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Newsletter of the Amphibian Network of South Asia and
Amphibian Specialist Group - South Asia

ISSN: 2230-7060

No.16 | May 2011



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Date of publication: 30 May 2011

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Checklist of Amphibians: Agumbe Rainforest Research Station

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World wide, amphibian populations are declining (Alford & Richards 1999), and India has more threatened species of amphibian than any other country in the Indo Malayan realm (Bain et al. 2005). This conservation crisis requires regional taxonomic based assessments of conservation (Molur 2008). The Indian subcontinent has a unique assemblage of flora and fauna due to the subcontinent's successive and prolonged periods of isolation (Roelants et al. 2003) and the Western Ghats are a recognised biodiversity hotspot (Myers et al. 2000). In the Western Ghats – Sri Lankan hotspot amphibians and reptiles have the highest level of endemism amongst the vertebrates (Gunawardene et al. 2007).

The amphibians of the Western Ghats are enigmatic and new species are being described with astonishing frequency, astonishingly it is estimated that just 50% of amphibians in the South Asian region have been described

(Molur 2008). The forests of the Western Ghats are under threat. Jha et al. (2000) estimated that between 1973 and 1995 there was a 25.6% reduction of forest cover in their 40,000km² study sight and the remaining forest had becoming increasingly degraded and fragmented. We lack even the most basic ecological and distributional data for many amphibian species in the Western Ghats; without such data the conservation needs for amphibians in the Western Ghats can not be discerned and declines will not be recognised. In such a context, this list of amphibians found in a 5km radius around the Agumbe Rainforest Research Station (ARRS) in the Agumbe forest reserve aims to contribute toward ongoing scientific research being done to understand their biogeography across the Western Ghats. ARRS is one of the few facilities dedicated to rainforest ecology study in India and as such would form an ideal base from which to study and

monitor amphibians in the long term.

Agumbe Rainforest Research Station

The Agumbe Rainforest Research Station (75.088710°E 13.518140°N) is located in the Agumbe Reserve forest at an elevation of 650m. Agumbe has the second highest annual rainfall in India with 7000mm per annum and temperatures ranging between 10–35°C (Bhaisare et al. 2010). The research station is an eight acre plot with an *Areca catechu* plantation and uncultivated paddy fields surrounded by secondary semievergreen forest.

Methods

Visual encounter surveys were carried out in a 5 km radius around the ARRS in the month of July 2010. Randomized walk transects were carried out at night and during the day across terrestrial habitat (forest patches, grassy meadows, paddy fields, and *Areca catechu* plantations) and aquatic habitat (ponds, streams and seepages). A total of 35 randomised walks were completed during this time. Individuals encountered were identified to genus and species and detailed photographs of head, dorsum, ventral surface fingers, toes and webbing were taken. No animal was collected during the survey. A

checklist of amphibians for the area was prepared at the end of the survey along with notes about their habitat and natural history wherever available. Species were identified using Biju & Bossuyt (2009), Joshy (2009), Dinesh et al. (2008), Kuramoto et al. (2007) and Daniel (2002). Two species were not observed by us (*Ichthyophis bombayensis* and *Raorchestes nerostagona*). We obtained photos of the species taken at the ARRS and have included these species in the checklist.

Amphibians were categorized as commonly encountered, infrequently encountered and rarely encountered depending on the frequency of sighting of each species

Commonly encountered - individuals encountered in >75 percent of total surveys.

Infrequently encountered - individuals encountered between 11 to 74 percent of total surveys.

Rarely encountered - individuals encountered in < 10 percent of total surveys.

Results

Bufonidae

***Duttaphrynus melanostictus* (Image 1):** Found in open areas. Large parotid gland. Black tipped warts. Digging appendage on inner and outer aspect of sole.



Image 1. *Duttaphrynus melanostictus*

Image 2. *Pedostibes tuberculosus*



***Pedostibes tuberculosus* (Image 2):** At the start of the monsoon in June, these were found in large congregations in and along stream beds and on vegetation at varied heights (up to 10m). Only one individual was found in July, this specimen

was more than 10m up and in the process of climbing higher up the bole of a large forest tree. Distinct parotid gland. Distinct white band running from eye to shoulder. Enlarged discs on toes and fingers. Toes extensively webbed.



Image 2 (a,b). *Euphlyctis aloysii*

Dicroglossidae

***Euphlyctis aloysii* (Image 3):** Found clinging to aquatic vegetation in ponds and shallow streams along with *Euphlyctis cyanophlyctis*. Eyes situated on top of head, large distinct tympanum. Dorsum smooth. Vertebral stripe. Irregular dark line patten on underside of thigh. First finger longer than second, toes fully webbed.

***Euphlyctis cyanophlyctis* (Image 4):** Found in most



Image 4. *Euphlyctis cyanophlyctis*

Image 5. *Fejervarya brevipalmata*



water bodies. Eyes on top of head. White band extending along surface of thighs. Distinct tympanum, smooth dorsum. First finger not longer than second. Toes fully webbed.

***Fejervarya brevipalmata* (Image 5):** Found in open areas. Distinct tympanum which is less than one half the diameter of the eye. Nostrils equidistant from eyes and

snout. Dorsum with short discontinuous dermal ridges. Vertebral stripe. White ventral surface with distinct *Fejervarya* lines (grey line which circumnavigates the ventral surface). No discs on fingers. Toes with poorly developed webbing. Fourth toe sits beyond first finger when the frog is at rest. Oval shaped metatarsal tubercle and prominent subarticular tubercles.

Fejervarya caperata

(Image 6): Found in open areas. Distinct tympanum which is less than one half the diameter of the eye. Nostrils equidistant from eyes and snout. Continuous dorso lateral dermal ridges. White ventral surface with distinct *Fejervarya* lines. No discs on fingers. Poorly developed toe webbing. Prominent subarticular tubercles.

Fejervarya kudremukhensis

(Image 7): Found in open areas. Snout relatively pointed. Distinct supra tympanic fold. Head wider than long. Short discontinuous dermal ridges bordered in black. Brick red spot present mid dorsum. Nostrils equidistant from eyes and snout. White ventral surface with distinct *Fejervarya* lines. Distinct palmer tubercles. Banded toe tips.



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Image 7. *Fejervarya kudremukhensis*

Image 6. *Fejervarya caperata*



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Image 8. *Fejervarya mudduraja*

Fejervarya mudduraja

(Image 8): Found in drainage ditches. Snout relatively pointed. Distinct supra tympanic fold. Short dermal ridges arranged in longitudinal lines on dorsum. Tubercles present on upper eyelid. Dorsal surface of thighs with four dark bars. Thighs with tubercles. White ventral surface with distinct *Fejervarya* lines. Prominent tubercle at base of thumb. Toe tips with discs.

Fejervarya rufescens

(Image 9): Found in open areas. Distinct tympanum which is less than one half the diameter of the eye. Barred labium. Distinct supra tympanic folder. Dorsum covered in warts. White ventral surface with distinct *Fejervarya* lines. First finger longer than second. Toes fuller webbed. Soles of feet with inner and outer digging tubercle.

Hoplobatrachus tigerinus

(Image 10): Found in all habitats around base. Large muscular limbs. Pointed snout. Distinct tympanum. Pale band along sides, numerous folds on dorsal surface. White unmarked ventral surface. Toes extensively webbed.

Micrixalidae

Micrixalus saxicola

(Image 11): Occurs along and on boulders in torrential streams. Only one specimen



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Image 9. *Fejervarya rufescens*

Image 10. *Hoplobatrachus tigerinus*



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was observed in the July survey period. They were often seen both before and after our study sight when the velocity of the torrents they inhabit had subsided. *M. saxicola* may move away from torrents at the height of the monsoon to avoid getting swept away.

Head very pointed. Dark in colouration. No dorso-lateral folds. Hind limbs relatively long and barred.

Microhylidae

***Ramanella* sp. (Image 12):**

Found in forests and disturbed areas. The genus *Ra-*



© Dhiraj Bhaisare

Image 11. *Micrixalus saxicola*

manella requires urgent taxonomic revision. The *Ramanella* species at Agumbe could not be identified to the species level. Small head and narrow mouth. Fingers with enlarged discs, toes without. Prominent digging appendages on



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Image 12. *Ramanella* sp.



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Image 13. *Nyctibatrachus* cf. *aliciae*

inner and outer aspect of sole on foot.

Nyctibatrachidae

Nyctibatrachus* cf. *aliciae (Image 13): Commonly found in stream seepages especially under rocks. One individual (sex unknown) was found on a *Pandanus* leaf beside multiple egg clutches that were at different stages of development. Pale triangular spot between the eyes. Diamond shaped pupils.



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Image 14. *Nyctibatrachus petraeus*



Image 15. *Clinotarsus curtipes*

Image 16. *Hylarana aurantiaca*



Eyes on top of head. Wrinkled skin on dorsum. White ventral surface. Throat and thighs speckled with brown. Large triangular thigh gland in males (not found in *N. aliciae*). Finger pads not enlarged. Toe pads enlarged. Toes three quarter

webbed.

***Nyctibatrachus petraeus* (Image 14):** One sub adult specimen found in a stream seepage filled with leaf litter. Diamond shaped pupils. Eyes on top of head. Wrinkled skin

on dorsum. White ventral surface. Throat and thighs speckled with brown. Skin of throat wrinkled. Enlarged finger and toe pads. Toes more than three quarters webbed.

Ranidae

Clinotarsus curtipes

(Image 15): Found in forests and along forest edges. Dorsal colouration distinct from colouration on specimen's sides. Dermal ridge runs from behind the eye to the groin. Large distinct tympanum. Dark ventral surface with lighter reticulations. Fingers and toes have small discs. Toes fully webbed.

Hylarana aurantiaca

(Image 16): This was the most commonly encountered ranid species, found in all habitats – evergreen forest and scrub in both lentic and lotic water bodies. Mass breeding was seen in the paddy fields in the months of June and July. Distinct tympanum equal in size to eye. Smooth dorsum. Colouration of sides darker than dorsum. White ventral surface. Fingers with enlarged discs. Toes with large discs.

Hylarana temporalis

(Image 17): Found in forest areas. Tympanum one half diameter of eye. Pronounced dermal ridge runs from eye to groin. Hind limbs marked with bars. Toes almost fully

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Image 17. *Hylarana temporalis*

Indirana semipalmata

(Image 18): More common in occurrence than *Indirana beddomii*. One individual found, had a thick white stripe along its dorsum. Large egg clutches of this species were found on granite slabs, concrete floors and in one case on the trunk of *Erythrina variegata* (Tapley et al. 2011). Bars on labium. Tympanum equal in diameter as eye. Dark band running from tympanum to nare. Limbs banded. Mottled throat. Enlarged discs on fingers. Second finger shorter than first. Toes half webbed and with large discs.

Image 18. *Indirana semipalmata*



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Rhacophoridae

Polypedates occidentalis

(Image 19): Found to be sympatric with *Rhacophorus malabaricus* and seen during the first few weeks of the monsoon. Interestingly,

Image 19. *Polypedates occidentalis*

webbed.

Ranixalidae

***Indirana beddomii*:** Found in all habitats. Dark band running from tympanum to nare. Enlarged discs on fingers and toes. First finger equal in length to second. Tympanum two-thirds diameter of eye. Toes webbed. Webbing extends to the middle of the fourth toe.



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Image 20. *Pseudophilautus amboli*

individuals did appear once again after heavy showers in the month of November. Sides of head and face darker than dorsum. Tympanum three quarters diameter of eye. Dorsum with distinct hour glass marking. Large discs on



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Image 22. *Raorchestes luteolus*



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fingers and toes. Fleshy spur on heel.

***Pseudophilautus amboli* (Image 20):** Commonly found throughout the study area. Males have a yellow throat with yellow speckling. May have hour glass pattern on dorsum. Dorsum covered in small spicules. Upper two-thirds of tympanum dark. Posterior half of ventral surface partially transparent.

Image 21. *Raorchestes* aff. *bombayensis*

***Raorchestes* aff. *bombayensis* (Image 21):** Found in forested areas 2–3 m above the ground. Brown iris. Anterior surface of groin and thighs brown with yellow blotches. Dark 'X' marking on dorsum. Lack of humeral bony projection in males (distinguishing individuals from *R. tuberohumerus*).

Raorchestes luteolus

(Image 22): Found in forested areas. Bluish-green ring around the eye, pointed snout, rounded canthus rostralis and indistinct tympanum. Posterior half of ventral surface transparent.

R a o r c h e s t e s nerostagona: Heard vocalising from the canopy throughout forested areas. Webbed fingers and webbed toes. Dermal fringe.

Raorchestes ponmudi

(Image 23): Found in forest areas. Large protruding eyes, sharp canthus rostralis. Rounded snout.

Rhacophorus malabaricus

(Image 24): Found on forest edges. Green colouration. Iris whitish or silvery, distinct tympanum. Extensive bright yellow/orange webbing on hands and feet. Fleshy spur on heel.

Caeciliidae

Ichthyophis beddomei

(Image 25): Found in Plantations and open areas. Dorsal surface dark violet in colour, ventral surface and sides yellow. Distinct eye, mouth terminal. Conical tentacle closer to eye than nostril. First nuchal groove visible on dorsal surface and the third nuchal groove only discernable only on the dorsum. First and second nuchal groove visible on



Image 23. *Raorchestes ponmudi*

Image 24. *Rhacophorus malabaricus*



ventral surface. Tail short and pointed, vent longitudinal.

Ichthyophis bombayensis

(Image 26): Dorsal surface dark violet in colour. Ventral surface lighter. Head narrower than body.

Discussion

A total of 28 species were recorded during the survey of which 26 were anurans and two were caecilians (Table 1). Eighty-five percent of the amphibians recorded from Agumbe are Indian endemics.



Image 25. *Ichthyophis beddomei*

Image 26. *Ichthyophis bombayensis*



The checklist published here should be viewed as incomplete. Our study was just one month in duration and we may well have missed explosive breeders as the monsoon had already begun. Ganesh & Mouli (2006) report *Uperodon systoma* from a dryer area of the Agumbe forest reserve and it may be that this species occurs near ARRS but it was not detected. *Kaloula taprobanica* and *Microhyla ornata* were notably absent and this was surprising given their wide distributional range and tolerance of most habitat types. Further study is required especially at the very

start of the monsoon and pre and post monsoon to detect the presence of explosive breeders and species which may breed post monsoon.

Long term monitoring of amphibians in the Western Ghats is vital. Although the amphibian chytrid fungus (*Batrachochytrium dendrobatidis*) has not yet been detected in India it is only a matter of time. We know little about the impacts of emerging infectious diseases and habitat fragmentation on the endemic amphibian fauna of the Western Ghats. The ARRS is a very special and unique place with a

rich, enigmatic and somewhat threatened amphibian assemblage. Twenty-five percent of the amphibians on the ARRS checklist are of some form of conservation concern with one Critically Endangered species (*Raorchestes ponmudi*) and two Endangered species (*Nyctibatrachus* cf. *aliciae* and *Pedostibes tuberculosus*). Twenty-five percent of the amphibians we recorded at ARRS were either not yet on the IUCN red list due to their recent description or were classified as data deficient and require further study. The ARRS would form the ideal base from which to conduct long term amphibian monitoring and amphibian related ecological studies. We hope that the checklist here will assist those working with amphibians in the Western Ghats region and hope that this specific regional check list will be replicated as presence and absence data for amphibians of many other areas of the Western Ghats is currently lacking.

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Table 1. A checklist of amphibians reported from the Agumbe Rainforest Research Station, Karnataka

	Taxa	IUCN Status	Indian endemic	Status in ARRS
	Bufo			
	Bufo			
1	<i>Duttaphrynus melanostictus</i> (Schneider, 1799)	LC	No	Commonly encountered
2	<i>Pedostibes tuberculosus</i> (Günther, 1876)	EN	Yes	Commonly encountered
	Dicroglossidae			
3	<i>Euphlyctis aloysii</i> (Joshy et al., 2009)	LC	Yes	Infrequently encountered
4	<i>Euphlyctis cyanophlyctis</i> (Schneider, 1799)	LC	No	Commonly encountered
5	<i>Fejervarya brevipalmata</i> (Peters, 1871)	DD	Yes	Commonly encountered
6	<i>Fejervarya caperata</i> (Kuramoto et al., 2007)	Not in Redlist	Yes	Commonly encountered
7	<i>Fejervarya kudremukhensis</i> (Kuramoto et al., 2007)	Not in Redlist	Yes	Commonly encountered
8	<i>Fejervarya mudduraja</i> (Kuramoto et al., 2007)	Not in Redlist	Yes	Rarely encountered
9	<i>Fejervarya rufescens</i> (Jerdon, 1854)	LC	Yes	Commonly encountered
10	<i>Hoplobatrachus tigerinus</i> (Daudin, 1802)	LC	No	Commonly encountered
	Micrixalidae			
11	<i>Micrixalus saxicola</i> (Jerdon, 1854)	VU	Yes	Rarely encountered
	Microhylidae			
12	<i>Ramanella</i> sp.	NT	Yes	Infrequently encountered
	Nyctibatrachidae			
13	<i>Nyctibatrachus cf. aliciae</i> (Inger et al., 1984)	EN	Yes	Commonly encountered
14	<i>Nyctibatrachus petraeus</i> (Das & Kunte, 2005)	LC	Yes	Rarely encountered
	Ranidae			
15	<i>Clinotarsus curtipes</i> (Jerdon, 1854)	NT	Yes	Commonly encountered
16	<i>Hylarana aurantiaca</i> (Boulenger, 1904)	VU	Yes	Commonly encountered
17	<i>Hylarana temporalis</i> (Günther, 1864)	NT	No	Commonly encountered
	Ranixalidae			
18	<i>Indirana beddomii</i> (Günther, 1876)	LC	Yes	Infrequently encountered
19	<i>Indirana semipalmata</i> (Boulenger, 1882)	LC	Yes	Commonly encountered
	Rhacophoridae			
20	<i>Polypedates occidentalis</i> (Das * Dutta, 2006)	DD	Yes	Commonly encountered
21	<i>Pseudophilautus amboli</i> (Biju & Bossuyt, 2009)	Not in Redlist	Yes	Commonly encountered
22	<i>Raorchestes aff. bombayensis</i> (Annandale, 1919)	VU	Yes	Commonly encountered
23	<i>Raorchestes luteolus</i> (Kuramoto & Joshy, 2003)	Not in Redlist	Yes	Commonly encountered
24	<i>Raorchestes nerostagona</i> (Biju & Bossuyt, 2005)	EN	Yes	Commonly encountered
25	<i>Raorchestes ponmudi</i> (Biju & Bossuyt, 2005)	CR	Yes	Frequently encountered
26	<i>Rhacophorus malabaricus</i> (Jerdon, 1870)	LC	Yes	Commonly encountered
	Caeciliidae			
27	<i>Ichthyophis beddomei</i> (Peters, 1880)	LC	Yes	Infrequently encountered
28	<i>Ichthyophis bombayensis</i> (Ananndale, 1919)	Not in Redlist	Yes	Infrequently encountered

CR - Critically Endangered; EN - Endangered; VU - Vulnerable; NT - Near Threatened; LC - Least Concern; DD - Data Deficient, conservation status according to the IUCN (www.iucnredlist.org)

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Acknowledgments

We would like to thank the following people and organisations for their assistance during our work in Agumbe The Gerry Martin project for its funding. Gerry Martin, P. Prashanth, K.V. Gururaja, Xavier Charles Barnes, Neethi Mahesh, Dhiraj Bhaisare, S.R. Ganesh, P. Gowrishankar, K.P. Dinesh, S. Biju, Gowri Mallapur, Deepak Veerappan, Vijay Kumar and Varun Torsekar.

Checklist of amphibians of Western Ghats

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Western Ghats, the 1600km long mountain chain running parallel to the West coast along the Arabian Sea, is one of the global biodiversity hot spots encompassing an area of 1,60,000km² (Kunte et al. 1999) exhibiting a high degree of endemism in both flora and fauna. India is known to have 311 species of the amphibians (Dinesh et al. 2010) out of the 6771 species amphibians across the world (Frost 2011). The Western Ghats harbor 157 species of amphibians in its mountain chain falling in the political boundaries of Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu states (Fig. 1).

The amphibian fauna of the Western Ghats can be arranged under 11 families, 27 genera and 157 species (Table 1), of which 134 are frogs and 23 caecilians (limbless amphibians). Three families, Micrixalidae, Nasikabatrachidae and Ranixalidae; 10 genera, *Ghatophryne*, *Xanthophryne*, *Micrixalus*, *Melanobatrachus*, *Nasikabatrachus*, *Nyctibatrachus*, *Indirana*, *Ghatixalus*, *Indotyphlus*, *Uraeotyphlus* and 135 species

of amphibians are endemic to this region.

In the Western Ghats, the discovery of amphibians was initiated during the year 1799 and it continued at a slow pace till the year 2000. However, the last decade of the 20th century marked the surge in amphibian discovery, mainly credited to the work of Biju and his team, who discovered more than 20 species new to science and a new family Nasikabatrachidae.

A recent study suggests

that, a total of 47 species of amphibians are feared lost in India and 28 species are lost from the Western Ghats (LAI 2011). For the 28 species of amphibians feared to be lost from the Western Ghats, either the type specimens are lost/missing or there are no species reports/collections after the new species discovery. In a recent expedition four species of the 28 species from the Western Ghats were rediscovered (LAI 2011), the rest of the species need to be traced from their type localities to justify the species validity.

According to the IUCN (2010) assessment, the 157 species of amphibians known from the Western Ghats fall under six broad categories;

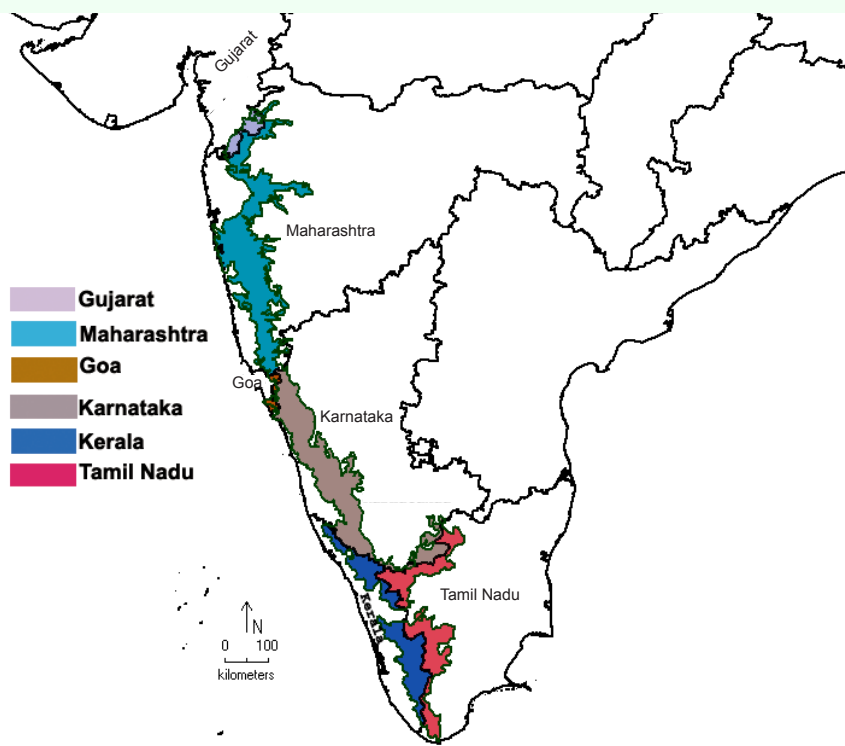


Figure 1. The Western Ghats boundaries in India

Table 1. Amphibian distribution details in the Western Ghats

Family	Genera	Species	Endemic species
Bufo	4	13	9
Dicroglossidae	3	24	16
Micrixalidae*	1	11	11
Microhylidae	5	13	7
Nasikabatrachidae*	1	01	1
Nyctibatrachidae	1	16	16
Ranidae	2	04	1
Ranixalidae*	1	10	10
Rhacophoridae	5	42	41
Caeciliidae	2	11	11
Ichthyophiidae	2	12	12
Total	27	157	135

* families endemic to the Western Ghats

eight Critically Endangered (CE); 69 Data Deficient (DD); 28 Endangered (EN); 30 Least Concern (LC); six Near Threatened (NT) and 16 Vulnerable (VU) (Table 2). In the IUCN assessment for amphibians of the Western Ghats, 44% of the species fall under DD (20 species of Rhacophoridae, 11 species of Dicroglossidae, 10 species each of Caeciliidae and Ichthyophiidae, six species of Nyctibatrachidae, five species of Micrixalidae, three species of Bufo, two species each of Microhylidae and Ranixalidae); this may be because of the new species discovery surge in the recent past; 18% under EN (eight species of Rhacophoridae, six species of Nyctibatrachidae, four species of Bufo, threespecies each of Microhylidae and Ranixalidae, two species of Dicroglossidae and a species

of Nasikabatrachidae); 10% VU (five species of Rhacophoridae, three species each of Micrixalidae and Nyctibatrachidae, two species of Bufo and one species each of Ranidae and Ranixalidae); 5% CE (four species of Rhacophoridae, two species of Ranixalidae and one species each of Dicroglossidae and Micrixalidae); 4% NT (two species of Ranidae and one species each of Bufo, of

Micrixalidae, Microhylidae and Rhacophoridae) and 19% of the species are considered as LC (Fig. 2).

A list of amphibians of the Western Ghats with their common names is presented in Table 2. For additional information on taxonomy, species accounts and distributional details, Frost (2011), Dinesh et al. (2009) and Biju et al. (2010) may be referred.

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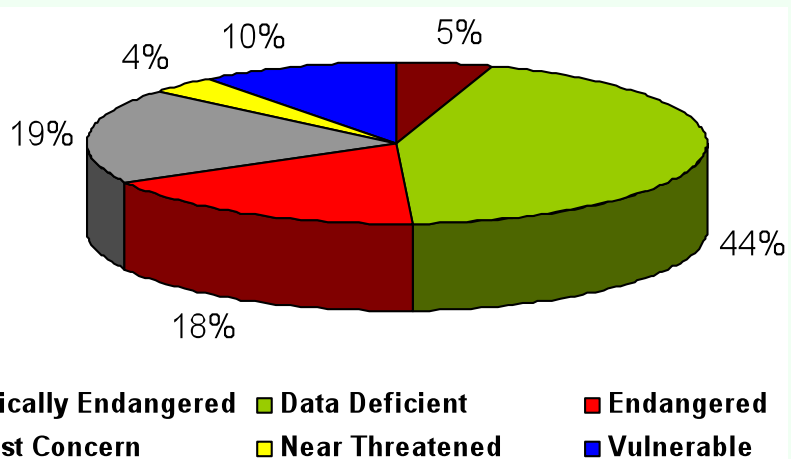


Figure 2. IUCN status for amphibians of Western Ghats

Table 2. List of amphibians of the Western Ghats

	Species	Common Name	Red List status
	Bufonidae		
1	<i>Duttaphrynus beddomii</i> * Gunther, 1875	Beddome's Toad	EN
2	<i>Duttaphrynus brevirostris</i> * Rao, 1937	Kempholey Toad	DD
3	<i>Duttaphrynus melanostictus</i> (Schneider 1799)	Common Indian Toad	LC
4	<i>Duttaphrynus microtypanum</i> * (Boulenger 1882)	Small-eared Toad	VU
5	<i>Duttaphrynus parietalis</i> Boulenger, 1882	Ridged Toad	NT
6	<i>Duttaphrynus scaber</i> Schneider, 1799	Ferguson's Toad	LC
7	<i>Duttaphrynus silentvalleyensis</i> * Pillai, 1982	Silent Valley Toad	DD
8	<i>Duttaphrynus stomaticus</i> Lutken 1862	Assam Toad	LC
9	<i>Ghatophryne ornata</i> * (Gunther, 1876)	Malabar Torrent Toad	EN
10	<i>Ghatophryne rubigina</i> * (Pillai and Pattabiraman, 1981)	Red Stream Toad	VU
11	<i>Pedostibes tuberculosus</i> * Gunther 1875	Malabar Tree Toad	EN
12	<i>Xanthophryne koyayensis</i> * (Soman, 1963)	Koyna Toad	EN
13	<i>Xanthophryne tigrinus</i> * Biju, Bocxlaer, Giri, Loader and Bossuyt, 2009	Tiger Toad	DD
	Dicroglossidae		
14	<i>Euphlyctis aloysii</i> * Joshy, Alam, Kurabayashi, Sumida and Kuramoto, 2009	Aloysii Skittering Frog	DD
15	<i>Euphlyctis cyanophlyctis</i> (Schneider, 1799)	Skittering Frog	LC
16	<i>Euphlyctis hexadactylus</i> (Lesson, 1834)	Indian Pond Frog	LC
17	<i>Euphlyctis mudigere</i> * Joshy, Alam, Kurabayashi, Sumida and Kuramoto, 2009	Mudigere Skittering Frog	DD
18	<i>Fejervarya brevipalmata</i> * (Peters, 1871)	Peters' Frog	DD
19	<i>Fejervarya caperata</i> * Kuramoto, Joshy, Kurabayashi and Sumida, 2007	Wrinkled Fejervarya	DD
20	<i>Fejervarya granosa</i> * Kuramoto, Joshy, Kurabayashi and Sumida, 2007	Granular Fejervarya	DD
21	<i>Fejervarya keralensis</i> (Dubois, 1980)	Kerala Warty Frog	LC
22	<i>Fejervarya kudremukhensis</i> * Kuramoto, Joshy, Kurabayashi and Sumida, 2007	Kudremukh Fejervarya	DD
23	<i>Fejervarya mudduraja</i> * Kuramoto, Joshy, Kurabayashi and Sumida, 2007	Muddu Raja Fejervarya	DD
24	<i>Fejervarya murthii</i> * (Pillai, 1979)	Murthy's Frog	CR
25	<i>Fejervarya mysorensis</i> * (Rao, 1922)	Mysore Frog	DD
26	<i>Fejervarya nilagirica</i> * (Jerdon, 1853)	Nilgiri Frog	EN
27	<i>Fejervarya parambikulamana</i> * (Rao, 1937)	Parambikulam Frog	DD
28	<i>Fejervarya rufescens</i> * (Jerdon, 1853)	Reddish Burrowing Frog	LC
29	<i>Fejervarya sauriceps</i> * (Rao, 1937)	Mysore Wart Frog	DD
30	<i>Fejervarya syhadrensis</i> (Annandale, 1919)	Syhadry Frog	LC
31	<i>Hoplobatrachus crassus</i> (Jerdon, 1853)	Jerdon's Bull Frog	LC
32	<i>Hoplobatrachus tigrinus</i> (Daudin, 1803)	Indian Bull Frog	LC
33	<i>Minervarya sahyadris</i> * Dubois, Ohler and Biju, 2001	Minervarya Frog	EN
34	<i>Sphaerotheca breviceps</i> (Schneider, 1799)	Indian Burrowing Frog	LC
35	<i>Sphaerotheca dobsonii</i> * (Boulenger, 1882)	Dobson's Burrowing Frog	LC
36	<i>Sphaerotheca leucorhynchus</i> * (Rao, 1937)	Rao's Burrowing Frog	DD
37	<i>Sphaerotheca rolandae</i> (Dubois, 1983)	Roland's Burrowing Frog	LC
	Micrixalidae		
38	<i>Micrixalus elegans</i> * (Rao, 1937)	Elegant Torrent Frog	DD
39	<i>Micrixalus fuscus</i> * (Boulenger, 1882)	Dusky Torrent Frog	NT
40	<i>Micrixalus gadgili</i> * Pillai and Pattabiraman, 1990	Gadgil's Torrent Frog	EN
41	<i>Micrixalus kottigeharensis</i> * (Rao, 1937)	Kottigehar Torrent Frog	CR

	Species	Common Name	Red List status
42	<i>Micrixalus narainensis</i> * (Rao, 1937)	Narain's Torrent Frog	DD
43	<i>Micrixalus nudis</i> * Pillai, 1978	Naked Torrent Frog	VU
44	<i>Micrixalus phyllophilus</i> * (Jerdon, 1853)	Pink-thighed Torrent Frog	VU
45	<i>Micrixalus saxicola</i> * (Jerdon, 1853)	Small Torrent Frog	VU
46	<i>Micrixalus silvaticus</i> * (Boulenger, 1882)	Forest Torrent Frog	DD
47	<i>Micrixalus swamianus</i> * (Rao, 1937)	Ramaswami's Torrent Frog	DD
48	<i>Micrixalus thampii</i> * Pillai, 1981	Thampi's Torrent Frog	DD
49	<i>Kaloula taprobanica</i> Parker, 1934	Sri Lankan Kaloula	LC
50	<i>Melanobatrachus indicus</i> * Beddome, 1878	Orange Black Tubercled Indian Microhylid	EN
51	<i>Microhyla ornata</i> (Dumeril and Bibron, 1841)	Ornate Narrow-mouthed Frog	LC
52	<i>Microhyla rubra</i> (Jerdon, 1854)	Red Narrow-mouthed Frog	LC
53	<i>Microhyla sholigari</i> * Dutta and Ray, 2000	Sholigari Microhylid	EN
54	<i>Ramanella anamalaiensis</i> * Rao, 1937	Anamalai Ramanella	DD
55	<i>Ramanella minor</i> * Rao, 1937	Small Ramanella	DD
56	<i>Ramanella montana</i> * (Jerdon, 1854)	Jerdon's Ramanella	NT
57	<i>Ramanella marmorata</i> * Rao, 1937	Marbled Ramanella	EN
58	<i>Ramanella triangularis</i> * (Gunther, 1875)	Malabar Ramanella	VU
59	<i>Ramanella variegata</i> (Stoliczka, 1872)	Variegated Ramanella	LC
60	<i>Uperodon globulosus</i> (Gunther, 1864)	Indian Balloon Frog	LC
61	<i>Uperodon systoma</i> (Schneider, 1799)	Marbled Balloon Frog	LC
	Nasikabatrachidae		
62	<i>Nasikabatrachus sahyadrensis</i> * Biju and Bossuyt, 2003	Pig Nose Frog	EN
	Nyctibatrachidae		
63	<i>Nyctibatrachus aliciae</i> * Inger, Shaffer, Koshy and Bakde, 1984	Alicia's Night Frog	EN
64	<i>Nyctibatrachus anamalaiensis</i> * (Myers, 1942)	Anamalai Night Frog	DD
65	<i>Nyctibatrachus beddomii</i> * (Boulenger, 1882)	Beddome's Night Frog	EN
66	<i>Nyctibatrachus dattatreyaensis</i> * Dinesh, Radhakrishnan and Bhatta, 2008	Dattatreya Night Frog	DD
67	<i>Nyctibatrachus deccanensis</i> * Dubois, 1984	Anamalai Night Frog	VU
68	<i>Nyctibatrachus humayuni</i> * Bhaduri and Kripalani, 1955	Bombay Night Frog	VU
69	<i>Nyctibatrachus karnatakaensis</i> * Dinesh, Radhakrishnan, Reddy and Gururaja, 2007	Giant Wrinkled Frog	EN
70	<i>Nyctibatrachus kempholeyensis</i> * (Rao, 1937)	Kempholey Night Frog	DD
71	<i>Nyctibatrachus major</i> * Boulenger, 1882	Malabar Night Frog	VU
72	<i>Nyctibatrachus minimus</i> * Biju, Bocxlaer, Giri, Roelants, Nagaraju and Bossuyt, 2007	Miniature Night Frog	DD
73	<i>Nyctibatrachus minor</i> * Inger, Shaffer, Koshy and Bakde, 1984	Small Wrinkled Frog	EN
74	<i>Nyctibatrachus petraeus</i> * Das and Kunte, 2005	Castle Rock Night frog	LC
75	<i>Nyctibatrachus sanctipalustris</i> * Rao, 1920	Coorg Night Frog	EN
76	<i>Nyctibatrachus sholai</i> * Radhakrishnan, Dinesh and Ravichandran, 2007	Eravikulam Night Frog	DD
77	<i>Nyctibatrachus sylvaticus</i> * Rao, 1937	Forest Night Frog	DD
78	<i>Nyctibatrachus vasanthi</i> * Ravichandran, 1997	Kalakad Wrinkled Frog	EN
	Ranidae		
79	<i>Clinotarsus curtipes</i> * (Jerdon, 1853)	Bicoloured Frog	NT
80	<i>Hylarana aurantiaca</i> (Boulenger, 1904)	Golden Frog	VU
81	<i>Hylarana malabarica</i> (Tschudi, 1838)	Fungoid Frog	LC

	Species	Common Name	Red List status
82	<i>Hylarana temporalis</i> (Gunther, 1864)	Bronze Frog	NT
	Ranixalidae		
83	<i>Indirana beddomii</i> * (Gunther, 1875)	Beddome's Indian Frog	LC
84	<i>Indirana brachytarsus</i> * (Gunther, 1875)	Anamallais Indian Frog	EN
85	<i>Indirana diplosticta</i> * (Gunther, 1875)	Malabar Indian Frog	EN
86	<i>Indirana gundia</i> * (Dubois, 1986)	Gundia Indian Frog	CR
87	<i>Indirana leithii</i> * (Boulenger, 1888)	Matheran Indian Frog	VU
88	<i>Indirana leptodactyla</i> * (Boulenger, 1882)	Boulenger's Indian Frog	EN
89	<i>Indirana longicrus</i> * (Rao, 1937)	Kempholey Indian Frog	DD
90	<i>Indirana phrynoderma</i> * (Boulenger, 1882)	Kerala Indian Frog	CR
91	<i>Indirana semipalmata</i> * (Boulenger, 1882)	Southern Indian Frog	LC
92	<i>Indirana tenuilingua</i> * (Rao, 1937)	Rao's Indian Frog	DD
	Rhacophoridae		
93	<i>Ghatixalus asterops</i> * Biju, Roelants and Bossuyt, 2008	Ghat Tree Frog	DD
94	<i>Ghatixalus variabilis</i> * (Jerdon, 1853)	Green Tree Frog	DD
95	<i>Polypedates maculatus</i> * (Gray, 1834)	Chunam Frog	LC
96	<i>Polypedates occidentalis</i> * Das and Dutta, 2006	Charpa Tree Frog	DD
97	<i>Polypedates pseudocruciger</i> * Das and Ravichandran, 1998	False Hour-glass Tree Frog	LC
98	<i>Pseudophilautus amboli</i> * (Biju and Bossuyt, 2009)	Amboli Bush Frog	DD
99	<i>Pseudophilautus kani</i> * (Biju and Bossuyt, 2009)	Kani Bush Frog	DD
100	<i>Pseudophilautus wynaadensis</i> * (Jerdon, 1853)	Dark-eared Bush Frog	EN
101	<i>Raorchestes beddomii</i> * (Gunther, 1876)	Beddomes Bush Frog	NT
102	<i>Raorchestes akroparallagi</i> * (Biju and Bossuyt, 2009)	Variable Bush Frog	DD
103	<i>Raorchestes anili</i> * (Biju and Bossuyt, 2006)	Anil's Bush Frog	LC
104	<i>Raorchestes bobingeri</i> * (Biju and Bossuyt, 2005)	Bobingers Bush Frog	VU
105	<i>Raorchestes bombayensis</i> * (Annandale, 1919)	Maharashtra Bush Frog	VU
106	<i>Raorchestes chalazodes</i> * (Gunther, 1876)	Gunther's Bush Frog	CR
107	<i>Raorchestes charius</i> * (Rao, 1937)	Seshachar's Bush Frog	EN
108	<i>Raorchestes chlorosomma</i> * (Biju and Bossuyt, 2009)	Green Eyed Bush Frog	DD
109	<i>Raorchestes chotta</i> * (Biju and Bossuyt, 2009)	Small Bush Frog	DD
110	<i>Raorchestes chromasynchysi</i> * (Biju and Bossuyt, 2009)	Confusing Green Bush Frog	DD
111	<i>Raorchestes coonoorensis</i> * (Biju and Bossuyt, 2009)	Coonor Bush Frog	DD
112	<i>Raorchestes dubois</i> * (Biju and Bossuyt, 2006)	Kodaikanal Bush Frog	VU
113	<i>Raorchestes flaviventris</i> * (Boulenger, 1882)	Hassan Bush Frog	DD
114	<i>Raorchestes glandulosus</i> * (Jerdon, 1853)	Beautiful Bush Frog	VU
115	<i>Raorchestes graminirupes</i> * (Biju and Bossuyt, 2005)	Ponmudi Bush Frog	VU
116	<i>Raorchestes griet</i> * (Bossuyt, 2002)	Griet Bush Frog	CR
117	<i>Raorchestes jayarami</i> * (Biju and Bossuyt, 2009)	Jayaram's Bush Frog	DD
118	<i>Raorchestes kaikatti</i> * (Biju and Bossuyt, 2009)	Kaikatti Bush Frog	DD
119	<i>Raorchestes luteolus</i> * (Kuramoto and Joshy, 2003)	Coorg Yellow Bush Frog	DD
120	<i>Raorchestes marki</i> * (Biju and Bossuyt, 2009)	Mark's Bush Frog	DD
121	<i>Raorchestes munnarensis</i> * (Biju and Bossuyt, 2009)	Munnar Bush Frog	DD
122	<i>Raorchestes nerostagona</i> * (Biju and Bossuyt, 2005)	Kalpatta Bush Frog	EN
123	<i>Raorchestes ochlandrae</i> * (Gururaja, Dinesh, Palot, Radhakrishnan and Ramachandra, 2007)	Ochlandrae Reed Frog	DD

	Species	Common Name	Red List status
124	<i>Raorchestes ponmudi</i> * (Biju and Bossuyt, 2005)	Large Ponmudi Bush Frog	CR
125	<i>Raorchestes resplendens</i> * Biju, Shouche, Dubois, Dutta and Bossuyt, 2010	Resplendent Shrub Frog	DD
126	<i>Raorchestes signatus</i> * (Boulenger, 1882)	Cross-backed Bush Frog	EN
127	<i>Raorchestes sushili</i> * (Biju and Bossuyt, 2009)	Sushil's Bush Frog	DD
128	<i>Raorchestes tinniens</i> * (Jerdon, 1853)	Spotted Bush Frog	EN
129	<i>Raorchestes travancoricus</i> * (Boulenger, 1891)	Travancore Bush Frog	EN
130	<i>Raorchestes tuberochumerus</i> * (Kuramoto and Joshy, 2003)	Kudremukh Bush Frog	DD
131	<i>Rhacophorus calcadensis</i> * Ahl, 1927	Kalakkad Tree Frog	EN
132	<i>Rhacophorus lateralis</i> * Boulenger, 1883	Small Tree Frog	EN
133	<i>Rhacophorus malabaricus</i> * Jerdon, 1870	Malabar Flying Frog	LC
134	<i>Rhacophorus pseudomalabaricus</i> * Vasudevan and Dutta, 2000	False Malabar Gliding Frog	CR
	Caeciliidae		
135	<i>Gegeneophis carnosus</i> * (Beddome, 1870)	Periah Peak Caecilian	DD
136	<i>Gegeneophis danieli</i> * Giri, Wilkinson and Gower, 2003	Daniels Caecilian	DD
137	<i>Gegeneophis goaensis</i> * Bhatta, Dinesh, Prashanth and Kulkarni, 2007	Goa Caecilian	DD
138	<i>Gegeneophis krishni</i> * Pillai and Ravichandran, 1999	Gurupur Caecilian	DD
139	<i>Gegeneophis madhava</i> * Bhatta and Srinivasa, 2004	Mudur Caecilian	DD
140	<i>Gegeneophis mhadeiensis</i> * Bhatta, Dinesh, Prashanth and Kulkarni, 2007	Mhadei Caecilian	DD
141	<i>Gegeneophis nadkarnii</i> * Bhatta and Prashanth, 2004	Nadkarnii Caecilian	DD
142	<i>Gegeneophis ramaswamii</i> * Taylor, 1964	Ramaswami's Caecilian	LC
143	<i>Gegeneophis seshachari</i> * Ravichandran, Gower and Wilkinson, 2003	Seshachari's Caecilian	DD
144	<i>Indotyphlus battersbyi</i> * Taylor, 1960	Battersby's Caecilian	DD
145	<i>Indotyphlus maharashtraensis</i> * Giri, Gower and Wilkinson, 2004	Humbarli Caecilian	DD
	Ichthyophiidae		
146	<i>Ichthyophis beddomei</i> * Peters 1879	Beddome's Caecilian	LC
147	<i>Ichthyophis bombayensis</i> * Taylor, 1960	Bombay Caecilian	DD
148	<i>Ichthyophis kodaguensis</i> * Wilkinson, Gower, Govindappa and Venkatachalaiah, 2007	Kodagu Striped Ichthyophis	DD
149	<i>Ichthyophis longicephalus</i> * Pillai, 1986	Long-headed Caecilian	DD
150	<i>Ichthyophis tricolor</i> * Annandale, 1909	Three-colored Caecilian	LC
151	<i>Uraeotyphlus gansi</i> * Gower, Rajendran, Nassbaum and Wilkinson, 2008	Gansi Caecilian	DD
152	<i>Uraeotyphlus interruptus</i> * Pillai and Ravichandran, 1999	Chengalam Caecilian	DD
153	<i>Uraeotyphlus malabaricus</i> * (Beddome, 1870)	Malabar Caecilian	DD
154	<i>Uraeotyphlus menoni</i> * Annandale, 1913	Menon's Caecilian	DD
155	<i>Uraeotyphlus narayani</i> * Seshachar, 1939	Narayan's Caecilian	DD
156	<i>Uraeotyphlus oommeni</i> * Gower and Wilkinson, 2007	Oommen's Uraeotyphlus	DD
157	<i>Uraeotyphlus oxyurus</i> * (Dumeril and Bibron, 1841)	Red Caecilian	DD

* species endemic to Western Ghats; CR - Critically Endangered; DD - Data Deficient; EN - Endangered; LC - Least Concern; NT - Near Threatened; VU - Vulnerable

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Acknowledgements

Authors are grateful to the Director, ZSI, Kolkata for encouragement and support. We are thankful to the anonymous referee for suggestions/corrections in improving the earlier manuscript.

A new record of *Ichthyophis kodaguensis*

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A new striped caecilian, *Ichthyophis kodaguensis* Wilkinson et al. 2007 was described from central Coorg about 20km south of the district capital Madikeri. The species is distinct from the other striped caecilian found in the area, *I. beddomei*, in characteristics relating to the head, annuli, position of the tentacle, and teeth.

On the evening of 20 February 2006 while we were at the guesthouse at Rainforest Retreat we heard shouts from a distance about a snake around 20.00hr. The snake turned out to be a huge caecilian crossing

the path (12.476723°N, 75.709401°E). We picked it up and kept it in a terrarium to observe the next morning and photograph.

The caecilian was moving on a dry pathway on a hill slope. It had come out of a wet evergreen forest fragment and moving in the direction of a cow shed across the pathway. The closest water body, a rivulet was about 50m away. The evening was cool while the day had been dry and hot in the mid 30s (centigrade).

On examination the next day we found the caecilian to measure 31cm in length and



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Image 1. *Ichthyophis kodaguensis*



Image 2. Close up of head of *Ichthyophis kodaguensis*

5cm in girth. It had a bright yellow lateral stripe running all along the length of its body, but slightly interrupted at the collar. The animal was a uniform purplish-brown in colour throughout its length (Images 1 & 2).

The individual had a broad and rounded head and the number of annuli was 345 on the dorsal side and 343 on the ventral side. The colour and shape of the head clearly placed the animal closer to *I. kodaguensis* as it differed in these characteristics with *I. beddomei*. The identity of the specimen as probably *I. kodaguensis* was confirmed by David Gower of the Natural History Museum, London (in litt. 13 February 2008).

The finding of this species

extends its known range from the type locality by about 30km northwards. The new record was from Rainforest Retreat located on the road to Kallur Village about 7km off Galibeedu Village, about 12km north from Madikeri Town in Kodagu District in Karnataka. The location is an organic coffee-cardamom plantation with native shade and perennial streams in the 25-acre plot. The neighbouring plot from where the caecilian was headed is a discarded coffee plantation with native shade in a riverine stretch.

The caecilian has since then been spotted by Dr. Anurag Goel several times and the labourers have reported several individuals in clumps next to the rivulet in damp pits

dug for banana plantation. The area has old growth canopy, but sparse undergrowth. We subsequently searched in and around the dung pile in the plantation, but did not locate the species in the compost pit.

The type series measured 15.8 to 27.4 cm ($n = 7$) in length, and the annuli numbers were from 276 to 306 ventrally ($n = 7$), and from 278 to 302 dorsally ($n = 4$) (Wilkinson et al. 2007), the specimen we observed was longer (31cm) than the type series and had more annuli (345 d / 343 v). The ratio of tentacle to nostril (TN) with tentacle to eye (TE) in the specimen was 1.34, which is in the range of *Ichthyophis kodaguensis* (1.25–1.58) (Wilkinson et al. 2007).

Following the key to striped *Ichthyophis* of the Western Ghats by Wilkinson et al. (2007), the specimen fits the following:

(i) No whitish midventral stripe, therefore not *I. tricolor*. The $TN/TE > 1.25$ in our specimen while in *I. tricolor* $TN/TE < 1.25$. The location where this specimen was sighted is very far from the known range of *I. tricolor*.

(ii) The area of sighting falls within the known range of *I. beddomei*. However, the following characteristics of the specimen differentiate it from typical *I. beddomei* characteristics: head not narrow and pointed, tentacle

not almost as close to naris as to eye (TN/TE > 1.25 in our specimen while in *I. beddomei* TN/TE < 1.25), and lateral stripe not extensive on mandible. The specimen is therefore not *I. beddomei*.

(iii) Just 190km south of the sighting area another similar looking Ichthyophis, *I. longicephalus* is described from Silent Valley National Park in Kerala. However, the characteristics of the specimen such as broad and rounded head, and tentacle less than twice as far from naris than from eye do not match the characteristics of *I. longicephalus* (TN/TE < 1.75 in our specimen, while TN/TE

> 1.75 in *I. longicephalus*). The only overlapping character according to the key is that of the more than 320 annuli counted in the specimen.

The specimen we observed was uniformly coloured, and since it's tentacle was much closer to the eye than to the naris, the head was broad and rounded, and the yellow stripe was broken on the mandible, it closely matches *I. kodaguensis* rather than *I. longicephalus*.

Given the sample size of the type series being low (7) and all from a single location, it might be that the *I. kodaguensis* does have an

overlap in annuli numbers with *I. longicephalus*. We suggest that the key be slightly modified after a thorough examination of the specimens from the new site, especially of the inner mandibular tooth row, which we did not observe.

Reference

Wilkinson, M., D.J. Gower, V. Govindappa & G. Venkatachalaiah (2007). A new species of *Ichthyophis* (Amphibia: Gymnophiona: Ichthyophiidae) from Karnataka, India. *Herpetologica* 63(4): 511–518.

Potential threat from an exotic introduced amphibian

In the last six months, there is an increase in the import of the African Clawed Frog *Xenopus laevis* by the aquarium trade into India. Preliminary studies conducted in Pune, Mumbai and Chennai indicate several hundred individuals brought into the country and sold to several hobbyists. It has also come to our attention that some of these fish hobbyists are unable to keep these albino African Clawed Frogs due to their aggressive nature in aquariums and are releasing them into the wild. One hobbyist approached an ANSA member to help release this frog into the wild near Pune. If any of you do come across this species being sold in your cities/towns, please bring it to our attention.

ANSA is putting together an appeal to the aquarium traders and hobbyists and also to the policy makers at the central and state governments to educate and impose a ban on trade of this species and other non-native amphibians into the country. Release of such species into the wild is potentially dangerous as they could: (i) Become invasive species impacting native amphibians and fish, and/or (ii) Introduce the dreaded *Batrachochytrium dendrobatidis* (chytrid) fungus into the wild, which could impact the native frog populations.

We request the ANSA members and others to join us in tackling this potential threat. Please join the **Alien Invasive Amphibians - Indian Action Initiative (AIA-IAI)** at ANSA/ASG-South Asia regional network by contacting Sanjay Molur, Co-chair of ANSA/ASG-South Asia network <herpinvert@gmail.com> to help understand the degree of trade in this species and other non-native amphibian species in the aquarium trade and release of individuals into the wild by the traders or hobbyists. If you are interested in helping with the policy document and reaching out to different stakeholders for positive action do let us know.

Observation of Himalayan Newt *Tylotriton verrucosus* in Namdapaha Tiger Reserve, Arunachal Pradesh, India

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India has a rich diversity of amphibians comprising 311 species (Dinesh et al. 2010). One major significance of the country's amphibian fauna is the occurrence of the Himalayan Newt *Tylotriton verrucosus*, which is the sole representative of the order Caudata. Given the size of the distribution of this species, it is plausible that (*T. verrucosus*) can differ depending on the geographical area. In the northern part of its range it has been reported from low hills below 1,000m. In the southern part of its range in India, it is generally an upland species occurring at elevations between 1,000–3,000 m. In Darjeeling District, West Bengal, India, there were 10 documented populations in 1994. The habitats included tea gardens, terrestrial meadows near ponds, vernal pools and woodland areas. Recently a survey in the Darjeeling hills revealed the presence of 16 such breeding populations (Deuti & Hegde 2007). *T. verrucosus* may be a complex encompassing many

variable forms, some of which may eventually turn out to be a subspecies or even a species of their own. *T. verrucosus* has the largest range of all species in the genus, which extends from the Yunnan Province in southeastern China, through northern Vietnam, northern Thailand (Wongratana 1984), northern Myanmar, Bhutan, eastern Nepal, and northeastern India (Sikkim, Darjeeling, Manipur, and Arunachal Pradesh). The distributions formerly acknowledged in

Yunnan province, China are now considered *T. shanjing*, with the exception of those found in the extreme west of the province. It probably occurs more widely than current records suggest, especially in areas between known sites (Zhao 1998).

In spite of being listed in the Schedule II Part II of the Indian Wildlife (Protection) Act, habitat loss from draining of wetlands, change in land use practices and rural development are a serious threat to this species. Water pollution from agrochemicals and domestic detergents, and the extraction of water for irrigation are also degrading its habitat. The species is considered a bad omen and thus killed in certain areas. It is also extensively used as bait for fishing in Manipur. Although more than a century has passed since the description of the species, the ecology

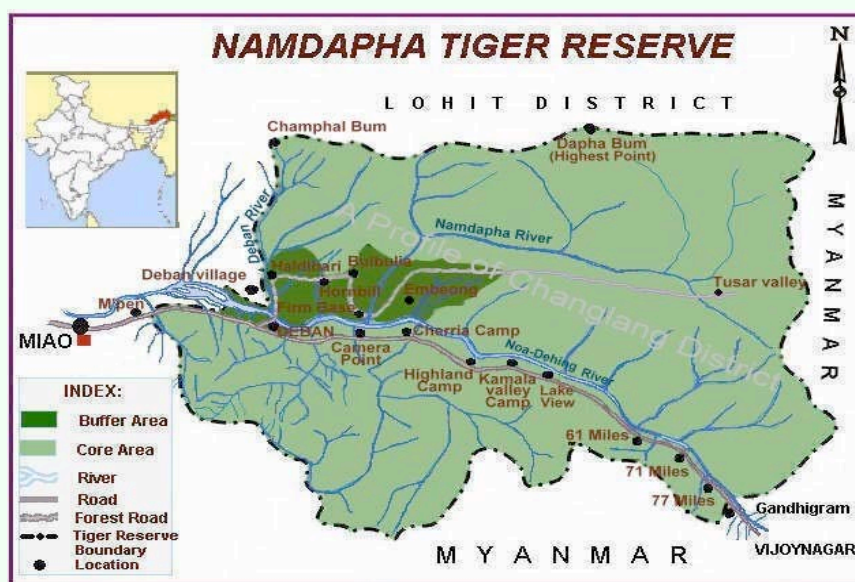


Figure 1. Map of Namdapaha Tiger Reserve, Arunachal Pradesh



Image 1. Himalayan Newts at Namdapha Tiger Reserve

Table 1. Occurrence of Himalayan Newt at Namdapha Tiger Reserve

	Region	Location	Coordinate	Alt (m)	No. of individuals	Date	Time
1	East	77 miles	27°18'21.4"E & 96°54'16.0"N	1126	2	08 August	11.00 am
2	East	65 miles	27°23'32.4"E & 96°45'02.6"N	1177	3	14 August	09.00 am

of this rare and sporadically distributed amphibian is poorly known. The species is listed as Least Concern in view of its wide distribution, tolerance of a broad range of habitats, presumed large population, and because it is unlikely to be declining fast enough to qualify for a listing in a more threatened category (IUCN 2006).

The species was described by Anderson (1871) from western Yunnan. In India, it has been reported from the low altitudes and cool climate of the Eastern Himalaya of West Bengal, Sikkim, Arunachal

Pradesh and Manipur (Kuzmin et al. 1994; Frost 1985; Devi 2000). Mansukhani et al. (1976) reported the occurrence of the newt from Arunachal Pradesh and she provided some interesting notes about the habitat of this tailed amphibian. When we were working on the status and distribution of the Malayan Sun Bear in a project funded by the Wildlife Institute of India and the International Bear Association in Namdapha Tiger Reserve, we observed a newt like creature along our transect line. Afterwards we confirmed the creature to be the Himalayan Newt. Literature

survey revealed that this species has not been reported from Namdpaha Tiger Reserve earlier. In this short note we communicate the presence and confirm its distribution from Gandhigram range of Namdapaha Tiger Reserve, Arunachal Pradesh.

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Acknowledgements

The authors are thankful to Mr. P.R. Sinha, Director, Wildlife Institute of India for his support and encouragement in conducting the study. We thankfully acknowledge the help of the forest department, Namdapha Tiger Reserve. We are also thankful to all field assistants and officers for their help and useful discussions on this study matter.

Join Amphibian Ark in the Global Amphibian Blitz!

Amphibians around the world are disappearing. Recent estimates suggest that nearly one-third (32%) or about 2,000 species of this unique group of animals is threatened with extinction. Nearly 168 species are thought to have gone extinct in the last two decades. With increasing land-use and climate change around the world, these trends are likely to worsen. To better understand and conserve these diverse and fascinating creatures, scientists urgently need information on where amphibians persist.

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3. Upload your amphibian photo from your hard-disk or link to your photo that's already on Flickr or Picassa.
4. Add a date, geographic coordinates, and the best identification you can and click "Save observation".

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What about threatened species? For contributions identified as a threatened species according to the IUCN Red-List, the public coordinates will be obscured by about 5 kilometers to discourage those who would seek to exploit rare species.

What taxonomy are you using? The Global Amphibian Blitz uses the checklist of species from [Amphibiaweb](#) which is updated weekly with newly described species. We use the taxonomy of the [Amphibian Species of the World](#) to group these species into families and genera.

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Alien Invasive Amphibians – Indian Action Initiative (AIA-IAI)

Join the AIA-IAI to combat the growing threat from exotic species imports in amphibians by the aquarium traders and hobbyists. Release of exotics could potentially threaten native wild amphibian and fish populations.

For more information and to join the action initiative, which include:

- (a) Surveying local aquarium traders
- (b) Conducting outreach programmes to aquarium hobbyists
- (c) Contacting policy makers and government officials
- (d) Reaching out to aquarium traders through education and awareness

Contact:

AIA-IAI @ ANSA/ASG-SA

c/o Zoo Outreach Organisation, 9A Lal Bahadur Colony, Peelamedu, Coimbatore, Tamil Nadu 641004, India

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African Clawed Frog *Xenopus laevis* in Pune

ISSN: 2230-7060 (online)

Editor: Sanjay Molur

Editorial Advisor: Sally Walker

frog leg

No. 16 | May 2011

Date of publication: 30 May 2011

ANSA and ASG-SA Co-chairs: Sanjay Molur & Karthikeyan Vasudevan

frog leg is the Newsletter of the Amphibian Network of South Asia (ANSA) and the Amphibian Specialist Group-South Asia (ASG-SA)

frog leg is published by WILD, ZOO and CBSG-SA as a service to the amphibian conservation community as well as conservation actioners and enthusiasts of South Asia.

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