisher (*Todiramphus fenubris*), 3) Halmahera Cuckoo shrike (*Coracina parvula*), and 4) Dusky-Brown Oriole (*Oriolus phaeochromus*). Biodiversity survey in ALNP by *Burung Indonesia* (2009) suggests that there are at least 104 types (39 parts) of birds exist in the park.

In Aketajawe blocks, there were many more types successfully found (82 types) than in Lolobata blocks (77 types). Totally, 25 species of endemic birds were found in North Maluku, including four endemic species found in Halmahera Island.

The studies on fauna in Halmahera have not been abundant compared to the research on the flora. Specific research on birds in Halmahera that has been done by Coates, B.J. & K.D. Bishop (2000) unexpectedly found several species of mammals, reptiles, amphibians, butterflies and aves. Recently, there have been 217 bird species spotted in Halmahera Island; 21 sea birds, 31 settled water birds, 33 migrant water birds, 26 migratory birds, 83 settled forest birds. From the 217 known species, 24 species are endemic to North Maluku found on Halmahera Island and 4 species are found nowhere else. Of the 24 species that are endemic to North Maluku, 7 species are protected, namely; *Haliastur indus*, *Lorius garrulous*, *Chamosyna placentis*, *Cacatua alba*, *Alcedo azurea*, *Alcedo Attis*, *Alcedo pusilla*, *Rhyticeros plicatus* and *Semioptera wallacii*, and 17 bird species are endangered (*Erythrarchus accipiter*, *Accipiter meyerianus*, *Hieraaetus morphnoides*, *Falco moluccensis*, *Falco severus*, *Eulipoa wallacei*, *Habroptila wallacii*, *Treron vernans*, *Ptilinopus rivoli*, *Ducula rosacea*, *Columbia vitiensis*, *Alisterus amboinensis*, *Cacomantis Heinrici*, *Sumiculus lugubris*, *Ninox connivens*, *Alcedo pusilla* and *Eurystomus azureus*).

According to Coates, B.J. & K.D. Bishop, (2000), Halmahera island has four bird species that cannot be found anywhere, 3 of which have been known to be in ALNP and the other one (*Habroptila wallacii*) is believed to exist in the national park but has not been found yet. The endemic bird species located on Halmahera Island including; 1) Invisible Rail (*Habroptila wallacii*) which is reported to live between the area of sago swamp and forest with lowland hills, 2) Sombre Kingfisher (*Todiramphus fenubris*) which is found in the forest edges slightly to the inside, often close to the area of forest clearing or forest edge, 3) Halmahera Cuckoo shrike (*Coracina parvula*) which is very common in logged forest hills or unlogged forests and in the lowlands, and 3) Dusky brown Oriole (*Oriolus phaeochromus*) which inhabits the primary forests and secondary forests on the lowland and also high forest hills. In the national park we can also find other interesting bird species; Figure 4 presents the types of birds that are often used by the communities around the area to be sold or used as souvenirs for the guests in the village. Birds that are considered attractive and are often hunted are 1) Wallace's standardwing (*Semioptera wallacii*), 2) White Cockatoo (*Cacatua alba*), 3) Chattering Lory (*Lorius garrulous*), 4) Ivory-breasted Pitta (*Pitta maxima*), 5) Bryan's nornbill (*Aceros plicatus*), 6) Dusky scrubfowl (*Megapodius Freycinet*), 7) Beragam pergam (*Ducula spp.*) and 8) Blue-capped Fruit Dove (*Ptilinopus bemsteini*). This area is also a sanctuary of the most endangered birds and globally endangered according to the IUCN (International Union for Conservation of Nature and Natural Resources). The protected birds are Drummer Rail (*Habroptila wallacii*),

White cockatoo (*cacatua alba*), Chattering lory (*Lorius garullus*), Sombre Kingfisher (*Halcyon funebris*), and Dusky Friarbird (*Philemon fuscicapillus*)



**Figure 2.** Birds that are often hunted by the communities (Source; *birds Indonesia. org*)

There are 104 bird species found in the park; 23 species are those protected by the Government of the Republic of Indonesia. Based on Government Regulation No. 7 In 1999, there are seven species of birds protected by the government as presented by figure 3 below: 1) Osprey (*Pandion haliaetus*), 2) Brahminy kite (*Haliastur indus*), 3) Nicobar pigeon (*Caloenas nicobarica*), 4) Nuri bayan (*Eclectus roratus*), 5) Azure kingfisher (*Alcedo azurea*), 6) Standardwing (*Semioptera wallacii*) and 7) Paradise-crow (*Lycocorax pyrrhopterus*).



**Figure 3.** Types of endemic birds protected by the government (Source; *Birds Indonesia. org*)

There have been a lot of effort put on the birds conservation in ALNP, but there are still many weak points noticed, such as resources (human, financial and time). These constraints make the conservation of birds in ALNP face difficulties. Therefore, it is necessary to prioritize protection for birds that are almost extinct. Managers of ALNP should pay more attention on the area which has a very high diversity of birds. If the priority areas have been identified, very limited resources for conservation action can be focused on prioritized areas only. There are many ways to identify the prioritized areas for conservation, one of which is with a bird. Birds are visible and able to contribute to the process of identifying critical areas (priority) for biodiversity conservation because their characteristics are more comparative than the other group of animals. In addition, important bird area (IBA) is a tool that can be used to find the areas that are globally important for biodiversity conservation. Important bird area (IBA) is an important area for biodiversity conservation either globally, regionally or

sub regionally. In addition, it is a practical tool for biodiversity conservation and selected using standard criteria. The criteria of important area for birds are first, there is a bird species globally threatened to extinction; second, there is still a bird species that has a limited distribution in the region; third, there are species of birds that live in large groups within the region.

### Bird Conservation for the Educational Tourism

Bird Conservation for the Educational Tourism can be defined as an activity that uses birds as the main attraction. Tourism activity that can be done is to observe birds in the wild (birdwatching). This activity is usually carried out by the researchers, a group of bird lovers, students and the community with a focus on the continuity of bird life (Hidayat, 2012). Birdwatching can also be developed into birds/wildlife photography. In Indonesia, especially in North Maluku, the number of bird watching communities and bird photography has raised. Almost every major city already has these communities. Actually, birdwatching activity has already been done in other countries. Indonesia becomes one of the areas that is perfect for birdwatching because of its uniqueness and its high level of species diversity. Birdwatching activities are activities that can generate income. Some countries, such as Kenya, Costa Rica, Nepal, India, Thailand, and Malaysia have made birdwatching as a business in the tourism sector. Many travel agencies in Europe and the United States got engaged in bird watching tour. They bring the travelers to these countries, but these countries do not have as many bird species diversity as found in Indonesia (Sudaryanto et al., 1998).

In particular, North Maluku has become a birdwatching destination, especially for foreign tourists. Several locations on the Halmahera Island are the birdwatching spots: Aketajawe block in the city of Tayawi and Tidore Islands Lolobata block in East Halmahera (BTN Aketajawe Lolobata, 2010). If packaged properly and professionally, birdwatching activities can turn into an occupation or a job (Hidayat, 2012). A birdwatching tour conducted individually or in groups known as birdtour. This Ecological Tourism attracts many tourists since there is a shift in the paradigm of international tourism of mass tourism to special interests (alternative tourism). Special interest tourism offers travelers a more meaningful journey, and adds to quality of life experience and lets them acquire new knowledge. A Birdwatching activity developed at this time is identical to a research activity aimed at educating. Along with the shift in the interest of tourists from mass tourist to be of special interest. The development of birdtour in North Maluku has been a part of amazing ecological tour in Indonesia.

### Strategic Planning for birdwatching

One form of sustainable uses of natural resources is to use it as an object of fascination ecotourism, because it does not damage the natural (non destructive activity), does not cause air pollution (non smokeless industry), and can be managed as a sustainable tourism (sustainable tourism). Ecotourism development is very appropriate to address the challenges of

saving the environment, as well as economic benefits in the management of forest resources, especially protected areas (Subarudi, 2009). If it is packed with attractive and professional way, birdwatching tourism activities can increase the financial income. To optimally utilize the high potential of bird diversity in the Aketajawe Lolobata National Park, Halmahera, good planning should be prepared. Additionally bird diversity based tourism activities can be directly perceived by the community in North Maluku as benefits. The implementation should involve the community, either actively or passively.

Abikusno, (2005) states that the optimal community participation can be achieved through deliberation and consensus in the planning and development activities. The criteria include: 1) involving local communities and stakeholders in the planning process and the development of ecotourism; 2) providing opportunities and optimizing them for people to get benefit and actively participate in ecotourism activities, 3) developing partnerships with local communities to discriminate control and prevention of negative impacts; 4) improving the skills of the local community in areas related to and support the development of tourism; 5) improving the local economy and reducing the level of revenue (leakage) as low as possible; 6) increasing incomes. Often, the local community has been first involved in the management of tourism activities prior to any development and planning. The role of the community can be seen especially in the form of additional accommodation, guiding services, and labor. In addition, local people usually have a tradition and local wisdom in the maintenance of tourism resources that are not shared by other tourism actors (Damanik & Helmut, 2006). According to Rahardjo (2005), the local community involvement can be in the form of: 1) a joint venture with the tour operators which provide more public services while private parties only focus on the promotion and marketing; 2) a service provider to tour operators; 3) leasing the land to the tour operator; 4) developing its own program independently; 5) working as a tour operator, either full time or part time. The potential of bird diversity in ALNP is high enough but not yet used optimally to improve the welfare of society. Local authorities have not made the natural richness to be one of the attractions. It is characterized by a lack of planning and development programs with a diversity of birds as a tourism object. Some strategic planning that can be carried out to develop a birdtour are as follow.

### 1. Potential Area Selection

The selection of the right location to be developed in to birdwatching spot will determine the success of the efforts. Specified location must have a high degree of diversity and the target species must exist in the area. Some of the locations that can be used as bird watching spot in the Aketajawe Lolobata National a Park are those in the region of Binagara Wasilei and Tayawi block. These locations have been used as birdwatching spot by the National Park Authority and the foreign tourists.

### 2. Bird Development Information Center (BIC)

BIC can be shaped as a center of information on ALNP birds. Through the construction of the BIC, it is expected that any information about birds in ALNP can be well-known and well documented. This place can be a tourist location since some of birds found in ALNP are endemic birds of which existence is increasingly difficult to find in nature. The information center is one way to get information without having to bother watching the original bird in the nature. Some of the major facilities built are a good specimen collection/preservation/birds offset in ALNP, the collection of eggs and nests, photographs of each type of birds together with the information. BIC should be put in the strategic locations, such as at the Ternate downtown, and managed by dedicated staff working in the BIC office. Another function of the BIC is as a means of publicizing the program in ALNP birdwatching. This can be achieved optimally by using the internet as a forum for promoting the program.

### 3. Tour Leader Provision

Trained guides/tour leader must be prepared carefully. Besides being able to master the birdwatching spot, the tour leader should also be able to communicate well with good *Bahasa Indonesia* and fluent English. Also, the tour leader must be someone who has knowledge and experience in the field of ornitology, in particular bird species in Indonesia especially in North Maluku. According to Hidayat (2012), the tour leader is generally a person who has an interest in birds and experienced in this field. To anticipate the difficulty of finding qualified human resource, students majoring in biology or forestry can be educated. They are most likely to be chosen because of its association with the field of science they are studying. The more experiences they got in birdwatching, the more professional tour leader they will become. They are the experts who have both the knowledge and the experience.

### 4. Facilities Provision

Facilities should be well provided to make the activity of birdwatching run smoothly and leave a good impression on the visitors. The facilities must be effective and efficient. It is necessary to build a toilet in every location and a shelter as a place to rest. Interpretation board is also needed to be put in the location to make people who visit the areas get easily understand the place and bird types they are going to observe in the ALNP, Halmahera.

## 4. Conclusions and Recommendations

### Conclusion

Educational tourism in Aketajawe Lolobata National Park which utilizes the birds diversity should be completely managed. The needs of maintaining conservation and increasing the society welfare should be in balance. A good planning on this, therefore, can help increase the local income and benefit the people nearby. The planning



strategies that can be done are selecting the potential area, building the BIC, providing a tour leader and good facilities to support the birdwatching activity.

### Recommendations

It is suggested that all people must be responsible for the bird conservation. All the people must help preserve the birds by avoiding activities which can harm the birds living in Indonesia.

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