

Fauna Indonesia



Volume 11, No. 1 Juni 2012



Accipiter trinotatus



Pusat Penelitian Biologi - LIPI
Bogor





Fauna Indonesia merupakan Majalah Ilmiah Populer yang diterbitkan oleh Masyarakat Zoologi Indonesia (MZI). Majalah ini memuat hasil pengamatan ataupun kajian yang berkaitan dengan fauna asli Indonesia, diterbitkan secara berkala dua kali setahun

ISSN 0216-9169

Redaksi

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PEDOMAN PENULISAN

1. Redaksi FAUNA INDONESIA menerima sumbangan naskah yang belum pernah diterbitkan, dapat berupa hasil pengamatan di lapangan/ laboratorium atau studi pustaka yang terkait dengan fauna asli Indonesia yang bersifat ilmiah populer.
2. Naskah ditulis dalam Bahasa Indonesia dengan *summary* Bahasa Inggris maksimum 200 kata dengan jarak baris tunggal.
3. Huruf menggunakan tipe Times New Roman 12, jarak baris 1.5 dalam format kertas A4 dengan ukuran margin atas dan bawah 2.5 cm, kanan dan kiri 3 cm.
4. Sistematika penulisan:
 - a. Judul: ditulis huruf besar, kecuali nama ilmiah spesies, dengan ukuran huruf 14.
 - b. Nama pengarang dan instansi/ organisasi.
 - c. *Summary*
 - d. Pendahuluan
 - e. Isi:
 - i. Jika tulisan berdasarkan pengamatan lapangan/ laboratorium maka dapat dicantumkan cara kerja/ metoda, lokasi dan waktu, hasil, pembahasan.
 - ii. Studi pustaka dapat mencantumkan taksonomi, deskripsi morfologi, habitat perilaku, konservasi, potensi pemanfaatan dan lain-lain tergantung topik tulisan.
 - f. Kesimpulan dan saran (jika ada).
 - g. Ucapan terima kasih (jika ada).
 - h. Daftar pustaka.
5. Acuan daftar pustaka:

Daftar pustaka ditulis berdasarkan urutan abjad nama belakang penulis pertama atau tunggal.

 - a. Jurnal
Chamberlain. C.P., J.D. Blum, R.T. Holmes, X. Feng, T.W. Sherry & G.R. Graves. 1997. The use of isotope tracers for identifying populations of migratory birds. *Oecologia* 9:132-141.
 - b. Buku
Flannery, T. 1990. *Mammals of New Guinea*. Robert Brown & Associates. New York. 439 pp.
Koford, R.R., B.S. Bowen, J.T. Lokemoen & A.D. Kruse. 2000. Cowbird parasitism in grasslands and croplands in the Northern Great Plains. Pages 229-235 in *Ecology and Management of Cowbirds* (J. N.M. Smith, T. L. Cook, S. I. Rothstein, S. K. Robinson, and S. G. Sealy, Eds.). University of Texas Press, Austin.
 - c. Koran
Bachtiar, I. 2009. *Berawal dari hobi , kini jadi jutawan*. Radar Bogor 28 November 2009. Hal.20
 - d. internet
NY Times Online . 2007."Fossil find challenges man's timeline". Accessed on 10 July 2007 (<http://www.nytimes.com/nytonline/NYTO-Fossil-Challenges-Timeline.html>).

6. Tata nama fauna:

- a. Nama ilmiah mengacu pada ICZN (zoologi) dan ICBN (botani), contoh *Glossolepis incisus*, nama jenis dengan author *Glossolepis incisus* Weber, 1907.
- b. Nama Inggris yang menunjuk nama jenis diawali dengan huruf besar dan italic, contoh *Red Rainbowfish*. Nama Indonesia yang menunjuk pada nama jenis diawali dengan huruf besar, contoh Ikan Pelangi Merah.
- c. Nama Indonesia dan Inggris yang menunjuk nama kelompok fauna ditulis dengan huruf kecil, kecuali diawal kalimat, contoh ikan pelangi/ rainbowfish.

7. Naskah dikirim secara elektronik ke alamat: fauna_indonesia@yahoo.com

PENGANTAR REDAKSI

Edisi pertama untuk tahun 2012 ini berisikan informasi-informasi menarik dan penting dari dunia fauna Indonesia. Pengetahuan yang tersaji cukup beragam dari topik yang menyangkut pengetahuan jenis-jenis fauna di lokasi tertentu sampai kepada usaha-usaha pengembangbiakan fauna yang menjadi komoditas perdagangan. Informasi ini tentu saja diharapkan dapat memacu pembaca untuk lebih mencintai potensi konservasi dan pemanfaatan fauna Indonesia dimasa datang.

Tiga tulisan berasal dari dunia moluska. Salah satu kelompok fauna terbesar didunia ini tidak banyak diketahui kehidupannya di Indonesia. Pengenalan siput telanjang, peranan moluska yang dapat mencatat kondisi iklim di masa lampau serta komunitas moluska yang sangat dipengaruhi oleh kondisi pasang surut adalah tema-tema baru yang ada dalam edisi kali ini. Tulisan dari dunia aves dan herpetofauna menampilkan informasi daftar jenis yang berkaitan dengan kondisi habitatnya. Inventarisasi aves di Gorontalo yang berkaitan dengan rehabilitasi hutan serta komunitas kodok pada perairan beraliran deras menjadi kajian yang menarik berkaitan dengan konservasi fauna. Usaha-usaha penangkaran burung dan kura-kura juga dipaparkan dengan baik. Pengamatan pakan alami di habitat aslinya serta observasi pertumbuhan kura-kura di penangkaran akan membuka khazanah pengetahuan berkaitan dengan usaha-usaha pelestarian fauna secara ex-situ.

Akhir kata, semoga informasi ini bermanfaat bagi para pembaca dan dapat menginspirasi untuk melakukan usaha konservasi dan pemanfaatan secara berkelanjutan dari fauna Indonesia.

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FROGS IN FAST-MOVING WATER HABITATS IN KERINCI SEBLAT NATIONAL PARK, SUMATRA

Hellen Kurniati

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Ringkasan

Tiga belas jenis kodok dijumpai mampu beradaptasi pada habitat sungai berarus deras di areal Taman Nasional Kerinci Seblat, yaitu *Leptophryne borbonica*, *Phrynoidis aspera*, *P. juxtaspera*, *Limnonectes blythii*, *L. macrodon*, *L. shompenorum*, *Huia modiglianii*, *H. sumatrana*, *Hylarana crassiovis*, *H. kampeni*, *H. picturata*, *H. signata* dan *Odorrana hosii*. Tiga belas jenis kodok tersebut dijumpai pada habitat dengan ketinggian yang bervariasi, yaitu mulai dari elevasi 0 m dari permukaan laut (dpl) pada jenis *L. shompenorum* sampai pada elevasi 1900 m dpl pada jenis *H. crassiovis*. kodok.php.

INTRODUCTION

A total of 71 species of frog were recorded at 15 survey sites (Figures 1 and 2) in Kerinci Seblat National Park (KSNP), Sumatra. Among them, there were 13 species inhabited strong water streams or torrent rivers. Therefore, there were only 18.3% of the total number of frog species in KSNP were able to adapt to the fast-flowing waters.

Adaptation of frog in the fast-flowing waters is generally accompanied by the change of

morphology of the frog. The features such as the toes webbing that full up to the fingertips and the toe or hands that widens to form a disc that enable feet and hands to hold stony substrate. Additionally, torrent frogs are usually slim with longer legs than those in the living terrestrial frogs. Alternatively some species are equipped with strong and muscular legs to enable them to withstand the rain water that could wash them away. Another adaptation for frogs that live in torrent water is the high frequency of advertisement call. Generally, the torrent frogs have high sound



Figure 1. Location of Kerinci Seblat National Park (KSNP) in Sumatra.

frequencies (Boonman & Kurniati 2011, Preininger *et al.* 2007), higher than the sound of water river flow which is generally around 5000 Hertz.

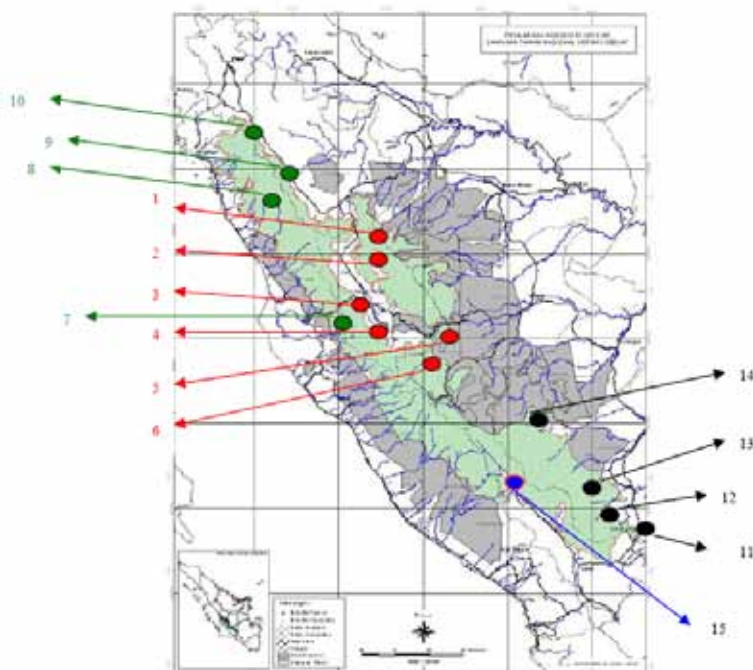


Figure 2. Selected survey sites for studying frogs diversity in KSNP. (1) Gunung Tujuh; (2) Rawa Bento; (3) Tapan; (4) Renah Kayu Embun; (5) Lumayang; (6) Sungai Durian; (7) Muara Sako; (8) Muara Kambang; (9) Muara Labuh; (10) Lubuk Selasih; (11) Bukit Sulap; (12) Bukit Batu; (13) Upper Rupit River; (14) Napal Licin; (15) Ketenong.

SPECIES ACCOUNT

The thirteen torrent frog species found in KSNP are described as follows:

1. Family Bufonidae

Leptophryne borbonica (Tschudi, 1838)

Cross Toad, Hou

The adults' toads (Figure 3) live in the leaf litter of lowland and sub mountain forests below 1200 m asl. It is often observed in seepage areas and along the banks of slow moving, small and very shallow streams (Inger & Stuebing 2005, Kurniati 2003), however, in Tapan it was found along the banks of fast moving stream at about 500 m asl. It was very common in Upper Rupit River and Ketenong, especially during the full moon. Although this is a common frog in Sumatra (IUCN 2011), it was uncommon in Tapan probably due to type of the habitat which was not suitable for the toads.



Figure 3. *L. borbonica* (Photograph by H. Kurniati).

Phrynomantis aspera (Gravenhorst, 1829)

Asian Giant Toad, River Toad, Rough Toad

The frog is known to be restricted to the banks of rainforest streams and rivers throughout its life cycle, and so far has been recorded only from heavily forested areas (IUCN 2011). Nevertheless, they has been observed in plantation area in Lumayang and in the village or paddy field in Muara Sako, Muara Kambang and Muara Labuh (Figure 4). In Gunung Halimun National Park, it is found in rivers or along small streams in various habitats, from primary rainforest to degraded areas and even near human residences (Kurniati 2003). In Java, it occurs from lowlands (Kurniati *et al.* 2001) to 1500 m asl (Iskandar 1998). It was common in lowland forest survey sites including Tapan, Lumayang, Sungai Durian, Napal Licin, Upper Rupit River and Ketenong; and also common in heavily degraded habitat such as rubber plantation in Sulap and Seloso Hills; and also in human habitation at Muara Sako, Muara Kambang and Muara Labuh.



Figure 4. *P. aspera* (Photograph by H. Kurniati).

***Phrynoidis juxtaspera* (Inger, 1964)**

Giant River Toad

It occurred along rocky creeks and riverbanks and also wanders widely through primary and degraded forests and marshland in Gunung Tujuh, Renah Kayu Embun and Lubuk Selasih (Figure 5). Occasionally it was found near isolated houses in hilly terrain near forest at Renah Kayu Embun survey site and in some types of tree plantations in Gunung Tujuh survey sites. Its vertical distribution is from about 1200 m asl to 1600 m asl. It was common in Gunung Tujuh, Renah Kayu Embun and Lubuk Selasih survey sites.



Figure 5. *P. juxtaspera* (Photograph by H. Kurniati).

2. Family Dicroglossidae

***Limnonectes blythii* (Boulenger, 1920)**

Blyth's River Frog, Giant Asian River Frog, Giant Frog

This species was found to inhabit gravelly and boulder streams in primary forest in Tapan, Lubuk Selasih, Upper Rupit River and Napal Licin survey sites; but in Muara Kambang, Muara Labuh, it occurred in secondary to heavily degraded forest, and in Sulap and Seloso Hills it was found in rubber plantation (Figure 6). Gravid females are distinguished by having reddish dorsal color. Males build a nesting hollow in a sandy streambed area where eggs will be laid by females (Mistar 2003). It was found at elevation between 100 and 1200 meters asl. The distribution of this species varied among sites, ranging from being fairly common in Tapan, Muara Kambang, Muara Labuh and Lubuk Selasih survey sites to common in Upper Rupit River. The frog was common in Bukit Tiga Puluh National Park

at elevation 300 m asl (Kurniati 2001).



Figure 6. *L. blythii* (Photograph by H. Kurniati).

***Limnonectes macrodon* (Duméril and Bibron, 1841)**

Fanged River Frog, Stone Creek Frog

L. macrodon was found at Napal Licin survey site (Figure 7). It occurred along the bank of strong moving streams inside semi disturbed forest. Although this is a common species in Java (Kurniati 2003) but not many individuals were found in the site. According to IUCN (2011), this species is found in the Lampung Province in South Sumatra. This research shows *L. macrodon* has wider distribution in Sumatra.



Figure 7. *L. macrodon* (Photograph by H. Kurniati).

***Limnonectes shompenorum* (Das, 1996)**

Giant Lowland Frog

This is a typical lowland frog. In this survey it was found in Muara Sako and Muara Kambang (Figure 8). It was very common there and inhabited paddy field that close to strong water river. Some

individuals occurred along gravel riverbank. Generally, it occurs in low areas along rivers in tropical forest and forest edges within leaf litter (IUCN 2011).



Figure 8. *L. shompenorum* (Photograph by H. Kurniati).

3. Family Ranidae

Huia modiglianii (Doria, Salvidio & Tavan, 1999) Modiglian's Torrent Frog

It occurred in clean torrents and fast-flowing streams in rain forest and open areas near the forest in Tapan (Figure 9). *H. modiglianii* is characterized by having six crossbars on hind limb, unlike *H. sumatrana* which has four crossbars (Doria *et al.* 1999). Based on IUCN (2011), this species was only known from Si Rambe and Bantjan Batu in the vicinity of Lake Toba, and collected at 400 m asl; however at Tapan survey site it was found at elevation 550 m asl, and inhabited strong moving streams.



Figure 9. *H. modiglianii* (Photograph by J. Holden).

Huia sumatrana (Yang, 1991)

Sumatran Torrent Frog

It occurred in clean torrents and fast-flowing streams in rain forest and open areas near the forest in Lumayang, Sungai Durian, Gunung Tujuh, Renah Kayu Embun, Muara Labuh, Lubuk Selasih, Upper Rupit River and Ketenong (Figure 10). Sometimes it sits on herb leaf near fast-flowing stream. It occurs from 300 to more than 1200 m asl (Mistar 2003), however at Upper Rupit River it was found at 150 m asl. It was common and abundant in in most of survey sites. This species is endemic to the Bukit Barisan mountains of western Sumatra (in Aceh, North Sumatra, West Sumatra, Bengkulu and Lampung Provinces) (Mistar 2003).



Figure 10. *H. sumatrana* (Photograph by H. Kurniati).

Hylarana crassiovis (Boulenger, 1920)

Kerinci's Frog

The species was usually seen on vegetation along fast moving streams (Figure 11). It occurred in primary lowland rain forest in Tapan to highland forest in Gunung Tujuh, Renah Kayu Embun, Muara Labuh, Lubuk Selasih and Ketenong. It also found along streams in marshland area in Gunung Tujuh. It occurred from 500 m to 1900 m asl. It is common in Tapan, Gunung Tujuh, Renah Kayu Embun and Lubuk Selasih, but scarce in Muara Labuh and Ketenong. This species is only known from a few localities including Barong Baru and Mount Kerinci in central Sumatra region (Iskandar & Colinj 2000).



Figure 11. *H. crassiovis* (Photograph by H. Kurniati).

***Hylarana kampeni* (Boulenger, 1920)**

Kampen's Frog

The morphology is similar to *H. crassiovis*, but they have difference in tympanum size (Figure 12). Kampen's Frog was only found in Lubuk Selasih. It occurred in primary sub mountain and mountain rainforest along strong water streams. It does not appear to tolerate forest disturbance. It was a common species, especially around 1000 m asl in Lubuk Selasih. This species is known from the entire mountain ridge along the western side of Sumatra. It was rediscovered in the late 1990s, and has now been recorded widely. It occurs above 700 m asl (IUCN, 2011).



Figure 12. *H. kampeni* (Photograph by J. Holden).

***Hylarana picturata* (Boulenger, 1920)**

Spotted Stream Frog, Variable Backed Frog

The frog was found in Lumayang, Muara Sako, Muara Kambang and Ketenong survey sites

(Figure 13). In Lumayang, it occurred in primary and slightly disturbed rain forests; however, in Muara Sako and Muara Kambang, it was found in along fast moving stream that located in degraded forest. In KSNP, it was found between 200 to 600 m asl. It was common species in Lumayang, but scarce in Muara Sako and Muara Kambang survey sites.



Figure 13. *H. picturata* (Photograph by H. Kurniati).

***Hylarana signata* (Günther, 1872)**

Striped Stream Frog

The frog was found in Tapan survey site (Figure 14). It inhabited clear and strong water river in the site. Based on IUCN (2011), it inhabits fast moving streams in lowland primary rain forest, and breeds in slow moving streams. In Tapan survey site, it occurred at elevation 500 m asl and found common to abundant in suitable habitats such as river bank with dense low vegetation.



Figure 14. *H. signata* (Photograph by H. Kurniati).

***Odorrana hosii* (Boulenger, 1891)**

Poisonous Frog

The species was mainly associated with clear,

strong-flowing boulder streams in hilly primary rainforest in Tapan, Lumayang, Sungai Durian, Renah Kayu Embun, Muara Sako, Muara Kambang, Muara Labuh, Lubuk Selasih, Napal Licin, Upper Rupit River, Ketenong and also found in marshland area in Gunung Tujuh survey site (Figure 15). It occurs from sea level up to 1700 m asl (Liem 1973). It is generally a common frog in suitable habitat.



Figure 15. *O. hosii* (Photograph by H. Kurniati).

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