

Survival Blueprint

Philippine Eagle, *Pithecophaga jefferyi*



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1. STATUS REVIEW

1.1 Taxonomy: Chordata>Aves>Accipitriformes>Accipitridae>*Pithecophaga>jefferyi*

Local names: Haring Ibon (Filipino), Banog, Mamboogook, Malamboogook (Bagobo, Mandaya, Manobo, Tagaka-olo), Garuda, Manaol (Maranao, Maguindanao), Tipule (Subano), Aguila (Tagalog), Manaol (Visayan)

English – Philippine Eagle, Great Philippine Eagle, Monkey-eating Eagle

Spanish – Aguila Comemonos, Aguila Monera

1.2 Distribution and population status:

The Haring Ibon (*Pithecophaga jefferyi*) is the national bird of the Philippines (Presidential Proclamation No. 615, 1995) and the world's largest raptor globally confined to the forests of four major islands in the country: Luzon, Samar, Leyte and Mindanao (Kennedy, Gonzales, Dickinson, Miranda Jr, & Fisher, 2000). The species is considered Critically Endangered and threatened to extinction due to habitat loss caused by deforestation (BirdLife International, 2001; Collar, Mallari, & Tabaranza, 1999).

In Luzon island, the Haring Ibon occurs in the Sierra Madre (Collar et al., 1999) and the Cordillera Mountain Ranges (Abaño & Ibañez, 2013; Rabor, 1971). It is believed that the island holds the largest Haring Ibon population next to, if not more than Mindanao (Bueser et al., 2003; Collar, 1997). However, there has been no adequately studied nest in Luzon according to Ibañez, (2007) and Miranda Jr. et al (2008). This lack of information highlights the importance of studying the species in Sierra Madre and the Cordilleras, which is why studying these populations is a priority concern of the national species action plan for the Haring Ibon (Philippine Eagle Working Group, 1996, 2008)

Note: this survival blueprint will primarily focus on populations of Pithecophaga jefferyi in the Central Sierra Madre Mountain Range, Luzon

1.2.1 Global distribution:

Country	Population estimate (plus references)	Distribution	Population trend (plus references)	Notes
Philippines	82-233 (Bueser et al., 2003)	Luzon, Samar, Leyte, Mindanao	Decreasing based on rates of habitat loss (BirdLife International, 2015)	



1.2.2 Local distribution:

Country	Region / province	Site	Level of Protection	Population size	Reference(s)	Notes
Philippines	Luzon	Cordillera Mountain Range	Local Conservation through municipal legislations i.e. the Lapat system in Apayao	at least 3 pairs	(Abaño & Ibañez, 2013)	
		Northern Sierra Madre Mountain Range	Protected Area Parcels of occupied eagle nesting territories are inside Northern Sierra Madre Natural Park	number of breeding pairs is unknown	(BirdLife International, 2015; Bueser et al., 2003; Collar et al., 1999)	
		Central Sierra Madre	Protected Area Parcels of occupied eagle nesting territories are inside Aurora Memorial Natural Park. Local Conservation Area in Gabaldon, Nueva Ecija	at least 2 pairs	Personal observation	Based on field surveys from 2014-2017
		Southern Sierra Madre Mountain Range	Local Conservation Area in General Nakar, Quezon	at least 1 individual	Personal observation	Based on field surveys from 2014
	Samar and Leyte	San Jose de Buan, Taft, Bonga, Jaro, Binahaan River	Parcels of occupied eagle habitats are inside protected areas (<i>i.e.</i> Samar Island Natural Park)	40 pairs	(BirdLife International, 2001; Bueser et al., 2003; Miranda Jr et al., 2008)	
	Mindanao	Forests of Mindanao	Parcel of occupied eagle habitats are inside protected areas.	200 pairs	(Bueser et al., 2003; Miranda Jr, Salvador, & Bueser,	



1.3 Protection status:

Global Threatened Species Red List Category and Criteria:

Critically Endangered A2cd;C2a(ii) ver 3.1 (BirdLife International, 2015)

Convention on International Trade in Endangered Species of Wild Fauna and Flora
Appendix I

National Red List Status:

Critically Endangered

Department Administrative Order 2004-15

Department of Environment and Natural Resources, Philippines

Republic Act of the Philippines No. 9147, 2001

Wildlife Resources Conservation and Protection Act

Presidential Proclamation No. 615, 1995

An act declaring the Philippine Eagle as the Philippine National Bird

Republic Act of the Philippines No. 6147, 1970

An act declaring the *Pithecophaga jefferyi* commonly known as monkey-eating eagle as a protected bird in the Philippines, providing for the preservation of the same and authorizing the appropriation of funds for the purpose

1.4 Habitat and resource assessment:

Pithecophaga jefferyi occupies primary dipterocarp forests and forages in secondary growth, primarily along steep terrain and riparian areas. It nests on major branch junctions inside canopies of emergent trees (Collar et al., 1999; Ibañez, 2007) such as *Agathis philippensis* and *Hopea sp.* (Abaño & Ibañez, 2013; Abaño, Salvador, & Ibañez, 2016) in the Cordilleras and *Agathis alba* (Danielsen, Jensen, Miranda Jr, & Caleda, 1992) in the Northern Sierra Madre and *Shorea polysperma* (personal observation) in Central Sierra Madre. Mindanao estimates suggest a pair covers an average of 133 km², which includes 68 km² of forest (Miranda Jr et al., 2008). Further research is needed to estimate extent of habitat occupancy in the Luzon population.

1.5 Biology and ecology:

Food

Research from Mindanao suggests the species is an opportunistic feeder (Kennedy, 1977). Prey species differ from island to island due to differences in abundance, and presence or absence of the species (Collar et al., 1999). Flying lemurs (*Cyanocephalus Volans*) for example are the main prey of the species in Mindanao, but flying lemurs are absent in Luzon. Recent observations in Luzon show the species preys on small to medium sized mammals e.g. Macaques (Panopio, Pajaro, Quimpo, Tagtag, & Almeda, 2015), *Phloeomys pallidus* and *Paradoxus hermaphroditus*, snakes, varanids (Abaño, Salvador, & Ibañez, 2016).

Breeding

Kennedy (1981) observed the breeding in Luzon starts at mid-December to mid-January. This supports recent observations of Abaño et al., (2016) made from an active nest in Cordillera where breeding started at January after the typhoon season in Luzon. This differs from the Mindanao population where breeding starts from late September to December (Kennedy, 1981).



1.6 Threat analysis:

Threats to the survival of the species are complex and interrelated (Collar et al., 1999; Philippine Eagle Working Group, 2008). Habitat loss and human persecution are the two top most threats to the survival of the species in a national scale (BirdLife International, 2001, 2015; Collar et al., 1999; Philippine Eagle Working Group, 2008). Other factors related to habitat loss that threaten the species are local exploitation, international trade, trophy hunting, lack of law enforcement, civil strife, toxic chemicals and natural problems (Collar et al., 1999).

The causes of Haring Ibon habitat loss are commercial logging, agricultural encroachment, timber extraction, mining and slash-and-burn farming, resulting in fragmented and heavily reduced lowland forest habitats. Old growth forest continues to be lost rapidly in the Philippines, such that as little as 9,220 km² may now remain within the Eagle's range. The population is estimated to be 350-650 birds, based on 1992 forest data and assuming a 25-50 km² home range per pair, 40% occupancy of available habitat and only one fledged young produced per pair annually (Collar et al. 1999; BirdLife International 2001).



1.8 Context and background information that will affect the success of any conservation action for this species:

	Description	Threats	Opportunities
Socio-cultural effects			
Economic implications	Forest resources remain as an important source of livelihood in community's adjacent eagle habitat.	Limiting access to forest resources will strain livelihood options in some communities	Development of alternative livelihood options could steer the local communities away from harvesting forest resources.
Existing conservation measures	Aside from the legislation listed above, the establishment of Critical Habitat in Gabaldon, Nueva Ecija is one of the existing conservation measure for the species in the local level Declaration of the Haring Ibon as a critical habitat for the Haring Ibon.		The establishment of the critical habitat adds a legal framework for the conservation of the species at the local level.
Administrative/political set-up	Poverty alleviation remains the number one priority for local governments near eagle habitats	There is law enforcement and natural resource conservation is not a priority of the local government. The species has a large territorial requirement, which means habitat management spans across several administrative and political boundaries, complicating efforts at protection.	Building a network of local communities for the conservation of the species is a potential strategy for managing eagle populations in the Central Sierra Madre Mountain Range. The extent of the forest habitat requirement of the species necessitates synergy among adjacent municipalities within eagle territories.
Local expertise and interest	There are limited number of wildlife biologists in the Philippines in general. Among the existing wildlife biology practitioners, interest in raptor conservation is limited to a handful of individuals.		Providing scholarships for members of local communities adjacent Haring Ibon Habitat to take up a Bachelor's Degree in Biology is an opportunity to build on local expertise.
Cultural attitudes	The species is the National Bird of the Philippines		This status promotes national pride in the conservation of the species.
Appeal of species	The species is one of, if not the most, charismatic of all endemic species in the Philippines.		The iconic look of the species makes it a great candidate for biodiversity conservation at the local up to the national level.



<p>Resources</p>	<p>Please give brief description of the extent to which ecotourism/engagement with corporate sector already exists – is there any?</p>		<p>Engaging with the corporate sector is an opportunity for local governments to raise funds for their biodiversity conservation plan. Ecotourism also has a huge potential in supporting local conservation of forest resources.</p>
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2. ACTION PROGRAMME

Vision (30-50 years)	
A bountiful, sustainable and ecologically balanced habitat of the Philippine eagle managed by participative, self-determined, empowered and environmentally-conscious community.	
Goal(s) (5-10 years)	
To develop and restore the Philippine eagle habitat through continuous protection and conservation of Mt. Mingan by key stakeholders	
Objectives	Prioritisation <i>(low, medium, high or critical)</i>
1. Conduct research to establish baseline and monitor PE population in Mt. Mingan.	Critical
2. Ensure protection of PE habitat and enforcement of forest and wildlife laws and ordinances.	High
3. Restore degraded and fragmented Mt. Mingan using indigenous species.	Medium
4. Develop biodiversity friendly livelihoods for forest dependent communities.	Low
5. Generate resources to support Critical Habitat management.	High
6. Participate in enforcement and regulation of laws, and involve the community in supervising the Critical Habitat of Philippine Eagle.	Medium



Table 2.1. Critical Habitat Management Plan for Gabaldon, Nueva Ecija (details can be seen in Gabaldon Critical Habitat Management Plan, 2016-2020 accomplished through multi-stakeholder consultations and workshops)

Activities	Country / region	Priority (low, medium, high or critical)	Associated Cost (PHP)	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
1. Conduct research to establish baseline and monitor PE population in Mt. Mingan.								
1.1 Critical Habitat (CH) delineation and demarcation	Gabaldon, Nueva Ecija, Philippines	Critical	355,000	2016-2017	Government Agencies	Ground validated, zones, sub-zones and CH boundaries, Approved CH Ordinance, DENR endorsement of CH through Department Administrative Order		Improving knowledge
1.2 Establish research agenda for PE	Gabaldon, Nueva Ecija, Philippines	Critical	1,000,000	2016-2020	Government Agencies, Researchers, NGOs	Number of trained Wildlife Enforcement Officers, Philippine Eagle Monitoring Reports, Inclusion of PE conservation to NEUST research agenda, number of monitoring equipment (binoculars, spotting scopes, GPS receivers)		Improving knowledge



Activities	Country / region	Priority (low, medium, high or critical)	Associated Cost (PHP)	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
1.3 Establish Management information System	Gabalдон, Nueva Ecija, Philippines	Critical	300,000	2016-2017	Government Agencies, Researchers, NGOs	GIS-based repository of monitoring reports	Collaboration with GIS experts	Improving knowledge
2. Ensure protection of PE habitat and enforcement of forest and wildlife laws and ordinances.								
2.1 Creation of Multi- Sectoral Forest Protection Committee	Gabalдон, Nueva Ecija, Philippines	Medium	NA	2016-2017	Government Agencies, Local Stakeholders	Executive order on Forest Protection Committee members		Species management
2.2 Deputation of Bantay Gubat (BG)/WEO, including Army	Gabalдон, Nueva Ecija, Philippines	High	NA	2016-2017	Government Agencies	Number of trained bantay gubat		Species management
2.3 Formulate forest protection and law enforcement plan by the Bantay Gubat/WEO	Gabalдон, Nueva Ecija, Philippines	Medium	NA	2016-2020	Government Agencies, Local Stakeholders	Forest monitoring reports		Species management
2.4 Capacity development program for BG/WEOs	Gabalдон, Nueva Ecija, Philippines	Medium	200,000	2016-2017	Government Agencies, Researchers, NGOs	Number of trained bantay gubat		Species management
2.5 Establish checkpoints and reporting procedure	Gabalдон, Nueva Ecija, Philippines	Critical	50,000/ checkpoint	2016-2017	Government Agencies	Number of established checkpoint		Species management



Activities	Country / region	Priority (low, medium, high or critical)	Associated Cost (PHP)	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
2.6 Establish patrol base in the forest	Gabalдон, Nueva Ecija, Philippines	Medium	1,000,000	2016-2017	Government Agencies	Number of established patrol base		Species management
2.7 Establish a Communication, Education and Public Awareness (CEPA) plan to popularize the Philippine Eagle	Gabalдон, Nueva Ecija, Philippines	Medium	100,000	2016-2017	Government Agencies, Local Local Communities, NGOs	CEPA plan		Education and awareness
3. Restore degraded and fragmented Mt. Mingan using indigenous species								
3.1 Native tree nurseries established in every barangay and at the LGU level	Gabalдон, Nueva Ecija, Philippines	Low	100,000/barangay	2016-2020	Government Agencies, Local Communities	Number of barangays with native tree nurseries		Habitat restoration
3.2 Establish native tree seedling nursery in schools by intensifying Gulayan sa Paaralan (Vegetable Farming in Schools)	Gabalдон, Nueva Ecija, Philippines	Low	100,000	2016-2020	Government Agencies, Local Communities	Number of schools with native tree seedling nurseries		Habitat restoration
3.3 Tree planting in established CH restoration site (8,200 hectares) – as per target, approximately 15 hectares planted in 5 years in a 2X4 planting distance	Gabalдон, Nueva Ecija, Philippines	Medium	200,000/site	2016-2020	Government Agencies, Local Communities	Number of hectares planted		Habitat restoration



Activities	Country / region	Priority (low, medium, high or critical)	Associated Cost (PHP)	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
3.4 Conduct district camp focusing on forest restoration	Gabalдон, Nueva Ecija, Philippines	Low	NA	2016-2020	Government Agencies	Number of district camps conducted		Habitat restoration
3.5 Continuous tree monitoring and maintenance/growing in the restoration site	Gabalдон, Nueva Ecija, Philippines	Medium	100,000/site	2016-2020	Government Agencies, Local Communities	Survival rate of planted trees		Habitat management
3.6 Assess the increase in forest cover	Gabalдон, Nueva Ecija, Philippines	Medium	100,000	2016-2020	Government Agencies	Change in forest cover		Improving knowledge
4. Develop biodiversity friendly livelihoods for forest dependent communities.								
4.1 Implementation of sustainable livelihood	Gabalдон, Nueva Ecija, Philippines	Medium	400,000	2016-2020	Government Agencies	Number of trained individuals alternative livelihood options		Poverty alleviation
4.2 Establishment of 10 has of production lots per barangay for the 10 barangays	Gabalдон, Nueva Ecija, Philippines	Low	200,000/barangay	2016-2020	Government Agencies	Area of production forest plots per barangay		Poverty alleviation
4.3 Community Based Eco tourism plan	Gabalдон, Nueva Ecija, Philippines	Medium	2,000,000	2016-2020	Government Agencies, Local Communities	Number of tourists visiting Gabalдон		Poverty alleviation
4.4 Management of Multiple Use Zone	Gabalдон, Nueva Ecija, Philippines	High	200,000/year	2016-2020	Government Agencies, Local Communities	Management plans for multiple use zones		Habitat management
4.5 Declaration of Local Conservation per Barangay	Gabalдон, Nueva Ecija, Philippines	Medium	NA	2016-2020	Government Agencies,	Barangay ordinances declaring local conservation areas		Law and policy
5. Generate resources to support CH management.								



Activities	Country / region	Priority (low, medium, high or critical)	Associated Cost (PHP)	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
5.1 Allocate funds from Internal Revenue Allotment (IRA)	Gabaldon, Nueva Ecija, Philippines	Critical	NA	2016-2020	Government Agencies,	Amount of funds CHMP implementation		Financial resource generation
5.2 Develop and submit proposals to funding agencies	Gabaldon, Nueva Ecija, Philippines	High	NA	2016-2020	Local Communities, NGOs	Number of proposals submitted		Financial resource generation
5.3 Involve stakeholders in fund raising campaigns	Gabaldon, Nueva Ecija, Philippines	High	NA	2016-2020	Government Agencies, Local Communities, NGOs	Number of stakeholders engaged in fund raising campaigns		Financial resource generation
5.4 Create a municipal resolution for the annual fund raising during Philippine eagle week	Gabaldon, Nueva Ecija, Philippines	Medium	500,000	2016-2020	Government Agencies	Municipal resolution of PE fund raising		Financial resource generation
5.5 Tap the business sector and other development partners (e.g. national and local officials, NGOs, POs, business establishments) to raise funds and support PE conservation activities (e.g. solicitations, sponsorships)	Gabaldon, Nueva Ecija, Philippines	High	NA	2016-2020	Government Agencies	Number of businesses engage in eagle conservation action		Financial resource generation

6. Participate in enforcement and regulation of law, and involve the community in supervising the Critical Habitat of Philippine Eagle.



Activities	Country / region	Priority <i>(low, medium, high or critical)</i>	Associated Cost (PHP)	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
6.1 CEPA Campaign at the local community level	Gabaldon, Nueva Ecija, Philippines	Medium	200,000/year	2016-2020	Government Agencies, Local Communities	Number of individuals	Collaboration with the Department of Education	Education and awareness
6.2 Incentives from 4Ps, scholarships, pre-marriage	Gabaldon, Nueva Ecija, Philippines	Low	NA	2016-2020	Government Agencies, Local Communities	Number of individuals enrolled in scholarships	Collaboration with Department of Social Welfare and Development	Poverty alleviation
6.3 Passing of resolutions and ordinances to empower communities	Gabaldon, Nueva Ecija, Philippines	Low	NA	2016-2020	Government Agencies	Approved Ordinance		Law and policy



References

- Abaño, T. R. C., & Ibañez, J. C. (2013). Survey of Philippine eagles and their Nest in the Northern Cordillera Range in Apayao Province. In *The 23rd Philippine Biodiversity Symposium* (p. 29). Cebu City, Philippines: Biodiversity Conservation Society of the Philippines.
- Abaño, T. R. C., Salvador, D. J. I., & Ibañez, J. C. (2016). First notes on the nest and behavior of a Philippine eagle pair and their juvenile in Luzon, Philippines. In *The 25th Philippine Biodiversity Symposium* (p. 34). Calapan City, Philippines.
- BirdLife International. (2001). *Threatened Birds of Asia: The BirdLife International Red Data Book*. (N. J. Collar, A. V. Andreev, S. Chan, M. J. Crosby, S. Subramanya, & J. A. Tobias, Eds.). Cambridge, UK: BirdLife International. Retrieved from <http://www.amazon.com/Threatened-Birds-Asia-BirdLife-International/dp/0946888442>
- BirdLife International. (2015). *Pithecophaga jefferyi*. *The IUCN Red List of Threatened Species 2015*: e.T22696012A79348671. <http://doi.org/http://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T22696012A79348671.en>
- Bueser, G. L. L., Bueser, K. G., Afan, D. S., Salvador, D. J. I., Grier, J. W., Kennedy, R. S., & Miranda Jr, H. C. (2003). Distribution and nesting density of the Philippine Eagle *Pithecophaga jefferyi* on Mindanao Island, Philippines: What do we know after 100 years? *Ibis*, 145(1), 130–135. <http://doi.org/10.1046/j.1474-919X.2003.00131.x>
- Collar, N. J. (1997). The Philippine Eagle on its hundredth birthday. *Raptor*, 24, 29–31.
- Collar, N. J., Mallari, N. A. D., & Tabaranza, B. R. (1999). *Threatened birds of the Philippines: the Haribon Foundation/BirdLife International Red Data Book*. Makati City, Philippines: Bookmark, Inc.
- Danielsen, F., Jensen, A., Miranda Jr, H. C., & Caleda, M. (1992). *A preliminary survey of the Philippine Eagle Pithecophaga jefferyi and the conservation of the Northern Sierra Madre Mountains in the Philippines*. Manila City.
- Ibañez, J. C. (2007, March). *Philippine Eagle Pithecophaga jefferyi Breeding Biology, Diet, Behavior, Nest Characteristics, and Longevity Estimate in Mindanao Island*. Ateneo de Davao University.
- Kennedy, R. S. (1977). Notes on the biology and population status of the monkey-eating eagle of the Philippines. *Wilson Bulletin*, 89(1), 1–21.
- Kennedy, R. S. (1981). Saving the Philippine Eagle. *National Geographic Magazine*, 843–856.
- Kennedy, R. S., Gonzales, P. C., Dickinson, E. C., Miranda Jr, H. C., & Fisher, T. H. (2000). *A Guide to the Birds of the Philippines*. New York: OUP Oxford. Retrieved from <https://books.google.com.ph/books?id=fPDxk551AhkC>
- Miranda Jr, H. C., Salvador, D. J. I., & Bueser, G. L. L. (2008). *Updates on the Nesting Biology of Population Status of the Philippine Eagle Pithecophaga jefferyi*. Davao City. Retrieved from http://philippineeaglefoundation.org/uploads/eagle_popstatus_luzon_estimate.pdf
- Philippine Eagle Working Group. (1996). *Integrated Conservation Plan for the Philippine Eagle (Pithecophaga jefferyi)*. Manila, Philippines: Protected Areas and Wildlife Bureau Department of Environment and Natural Resources (Philippines).
- Philippine Eagle Working Group. (2008). *2008 Philippine Eagle Integrated Conservation Plan*. Unpublished.
- Presidential Proclamation No. 615. Declaring the Philippine Eagle as the National Bird of the Philippines (1995). Manila: Office of the Philippine President. Retrieved from <http://www.gov.ph/1995/07/04/proclamation-no-615-s-1995/>
- Rabor, D. S. (1971). The Present Status of Conservation of the Monkey-Eating Eagle (*Pithecophaga jefferyi* Ogilvie-Grant) of the Philippines. *The Philippine Geographical Journal*, 15, 90–103.

