

A Checklist of
Amphibians
and Reptiles of
Gunung Mulu National Park
Sarawak

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Introduction

Gunung Mulu National Park (headquarters at 04.02.30.3N; 114.48.46.1E), with 105 described species of amphibians and 91 reptiles, is an area of great biological diversity.

The Park has an area of 52,866 ha, and was gazetted in 1974. Named after Gunung Mulu, a huge sandstone massif and the second highest peak of Sarawak, the Park also includes the Melinau Limestone formation, home to one of the world's largest cave systems. Elevational range included starts from about 50 m at the Park Headquarters, and culminates in the summits of Gunung Benarat (1,615 m), Gunung Api (1,710 m) and Gunung Mulu (2,376 m). This Natural World Heritage Site, however, remains poorly inventoried, and additional records are expected or are being prepared for publication at the time of writing.

Checklist

Provided here is a checklist of the amphibian and reptile faunas of the Park and its immediate vicinity, based on collections and observations, in addition to literature records and museum specimens and photographic vouchers captured by colleagues and other visitors to Mulu.

We have adopted the nomenclature of Frost (2017) for amphibians and Uetz (2017) for reptiles.



**Checklist of the amphibians of the Gunung Mulu National Park.
Current: 15 October 2017.**

Bufonidae

- Ansonia hanitschi* Inger, 1960: Hanitsch's Slender Toad
Ansonia leptopus (Günther, 1872): Brown Slender Toad
Ansonia longidigita Inger, 1960: Long-fingered Slender Toad
Ansonia platysoma Inger, 1960: Flat-bodied Slender Toad
Ansonia torrentis Dring, 1983: Mulu Slender Toad
Ingerophrynus divergens (Peters, 1871): Crested Toad
Leptophryne borbonica (Tschudi, 1838): Cross Toad
Pelophryne api Dring, 1983: Api Dwarf Toad
Pelophryne cf. guentheri (Boulenger, 1882): Günther's Dwarf Toad
Pelophryne saravacensis Inger & Stuebing, 2009: Sarawak Dwarf Toad
Pelophryne signata (Boulenger, 1894): Lowland Dwarf Toad
Phrynoidis aspera (Gravenhorst, 1829): River Toad
Phrynoidis juxtaspera (Inger, 1964): Giant River Toad
Rentapia hosii (Boulenger, 1892): Brown Tree Toad
Rentapia rugosus Inger, 1958: Rough-skinned Tree Toad

Ceratobatrachidae

- Alcalus baluensis* (Boulenger, 1896): Kinabalu Inger Frog

Dicroglossidae

- Fejervarya limnocharis* (Gravenhorst, 1829): Grass Frog
Limnonectes ibanorum (Inger, 1964): Rough-backed River Frog
Limnonectes ingeri (Kiew, 1978): Inger's Greater Swamp Frog
Limnonectes aff. kuhlii (Tschudi, 1838): Kuhl's Creek Frog
Limnonectes leporinus (Andersson, 1923): Giant River Frog
Limnonectes malesianus (Kiew, 1984): Malaysian River Frog
Limnonectes palavanensis (Boulenger, 1894): Smooth Guardian Frog
Limnonectes paramacrodon (Inger, 1966): Lesser Swamp Frog
Occidozyga baluensis (Boulenger, 1896): Seep Frog
Occidozyga sumatrana (Peters, 1877): Yellow-bellied Puddle Frog

Megophryidae

- Leptobrachella baluensis* Smith, 1931: Kinabalu Dwarf Litter Frog
Leptobrachella brevicrus Dring, 1983: Mulu Short-legged Dwarf Litter Frog
Leptobrachella itiokai Eto, Matsui & Nishikawa, 2016: Itioka's Dwarf Litter Frog
Leptobrachella juliandringi Eto, Matsui & Nishikawa, 2015: Dring's Dwarf Litter Frog
Leptobrachella mjobergi Smith, 1925: Mjöberg's Dwarf Litter Frog
Leptobrachella parva Dring, 1983: Small Dwarf Litter Frog
Leptobrachium abbotti (Cochran, 1926): Lowland Litter Frog
Leptobrachium guningense Malkmus, 1996: Eastern Montane Litter Frog
Leptobrachium montanum Fischer, 1885: Montane Litter Frog
Leptolalax dringi Dubois, 1987: Dring's Slender Litter Frog
Leptolalax fritinniens Dehling & Matsui, 2013: Mulu Slender Litter Frog
Leptolalax gracilis (Günther, 1872): Sarawak Slender Litter Frog
Leptolalax pictus Malkmus, 1992: Painted Slender Litter Frog
Megophrys dringi (Inger, Stuebing & Tan, 1995): Dring's Horned Frog
Megophrys nasuta (Schlegel, 1858): Bornean Horned Frog

Microhylidae

- Glyphoglossus flavus* (Kiew, 1984): Yellow Spadefoot Frog
Glyphoglossus smithi (Barbour & Noble, 1916): Smith's Spadefoot Frog
Chaperina fusca Mocquard, 1892: Saffron-bellied Frog
Kalophrynus calciphilus Dehling, 2011: Limestone Sticky Frog
Kalophrynus nubicola Dring, 1983: Cloud-dwelling Sticky Frog
Kalophrynus pleurostigma Tschudi, 1838: Rufous-sided Sticky Frog
Kalophrynus heterochirus Boulenger, 1900: Variable Sticky Frog
Kaloula baleata (Müller, 1836): Brown Bullfrog
Metaphrynella sundana (Peters, 1867): Bornean Tree Hole Frog
Microhyla berdmorei (Blyth, 1856): Berdmore's Narrow-mouthed Frog
Microhyla borneensis Parker, 1928: Bornean Narrow-mouthed Frog
Microhyla malang Matsui, 2011: Matang Narrow-mouthed Frog
Microhyla perparva Inger & Frogner, 1979: Least Narrow-mouthed Frog
Microhyla petrigena Inger & Frogner, 1979: Pothole Narrow-mouthed Frog

Ranidae

- Abavorana luctuosa* (Peters, 1871): Mahogany Frog
Chalcorana megalonesa Inger, Stuart & Iskandar, 2009 Greater Bornean White-lipped Frog
Chalcorana raniceps (Peters, 1871): Lesser Bornean White-lipped Frog
Huia cavitympanum (Boulenger, 1893): Hole-eared Torrent Frog
Hylarana erythraea (Schlegel, 1837): Green Paddy Frog
Pulchrana baramica (Boettger, 1901): Brown Marsh Frog
Pulchrana glandulosa (Boulenger, 1882): Rough-sided Frog
Pulchrana laterimaculata (Barbour & Noble, 1916): Side-spotted Swamp Frog
Pulchrana picturata (Boulenger, 1920): Spotted Stream Frog
Pulchrana signata (Günther, 1872): Striped Stream Frog
Meristogenys amoropalammis (Matsui, 1986): Mountain Torrent Frog
Meristogenys kinabaluensis (Inger, 1966): Kinabalu Torrent Frog
Meristogenys orphnocnemis (Matsui, 1986): Dusky-legged Torrent Frog
Meristogenys poecilus (Inger & Gritis, 1983): Blotched Torrent Frog
Meristogenys whiteheadi (Boulenger, 1887): Whitehead's Torrent Frog
Odorrana hosii (Boulenger, 1891): Poisonous Rock Frog
Staurois guttatus (Günther, 1858): Black-spotted Foot-Flagging Frog
Staurois latopalermatus (Boulenger, 1887): Rock Skipper
Staurois parvus Inger & Haile, 1959: Small Foot-flagging Frog
Staurois tuberilinguis Boulenger, 1918: Green-spotted Rock Frog

Rhacophoridae

- Feihyla kajau* Dring, 1983: White-eared Tree Frog/ Charming Tree Frog
Knixalus appendiculatus (Günther, 1858): Frilled Tree Frog
Nyctixalus pictus (Peters, 1871): Cinnamon Tree Frog
Philautus acutus Dring, 1987: Sharp-snouted Bush Frog
Philautus hosii (Boulenger, 1895): Hose's Bush Frog
Philautus ingeri Dring, 1987: Inger's Bush Frog
Philautus juliandringi Dehling, 2010: Julian Dring's Bush Frog
Philautus kerangae Dring, 1987: Kerangas Bush Frog
Philautus macroscelis (Boulenger, 1896): Mossy Bush Frog
Philautus mjobergi Smith, 1925: Mjöberg's Bush Frog
Philautus petersi (Boulenger, 1900): Peters' Bush Frog
Philautus tectus Dring, 1987: Covert Bush Frog
Philautus umbra Dring, 1987: Shadow Bush Frog
Polypedates colletti (Boulenger, 1890): Collett's Tree Frog
Polypedates leucomystax (Gravenhorst, 1829): Common Asian Tree Frog

**Checklist of reptiles of Gunung Mulu National Park.
Current 15 October 2017.**

Crocodylidae

Crocodylus porosus Schneider, 1801: Saltwater Crocodile

Geoemydidae

Cuora amboinensis (Daudin, 1801): Malayan Box Turtle

Heosemys spinosa (Gray, 1831): Spiny Hill Turtle

Siebenrockiella crassicollis (Gray, 1831): Black Marsh Turtle

Trionychidae

Amyda cartilaginea (Boddaert, 1770): Malayan Softshell Turtle

Dogania subplana (Geoffroy Saint-Hilaire, 1809): Asian Softshell Turtle

SQUAMATA [SAURIA]

Agamidae

Bronchocela cristatella (Kuhl, 1820): Green Crested Lizard

Draco cornutus Günther, 1864: Cornuted Flying Lizard

Draco haematopogon Boie, 1831: Blood-bearded Flying Lizard

Draco maximus Boulenger, 1893: Giant Flying Lizard

Draco melanopogon Boulenger, 1887: Black-bearded Flying Lizard

Draco quinquefasciatus Hardwicke & Gray, 1827: Six-lined Flying Lizard

Gonocephalus bornensis (Schlegel, 1848): Bornean Angle-headed Lizard

Gonocephalus grandis (Gray, 1845): Giant Angle-headed Lizard

Gonocephalus liogaster (Günther, 1872): Blue-eyed Angle-headed Lizard

Phoxophrys borneensis Inger, 1960: Bornean Shrub Lizard

Phoxophrys nigrilabris (Peters, 1864): Black-lipped Shrub Lizard

Phoxophrys spiniceps Smith, 1925: Spiny-headed Shrub Lizard

Eublepharidae

Aeluroscalabotes felinus (Günther, 1864): Cat Gecko

Gekkonidae

- Cnemaspis dringi* Das & Bauer, 1998: Dring's Day Gecko
Cyrtodactylus baluensis (Mocquard, 1890): Kinabalu Bent-toed Gecko.
Cyrtodactylus cavernicolus Inger & King, 1961: Niah Cave Gecko
Cyrtodactylus consobrinus (Peters, 1871): Giant Bent-toed Gecko
Cyrtodactylus ingeri Hikida, 1990: Inger's Bent-toed Gecko
Cyrtodactylus malayanus (de Rooij, 1915): Malayan Bent-toed Gecko
Cyrtodactylus pubisulcus Inger, 1957: Grooved Bent-toed Gecko
Gehyra mutilata (Wiegmann, 1834): Four-clawed Gecko
Gekko monarchus (Schlegel, 1836): Spotted House Gecko
Gekko smithii (Gray, 1842): Smith's Giant Gecko
Hemidactylus frenatus Duméril & Bibron, 1836: Asian House Gecko
Hemiphyllodactylus typus Bleeker, 1860: Oriental Worm Gecko
Ptychozoon horsfieldii (Gray, 1827): Horsfield's Gliding Gecko
Ptychozoon kuhli Stejneger, 1902: Kuhl's Gliding Gecko

Scincidae

- Apterygodon vittatus* Edeling, 1864: Bornean Tree Skink
Dasia grisea Gray, 1845: Grey Tree Skink
Dasia olivacea Gray, 1839: Common Tree Skink
Eutropis multifasciata (Kuhl, 1820): Common Ground Skink
Eutropis rudis Boulenger, 1887: Three-keeled Ground Skink
Eutropis rugifera (Stoliczka, 1870): Rough-backed Ground Skink
Lipinia vittigera (Boulenger, 1894): Common Striped Skink
Sphenomorphus alfredi (Boulenger, 1898): Alfred's Litter Skink
Sphenomorphus cyanolaemus Inger & Hosmer, 1965: Blue-bellied Litter Skink
Sphenomorphus multisquamatus Inger, 1958: Many-scaled Litter Skink
Tropidophorus beccarii Peters, 1871: Beccari's Water Skink
Tropidophorus brookei (Gray, 1845): Brooke's Water Skink

Varanidae

- Varanus rudicollis* Gray, 1845: Rough-necked Monitor
Varanus salvator (Laurenti, 1768): Water Monitor

SQUAMATA [SERPENTES]

Cylindrophiiidae

Cylindrophis ruffus (Laurenti, 1768): Red-tailed Pipe Snake

Pythonidae

Malayopython reticulatus (Schneider, 1801): Reticulated Python

Python breitensteini Steindachner, 1880: Bornean Short Python

Xenopeltidae

Xenopeltis unicolor Boie, 1827: Sunbeam Snake

Colubridae

Ahaetulla fasciolata (Fischer, 1885): Speckle-headed Vine Snake

Ahaetulla prasina (Boie, 1827): Oriental Vine Snake

Boiga cynodon (Boie, 1827): Dog-toothed Cat Snake

Boiga dendrophila (Boie, 1827): Mangrove Cat Snake

Boiga drapiezii (Boie, 1827): White-spotted Cat Snake

Boiga jaspidea (Duméril, Bibron & Duméril, 1854): Jasper Cat Snake

Calamaria borneensis Bleeker, 1860: Bornean Reed Snake

Calamaria lovii (Boulenger, 1887): Low's Reed Snake

Calamaria melanota Jan, 1862: Jan's Reed Snake

Calamaria schlegeli Duméril, Bibron & Duméril, 1854: Red-headed Reed Snake

Chrysopelea paradisi Boie, 1827: Garden Flying Snake

Chrysopelea pelias (Linnaeus, 1758): Twin-barred Flying Snake

Coelognathus flavolineatus (Schlegel, 1837): Common Malayan Racer

Dendrelaphis caudolineatus (Gray, 1835): Striped Bronzeback Tree Snake

Dendrelaphis pictus (Gmelin, 1789): Painted Bronzeback Tree Snake

Dryocalamus tristrigatus (Günther, 1858): Three-banded Bridled Snake

Dryophiops rubescens (Gray, 1835): Keel-bellied Vine Snake

Gonyosoma margaritatum (Peters, 1871): Royal Tree Snake

Gonyosoma oxycephalum (Boie, 1827): Brown-tailed Racer

Lycodon subcinctus Boie, 1827: Malayan Banded Wolf Snake

Oligodon octolineatus (Schneider, 1801): Lined Kukri Snake

Orthriophis taeniurus (Cope, 1861): Cave Racer

Psammodynastes pictus Günther, 1858: Painted Mock Viper

Psammodynastes pulverulentus Boie, 1827: Common Mock Viper

Ptyas carinata (Günther, 1858): Keeled Rat Snake

Ptyas fusca (Günther, 1858): Grey Rat Snake

Natricidae

Hebius sarawacense (Günther, 1872): Sarawak Grass Snake,

Rhabdophis chrysargos (Schlegel, 1837): Speckle-bellied Keelback Snake

Rhabdophis murudensis (Smith, 1925): Fire-lipped Keelback Snake

Xenochrophis maculatus (Edeling, 1864): Spotted Water Snake

Xenochrophis trianguligerus (Boie, 1827): Red-sided Keelback Snake

Elapidae

Bungarus flaviceps (Reinhardt, 1843): Red-headed Krait

Calliophis intestinalis (Laurenti, 1768): Malayan Striped Coral Snake

Ophiophagus hannah (Cantor, 1836): King Cobra

Pareidae

Aplopeltura boa (Boie, 1828): Blunt-headed Tree Snake

Asthenodipsas laevis (Boie, 1827): Blunt-headed Tree Snake

Asthenodipsas malaccanus Peters, 1864: Malacca Slug Snake

Viperidae

Parias sumatranus (Raffles, 1822): Sumatran Pit Viper

Trimeresurus borneensis (Peters, 1871): Bornean Flat-nosed Pit Viper

Tropidolaemus subannulatus (Gray, 1842) Bornean Keeled Pit Viper



Where to Find Frogs and Reptiles

Mulu's herpetofauna are distributed across its different habitat types and elevational ranges, from the Park Headquarters to the blackwater swamps of Mentawai, from the pinnacles of Api to just below the summit of Gunung Mulu. The greatest concentration of endemic frogs is at the headwaters of Sungei Tapin, close to Camp 4, and many of Mulu's famous frogs have been described from this single location. However, some of the Mulu-only species can also be seen closer- for instance, the Api Dwarf Toad, *Pelophryne api*, is restricted to the lowland limestone formation, and significant numbers can be seen and heard on wet nights from the limestone scree area adjacent to the Park Headquarters. Frogs are more often heard than seen, and the Park Headquarters area offers many habitats suitable for amphibian life, such as rivers, seepages and small ponds, all used by different species. The loudest of these must be the Rough-sided Frog, *Pulchrana glandulosa*, whose call has been likened to the bark of a dog, albeit from trees!

Information on Bornean frogs and sample calls can be seen and heard at the website "Frogs of Borneo. Frogs and tadpoles of East Malaysia" (<http://frog-sofborneo.org>).

Snakes and lizards are regularly but unpredictably encountered on the long boardwalks to the Show Caves, by day and night. The Cave Racers are regulars at some of the well-visited caves and can be seen almost at request.



First-aid for Snake-Bites

Visitors to Mulu will be relieved to know that only a tiny proportion of snakes are dangerous to humans. A major part of this diversity is marine. Amongst land-dwellers, the most familiar are the vipers, cobras, kraits and coral snakes. Venom from cobras, kraits and coral snakes affects the nerves ('neurotoxic' venom which blocks conduction of nerve impulse to muscles; symptoms include loss of muscle control, manifested by drooping eyelids, loss of muscle tone in facial features and paralysis of diaphragm, resulting in inability to breathe). Envenomation by vipers affects the circulatory system ('haemotoxic' venom, which damages the walls of blood vessels; symptoms include severe local pain and swelling, non-clotting of blood and kidney failure).

Large-growing non-venomous snakes, such as pythons can give a painful bite, causing severe lacerations and may require stitches, and bites from some of the keelback snakes require medical treatment for envenomation. For bites from cobras, kraits, coral snakes and vipers, arrangements to transport the victim to a hospital should be made immediately. The nearest hospital is the Miri General Hospital, and medivac may be essential to save life and limb in such cases. The patient needs to be calmed and reassured and kept immobile as much as possible, as movements can increase systemic absorption of venom. Identification or accurate description of the snake responsible for the bite aids treatment. In case of elapid, a pressure bandage may be applied tightly, but permitting the pulse of the bitten limb, in order to retard venom absorption.

Antivenom should be administered only by qualified physicians, who will check for venom sensitivity and administer the appropriate antivenom and in sufficient quantity.

A note of reassurance to victims of snake-bite: a large number of bites from venomous snakes are associated with only a small amount of venom, or none at all (referred to as a dry bite). The chance of recovery, consequently, is very good.

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