Title: RSG Malaysia Conference 2020 – *Synergizing Regional Conservation Efforts for Global Impact*

Date: 10th -13th January 2020

Venue: School of Biological Sciences, Universiti Sains Malaysia, Penang Island

Country: Malaysia

Organiser: The Rufford Foundation, School of Biological Sciences - Universiti Sains Malaysia & Malaysian Primatological Society

Summary:

The RSG Malaysia Conference 2020 with the theme *Synergizing Regional Conservation Efforts for Global Impact* was carried out over four days in Penang, Malaysia. Participants arrived on the 10th of January 2020 and the conference commenced on the 11th. On this day, all participants presented findings of their research funded by the Rufford Foundation at School of Biological Sciences USM and spent the day networking with each other. On the third day, participants visited the Penang National Park and the Tropical Spice Garden during the conference field trip where they learned about Penang's natural heritage and local biodiversity. The conference closed with a farewell dinner on the 12th after the field trip and the participants returned to their countries on the next day. Throughout the conference, the organizers enforced environmentally-friendly, zero-plastic and, to a certain extent, zero-waste practices by requesting that participants to bring their own lanyards and refillable water bottles, printing name cards on paper, serving mostly vegetarian food, and providing door gifts by a local supplier who made environmentally-friendly home-made products.

Objectives:

1) To encourage networking amongst RSG grantees
2) To share local, national and international conservation efforts and research supported by the Rufford Foundation

Impact:

The Rufford Foundation funds work that is traditionally hard to fundraise for. For example, new concepts such as eco-engineering is ground-breaking but because it is little known in Malaysia, funding is difficult to secure. Rufford provided seed funding for this project in Penang, which enabled capacity building and replicable models for future projects. Rufford also funded the work on threatened SE-Asian species such yellow-tail brook bard, flying squirrels, montane birds, and agile gibbons as well as locally developed approaches to biodiversity management involving local communities. For example, the conservation of the endemic Javan sparrow in Indonesia and conifer tree species cultivation involves the local community to be successful. Through, Rufford, early local career conservationists were supported to achieve their goals, which became evident through the students who presented their findings during the conference, therefore Rufford plays a crucial role in capacity building and training of a future generation of local conservationists. Funds were also used to support research on Critically Endangered species such as the Giant ibis in Cambodia, giant land snail in Vietnam, white-cheeked gibbons in Vietnam, and other endangered, flagship, or endemic species in Southeast Asia. Besides, Rufford also supported ecosystem conservation through works on mangroves in Vietnam and marine protected areas in Malaysia. Research

on current, pressing issues such as wildlife hunting, trafficking and consumption was also funded and presented during the conference, rounding up the scope of research and conservation works through landscape, species and community engagement approaches. All presenters showed that there works are meaningful in the local and global context contributing to effective conservation measures to protect species and their habitats.

Issues and recommendations:

Issue 1: Internet connection at the venue was not accessible to the participants, which was due a technical defect during that week.

Recommendation: To apply for official USM visitors' WiFi username and password prior to future conferences and ensure the technician sets up a proper connection prior to the conference.

Issue 2: Information on preparation for field trip was not communicated well enough, especially the need to bring enough water and sunshade.

Recommendation: To highlight important information and send reminders for future conferences through emails, not relying only on the published information in the conference booklet.

Issue 3: Field trip was too long with little down time in between.

Recommendation: Plan activities to include rest as part of the schedule; to take into consideration the demographics of participants and their physical condition/needs.

List of participants:

No	Title	Name	Affiliation	Grant Level
1	Mr	Chanratana Pin	Ministry of Environment, Cambodia & WildCRU, Oxford University	1st Rufford Small Grant
2	Mr	Hoai Nam Dang Vu	University of Copenhagen	1st Rufford Small Grant
3	Ms	Ika Yuni Agustin	Brawijaya University	1st Rufford Small Grant
4	Mr	Irfan Rosyadi	Yayasan Kanopi Indonesia	1st Rufford Small Grant
5	Mr	Mohamad Nur Arifuddin	Universiti Malaysia Kelantan	1st Rufford Small Grant
6	Dr	Voon-Ching Lim	Blue Communities; University of Malaya	1st Rufford Small Grant
7	Ms	Phong Hoai Trinh	The University of Science, VNUHCM, Vietnam	2nd Rufford Small Grant
8	Mr	Tran Van Sang	Center for Nature Conservation and Development	1st Rufford Small Grant
9	Dr	Sapai Min	University of Yangon	1st Booster Grant
10	Dr	Sharon Rose Tabugo	MSU-Iligan Institute of Technology	1st Rufford Small Grant

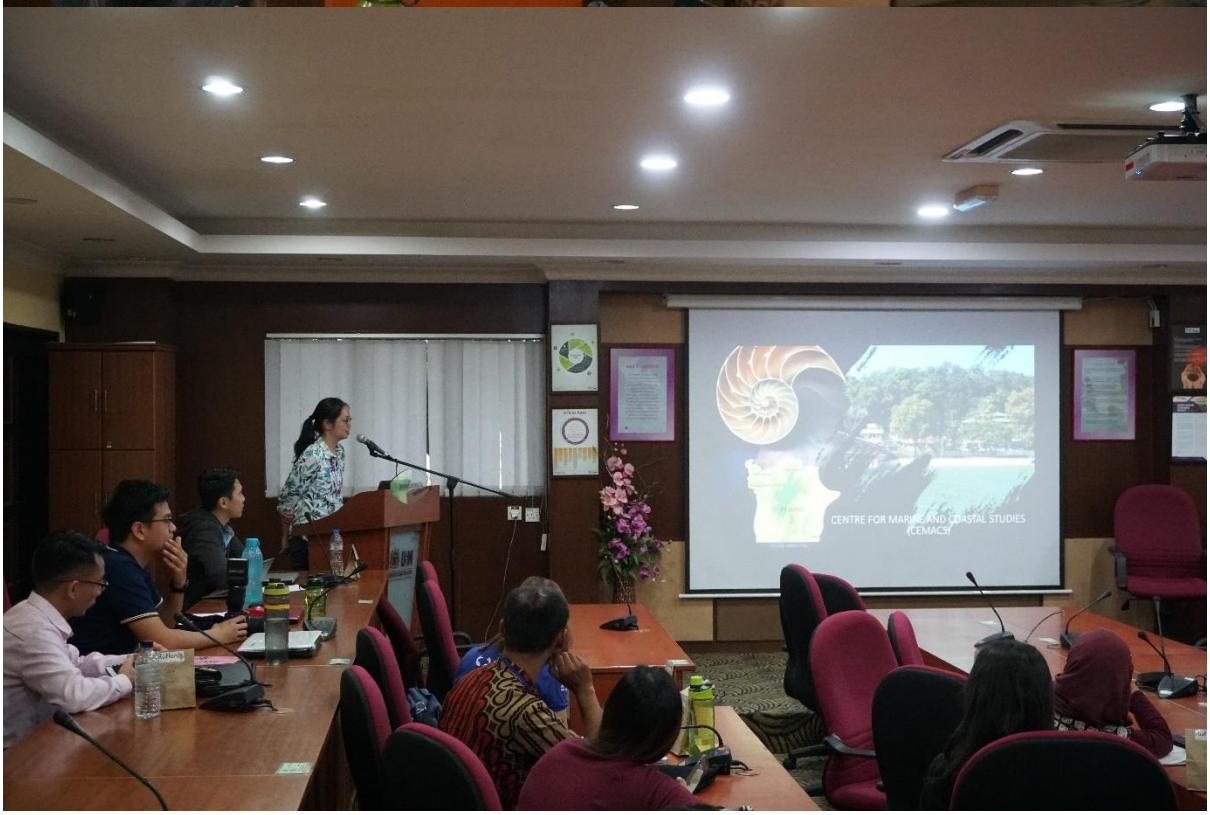
11	Mr	Tung Bui	Centre for Nature Conservation and Development (CCD)	1st Rufford Small Grant
12	Ms	Thi Bich-Thao Vo	University of Science, Vietnam National University Ho Chi Minh City	1st Rufford Small Grant
13	Dr	Vy Nguyen	Institute of Tropical Biology (Vietnam Academy of Science and Technology)	1st Rufford Small Grant
14	Mr	Malcom Chu Keong Soh	National Parks Board, Singapore	1st Rufford Small Grant
15	Mr	To Luu Nguyen Duc	People and Nature Reconciliation (PanNature)	2nd Rufford Small Grant
16	Mr	Phong Le Minh	University of Science, National University Ho Chi Minh City	-
17	Mr	Thanh Huynh Kim	University of Science, National University Ho Chi Minh City	-
18	Dr	Nadine Ruppert (committee)	School of Biological Sciences, USM & Malaysian Primatological Society	2nd Rufford Small Grant
19	Ms	Jo Leen Yap (committee)	School of Biological Sciences, USM & Malaysian Primatological Society	2nd Rufford Small Grant
20	Mr	Harris Wei Khang Heng (committee)	Institute of Ocean and Earth Sciences, University of Malaya	1st Rufford Small Grant
21	Mr	Ethan Pang (committee)	School of Biological Sciences, USM & Malaysian Primatological Society	1st Rufford Small Grant
22	Dr	Su Yin Chee (committee)	Center for Marine and Coastal Studies, USM	1st Booster Grant

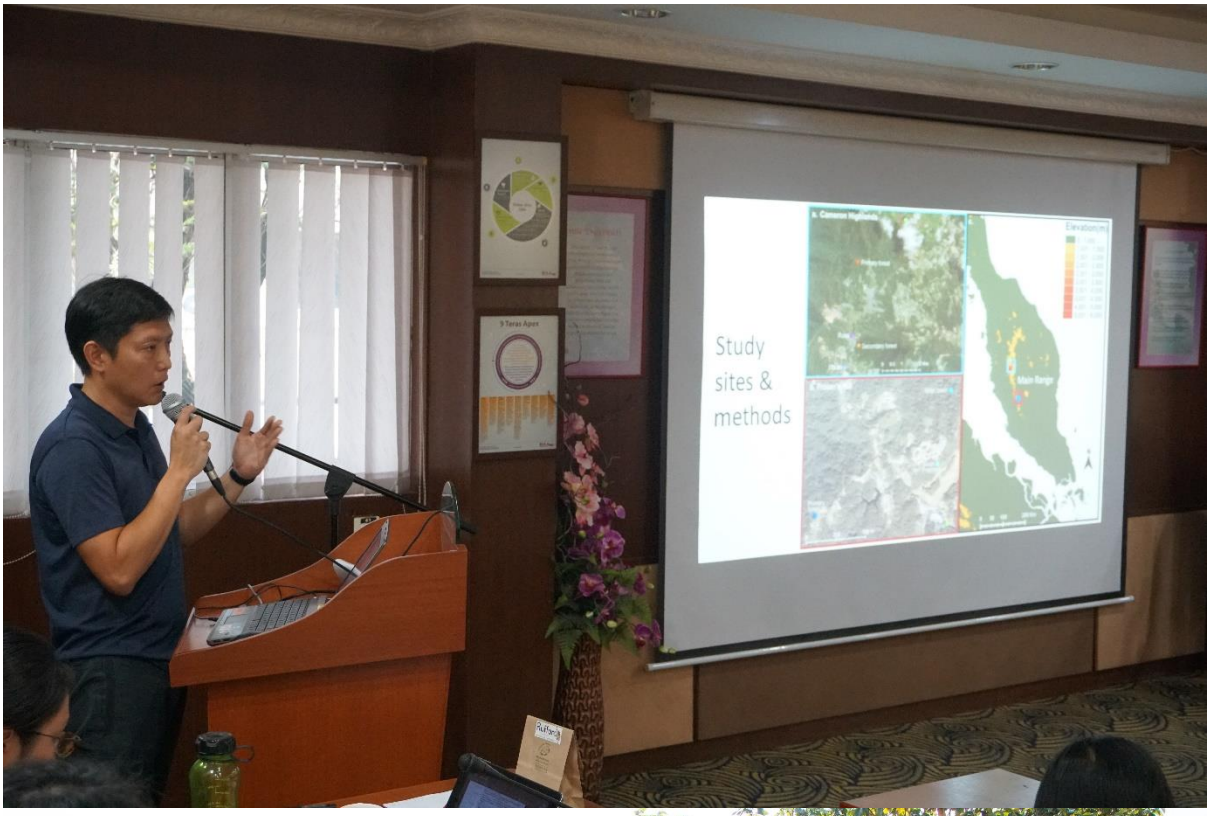
Conference schedule and abstracts:

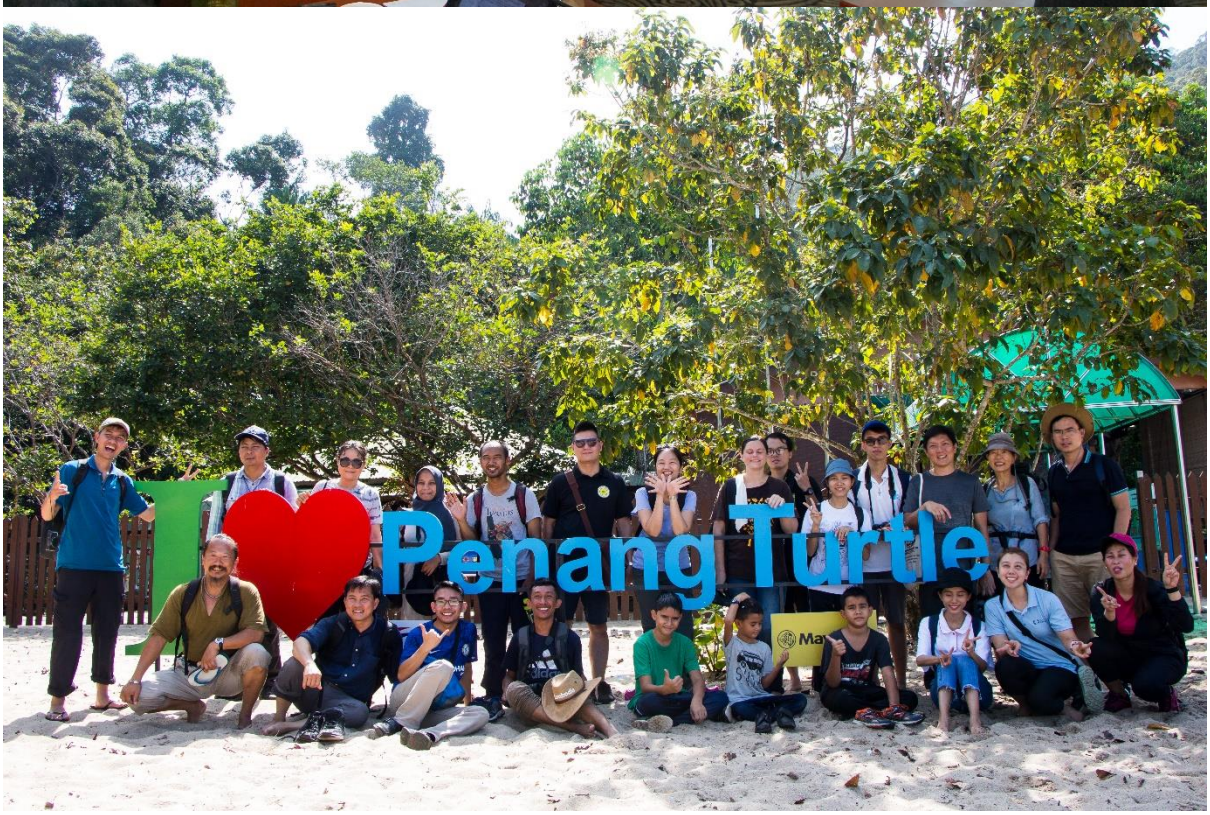
Attached as Appendix in Conference Booklet (pdf file).

Photo highlights:


The observation suggest the java sparrow movement are
season.
their movement pattern are still unknown but usually wil
and rare during dry season


CENTRE FOR MARINE AND COASTAL STUDIES
(CEMACS)


Study
sites &
methods


Penang Turtle


Rufford Small Grant
Conference 2020
10th - 13th January 2020
Penang, Malaysia


KELUAR

Rufford Small Grant Conference 2020

10th - 13th January 2020
Penang, Malaysia

"Synergizing Regional Conservation Efforts for Global Impact."

Organised by:

The Rufford Foundation

UNIVERSITI SAINS MALAYSIA

APEX™

SBS School of Biological Sciences
Excellence Through Bio-Diversity

Malaysian Primatological Society MPS

Program

Date and Time	Agenda
Day 1 - Welcoming: 10 January 2020 (Friday)	
1745	Gathering at Vistana Hotel lobby
1800	Shuttle to dinner venue, Jawi House Café Gallery in George Town
1900-2100	Welcoming Dinner
2100	Shuttle back to Vistana Hotel or free and easy (at own expenses)
Day 2- Conference: 11 January 2020 (Saturday)	
0700-0800	Breakfast at Vistana hotel
0800-0815	Gathering at hotel lobby
0815-0900	Shuttle to conference venue (Universiti Sains Malaysia, School of Biological Sciences, Room 107)
0900-0915	Registration
0915-0930	Welcoming address by Mr. Josh Cole, Grants Director of The Rufford Foundation
	Opening remarks by Dr. Nadine Ruppert, Conference Chair
Presentations Session 1	
0930-0950	**Greening of grey: Creating space for nature on artificial coastlines in Penang** Chee Su Yin, Yee Jean Chai, Ally Evans, Rebecca L. Morris, Elisabeth M.A. Strain, Ross Coleman, Cheah Chee Ban & Louise B. Firth
0950-1010	**Estimating Giant ibis occupancy at waterholes in the dry forest of Eastern plains landscape, Cambodia** Pin Chanratana
1010-1030	**Application of tree propagation techniques for conservation and development of endangered conifer species in the mountainous corridor Hoa Binh – Son La in Northern Vietnam** Nguyễn Đức Tố Lưu
1030-1050	**Understanding the socio-ecological systems in Tun Mustapha Park, Sabah, Malaysia through local communities' perspectives** Voon-Ching Lim, Mohd Iqbal Mohd Noor, Eva Vivian Justine, Kamal Solhaimi Fadzil & Goh Hong Ching
1050-1105	**Morning Tea Break**
Presentations Session 2	
1105-1125	**Status and range decline of the Germain's peacock pheasant in Southern Vietnam** Vy Nguyen Tran
1125-1145	**Education strategies for Javan lutung conservation in the Bromo-Tengger-Semeru National Park, Indonesia** Ika Yuni Agustin & Eni Hidayati

1145-1205	**Distribution and conservation of the Critically Endangered Giant land snail (*Bertia cambojiensis*) in Southern Vietnam** Trinh Phong Hoai
1205-1225	**Current status of mangrove forest degradation in Xuan Thuy National Park, Vietnam** Tran Van Sang
1225-1245	**Wildlife consumption survey in Yangon, Myanmar** Sapai Min
1245-1305	**A glimpse on seahorses in Mindanao: Of shapes, forms and microhabitats** Sharon Rose Tabugo
1305-1430	**Lunch Break & Group Photo**
Presentations Session 3	
1430-1450	**Conservation of Northern white-cheeked gibbon (*Nomascus leucogenys*) in Pu Hoat Nature Reserve, Vietnam** Bui Thanh Tung & Nguyen Van Tay
1450-1510	**Population pensity of Red giant flying squirrel, *Petaurista petaurista* in Merapoh, Malaysia** Mohamad Nur Arifuddin, Izereen Mukri, Suganthi Appalasamy, Jayaraj Vijaya Kumaran & Mohd Tajuddin Abdullah
1510-1530	**Reference group influences and campaign exposure effects on rhino horn demand: Qualitative insights from Vietnam** Dang Vu Hoai Nam, Martin Reinhardt Nielsen & Jette Bredahl Jacobsen
1530-1550	**Temporal changes in forest structure and resource abundance affect occupancy and diversity of tropical montane birds in Peninsular Malaysia** Malcolm C. K. Soh, Amanda R. Ridley, Kelvin S.-H. Peh, Chong Leong Puan & Nicola J. Mitchell
1550-1610	**Distribution of the endangered Yellow tail brook barb *Poropuntius deauratus* (Valenciennes, 1842) from coastal river drainages in Central Vietnam** Vo Thi Bich-Thao
1610-1625	**Afternoon Tea Break**
Presentations Session 4	
1625-1645	**Community-based monitoring: Reconciliate farmers and the endangered rice eater bird, Java sparrow *Lonchura oryzivora* in Gunungkidul Karst Region, Java Island, Indonesia** Irfan Rosyadi
1645-1705	**Population densities of agile gibbon (*Hylobates agilis*) and their relationship with habitat disturbance in Ulu Muda Forest Reserve, Malaysia** Yi Heng Pang, Nadine Ruppert, Susan Lappan, Nik Fadzly Nik Rosely & Thad Bartlett
1705-1745	**Group Discussion:** *"Pressing conservation issues in Southeast Asia and how to strengthen regional partnerships"*
1745-1800	**Closing Remarks**

1800-1830	Shuttle to dinner venue, Ananda Bahwan Garden Café in George Town
1830-2030	Dinner
2030	Shuttle back to Vistana Hotel or free and easy (at own expenses)
Day 3 - Field Trip: 12 January 2020 (Sunday)	
0630-0650	Breakfast at Vistana Hotel
0650-0700	Gather at hotel lobby
0700-0800	Shuttle to **Penang National Park (PNP)**
0800-1130	Boat to Kerachut Turtle Sanctuary, walk at lowland forest to meromictic lake
1130-1145	Boat to **Centre for Marine and Coastal Studies (CEMACS)**
1145-1300	CEMACS guided tour
1300-1400	Lunch at CEMACS
1400-1415	Boat back to the entrance of PNP
1415-1430	Shuttle to **Tropical Spice Garden (TSG)**
1430-1600	TSG guided tour
1600-1730	Free and easy around TSG or by the beach
1730-2000	Closing dinner at The Pavilion, Tropical Spice Garden. Theme "Tropical Summer"
2030	Shuttle back to Vistana Hotel or free and easy (at own expenses)
Day 4 - Departure: 13 January 2020 (Monday)	
Breakfast and check-out from Vistana Hotel before 12pm. Own travel arrangements.	

About Penang Island, Malaysia

Penang is an island-state off the north western coast of Peninsular Malaysia. It comprises two parts - Penang Island, with the capital city of the state - George Town, and a strip of mainland Peninsula. Also regarded as the food capital of Malaysia, Penang entices visitors with its beautiful coasts and scrumptious cuisines. George Town is a listed UNESCO World Cultural Heritage Site. Penang is highly diverse in ethnicity, culture, nature, language and religion, and visitors from all over the world visit Penang for its nature and cultural heritage.

Google 'Penang' and you will find amazing things to do, such as visiting the heritage buildings or appreciating the nature in Penang Hill, Penang Botanic Gardens or Penang National Park. It is easy to understand why Penang is called the 'Pearl of the Orient'. Its landscape is a mosaic of British colonial, oriental, Asian and modern influences, together with a social fabric woven of Asia's richest cultures.

Map of Penang Island. Source: Pinterest

- *Vistana Hotel Penang Bukit Jambul*
- *Place of interest during the conference*

Travel and Accommodation Information

Conference Venue:

Room 107, School of Biological Sciences, Universiti Sains Malaysia

Accommodation:

Hotel Name : Vistana Penang Bukit Jambul
Address : 213, Jalan Bukit Gambir, Bukit Jambul, 11950 Penang, Malaysia
Telephone : +60 4 646 8000
Website : www.vistanahotels.com/penang/
Email : enquiry@VistanaPenang.com
GPS : N 05° 33' 62.6" E 100° 29' 15.9"

Description of the hotel:

The Vistana Hotel Penang is conveniently located a short (<5 min) driving distance from the conference venue and within walking distance of the shopping mall, Bukit Jambul Complex. The Bukit Jambul Country Club Golf Course, the Bayan Lepas Free Industrial Zone, and the Penang International Airport are also conveniently nearby. George Town is only a 30-minute drive away.

Getting to the hotel from airport:

The Vistana Hotel is located about 8 km from the Penang International Airport (PEN), which takes about 20 minutes by car. There are two ways of getting to Vistana Penang Bukit Jambul from the airport. You can get around with the shuttle service provided by Vistana Penang Bukit Jambul (information about the shuttle service will be provided in January as the hotel is currently revising their rates). Or, which is more convenient, use the Grab Car service.

Other information:

- Check-in from: 03:00 PM; Check-out until: 12:00 PM
- You may be asked to pay the **RM10 tourism tax** per room per night upon check-in, which the **organiser will reimburse** during the first day/ registration.
- Breakfast is offered at Vistana Hotel. Lunch served during the conference will mainly be vegetarian and fish.
- To make this conference sustainable & environmentally-friendly, please **bring your own lanyards** for the name tag, and a **refillable tumbler**/ water bottle.
- For the field trip, bring **proper hiking shoes**, sun blocker, and umbrella/ raincoat.
- The theme of the Closing Dinner is **"Tropical Summer"**, dress code is "tropical smart casual or elegant". You can **bring clothes to change** to the field trip and leave them on the bus. You can shower and change at the dinner venue (Tropical Spice Garden).

The Venue:

About Universiti Sains Malaysia (USM)

Established in 1969 with its main campus located in Penang Island, Universiti Sains Malaysia (USM) is the second oldest university in Malaysia and one of the leading universities in the world (ranked #165 by QS). USM has 26 schools, offering undergraduate and postgraduate education and research-based degrees to local and international students. More information about USM available at https://www.usm.my/. The School of Biological Sciences (SBS), one of USM's oldest schools, offers undergraduate and postgraduate science degrees, including conservation-related qualifications in Environmental Science, Zoology and Marine Biology. More information about SBS at http://bio.usm.my/. USM champions sustainability and was conceptualised as a "University in a Garden", balancing the role and function of the university as an institution of higher learning and nature. The flora, fauna, aquatic and other natural elements are dynamically linked to the exploration of knowledge into the nature of existence. The concept is an invitation to value, preserve and nurture the campus ambient as part of the efforts to create and sustain an intellectually conducive setting. It is about touching hearts and minds in appreciation of nature as a source of inspiration as bequeathed to us by the Creator. (Text adapted from http://www.mdbd.usm.my/usm/. For more pictures of the campus visit: https://www.usm.my/images/pdf/theuniversityinagarden.pdf).

Rufford Small Grant Conference – Malaysia 2020

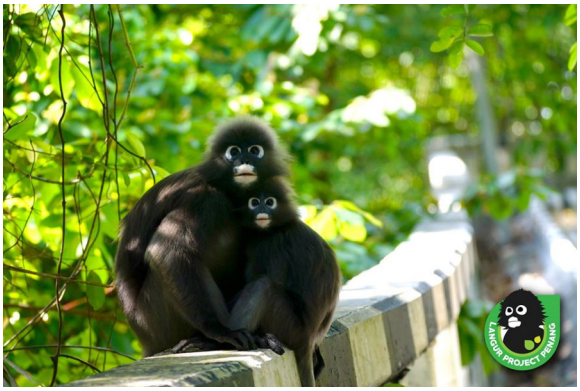
"Synergizing Regional Conservation Efforts for Global Impact"

10th -13th January 2020, Penang, Malaysia

The Co-organiser:

About Malaysian Primatological Society (MPS)

MPS is Malaysia's first NGO revolving around Malaysian primates. The mission of MPS is to enhance primate research and conservation efforts while increasing public awareness on the importance Malaysian primates. Focal projects under the umbrella of MPS are Night Spotting Project, Langur Project Penang, Primate Watch Malaysia, Gibbons of Peninsular Malaysia, and Macaca Nemestrina Project focusing on diverse species such as Dusky leaf monkeys, Southern pig-tailed macaques and small apes. MPS is supported with grants by Disney Conservation Fund, Rufford Foundation, Orangutan Foundation and others.



These primate projects are supported by The Rufford Foundation:

Macaca Nemestrina Project
Facebook.com/nemestrina

Langur Project Penang
Facebook.com/LangurProjectPenang

UNGKA-Gibbons of Peninsular Malaysia
Facebook.com/GibbonsOf Malaysia

The Fieldtrip:

About Penang National Park (PNP)

Photo by Tripsavvy

Photo by Culture Trip

At a size of 23 km^2, Penang National Park is Malaysia's smallest national park and one of the smallest national parks in the world. However, you can fill a day with activities as diverse as jungle walks, camping, fishing and sunbathing on quiet, golden-sand beaches. There are multiple forest and beach trails to explore this park, with the highly recommended Monkey Beach trail and Pantai Kerachut trail. From Monkey Beach it is another 30 minutes to Muka Head, the isolated rocky promontory at the most north western corner of the island, where on the peak of the head is a lighthouse dating from 1883. The views of the surrounding islands from up here are worth the sweaty uphill jaunt.

A longer and more difficult trail heads south from the suspension bridge towards Pantai Kerachut, a beautiful white-sand beach that is a popular spot for picnics and a green-turtle nesting ground. On your way is the unusual meromictic lake, a rare natural feature composed of two separate layers of unmixed freshwater on top and seawater below, supporting a unique mini-ecosystem. From Pantai Kerachut, you can walk about 40 minutes onward to further-flung and isolated Teluk Kampi, which is the longest beach in the park; look for trenches along the coast – they're remnants of the Japanese occupation in WWII.

Muka Head Lighthouse. Photo by Traveltips Penang

About Centre for Marine and Coastal Studies (CEMACS)

Photo from CEMACS's official website

USM's Centre for Marine and Coastal studies (CEMACS) was established in August 1991 to undertake research and postgraduate training in Marine Science and Coastal Ecosystems. It provides the institutional mechanism for mobilising and integrating the University's considerable expertise and resources in marine science. The main objective of CEMACS is to enhance the capability of conducting integrated inter-and multi-disciplinary studies leading towards solving problems related to marine and coastal ecosystems. CEMACS is located at Teluk Aling the northwest coast of Penang Island in the Penang National Park. The centre is served by a number of core academics working in collaboration with research associates identified from other teaching schools as well as from outside the University. The centre's international associates include those from Canada, Australia, USA, UK, Japan, Cambodia, Indonesia, India, Iran, Australia, China, Singapore, Vietnam and Denmark. Presently, research and training conducted at the centre is focused on biodiversity and conservation of marine ecosystems, coastal forest ecosystems, mariculture and marine mammal ecology (dugong and dolphins; also see https://cemacs.usm.my/index.php/ms/).

About Tropical Spice Garden

Tropical Spice Garden (https://tropicalspicegarden.com/) is a bio-diverse living museum of the spices and other tropical plants that have shaped our global history. The six landscaped acres of the garden are a treasure trove of more than 500 living specimens of lush and exotic flora from around the world. Situated along Penang's north-western shores, on an abandoned, rubber plantation, this Southeast Asia's only tropical spice garden has three trails; the Spice Trail, Ornamental Trail and Jungle Trail – these treks that take you past different sections of the compound. Each 'room' features special plant collections such as spices and herbs, aquatic plants and jungle flora. Instructional signage exhibiting the names and uses of each plant. After a guided tour in this magical garden, we will enjoy our welfare dinner here in relaxed atmosphere. Please bring clothes to change to fit the theme "Tropical Summer" (dress code: tropical smart casual or elegant).

Photos from Tropical Spice Garden's Facebook page

ABSTRACTS

Greening of grey: Creating space for nature on artificial coastlines in Penang

Chee Su Yin[1*], Yee Jean Chai[1], Ally Evans[2], Rebecca L. Morris[3], Elisabeth M.A. Strain[3], Ross Coleman[4], Cheah Chee Ban[5] & Louise B. Firth[6]

[1] Centre for Marine and Coastal Studies, Universiti Sains Malaysia, Penang, Malaysia
*Email: suyinchee@usm.my
[2] School of Ocean and Earth Science, University of Southampton, United Kingdom
[3] School of Biosciences, University of Melbourne, Australia
[4] Coastal & Marine Ecosystems, School of Life & Environmental Sciences, The University of Sydney, Australia
[5] School of Housing, Building and Planning, Universiti Sains Malaysia, Penang, Malaysia
[6] School of Biological and Marine Sciences, University of Plymouth, United Kingdom

ABSTRACT

"Ocean sprawl" has been attributed to increasing replacement of natural coastlines with artificial structures (e.g. seawalls, breakwaters, rock revetments). Set against a backdrop of a growing global population and demand for infrastructure, artificial structures are being constructed to protect coastlines from impacts associated with climate change (e.g. sea-level rise, coastal erosion, rise in storm frequencies). Artificial structures can have widespread ecological consequences such as reduction in native biodiversity and facilitation of spread of non-indigenous species. The inability of artificial structures to mimic natural habitats may be due to a range of intrinsic factors including lack of topographic complexity and space, and the materials used to construct them. Although there is growing knowledge on how 'eco-engineering' interventions can be used to enhance biodiversity, few studies have been conducted in tropical environments and even fewer in Malaysia. Here we report the country's first eco-engineering projects carried out in Malaysia on the heavily-developed coastlines of Penang. Drill-cored rock pools encouraged the colonization of small to medium-sized organisms such as barnacles, limpets, polychaetes, shrimps, crabs, juvenile sea cucumbers and fishes, on otherwise, barren surfaces of rock revetments on reclaimed coasts. The "flowerpots" attached onto a breakwater at a quay created habitat for mobile organisms such as fishes and octopi. The "flowerpots" were also colonized by giant oysters on the outside and hooded oysters on the inside surfaces of the flowerpots. Textured tiles from the World Harbour Project diversified biodiversity at harbours by supporting colonization and/or growth of local oyster, shrimp, and mussel species.

KEYWORDS: Eco-engineering, offset, compensate, biodiversity, conservation

Estimating Giant ibis occupancy at waterholes in the dry forest of Eastern plains landscape, Cambodia

Pin Chanratana*

Ministry of Environment, Phnom Penh, Cambodia.
*Email: chanratana.pin@gmail.com

ABSTRACT

During the dry season in Eastern Cambodia, the landscape's water availability is mainly limited to perennial rivers as well as seasonal waterholes (local name "Trapeang"). These waterholes form an essential part of the deciduous dipterocarp forest and are important for globally threatened mammal and bird species in the Cambodian dry forest. Camera traps were used during the dry season of 2015-2016 in Srepok Wildlife Sanctuary, Eastern plains landscape, Cambodia to photograph the Critically Endangered (IUCN Red List) Giant ibis that utilizes seasonal waterholes to forage. Environmental and anthropogenic factors were collected for modelling. Our results show that water depth, waterhole size, and number of neighbouring waterholes positively influenced waterhole utilization by our target species. Additionally, resource competition occurred between humans and wildlife at waterholes during the dry season when water was scarce. Understanding of Giant ibis' waterhole utilization is crucial to the conservation of this species in Cambodia's dry forest. It can help us to identify what the preferred waterholes of the Giant ibis are, which they utilize more frequently, and help us to plan Giant ibis census effectively. Improvement of waterholes to retain rainwater and to improve foraging habitat for wildlife during the dry season is a management tool that could be beneficial to wildlife in the Cambodian dry forests.

KEYWORDS: Cambodia, dry forest, Giant ibis, occupancy, waterholes

Application of tree propagation techniques for conservation and development of endangered conifer species in the mountainous corridor Hoa Binh – Son La in Northern Vietnam

Nguyễn Đức Tố Lưu*

People and Nature Reconciliation (PanNature), Cau Giay District, Hanoi, Vietnam
*Email: ndtluu@nature.org.vn

ABSTRACT

The mountainous corridor area between Son La and Hoa Binh provinces in Northern Vietnam is a homeland for at least 15 conifer tree species, most of which are endangered, mainly due to limited natural regeneration in small fragmented populations. Application research for effective propagation of the trees is an active way to conserve and develop the precious genetic resources. *Calocedrus rupestris,* an endemic species of Cupressaceae, is a conifer from the limestone ridge of the mountains. Vegetative propagation was conducted by stem cutting of the species in winter time. The cuttings were maintained in a non-mist propagator. After 5 months the cutting produced good roots and seedlings could be used for ex-situ plantation. This simple and effective method was trained to local people for further cultivation of the plant.

The Hoa Binh – Son La mountainous area became also well-known after the discovery of a new five-needle pine - *Pinus cernua* in 2014. This pine produces large unwinged seeds, edible for rodents. Therefore, it has very few natural generations in the area. Abundant seed production of the species has a periodicity of 3 years that also limits the frequent seed generation. Seed collection and sowing of these pines has been conducted. Germination percentage reached over 50%. Seedlings can be used for planting after 1 year. Successful seed propagation of these rare species can serve as a basis for further plantation trials in order to investigate the potential of the pines for forest plantations in the North-Western part of Vietnam.

KEYWORDS: Vegetative propagation, *Calocedrus rupestris, Pinus cernua*, seed propagation

Understanding the socio-ecological systems in Tun Mustapha Park, Sabah, Malaysia through local communities' perspectives

Voon-Ching Lim[1,2*], Mohd Iqbal Mohd Noor[1,2], Eva Vivian Justine[2], Kamal Solhaimi Fadzil[2,3] & Goh Hong Ching[1,2]

[1]Department of Urban and Regional Planning, Faculty of Built Environment, University Malaya, Kuala Lumpur, Malaysia
*Email: vclim@um.edu.my
[2]GCRF Blue Communities, Plymouth Marine Laboratory, Plymouth, United Kingdom
[3]Department of Anthropology and Sociology, Faculty of Arts and Social Sciences, University of Malaya, Kuala Lumpur, Malaysia

ABSTRACT

Understanding how communities use ecosystem services provided by coastal and marine habitats can facilitate the management of marine protected areas (MPA) such as Tun Mustapha Park (TMP), Malaysia where the ecosystem-based management plan is still to be implemented. As the residents of the habitats and hence primary users of ecosystem services, local communities can provide insights into ecosystem services through their observation and experience, which could enhance the ecosystem-based management plan. Such knowledge can be obtained through community-partnered participatory research, where local communities are involved in the research and hence the decision-making. Participatory research could also instil interest in the local communities to protect their homeland. This project partnered with community-based organisations (CBO) across TMP to assess ecosystem services in the MPA through ecosystem mapping and Photovoice. Firstly, the CBOs were asked to map (i) coastal and marine habitats, and (ii) ecosystem services in TMP based on their knowledge. This resulted (i) a map comprising locations of intertidal zones, mangroves, seagrasses and coral reefs, and (ii) three maps of ecosystem services namely provisioning, cultural and regulating/supporting services. Next, the CBOs were given training in Photovoice (i.e. introduction to ecosystem services, research ethics, photography and steps of Photovoice), which they will conduct from December 2019 onwards. The result from the Photovoice is expected to enhance the maps of habitats and ecosystem services. Nevertheless, the preliminary findings from ecosystem mapping and Photovoice training provided support to the consideration of local ecological knowledge as key criteria in ecosystem-based management of MPA.

KEYWORDS: Citizen science, Photovoice, participatory mapping, community empowerment, ecosystem services

Status and range decline of the Germain's peacock pheasant in Southern Vietnam

Vy Nguyen Tran*

Department of Biological Resources, Institute of Tropical Biology, Vietnam Academy of Science and Technology, Ho Chi Minh City, Vietnam
*Email: vychim@yahoo.com

ABSTRACT

The Southeast Asian range of a narrow-geographical range species, *Polyplectron germaini* (Germain's peacock pheasant; GPP) has been shrinking due to pressures from anthropogenic activities. To improve our knowledge of population densities in its remaining habitats, current and historical distribution range, and the contraction of its distribution range as a surrogate for population decline, we carried out a line transect survey in Cat Tien National Park in Southern Vietnam to estimate its density and subsequently model its habitat associations. Our results consistently showed that the density of the GPP was not significantly different among mosaic, evergreen, or mixed deciduous forests, but appeared to be notably lower in bamboo forests. GPP was mostly found close to water sources in mosaic, evergreen and mixed-deciduous forests. Primary forest loss, mainly in the lowlands, within the ranges of both species was at least 70% over the last 70 years, suggesting that suitable habitats within the range of the species may have shrunk by at least 60-70%. In addition, a number of threats still occur in their remaining suitable habitats, making it increasingly vulnerable in the long-term, if conservation interventions, such as increased protection, are not implemented.

KEYWORDS: *Polyplectron germaini,* Germain's peacock pheasant, anthropogenic activities, Vietnam

Education strategies for Javan lutung conservation in the Bromo-Tengger-Semeru National Park, Indonesia

Ika Yuni Agustin[1*] & Eni Hidayati[2]

[1]Faculty of Mathematics and Natural Sciences, University of Brawijaya, Malang, Indonesia
*Email: ikayuni.agustin@gmail.com
[2]Forest Department, Faculty of Agriculture, University of Mataram, Mataram, Indonesia

ABSTRACT

The Javan lutung (*Trachypithecus auratus;* Vulnerable - IUCN Red List) is a primate endemic to the islands of Java, Bali and Lombok. The main threats for this species are poaching, forest degradation and forest conversion into arable land. Bromo-Tengger-Semeru National Park (BTSNP) in east Java is one of these primates' habitat. The park provides various ecosystem services for the people from the upstream to the downstream areas. With increasing pressure for farm land, it is important to develop conservation education strategies focusing on forest ecosystem services and Javan lutung's important ecological functions. This ongoing project provides an updated mapping on Javan lutung distribution and important vegetation for the primate in BTSNP, especially in the western part of Mt. Semeru. This project also provides information on various stakeholders' perception and knowledge regarding Javan lutung's ecological functions and ecosystem services provided by its habitat. All the findings from the activities are taken into consideration for developing an education strategy for the conservation of the Javan lutung. We found that primates are distributed in Resort Coban Trisula, Resort Jabung, Resort Ranu Pani, Resort Senduro, and in PERHUTANI forest in Poncokusumo village. We identified 20 food plant species for these primates and 3 tree species for primate cover during the survey. From interviews with local people we found that most lack knowledge on the primates' role in the forest ecosystem, but most of them were aware that the forest provides ecosystem services for them. They also agree that forest and Javan lutung conservation curricula are to be taught in school. We recognized one potential site for education activities where BTSNP staff and local communities in Poncokusumo village agree using the site as education activities area.

KEYWORDS: Ebony leaf monkey, Bromo Tengger Semeru National Park, ecological survey, stakeholder's perception, education strategy

Distribution and conservation of the Critically Endangered Giant land snail (*Bertia cambojiensis*) in Southern Vietnam

Trinh Phong Hoai*

Lab of Zoology, Department of Ecology - Evolutionary Biology; Faculty of Biology and Biotechnology, University of Science, Ho Chi Minh City, Vietnam
*Email: phonghoaitrinh95@gmail.com

ABSTRACT

Bertia cambojiensis is a Critically Endangered (IUCN Red List) land snail found at restricted areas in Southern Vietnam. In the wild, this species is facing extinction risk by being used as food and medicine, as well as through exploitation for shell trade. Presently, distribution areas, habitat, and population density data are very important to determine species status and to provide baseline information for management and conservation. In Lam Dong province, many living individuals are found being sold as food on the roadside, hence this species is predicted to occur in this region and adjacent areas. Our surveys were conducted during rainy season (2018) and dry season (2019) in Dong Nai, Lam Dong, and Binh Thuan provinces with 30 sampling plots (each 20m x 20 m) for each area. *Bertia cambojiensis* was found in all survey areas with three habitats: evergreen forest, bamboo forest, and mixed forest. In the survey areas, *B. cambojiensis* occurred in five microhabitats: on the ground, under leaf litter, on rocks, on rotten fallen trees, and on living trees. *Bertia cambojiensis* lives in areas with soil temperature from 21.7°C to 25.5°C, acidic pH, and soil moisture from 30% to over 80%. In total, 39 live individuals and nine shells were recorded. This species shows the highest population density in Lam Dong province, and the lowest in Dong Nai province. Our study results provide the scientific basis for local managers to develop appropriate and effective management strategies for *B. cambojiensis*.

KEYWORDS: *Bertia cambojiensis*, Giant land snail, distribution, Southern Vietnam

Current status of mangrove forest degradation in Xuan Thuy National Park, Vietnam

Tran Van Sang*

Center for Nature Conservation and Development, Hanoi, Vietnam
*Email: sangvfu@gmail.com

ABSTRACT

Mangroves are tropical and subtropical communities of tree species that grow in estuary areas, in intertidal mudflats and along coastlines where they are regularly inundated by saline or brackish water. Living at the interface between land and sea, most mangroves are vulnerable due to climate change. This study provides information on the current status of mangrove forest degradation in Xuan Thuy National Park, the first Ramsar site in Vietnam. In recent years, due to the change in climate conditions (i.e. extreme cold winter) and human activities (i.e. heightened lagoon banks for aquaculture), some mangrove species showed less adaptability. The survey results indicate that some mangrove species in Xuan Thuy National Park such as *Kandelia obovate* and *Sonneratia caseolaris* were degrading. There were more than 100 trees of *S. caseolaris* that died after the extreme cold winter of 2013. The survey results from 2019 found that the 7.2 km shoreline of Con Lu islet has been eroding and 63.4 ha of mangroves of *K. obovata* in Con Lu islet have eroded. A strong storm in 2012 caused the change in the shoreline of Con Xanh islet and Con Mo islet and the loss of 113.05 ha of mangroves in three buffer zones, Giao An, Giao Lac and Giao Xuan. Our study proposes long-term planning for mangrove conservation such as restoring and rehabilitating degraded mangrove forests, enhancing monitoring and controlling mangrove forests, signing co-management plans of mangrove forests, training and improving awareness of communities and applying new livelihood models to reduce pressure on the mangrove forests.

KEYWORDS: Mangrove forest, degraded mangrove, climate change, Xuan Thuy National Park

Wildlife consumption survey in Yangon, Myanmar

Sapai Min*

University of Yangon, Kamayut, Yangon, Myanmar
*Email: jassie.jasmine@gmail.com

ABSTRACT

A survey of wildlife consumption in Yangon, Myanmar was conducted from July to November 2019. The study used a structured questionnaire and face-to-face interviews for at least 60 local people in Yangon. Four types of consumer behaviour were addressed in the questionnaire such as using wild animals as food, using medicine or tonic products containing wildlife ingredients, wearing ornaments and garments made from wildlife, and keeping wildlife as pets. Attitudes towards wildlife were included. According to the results obtained from the interviews with 60 people, 22 % showed preference to eat wildlife meat. Sambar and Muntjac deer were recorded as the most favourite species for food. 50 % of respondents believed that wildlife is good for health. Serow oil was recorded as the most favourite medicine for joint pain, followed by python gall bladder for stroke and infantile paralysis. 68% of interviewees used wildlife parts as the ornaments. Elephant tail hair rings were the most favourite items. Parrot and Hill mynas were recorded as pet species. 72% of interviewees did not know the value of wildlife and which the protected species and threatened species are. The study's findings were provided to inform government and non-government organization strategies for reforming the current unregulated wildlife (bushmeat) market and to improve controls of illegal wildlife trafficking.

KEYWORDS: wildlife, consumption, attitude, Yangon, Myanmar

A glimpse on seahorses in Mindanao: Of shapes, forms and microhabitats

Sharon Rose Tabugo*

Department of Biological Sciences, College of Science and Mathematics, MSU-Iligan Institute of Technology, Iligan City, Philippines
*Email: sharonrose.tabugo@g.msuiit.edu.ph

ABSTRACT

Seahorses are considered as flagship species of the marine environment because they occupy various habitats. They are notably charismatic, hence, gained popularity in Traditional Chinese Medicine (TCM) and are considered as highly vulnerable species due to overfishing and habitat destruction. Thus, there is a need to monitor their populations. This study documents the different species from selected areas in Mindanao and their respective microhabitats. Elliptic Fourier Analysis was done to describe and visualize subtle body shape variations. Results suggest strong evidence for phenotypic differentiation that could be a result of specialization to different microhabitats. Body shape was species-specific and differed based on sex and geographical locations. Fractal Analysis was done via Box-counting and Lacunarity method. Species were found to be morphologically complex and attributed differences could be due to variation of morphological complexity as they have adapted to their respective microhabitats. This study suggests that it is vital to conserve microhabitats of seahorses in the marine environment. Thus, understanding the nature and variation of phenotypes in populations is vital for developing effective management strategies for conservation.

KEYWORDS: Seahorse, conservation, Philippines, microhabitats, shape

Conservation of Northern white-cheeked gibbon (*Nomascus leucogenys*) in Pu Hoat Nature Reserve, Vietnam

Bui Thanh Tung* & Nguyen Van Tay

Center for Nature Conservation and Development, Hanoi, Vietnam
*Email: tung.bui@ccd.org.vn

ABSTRACT

The Northern white-cheeked gibbon (*Nomascus leucogenys*) is one of the planet's most endangered primates and the most threatened species in Vietnam. Moreover, its status in Vietnam is still poorly known. Pu Hoat Nature Reserve is known as one of two key areas for this Critically Endangered (IUCN Red List) gibbon, however, it has received very little attention for conservation. There have been very little research and conservation efforts for this reserve. We conducted interviews on primate conservation with communities in this reserve in nine buffer zones with more than 60 households. Interview results showed the presence of gibbons in the reserve. More than 58% of interviewees were aware that there is this gibbon, the rest were not aware of the species. Interviews discussing the hunting for gibbons and other animals in the area are still ongoing. Our team recorded three captive gibbon individuals in local households in the buffer zone near the reserve. This information is important for gibbon presence surveys at the reserve to develop wider regional surveys of gibbons and to determine the status of the species at Pu Hoat Nature Reserve. We conducted presence surveys and collected data from five days in this reserve and detected three gibbon groups. We are still conducting follow-up surveys to complete the information on the density and characteristics of the distribution range of *Nomascus leucogenys* at Pu Hoat Nature Reserve.

KEYWORDS: Gibbon, *Nomascus leucogenys*, Pu Hoat Nature Reserve, primates

Population density of Red giant flying squirrels, *Petaurista petaurista* in Merapoh, Malaysia

Mohamad Nur Arifuddin[1,2*], Izereen Mukri[2], Suganthi Appalasamy[1,2], Jayaraj Vijaya Kumaran K[1,2,3] & Mohd Tajuddin Abdullah[3]

[1] Faculty of Earth Science, Universiti Malaysia Kelantan, Jeli, Malaysia
*Email: mohdnurarifuddin@gmail.com
[2] Malayan Rainforest Station, Merapoh, Malaysia
[3] Institute of Tropical Biodiversity and Sustainable Development, Universiti Malaysia Terengganu, Kuala Terengganu, Malaysia

ABSTRACT

A preliminary survey on the diversity of flying squirrels was conducted in several locations in Merapoh, Pahang, Peninsular Malaysia using standard line transect method. The survey areas included a pristine forest, logged-over forest and agroforested plantations. Flying squirrels are mainly nocturnal, thus observations were made using headlamp, binoculars (8x30 magnification) and a Digital SLR affixed with telephoto lens (Nikon D500 + Nikkor 200-500 F5.6 VR). We managed to record seven individuals from four species of flying squirrels, which included *Petaurista petaurista*, *Iomys horsefieldii*, *Hylopetes spadiceus* and *H. lepidus*. *Hylopetes lepidus,* which was recorded in the pristine forest, is listed as Data Deficient (IUCN Red List) highlighting the need to fill the ecological and population status information about these elusive animals. Even though the study period started in September 2019 and lasts until February 2020, continuous and systematic diversity surveys on flying squirrels are still needed as they are understudied in Malaysia, especially in Merapoh.

KEYWORDS: Population density, flying squirrels, nocturnal mammals

Reference group influences and campaign exposure effects on rhino horn demand: Qualitative insights from Vietnam

Dang Vu Hoai Nam[1,2*], Martin Reinhardt Nielsen[1], and Jette Bredahl Jacobsen[1,3]

[1]Department of Food and Resource Economics, Faculty of Science, University of Copenhagen, Denmark
*Email: dvhn@ifro.ku.dk
[2]Social Marketing Initiatives, Hanoi, Vietnam
[3]Center for Macroecology, Evolution and Climate, University of Copenhagen, Denmark

ABSTRACT

While considerable effort is invested in rhino horn demand reduction campaigns, it is unclear to what extent users are exposed to and accept the selected messages in these ads. We investigate recall as an indicator of exposure and the influence of different reference groups by conducting fifty semi-structured interviews with confessed rhino horn users in Hanoi and using an interpretative thematic analysis. Results reveal an entrenched belief and "magical thinking" about the medicinal efficacy of rhino horn. The decision to buy or use rhino horn was almost exclusively influenced by peers with perceived expertise using rhino horn, whereas traditional medicine practitioners, doctors, government officials, business leaders, and celebrities had very little influence. Campaign exposure was relatively high, but campaign influence low as consumers considered recent demand reduction campaigns and the reference groups delivering the message as well as the implementing organisations unreliable and driven by profit. Willingness to sign a pledge to refrain from buying, using or gifting rhino horn encouraged by employers or association was relatively high (66%). But a high proportion would not comply with this pledge (88%). Case studies of users or their next of kin having experienced negative or no effect of rhino horn were suggested possibly effective in reducing demand by respondents. To increase the acceptance of demand reduction campaigns, organisations could consider reducing their own branding to reduce distrust in the target audience.

KEYWORDS: Wildlife trade, behaviour modification, demand reduction, peer pressure, rhino horn

Temporal changes in forest structure and resource abundance affect occupancy and diversity of tropical montane birds in Peninsular Malaysia

Malcolm C. K. Soh[1], Amanda R. Ridley[1], Kelvin S.-H. Peh[2,4], Chong Leong Puan[3] & Nicola J. Mitchell[1]

[1]School of Biological Sciences, The University of Western Australia, Perth, Australia
[2]School of Biological Sciences, University of Southampton, United Kingdom
[3]Faculty of Forestry, Universiti Putra Malaysia, Serdang, Malaysia
[4]Conservation Science Group, Department of Zoology, University of Cambridge, United Kingdom

ABSTRACT

Tropical montane forests have high endemism and provide fundamental ecosystem services but are experiencing rapid deforestation and climate change. Here we examine the resilience of tropical montane birds in Peninsular Malaysia to environmental change by comparing field data collected at the same nine locations 14 years apart. While we were able to demonstrate that the climate had changed at high altitudes via a trend analysis, there were no associated changes in bird communities beyond a slight shift in species composition at only one of nine sites. Species composition in our sampled sites, unlike species richness, showed some differences between sampling years, most notably with a tea plantation site showing a greater similarity to less disturbed sites than it did in our earlier survey. In general, colonization and persistence probabilities were affected by changes in arthropod abundance. Functional traits also played a role in moderating the sensitivity of birds to changes in vegetation structure and food abundance. The occupancies of birds restricted to higher elevations and certain foraging guilds such as insectivores and frugivores declined with changes in less canopy cover, ground cover and arthropod abundance. However, bird sensitivities to the same environmental changes were not dependent on body size.

KEYWORDS: Montane birds, climate change, habitat degradation, dynamic occupancy

Distribution of the endangered Yellow tail brook barb *Poropuntius deauratus* (Valenciennes, 1842) from coastal river drainages in Central Vietnam

Vo Thi Bich-Thao*

Department of Ecology and Evolutionary Biology, Faculty of Biology-Biotechnology, University of Science, Vietnam National University, Ho Chi Minh City, Vietnam
*Email: bichthao0504@gmail.com

ABSTRACT

The Yellow tail brook barb (*Poropuntius deauratus*) is one of the earliest described fish species in Vietnam since 1842. They have been reported to occur in Central Vietnam only. However, in some studies, this species is also recorded from Cambodia, Thailand, China, Laos, and Malaysia. The unclear distribution range of *P. deauratus* is caused by uncertainty of their taxonomy. *Poropuntius deauratus* was described with morphometric methods through differences of their caudal-fin morphology. To conserve this species, our project is aimed to solve the problem in taxonomy of *P. deauratus* by molecular analysis to re-investigate its distribution. *Poropuntius deauratus* was collected from river drainages in Central Vietnam, and compared with specimens from Thailand, Laos, and Cambodia in both dry and rainy season. Detailed distribution information was collected including latitude, longitude, and ecological parameters where *P. deauratus* occurred. Specimens were identified by morphology combined with DNA barcoding. Morphometric and molecular data showed specimens from Central Vietnam were more similar to *P. normani* collected from Dong Nai river drainage, Laos, Thailand, and Cambodia in previous reports. Our results strongly support the precise distribution of *P. deauratus* is not only in Central Vietnam but also in Laos, Thailand and Cambodia. In the mid of 2020, distribution areas will be mapped from river drainages where the species occurred. Distribution information is going to be presented in reports, maps, and publications for management in local provinces and conservationist.

KEYWORDS: *Poropuntius deauratus*, distribution, Central Vietnam

Community-based monitoring: Reconciliate farmers and the endangered rice eater bird, Java sparrow *Lonchura oryzivora* in Gunungkidul Karst Region, Java Island, Indonesia

Irfan Rosyadi*

Kanopi Indonesia, Yogyakarta, Indonesia
*Email: hcyanoventris@gmail.com

ABSTRACT

The Java sparrow *Lonchura oryzivora* is an endemic bird species to Java and Bali that is endangered due to poaching activities. This project aims to conserve the remaining Java sparrow population in the Gunungkidul Karst Region by involving local farmers. To gain information for conservation strategies, we have conducted surveys on Java sparrow's feeding habitat distribution and community surveys in Pejaten village, Panggang sub-district, Gunungkidul regency, Yogyakarta during June and August 2019. Habitat surveys were conducted through interviews with informants and observations at each location. Community surveys were conducted through focus group discussions and participatory village mapping. We have found at least 15 field farms which were reported as Java sparrow feeding habitat in the project site. As no grains are alive during dry season, they are often reported to visit cow sheds to find rice grains that remain among the straw. However, Java sparrows become rarer since most of them move to other areas in which rice fields can still be found. The community surveys showed that most people here live as farmers who spend all day at the field farm, however, they usually have water difficulties during dry season. The discussion also suggested that they want more portion more women to be involved in this project activity. They were also still confused about the importance of Java sparrows for conservation. Instead of having a strategic role in the ecosystem, this species is considered a pest for rice plantations. Farmers hope this project activity will give real benefit as well as solution for their problems.

KEYWORDS: Java sparrow, *Lonchura oryzivora, rice-eater bird,* Gunungkidul Karst Region, Indonesia

Population densities of agile gibbon (*Hylobates agilis*) and their relationship with habitat disturbance in Ulu Muda Forest Reserve, Malaysia

Yi Heng Pang[1]*, Nadine Ruppert[1], Susan Lappan[2], Nik Fadzly Nik Rosely[1] & Thad Bartlett[3]

[1] School of Biological Sciences, Universiti Sains Malaysia, Penang, Malaysia
* Email: ethanpangyiheng@student.usm.my
[2] Department of Anthropology, Appalachian State University, Boone, USA
[3] Department of Anthropology, University of Texas at San Antonio, San Antonio, USA

ABSTRACT

Agile gibbons (*Hylobates agilis*) are Endangered (IUCN Red List) due to habitat loss and degradation. They are restricted to northwestern Peninsular Malaysia, southern Sumatra and a small area of southern Thailand, where the area has been heavily modified for other land uses. Detailed knowledge of their abundance and habitat preference is required for effective conservation management. To estimate gibbon abundance and compare group densities in different forest types, we conducted acoustic surveys in nine locations in the Ulu Muda Forest Reserve, Kedah, Malaysia from April 2018 to February 2019. Surveys included primary forest, recently selectively logged and older selectively logged forests. We also evaluated habitat characteristics using vegetation speed plots and satellite imagery to assess the relationship between ecological variables and gibbon group densities. We detected the highest group densities in recently logged forest, indicating a compression effect linked to deforestation. Ulu Muda is one of the largest remaining forested areas in the distribution range of agile gibbons in the Malay Peninsula, and these results confirm its global importance for small ape conservation. Understanding the impact of selective logging on agile gibbon densities will improve our ability to predict the effect of different forestry practices on endangered arboreal frugivores and to implement effective conservation actions in Peninsular Malaysia.

KEYWORDS: Small apes, Hylobatidae, acoustic surveys, group density, habitat quality

Thank you and see you again soon!

IMPRESSUM

Organizing Committee

Dr. Nadine Ruppert (School of Biological Sciences, USM & Malaysian Primatological Society)

Yap Jo Leen (School of Biological Sciences, USM & Malaysian Primatological Society)

Harris Heng Wei Khang (Institute of Ocean and Earth Sciences, University of Malaya)

Dr. Su Yin Chee (Center for Marine and Coastal Studies, USM)

Ethan Pang Yi Heng (School of Biological Sciences, USM & Malaysian Primatological Society)

Josh Cole (The Rufford Foundation)

Cover Image: Penang National Park, courtesy of The Habitat Foundation.

"There is a pleasure in the pathless woods,
There is a rapture on the lonely shore,
There is society where none intrudes,
By the deep Sea, and music in its roar:
I love not Man the less, but Nature more,
From these our interviews, in which I steal
From all I may be, or have been before,
To mingle with the Universe, and feel
What I can ne'er express, yet cannot all conceal."

—Childe Harold's Pilgrimage by George Gordon Byron