ECOLOGY AND CONSERVATION OF RAPTORS

(STUDY CASE *: Nisaetus bartelsi*, *Accipiter gentilis fujiyama*, *Bubo blakistoni blakistoni*, *Nisaetus nipalensis orientalis*)

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Self Introduction

Name : Cici Nurfatimah

Country : Indonesia

Duration stay in Kyoto : 6 months (April – September 2015)

Current affiliation in IPB : Master Student in Department of Landscape Architecture, Faculty of Agriculture, Graduate School of Bogor Agricultural University (IPB)

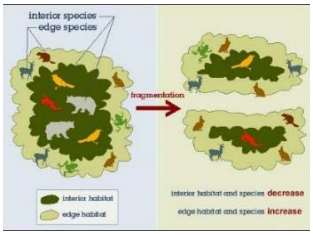
Affiliation in Kyoto University : Landscape Ecology and Planning Laboratory of Graduate School of Global Environment Studies

Supervisor in Kyoto University : Prof. Shozo Shibata

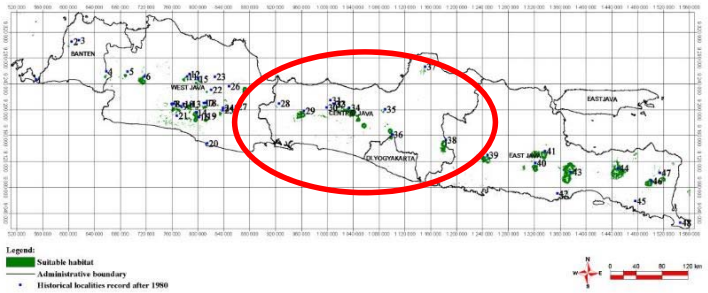
Supervisor in IPB : 1. Dr. Syartinilia, SP, Msi

2. Dr. Ir. Yeni Aryati Mulyani, MSc

Current Study Background in Indonesia



- An alarming population decline of Javan Hawk-Eagle
- Habitat fragmentation and destruction caused by human activity
- Only few studies about Javan Hawk-Eagle
- No update information about habitat condition since 2003



Source: Syartinilia et al, 2009

Study Area :

- Central part of Java Island
- The least of habitat quality rank (Syartinilia et al., 2009)
- Severe habitat destruction and still continue

Study Topic and Objective

In Bogor Agricultural University

- **Research Topic** : Ecological Corridor Networks for Javan Hawk-Eagle (*Nisaetus bartelsi*) Habitat in Central Part of Java Island
- **Main objective** : Making recomendation for the policy of Javan Hawk-Eagle's habitat trough ecological corridor networks management system

In Kyoto University

- **Study Topic** : The comparison of ecological habitat between Javan Hawk-Eagle (*Nisaetus bartelsi*) and Goshawk (*Accipiter gentilis*)
- **Main objective** : To study about the ecological habitat of Goshawk (*Accipiter gentilis*) and how to manage and conserve the species as protected bird species

Ecology and Conservation of Raptors

Common name :
Javan Hawk-Eagle (EN)
Elang Jawa (INA)
Scientific name :
Nisaetus bartelsi
IUCN Red List Category :
Endangered species
Current population ± 300 pairs for 126.700 km²

Geographic range :
Java Island endemic
Habitat requirement:

- Primary forest at 1200 - 1800m asl
- Home range ±400 ha / 4 km2
- Feed on small reptiles, fruit bats, small mammals.
- Nesting on high and old trees : Rasamala (*Altingia excelsa*), Pasang (*Lithocarpus* sp), Puspa (*Schima wallichii*)

Common name :
Northern Goshawk (EN)
Oo taka (JPN)
Scientific name :
Accipiter gentilis fujiyama
IUCN Red List Category :
Least concern

Status in Japan :
2002 – Threatened species
2006 – Near threatened species
Geographic range :
North America, Europe, Asia, Japan
Habitat requirement:

- Agricultural landscapes where open land was the predominant land-cover type
- Nesting at conifer and deciduous mix forest
- prefer forest edge.
- Feed on small birds and mammals.
- Home range 1171 ha (northern Japan)

Ecology and Conservation of Raptors

Common name :
Mountain Hawk-Eagle(EN)
Kumataka (JPN)
Scientific name :
Nisatetus nipalensis orientalis
IUCN Red List Category :
Least concern but gradually decreasing

Geographic range :
southwestern India, SriLanka, the Indo-China Peninsula, China, the Russian Far East and Japan
Habitat requirement:

- Mountainous region covered with forest
- Deciduous forest and artificial plantation forest
- Distribution density : 1 pair/ 20-40 km2
- Feeds mostly on small mammals, especially hares, and terrestrial birds, including junglefowl, domestic poultry, ducks, and pheasants, large snakes, and lizards

Common name :
Blakiston's Fish Owl (EN)
Shima fukuro(JPN)
Scientific name :
Bubo blakistoni blakistoni
IUCN Red List Category :
Endangered Species
35 breeding pairs left, restricted to eastern and central part of Hokkaido

Geographic range :
China, Japan, Russian Federation
Habitat requirement:

- Home range within valley and close to water
- Inhabits dense forest and broad-leaves forest
- Fish as main diet. But also prey on small mammals, amphibi, insect and crustacean
- Home range varied from 3.7 km2 to 56 km2 depends on the season

Ecology and Conservation of Raptors

What it needs to understand habitat of birds are by observing each of this requirement

- What kind of prey it needs
- The suitable nesting site
- Its movement: how, why, where and when
- Stop over condition (connector between patches)

Javan Hawk-Eagle Conservation Program in Indonesia

- 14 priority species to be increased in population as much as 3% by 2010-2014 (Indonesian Ministry of Forestry, 2010).
- Strategy and Action Plan For Conservation of Javan Hawk-Eagle (Spizaetus bartelsi) 2013-2022

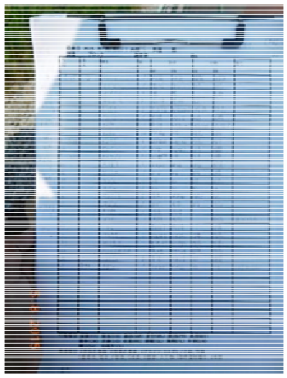
Still lack of scientific guidance and methodology to be applied in the field

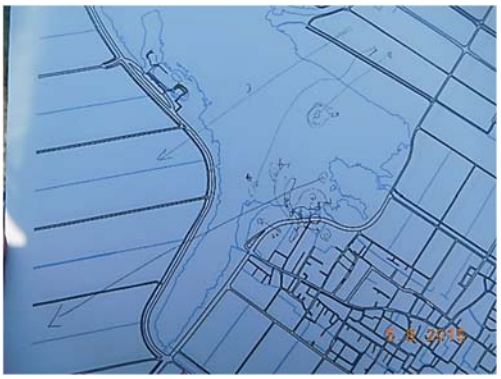
Ecology and Conservation of Raptors

Conservation and Management Program for Raptors in Japan :

- **Kumataka**: preserve large trees in their favorable nesting grounds as well as to make environmentally sustainable use of timber resources
- **Shima fukuro**: design and implement a recovery plan for the river system and forest in Hokkaido; reduce human activity in riparian zones
- **Ootaka**: Published guide book to conserve Ootaka. This book consist of scientific paper and also environmental impact analysis and assessment tools for development in urban/sub urban area based on raptors.

Collaborative Research and Discussion With Experts





Experts :
Mr. Hamada (Ornithologist)
Mr. Kawakami (M1, Landscape Ecology & Planning Lab)
Date : 5th August 2015
Location : Notogawa
Activity : Bird surveying
Survey methodology :

- Listing all the birds occurred on the site
- Observed and noted the behavior
- Mapped its movement within area

Purpose of study :
To understand the function and relationship of landscape matrix for bird habitat

Collaborative Research and Discussion With Experts

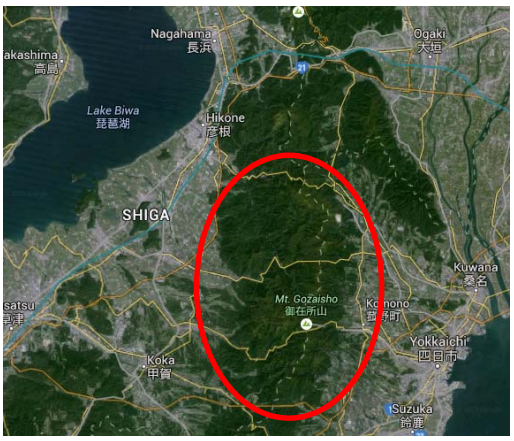
Experts :

- Prof. Hisashi Sugawa (The Ornithology Society of Japan, Japanese Bird Banding Association)
- Prof. Yosihiro Natsuhara (Nagoya University Graduate School of Environment)

Date : 28th July 2015
Location : Ryukoku University
Activity : Discussion about Ootaka

Date : 15th August 2015
Location : Ujigawa River
Activity : Observing Swallow bird nesting habitat at riverbank
Survey Methodology :
Bird Banding >> Also called bird ringing is the attachment of small, individually numbered metal or plastic tag to the leg or wing of a wild bird to enable individual identification. To catch the birds is by installing 5 x 20 m nets over birds flying track.

Collaborative Research and Discussion With Experts



Date : 25th July 2015 & 20th September 2015
Location : Suzuka Mountain

Research team :
- Prof. Toru Yamazaki (President of Asian Raptor Research Networks)
- Mr. Takehiko Inoue (raptor researcher)
- Mr. Shin Nakano (raptor researcher)
- Ms. Maho Sumita (avian veterinarian specialist)
- Mr. Koichi Naito (bird watching community)

Species target of study :
- Mountain Hawk-Eagle (*Nisaetus nipalensis orientalis*)
- Golden Eagle (*Aquila chrysaetos japonica*)

Survey Methodology :
Team divided into two teams. Each team took spot at different mountain's peak within Kumataka's territory. Each team reported the sighting of Kumataka.

Benefit of Study

- Improved my comprehension in raptor research through discussion with experts and field activities
- Obtained many good literature references which are not accessible in my home campus
- Learn new methodology and technique in bird survey and observation
- Established connection with researchers and experts as basis for the development of my study in landscape ecology and ornithology

Other Activities

Wakayama Fieldtrip (27th-28th June 2015): traditional fisherman village, Shirahama aquarium, harvested plum and learned how to proceed the plums into different products.



Awaji Island Lab Fieldtrip (31st August – 1st September 2015)

Sumoto Castle, Narugashima, Bamboo fertilizer factory, Izanagi Shrine, Hokudan Earthquake Memorial Park, Awaji Hanasajiki



Lesson Learned From The Program



- Understanding standard and methods of academic in Japan
- Acquisition of knowledge about Japan by experienced fascinating social and cultural daily life of Japan
- Increased knowledge about Japanese landscape and architecture design by directly observed many wonderful sites and places in Kyoto City
- Made a lots of new friends and connections from students of different countries
- Gain confidence and familiarity to speak foreign languages
- Improved cross-cultural communication and discussion ability in foreign language

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- Mr. Teppei Kawakami
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- Staff of GSGES Office
- Members of Landscape Ecology and Planning Laboratory

Terima Kasih

ありがとうございました

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Thank you