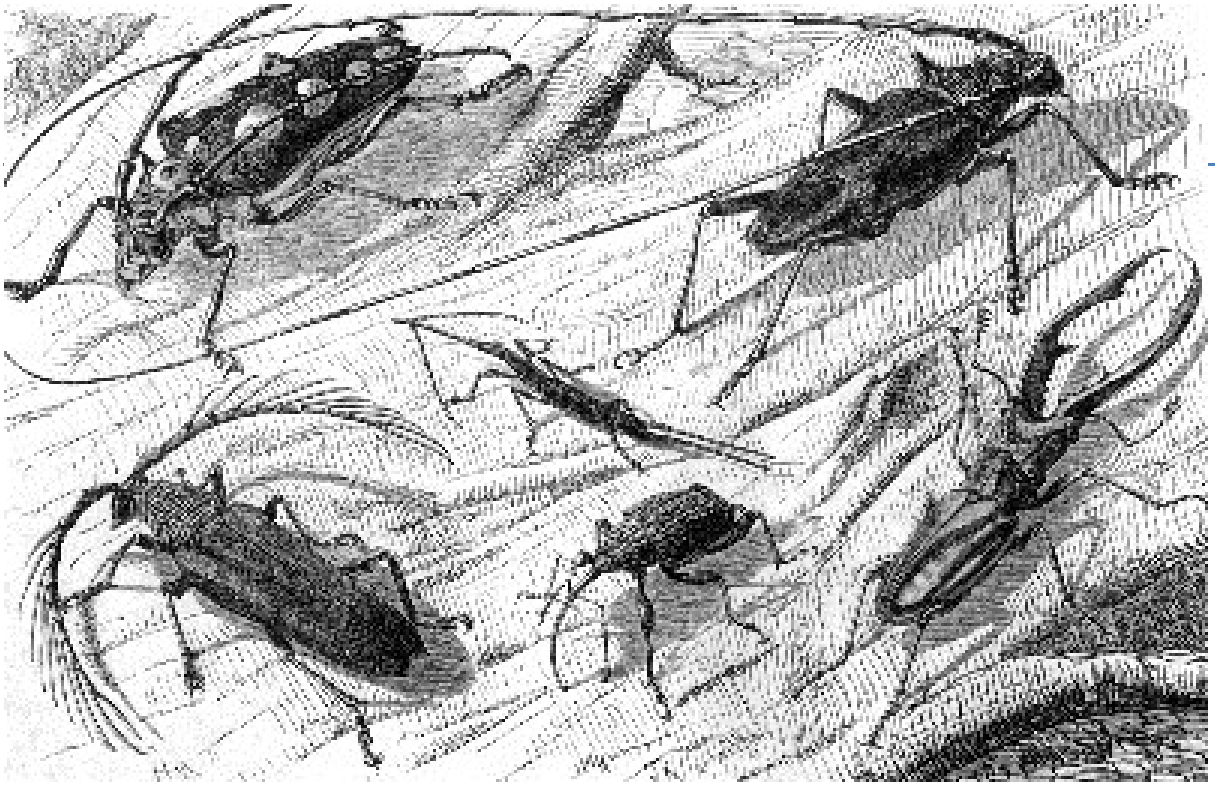
WALLACEA
UK-INDONESIA COLLABORATION

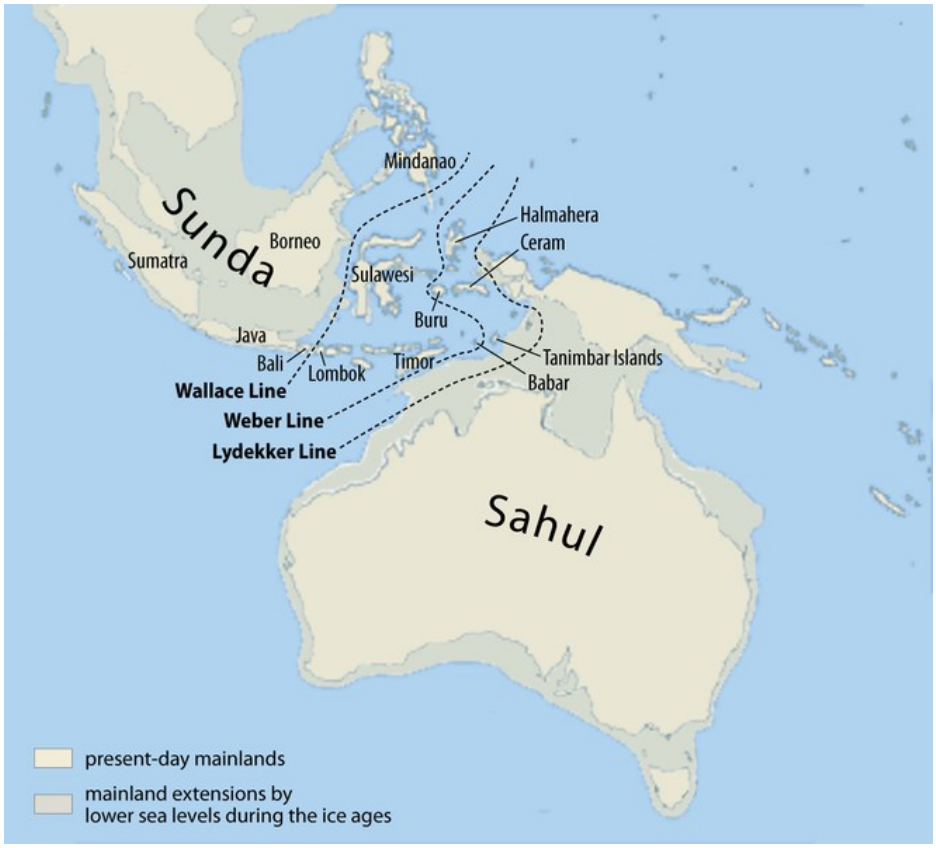


RESEARCHERS NETWORKING WORKSHOP
MAKASSAR, 6-8 FEBRUARY 2018

Workshop Overview

The primary objective of this workshop is to provide UK and Indonesia researchers in the space of 'Wallacea region – understanding biodiversity and evolutionary responses to environmental change' with the opportunity to discuss ideas for research collaboration in the future. Through discussions and networking, the workshop will aid in identifying and forming these partnerships. The workshop will also provide more information on the upcoming Newton Fund joint research call for proposals on the topic. The joint call is a partnership between UK Natural Environment Research Council (NERC) and the Indonesian Ministry for Research, Technology & Higher Education (Ristekdikti).



This call is part of a wider portfolio of UK-Indonesia science and cultural collaboration to highlight and understand Indonesia's biodiversity as part of a celebration of Alfred Russell Wallace's' work in the region. The primary purpose of the call is to explore biodiversity of the Wallacea region, and through this understand tensions in land use and the adaptation of biodiversity in response to environmental change. The programme will provide solutions to support effective management, restoration, rehabilitation and exploitation of the region and its biodiversity.

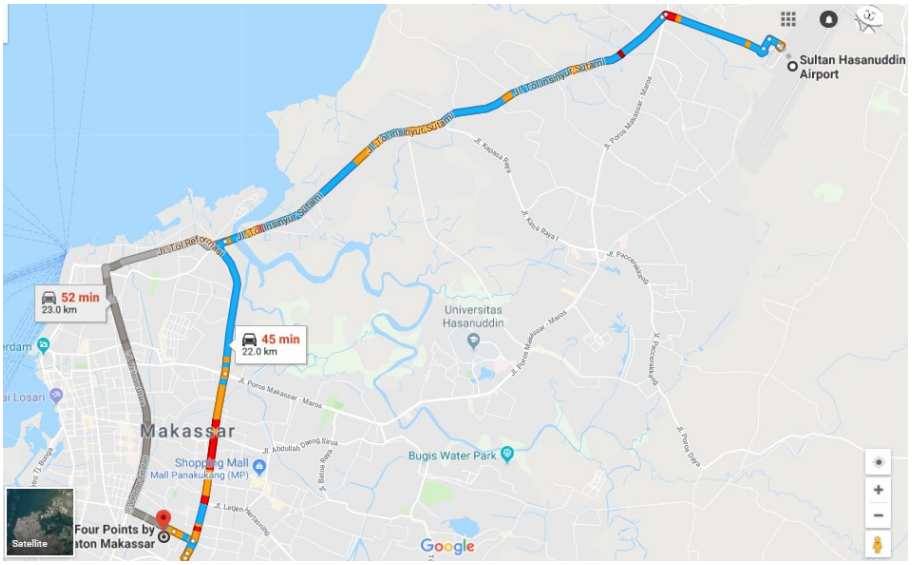
Your role at the workshop is to represent yourself, as well as your wider research organisation's interest, when discussing ideas for UK-Indonesian collaboration under the scope of the upcoming research call. Each researcher will have a 5-minute presentation slot, followed by a 2-minute Q&A. A team who will be working with British Council on Wallacea media expedition & documentary will attend as observers, with the objective of getting scientific insights from the researchers.

Any presentation slides from should be emailed by Feb 5, 2018 to Anissa S. Febrina (asfebrina@gmail.com).

Meeting Hotel and Venue

- **Hotel and Venue**
  Four Points by Sheraton Hotel Makassar
  Jl Landak Baru No. 130, Banta-Bantaeng, Rappocini
  Makassar City, South Sulawesi 90222
  Phone: +62 411 809 9999

Makassar is the largest urban hub in the Wallacea region. The coastal city is the capital of South Sulawesi Province. The hotel is located some 40-minute away from the Sultan Hasanuddin Airport Makassar and around 15-minute drive from Losari beach.

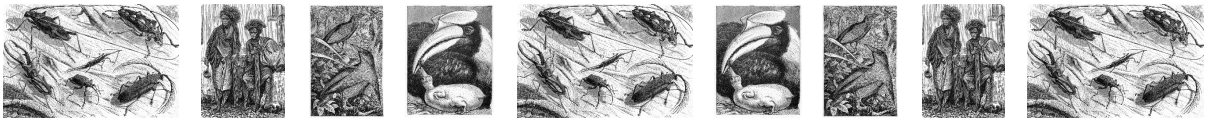


- **Airport Transfer**

The hosting organisations have arranged for airport transfer from Sultan Hasanuddin Airport in Makassar to hotel venue for all participants. The meeting point is at arrival gate. There is only one exit gate for both domestic and international arrival at the airport so there will be one meeting point at the arrival gate. Please watch your belongings and luggage.
Dwijava Travel liaison officer will be on stand-by at the meeting point. Please look out for below signage upon arrival. Your contact is Tommy at +62 818 831 706.

- **Other contacts on arrival** – If you have any questions or concerns on arrival, please contact:

1. Widya (widya@dwijavatravel.com/ +62 878 8540 3076)
2. Anissa S. Febrina (asfebrina@gmail.com/ +62 852 1667 7326/ +62 811 808 2758)



Workshop Information

Wallacea region - understanding biodiversity and evolutionary responses to environmental change
6 – 8 February 2018, Makassar, Indonesia

Summary

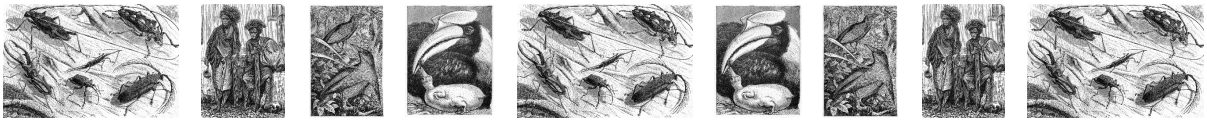
Jointly hosted by NERC & Ristekdikti, the workshop convenes some 40 researchers from UK and Indonesia working within the scope the Wallacea Region - Understanding biodiversity & evolutionary responses to environmental change programme. Funding for the UK contribution to the programme is from the Newton Fund in partnership with Ristekdikti.
The aims of the workshop will be to:

- launch the Wallacea Region - Understanding biodiversity & evolutionary responses to environmental change funding call and present an overview of the call aims and objectives
- facilitate links between the UK and Indonesian research communities in the areas of biodiversity and ecosystem functioning by providing an opportunity for researchers to network and begin to develop ideas to address the aims of the call.

Researchers from both UK and Indonesia come from a diverse background in environmental science researchers working in the fields of biodiversity, ecosystem functioning and services, environmental omics, landscape modelling, Earth observations and related disciplines, including the range of forest types from alpine to mangroves and coastal systems at the land-sea interface. Attendance of the workshop is not mandatory for applications to the call.

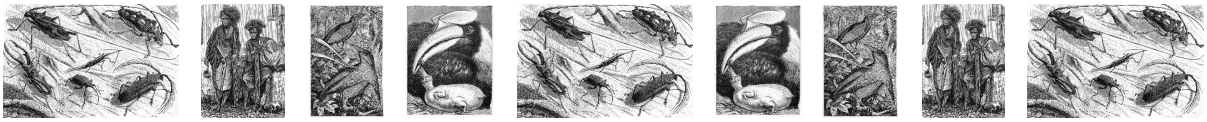
Workshop Programme
Tuesday, 6 February 2018
Persik Ballroom, Four Points Hotel, 1st Floor

Time	Programme
09:00 – 09:30	Registration & Breakfast
09:30 – 09:45	Welcome Address Ristekdikti DG Research – Dr Muh Dimyati
09.45 – 10.00	Remarks NERC Wallacea lead – Dr Simon Kerley
10.00 – 10:15	Round table introduction
Scene-setting presentations from Indonesia and UK experts	
10:15 – 10:45	Overview of Joint Research Call on Wallacea and biodiversity research in the UK in the context of Wallacea NERC
10:45 – 11.00	In depth insight into the Wallacea Conservation efforts & scientific gap in Indonesia Adi Widyanto – Burung Indonesia Dan Exton – Operation Wallacea



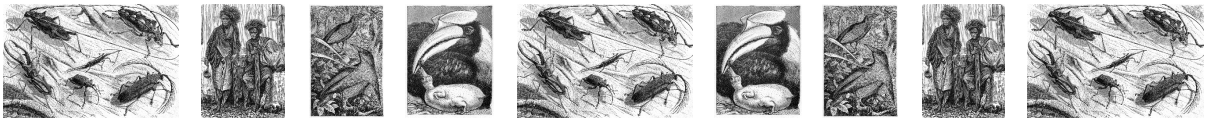
11.00 – 11:15	Q&A session
11:15 – 11:30	Coffee break
11:30 – 12.00	Presentation on Wallacea research in Indonesia Prof Ocky Karna Radjasa
12.00 – 13.00	Lunch break at The Eatery, Four Points Hotel, 1st Floor

Time	**Programme**
13.00 – 13.50	Speech networking
13.40 -14.50	<u>Presentations – Session 1</u> Moderator: Prof Ocky Karna Radjasa – Ristekdikti 1. ID - Prof Jamaluddin Jompa, Hasanuddin University 2. ID – Dr Alan Koropitan, IPB 3. ID – Prof Inneke Rumengan, Sam Ratulangi University 4. ID – Dr Agus Trianto, Diponegoro University 5. ID – Prof Rohani Ambo-Rappe, Hasanuddin University 6. UK – Dr Maria Beger, University of Leeds 7. UK – Dr Karen Diele, Edinburgh Napier University 8. UK – Prof Daniela Schmidt, University of Bristol 9. UK – Prof David Smith, University of Essex 10. UK – Dr Richard Unsworth, Swansea University
14.50 – 15.00	Coffee break
15.00 -16.10	<u>Presentations – Session 2</u> Moderator: Dr Simon Kerley, NERC 1. UK – Dr Adam Algar, University of Nottingham 2. UK – Dr France Gerard, NERC Centre for Ecology & Hidrology 3. UK – Dr Benoit Goossens, Cardiff University 4. UK – Prof Jane Hill, University of York 5. UK – Prof Owen Lewis, University of Oxford 6. UK – Prof Justin Travis, University of Aberdeen 7. UK – Dr Mathew Struebig, University of Kent 8. ID – Dr Sonny Mumbunan, University of Indonesia 9. ID – Prof Daniel Murdiyarso, IPB & CIFOR 10. ID – Dr Hamid Toha, University of Papua
16.10 – 17.00	Table discussion of research gaps and opportunities in Indonesia by Wallacea call themes Moderator: Dr Hasnawati Saleh – ALMI
17.00 – 17.15	Conclusion of day 1 NERC – Dr Helen Pearce
17.15	Adjourn
17.15 – 18.00	Closed meeting for the funders – NERC & Ristekdikti only
19: 00 onwards	Welcome dinner – Santai Place, Four Points Hotel, 9th Floor



Wednesday, 7 February 2018
Persik Ballroom, Four Points Hotel, 1st Floor

Time	Programme
08:30 – 09:00	Registration & Breakfast
Presentations continued	
09:00 – 09:10	Welcome, Overview and Introduction to morning session NERC
09:10 – 10.20	Presentations –session 3 Moderator: NERC – Dr Helen Pearce 1. UK – Prof Jonathan Adams, Cranfield University 2. UK – Dr Francis Brearley, Manchester Metropolitan University 3. UK – Dr Darren Evans, Newcastle University 4. UK – Belinda Luke, CABI 5. UK – Dr Alexander Papadopulos, Bangor University 6. ID - Dr Berry Juliandi - IPB 7. ID - Dr Gino Limmon – Pattimura University 8. ID - Prof Agus Sabdono – Diponegoro University 9. ID - Dr Kustiariyah Tarman - IPB 10. ID - Dr Yosmina Tapilatu - LIPI
10.20 - 10:40	Coffee break
10.40 -11.50	Presentations – session 4 Moderator: Hali Aprimadya – Ristekdikti 1. ID – Prof Ngakan Putu Oka, Hasanuddin University 2. ID – Prof Jatna Supriatna, University of Indonesia 3. ID – Dr Aiyen Tjoa – Tadulako University 4. ID – Prof Irawan Yusuf – Hasanuddin University 5. ID – Rosaria – Surya University 6. ID – Prof Djoko Iskandar, ITB 7. UK – Dr Andre Schuiteman, Royal Botanic Garden Kew 8. UK – Dr Peter Wilkie, Royal Botanic Garden Edinburgh 9. UK – Dr Laura Michie, University of Portsmouth
11.50-12.45	Open discussion of research gaps and opportunities facilitated by NERC
12.45-14.00	Lunch break at The Eatery, Four Points Hotel, 1st Floor
14:00 – 14:10	Introduction to the afternoon and networking session
14:10 – 16.20	Free time for networking (one-to-one discussion between Indonesian and UK researchers or roundtable discussion based on sub-topics)
16.20 – 16.40	Foreign research permit & MTA for biodiversity research Ristekdikti Director for IP Management – Dr Sadjuga
16:40 – 17:00	Concluding Remarks Ristekdikti Secretary for Directorate General for Research – Ir Prakoso



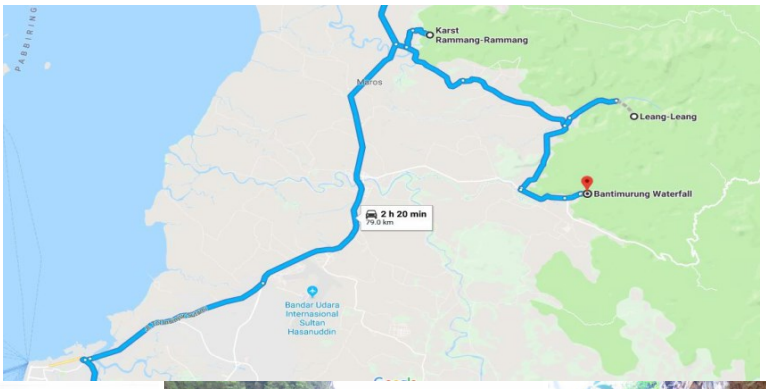
Time	Programme
	NERC
17.00 – 18.00	Closed meeting for the funders – NERC & Ristekdikti only
19.00 onwards	Networking dinner at The Eatery, Four Points Hotel, 1st Floor

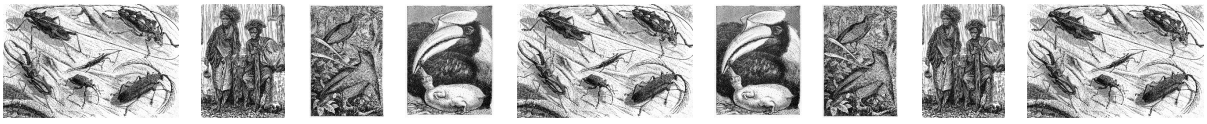
Thursday, 8 February 2018 – Full day site visit (itinerary on next page)

Participants will leave together from the hotel, then transfer to limestone hills Rammang-Rammang crowned by UNESCO as the 2nd largest cretaceous hills in the world. Using local wooden boat, exploring the Pute river that divides the limestone hills. Participants can enjoy the beauty of the river between the Nipa trees and the local people's houses on the river side. We will then transfer to local restaurant for lunch. Next is the visit to Leang-leang National Prehistoric Park with unique finger prints on the wall of the cave that dates back to 2500 BC. The field trip ends at Bantimurung, a natural reserve featuring a waterfall, located approximately 40 km north east of Makassar. Bantimurung is also known as a butterfly breeding center. The trip will include a closing dinner at Swissbel Hotel Makassar. Please wear sturdy sneakers and bring with you caps and light raincoat in case of rain.

Site Visit

07.30-08.30	: Hotel Breakfast
08.30-08.45	: Lobby
08.45-10.15	**: Trip to RamangRamang**
10.15-10.30	: Changes transport by Boat
10.30-10.45	: trip to “Kampung Beru”
10.45-11.45	: Kampung Explore
11.45-12.00	: back to BUS by Boat.
12.30	: Timing estimated start to next Trip.
12.30-13.00	: Trip to LeangLeang (& Lunch)
13.00-14.00	: Lunch at Maros Local Resto.
14.00-15.30	: LeangLeang Explore
15.30-15.45	: Back to BUS
	Note: Meeting point @ Leang Timpuseng
16.00-16.30	: trip to Batimurung
16.30-17.30	: Batimurung Explore
17.30-17.45	: Back to BUS & Go to Makassar
19.15	: Dinner at Swissbel Makassar





Background information – Newton Fund

The Newton Fund aims to promote the economic development and social welfare of either the partner countries or, through working with the partner country, to address the well-being of communities. It will do so through strengthening partner country science and innovation capacity and unlocking further funding to support this work. It is part of the UK's official development assistance (ODA). The Fund was launched in 2014 and originally consisted of £75 million each year for 5 years. In the 2015 UK Spending Review it was agreed to extend and expand the Fund. The Newton Fund was extended from 2019 to 2021 and expanded by doubling the £75 million investment to £150 million by 2021, leading to a £735 million UK investment to 2021, with partner countries providing matched resources within the Fund.
The Newton Fund covers three broad activities:

- **People**: increasing capacity in science and innovation, individually and institutionally in partner countries.
- **Research**: research collaborations on development topics.
- **Translation**: creating collaborative solutions to development challenges and strengthening innovation systems.

The Fund is being delivered through 15 UK delivery partners, among others UK Natural Environment Research Council who is delivering this specific activity.
For more information on the Newton Fund in general please visit: Newton Fund website
For more information on NERC Newton Fund activities please visit:
NERC Newton Fund website

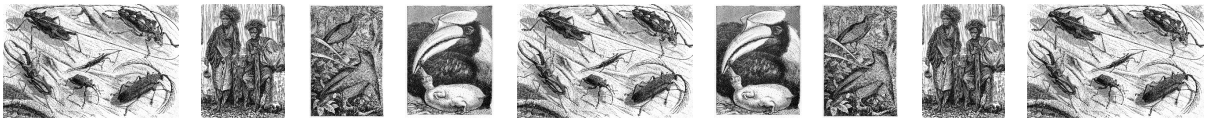
Background information – Wallacea region - understanding biodiversity and evolutionary responses to environmental change call for research proposals

The primary purpose of the call is to explore biodiversity of the Wallacea region, and through this understand tensions in land use and the adaptation of biodiversity in response to environmental change. The programme will provide solutions to support effective management, restoration, rehabilitation and exploitation of the region and its biodiversity.

The programme will deliver new basic science data leading to greater knowledge and wider approaches to inform effective management, restoration, rehabilitation, and exploitation of the area's biodiversity and ecosystems, balancing the need for conservation with economic development, and supporting the social and economic stability of the region.

The programme will:

- Develop knowledge of Wallacea region biodiversity and ecosystems responses to change;
- Use this knowledge to understand biodiversity connectivity across the region exploring resilience, trade-offs and inform restoration and management;
- Explore the benefits (economic, environmental and social) attached to the region's natural capital assets (via the benefits and services derived) and therefore provide an informed approach to innovation and business activity.



Science background

Indonesia is the largest archipelagic country in the world, stretching from Borneo and Java east to New Guinea and is comprised of nearly 17,508 islands. 49% of the country is forested, accounting for 10% of the world's tropical forests. The Wallacea biogeographical island region is defined as a group of mainly Indonesian islands separated by deep water straits from the Asian and Australian continental shelves. Wallacea includes Sulawesi, the largest island in the group, as well as Lombok, Sumbawa, Flores, Sumba, Timor, Halmahera, Buru, Seram, and many smaller islands.

Sitting at the intersection between the Oriental and Australasian biogeographic regions, it is one of the world's biodiversity hotspots, with a high level of endemism due to the deep water straits. The Indonesian Government has initiated the programme of activities focussed around Alfred Russell Wallace to strengthen the ties between Indonesia and the UK at scientific, social and cultural levels. This Wallacea research programme is complemented by exhibitions, public lectures, media expeditions, production of documentary and public science engagement through other funding.

Within the past century, Indonesia has undergone significant development as its population has nearly quadrupled. Various activities have put pressure on the long-term sustainability of the forests such as with clearances for agricultural programs, industrial timber plantations, and for land settlement schemes. This has greatly reduced the amount of forest habitat, particularly in the lowlands, and has caused dramatic and severe declines in the populations of many forest species

This programme aligns to Indonesia's strategic focus on the sustainable management of biodiversity, balancing the need for conservation and economic development through natural resource management. It also aligns to the National Mid-Term Development Plan 2015-2019, which seeks to increase support of science and technology for sustainability and utilisation of natural resources.

Non-Science background

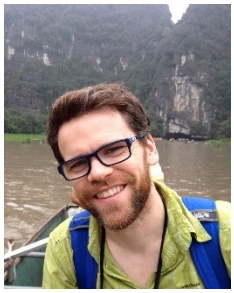
NERC is the UK's main public funder of environmental research, innovation and training. Its aim is to fund excellent, peer reviewed science that helps us understand and predict how our planet works and enables the responsible management of the environment.

Ristekdikti is the main government institution in Indonesia overseeing policy of research and innovation. It holds national research calls schemes on various topics with a focus on applied research. This particular call is paired up with the Kerjasama Luar Negeri (KLN) call.

UK BIOGRAPHIES

Professor Jonathan Adams
Cranfield University
j.m.adams@cranfield.ac.uk

I'm an ecologist working mainly on soil and plant microbes - bacteria, fungi, archaea and also small nematodes - using eDNA and next generation sequencing. I tend to study community structure and diversity patterns in these very diverse and poorly known organisms. I have worked a lot in tropical forests in Malaysia and Brunei, also in temperate Asia (China, Japan, Korea), in central Asian and Mediterranean deserts, and in the High Arctic. I started off studying Botany at Oxford University, and Quaternary Geology at Aix-Marseille II in France. I did postdocs at Cambridge and Oak Ridge before teaching at Rutgers University, and Seoul National University. I recently moved back to the UK to take up a job as Professor at Cranfield University.



Dr. Adam C. Algar
University of Nottingham
adam.algar@nottingham.ac.uk

I am an Associate Professor in the School of Geography at the University of Nottingham. Previously, I did postdoctoral research in the Museum of Comparative Zoology at Harvard University, following my PhD (Biology) at the University of Ottawa in Canada. My research focuses on understanding niche limits and dynamics in space and time, with the goal of improving predictions of how organisms, species, and ecological communities respond to environmental change. My interests span scales of ecological and spatial organization, from local responses of individual organisms to species distributions and global patterns of biodiversity. My research group uses a mix of macroecological and macroevolutionary modelling and field-based research. The 'macro' approach includes correlative and mechanistic species' distribution and biodiversity modelling that draws together Earth Observation and climate data with information on species' occurrences, phylogeny, and phenotype from natural history collections. In the field, we focus on the thermal and functional implications of land use change and why some species can thrive in human-modified habitats and others cannot. We are currently working in peninsular Malaysia examining behavioural and ecological responses of agamid lizards to plantations. Although my macroecological research uses a range of taxa, I predominantly use lizards as a model system. In addition to research on Southeast Asian agamids, I have been working on Caribbean *Anolis* lizards for most of the last decade, using islands as replicated natural laboratories to understand effects of climate and biotic interactions on diversity, niche evolution and diversification.

Dr Maria Beger
University of Leeds
m.beger@leeds.ac.uk

Maria Beger holds a University Academic Fellowship in Marine Conservation Science **(250greatminds)** at the University of Leeds and holds an honorary affiliation with the University of Queensland (Australia). She has over a decade's experience in developing ecology-based solutions for tropical marine environmental management problems, much of it in the Coral Triangle. Maria holds a PhD in Conservation Science from the University of Queensland, Australia, a MSc from Heriot Watt University, Scotland, and a MEng in groundwater management from TU Dresden, Germany. She combines expertise in 1) developing approaches to better integrating socio-ecological factors into spatial planning for biodiversity conservation, and 2) marine biodiversity responses to environmental and human stressors. With an equivalent of 6 years of post-PhD research, she has published 59 journal papers, has raised competitive research funds of over £1.85M internationally, including a EU Marie Curie reintegration fellowship, and is part of the Research Network Canada's Changing Oceans (CHONe) worth £5.44M.
To link biology to conservation and direct management action, Beger develops new methods for spatial conservation that integrate ecological context for range shifts to high latitudes, evolutionary drivers, movement ecology and dynamic fisheries redistributions into conservation plans. Apart from climate change related questions, she is interested in incorporating connectivity in marine conservation decisions, including larval dispersal connectivity, and conservation of marine-terrestrial-freshwater connectivity. Beger's work in reef ecology has influenced our understanding of ecosystem functioning of coral reefs, with particular focus on remote near-pristine systems and human/ environmental gradients.

Dr Francis Brearley
Manchester Metropolitan University
f.g.brearley@mmu.ac.uk

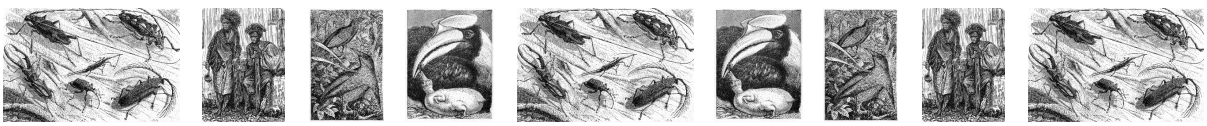
I am a Senior Lecturer in Ecology (since 2007) and co-leader of the *Plants, Soils and Ecosystems* research group at Manchester Metropolitan University with research interests in the importance of plant-soil interactions for ecosystem functioning in tropical forests. I have been conducting research in Indonesian forests since 1998 when I studied ecological processes in an old secondary forest for my undergraduate project at the University of Stirling. I gained my PhD from the University of Sheffield on tropical ectomycorrhizal fungi in 2003; since then my research has included studies on the diversity and dynamics of both above- and below-ground components of tropical forests and how they may be affected by human disturbance. I have published over 40 papers including a number of high-impact collaborative papers on soil fungi (*Science*), soil bacteria (*Nature Microbiology*), forest diversity (*PNAS*) and forest carbon dynamics (*Nature Communications*). I currently have students working on plant-soil interactions in Malaysia and Indonesia (Sulawesi) and am leading the development of a scientist-led Indonesian forest-monitoring network with over 40 colleagues from the UK and Indonesia.

Dr Karen Diele
Edinburgh Napier University & St Abbs Marine Station, Scotland
k.diele@napier.ac.uk

Karen is a Reader in Marine Sciences at Edinburgh Napier University and Co-Director of Research, St Abbs Marine Station, Scotland. Prior to taking up her position in Scotland in 2012, she worked for the Leibniz Centre for Tropical Marine Ecology in Bremen, Germany, with longer-term mangrove projects in e.g. Brazil and Vietnam. Karen's research focusses on the (i) dynamics and management of coastal ecosystems and their (mostly) benthic fauna, (ii) linkages between biodiversity and ecosystem functions and services, (iii) life cycles, behaviour and functional ecology of marine invertebrates and their responses to environmental stressors and (iv) assessment and co-management of tropical small-scale fisheries. Karen has coordinated a large bilateral research project on mangroves dynamics and management in Brazil for 5 years. She is scientific advisor for the NGO Conservation International-Brazil, for the ICMBio of the Brazilian Environmental Ministry, and steering group member of the Marine Stressor Forum and Fisheries Science Forum of the Marine Alliance for Science and Technology for Scotland. As a fun side-project, she recently worked with singers, composers and school kids who translated her research on the effects of aquatic noise, and on mangrove crab fishery, into tunes, increasing public engagement.

Dr Darren Evans
Newcastle University
darren.evans@ncl.ac.uk

My research combines advances in ecological network analysis with DNA-metabarcoding to examine the impacts of environmental change on species-interactions and ecosystem functioning. I am currently studying the consequences of altered network structure on fungi, plant and animal populations, mainly within forest- and agro-ecosystems. Ecological networks provide a mathematical framework to describe interactions between species, the underlying structure of communities, co-evolution and the function and stability of ecosystems. I have developed ecological network analyses to assess the resilience of complex ecological communities to species loss, and use them as a novel way of guiding restoration. These advances are particularly well suited to understanding biodiversity and evolutionary responses to environmental change in the Wallacea region. I have spearheaded the use of DNA-metabarcoding to construct highly-resolved species-interaction networks (e.g. plant-pollinator, host-parasitoid, plant-fungi and avian food-webs). Advances in DNA sequencing technologies are resolving previously intractable questions in functional and taxonomic biodiversity and provide enormous potential to determine hitherto difficult to observe species interactions, particularly in the tropics. I use DNA-metabarcoding to build phylogenetically-structured networks that can incorporate biodiversity that has yet to be described, allowing both ecological and evolutionary processes to be studied. I can provide training and capacity building in DNA-barcoding/metabarcoding technologies and advanced ecological network analysis.

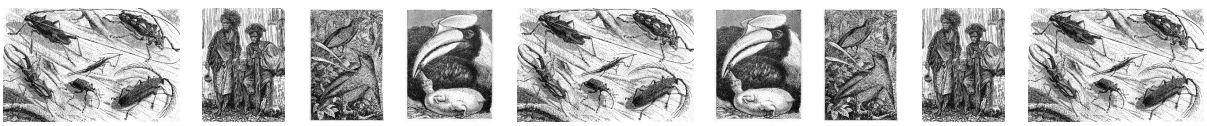


Dr Dan Exton
Operation Wallacea
dan.exton@opwall.com

I am a marine biologist specialising in coral reef community ecology, artisanal fisheries management and the role of biogenic volatile organic compounds in ecological functioning, with extensive experience conducting marine research in the Wallacea region. My recent research interests include barriers to sustainability in artisanal reef fisheries and the role of habitat complexity in driving reef community structure, as well as Caribbean-based research on invasive species amongst others. In my current role as Head of Research, Conservation and Education at Operation Wallacea, I am involved in annual research and conservation programmes taking place within Wallacean lowland forests and marine coastal habitats that provide opportunities for fieldwork support to academic research. In addition, I lead on efforts to bring value added processing of farmed seaweed to raw producers, and am involved in preparing an application for REDD+ funding to protect the forests of Buton Island, both via my role with UK-based charity the Wallacea Trust.

Dr France Gerard
NERC Centre for Ecology and Hydrology
ffg@ceh.ac.uk

I have more than 20 years of experience in Earth observation (EO) working on optical remote sensing of forests and habitats, land and vegetation cover, and characterising vegetation dynamics, phenology and disturbances in a wide range of environments (boreal and sub-tropical forests, temperate and semi-arid grasslands). My current focus is on the development of EO-derived data to (i) retrieve functional traits from grassland and forests, (ii) monitor the condition of vegetation and habitats and (iii) support process understanding. My team have expertise in working with and combining observations from in situ cameras and sensors, UAVs, optical and radar satellite imagery to monitor the spatial and temporal dynamics of habitats and landscapes. I am currently CO-I on a MRC GCRF project (Optimising sustainable forest use whilst minimising impacts of emerging zoonotic diseases) and CO-I in the NERC project VERA (Vegetation-Rainfall Feedbacks in Africa). One of my PhDs is investigating UAV (Unmanned Airborne Vehicle) hyperspectral imaging for grassland condition monitoring.
One of my current interests is to evaluate the use of EO to monitor plant diversity and habitat condition by establishing a link between the EO hyperspectral signal and the physical and chemical traits of plants. Within the context of Wallacea I would be keen to deploy our unmanned hexacopter, carrying our hyperspectral camera and newly acquire hyperspectral sensor and trial this novel setup to investigate new avenues for plant functional type mapping. I am also interested in developing robust methods for integrating in situ and EO observations to support habitat condition monitoring and provide the evidence that biodiverse habitats increase ecosystem service provision.



Dr Benoit Goossens
Cardiff University
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I am a Reader at Cardiff University and I have more than 20 years of experience in conservation biology and the related fields of molecular ecology and behavioural ecology. In 2007, I set up the Danau Girang Field Centre (DGFC) in the Lower Kinabatangan Wildlife Sanctuary, Sabah, Malaysian Borneo, with the Sabah Wildlife Department and Cardiff University. The main scientific focus of my field centre is to understand how wildlife responds to environmental changes and anthropogenic pressures. We aim to determine the landscape-level requirements that are critical for the viable persistence of tropical species in highly fragmented and oil palm dominated landscapes. Through the utilisation of advanced technologies such as camera traps, GPS collars, drones, LiDAR imaging and landscape genetics and genomics, we explore the survival mechanisms employed by multiple species, with the aim of developing species action plans and landscape management guidelines for fragmented and highly vulnerable lowland tropical ecosystems. I have been living in Sabah, Malaysia for the past 12 years and I'm holding a work permit with the Sabah State Government and I am acting as an advisor for the Sabah Wildlife Department. I am also a member of the IUCN SSC's Asian Wild Cattle, Crocodile, Asian Elephant and Primate Specialist Groups.

Professor Jane K Hill
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I am an ecologist researching the impacts of climate change and habitat loss on terrestrial biodiversity. I analyse long-term data sets on species' distributions and abundances, carry out lab and field experiments, and simulation modelling to examine the impacts of environmental changes on biodiversity, and the effectiveness of mitigation strategies e.g. benefits of habitat connectivity. I work in both temperate and tropical ecosystems on inter-disciplinary projects that help develop multi-functional landscapes that reduce biodiversity losses whilst maintaining stakeholder needs. I work mostly on terrestrial invertebrates, especially butterflies, and my research has demonstrated that species are shifting their ranges by moving uphill and to higher latitiudes as a consequnce of climate change, but that habitat loss is slowing-up these responses. My research in SE Asia demonstrates the conservation value of logged rainforest and how the size and placement of forest fragments affect biodiversity and ecosystem functioning. I am currently testing the impacts of sustainable certification of oil palm for optimising biodiversity conservation and crop yields, and the effectiveness of tropical peatland restoration. I am Associate Head of the Department of Biology at the University of York, where I have been based since 2001. I am a trustee of the British Ecological Society, a trustee of the SE Asian Rainforest Research partnership (SEARRP), and lead scientist on the SEnSOR project (Socially and Environmentally Sustainable Oil palm Research).

Dr Simon Kerley
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Simon is the Natural Environment Research Council's (NERC) Head of Research for terrestrial ecosystems. He joined NERC in June 2013 and is responsible for leading the delivery of NERC strategy within the terrestrial portion of the NERC remit. His role is to be a principal interface between NERC and its community, and he is responsible for developing the value-managed relationships with researchers, users and funders in this portfolio. In working with the community and colleagues in NERC, Simon looks to help develop NERC as a science-led organisation, and deliver an integrated portfolio across funding streams, and provides a link to multi-partner initiatives, including Global Food Security. The areas of the science remit he covers include soils, biodiversity, bioinformatics, 'Omics and synthetic biology and agriculture. He also oversees programs including: tree health, tropical forests, insect pollinators, valuing nature, and Critical Zone science. Simon has previously worked for BBSRC in the agri-food and then underpinning health areas, and prior to that he was a research scientist in the soil rhizosphere/plant physiology area at Rothamsted, North Wyke and Sheffield.

Professor Owen Lewis
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I am Professor of Ecology at the University of Oxford. My research focused on the processes that maintain, structure and threaten biodiversity, and the consequences of biodiversity change for human livelihoods. Much of my research focuses on tropical forests and human-modified tropical landscape, with field sites in Malaysia, Papua New Guinea, Australia and Ghana. I am the Lead Principal Investigator for a research consortium within NERC's Human Modified Tropical Forests (HMTF) programme. We are working in Sabah, Malaysian Borneo, to explore food webs and biodiversity patterns across an anthropogenic land-use gradient, measuring biogeochemical cycles and fluxes, and exploring correlations between biodiversity and ecosystem functioning. Our ultimate goal is to inform realistic policy scenarios to optimize biodiversity and ecosystem services.

Dr Belinda Luke
CAB International
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Dr. Belinda Luke has worked for CABI for 21 years in biopesticide development. She is head of the Biopesticide Team based in the UK and currently has projects in China and the UK. Belinda has extensive experience of isolating fungi, screening, mass production processes, quality control, shelf-life studies, formulation development and application. Some of the many projects that Belinda has worked on include: Green Muscle, a registered biopesticide for the control of locusts and grasshoppers for use in Africa, Storage pest control in UK grain stores (currently going through the registration system) and a BMGF project taking the storage pest technology from the UK to Africa for control of the larger grain borer in maize. More relevant to this workshop the Biopesticides Team had a project based in Chile collecting, isolating, identifying and storing fungal and nematode samples from the North to the South of the country. This led on to a further project helping local people reintroduce native plants, to the Robinson Crusoe Island, that had been outcompeted by invasive species. Belinda carries out consultancies for commercial biopesticide production companies to advise on quality control and improving fungal mass production systems.

Dr Laura Michie
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Laura Michie is a Lecturer in Marine Biology at the University of Portsmouth and Project Manager at The Chatty Scientist, a science communication training platform. Her research is focused on intertidal ecology, specifically crustacean biology and mangrove flora and fauna. Laura's current research is focused on crustacean taxonomy, systematics and behaviour. Her other research interests include mangrove plant-animal interactions, decay pathways of woody detritus and carbon fluxes within mangroves, with a particular interest in the essential role of ecosystem engineers, the factors that influence biodiversity and the recycling of carbon in coastal tropical ecosystems. Laura has been a visiting researcher at the Natural History Museum in London for the last three years, contributing to projects on crustacean identification, confocal microscopy and Micro computed tomography. Laura's PhD looked at the coexistence of ten species of fiddler crab in the Wakatobi National Park, Indonesia. Her research aimed to explain how this remarkable level of biodiversity is achieved by looking at resource partitioning, behaviour and habitat heterogeneity. Laura is passionate about science communication, she is a STEM ambassador, takes part in public engagement at the Natural History Museum and has recently worked with National Geographic on a documentary.

Dr Alexander Papadopulos
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I am a molecular ecologist and evolutionary geneticist. My background is in using genetic methods to identify and study the origins of biodiversity, particularly through understanding the processes of adaptation and speciation. My main focus is studying rapid evolution of heavy metal tolerance in response to human induced environmental change, specifically as a result of copper and lead mining activities. I aim to understand the extent to which evolution can follow reproducible and predictable trajectories and the genomic bases of the adaptive process. My research combines genetics and genomics with ecological analyses and experiments, primarily working with plants and fish. I have also used molecular methods for species discovery and I am one of the pioneers of using in the field DNA sequencing technologies for species identification in plants. I am currently a lecturer in molecular ecology and evolution at Bangor University, where I am a member of the Molecular Ecology and Fisheries Genetics Laboratory. This is an internationally recognised team of principal investigators (led by Prof. Gary Carvalho and Prof. Simon Creer) exploiting cutting edge DNA sequencing techniques to investigate the ecological and evolutionary drivers of biodiversity, consequent ecosystem function and services/disservices, and environmental management. I have previously worked at RBG, Kew, the University of Oxford and Imperial College London.

Dr Helen Pearce
Natural Environment Research Council (NERC)
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Helen joined NERC's research and innovation directorate in 2014 as a science programmes officer. In 2015, she was appointed to the position of senior programme manager (research) where she works in a dual role. Her responsibilities are first, to develop and coordinate the processes used to define and manage NERC's strategic research portfolio, and second, to commission and manage NERC's strategic research investments and support the partnerships essential to NERC's success in the climate and weather portfolio. She also has experience working on research programmes in other areas of NERC's remit, including her current work on the Wallacea region Newton programme, and in partnership with the other research councils. Helen holds a BA in geography and PhD in climate science from the University of Oxford.

Professor Daniela Schmidt
University of Bristol
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My research focuses on understanding the causes and effects of global warming and ocean acidification on marine ecosystems, both in the modern era and in geological time. I study open ocean and shelf ecosystems focussing on foraminifers, bivalves, bryozoans, and coralline algae. These organisms are ideal high-resolution archives for climate change but also provide a wide range of ecosystem services.
To address these questions, I have transferred tools from a wide range of fields including isotope geochemistry, material science and fluid dynamics such as the ion probe and electron probe, atomic force microscopy to assess crystal growth and patterns, Nano indentation to gather material properties and combine with Finite Element Analysis.

My aspiration is to develop an overarching framework for understanding the effect of climate change and ocean acidification on calcifying organisms. I aim to quantify if these organisms will be able to provide the same ecosystem functioning in the future and hence the same ecosystem services to provide policy relevant information about the impact of climate change on biodiversity and food security.
I am actively pursuing closer contact with end-users of my research with the aim to identify mechanisms for aligning research activity with new partners. I have been an author on the last IPCC report (*IPCC2014*, WGII, Ocean Systems, TS, SPM) and the *SAPEA* report on Food from the Ocean for the EU. As the Associate Dean for Research for the Science Faculty at Bristol, I am collaborating with colleagues, our University Research Institutes and facilitating research across the faculty.

Dr André Schuiteman
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André Schuiteman was born in Amsterdam, The Netherlands, in 1960. From an early age he was deeply interested in all aspects of Natural History. In his mid teens he started to focus on plants, especially orchids. Nevertheless, he went on to study economics and econometrics, while unofficially studying botany in his spare time. During his studies he made privately funded expeditions to Tanzania and Papua New Guinea, which convinced him that his heart did not lie in economics but in biology. After finishing his studies he started to volunteer at the National Herbarium of the Netherlands at Leiden University, doing systematic research on orchids. In 1990 he was offered a contract there and he remained as a Researcher until 2010. In that year he successfully applied for a position as Senior Researcher in the Orchid Herbarium at the Royal Botanic Gardens, Kew, UK. He is currently Research Leader in Kew's Identification and Naming Department, and in 2017 obtained his PhD on the evolution and systematics of the orchid genus *Dendrobium* at Oxford Brookes University. He conducted field work in Cambodia, Colombia, Indonesia (Java, West Papua Province), Laos, Papua New Guinea, Sabah, Sarawak, Tanzania and Vietnam, and is the author of numerous papers on orchids and some other plants groups.

Professor David Smith
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I am a coral reef biologist with 15 years of research experience and have directed and managed research centres with an interdisciplinary remit. I have a track record in coral reef ecology, coral ecophysiology, climate change science and to a lesser extent conservation management. My research goals are to identify management solutions that are aimed at protecting coral reefs and dependent communities from the detrimental impacts of acute and chronic environmental change. The majority of my research has been focused within the Wallacea region, specifically the Wakatobi Marine Park, where I have worked closely with Indonesian colleagues and Operation Wallacea to assess the biodiversity of reefs and the ecophysiology of corals. I am visiting professor at the University of Hasanuddin. I have much research interests but I am currently exploring the role of the microbiome in driving the ecological success of corals and how these closely associated microorganisms influence the ability of corals to exist across a wide range of environmental conditions. My group is also exploring how the coral microbiome influences stress tolerance of corals. In the past I have worked across tropical marine habitats and still have an interest in seascape ecology (eg connectivity of coral and fish populations) as well as the interaction between the land and the sea and in particular how changes to land use influences the biodiversity and productivity of coral reefs and associated habitats. I am a regular reviewer for NERC and overseas research councils and the marine editor for Global Change Biology.

Dr Matthew Struebig
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I combine field ecology and spatial modelling to study responses of tropical biodiversity to environmental change, and implications this has for planning and management. My research addresses key questions concerning the management of natural capital (forests, waterways, biodiversity, carbon) and the effects this has on human-wellbeing - requiring interdisciplinary links with social scientists.
I have 17 years experience working in Indonesia and Malaysia, including 3 years consultancy alongside LIPI with mining, logging and oil palm industries, and have held fellowships in Brunei (UBD) and UK (Queen Mary London). My earlier work characterised mammal diversity in Sulawesi, Kalimantan, Java and Myanmar, discovering 5 new species. Since my PhD (Queen Mary London) in conservation genetics I focus on environmental change, with key outputs on the effects of logging (Current Biology, 2014), fragmentation (Ecology Letters, 2011) and climate change (Global Change Biology, 2015) on biodiversity, as well as technical expertise on bioacoustics (Environmental Research Letters, 2017), camera trapping (Journal Applied Ecology, 2017), species distribution modelling (Current Biology, 2015) and connectivity (Conservation Biology, Submitted).
I belong to Borneo Futures, an initiative to bring science to land-use planning in Borneo, and seek to extend this concept to Wallacea. My team on NERC's HMTF programme characterise landscape-level carbon stocks and biodiversity (6 taxa) in Sabah, and my Newton-funded team study management of riparian zones. I also lead projects on human tiger conflict and social forestry in Sumatra and Kalimantan, and help government monitor the impact of *hutan desa* on forests and poverty (Global Environmental Change 2017).

Professor Justin Travis
University of Aberdeen
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Justin Travis is a Professor of Ecology and Evolution at the University of Aberdeen. Most of his group's research uses models to study the population and evolutionary dynamics of spatially structured populations. Current work focuses on (1) improving models of dispersal and connectivity, (2) integrating ecological and population genetics modelling to gain increased understanding of the biology of range shifts (3) using models to make general predictions regarding the consequences of habitat destruction and climate change for biodiversity. His group recently released the simulation platform, RangeShifter, for individual-based modelling of ecological and evolutionary dynamics in spatial population dynamics. This platform is being used to increase fundamental understanding of eco-evolutionary dynamics as well as to forecast biodiversity responses to climate change and to test, in silico, alternative management strategies. RangeShifter has already been used successfully in terrestrial and marine systems in Europe (UK, Finland, France, Sweden), Africa (Kenya) and Asia (China) to inform the spatial management of landscapes to support desired biodiversity and to reduce the threat of non-desired biodiversity (e.g. invasives). It is currently being used to inform how sites for forest restoration should be prioritised across the UK to provide the most resilient forest network in the face of climate change. I am enthusiastic to meet people with whom we can build a project to develop capability for forecasting biodiversity responses to environmental changes in Indonesia, and to explore how development potential (including landuse change for agri and silviculture) can be reconciled with biodiversity conservation.

Dr Richard Unsworth
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Richard's expertise lie in the ecological structuring processes of marine systems and the implications of these systems for society. This focuses primarily on the interrelationships between foundation species, habitat, and associated productive fauna (mainly fish). He is particularly interested in the consequences of cross-scale environmental changes on seagrass meadows functioning and the implications of this for global food security and other ecosystem services. Richard has more than twelve years' experience of research in marine systems and conducts collaborative interdisciplinary research in Europe, Australia, Indonesia, Columbia and the Turks and Caicos Islands. Based within the SEACAMS team at Swansea, he leads the level 3 module in 'Tropical marine ecology and conservation' and teaches on the MSc module 'Conservation of aquatic resources'. After completing his PhD in 2007, Richard conducted research and consulting work for Sinclair Knight Merz, Brisbane and the Northern Fisheries Centre, Queensland, Australia. He has also worked as a senior ecology lecturer at University of Glamorgan. He is an academic editor at PLoS One and vice-president of the World Seagrass Association. Richard is also a founding director of Project-Seagrass and continues to work as a senior scientist at SeagrassWatchHQ. Other roles include membership of the editorial boards of Marine Pollution Bulletin and Marine Environmental Research.
His current research projects include the impact of climate variability on seagrass ecosystems, social-ecological systems analysis, ocean acidification and seagrass, and the resilience and ecosystem service provision of seagrass. Funding is currently through SEACAMS, Darwin, the Waterloo Foundation and the Ocean Foundation

Dr Peter Wilkie
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I am a biodiversity scientist with more than 25 years' research experience in Indonesian forests and lead the Indonesia programme at the Royal Botanic Garden Edinburgh (RBGE) which specialises in providing and analysing data on species identification, diversity and distributions. At present I am involved in a 5 year research agreement to better understand the plant diversity of Indonesia with the Indonesian Institute of Sciences, the Research Centre for Biology, the Indonesian Ministry of Forestry and the Center for Plant Conservation-Bogor Botanic Gardens. This includes the production of base-line taxonomic data of plant diversity, the analysis of distribution data to provide IUCN assessments of threat to species, the elucidation of evolutionary relationships to provide robust phylogenetic frameworks for taxonomic studies and the use of biogeographic data to understand distribution patterns.
My publications include identification manuals for the timber trees of Kalimantan; papers on the influence of tectonics, sea-level changes and dispersal on migration and diversification; floristic analysis of Borneo's tropical trees; the use of Indonesian vernacular names for forest inventories; the discovery and description of new species. As a member of DEFRA's Nagoya Protocol stakeholders group I am a keen advocate for the fair and equitable sharing of benefits arising from the utilization of biodiversity. I am also committed to the conservation and sustainable management of Indonesian biodiversity and am a member of the IUCN/ Species Survival Commission Global Tree Specialist Group.

ID BIOGRAPHIES

Dr Muhammad Dimyati
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Currently in charge of national research ecosystem development and strategic planning, Dr Dimyati oversees among others international research funding collaborations, research linkage to translation and higher education agendas. Prior to joining the ministry, Dr Dimyati was deputy director at the Ministry of Public Housing and Public Works. He holds degrees in Geography from Universitas Gadjah Mada and Kyoto University.

Professor Djoko Iskandar
Bandung Institute of Technology
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Professor Iskandar is an Indonesian herpetologist who studies the amphibians of Souteast Asia and Australasia. He is currently a researcher and professor of biosystematics and ecology at School of Life Sciences & Technology, Bandung Institute of Technology. His research interests include biodiversity, evolution, biogeography, amphibian, reptilian, ecological valuation, species indicators, small vertebrates. He has been the first to describe many species of amphibian, including the Bornean flat-headed frog in 1978 and in 2014, *Limnonectes larvaepartus,* the only known frog that directly births tadpoles. Professor Iskandar is the autor of The Amphibians of Java and Bali. The monotypic banded watersnake genus Djokoiskandarus is named in his honour, as are several species of lizard and frog. He obtained his master's and doctoral degree from Université des Sciences et Techniques du Languedoc, Montpellier, France in the 1980s. He was awarded the prestigious national scientific Habibie Award in Basic Sciences in 2005.

Professor Jamaluddin Jompa
Hasanuddin University
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Prof. Jamaluddin Jompa, was born in 1967 in Takalar, South Sulawesi, Indonesia. He got his PhD at James Cook University, Australia in 2001. He graduated from McMaster University, Canada for his master degree in 1996. He is a senior lecturer and formerly served as Dean of Faculty of Marine Sciences and Fisheries, Hasanuddin University (2013-2017). In the last few years, he also has been involved in various programs of the Indonsian Academy of Science (AIPI); including chairing the study committe of Indonesian Science Agenda and now serving as the President of Indosian Young Academy of Scince (ALMI).From 2004-2013, he served as director of Research and Development Center for Marine, Coasts, and Small Islands, Unhas. His research has expanded from aquaculture to marine biology, marine ecology, coral reef biology, reef bio- prospecting, and more recently on coral reef ecology and coastal management. His current research projects are coral reef health and marine protected areas. He has published about 70 journals/books; the majority of them are international publications. In other profesional societies, Jamal is also active in several organizations including serving as the Secretary General of Indonesian Coral Reef Society, Chairman of South Sulawesi Sea Partnership Program, President of Association of Diving School International-Indonesia, member of National Fisheries Stock Assessment, etc.

In 2007, in addition to his ongoing duties at UnHas, Jamal was seconded to the Ministry of Marine Affairs and Fisheries of the Republic of Indonesia to assist in managing and directing the national Coral Reef Rehabilitation and Management Program Phase II (COREMAP-II). This was one of the largest coral reef management projects in the world in terms of area, finance, and project length. Jamal served as Executive Secretary of this very challenging project and successfully brought the project to a successful completion in December 2011. Jamal is now the Chairman of Center of Excellent on Marine Resilience and Sustainable Development (MaRSAVE) at Unhas.

Dr Berry Juliandi
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Berry currently heads the Laboratory for Veterinary Stem Cells at the Centre for Natural Resources & Biotechnology Research. He is also the chief editor of HAYATI Journal of Biosciences (Elsevier). His research interests include epigenetic regulation of neural stem cell differentiation, neurogenesis and memory, morphometrics and human biology. Berry obtained his doctoral degree in molecular neuroscience from Nara Institute of Science & Technology, Japan. Across the span of his career, Berry has received several awards including Top 200 Highly Cited Indonesian Scientists in 2015.

Dr Alan Koropitan
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Alan F. Koropitan, PhD is an Associate Professor in Oceanography at Department of Marine Science and Technology, Bogor Agricultural University (IPB), Indonesia. Since February 2016, he has appointed as Coordinator for Strategic Research at Faculty of Fisheries and Marine Science (FFMS), Bogor Agricultural University. He is also one of study committee in development of Indonesian Science Agenda Towards a Century of Independence 2045 at Indonesian Academy of Sciences. He has got his PhD at Hokkaido University, Japan in 2008, and just after graduation, he moved to University of Minnesota for almost two years as a postdoctoral research associate at Biogeochemical Cycle Group, Department of Geology and Geophysics. His past and on-going researches consisted of modeling biogeochemical process in the Java Sea, anthropogenic carbon budget in the Indonesian Throughflow Regime, primary production of the Java Sea in a changing environment: Climate change and anthropogenic impacts (in collaboration with Southeast Asian Regional Center for Tropical Biology), climate change vulnerability study in Lembata and Aru Islands (in collaboration with KIARA-an Indonesian NGO), mangrove rehabilitation and its impact on carbon sequestration in Pangandaran (West-Java), isotope application in estimating sedimentation rate around Mangrove rehabilitation area in Pangandaran (West-Java). Recently, he has just initiated a collaborative research with Center for Coastal and Marine Resources Studies-IPB in order to study on carbon sequestration and sedimentation in Mangrove ecosystem of West-Lombok as well as vulnerability and risk analysis of the coral reef and seagrass ecosystems in Wakatobi Islands.

Dr Gino Valentino Limmon
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Dr Limmon obtained his Bachelor's in Biology from Hasanuddin University before continuing his Master's in marine biology/geology at McMaster University, Canada**.** He subsequently worked on his PhD in Molecular Biology at the Friedrich Schiller University/Hans Knoell Institute in Germany. He has over 15 years of experience in the field of Molecular Biology and is the expert of Marine Biotechnology and Director of Marine Science Center of Excellence at the Pattimura University in Ambon, Indonesia, working on research topics such as screening of potential drug candidate from marine organisms, DNA barcoding, identification of novel biomarkers for environmental changes, biofuel from microalgae, bio-erosion on coral reefs, the influence of climate change and ocean acidification on coral reefs and coral reef organisms and the mapping and monitoring of coral reef conditions in Maluku. Prior to returning to Indonesia, Dr. Limmon was working as a visiting fellow at National Institute of Environmental Sciences, NIH, USA and then he invited to work in Singapore as a senior research scientist for the Singapore-MIT Alliance for Research and Technology (SMART). Here, he was the group leader of the lung repair group where they focused on various research topics, such as Identification of progenitor cells that play a main role in lung repair, identification of novel cell surface markers for lung epithelial cells, mesenchymal stem cell therapy for acute lung injury and the identification of serum biomarkers for inflammation and lung damage /repair using proteomics approach. He has won several honors and awards such as National Institute of Health – Fellows Award for Research Excellence 2007, NIH-NIEHS Fellowship 2004-2008, Hans Knoell Institute (HKI) Fellowship 2002- 2004, German Academic Exchange Program (DAAD) Fellowship 1998- 2002, Marine Science Education Program Fellowship 1994-1996.

Professor Sangkot Marzuki
Indonesian Academy of Science (AIPI) & Yayasan Wallacea
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Professor Sangkot is one of the founders of Yayasan Wallacea. He is also noted for his role in reactivating the Indonesian Academy of Sciences since he took leadership in 2012. Two subsidiaries have emerged from the Academy since: the Young Scientists Arm which has published Indonesia45 & the Indonesian Science Fund (ISF) which will be the country's first independent research funding body. His scientific interest has been in the biogenesis of energy transducing membranes, & related human genetic disorders; an interest he developed during his 17 years as medical faculty member of Monash University in Australia. He moved to Indonesia in 1992 to rebuild the Eijkman Institute, where he extended this interest to encompass human genome diversity & infectious diseases. He also has a personal interest in science history.

Dr Sonny Mumbunan
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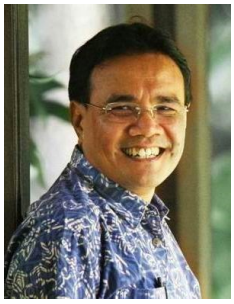
Dr Sonny Mumbunan is an economist and research scientists at the Research Centre for Climate Change at the University of Indonesia. He is also a senior economist and research associate at the World Resources Institute Indonesia. He was trained in the issues of environmental appraisal and policy formulation at the New University of Lisboa, Portugal, in behavioural economics at the University of Mannheim, Germany and in environmental governance at the Norwegian University of Life Sciences, Norway. He holds an M.Sc, in Empirical Economics and Policy Advice from Marthin Luther University Halle-Wittenberg (2008) and wrote his dissertation on ecological fiscal transfers in Indonesia at the Helmholtz Centre for Environmental Research (UFZ), which he submitted to the University of Leipzig, Germany (2010) for a doctoral in economics. His research interests include economic instruments for ecosystem service compensation, policy analysis of climate change mitigation and adaptation measures, public finance and extractive industries.



Professor Daniel Murdiyarso
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He is currently holding a position as Principal Scientist at the Center for International Forestry Research (CIFOR) and Professor at the Department of Geophysics and Meteorology, Bogor Agricultural University (IPB). He received his first degree in Forestry from IPB and PhD from the Department of Meteorology, University of Reading, UK. His research works are related to land-use change and biogeochemical cycles, climate change mitigation and adaptation. He has published a large number of articles in peer-reviewed journals and book chapters on these areas. He was a Technical Adviser for the World Bank on the development of BioCarbon Fund and Forest Carbon Partnership Facilities (FCPF). His work with the 2007 Nobel Peace Prize winning IPCC is related with his roles as the Coordinating Lead Author of the IPCC Third Assessment Report 2001, the IPCC Special Report on Land-use, Land-use Change and Forestry 2002, Review Editor of the IPCC Fourth Assessment Report 2007, and Coordinating Lead Author of the 2013 Wetlands Supplement for 2006 IPCC Guidelines. Dr Murdiyarso served the Government of Indonesia as Deputy Minister of Environment (2001-2002), during which he was also the National Focal Point of the UNFCCC and CBD. Since 2002 Professor Murdiyarso is a member of the Indonesian Academy of Sciences.

Professor Ngakan Putu Oka
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An alumnae of Hasanuddin University, Professor Putu Oka has since 1988 taught at the Hasanuddin University. He teaches Basic Ecology, Vegetation Ecology, Dendrology. Conservation Biology, Natural Resources Management and Ecotourism. He obtained his master's and doctoral degrees from Kagoshima University, Japan. His most recent research projects include Diversity and distribution of under-canopy species at the Experimental Forest of Hasanuddin University (2014), Impact of climate change on the reproduction phenology of some mango species in Makassar (2013), Diversity and distribution of tree species at the Experimental Forest of Hasanuddin University (2013), Ecotourism development in the Field Laboratory of Conservation and Ecotourism of the Experimental Forest of Hasanuddin University (2012), Socially tolerant relationships among wild male moor macaques (*Macaca maura*), National policies and local realities: Synergies of conservation developmment and REDD+ in Indonesia (2011-2012), Macaques and the ritual production of sacredness among Balinese transmigrants in South Sulawesi, Indonesia (2011), Distribution of *Diospyros celebica* (Bakh.) Juveniles Under the Shed of Their Mother Tree in the Experimental Forest of Hasanuddin University (2010), Diversity of Reptile and Amphibian in the Experimental Forest of Hasanuddin University, South Sulawesi (2009), The Contribution of Non Timber Forest Product to the Forest Community Welfare in Sepakat Village, South Sulawesi(2008)

Professor Ocky Karna Radjasa
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Prof Ocky Radjasa currently serves as the Director for Research and Community Service at Ristekdikti. He is also a professor of marine microbiology at Diponegoro University of Semarang, Central Java, Indonesia. Radjasa obtained his B.Sc degree in Environmental Science at Soedirman University of Purwokerto, Indonesia. After graduation, he joined Department of Marine Science, Diponegoro as a junior assistant and went to McMaster University, Hamilton, Ontario, Canada and obtained his M.Sc in Biology in 1994. He joined Ocean Research Institute (ORI), the University of Tokyo, and received a PhD in aquatic biosciences in 2001. He then received a DAAD postdoctoral fellowship in Institute of Chemistry and Biology of Marine environment, University of Oldenburg in 2002. In 2004, Radjasa joined IFM-GEOMAR in Kiel as a Humboldt fellow, until he returned to Indonesia in 2005 and took a helm as the Director of Center of Tropical Coastal and Marine Studies, Diponegoro University until 2009. His research interest is primarily focused on marine molecular microbial diversity and marine microbial natural products from marine microbial symbionts. He is currently working to screen marine microbial symbionts against Multi Drug Resistant (MDR) pathogens from Indonesian local hospitals supported by USAID and University of California Santa Cruz and fungal symbionts of corals for the treatment of cancer in collaboration with 5 EU- countries. He concerned much about the use of coral reefs in sustainable manner.

Professor Inneke Rumengan
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Inneke is a lecturer and researcher at Faculty of Fisheries, Sam Ratulangi University. She obtained her undergraduate degree from the same university in 1984, and subsequently a master's degree from Kagoshima University and a doctoral degree from Nagasaki University, Japan. Inneke focused her doctoral research on the cytogenetics of zooplankton. Since then, her research has revolved around the exploration of molecular structures of microalgae and zooplankton. As a lecturer, Inneke teaches modules on marine biotechnology, including genetic modification.

Professor Rohani Ambo Rappe
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Rohani Ambo-Rappe is a lecturer in Marine Science Department, Faculty of Marine Science and Fisheries, Hasanuddin University since 1993. She completed undergraduate study in Fisheries Science, Hasanuddin University in 1992, Master degree in Marine Science at Institut Pertanian Bogor (IPB) in 1998, and PhD degree at the University of Newcastle (Australia) in 2008. She is a professor in Marine Ecology since 2014. She was the head of Marine Ecology Laboratory (Dept. of Marine Science) from 2008 to 2014, and served as Secretary of Dept. of Marine Science from 2010 to 2014. She is currently the head of international relation unit of Faculty of Marine Science and Fisheries. Her main research interests are seagrass ecology, ecosystem services, and ecosystem restoration. She is the recipient of national and international research grants and conducted some research collaboration on various topics related seagrass ecosystem services and restoration, i.e. (i) Combating Seagrass Decline: Developing a Restoration Manual For Indonesia and The Coral Triangle (USAID PEER Science), (ii) Empowering Community Action for Seagrass Conservation in Southeast Asia: Seagrass Meadows Support Food Security (Waterloo Foundation), (iii) Ecosystem Function of Seagrass System in Different Hydrodynamic Regimes: Implication for Seagrass Restoration (Indonesian Ministry of Higher Education), (iv) Carbon Sink Capacity of Seagrasses in Different Hydrodynamic Condition: Implication for Climate Change Mitigation (Internal Hasanuddin University Grant).

She published several papers at the high reputable international journals, i.e. Translational fluctuating asymmetry and leaf dimension in seagrass, Zostera capricorni Aschers in a gradient of heavy metals (Environmental Bioindicators, 2007), Increased heavy metal and nutrient contamination does not increase fluctuating asymmetry in seagrass Halophila ovalis (Ecological Indicators, 2008), Higher fluctuating asymmetry: Indication of stress on Anadara trapezia associated with contaminated seagrass (Environmental Bioindicators, 2008), Juvenile batfish hidden in seagrass (Coral Reefs, 2014), Developing a methodology of bioindication of human-induced effects using seagrass morphological variation in Spermonde Archipelago, South Sulawesi, Indonesia (Marine Pollution Bulletin,2014),The effect of storage condition on viability of Enhalus acoroides seedlings (Aquatic Botany, 2015), Differences in richness and abundance of species assemblages in tropical seagrass beds of different structural complexity (Journal of Environmental Science and Technology, 2016), Dugongs around Sulawesi in the Anthropocene (Frontiers in Marine Science, 2017), Species richness accelerates marine ecosystem restoration in the Coral Triangle (PNAS, 2017).

Professor Agus Sabdono
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A professor in marine biotechnology, Agus Sabdono's current research interest is in pesticide degrading coral bacteria, coral disease and more recently novel bioactive compounds from bacteria associated with marine invertebrates. His research topics include exploration of marine invertebrate's bacterial symbionts to combat MDR (Multi Drug Resistance) of Indonesian tropical diseases; pathobiotechnology strategy for conservation of Indonesian coral reefs against coral disease and microencapsulation of pesticide-degraded coral bacteria as bioremedial agents for conservation of coral communities. Prof Sabdono is at present Dean of Faculty of Fisheries & Marine Sciences at Diponegoro University. He obtained his undergraduate degree in Agriculture from Satya Wacana University, Indonesia, and subsequently a master's degree from University of Kentucky, US and a doctoral degree from Gadjah Mada University, Indonesia.

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Nana completed Master of Science from The University of Queensland (2004), Working as Research Assistant in Bone Research Group at St. Vincent's Institute for Medical Research, completed her PhD at The University of Melbourne (2010) and postdoc at the same research group. Upon her return to Indonesia, she worked as a Consultant Investigator for Novartis-Hasanuddin Clinical Research Initiave in 2011-2014. She is currently on leave from research post at Fac. of Medicine, Hasanuddin University Makassar. She is a Study Director for SAINS45-Indonesian Science Agenda, a consensus report by Indonesian young scientists alumni AIPI Frontiers of Sciences meetings, published by Indonesian Academy of Sciences (AIPI) and Indonesian Young Academy of Sciences (ALMI). SAINS45 has become a reference for DIPI research themes.

Professor Jatna Supriatna
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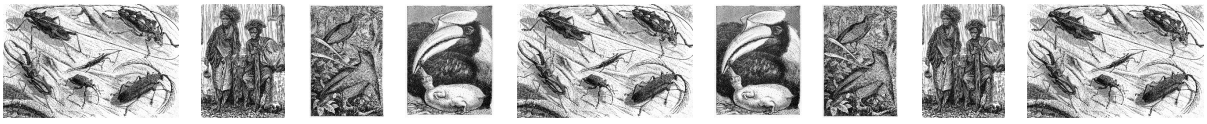
After finishing his Master of Science (1986) and Doctorate degree (1991) from the University of New Mexico, USA, plus pre and postdoctoral at Columbia University in New York, he serves as a senior lecturer at the Biology Department, the Director of Biodiversity and Conservation Studies, and the Coordinator of Graduate Program on Conservation Biology of the University of Indonesia. He also became a chief editor of Tropical Biodiversity since 1992, Editor of Asia Primate Journal (2008), Board of editor of the International Journal of Wildlife Policy and Law, board of editor of Tropical Ecology, Consulting editor of Biosphere Conservation and board of Advisor of Earthwatch Institute (2002). He also served a member of the board of supervision of Bornean Orangutan Survival Foundation and board of the member of Biodiversity and Development Foundation. He teaches many courses including Conservation Biology, Biogeography, Tropical Ecology, Bioanthropology, Animal Behavior in undergraduate and graduate programs at the Department of Biology, University of Indonesia. He has supervised more than 10 doctoral and 40 master degrees in conservation biology at the



University of Indonesia. He also supervised master and doctoral theses at Bogor Agriculture University, Andalas University and from abroad such as from the University of Kebangsaan Malaysia, Australia National University, Lousiana State University, University of New Mexico and Columbia University in New York which mostly related to Forest and Biodiversity Conservation.

In 1999, he served as Chairman of Indonesia Biologist Association, Jakarta Chapter. In 2006, elected President of South East Asia Primatologist Association, and in 2007 assigned as Chairman of IUCN- SSC PSG South East Asia. He has also been an active member of several international organizations: IUCN-World Conservation of Protected Area, IUCN-Specialist Survival Commision-Primate Specialist Group, International Primatological Society, Society for Conservation Biologist and many others. He has been assigned by Government of Indonesia to be a member of Indonesia delegation to many conferences such as Convention of Biological Diversity, IUCN meeting, World Park Congress, UNFCCC and its SUBSTTA (Bali, Cairns, Bonn, Bangkok) and UN Forest Forum in New York. He is recently active in climate change negotiation for REDD+. He has been appointed as Country Director for Conservation International Indonesia Program in 1994, then become Vice President since 2005 carries the distinction of being the first Indonesian in the country to head up a conservation program for a major international organization. For his dedication at the conservation and environment works, he received a distinguished award from his Royal highness Prince of Berhard of the Netherland in 1999 as an Officer of the most Excellence Order of Golden Ark Award. In 2009, he also received the most privileges Award from President B.J. Habibie, or Habibie Award for outstanding achievements on Natural Science research in 2008. In 2011 He also received Achmad Bakrie Award for his contribution in the field of science in Indonesia. He has been elected as member of Indonesian Academic of Sciences (AIPI) in 2012.

He published 9 books mostly in the Indonesia's Biodiversity and environment and more than 100 articles in the international journals (Science, Nature, Conservation Biology, Primates, Evolution, Primate Conservation, Herpetologica, many others). Two of his books, Biologi Konservasi (Conservation Biology 2007) and Menyelamatkan Alam Indonesia (Saving of Indonesia's Nature 2009) are among the best seller on the environment books in Indonesia. In 2009, together with Dr. Sharon Gusrky authored an edited book "Indonesia Primates" published by Springer, New York. His recent book "Berwisata Alam di Taman Nasional" tells his experiences in exploring various national parks both inside and outside the country as well as giving a scholarly overview of the nation's national parks and the history of their development, challenges to park management and suggestions for overcoming some of the obstacles to their contribution to conservation, local economies, and tourism.

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Dr. Kustiariyah Tarman is faculty member at the Department of Aquatic Products Technology, Faculty of Fisheries and Marine Sciences, Bogor Agricultural University, Indonesia. Her research interests are marine natural products and marine microbiology, especially marine fungi. Her work has been published in scientific publications and books. Presently, she has on-going project on (1) the application of marine fungi in producing enzymes to support seaweed industrialization; (2) the development of marine biota-based nutraceuticals and cosmeceuticals, including sea cucumbers, marine algae and microalgae. She has experience on the application of metabolomics to observe the effect of stress on the production of bioactive metabolites in green algae and its endophytic fungi. This subject includes isolation and identification of the secondary metabolites, isolation of algal endophytic fungi, induction or activation of metabolites production in algae or its endophytic fungi to discover marine-based new drug candidates. She provides service to several national associations including Indonesian Society for Mycology (MikoIna), and Indonesian Society for Fisheries Product Processing (MPHPI). She is a member of the editorial board for the Indonesian Journal of Fisheries Product Processing, as well as reviewer of national and international journals including Tropical Marine Sciences and Technology, Marine Drugs, etc.

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Yosmina Tapilatu is a research scientist responsible for the Marine Microbiology and Biotechnology Laboratory at the Center for Deep-Sea research, Indonesian Institute of Sciences (PPLD-LIPI) in Ambon, Maluku Province. She earned her Doctorate degree in Oceanology from The Mediterranean University (currently referred to as the Aix-Marseille University) in Marseille, France. Her thesis was on the hydrocarbon-degrading microbes activities in extreme environments (deep sea and hypersaline pond). Her research activities are focused on the exploration of marine microbial diversity in the Indonesian eastern area. She plans to use the molecular biology approach, as well as biochemical and microbiological methods, to assess their ecological role and also their biotechnological potential in the future. Recent projects include exploration of marine bacteria producing bioactive compounds from coastal and deep-sea areas of Maluku waters. She published regularly every year on subjects ranging from bacterial isolation, marine biology to anthropogenic effects on marine environment.

Dr Aiyen Tjoa
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Aiyen Tjoa is currently senior teaching staff at Agriculture Faculty of Tadulako University, a state public University which is located in Central Sulawesi. She earned her bachelor at Agriculture Faculty of Jambi University- Indonesia, MSc. from the Royal Veterinary and Agricultural University (KVL) in Copenhagen-Denmark, and her PhD in soil chemistry and plant nutrition from the Hohenheim University in Stuttgart, worked for Prof. Volker Rőmheld. Her main research field is on soil-plant transferred system. She is performing delicate research topics such as uptake of heavy metal in hyperaccumulating plants, working intensively on land use change impact on ecology and biodiversity. Several publications

came out regularly from her group and with her international collaborators. Besides research activities, she managed the domestic and international partnership office of UNTAD for at least 7 years. She has been involved years in early stages of many proposal developments with European Universities for human and institution capacity building, therefore she is coordinating several European commission funded projects. She is meantime the Indonesian coordinator of a huge collaborative research between IPB-Bogor, UNJA-Jambi, UNTAD- Palu and Gőttingen funded by the DFG (Deutsche forschungs gemeinschaft). Her knowledge in collaborative research management system has been well acknowledged by partners. Upcoming project, she is working on a book as co-author entitled effects on ecosystem services provided by birds and bats in smallholder cacao plantations of Central Sulawesi.

Dr Agus Trianto
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Agus is currently a lecturer in marine science at Diponegoro University. He obtained his doctoral degree from the University of Ryukyus, Japan. His research interests is in marine biotechnology and marine products. Agus latest publication includes A New Cytotoxic Polyacetylenic Alcohol from a Sponge Callyspongia sp (2017), Isolation and Identification of Sponge-Associated Fungus Producing Anti Multidrug-resistant (MDR) Bacterial Substances (2017), Exploration of Marine Sponges-Associated Fungi Producing Antifungal Compounds (2017) and Evaluation of antibacterial activity and identification of Marine sponge-associated yellow pigmented fungi from Teluk Awur, Jepara (2017).

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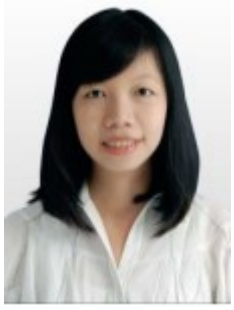
Hamid Toha has a MSc in Biochemistry from Bandung Institute of Technology. He is a lecturer at the State University of Papua (UNIPA). He has worked for several years with Conservation International on increasing science capacity in West Papua, Indonesia and recently established a genetics laboratory at UNIPA.



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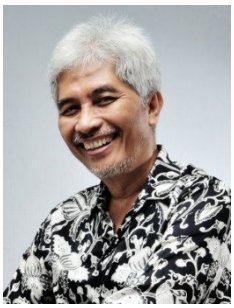
Rosaria received her MSc degree in Molecular Medicine from Imperial College London, UK and BSc in Biotechnology from Universitas Pelita Harapan (UPH), Indonesia. Her research interests include plant tissue culture; phytochemistry and molecular medicinal activities of plants and fungi; genetic engineering for optimal drug production in microbial or fungal systems; Indonesian biodiversity conservation and exploration; and business-directed bioscience research for promoting the development of Indonesian local villages. She was a researh assistant at Food Biotechnology research group of Bina Nusantara University and then at Molecular Epidemiology group of Mochtar Riady Institute for Nanotechnology. She has been a lecturer and researcher at the Department of Biotechnology and Neuroscience of Surya University since 2017. She was involved in the writing of one published book; probiotics and beyond (2017), and

currently writing a book about functional food and nutraceuticals. She received the best graduate and outstanding achievement awards from UPH and won various national biology competitions during high school and undergraduate years. Rosaria was awarded full scholarships for the full duration of undergraduate study from UPH and for master study from The Indonesian Ministry of Finance.



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Professor Endang Sukara is an alumni of the Queensland University, Australia. He serves as Vice Chairman of the Indonesian Institute of Sciences (LIPI) between 2010 and 2012, Deputy Chairman of LIPI in Life Sciences between 2001 and 2010. He was appointed as Chairman for the National Commission for Man and the Biosphere Program (MAB) UNESCO for Indonesia from 2001 to 2010 and member for the International Coordinating Council Man and Biosphere (MAB) - UNESCO from 2007 until 2011. He was appointed as Chairman of Board of Trustee for the Association of Plant Resources in Southeast Asia (PROSEA) from 2001 to 2010 and member of the Board of Trustee for the Foundation of Plant Resources in Tropical Africa (PROTA). He is President for the Association for the Conservation and Sustainable use of Microbial Genetic Resources in Asia in 2008. Prof. Sukara also representing Indonesia as Associate Member for the Governing Board of the Global Biodiversity Information Facilities (GBIF). He is also member for the National Research Council of the Republic of Indonesia until 2009. Between 2001 and 2011 appointed as Vice Chairman of the IGBC UNESCO. He is recipient of ASEAN Meritorius Award 2009, and recipient of the Australian Alumni Awards 2011. He is member of National Bioethic Comission Indonesia and member for the Asian Bioethic Comission UNESCO, and member Intergovernmental Bioethic Comission (IGBC) UNESCO until 2015. He is Visiting Professor at Kyoto University Japan between September 2013 and February 2014 to promote the implementation of Nagoya Protocol under the CBD. Currently he is also Visiting Professor to the American University of Sovereign Nations Arizona. His present position is Research Professor at the Indonesian Institute of Sciences (LIPI), Member of Ethical Researcher Comission and Advisory Board Member to the State Minister for Environment for the implementation of Nagoya Protocol. He is elected as Bureau Member of the Subsidiary Body on Scientific, Technology and Technical Advice to COP CBD representing Asia Pacific for 2014 and 2015. He is appointed as member of the Indonesian Academy of Sciences (AIPI) from 2015. Dean for Faculty of Life Sciences Surya University since 2017.

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Adi is managing the Critical Partnership Ecosystem Fund – Wallacea Programme at Burung Indonesia. Throughout Wallacea, there has been a historical lack of investment in conservation, specifically, and economic development in general. CEPF make grants that promotes conservation, support the economic growth agendas of the hotspot's two countries, Indonesia and Timor-Leste.

CEPF recognizes that local communities and their organizations are the ultimate custodians of Wallacea's biodiversity, but their levels of capacity vary widely. Its strategy focuses on building this capacity through partnerships, networks and mentoring with national and international nonprofits, universities and private companies. In geographies where customary institutions and management practices still prevail, CEPF takes an approach that supports these first, even if it means not creating formal protected areas. CEPF grants prioritize the globally threatened species in the hotspot that require specific, immediate action to protect them from either collection or killing for consumption and trade.