



# BUNGO RANGE

**BIODIVERSITY AND COMMUNITY**

EDITORS

GABRIEL TONGA NOWEG  
FAISAL ALI ANWARALI KHAN  
JONGKAR GRINANG



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# BUNGO RANGE

BIODIVERSITY AND COMMUNITY

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# FOREWORD

I am glad to note that this publication is another excellent milestone from Universiti Malaysia Sarawak through the Institute of Biodiversity and Environmental Conservation, in particular exploring and documenting the rich biodiversity and community in Sarawak. The biodiversity and environmental conservation is one of three niche areas of the university, which recognise the need to balance the biodiversity, habitats and human development. As such, the Research Innovation and Enterprise Centre, the university's centre responsible for research and innovation, has actively facilitated and supported research activities, and publications in various platforms available to scientific communities and the public.

I would like to thank staff of the Institute of Biodiversity and Environmental Conservation for continuously conducting good research and documenting crucial information that benefits many users including scientists across the region. It is well in line with the Institute's vision to become a leading center for research in tropical biodiversity and environmental conservation in Borneo and Southeast Asian region. I would like to congratulate the editors for their efforts in compiling and editing the data resulted from a multidisciplinary expedition in Bungo Range in December 2017 into a well indexed research book. I do believe that each article in this book serves its purpose as an important reference to academics, policy makers as well as public audiences. In particular, the findings would be a useful reference for the management plan of Bungo Range National Park that was gazetted on 26 February 2009.

To materialise the multidisciplinary expedition and the publication, the Institute had collaborated with various state agencies and local communities. Therefore, I am acknowledging their support and contribution (both financial and in-kind) to this project. They are Forest Department Sarawak, Sarawak Forestry Corporation,

Sarawak Biodiversity Centre, Sekolah Kebangsaan Tringgus, Pejabat Pendidikan Daerah Bau, Bau District Office, Bau District Council, Klinik Kesihatan Krokong, Bau District Police, Bau Fire and Rescue Station, Bau Hospital, and villagers from Tringgus settlement namely, Kg Bong, Kg Rotan and Kg Nguan. I hope similar collaborative efforts will be pursued in the near future to other protected areas in Sarawak.

To the authors, UNIMAS Publisher, and those who are involved in this publication, keep up with the good team spirit.

Finally, thank you for inviting me to pen my message in this great reading material.

**Prof. Dr. Wan Hashim bin Wan Ibrahim**  
**Deputy Vice Chancellor (Research and Innovation)**  
**Universiti Malaysia Sarawak**

# PREFACE

This publication marks another significant output of the collaborative works between Universiti Malaysia Sarawak and Forest Department Sarawak on biodiversity study and conservation in the State.

In this book, the findings of multidisciplinary expedition to Bungo Range in December 2017 were compiled into 24 chapters covering biodiversity, environment and community under the theme “Bungo Range - Biodiversity and Community”. The theme signifies the importance of the pristine mountainous forest of the Bungo Range that supports rich species of flora and fauna, and the uniqueness of community and their customs as well as cultures. The involvement of academics, researchers and the villagers in the expedition has enhanced the exchange of knowledge, skill, and experience among the stakeholders, which are reflected in this book. In particular, the participation of the villagers in the expedition had indirectly conveyed the message of the Forest Department Sarawak on the importance of conserving the forest of Bungo Range and preserving local cultures. Ironically, the Bungo Range is becoming a popular tourism destination due to the outstanding sceneries such as mountains, waterfalls, reservoir, and the cultures (e. g., the last ring ladies). Indeed, this book will serve as a useful reading material for researchers, scientists and non-government organization in their research endeavour.

We would like to congratulate the editors, authors and those who contributed to the production of this book. We wish similar outputs shall be achieved from future collaborative work between Universiti Malaysia Sarawak and Forest Department Sarawak. Specifically, we would like to thank the community leaders and heads of department in Bau District for their support throughout the project. Yang Berhormat Miro Simuh for his strong supports of the expedition and launching of the event on 5<sup>th</sup> December 2017.

We hope this book serves the needs of the audiences either as academic reference or reading material in leisure time. Happy Reading!

**Prof. Dr. Mohd Azlan Jayasilan**

Director  
Institute of Biodiversity and  
Environmental Conservation  
Universiti Malaysia Sarawak

**Datu Hamden Haji Mohammad**

Director  
Forest Department Sarawak

# INTRODUCTION

Sarawak government has voluntarily set aside more than 2.6 million hectares of lands and water bodies as conservation areas under the Heart of Borneo (HOB) Initiatives. The Sarawak's HOB area stretch from the north in Limbang Division to the south at Tanjung Datu that boundaries with Sabah, Brunei and Kalimantan, Indonesia. Of the total HOB area, approximately 441,000 hectares are totally protected area comprising national parks, wildlife sanctuaries and nature reserves. The southern part of the HOB contains 10 protected areas many of which are tourism hotspots such as Bako National Park, Kubah National Park, Gunung Gading National Park, Matang Wildlife Centre and Tanjung Datu National Park.

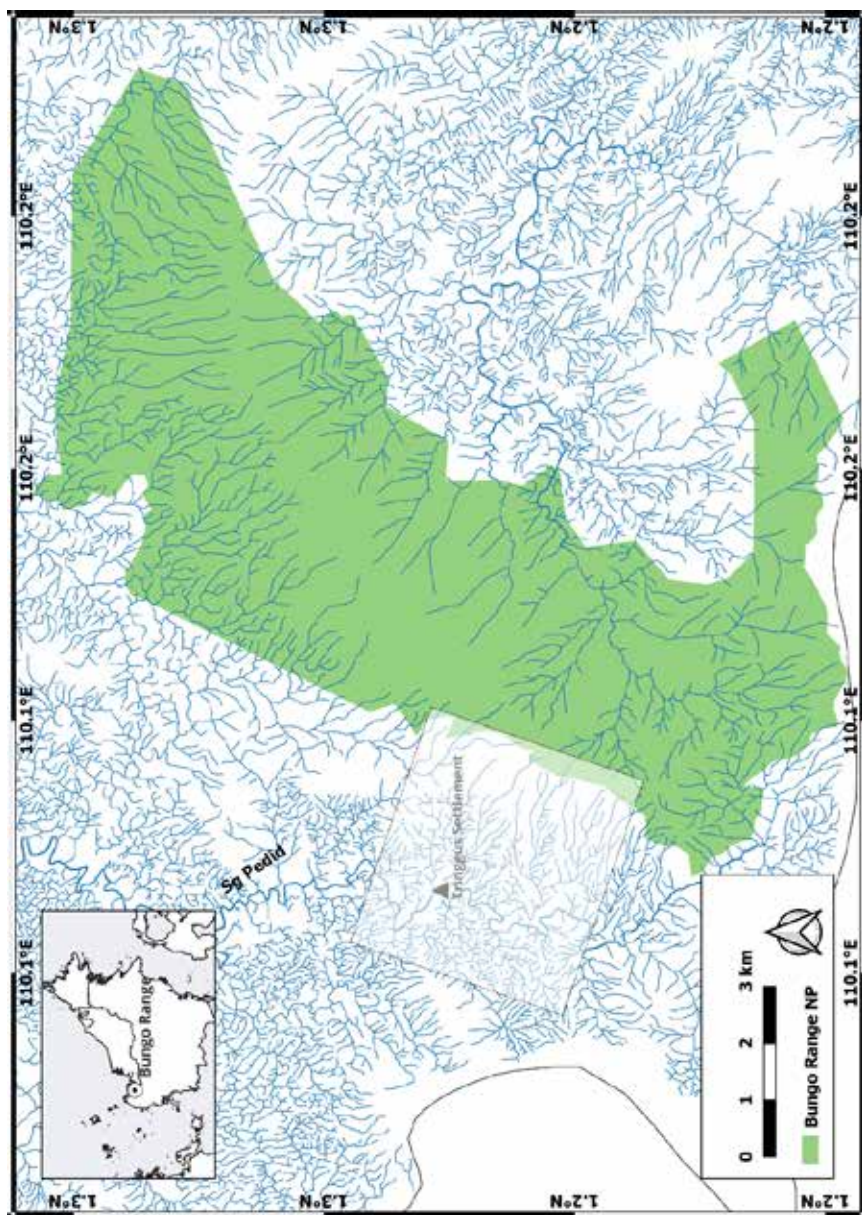
Bungo Range is located at 10° 16' latitude and 110° 9' longitude of the southern side of the HOB, about 500 meter above the sea level. The mountainous primary forest of the area was gazetted as Bungo Range National Park on 26<sup>th</sup> February 2009 covering 8,096 heactares (**Figure 1.1**). Bungo Range is an important water catchment area in the upstream of the Sarawak Kiri River and Sarawak Kanan River, where the Bengoh Dam is built to provide water supply for Kuching population. The southern end of the Bungo Range is the boundary of West Kalimantan, Indonesia.

In 2017, a multidisciplinary expedition to Bungo Range was conducted as one of the activities organized in conjunction with UNIMAS's Silver Jubilee Celebration. The Institute of Biodiversity and Environmental Conservation had led the expedition with the support of Forest Department Sarawak and other Institutes as well as Faculties within the university. The goal of the expedition was to increase the visibility of UNIMAS not just to the Tringgus community, but also to answer the call of the Sarawak government that wants to emphasise the implementation of Digital Biodiversity

in this state. The expedition was conducted for two weeks with the launching of the event held on 5<sup>th</sup> December 2017 at Tringgus settlement area.

Despite the earliest exploration in the area back to year 1880s, there is a lack of information pertaining to biodiversity and socio-economy, which are necessary to enhance biodiversity conservation, and boost local economic activities in the area. The expedition had produced substantial baseline data for the management of Bungo Range National Park, and highlight the area as a tourism destination, which eventually would benefit the local community in the area. The findings of the expedition are compiled herewith, comprising historical exploration in Bungo Range, water resource, aquatic biodiversity, floristics, mammals, birds, reptiles, amphibians, insects, and health and socio-economics of the locals. In summary, this book reported a total of 313 species of plants mainly orchids and zingers, and 298 species of wildlife among others are 105 birds, 39 mammals, 92 insects, 27 reptiles, 17 amphibians, and 59 aquatic lives. Additionally, the use of natural resources by local community in Tringgus is also presented in this book.

Because the expedition had only covered a small area of the southern section of the Bungo Range, gaps of information in this edition are expected, which suggest more explorations are needed in the near future. In this regard, the editors would like to acknowledge the contribution of the authors of each article in this edition. This edition may not stop here, and we wish to be working with you all again!



**Figure 1.1.** Map of Bungo Range National Park and the expedition area (shaded box).







**THEME:**  
**GEOLOGICAL STUDY  
AND ZOOLOGICAL  
EXPLORATION**

# THE IMPORTANCE OF FOREST REGENERATION IN PROTECTING ECONOMICALLY IMPORTANT TREE SPECIES

Gabriel Tonga Noweg and Julia Nelson

Bungo Range comprises of both primary forest in the upper highland and secondary forest in the lower part of the range. The primary forest has been gazetted as a national park on 26 February 2017, but there is very little information on the forest biodiversity on this range. The primary forest is divided into two types namely, kerangas forest (KF) and mixed dipterocarp forest (MDF). KF is also known as the tropical heath forest, which can be literally defined as the ‘land which cannot grow rice’ due to its highly acidic soil. The infertile soil has resulted in low yield of high-quality timber as compared to the MDF. The MDF, on the other hand, is mostly dominated by trees from the Dipterocarpaceae family. The Dipterocarpaceae trees yield high quality and expensive timber as compared to other timber-producing trees.

Bungo Range has suffered from several series of disturbances including natural phenomena and human activities (**Figure 10.1**). A major storm that caused landslides and strong winds in numerous regions hit Bau District in the past ten years, roughly in the year 2009. The local spokesperson claims that the strong wind also had impacted a portion of the west side of the Bungo Range, which resulted in the loss of ground cover vegetation and the falling of large trees. In addition, extensive forest destruction has occurred in the lower Bungo Range as a result of shifting cultivation and logging activities in the past. Hence, the forest regeneration study was conducted in the KF and MDF to determine the regeneration

status of the economically important tree species within Bungo Range. The health of the forest can be depicted through studies on natural regeneration, which also show how environmental, natural, and human factors affect the structure of the vegetation and the regeneration of woody species.



**Figure 10.1.** Forest clearing for agricultural activity in the Bungo Range secondary forest.

A systematic sampling using the nested quadrat method has been carried out in both forest types. All seedlings (height <0.9 m), saplings (height 0.91-3 m tall, diameter at breast height [DBH] <5 cm) and trees (height >3 m tall, DBH  $\geq$  5 cm) were measured within the nested plot (**Figure 10.2**).



**Plate 1.** Sapling with less than 5 cm DBH.



**Plate 2.** *Koompassia excelsa* tree with DBH  $\geq$ 5 cm.

**Figure 10.2.** Comparison of sapling and tree sizes as measured within the nested plot.

The economically important species is then defined by the timber-producing tree species. The timber produced ranges from the heavy hardwood to light softwood. The economic value of these timbers is influenced by the wood strength, quality, durability, and their utilization.

The result from the forest regeneration study in KF shows that, there is a total of 77 timber-producing species (**Table 10.1**). Among the timber-producing species, 11 species show good regeneration status, in which, the number of seedlings >saplings>trees. The species are including *Calophyllum inophyllum*, *Dacryodes* sp., *Dialium indum*, *Dryobalanops beccarii*, *Gonystylus*

sp., *Hopea kerangasensis*, *Mesua* sp., *Pimelodendron griffithianum*, *Santiria rubiginosa*, *Shorea myrionerva* and *Syzygium* sp. However, there are 37 timber-producing species with no regeneration i.e., *Allantospermum borneense*, *Baccaurea* sp., *Cratoxylum arborescens*, *Dryobalanops lanceolata*, *Palaquium gutta* and *Shorea venulosa*. Four species are considered as new species in the KF as there are only seedling and sapling of the species were found viz: *Garcinia* sp., *Litsea suboppositifolia*, *Shorea* sp. and *Calophyllum lowei*.

**Table 10.1.** Regeneration status of timber and non-timber-producing tree species in KF.

<b>Regeneration status</b>						
	<b>Good (Seedling &gt;sapling &gt; tree)</b>	<b>Fair (Seedling &gt;sapling &lt; tree)</b>	<b>Poor (Only sapling present)</b>	<b>No regeneration (Only tree present)</b>	<b>New species (Only sapling and seedling present)</b>	<b>Total</b>
Timber	11	8	17	37	4	77
Non-timber	0	0	2	12	1	15
Total	11	8	19	49	5	92

There are also eight timber-producing species listed in the IUCN Red List namely, *Agathis borneensis* (Endangered), *Diospyros* sp. (Near threatened), *Dryobalanops beccarii* (Endangered), *Dryobalanops lanceolata* (Endangered), *Hopea kerangasensis* (Critically endangered), *Palaquium gutta* (Near threatened), *Shorea acuminatissimum* (Critically endangered) and *Shorea parvifolia* (Critically endangered). shows the tree species regeneration status in the KF.

On the other hand, a total of 70 timber-producing species has been sampled in the MDF (**Table 10.2**). From the total number of the timber-producing species, only nine species show good regeneration status including *Antidesma* sp., *Dacryodes* sp., *Koompassia excelsa*, *Lithocarpus* sp., *Litsea* sp., *Macaranga caladiifolia*, *Pentace* sp., *Polyalthia* sp. and *Sandoricum caudatum*. However, there are 18 timber-producing species with no regeneration i.e., *Adinandra* sp., *Alseodaphne insignis*, *Baccaurea* sp. and *Neolamarckia cadamba*. Besides that, five new species with only the seedling and sapling were found including the *Garcinia* sp., *Gomphia serrata*, *Litsea suboppositifolia*, *Lophopetalum* sp. and *Syzygium* sp.

**Table 10.2.** Regeneration status of timber and non-timber-producing tree species in MDF.

	<b>Regeneration status</b>					<b>Total</b>
	<b>Good (Seedling &gt;sapling &gt; tree)</b>	<b>Fair (Seedling &gt;sapling &lt; tree)</b>	<b>Poor (Only sapling present)</b>	<b>No regeneration (Only tree present)</b>	<b>New species (Only sapling and seedling present)</b>	
Timber	9	14	24	18	5	70
Non-timber	0	2	2	0	3	7
Total	9	16	26	18	8	77

Last but not least, there are three timber-producing species listed in the IUCN Red List namely, *Diospyros* sp. (Near threatened), *Gonstylus* sp. (Vulnerable) and *Palaquium gutta* (Near threatened).

The results obtained from both study sites clearly show that, Bungo Range is a rich forest as it stores many valuable and important tree species. However, the high total number of tree species with no regeneration poses a possible threat to the continuity of these valuable species. Poor germination rate is one of the main reasons of low number of natural regenerations. The poor germination rate may be indirectly contributed by the

canopy structure. The community composition of the understorey of an undisturbed forest generally is comprised of shade-tolerant seedlings for example *Dryobalanops beccarii*, which requires less sunlight during seedling stage for successful establishment and survival. However, creating sufficient canopy gaps may accelerate the *D. beccarii* growth into big trees. Hence, further efforts are needed to promote regeneration such as protection of mother trees, silvicultural practices which release seedlings and saplings from heavy shading (such as shown in **Figure 10.3**) as well as enrichment planting.



**Figure 10.3.** Canopy opening may promote the regeneration of preferred tree species (the density of seedlings under this condition is higher than a closed-canopy area).

### A Checklist of Timber-Producing Trees in Bungo Range

Family	Species	Local name	Timber trade name
Achariaceae	<i>Hydnocarpus</i> sp.	Senumpul (Ib/Mal)	Senumpul
	<i>Ryparosa</i> sp.	Senumpul angoh (Ib/Mal)	-
Anacardiaceae	<i>Dracontomelon dao</i>	Mengkuang (Ib), Sengkuang (Mal)	-
	<i>Gluta wallichii</i>	Pra'us (Bid), Rengas (Ib/Mal)	Rengas
	<i>Mangifera pajang</i>	Bowang (Bid), Embang (Ib)	Machang
	<i>Parishia maingayi</i>	Pra'us bodang (Bid), Upi paya (Ib/Mal)	Lelayang
Annonaceae	<i>Monocarpia</i> sp.	Kinamai tongon (Bid), Semukau (Ib)	Mempisang
	<i>Polyalthia cauliflora</i>	Semukau bingkalia (Ib), Mempisang (Mal)	Mempisang
	<i>Polyalthia glauca</i>	Dileh paya (Ib), Selaut batu (Mal)	Mempisang
	<i>Polyalthia hypoleuca</i>	Dileh saie (Ib), Selaut (Mal)	Mempisang
	<i>Polyalthia</i> sp.	Semukau (Ib)	Mempisang
	<i>Xylopi ferruginea</i>	Binyokad (Bid), Ako bulu (Ib)	Mempisang
Aquifoliaceae	<i>Ilex hypoglauca</i>	Sapo (Bid), Kerdam paya besai (Ib), Kerdam mengkulat (Mal)	Mensirah
Araucariaceae	<i>Agathis borneensis</i>	Koyuh damar (Bid), Bindang (Ib/Mal)	Damar minyak



Burseraceae	<i>Dacryodes edulis</i>	Timayow (Bid), Kemayau (Ib/Mal)	Kedondong hutan
	<i>Dacryodes</i> sp.	Seladah (Ib/Mal)	Kedondong
	<i>Santiria rubiginosa</i>	Dabe manuk (Bid), Seladah paya (Ib/Mal)	Kedondong
Calophyllaceae	<i>Calophyllum inophyllum</i>	Sibung (Bid), Bintangor beludu (Ib)	Bintangor
	<i>Calophyllum lanigerum</i>	Sibung (Bid), Bintangor putih (Ib/Mal)	Bintangor
	<i>Calophyllum lowei</i>	Sibung (Bid), Bintangor (Ib/Mal)	Bintangor
	<i>Mesua</i> sp.	Tunguos (Bid), Mergasing (Ib/Mal)	Penaga
Cannabaceae	<i>Gironniera</i> sp.	Seresap (Bid), Medang kasap (Ib/Mal)	Kasap
Celastraceae	<i>Lophopetalum</i> sp.	Krupuok (Bid), Perupok (Ib)	Perupok
Chrysobalanaceae	<i>Maranthes corymbosa</i>	Merbatu (Ib)	Merbatu
Clusiaceae	<i>Garcinia cuspidata</i>	Konis (Bid), Kandis (Ib/Mal)	Kandis
Cornaceae	<i>Alangium</i> sp.	Midong (Ib), Jadam (Mal)	Mentulang
Dipterocarpaceae	<i>Anisoptera</i> sp.	Obang jonyang (Bid), Mersawa (Ib/Mal)	Mersawa
	<i>Dryobalanops beccarii</i>	Lodan (Bid), Kapur keladan (Ib), Kapur bukit (Mal)	Kapur
	<i>Dryobalanops lanceolata</i>	Lodan (Bid), Kapur paji (Ib), Kapur daram (Mal)	Kapur

	<i>Hopea kerangasensis</i>	Koyuh damar (Bid), Luis kerangas (Ib/Mal)	Merawan
	<i>Shorea acuminatissima</i>	Obang (Bid), Lun runching (Ib/Mal)	Meranti kuning
	<i>Shorea foxworthyi</i>	Jojag (Bid), Selangan batu (Ib)	Selangan batu
	<i>Shorea macroptera</i>	Obang (Bid), Meranti melantai (Ib)	Melantai
	<i>Shorea myrionerva</i>	Kabang (Bid), Langgai sepit udang (Ib), Meranti sepit udang (Mal)	Meranti merah muda
	<i>Shorea parvifolia</i>	Obang (Bid), Meranti sarang punai (Ib/Mal)	Meranti merah muda
	<i>Shorea sp.</i>	Meranti (Ib/Mal)	Meranti
	<i>Shorea venulosa</i>	Obang (Bid), Meranti tangkai panjang (Mal)	Meranti merah tua
	<i>Vatica granulata</i>	Kowan (Bid), Resak ranting bersisik (Ib/Mal)	Resak
	<i>Vatica sp.</i>	Kowan (Bid), Resak (Ib/Mal)	Resak
Ebenaceae	<i>Diospyros sp.</i>	Unguon oran (Bid), Kayu malam (Ib/Mal)	Kayu malam
Elaeocarpaceae	<i>Elaeocarpus floribundus</i>	Emperdu pensi mit (Ib)	Sengkurat
	<i>Elaeocarpus sp.</i>	Emperdu (Ib), Tong (Bid)	Sengkurat
	<i>Elaeocarpus stipularis</i>	Emperdu pensi (Ib)	Sengkurat
Erythroxylaceae	<i>Erythroxylum sp.</i>	Manding (Ib)	Chinta mula

Euphorbiaceae	<i>Croton</i> sp.	Towi (Bid), Entupak (Ib), Balik angin (Mal)	-
	<i>Elateriospermum tapos</i>	Ropi (Bid), Kelampai (Ib), Perah (Mal)	Perah
	<i>Macaranga caladiifolia</i>	Binua (Bid), Benuah paya (Mal)	Mahang
	<i>Macaranga</i> sp.	Binua (Bid), Benuah (Mal)	Mahang
	<i>Neoscortechinia kingii</i>	Bantas (Ib)	-
	<i>Pimelodendron griffithianum</i>	Kelampai sitak (Ib), Perah ikan (Mal)	Perah ikan
Fabaceae	<i>Archidendron jiringa</i>	Joring (Bid), Jerin (Mal)	-
	<i>Dialium indum</i>	Kronyih (Bid), Keranji (Ib/Mal)	Keranji
	<i>Koompassia excelsa</i>	Do'oh (Bid), Tapang (Ib), Tualang (Mal)	Tualang
Fagaceae	<i>Castanopsis motleyana</i>	Bongan (Bid), Berangan besai (Ib)	Berangan
	<i>Lithocarpus</i> sp.	Keraki (Bid), Empili (Ib), Mempening (Mal)	Mempening
Hypericaceae	<i>Cratoxylum arborescens</i>	Tuma (Bid), Geronggang (Mal)	Geronggang
Irvingiaceae	<i>Allantospermum borneense</i>	Ras (Bid), Tulang (Ib/Mal)	Nyalin
Lamiaceae	<i>Callicarpa</i> sp.	Rurai (Bid), Sabal besi (Ib)	-
Lauraceae	<i>Actinodaphne sesquipetalis</i>	Tiburus (Bid), Medang payung (Ib/Mal)	Medang
Lauraceae	<i>Alseodaphne insignis</i>	Medang lui kasar (Mal)	Medang
Lauraceae	<i>Beilschmiedia</i> sp.	Medang (Ib/Mal)	Medang
Lauraceae	<i>Endiandra</i> sp.	Medang bejubai (Ib)	Medang
Lauraceae	<i>Lindera</i> sp.	Tiburus (Bid.), Medang sisit (Ib/Mal)	Medang

Lauraceae	<i>Litsea elliptica</i>	Medang pawas (Ib)	Medang
Lauraceae	<i>Litsea lancifolia</i>	Kala manuk (Bid), Medang (Ib/Mal)	Medang
Lauraceae	<i>Litsea</i> sp.	Medang (Ib/Mal)	Medang
Lauraceae	<i>Litsea suboppositifolia</i>	Medang pangit mit (Ib)	Medang
Malvaceae	<i>Brownlowia</i> sp.	Baru (Ib)	-
Malvaceae	<i>Grewia laevigata</i>	Bunsi (Ib)	-
Malvaceae	<i>Heritiera albiflora</i>	Mengkulang jari (Ib/Mal)	Mengkulang/ Dungun
Malvaceae	<i>Pentace</i> sp.	Bisoran (Bid), Baru bukit (Ib)	Melunak
Malvaceae	<i>Sterculia</i> sp.	Obul (Bid), Melebu (Ib)	Kelumpang
Melastomataceae	<i>Pternandra</i> sp.	Tulang kada (Bid), Pulu (Ib)	Sial menahun
Meliaceae	<i>Aglaiia</i> sp.	Nyikedan (Bid), Segera (Ib)	Bekak
Meliaceae	<i>Sandoricum caudatum</i>	Klapu (Bid), Kelampu (Ib)	Sentul
Meliaceae	<i>Sandoricum koetjape</i>	Situ (Bid), Kelampu (Ib)	Sentul
Moraceae	<i>Artocarpus kemando</i>	Puduh (Bid), Pudu (Ib)	-
Moraceae	<i>Artocarpus nitidus</i>	Kolon (Bid), Selanking (Ib)	Keledang
Moraceae	<i>Artocarpus odoratissimus</i>	Telap (Bid), Lumok (Ib), Terap (Mal)	Terap
Myristicaceae	<i>Horsfieldia grandis</i>	Pang biga (Big), Kumpang (Ib/Mal)	Penarahan
Myristicaceae	<i>Knema latifolia</i>	Pang (Bid), Kumpang putih (Ib/Mal)	Penarahan
Myrtaceae	<i>Syzygium acuminatissimum</i>	Bah mopu' (Bid), Ubah putih (Ib/Mal)	Kelat

Myrtaceae	<i>Syzygium arcuatinervum</i>	Bah birieh (Bid), Ubah lusu (Ib), ubah merah (Mal)	Kelat
Myrtaceae	<i>Syzygium bankense</i>	Bah ribu (Bid), Ubah (Ib/Mal)	Kelat
Myrtaceae	<i>Syzygium beccarii</i>	Bah (Bid), Ubah tangkai pendek (Ib)	Kelat
Myrtaceae	<i>Syzygium kunstleri</i>	Bah birieh (Bid), Ubah merah (Ib/Mal)	Kelat
Myrtaceae	<i>Syzygium polyanthum</i>	Bah bungkok (Bid), Ubah bungkok (Ib)	Kelat
Myrtaceae	<i>Syzygium</i> sp.	Bah (Bid), Ubah (Ib/Mal)	Kelat
Myrtaceae	<i>Tristaniopsis</i> sp.	Limuban (Bid), Selunsor (Mal)	Pelawan
Ochnaceae	<i>Gomphia serrata</i>	Chenaga lampong (Ib), Ladin (Mal)	-
Oxalidaceae	<i>Sarcotheca diversifolia</i>	Teba-ang (Bid), Piang (Ib)	Pupoi
Oxalidaceae	<i>Sarcotheca glauca</i>	Piang paya (Ib)	Pupoi
Oxalidaceae	<i>Sarcotheca</i> sp.	Piang (Ib)	Pupoi
Pentaphragaceae	<i>Adinandra</i> sp.	Semopak (Bid), Legai (Ib)	Samak
Phyllanthaceae	<i>Antidesma</i> sp.	Bernai (Ib)	-
Phyllanthaceae	<i>Aporosa</i> sp.2	Botung (Bid), Kayu masam (Ib)	Kayu masam
Phyllanthaceae	<i>Baccaurea macrocarpa</i>	Bitongon (Bid), Puak (Ib), Tampoi (Mal)	Tampoi
Phyllanthaceae	<i>Cleistanthus</i> sp.	Mobi (Bid), Pala beriak (Ib)	-
Phyllanthaceae	<i>Glochidion macrostigma</i>	Nyah (Bid), Menyam (Ib)	Ubah
Polygalaceae	<i>Xanthophyllum ellipticum</i>	Nyalin paya (Ib), Nyalin tikus (Mal)	Nyalin

Proteaceae	<i>Helicia</i> sp.	Pasis (Bid), Palis (Ib)	Sawa luka
Rhizophoraceae	<i>Pellacalyx</i> sp.	Dangoh (Bid), Merbuloh (Ib/Mal)	Membuloh
Rosaceae	<i>Prunus</i> sp.	Enteli (Ib)	Pepijat
Rubiaceae	<i>Canthium umbelligerum</i>	Bokol (Bid), Tulang ular (Ib)	-
Rubiaceae	<i>Nauclea</i> sp.	Empitap (Ib)	Bangkal
Rubiaceae	<i>Neolamarckia cadamba</i>	Kelampayan (Ib/Mal)	Laran
Rubiaceae	<i>Timonius</i> sp.	Kurang (Bid), Rentap (Ib)	-
Sabiaceae	<i>Meliosma</i> sp.	Bitonok (Bid), Bulu manok (Ib)	-
Salicaceae	<i>Flacourtia rukam</i>	Poya (Bid), Rukam (Ib)	-
Salicaceae	<i>Homalium</i> sp.	Senumpul (Ib/Mal)	Telor buaya
Sapindaceae	<i>Nephelium cuspidatum</i>	Porot (Bid), Sibau larat (Ib)	Rambutan
Sapindaceae	<i>Nephelium lappaceum</i>	Rimutan (Bid), Sanggau (Ib)	Rambutan
Sapotaceae	<i>Madhuca motleyana</i>	Ketiau paya/nyatoh ketiau paya (Ib)	Nyatoh
Sapotaceae	<i>Palaquium gutta</i>	Jotu (Bid), Nyatoh rian (Ib)	Nyatoh
Symplocaceae	<i>Symplocos</i> sp.	Ruboh (Bid), Jirak (Ib)	-
Theaceae	<i>Gordonia</i> sp.	Legai buah bujur (Ib)	Samak
Thymelaeaceae	<i>Gonystylus micranthus</i>	Dukun (Bid), Ramin hitam (Ib/Mal)	Ramin
Thymelaeaceae	<i>Gonystylus</i> sp.	Dukun (Bid), Ramin (Ib/Mal)	Ramin

Note: The timber and non-timber producing species is classified into timber-producing species as defined in Soerianegara & Lemmens (1993), Lemmens et al. (1995), Sosef et al. (1998) and Wong (2002)

# BUNGO RANGE

**BIODIVERSITY AND COMMUNITY**

This book highlights the significant findings from the Multidisciplinary Expedition in Bungo Range conducted on 5-10 December 2017. The expedition was organized by the Institute of Biodiversity and Environmental Conservation, UNIMAS with support from the Forest Department Sarawak. This volume is illustrated in 24 chapters covering the historical exploration of Bungo Range, a geological feature of the mountain, water resources, aquatic biodiversity, floristics, mammals, birds, reptiles, amphibians, insects, and health and socio-economics of the Tringgus community. It is reported herewith in the book that there are a total of 313 species of plants mainly orchids and zingers, and 298 species of wildlife, among them 105 birds, 39 mammals, 92 insects, 27 reptiles, 17 amphibians, and 59 aquatic lives. Additionally, the use of natural resources by the local community in Tringgus is also presented. This book can serve as a useful reference for the development and management of Bungo Range National Park, and the communities living surrounding the area.