Rufford Small Grants Conference – Vietnam 2018

"Strengthening network of The Rufford Foundation Recipients in Southeast Asia"

Hanoi, Vietnam, 19th – 20th October, 2018

1. Objectives

In 2015, the Rufford Small Grants conference was firstly held at the VNUHCM - University of Science. This conference had received 40 participants from 4 universities, 3 research institutes, 6 organizations, and 3 countries (Nepal, Thailand, and Vietnam), including young researchers, lecturers, and undergraduate students.

In order to improve exchanges of communication between Rufford's recipients in South-east Asia countries and information between Rufford Foundation and its grant recipients as well, the 2nd RSG conference is held in Hanoi, Vietnam with generous financial support from Rufford Small Grants Foundation, and kind administrative and logistic support of the Institute of Biological and Environmental Sciences (IIBES) and the Institute of Ecology and Biological Resources (IEBR)-Vietnam Academy of Science and Technology (VAST).

The main objectives of the conference were to:

1) Exchange knowledge, ideas, and experience in doing research between Rufford's grantees;
2) Create invaluable networking opportunities;
3) Increase communication and information between the Rufford Foundation and its grant recipients; and
4) Discuss about current research issues/ challenges in Southeast Asia.

2. Impact of Rufford Funding

In summary, participants rated the 2nd RSG Conference – Vietnam 2018 very positively. They were satisfied with the quality of given oral presentations and logistic arrangements.

The main comments of Rufford Small Grants Foundation are below:

- Rufford's funding had financially helped the grantees to carry out their research and conservation projects.

- Rufford's support has helped many ones to start up joining conservation work. Some of them has been committed to biodiversity conservation in their home countries to save endangered species and habitats.

- Rufford Small Grands Conferences are great opportunities for the grantees to meet and share the acknowledgment and experience from their work as well seeking transboundary collaboration in the future.

We had received 45 registers, but only 31 participants (see detailed List of Participants, not including organizing committee, special guests and workshop volunteers) could attend the conference with 21 high quality presentations as below:

1. **Socioeconomic Determinants of Consumption of Non-Timber Forest Products in Vietnam's Bu Gia Map National Park** by Toai Nguyen, Susan Lawler & Warren Paul
2. **A giant's happy meal: whale sharks and their food in the whale shark capital Donsol, Sorsogon, Philippines** by Rica Teresa Dungog & Gianina Cassandra May Apego
3. **Forest cover change using multi temporal remote sensing data in Phnom Tamao Zoological Park, Cambodia** by Khot Chesda
4. **Investigation of Wildlife Trade in Myanmar-Thailand Border Cities under Growing Trans- boundary Economic Trade** by Sapai Min
5. **Distribution and Conservation of the endangered Giant Land Snail (*Bertia cambojiensis*) in Southern Vietnam** by Phong Hoai Trinh
6. **Diversity and Conservation of Fish Community in the Krong No River, Langbiang Plateau, Vietnam** by Pham Manh Hung, Tran Thi Cam Loan, Nguyen Sy Quang & Hoang Duc Huy
7. **Fish fauna in the Dong Nai River: diversity and value** by Tran Trong Ngan, Do Hanh Vi, Pham Manh Hung, Hoang Duc Huy
8. **An Island's Herpetofaunal Diversity: A Tool for Developing Collaborative Research and Conservation Practice** by Camila G. Meneses
9. **Forensic genetic case study: Species identification and traceability of sea turtle caught in illegal trade in Bali** by Ni Putu Dian Pertiwi, Maulid Dio Suhendro, Astria Yusmalinda, I Nyoman Giri Putra, I Gusti Ayu Ricca Mahatma Putri, M. Danie Al Malik & Andrianus Sembiring
10. **Conservation of marine mammal in Viet Nam: the challenges and potential strategy** by Vu Long
11. **The influence of free-roaming dogs to the conservation of critically Endangered Bawean deer and human health** by Dede Aulia Rahman
12. **Behaviour, habitat use and diet of wild dusky langurs in different habitat types in Penang, Malaysia** by Jo Leen Yap & Nadine Ruppert
13. **Rat feeding behavior of Southern pig-tailed macaques in oil palm plantations – implications for conservation** by Nadine Ruppert, Anna Holzner & Anja Widdig

14. **Bats in Islands: Partnerships for Biodiversity Research and Conservation in the Philippine Setting** by James DV. Alvarez
15. **Green Peafowl and their use of crops in agricultural land in rural Myanmar: implications for conservation of the species** by Nay Myo Shwe, Niti Sukumal, Khin Maung Oo, Simon Dowell, Stephen Browne & Tommaso Savini
16. **Potential Habitat of the Javan Hawk-eagle (*Nisaetus bartelsi* Stresemann, 1924) in Mount Ungaran, Central Java** by Sitta Yusti Azizah, Afrizal Maula Alfarisi & Tulus Pambudi
17. **Conservation of Flora Biodiversity in secondary forest of Kyaik Htee Yoe reserve forest** by Myo Min Thant
18. **The effect of rubber plantation on soil properties and economic potential in Thach Thanh District, Thanh Hoa Province, Vietnam** by Seng Ravor
19. **Orchid Diversity, Composition and Ecology: Implications to Conservation** by Zhereeleen D. Meneses
20. **Review of 15 years for conservation and development of genetic resources of Vietnam coniferous trees** by Nguyen Duc To Luu
21. **Natural history observations on the Endangered turtle *Geoemyda spengleri* in Tay Yen Tu Nature Reserve (Vietnam), with notes on other sympatric species** by Pham Van Thong

Please see enclosed proceedings for details.

3. Recommendations

Some Rufford grantees would like to have more RSG Conferences to be hosted in other countries such as Malaysia, Myanmar, Indonesia and Philippines.

4. List of Participants

No	Full name	Affiliation	Home Country
1	Al John Cabanas	University of the Philippines Los Baños	Philippines
2	Amena Easmin	Vietnam National University of Forestry	Bangladesh
3	Bui Tung	Tropical forest program	Vietnam
4	Camila Meneses	University of the Philippines Los Baños	Philippines
5	Chesda Khot	Vietnam National University of Forestry	Cambodia
6	Dao Thi Hoa Hong	Vietnam National University of Forestry	Vietnam
7	Giania Cassandra May Apego	University of Philippines - Marine Science Institute	Philippines
8	James Alvarez	University of the Philippines Los Baños Museum of Natural History	Philippines
9	Jo Leen Yap	Universiti Sains Malaysia (USM), Langur Project Penang (LPP)	Malaysia
10	Kolyan Chin	Vietnam National University of Forestry	Cambodia
11	Myo Min Thant	Vietnam National University of Forestry	Cambodia
12	Nay Myo Shwe	Fauna & Flora International	Myanmar
13	Nguyen Duc To Luu	PanNature	Vietnam
14	Nguyen Van Toai	Bu Gia Map National Park, La Trobe University	Vietnam

15	Ni Putu Dian Pertiwi	Yayasan Biodiversitas Indonesia (Bionesia)	Indonesia
16	Novelia Triana	Vietnam National University of Forestry	Indonesia
17	Pham Manh Hung	University of Science - VNUHCM	Vietnam
18	Pham Van Tan	Vietnam Forest Museum	Vietnam
19	Pham Van Thong	Vietnam National University of Forestry	Vietnam
20	Phong Hoai Trinh	University of Science - VNUHCM	Vietnam
21	Ravor Seng	Vietnam National University of Forestry	Cambodia
22	Rica Teresa Dungog	University of Philippines - Marine Science Institute	Philippines
23	Sapai Min	University of Yangon	Myanmar
24	Sitta Yusti Azizah	Ekosistem Indonesia	Indonesia
25	Tran Trong Ngan	University of Science - VNUHCM	Vietnam
26	Tran Van Dung	Vietnam National University of Forestry	Vietnam
27	Wei Khang (Harris) Heng	Institute of Ocean and Earth Sciences	Malaysia
28	Zhereeleen D.	University of the Philippines Los Baños	Philippines
29	Vu Long	Center for Biodiversity and Endangered Species - VUSTA	Vietnam
30	Doan Hoang Son	Institute of Ecology and Biological Resources (IEBR) - VAST	Vietnam
31	Nguyen Thi Thu Ha	Institute of Ecology and Biological Resources (IEBR) - VAST	Vietnam

There were 31 participants attending the conference, and 21 of them presented their Rufford projects. Other four participants were part of the organizing committee and conference special guests. Figure 1 shows how many countries were represented by the number of participants in RSG Conference – Vietnam 2018.

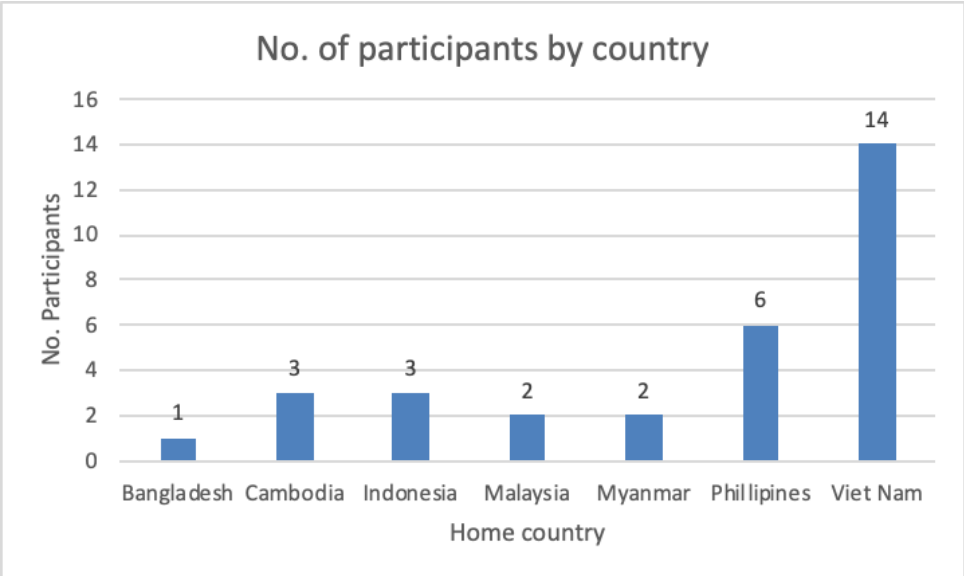

Figure 1. Number of participants by home country in RSG Conference - Vietnam 2018

5. Photographs


VƯỜN QUỐC GIA
CÚC PHƯƠNG
NATIONAL PARK


Socioeconomic Determinants of the Consumption of Non-timber Forest Products in Vietnam's Ba Be National Park


-102 species
-1,200 animal


Research Titles granted by Rufford Foun


Fish fauna in the Dong Nai River
diversity and value
HOW WAS MGDNP SURVEYED?
FORENSIC GENETIC CASE STUDY:
SPECIES IDENTIFICATION AND
TRACEABILITY OF SEA TURTLE
CAUGHT IN ILLEGAL TRADE IN
BALI
CBES
Habitat Use
by Dugongs



Potential Habitat
of Javan Hawk-eagle
(Nisaetus bartelsi
Stresemann, 1924) in
Mount Ungaran,
Central Java, Indonesia

The Conservation of Flora Biodiversity in
Secondary Forest, Myanmar



Ruffor


KHU DU LỊCH
HỒ MẠC
MAC LAKE


RUFFORD SMALL GRANTS CONFERENCE – VIETNAM 2018

Strengthening Network of the Rufford Foundation Recipients in Southeast Asia

Hanoi, Vietnam, 19th – 20th October, 2018

PROCEEDINGS

PROCEEDINGS

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Dear Rufford's recipients,

It is with great pleasure that we receive you to participate in the 2nd Rufford Grants Conference – Vietnam 2018 held at the Institute of Ecology and Biological Resources (IEBR)-Vietnam Academy of Science and Technology (VAST), Hanoi, Vietnam from 19th to 20th October 2018.

As known, the first Rufford Small Grants conference was launched in 2012 in Nepal providing a great opportunity for Rufford's recipients to meet and exchange their experience as well to discuss ideas, problems, issues and create invaluable networking opportunities.

In 2015, the Rufford Small Grants conference was firstly held at the VNUHCM - University of Science. This conference had received 40 participants from 4 universities, 3 research institutes, 6 organizations, and 3 countries (Nepal, Thailand, and Vietnam), including young researchers, lecturers, and undergraduate students.

In order to improve exchanges of communication between Rufford's recipients in South-east Asia countries and information between Rufford Foundation and its grant recipients as well, this 2nd RSG conference is held in Hanoi, Vietnam with generous financial support from Rufford Small Grants Foundation, and kind administrative and logistic support of the Institute of Biological and Environmental Sciences (IIBES) and the Institute of Ecology and Biological Resources (IEBR)-Vietnam Academy of Science and Technology (VAST). This conference would be a great opportunity to connect the Rufford's recipients and young researchers from South-east Asia countries for meeting together, sharing their success stories of the small grants and learning how to enhance their performance in doing researches and exploring the research results. The main objectives of the conference are to:

1) Exchange knowledge, ideas, and experience in doing research between Rufford's grantees;
2) Create invaluable networking opportunities;
3) Increase communication and information between the Rufford Foundation and its grant recipients; and
4) Discuss about current research issues/ challenges in Southeast Asia. Sincerely yours,

Le Khac Quyet

Le Manh Hung

RUFFORD SMALL GRANTS CONFERENCE – VIETNAM 2018

"Strengthening network of The Rufford Foundation Recipients in Southeast Asia"

Hanoi, Vietnam, 19th – 20th October, 2018

VENUE: Building No.A3, Institute of Ecology and Biological Resources – VAST
#18 Hoang Quoc Viet Street, Hanoi, Vietnam

AGENDA:

DATE & TIME	ACTIVITIES	BY WHOM
Day 1 – 19 Oct 2018		
06:00 – 07:15	Breakfast at the hotel	
07:15 – 08:00	Transfer to meeting venue	
08:00 – 08:30	Registration	
08:30 – 08:45	Welcome speech of Assoc. Prof. Dr. Truong Xuan Lam Deputy-Director, IEBR	
08:45 – 09:00	Remarks of conference co-organizers, Dr. Le Khac Quyet & Dr. Le Manh Hung	
PODIUM PRESENTATIONS		
SECTION 1: GENERAL ISSUES		
09:00 – 09:15	**Socioeconomic Determinants of Consumption of Non-Timber Forest Products in Vietnam's Bu Gia Map National Park** by Toai Nguyen, Susan Lawler & Warren Paul	
09:15 – 09: 30	**A giant's happy meal: whale sharks and their food in the whale shark capital Donsol, Sorsogon, Philippines** by Rica Teresa Dungog & Gianina Cassandra May Apego	
09:30 – 09:45	**Forest cover change using multiptemporal remote sensing data in Phnom Tamao Zoological Park, Cambodia** by Khot Chesda	
09:45 – 10:00	**Investigation of Wildlife Trade in Myanmar-Thailand Border Cities under Growing Trans-boundary Economic Trade** by Sapai Min	
10:00 – 10:15	**Distribution and Conservation of the endangered Giant Land Snail (*Bertia cambojiensis*) in Southern Vietnam** by Phong Hoai Trinh	
10:15 – 10:30	***Tea break***	
SECTION 2: AQUATIC ECOSYTEMS		
10:30 – 10:45	**Diversity and Conservation of Fish Community in the Krong No River, Langbiang Plateau, Vietnam** by Pham Manh Hung, Tran Thi Cam Loan, Nguyen Sy Quang & Hoang Duc Huy	
10:45 – 11:00	**Fish fauna in the Dong Nai River: diversity and value** by Tran Trong Ngan, Do Hanh Vi, Pham Manh Hung, Hoang Duc Huy	
11:00 – 11:15	**An Island's Herpetofaunal Diversity: A Tool for Developing Collaborative Research and Conservation Practice** by Camila G. Meneses	

11:15 – 11:30	**Forensic genetic case study: Species identification and traceability of sea turtle caught in illegal trade in Bali** by Ni Putu Dian Pertiwi, Maulid Dio Suhendro, Astria Yusmalinda, I Nyoman Giri Putra, I Gusti Ayu Ricca Mahatma Putri, M. Danie Al Malik & Andrianus Sembiring
11:30 – 11:45	**Conservation of marine mammal in Viet Nam: the challenges and potential strategy** by Vu Long
11:45 – 12:00	**Remarks of conference co-organizers, Dr. Quyet & Dr. Hung**
12:00 – 13:30	**Lunch break**
SECTION 3: MAMMALS	
13:45 – 14:00	**Habitat Use by Dugongs in the Sibu-Tinggi Archipelago, Johor, Malaysia** by Wei-Khang HENG, Jillian Lean-Sim OOI, Louisa S. PONNAMPALAM & Kee Alfian bin ABDUL ADZIS
14:00 – 14:15	**The influence of free-roaming dogs to the conservation of critically Endangered Bawean deer and human health** by Dede Aulia Rahman
14:15 – 14:30	**Behaviour, habitat use and diet of wild dusky langurs in different habitat types in Penang, Malaysia** by Jo Leen Yap & Nadine Ruppert
14:30 – 14:45	**Rat feeding behavior of Southern pig-tailed macaques in oil palm plantations – implications for conservation** by Nadine Ruppert, Anna Holzner & Anja Widdig
14:45 – 15:00	**Bats in Islands: Partnerships for Biodiversity Research and Conservation in the Philippine Setting** by James DV. Alvarez
15:00 – 15:15	***Tea break***
SECTION 4: PLANTS AND BIRDS	
15:15 – 15:30	**Green Peafowl and their use of crops in agricultural land in rural Myanmar: implications for conservation of the species** by Nay Myo Shwe, Niti Sukumal, Khin Maung Oo, Simon Dowell, Stephen Browne & Tommaso Savini
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17:00 – 17:15	**Natural history observations on the Endangered turtle *Geoemyda spengleri* in Tay Yen Tu Nature Reserve (Vietnam), with notes on other sympatric species** by Pham Van Thong
	Closing remarks
18:30 – 20:00	**Dinner**
Day 2 – 20 Oct 2018: Field visit to Cuc Phuong National Park and Van Long Nature Reserve	
06:00 – 07:00	Breakfast at the hotel (**SEN HOTEL 1**)
07:00 – 10:00	Travel to Cuc Phuong National Park
10:00 – 12:00	Visit to Endangered Primate Rescue Center (EPRC), Pangolin and Small Carnivore Conservation Center, and Turtle Conservation Center
12:00 – 13:00	**Lunch**
13:00 – 14:00	Free time to enjoy jungle
14:00 – 15:00	Travel to Van Long; Sightseeing at Van Long Nature Reserve
15:00 – 18:00	Return Hanoi
18:00 – 20:30	**Farewell Party in Hanoi**

ABSTRACTS

- 1 -

Socioeconomic Determinants of Consumption of Non-Timber Forest Products in Vietnam's Bu Gia Map National Park

Toai Nguyen[1,2] Susan Lawler [2], Warren Paul [2]

Non-timber forest products play an important role in providing a means of livelihood and cultural amenity for local people around protected areas. There have been many studies that concentrate on the consumption of non-timber forest products and impacts on natural forests, however, the use of non-timber forest products by different groups has not been well analyzed to ensure the goal of better biodiversity conservation and sustainable development. This study examines the socioeconomic determinants of the utilization of non-timber forest products extracted from Vietnam's Bu Gia Map National Park using data from interviews with 121 local people residing in the buffer zones. A strong association between the consumption of non-timber forest products and ethnicity, family size, age of respondents, their education levels, the diversity of NTFPs, and land use was found using a multiple linear regression (R^2 = 0.602, $p < 0.001$). A Poisson regression found a difference in the diversity of NTFPs used by indigenous people and migrants (Pearson Chi- square/Degree of freedom = 0.956). However, there were not any differences in NTFP use due to economic status, age of respondents, education level, and insufficient food supplies. Understanding the socioeconomic determinants of non-timber forest products will enable conservationists and park managers to plan suitable interventions in conservation programs in protected areas. This study may enable local managers to improve sustainable development by supporting socioeconomic groups that need help to reduce their hunger and their reliance on natural forests.

Key words: Non-timber forest product, socioeconomic determinants, migrants, indigenous people, national park

[1] Bu Gia Map National Park; [2] La Trobe University

- 2 -

A giant's happy meal: whale sharks and their food in the whale shark capital Donsol, Sorsogon, Philippines

Rica Teresa Dungog [1], Gianina Cassandra May Apego [1]

Phytoplankton and zooplankton samples were collected from September 2017 to May 2018 to determine differences in plankton abundance and composition during the season (December–May) and off- season (September–November) of whale shark sightings in Donsol, Sorsogon, Philippines. According to literature, whale sharks are basically driven by food pulses and it is strongly posited that the seasonal annual aggregation of whale sharks is linked to the abundance of their prey in the area in the form of plankton. This study aimed to compare the spatial and temporal patterns of plankton assemblage, determine the influence of physical

and chemical parameters on the assemblage and investigate the relationship between the assemblage and whale sharks. The data gathered will be statistically analyzed to reveal the interplay of these biological, physical and chemical parameters that shape the marine ecosystem of the study area. The information gathered about the plankton composition will substantially add to the existing information about the plankton assemblage in the local waters of Donsol, what shifts in the plankton communities may imply, what adaptations by the plankton may affect the marine environment from water quality to fisheries, and ultimately promote greater understanding of plankton in tropical countries like the Philippines. Likewise, the results of this study can strongly support the hypothesis of bottom-up control of this coastal ecosystem, with focus on the linkage of factors that influence the phytoplankton assemblage, grazers and ultimately, the whale sharks.

***Key words*:** Phytoplankton, Zooplankton, Whale Shark

[1] Marine Science Institute, University of the Philippines (UP-MSI)

- 3 -

Forest cover change using multiptemporal remote sensing data in Phnom Tamao Zoological Park, Cambodia

Khot Chesda [1]

Forest covers from satellite data provide the various scales from the past periods, in particular it's have been conducted all over the world included Cambodia for several years. However, In Phnom Tamao Zoological Park and Wildlife Rescue Center (PTZPWRC) no case studies about forest cover change. Hence, using multi-temporal remote sensing data to quantify forest cover and land use land cover change was conducted in PTZPWRC, Ba Ti district, Takeo commune, Cambodia during 1997 – 2017. For this study, Landsat data including Landsat 5 (TM) in 1997, 2001, 2007 and Landsat 8 (OLI) in 2013, 2017 with spatial resolution of 30 m was used to quantify forest cover extents and defined the driver of change. NDVI (Normalized Difference Vegetation Index) in combination with unsupervised classification were used. After analyzed the results showed that there was change from years 1997 - 2017 of forest cover change extents. Accuracy assessments of forest cover maps showed that high accurate over 83.67%. In particular, Forest cover extents increased of period 1997 – 2017 from 1,928.7 ha to 2,162.7 ha (increased by 234), 2001 - 2007 from 1,758.06 ha to 2,065.68 ha (increased by 307.62 ha), 2007 – 2013 from 2,065.68 ha to 2,149.2 ha (increased by 83.52 ha), 2013 – 2017 from 2,149.2 to 2,162.7 ha (increased by 13.5 ha). Forest cover extents decreased by 1,928.49 ha to 1,758.06 ha in the period 1997 – 2001. The main drivers of forest cover extents increased due to good governance in forest conservation of Forest Administration and decreased because human activities, such as illegal logging, land encroachment, agriculture expansion, forest fire.

***Key words*:** Remote sensing, multiptemporal, forest cover, Phnom Tamao, Cambodia

[1] Vietnam National University of Forestry

- 4 -

Investigation of Wildlife Trade in Myanmar-Thailand Border Cities under Growing Trans-boundary Economic Trade

Sapai Min [1]

Investigation of Wildlife Trade in Myanmar-Thailand Border cities under Growing Trans-boundary Economic Trade was conduct one years (March 2016 to March 2017). Tachilek and Myawaddy were focused as two main study cities on the border with Thailand. Items observed at the survey site included animal skins, whole animals and body parts, primarily for use in traditional medicine and for decoration; live animals were on sale to be kept as pets and wild meat for food. There were not observed any wildlife parts in Myawaddy on the border of Thailand. In Tachilek, a total of 35 species were recorded, of which 33 species are afforded some degree of protection under Myanmar's national wildlife legislation and/or are listed in the CITES Appendices or in IUCN globally threatened categories. Only 18 of the 35 species observed were not listed in the CITES Appendices. Eight of the 35 species were not legally protected in the MWPL. According to interviews with local traders and from direct observations, most of wildlife species were brought by middle men from everywhere of Myanmar, furthermore, wildlife from Tachileik is traded not only to Thailand by using illegal route avoid the Myanmar -Thailand check point but also to China through Mong La , the border town as the destination of traded wildlife species. Therefore, wildlife parts were seen for sale in Tachileik apart from Myawaddy, where trade is locally prohibited.

Key words: Investigate, wildlife trade, Myanmar-Thailand border cities

[1] Department of Zoology, University of Yangon, Kamayut Township, Yangon Region, Myanmar

- 5 -

Distribution and Conservation of the endangered Giant Land Snail (*Bertia cambojiensis*) in Southern Vietnam

Phong Hoai Trinh [1]

Bertia cambojiensis is a Critically Endangered species found below leaf litter in tropical moist lowland forest in southern Vietnam, but there is not specific data about distribution, habitats and population density. Currently, *B. cambojiensis* in wild is facing high risk of extinction because it will be heavily collected for the shell trade as well as being used as food and medicine. In rainy season 2018, we carry out survey at evergreen, bamboo and mixed forest in Lam Dong, Binh Thuan, Dong Nai province. Giant land snails are collected by sample plots method, 30 sample plots were set up with an area of 20x20m and each sample plot is 5m apart. For each individual *B. cambojiensis* found, we record sample label, GPS coordinate, environmental parameters such as humidity, elevation, temperature, and microhabitat feature, take photograph, and describe morphological feature. All live individuals of *B. cambojiensis* are collected to estimate population density and released to the location where they were found after each sampling day. The result record 36 individuals and 9 its shells.

Population density was recorded at Lam Dong is highest with 0, 0018 individuals / m^2. *B cambojiensis* was found in microhabitat such as under leaf litter, rotten fallen tree, and fallen fruits. We also record the other land snails in the same microhabitat and carry out identification. These results will contribute to status of *B. cambojiensis* in wild as scientific data for management and conservation as well as deeper research about *B. cambojiensis*.

***Key words*:** Land snail, *Bertia cambojiensis*

[1] Faculty of Biology and Biotechnology, University of Science - VNUHCM

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Diversity and Conservation of Fish Community in the Krong No River, Langbiang Plateau, Vietnam

Pham Manh Hung[1], Tran Thi Cam Loan[1], Nguyen Sy Quang[2], Hoang Duc Huy[1]

Limits of our knowledge for Fish Community in the Krong No River, Langbiang Plateau represent a threat both for their conservation and sustainable exploitation. Taxonomical and biogeographical investigations are urgently needed to avoid collapse of this community. This study aims to provide the morphological and molecular characters useful for the identification of fish species; provide a first species checklist useful for conservation management. The study collected including 20 species (62 specimens collected) of family Cyprinidae (11 species), Nemacheilidae (2 species), Balitoridae (1 species), Botiidae (1 species), Gyrinocheiridae (1 species), Sisoridae (2 species), Mastacembelidae (1 species) and Channidae (1 species) in the Krong No River. 18 species were provided the characters to identify to species level. Only two species of family Nemacheilidae have characters to identify to genus level. In addition, we recorded four specific fishes for the Krong No River: Onychostoma krongnoensis, Tor mekongensis, T. sinensis, Neolissochilus stracheyi. The COI sequences to identify these species and provided them to Bold system v3 and Genbank for publication.

Onychostoma krongnoensis, Mahseer *Tor mekongensis*, *T. sinensis* and *Neolissochilus stracheyi* are the important species for conservation. The next study needs to determine the threats to these fishes in this region.

Key words: Fishes, Krong No, river, conservation, Bidoup-Nui Ba

[1]Dept. Ecology and Evolutionary Biology, University of Science - VNUHCM, Ho Chi Minh City, Vietnam
[2] Bidoup-Nui Ba National Park, Lam Dong Province

- **7** -

Fish fauna in the Dong Nai River: diversity and value

Tran Trong Ngan[1], Do Hanh Vi[1], Pham Manh Hung[1], Hoang Duc Huy[1]

Knowledge of where species occurs is fundamental to biodiversity conservation. This research aims to study diversity of fish species in the Dong Nai River and locate threatened fishes in the wild. In total, 136 species belong to 92 genera, 38 families and 13 orders were recorded and the most abundance order is Cypriniformes. Among them, we found 34 species were sold frequently in the local markets such as *Notopterus notopterus*, *Barbonymus* spp., *Oxyeleotris marmorata*, *Ompok* siluroides, *Chana striata.* Two species *Tor dongnaiensis* and *Onychostoma dongnaiensis* are endemic species of this river. The Dong Nai ichthyofauna is sharing two endemic species of the Mekong ichthyofauna with the Mekong River: *Puntioplites falcifer* and *Scaphognathops stejnegeri*. Many threatened species was recorded in Dong Nai River such as: *Hypophthalmichthys molitrix*, *Bagarius yarrelli*, *Wallago attu*, *Clarias microcephalus.* However, these species are very rare because of exploitation and habitat loss as road construction, pesticide from agriculture, sand exploitation or river encroaching.

Key words: Fish fauna, Dong Nai River, diversity, value

[1]Dept. Ecology and Evolutionary Biology, University of Science - VNUHCM, Ho Chi Minh City, Vietnam

- **8** -

An Island's Herpetofaunal Diversity: A Tool for Developing Collaborative Research and Conservation Practice

Camila G. Meneses[1]

Philippine archipelago provides a ready-made laboratory for scientific research. The complex, mobile geological history of the Philippine landmasses interests most biogeographers. Hence, biodiversity research and nature conservation often focus on geographical areas and ecosystems that extend across national borders like in the Philippines settings. One of the interesting landmasses that may hold a promising flora and fauna diversity is the Romblon Island Group (RIG), assemblage of islands (Tablas, Romblon, and Sibuyan) in the central position of the Philippine archipelago. In the remote island of Sibuyan, we surveyed amphibians and reptiles. Despite past and recent studies, herpetofaunal diversity on this island has remained underestimated. We surveyed Mt. Guiting-Guiting Natural Park (MG2NP) and recorded 49 species of Amphibians and reptiles that some awaited for further taxonomic and molecular description because of unique features. And so, with these results, we also suggested to place a strong emphasis on the outputs that benefits the community of researchers in the academe, local community, and environmental institutions. Aside from biodiversity research we aim to seek inputs from representative institutions so that research efforts can meet the needs of the host-island through training and workshops. On the other hand, I will also highlight how the challenges and as well as the significant contribution of

Rufford Foundation grant in academic research in life sciences resulted in an exploratory study in Philippine herpetofauna.

Key words: RIG, Sibuyan Island, Geologic history, Herpetofauna. Conservation, Collaboration

[1]University of the Philippines Los Baños Graduate School, College of Arts and Sciences, IBS-Animal Biology Division, College, Laguna, Philippines

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Forensic genetic case study: Species identification and traceability of sea turtle caught in illegal trade in Bali

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Although known as a protected species, sea turtle trade is still occurring, especially in Indonesia. Understanding the species and population origin of sea turtle being sold in illegal market is crucial for its conservation. Thus, the genetic forensic has been used as a key investigating tools to help with this problem. In this research, using the similar approach, we aim to identify the species and population origin of the sea turtle caught and traded in illegal market in Bali.

Of the total 20 samples collected in 2017 - 2018 from confiscated sea turtle during illegal trade, by-catch, and traditional restaurant serving sea turtle meat, 17 samples were successfully analyzed. Result identified 15 samples were green sea turtle (*Chelonia mydas*), while 2 samples were Olive Ridley sea turtle (*Lepidochelys olivacea*). *Mixed Stock Analysis* using a comparison with the previous study from Moritz *et al.* (2002) and Dethmers *et al.* (2006) showed 7 similar haplotypes (C1, C3, C4, C5, C7, D2, A3) and 2 new haplotypes (*orphan*), which also indicated the samples nesting origin mostly from Long island (22.81%), Sipadan (13.69%), Paloh (11.41%), Sarawak (8.27%), Sangalaki (7.92%) and Philippines Turtle island (6.17). This result indicates that illegal trade in Bali will not only impacts the sea turtle populations in Indonesia, but also in other countries. Therefore, collaboration from multi-regional parties is needed to ensure the conservation and protection of the future of the sea turtle species.

Key words: Sea turtle, forensic, genetic, illegal trade

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- **10** -

Conservation of marine mammal in Viet Nam: the challenges and potential strategy

Vu Long[1]

Conservation orientated studies for marine mammals remain rare in Vietnam, with total less than 05 papers published in peer-reviewed journals since 1920. This situation creates an enormous information gap for conservation management of marine mammal in the country, where available efforts are depended on anecdotal knowledge rather than robust scientific data. Understanding the challenges faced by conservation orientated marine mammal studies in Vietnam are crucial for science and conservation management. This paper highlights the challenges we face when implemented three separate marine mammal studies in Vietnam.

Traditional marine mammal survey, such as our cetacean project in Kien Giang Biosphere Reserve, will need to address the issue of small population, the cryptic behavior of the animal and dynamic nature of the marine environment. For a national-scale project, represented by our marine mammal stranding monitoring programme, we mainly faced the low awareness of stakeholders regrading marine mammal in Vietnam. For regional-scaled project, represented by our bycatch risk-assessment studies for marine mammal in Vietnam, Thailand and Malaysia, our main challenge was the enormous gaps of knowledge on marine mammal distribution and abundance in Vietnam, as well as the lack of understanding on the interaction between fisheries and those animals. Addressing these challenges requires significantly improves the capability of local researchers and conservation practitioners regarding survey design and activity-implementations.

Multidisciplinary approaches, advance technologies and strong commitments are also vital for future research and conservation strategies regarding marine mammal in Vietnam.

Key words: Marine mammal, challenges, survey, bycatch, strategy

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Habitat Use by Dugongs in the Sibu-Tinggi Archipelago, Johor, Malaysia

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In Peninsular Malaysia, endangered dugongs (*Dugong dugon*) are localized around the Sibu-Tinggi Archipelago (South China Sea) owing to the presence of extensive seagrass meadows.

Field surveys were conducted from 2016 to comprehensively study the distribution of seagrass meadows and the dugongs' interactions with their seagrass habitat in the subtidal tropical environment. We examined the spatial distribution patterns of the dugong feeding trails across different seasons using towed underwater video, and ascertained whether feeding patterns

were related to seagrass diversity, biomass, nutrient composition, water depth and/or substrate. Underwater Monitoring System for Dugong (UMSD) prototypes were placed in areas with intensive dugong grazing to investigate the time-area usage patterns of dugong feeding and other associated behaviours. Most of these feeding trails occurred in the mid to southern part of the meadow and the distribution of intensive feeding areas across seasons suggested the existence of regular dugong grazing swards, called "feeding hotspots". There is evidence that the quantity and some nutrients of seagrass, i.e. nitrogen, are higher in the feeding areas which might influence their preferential feeding mechanism. Over a week period in June 2018, two adult dugongs (or returning individual) captured in the field of view of the cameras, both feeding at the same site between 11:30 until 13:00, providing significant insight into the feeding movement activities within their main feeding grounds. Understanding of the habitat use can determine the movement behaviour of the vulnerable dugongs and provide a habitat-explicit rationale for designing better management plan for dugong protected areas.

Key words: Dugong, subtidal seagrass, feeding trails, spatial distribution, underwater monitoring

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The influence of free-roaming dogs to the conservation of critically endangered Bawean deer and human health

Dede Aulia Rahman [1]

Despite being the most isolated deer in the world, the critically endangered Bawean deer *Axis kuhlii* has received several threats in the habitat. Bawean deer's were attracted to settlements by agricultural crops which places them at risk from free-roaming dogs *Canis lupus familiaris*.

The cross-sectional study was carried out from July 2017 to June 2018 to report the geographic spread and interactions of both species using camera traps, also to measure KAP (Knowledge, Attitude, and Practice) to identify the most influential factors of dog owners pertaining their dog-keeping practices in Bawean Island, Indonesia. Camera traps provided a low number of records of Bawean deer (RAI=1.12; 98 for 8760 camera days) than free-roaming dogs (RAI=1.78; 156 for 8.760 camera days). The estimated range of the Bawean deer's is significantly narrower than previously reported. Majority of dog owners had poor practice consisted of bad practice (198; 99%). The significant factors toward dog-keeping practices found on level of monthly income ($r=0.479$; $p<0.005$), knowledge ($r=1.000$; $p<0.005$), and attitude ($r=0.848$; $p<0.005$). The knowledge, attitude and practice were not found adequate due to the role of dogs in traditional Bawean culture. These results indicate that dog interactions with wildlife are related to the role of dog in the household and are directly influenced by their owners. To avoid conflict with local communities and disease transmission in conservation areas, it is important to develop strategies for managing dogs that balance conservation needs and roles of dogs play in these rural households.

Key words: Dogs, wildlife, camera trap, KAP study, disease transmission

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Behaviour, habitat use and diet of wild dusky langurs in different habitat types in Penang, Malaysia

Jo Leen Yap[1] Nadine Ruppert [1]

Habitat degradation may cause behavioural changes in primates. Here, we assessed activities, habitat use and diet of a wild group of dusky langurs (*Trachypithecus obscurus*) in a heavily human-impacted habitat in Penang, Malaysia, to better understand how these primates can adapt to habitat degradation and fragmentation. We used group scan sampling to record activity budgets and recorded home range size, stratum use, and food plant species and parts. The langurs' home range is 12.9 hectares, including secondary forest (61.2%), a nature park (23.9%) and the beach (14.9%). The main activities of the group were resting (44.8%) and locomotion (24.4%). Langurs spent more time resting and foraging in the secondary forest than in the nature park and beach (One-way ANOVA, $p<0.05$). Langurs spent most of their time (61.2%) in the secondary forest where they fed mainly on leaves (70.5%). We identified 56 food plant species from 32 families, including wild and cultivated plants. Langurs behaved differently and ate different plant species in different habitat types. To obtain certain plants they crossed the road at least once per day to the beach (2,114 individual road crossings, 7 road kills) by tree leap (63.2%), power lines (34.2%) or ground use (2.6%). To mitigate the impact of roads we have designed and tested the first firehose canopy bridge in Peninsular Malaysia.

***Key words*:** Activity budgets, feeding ecology, habitat disturbance, leaf monkeys, *Trachypithecus obscurus*

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Rat feeding behavior of Southern pig-tailed macaques in oil palm plantations – implications for conservation

Nadine Ruppert[1], Anna Holzner[12], Anja Widdig[234]

Conversion of tropical forests into oil palm plantations reduces habitat of naturally occurring species, including primates. In the forest-oil palm matrix, Southern pig-tailed macaques partially (*Macaca nemestrina*) divert their foraging activities into plantations where farmers hunt them as crop raiders. Contrary, we hypothesize that macaques may act as biological pest control as they frequently feed on plantation rats (*Rattus* spp.). To assess the impact of pig-tailed macaques on populations of plantation rats, we recorded the macaques' feeding behavior in oil palm plantations and conducted a rat mark and recapture study in Segari, Peninsular Malaysia. Pilot data revealed a significant decrease in rat abundance with increased

presence of macaques in plantations. Further, focal observations showed a rat consumption rate of 2,085 rats per year by one group of pig-tailed macaques. Our findings can be used for mitigating human-macaque conflicts by encouraging plantation managers to protect these primates and their natural habitat.

Key words: *Macaca nemestrina*, Peninsular Malaysia, human-wildlife conflicts, crop raiding, biological pest control

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Bats in Islands: Partnerships for Biodiversity Research and Conservation in the Philippine Setting

James DV. Alvarez[1]

For an archipelago such as the Philippines, our diversity of bats is extremely remarkable with very high rate of endemism. However, studies on various aspects including taxonomy and ecology are very limited and fragmentary. Several species complexes are recognized but remain unresolved yet are excluded in recent taxonomic revisions elsewhere in their distribution range in Southeast Asia. Recognizing the difficulty in studying bats, coupled with limited funds for basic biodiversity research, we partner with government agencies including the Philippine Department of Environment and Natural Resources as well as local universities to facilitate research activities in unexplored regions of the country. In 2016 and 2017, we surveyed bats in Mt.

Guiting-guiting Natural Park in the remote island of Sibuyan. We recorded a total of 16 species including two new geographic records. We also recorded abundant population of the endangered Philippine tube-nosed fruit bat (*Nyctimene rabori*). Sibuyan is important for the species which is distributed in 3 islands only, two of which are heavily deforested. Here, I will also present the learnings as well as the challenges in conducting research on the ecology of bats in small islands in the Philippines. I will also highlight the role of the support from the Rufford Foundation in achieving the goals for research and conservation of Philippine bats.

Key words: Archipelago, Bats, Capacity building, Conservation, Research

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Green Peafowl and their use of crops in agricultural land in rural Myanmar: implications for conservation of the species

Nay Myo Shwe[1*], Niti Sukumal[1], Khin Maung Oo[1] Simon Dowell[2], Stephen Browne[2], Tommaso Savini[1]

Agricultural activities can reduce biodiversity, whereas low intensity agriculture and traditional farming practices can often support it. Green Peafowl are under threat across much of their range due to a variety of reasons, including hunting and habitat loss. Here we investigate habitat use of Green Peafowl in an anthropogenically altered landscape and produce recommendations for the long-term conservation management of the species. A total of 3,414m transects along three different routes were walked monthly, from February 2016 to January 2017, twice per day in both directions in the morning and evening for four consecutive days at Nan Kone Buddha Monastery area in Southern Shan State, Myanmar. Density was estimated at 2.62 animals/km^2 in the west part of the study area and 1.12 animals/km^2 in the east. Habitat use was significantly non-random, with forest patches being the most utilized and preferred habitat. Crops were the second most preferred habitat type. Within 300m radius surrounding forest patches, the order of habitat preference was crop>scrub>fallow, but with crop significantly preferred over the other two habitats. Crops within 300m radius and preserved isolated forest blocks adjacent to agricultural areas managed by the community are an important feature for biodiversity conservation.

Key words**:** Agricultural, Buddha Monastery, compositional analysis, fragmented forest, *Pavo muticus,* Shan plateau

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- **17** -

Potential Habitat of the Javan Hawk-eagle (*Nisaetus bartelsi* Stresemann, 1924) in Mount Ungaran, Central Java

Sitta Yusti Azizah[1], Afrizal Maula Alfarisi[2], Tulus Pambudi[3]

Javan Hawk-eagle is the Javan endemic species. It has similarity with the Garuda, so this raptor declared as national symbol of Indonesia Republic. It causes an increase in trade and listed as endangered by IUCN. Besides it, the main threat is habitat loss. This raptor is only left in several patch of fragmented tropical rain forest in Java. Mount Ungaran is one of these bird habitats.

This area includes in Important Bird Area (IBA) but is not listed as conservation area so that the protection of the Javan Hawk-eagle in this area is not the main focus of the government. To manage this bird protection effort, research is needed on the distribution and characteristics of

its habitat on Mount Ungaran. It presence and habitat description confirmed by observing on a grid of 100m x 100m or 55 grid blocks throughout the region. Distribution map shows Javan Hawk-eagle are found at altitude at 944 - 1457 m asl, with slopes ranging from 9% - 40%, with the closest distance to the settlement area of 325 m and found water sources, natural and artificial rivers. Habitat that used by Javan Hawk-eagle includes mixed forests, shrubs and plantation areas with a range of NDVI values of 0.2-0.41.

Key words: Javan Hawk-eagle, distribution, habitat, Mount Ungaran

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Conservation of floral biodiversity in secondary forest of Kyaik Htee Yoe Reserve Forest

Myo Min Thant [1]

In Myanmar, 42.92% of total land area is forested and of this 10% is classified as primary forest (FRA 2015). However, these forests are in trouble. According to the Global Forest Resources Assessment 2015, almost 2 percent of the country's forest cover, based on 2010 levels, has been lost each year and Myanmar had the third-highest annual rate of forest reduction in the world. Nowadays, the large forests areas in Myanmar are being threatened as a result of deforestation and forest degradation with the loss of biodiversity (Data 2011). The forest lost has decreased the number of species, influenced the forest quality in terms of structure, timber volume and biodiversity (Bui 2016). Loss of biodiversity means losing the essential services that biodiversity provides, and prevents passing on an invaluable gift to future generations (Williams 2008).

Therefore, solutions for sustainable forest management, restoration and rare species conservation, especially for secondary forests, are a matter of urgency. To implement these activities, the information of about stand composition, structure, and dynamics of different forest stands in protected areas is one of the most important requirements. But the information about the floristic composition of the diverse protected area in Myanmar is still in limited information especially in Kyaik Htee Yoe Reserve Forest. Because of the above reasons, I would like to carry out this project "Conservation of Flora Biodiversity in Secondary Forest of Kyaik Htee Yoe Reserve Forest."

***Key words*:** Forest, conservation, floristic composition, Kyaik Htee Yoe Reserve Forest, Myanmar

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The effect of rubber plantation on soil properties and economic potential in Thach Thanh District, Thanh Hoa Province, Vietnam

Seng Ravor [1]

This study aimed to two main cases as (1) soil properties in the rubber plantation with different ages, rubber mixed with turmeric and from turmeric farm, (2) economic potential of rubber and arable farm in Thach Thanh and Cam Thuy districts, Vietnam. Each soil samples were concentration the layers of the soil (1) from 0- 30 cm deep, (2) 40-105 cm deep. The results obtained from the laboratory shows: contents of nitrogen (N), Carbon (C) and Phosphorous (P), Soil moisture, soil density, soil bulk density, soil porosity, soil pH level and soil texture. For soil texture by used triangle determined: plot (1) rubber planted in 1999 the soil layer from 0-30 cm deep was clay soil, 40-105 cm deep was clay loam soil. Plot (2) rubber planted in 2007 the soil layer 0-30 cm was clay loam soil; 40-105 cm deep was clay soil. Plot (3) turmeric farm condition in 2018, for the soil layer 0-30 cm deep was clay soil; 40-105 cm deep was clay soil. Plot (4) rubber planted in 2014 mixed with turmeric condition the soil layer 0-30 cm deep was clay soil and 40-105 cm deep was clay soil. In order to compare the relationship between rubber income and arable farm to get the information, the study went to interview the local people. Chi-square test expressed the relationship between the income value of rubber, sugarcane and turmeric were not different in significant. The price of rubber in 2018: 25,000 VND/kg, turmeric: 6,000 VND/kg and sugarcane: 900-1,000 VND/kg.

Key words: Rubber plantation, soil properties, economic potential

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Orchid Diversity, Composition and Ecology: Implications to Conservation

Zhereeleen D. Meneses [1]

Philippines' orchid flora presents high level of endemicity but is highly threatened due to continuing habitat degradation. Samar's contiguous forests form a large proportion of the Samar Island Natural Park which is among the remaining frontiers of Philippine forests. The project on orchid diversity, ecology and conservation in Western Samar, Philippines was conducted from June 2015 – March 2016. A total of 48 sampling plots measuring 20m×20m spaced 100m apart were established from the edge towards the interior of different forest types to account for orchid composition and to gather environmental (light, elevation, slope, NDVI and SAVI) and geographic data. Orchid diversity and composition were examined with the predictor variables using simple and partial Mantel tests while the forest edge effects were investigated via ANCOVA. A total of 90 orchid species were inventoried; 23 are new island-records, four are promising novel taxa, and a new genus record for the Philippines. Results showed that from forest edges towards the interior, orchid abundance and diversity generally increase through highly variable environmental factors. Generally, orchid composition showed significant positive correlation with light, elevation, NDVI and SAVI while it is negatively

associated with the slope. Specifically, epiphytic orchid diversity is promoted with high solar radiation and intact vegetation, while it is inhibited with increasing slope. Meanwhile, terrestrial orchid diversity and abundance is positively affected by increase in elevation. Local people's organization were involved in the information and education campaigns and a local orchid nursery for rescued native orchids was constructed for the purpose of conservation.

Key words: Orchids, conservation, ecology

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Review of 15 years for conservation and development of genetic resources of Vietnam coniferous trees

Nguyen Duc To Luu [1]

In 2004 the publication **Vietnam Conifers – Conservation status review** made an important milestone in conifer conservation work in Vietnam. From that time these achievements have been further developed. A prominent case is the discovery of *Pinus cernua*, a new pine species for Vietnam in 2014 in Son La province.

Conservation of the natural habitats for important conifer populations is maintained. In 2014, Nam Dong conifer conservation area was established in Thanh Hoa as a second species and habitat conservation site dedicated to coniferous trees after Water pine (*Glyptostrobus pencilis*) protected area in Dak Lak.

Successful propagation rare endangered conifers, a bright point of the previous period, continue to be maintained during the last years. Methods for propagation of precious conifers have been successfully studied. Typical examples of successful propagation are by cuttings for *Xanthocyparis vietnamensis*, *Calocedrus rupestris*, by layering for *Glyptostrobus pencilis* and by seeds for *Taiwaniana cryptomerioides*.

During the 15 years plantation trials for some conifer species have been established such as for *Cunninghamia konishii* and *Taiwaniana cryptomerioides* in Thanh Hoa and Lang Son, for *Cupressus tonkinensis* in Lang Son and *Keteleeria evelyniana* in Son La. In Central Highland plantation of *Taxus wallichiana* has been established in order to produce leaves for taxol extraction. Essential oil of *Cunninghamia konishii* is extracted commercially. The use of indigenous conifers by local farmers for producing bonsai trees is also expanded for the time.

The experience and lessons learned from the conservation and development of coniferous trees in the past 15 years can be deduced as the basis for the conservation and development of this group of trees in the near future.

Key words: Conifer, conservation

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Natural history observations on the Endangered turtle *Geoemyda spengleri* in Tay Yen Tu Nature Reserve (Vietnam), with notes on other sympatric species

Thong Pham Van[1,2*], Thinh Vu Tien[2], Jeffrey E. Dawson[3], Tung Bui Thanh[2] & Benjamin Leprince[1]

Ranking as number 9th in the top of the world, Vietnam is one the most biodiverse countries in terms of turtle species richness, with 27 species being tortoise and freshwater turtle. However, the natural history of all of these species is very little known, but it is thought that the great majority of them are heavily threatened by habitat loss and overhunting. Here, this report provide the primarily information from research (based on both interviews local people and field survey through the forest) in the Tay Yen Tu Nature Reserve, Bac Giang Province, Vietnam in order to collect natural history information (distribution, ecology and threats) on *Geoemyda spengleri* and on other sympatric species. During the interviews, we showed pictures of 14 different species. There were at least 10% (n=72) of the interviewees recognized seven species.

G. spengleri and *C. mouhotii* were by far the most frequently cited species by interviewees, and were also dominant in a sample of 40 turtle individuals that were observed on local trade.

These two species were also observed during field transects. Individuals of *G. spengleri* were observed from 10:47-13:45 hour, in all cases in sunny weather after rains, at 25-30°C temperature range. All individuals were seen in montane bamboo forests at elevation range from 651m-725m, often inside or nearby rocky caves, and in sites with forest cover being 70%-90%, at slope angles varying from 5 to 45 degrees.

Key words: Tay Yen Tu Nature Reserve, *Geoemyda spengleri*, interviews, field survey

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