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Fantastic Facts

Salim Ali's Fruit Bat *Latidens salimalii* Thonglongya, 1972

Distinguishing characters: This medium-sized fruit bat exhibits characteristics of a *Cynopterus* species, except it does not have a tail. The dorsal pelage is short and soft, brownish-black with some gray hairs which gives it a grizzled effect around the back and on shoulders. The ventral pelage is short with very sparse hairs on chin and neck. The ears are blunt, rounded and uniformly coloured.

Body measurements: The head-body length is about 107mm, forearm length about 67mm.

Habit and habitat: It is a wet evergreen forest species occurring in more open areas and roosting in caves. This bat has been seen in broad-leaved montane forests and coffee plantations at an altitude of up to 1000m.

Distribution: This is the only known endemic fruit bat of the Western Ghats, found exclusively in the southern chain of the Ghats, recorded in

the High Wavy mountains, Cardamom hills and in Kalakkad-Mundanthurai Tiger Reserve.

Status: This species seems to have a restricted distribution within the Western



Arbab Roy / Juliet Vanitharani

Ghats, making it susceptible to changes in habitat (such as plantations) and other threats such as poaching and cave disturbance. It has been categorised as Endangered.

Salim Ali's Fruit Bat *Latidens salimalii* Thonglongya, 1972

ENDANGERED



FRUIT BATS OF SOUTH ASIA

PART 4

Fantastic Facts

Ratanaworabhan's Fruit Bat

Megaerops niphanae
Yenbutra & Felten,
1983

Distinguishing characters:

This small fruit bat is as big as *Cynopterus brachyotis* in size and in appearance except for the absence of external tail. The dorsal pelage is uniformly brown in colour except for pale shoulders, the ventral pelage is uniformly greyish. The ears are broadly rounded and uniformly coloured.

Body measurements:

The head-body length is

about 85mm, forearm length about 58mm.

Habit and habitat:

bat is presumed to be a deep forest dweller trapped in Namdapha and in Darjeeling before the habitat was cleared. It occurs usually in stream clearings in high elevation forests. Its roosting site is unknown.

Distribution: Very sparsely distributed

from the available information. Only a few locations in eastern Himalaya are known till date, but it is likely that the species could occur in undisturbed

high altitude forests of eastern Himalaya.

Status: The IUCN status of this species in South Asian region is Near Threatened in South Asia given the rapid loss of habitat in the region, change in quality of habitat and other human-induced threats such as development, tourism and encroachments. At global level it is Least Concern.



Arbab Roy / Bates & Harrison 1997. Bats of the Indian Subcontinent

Ratanaworabhan's Fruit Bat
Megaerops niphanae Yenbutra & Felten, 1983

NEAR THREATENED (South Asia)
LEAST CONCERN (Globally)



Fantastic Facts

Hill Long-tongued Fruit Bat *Macroglossus sobrinus* (K. Andersen, 1911)

Distinguishing characters: This is a very characteristic long-nosed fruit bat in the region, much different looking than all the others. It is smaller than *Eonycteris spelaea* which shares the same distribution. The elongated snout is a modification for nectar feeding. The bat lacks external tail. The dorsal pelage is uniformly clay brown and the ventral pelage is uniformly biscuit brown. The ears are

uniformly coloured like the dorsal pelage, ending in narrow but rounded tips.

Body measurements: The head-body length is about 82mm, forearm length about 47mm.

Habit and habitat: This is a evergreen forest species found up to 2000m altitude. It does not occur in disturbed habitats and roosts in small colonies of up to 10 individuals under palm fronds, in banana leaves and under branches of specific trees. It feeds on nectar, pollen, flowers and soft

fruits. It is presumed to not travel long distances and has set routes for feeding.

Distribution: This species is poorly documented in South Asia



Arbab Roy / Modified from F.J. Bonaccorso, 1998. Bats of Papua New Guinea

with only a few known localities in northeastern India. Other locations include those in Southeast Asia.

Status: This species seems to prefer less disturbed areas and thick evergreen forests, which are reducing considerably in northeastern India. It has been categorised as Near Threatened in South Asia although more detailed studies are required immediately.

Hill Long-tongued Fruit Bat
Macroglossus sobrinus (K. Andersen, 1911)

NEAR THREATENED (South Asia)
LEAST CONCERN (Globally)



Fantastic Facts

Blanford's Fruit Bat *Sphaerias blanfordi* (Thomas, 1891)

Distinguishing

characters: This species closely resembles the *Cynopterus* group of bats, which are small. It does not have a tail. The dorsal and ventral pelage are uniformly greyish-brown coloured, thick and long. The wings are uniformly brown. The ears are small, the tip narrowing but blunt. The anterior margin of the ears have a thin white border.

Body measurements:

The head-body length is about 87mm, forearm length about 55mm.

Habit and habitat: This is probably restricted only to mountainous slopes, but very little is known about this poorly studied species.

Distribution: It seems to occur across the low ranges of Trans-Himalaya occurring in India, Nepal and Bhutan in South Asia. It also occurs widely distributed in northern Myanmar, Thailand and

southwestern China, as also in Tibet. The South Asian population is a distinct subspecies called *S.b. blanfordi*.

Status: Although not much is known of this species *per se*, its habitat is under much threat with continuing decline in area and quality. This species is categorised as Near Threatened in South Asia due to this reason, however, further studies are urgently required.

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Blanford's Fruit Bat *Sphaerias blanfordi* (Thomas, 1891)

NEAR THREATENED (South Asia)
LEAST CONCERN (Globally)



Fantastic Facts

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Print this mask on a card and cut it



Rhinopoma hardwickii

Collect these masks for exciting games

CHITAL

Unusal sighting of *Axis axis* in higher elevations in Nilgiris District, Tamil Nadu



IUCN Red List:
Least Concern
(Duckworth et al.
2015)

Female Chital found behind the bushes in Marlimund Lake

Mammalia
[Class of Mammals]

Cetartiodactyla
[Order of even-toed ungulates and cetaceans]

Cervidae
[Family of Deer]

Axis axis
[Chital]

Species described by
Erxleben in 1777

The Chital *Axis axis* is a medium sized deer belonging to the family Cervidae and a native species to India, Sri Lanka, Nepal, Bangladesh and Bhutan (Prater 1934; Schaller 1967). The species thrive in a variety of habitats, but avoid extremes such as dense moist (evergreen) forests and open semi-desert or desert. Moist and dry deciduous forest areas, especially adjoining dry thorn scrub or grasslands, appear to be optimal, and highest densities of Chital are reported from these habitats. Short grasslands of the terai, swampy meadows and glades adjoining forest areas, coastal dry evergreen forests, mixed forests or plantations with Teak *Tectona grandis* and Sal *Shorea robusta* are also used, and indeed over much of northern and southern India, its distribution closely matches

that of Sal and Teak, respectively (Raman 2013).

The Nilgiris is a major part of the Nilgiri Biosphere Reserve. The Nilgiris is situated (11°12'–11°43'N & 76°14'–77°01'E) in the north western corner of Tamil Nadu in southern India. They are bounded on the North by the State of Karnataka and in the west and southwest by Kerala and east and south by Coimbatore District of Tamil Nadu. The Nilgiris occupies a total area of 2542sq.

km and the elevation of the Nilgiris ranges from 300 to about 2,700m. Nilgiris, as the most forested district of the state, signifies an important stretch of Western Ghats in Tamil Nadu and is the junction of the Western and Eastern Ghats. The peak of Doddabetta is the highest elevation in Nilgiris with an altitude of 2,637m.

On 6 December 2017 17.00hr, we observed a herd of three Chitals consisted of one male and two females, feeding on tip of Common Gorse *Ulex europaeus* in eucalyptus plantation near Marlimund Lake (11.2546°N & 76.41497°E, elevation 2,209m), Udhagai North Range, Nilgiris Forest Division in Nilgiris. When it moved away from vegetation undergrowth, we noted the golden-rufous body with a covering of white spots. As we photographed the herd with Cannon 700D with 55–250 mm zoom lens, we were able to identify them in the images as Chital. Generally, Chital is a lower elevation species but rarely seen above the elevation of 1,160m (Schaller 1967). Krishnan (1972) reported that Chital is particularly frequent in grassland–forest interface, edge, and other ecotones. Although several observers have noted that Chital occurs mostly in flat areas and avoids hills and slopes (Schaller 1967; Khan 1996), this may not hold in areas where preferred habitats or forage is also available on slopes (Raman 2013; Kumar 2010). Johnsingh et al. (2004) stated that it occurs in both hilly and flatter terrain, mainly the latter, in the Terai Arc Landscape of India. Raman (1996) observed that habitat use varies seasonally, reflecting food availability. Chital uses more wooded habitat during the cool-dry season and early summer (November to May), where fallen fruit, leaf litter, and browse are available. The present record envisages that the occurrences of Chital in higher elevation are due to foraging and to avoid the predators in upper Nilgiris in winter season.

Global Distribution:

Native: Bangladesh, Bhutan, India (Andaman Is. - Introduced), Nepal, Sri Lanka. Introduced: Argentina, Armenia (Armenia), Australia, Brazil, Croatia, Moldova, Pakistan, Papua New Guinea, Ukraine, United States (California, Florida, Hawaiian Is., Texas), Uruguay (Duckworth et al. 2015)

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Corrigendum

Bhatt, U.M., B. Habib & S. Lyngdoh (2018). Chital: Photographic evidence of *Axis axis* after two decades in Manas National Park, Assam, India. *Mammal Tales* #3. In: *Zoo's Print* 33(8): 05-08; <http://www.zoosprint.org/ZooPrintMagazine/2018/August/5-8.pdf>

In the article 3rd para, read as "The present communication reports first ever scientific evidence of chital on 17 June 2017 at 04:47hr. The similar reports have been made recently by the Forest Department" instead of "The present scientific communication reports about evidence of chital (adult & sub-adult) on 17 June 2017 at 04:47hr. As reported by the Field Director, Manas, the first photographic evidence was recorded in the park by front-line staff with the help of Aaranyak, an NGO in Panbari Range in 2016 and it was reported in The Telegraph first by Mr. Roopak Goswami (Jan.17, 2017)".

Some new sighting records of flycatchers in Chandgad Taluka: Kolhapur District, Maharashtra

The Indian subcontinent is a home ground for 1263 bird species (Praveen, et al., 2016). Of which, Maharashtra State represents 632 bird species (Avibase, 2017). Prasad (2003) reported 450 bird species from Western Maharashtra. Chandgad Taluka of Kolhapur District is a part of Western Ghats, which harbours very rich biodiversity. The Chandgad Taluka (Latitude 15° 45' to 16° 3' North and Longitude 74° 1' to 74° 27' East) is located around 762 m MSL, and witness heavy rainfall (ca. 3000 to 5000 mm/year). The new sighting records of Orange-breasted Green-Pigeon *Treron bicinctus* (Hiragond and Gavade, 2012) and White-throated Thrush *Zoothera citrina cyanotus* (Hiragond et al., 2015) were reported from Chandgad Taluka in recent past. In our birding trips to different parts of Chandgad Taluka, we sighted Grey-headed Canary-flycatcher (*Culicicapa ceylonensis*), White-bellied Blue-flycatcher (*Cyornis pallipes*), Blue-throated Blue-flycatcher (*Cyornis rubeculoides*) and Verditer Flycatcher (*Eumyias thalassinus*). Since, there is no any published literature of sightings of these flycatchers in Chandgad Taluka till date, we have tried to draw an attention of the birders' community to report their probable records of first sighting from Chandgad Taluka, Kolhapur District. Identification of the observed bird species were confirmed using field guides by Kazmierczak (2000), Grimmett et al., (1998, 2011) and, Rasmussen and Anderton (2012).

1. Grey-headed Canary-flycatcher (*Culicicapa ceylonensis*)

It is a small, greenish yellow bird with grey head and breast, inhabits the broad-leaved forest, coffee plantations and open wooded areas. It is reported from Bombay, Nasrapur and Bhimashankar in Pune District, Jaikwadi Dam and Paithan in Aurangabad District, Kalambushi and Chiplun in Ratnagiri Districts, and Ahemadnagr (Prasad, 2003); and Melghat Tiger Reserve (Lambert, 2014) in Maharashtra. Joshua et al., (2005) reported the first sighting of Grey-headed Canary-flycatcher from Jamnagar district of Gujarat. They found the bird was calling from *Vachellia nilotica* forest and feeding in association with few Oriental White-eye (*Zosterops palpebrosus*) and a common Lesser Whitethroat (*Sylvia curruca*).

We were on a birding trip towards Sundi Falls in Chandgad Taluka on 24.12.2016. Around 3.30 pm, we accidentally sighted a single individual of Grey-headed



Grey-headed Canary-flycatcher photographed in Sundi falls

Canary-flycatcher *Culicicapa ceylonensis* associated with male Asian Paradise-flycatcher (*Terpsiphone paradisi*). Grey-headed Canary-flycatcher was flying along the rocky waterfall. The bird was there for few minutes, flying from one branch to another branch on a small unidentified tree along the rocky wall. It is around 10 meter height from the bottom of waterfall. Local people does not regularly sight this bird as it is a rare species in this area. Recently, several trees are removed from Sundi Water Falls that destroyed the natural habitat.

2. White-bellied Blue-flycatcher (*Cyornis pallipes*)

It is a medium sized (around 15 cm) resident bird in Western Ghats found up to central Maharashtra from south upwards. It inhabits the broad-leaved evergreen forest. The distribution map by Grimmitt et al., (2011) and, Rasmussen and Anderton (2012) shows



White-bellied Blue-flycatcher a) photographed in Tillari forest on 13.11.2016, b) photographed in Tillari forest on 10.12.2017 and c) photographed in Perani forest on 17.02.2018

its distribution in Sothern Western Ghats up to Karnataka and Goa, and few sightings in Western Maharashtra. In Maharashtra, the said bird was reported from Bhimashankar in Pune District (Ali, 1950); nearby Pune (Khare, 2015); Panshet, Lonavla, Sinhagad, Pune, Phansad Wildlife Sanctuary and Matheran in Raigad District, Mahabaleshwar and Koyna Wildlife Sanctuary in Satara district and Radhanagari in Kolhapur district (Prasad, 2003).

We had sighted a single individual of White-bellied Blue-flycatcher *Cyornis pallipes* on 12.11.2016 around 12.15 pm near Swapnill point in Tillari forest of Chandgad Taluka. It was photographed in the same area on 10.12.2017 around 4.00 pm and in Perani forest on 17.02.2018 at 4.10 pm. This Perani forest is around 25 km away from Tillari towards Amboli. The bird was perching on unidentified tree branch around 4-6 meters height from the ground, was observed for few minutes in all the three sightings. The bird was disturbed by our movements and flew in to the forest.

3. Verditer Flycatcher (*Eumyias thalassinus*)

Verditer Flycatcher is a greenish blue bird inhabited the open forest, forest clearings and roadside vegetation in forests; found in solitary or in pairs. In Maharashtra, the bird was reported from Dhule, Pune, Ahemadnagar and Solapur district (Prasad, 2003), and Danoli village of Sawantwadi taluk in Sindadurg district (Vannur and Hiragond, 2016).



Verditer Flycatcher photographed in Waghotri

In Kachchh District of Gujarat Verditer Flycatcher seems to be a vagrant, as it was sighted in Dhunai of Kachchh on 12.04.2002 after 38 years (Soni and Joshua, 2013).

On 11.11.2016 around 5.00 pm, we were walking along the roadside near Mahadev temple in Waghotri of Chandgad taluka. All of a sudden, two individuals of Verditer Flycatcher *Eumyias thalassinus*

flew into a small unidentified tree along the road side. Birds were perching on a tree

branch around 6-7 meter above the ground. These birds were there for about 2 minutes flying from a branch to other on the same tree using outer canopy of the tree. While taking photographs they were disturbed and flew into the forest. Towards south of Waghotri around 40 km in Belagavi district of Karnataka, Verditer Flycatcher was sighted earlier by Mallya (2009) on 26.11.2009 in outskirts of Belagavi (IndiaNaturewatch, 2009), and by NageshVannur in Vaccine depot of Belagavi city on 30.01.2015 and Kusamalli village in Khanapur taluk of Belagavi on 29.03.2015 (Vannur and Hiragond, 2016).

4. Blue-throated Blue-flycatcher (*Cyornis rubeculoides*)

Blue-throated Blue-flycatcher is a winter visitor to southern Western Ghats. In Maharashtra, there are few sightings of this bird from Sindhudurg / Ratnagiri district (Prasad, 2003).

We had sighted Blue-throated Blue-flycatcher *Cyornis rubeculoides* in outskirts of Halkarni village of Chandgad taluka on 02.11.2016. The bird was devouring some unidentified larvae on unidentified tree branch. The bird was perching on a large tree branch at the middle part of the canopy around 6-7m height from the ground. The bird was videographed ([Video 1](#)). The bird was observed devouring the larvae for 2 minutes. Later, the bird was disturbed by our movements and flew to nearby tree along with the killed larvae.

Since, Chandgad taluka is a part of Western Ghats having suitable habitat for birds. Study area representing large number of fruiting trees like Ficus (*Ficus benghalensis* and *Ficus racemosa*), Jambolan (*Syzygium cumini*), Jackfruit (*Artocarpus heterophyllus*), several vegetable crops and agricultural plants like Maize (*Zea mays*), Ground nut (*Arachis hypogea*), Sunflower (*Helianthus annuus*), Millet finger (*Eleusine coracana*), Peas (*Pisum sativum*) support the avifauna diversity. The Grey-headed Canary-flycatcher, White-bellied Blue-flycatcher, Blue-throated Blue-flycatcher and Verditer Flycatcher sighted in Chandgad taluka are listed as Least Concern (IUCN, 2017). Since, the White-bellied Blue-flycatcher and Verditer Flycatcher sighted in interior forested area and, Blue-throated Blue-flycatcher sighted in outskirts of Halkarni village are not facing any threats at present whereas, in

Sundi Water Falls the natural habit is lost due to felling of trees. This is to be restored by planting several trees especially fruiting trees. Otherwise, the habitat loss may affect the presence of Grey-headed Canary-flycatcher in the near future.

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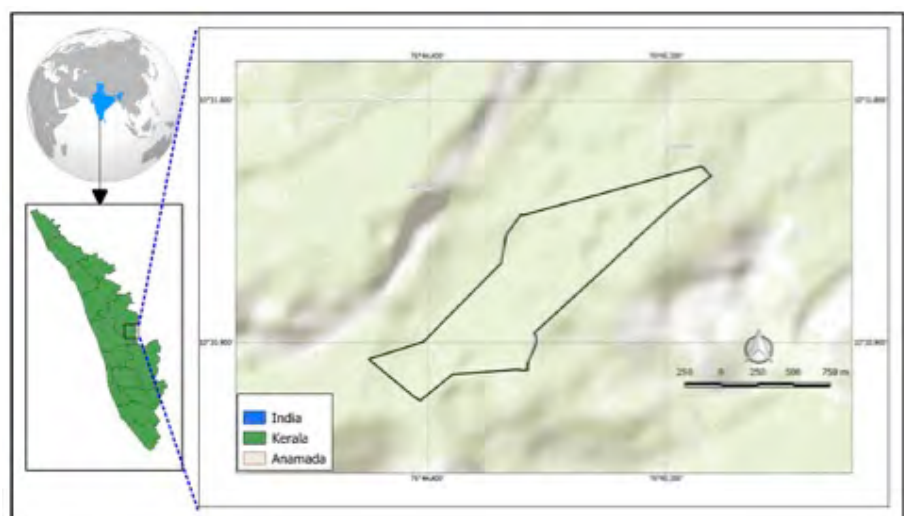


Preliminary checklist of anurans of Nelliampathy Hills, southern Western Ghats, Kerala, India

The most threatened taxa in the vertebrate world are constituted by the amphibians where in most of the members are on the brink of extinction (Stuart et al. 2004). Habitat loss and habitat fragmentation are the core cause for this. According to Baillie et al. (2004) & IUCN SSC Amphibian Specialist Group (2011a,b) threat for the 88% of the threatened amphibians of the world are due to habitat loss and habitat degradation. Among vertebrates of the world, declining rate of the amphibians is higher than any other taxa among vertebrates (Roelants et al. 2007). A total of 181 species of amphibians recorded in the Western Ghats, 87% are endemics (Subramanian et al. 2013). Western Ghats mountains that lie between river Tapti in the north to Kanyakumari in the south, is highly fragmented and surrounded with various land use systems, including plantations and settlements (Anonymous 2011). These fragments of the human-modified landscape that occur between the natural forests, act as corridors and they have the potential to conserve the native biodiversity, which is still untapped. The present study is to understand the conservation value and amphibian richness in a human-modified landscape located between the natural forests in the southern Western Ghats, in India.

Study area

The study was conducted at Anamada in the Nelliampathy Hills of Palakkad District, Kerala. This area is contiguous with Parambikulam Tiger Reserve and Nemmara Forest Division. The total extent of the study site is 182ha (between 10.48–10.51°N and 76.71–76.76°E). The study site was the property of Maharaja of Kollenkode who leased vast tracts of dense jungle to the British for the cultivation of coffee, cardamom and oranges in the 18th century.



Anamada, Nelliampathy Hills, Southern Western Ghats, Kerala, India. Provide GPS coordinates



Aerial distance (9.5km) between type locality of *Raorchestes kaikatti* and *R. marki* with present study area

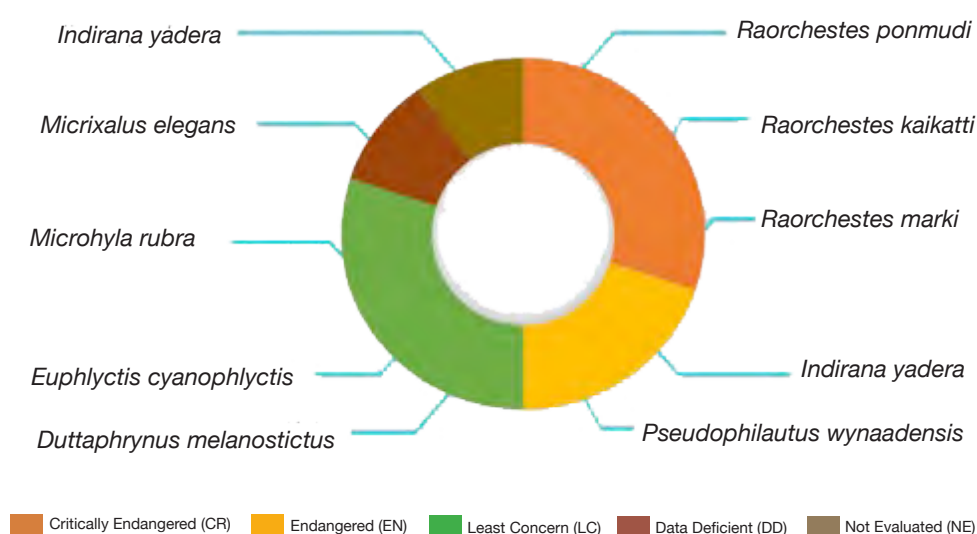
However, for the past two decades, there were no major plantation activities taking place here and as a result, the use of pesticides was minimal for the past two decades. The major vegetation consists of the plantations of Coffee (*Coffea arabica*), Cardamom (*Elettaria*

cardamomum) and Orange (*Citrus mandarin*). Apart from these the study site also has natural forest patches of IA/C4 west coast tropical evergreen forests and 2A/C2 west coast tropical semi evergreen forests interspersed with these plantations. The dominant tree species in the natural forest patches were *Bischofia javanica*, *Artocarpus hirsutus*, *Maesopsis eminii* etc. The altitude of the study site ranges from 1,000–1,100 m.

Methods

Visual encounter surveys were carried out in March - April 2018 from 16:00hr to 22:00hr. Efforts were made to cover all the representative habitats of the study site. We searched for anurans in suitable microhabitats including ponds, dried stream channels, rocky patches, leaf

litters and dead logs. Standard morphological measurements were taken for all specimens as per Bossuyt & Dubois (2001). These include, snout-vent length (SVL), head width (HW),



IUCN status of encountered species



Table 1: Species diversity of anurans of Anamada, Nelliampathy Hills

Common name	Scientific name	Family	IUCN status
Common Indian Toad	<i>Duttaphrynus melanostictus</i>	Bufonidae	LC
Warty Frog	<i>Minervarya</i> sp.	Dicroglossidae	** -
Common Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	LC
Narrow-mouthed Frog	<i>Microhyla</i> sp.	Microhylidae	** -
Reddish Narrow-mouthed Frog	<i>Microhyla rubra</i>	Microhylidae	LC
Elegant Dancing Frog*	<i>Micrixalus elegans</i>	Micrixalidae	DD
Gunther's Leaping Frog*	<i>Indirana brachytarsus</i>	Ranixalidae	EN
Yadera Leaping Frog*	<i>Indirana yadera</i>	Ranixalidae	NE
Jerdon's Bush Frog*	<i>Pseudophilautus wynaadensis</i>	Rhacophoridae	EN
Kaikatti Bush Frog*	<i>Raorchestes kaikatti</i>	Rhacophoridae	CR
Mark's Bush Frog*	<i>Raorchestes marki</i>	Rhacophoridae	CR
Ponmudi Bush Frog*	<i>Raorchestes ponmudi</i>	Rhacophoridae	CR

LC – Least Concern; DD – Data Deficient; EN – Endangered; CR – Critically Endangered; NE – Not Evaluated; * - endemic to the Western Ghats; ** - Identified at genus level.

head length (HL), mandible nostril (MN), eye length (EL), forelimb length (FLL), hand length (HL), thigh length (TL), shank length (ShL), foot length (FOL), total foot length (TFOL). The instrument used for taking measurement was Aerospace Digimatic Vernier Caliper (to the nearest 0.01mm).

Result and Discussion

A total of 12 species under six different families in which two could be identified only at the genus level were reported from the study site (Table 1). This include seven species that are endemic to Western Ghats such as *Micrixalus elegans*, *Indirana brachytarsus*, *Indirana yadera*, *Pseudophilautus wynaadensis*, *Raorchestes marki*, *Raorchestes ponmudi* and *Raorchestes kaikatti*. *Raorchestes kaikatti*, *Raorchestes marki* and *Raorchestes ponmudi* are Critically Endangered species (IUCN SSC Amphibian Specialist Group. 2011a, 2011b; Biju 2004a). While *Indirana brachytarsus* and *Pseudophilautus wynaadensis* are Endangered species according to IUCN (Biju et al. 2004a,b).

During the study, 20 individuals were sighted and morphological measurements were taken (Table 2). The most dominant family was the *Rhacophoridae*, which was represented by four species followed by *Dicroglossidae*, *Microhylidae*, and *Ranixalidae* with two species each (Table 1).



Table 2. Morphometric measurements (mm) of anurans from the study site

Species	Locality	SVL	HW	HL	MN	EL	FLL	HAL	TL	ShL	FOL	TFOL
<i>Fejervarya</i> sp.	Anamada	35.96	12.79	11.21	9.6	3.99	5.92	8.76	18.14	18.28	18.08	26.86
<i>Euphlyctis cyanophlyctis</i>	Anamada	34.31	12.12	11.23	9.67	3.82	7.09	9.44	17.62	17.61	17.53	24.88
<i>Microhyla</i> sp.	Anamada	15.03	5.11	4.24	3.68	1.78	3.09	4.05	7.62	7.96	7.28	11.59
<i>Microhyla rubra</i>	Anamada	10.96	4.14	3.28	2.4	1.2	2.24	2.86	6.11	6.19	5.9	8.5
<i>Micrixalus elegans</i>	Anamada	13.29	5.58	4.09	3.41	1.97	2.93	3.4	6.21	6.3	6.42	9.42
<i>Indirana brachytarsus</i>	Anamada	32.01	11.99	10.98	9.51	3.82	6.17	7.28	17.66	18.93	15.78	25.04
<i>Indirana brachytarsus</i>	Anamada	33.15	12.52	12.1	9.97	3.88	6.96	8.46	18.55	20.79	17.28	27.45
<i>Indirana brachytarsus</i>	Anamada	31.47	12.81	12.4	11.55	3.75	6.78	9	20.43	21.49	19.72	28.9
<i>Indirana brachytarsus</i>	Anamada	27.87	10.61	11.01	86.4	3.01	5	7.29	15.63	16.92	15.44	22.64
<i>Indirana yadera</i>	Anamada	22.45	9.71	8.96	7.47	3.27	4.88	6.05	12.82	13.64	11.58	17.75
<i>Pseudophilautus wynaadensis</i>	Anamada	18.82	7.52	6.32	5.68	2.45	4.02	5.64	9.33	10.05	7.27	12.59
<i>Pseudophilautus wynaadensis</i>	Anamada	28.8	9	8.12	6.88	3.04	5.19	6.5	12.23	12.58	10.45	16.17
<i>Pseudophilautus wynaadensis</i>	Anamada	19.74	8.24	6.64	5.72	2.61	4.62	5.26	10.53	11.14	9.19	14.84
<i>Pseudophilautus wynaadensis</i>	Anamada	20.22	7.74	7.11	6.04	2.82	4.1	6.28	10.68	10.8	8.7	14.27
<i>Pseudophilautus wynaadensis</i>	Anamada	22.06	8.76	8.41	6.61	2.7	4.6	6.94	11.97	12.31	9.6	16.02
<i>Pseudophilautus wynaadensis</i>	Anamada	20.8	7.89	7.22	6.24	2.5	4.25	5.53	10.21	10.92	8.69	13.95
<i>Pseudophilautus wynaadensis</i>	Anamada	18.84	8.15	7.1	5.84	2.86	5.04	6.17	11.44	11.14	8.58	14.67
<i>Raorchestes kaikatti</i>	Anamada	19.46	8.15	6.98	6.3	2.39	4.93	5.67	10.96	11.64	9.21	14.84
<i>Raorchestes marki</i>	Anamada	20.51	8.41	6.79	5.26	3.1	5.72	5.5	11.8	12.16	9.17	15.56
<i>Raorchestes ponmudi</i>	Anamada	35.04	14.44	11.77	9.85	4.25	8.09	11.32	18.14	18.08	15.09	23.59

SVL - snout vent length; HW - head width; HL - head length; MN - mandible nostril; EL - eye length; FLL - forelimb length; HL - hand length; TL - thigh length; ShL - shank length; FOL - foot length; TFOL - total foot length.



1. Common Indian Toad *Duttaphrynus melanostictus* (Schneider, 1799)

Duttaphrynus melanostictus is a cosmopolitan species, though during the study only two individuals were encountered. They were encountered along the drainage areas in the study site and were of two different color morph. Both the individuals were adult.

2. Common Skittering Frog *Euphlyctis cyanophlyctis* (Schneider, 1769)

It is a widely distributed species in the family Dicroglossidae. In this study, six individuals were encountered near a stagnant water body in a rocky patch. All were adults and one was calling from a water body.

3. *Minervarya* sp.

We found this individual from a stagnant water body in a rocky patch. Morphological characters of the specimen are distinct tympanum and supra tympanic fold, pointed fingers lack webbing and toes with moderate webbing and small but prominent sub articular tubercles. *Fejervarya* species in the Western Ghats are now under *Minervarya* (Sanchez et al. 2018). Further molecular analysis is needed for the species level confirmation.

4. Reddish Narrow-mouthed Frog *Microhyla rubra* (Jerdon, 1854)

It was sighted among the leaf litters in a coffee plantation. There is dark stripe which runs from the snout through its eyes back to hind legs. The legs have a banded pattern with a black spot on groin and thigh. Its belly is creamy white with some markings on the throat. The tympanum was indistinct.

5. *Microhyla* sp.

It was encountered near flowing water body during 19:00–21:00 at 1,069m. It seems like *Microhyla sholigari* due to the presence of discs on fingers with circum marginal groove cover notched distally and on toes with circum marginal groove cover bifurcate distally. The present study area is in the south of Palghat gap, but all the specimen in Seshadri et al. (2016) is from north of Palghat gap. So, it could be a range extension of *M. sholigari*. However, DNA analysis of the species will be needed to confirm the taxonomy. Total three individuals were encountered during the study period.

6. Elegant Dancing Frog *Micrixalus elegans* (Rao, 1937)

Only one individual was encountered from leaf litter near a flowing stream during the



study period. It has restricted distribution between Palghat gap and Goa gap. It is a Data Deficient (Biju 2004b) species by IUCN. The snout is round in both lateral and dorsal view with round canthus rostralis.

7. Gunther's Leaping Frog *Indirana brachytarsus* (Gunther, 1876)

Total four individuals were encountered during the study time. One individual was encountered from stagnant water in a rocky patch and the remaining were encountered from flowing waterbodies in cardamom and coffee plantations. This species has been reported from Idukki Wildlife Sanctuary, Ponmudi Reserve Forest, Neyyar Wildlife Sanctuary, Anamalai Tiger Reserve, Peechi-Vazhani Wildlife Sanctuary and Chimmony Wildlife Sanctuary (Dahanukar et al. 2016). The present study shows its distribution in Nelliampathy Hills.

8. Yadera Leaping Frog *Indirana yadera*

This species was encountered from stagnant waterbody in a valley. Only one individual was sighted at an altitude of 1,075m. The first finger is longer than second, double outer palmer tubercle. The tympanum is well distinct. The encountered specimens were reddish brown in colour.

9. Jerdon's Bush Frog *Pseudophilautus wynaadensis* (Jerdon 1853).

It is the most abundant anuran found in our study site. Total eight individuals were encountered with different color morphs. Most of the individuals were encountered from coffee and cardamom plantation at an altitude of 1,100m.

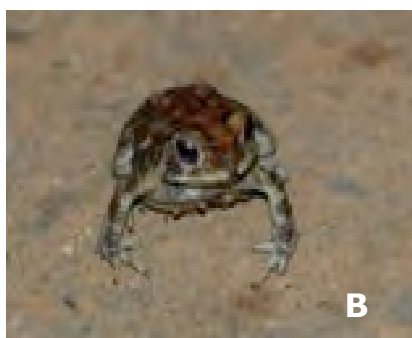
10. Kaikatti Bush Frog *Raorchestes kaikatti* (Biju & Bossuyt, 2009)

It was encountered from coffee plantation inside the hollow fallen tree. Its holotype was collected from Kaikatti, which is 13km (Ground Distance) away from the present study area. The aerial distance between the type locality and present study area is about 9.5km. The GPS coordinates of the type locality were 10.583°N & 76.733°E (Biju & Bossuyt 2009). The present encountered coordinates are 10.50°N & 76.75°E. The GPS used for recording was Garmin etrex 30x (Accuracy 5m). Only one individual was encountered during the study, which was a sub-adult. It is interesting to note that this is the first sighting of the *Raorchestes kaikatti* from outside the type locality. *Raorchestes kaikatti* is a single-location, Critically Endangered species, thus belonging to the Alliance of Zero Extinction (AZE) category of species.

Images



Common Indian Toad *Duttaphrynus melanostictus* (A & B are different colour morphs) A - © U.S. Amal, B - © M. Abin



Reddish Narrow-mouthed Frog *Microhyla rubra* © U.S Amal



Common Skittering Frog *Euphlyctis cyanophlyctis* © Afthab Faisal



Elegant Dancing Frog *Micrixalus elegans* © U.S Amal



Yadera Leaping Frog *Indirana yadera* © U.S Amal



Narrow-mouthed Frog *Microhyla* sp. A - © U.S. Amal, B - © Afthab Faisal



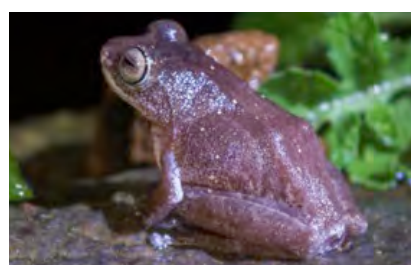
Warty Frog *Minervarya* sp. © Afthab Faisal



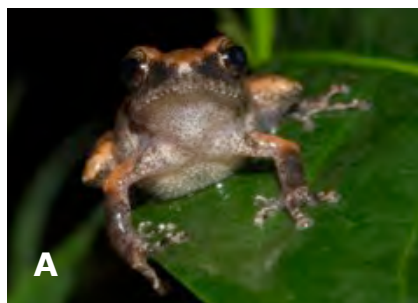
Mark's Bush Frog *Raorchestes marki* © Afthab Faisal



Kaikatti Bush Frog *Raorchestes kaikatti* © Afthab Faisal



Ponmudi Bush Frog *Raorchestes ponmudi* © Afthab Faisal



Jerdon's Bush Frog *Pseudophilautus wynaadensis* © (A, B, C & D are different colour morphs). A, B, C - © Afthab Faisal, D - © U. S Amal

11. Mark's Bush Frog *Raorchestes marki* (Biju & Bossuyt, 2009)

It was encountered from coffee plantation after a rain. Its holotype was also collected from Kaikatti which is 13 km (Ground Distance) away from the present study area. The aerial distance between the type locality and present study area is about 9.5km. The GPS coordinates of the type locality were 10.583°N & 76.733°E (Biju & Bossuyt 2009). The present encountered coordinates are 10.50°N & 76.75°E. The GPS used for recording was

Garmin etrex 30x (Accuracy 5m). Only one individual was encountered during the study. It is interesting to note that this is the first sighting of the *Raorchestes marki* from outside the type locality. *Raorchestes marki* is a single-location, Critically Endangered species, thus belonging to the Alliance of Zero Extinction (AZE) category of species.

12. Ponmudi Bush Frog *Raorchestes ponmudi* (Biju & Bossuyt, 2005)

It was encountered from the coffee tree of 1m height during a heavy rain

Gunther's Leaping Frog *Indirana brachytarsus* © Afthab Faisal

while it was calling. It was encountered at 19:00–21:00 hr. It was previously recorded by Biju & Bossuyt (2009) from places Ponmudi, Vagamon, Gavi, Kalpetta, Mananthavady and Sulthan's Battery of Kerala. It is also recorded from Parambikulam Tiger Reserve by Jobin & Nameer (2012). The present location is from Nelliampathy hills which is bordering Parambikulam Tiger Reserve. Only one individual was encountered during the study.

Dolia et al. (2008) have stated that agroforestry systems or plantations are resilient for biodiversity conservation than other land modifications because of the arboreal vegetation they incorporate. In the present study, four species (Table 1) belong to Rhacophoridae,





which shows that the arboreal vegetation in the study area acted as a suitable microhabitat for tree frogs. Majority of the encounter in the present study was from the leaf litters along with dead logs in the plantation which supported the anuran diversity of the study area. Habitat heterogeneity and structural complexity of this human-modified production landscape of Western Ghats may be the reason behind the presence of a large number of endemic species in the current work. Anand et al. (2010) emphasized that protected areas alone are inadequate to conserve the native tropical biodiversity in the long term. Conservation of the area outside Protected Areas (PA's) is needed for prevention of extinction of globally threatened species and thereby achieving Aichi Biodiversity Target 12 (Raghavan et al. 2016). Syamili & Nameer (2018) also highlighted the significance of the human-modified landscape in the conservation of anurans in the Western Ghats.

Conclusion

The present study highlights the significance of this human-modified landscape, sandwiched between natural forests, such as Parambikulam Tiger Reserve and Nemmara Reserved Forests. We report seven species of anurans that are endemic to the Western Ghats from the study area. This includes three Critically Endangered and two Endangered species. One of the major highlights of the study was the sighting of the two globally threatened species such as *Raorchestes kaikatti* and *R.marki*. These species until now were known only from the type locality. All these findings show the significance of conservation of this tropical human-modified productive landscape and to achieve the Aichi Biodiversity Target 12.

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Citation: Afthab, F.K., U.S. Amal & P.O. Nameer (2018). Preliminary checklist of anurans of Nelliampathy Hills, southern Western Ghats, Kerala, India. *frog leg* #136. In: *Zoo's Print* 33(9): 14–23

Workshop on different animal groups for college students at Sundarvan, Ahmedabad



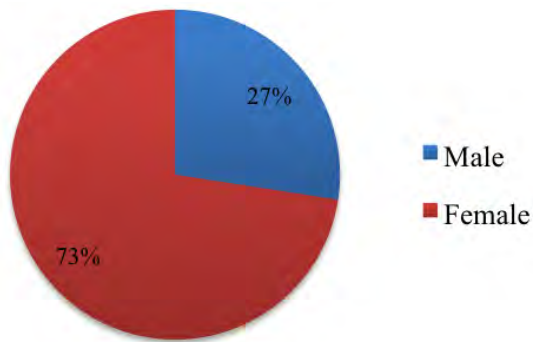
Identification of reptiles

Sundarvan is a mini zoo and the annual visitation is more than a lakh that includes children from more than 250 schools. Various activities are conducted at Sundarvan to reach different age group. Main focus of activities is to inculcate nature appreciation among general public and enhancing their classroom learning of students. Curriculum based activities for students of various age groups as well as capacity building towards biodiversity conservation and awareness for teachers and technical sessions for higher education students on request are also conducted.

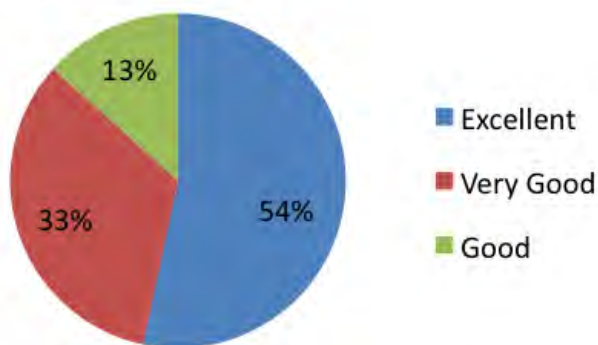
Workshop on “Let’s talk about Birds”.

The workshop was aimed to generate awareness towards bird conservation, identification and field techniques for population studies. The workshop led by a team of wildlife biologists attracted a target group of 150 undergraduate and post graduate science students in five batches.

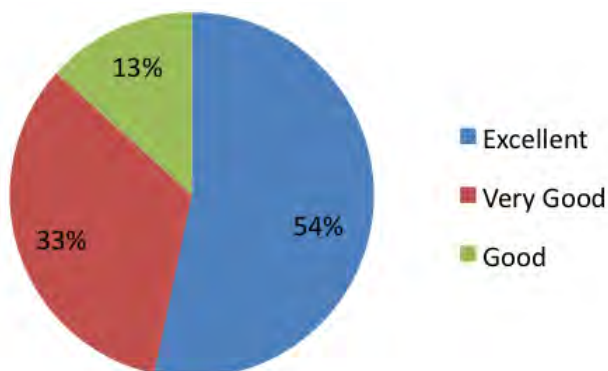
Quiz on common birds was conducted during ice breaking session. The participants learnt the evolution, classification of Birds, basics of bird watching, bird identification, field



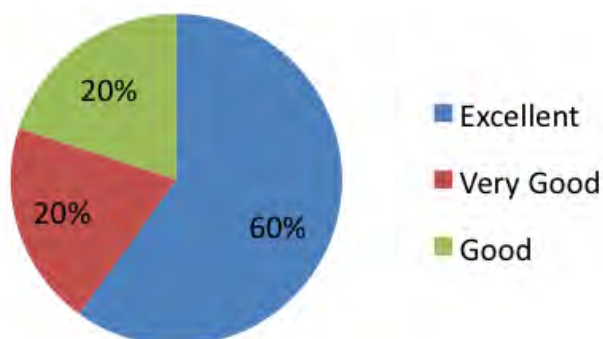
Participants



Presentation



Overall experience



Field Activity

Submitted by S. Sivakumar, Park Manager, Deep Shah, Education Officer, Sundarvan and Meena Nareshwar, Programme Director, CEE. Email: s.sivakumar@ceeindia.org

techniques and monitoring of migration and movement patterns.

In addition, hands on activities for bird watching and different techniques for population estimation were carried out in the campus. Maximum 35 bird species were recorded during nature trail. Awareness towards bird conservation with examples of conservation success stories and discussions on career paths in the field of wildlife & biodiversity conservation were conducted. Dr. Dhawal Mehta was the resource person of the workshop.

Workshop on “Let’s talk about Reptiles”.

The workshop was aimed to generate awareness towards reptiles, species identification, field techniques and conservation. A total of 127 undergraduate science students in three batches participated the event. The participants had hands on experience on learning identification of different reptiles (i.e. lizards, snakes, crocodiles and turtles & tortoises) their feeding habits, special features or adaptations and population estimation techniques. Awareness towards reptile conservation with ecosystem values was included.

The participants were from different science colleges like St. Xavier’s Science College, K.K. Shastri Government Science College, Navgujarat College, C.U. Shah College, M.S. University, Bharti Vidhyapith and Doon P.G. College. The basic analysis of the participant profile and feedback are given here.

International Vulture Awareness Day celebrated to keep the Skylords soaring high



IVAD celebration in schools of Ambedkar Nagar, Uttar Pradesh

International Vulture Awareness Day was celebrated on 1 September 2018 in various districts of Uttar Pradesh and Madhya Pradesh. Indian Biodiversity Conservation Society (IBCS) organized the event by involving various NGOs (Manav Organization from Lalitpur, Sarthak Pragati Prayaash Society from Jhansi, Wild Geo Excursion from Tikamgarh, Paryavaran Jeev Seva Sansthan from Gonda and Society for Scientific Research from Barabanki) and school teachers (Tikamgarh, Jhansi, Gonda, Ambedkarnagar, Gwalior). The objective was to engross the people and particularly the students that are fortunate to live in close proximity of natural habitats of vultures. The awareness material was developed and mailed to the interested organizers in advance so that they could manage the event in their areas. Manav Organisation celebrated IVAD in Nehru Post Graduate College, Lalitpur so that the youth become responsive towards the vulture population in Lalitpur. Lalitpur has a number of natural breeding colonies of vulture species (*Gyps indicus*, *Gyps bengalensis*, *Sarcogyps calvus* and *Neophron percnopterus*). As a result, the graduate and postgraduate students could participate in the future vulture census and monitoring programmes.

The students that are already indulged in the vulture conservation initiatives in Orchha, Tikamgarh have been felicitated with the scholarships from September onwards to encourage them to continue the much-needed actions. Various nature lovers those are

associated with Indian Biodiversity Conservation Society (IBCS) since last three years have provided these scholarships. The students are lead by IBCS in making observations, collecting and graphing data, drawing meaningful conclusions, and sharing their work.

The awareness boards in Orchha that provide information about the status of vultures were also renewed. These have played an important role in dissipating the knowledge about IUCN status and Wildlife Protection Act, 1972 with reference to vultures. The boards have message both in Hindi and English since Orchha is a tourist place and attracts tourists both from India and overseas. The 'Giddh Mitras' (Friends of vultures) monitor the vulture populations not only on specific days but also all round the year.

The teachers organized the painting and colouring activities for the students. The colouring sheets had a slogan on vultures, written in Hindi and a picture of vulture. The slogans stated that vultures consume the dead carcasses and keep the environment clean so we should be thankful to them. Another slogan acknowledged that we should learn to serve the society like

vultures and should be interested in their conservation.

The motive was to let the students know about the scavengers and their importance.

They also distributed the flyers on vultures prepared in Hindi to the students.

The flyers had

information about the role of vultures in environment, the causes of their decline and steps to conserve them. With the help of A3 size posters, students were introduced to 9 vulture species of India. The students also participated in the plantation that was undertaken to promote the importance of nesting material utilized by the breeding pairs to construct the massive nest. The local press media also helped in dispersing the message and the importance of this day.



The colouring sheets with slogans on vultures

Submitted by: Sonika Kushwaha and Akhilesh Kumar, Indian Biodiversity Conservation Society, Jhansi, Uttar Pradesh. Email: ibcsforall@gmail.com

International Tiger Day celebration at Tata Zoo, Jamshedpur, Jharkhand



Lottery for naming of Tiger cubs

On the occasion of International Tiger Day-2018, Tata Steel Zoological Park organized programmes such as “Poster presentation on save tigers”, Keeper talk, “Touch ‘n’ Learn” and naming of the tiger cubs which was born on 23 August, 2017. Nominations for naming of tiger cubs were invited via email and directly through the drop boxes from 5 February to 1 March. A total of 457 entrees received. Out of all the suggested names received from general public 214 female names for two female cubs were shortlisted. Finally, the names ‘Saloni’ and ‘Sunaina’ were chosen.

Major objective of our Zoo is to make aware more and more people for the need to conserve and preserve country’s wild fauna diversity through organizing awareness programmes as well as aligning with ongoing international campaigns like ‘Save the tiger’. The programme was inaugurated with welcome address by Dr. Seema Rani, Biologist cum Education officer. She explained about the importance of saving tigers. Thereafter two names were selected through lottery by the participating students. Followed by “Keeper talk on Tiger” given by animal Keepers Lalan Kumar and Vijay Mukhi and poster presentation session by Zoo volunteers Rahul Tiwari and Harshita Champia and “Touch and Learn” by Pratap Singh Gill at NEC were delivered. A total of 65 school children and visitors participated.



Keeper talk on Pheasants

Friendship day celebration

It was observed in association with Little Flower School, Telco and local NGO Anwasha. A total of 120 school children participated. On 5 Aug, the programme began with the exploratory speech delivered by Zoo Biologist cum education officer Dr. Seema Rani, urging the children to make a pledge to conserve and protect nature and sustains their friendship with the nature. Thereafter, the children from Little Flower School, Telco along with their teacher Pragya Nagar tied friendship bands and ribbons to trees and on animal enclosures to signify their friendship with flora and fauna. The programme “touch and learn” was conducted at NEC and “Keeper Talk on Pheasant” were delivered by Dilip Day, Animal Keeper. On 4 August the day was kicked off by plantation programme led by Director of Tata Steel Zoological Park, Bipul Chakrabarty along with the children and members of local NGO Anwasha. A total of 30 saplings were planted.

Submitted by: Seema Rani, Biologist cum Education Officer. Email: cmarani00@rediffmail.com

Snake identification and rescue workshop at Lucknow University, UP

The Institute for Wildlife Sciences, University of Lucknow in Collaboration with Biodiversity and Wildlife Conservation Lab, Department of Zoology and Institute for Wildlife Sciences, ONGC, Centre for Advanced Studies, University of Lucknow in collaboration with Uttar Pradesh State Biodiversity Board, Centre for Biodiversity and Wildlife Research and Conservation, Lucknow, Turtle Survival Alliance, Butterfly Research Centre, Bhimtal, UK., CEE organized one-day workshop on Snake Identification and Rescue on 7 September 2018.

The main objective of the workshop was to create awareness among people, students

as well as teachers regarding snakes, their identification and rescue. In rainy season chances of snake encounter is maximum. Establishing a network of responsible snake friends in each region will help us to rescue them when encountered. About 60 participants from different parts of country like Uttar Pradesh, Madhya Pradesh, Uttarakhand, West Bengal, Bihar, Gujarat and Rajasthan participated in the workshop.

Prof K.K Sharma, renowned herpetologist and former Vice Chancellor, MDS University gave the key note address. He briefed about snake identification and rescue. He also demonstrated how to use the snake rescue kit in the field and other modern techniques



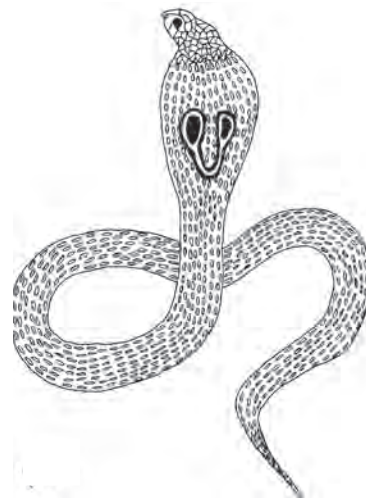
Snake experts demonstrating the participants that how to use the rescue instruments

about snake rescue. He explained about the pressure immobilisation method as it is the most accepted method used after the snake bite.

Prof. Amita Kanaujia delivered a lecture on “Snakes are friend or foe”. She explained that snakes are friends and helps in controlling the rodent population. So, we should deal them as a friend not a foe.

Mr. Vivekananda Kumar (Project biologist), Wildlife Institute of India, Dehradun delivered a series of lectures on snake identification, conservation and rescue. He instructed the participants how to rescue snake in the field and he also trained that use of various snake rescue instruments and techniques in field. He also covered the methods of venom extraction, anti-venom manufacturing, and crimes related to snake and snake venom trade.

Unavailability of expertise within the department on-field implementation is challenging in reality. Many a time, a serious disconnect have been noticed between the community of snake friends and forest staff. Therefore, this workshop will very helpful and play a crucial role in capacity building related to snake rescue and release.



Submitted by: Amita Kanaujia and Adesh Kumar, University of Lucknow, Uttar Pradesh. Email: kanaujia.amita@gmail.com



Participants of Snake identification and rescue workshop



2018 CPSG Annual Meeting

The 2018 CPSG Annual Meeting will be hosted by Zoological Park Organization, Thailand in Bangkok, Thailand from 18-21 October 2018. The meeting is hosted by Zoological Park Organization and will take place at the ANANTARA Riverside Bangkok Hotel.

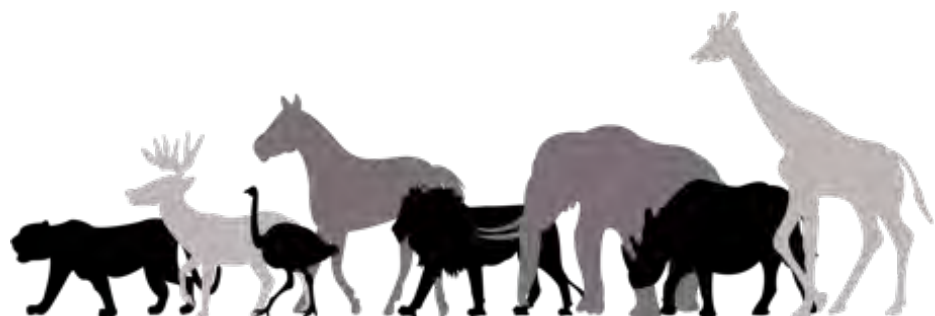
This year's theme is Towards Zero Extinction in Southeast Asia and we are thrilled to have Erik Meijaard, Director of Borneo Futures, as our keynote speaker presenting a talk on 'Opportunities for Southeast Asian Conservation in the Anthropocene'.

Working groups and presentations will include:

- Enhancing the impact of the Asian Species Action Partnership (ASAP!)
- Ex situ conservation of ASAP species
- Threat-based Approaches to Multi-Species Planning: Illegal wildlife trade, wildlife health
- Assessing conservation needs: Using the Red List to its best advantage
- Planning for Implementation: Setting people up for successful species conservation plan implementation
- Asian Song Bird Crisis
- Strengthening Application of the One Plan Approach in Southeast Asia through CPSG Southeast Asia and ASAP Partnerships

More information about registration can be found here www.cpsg2018.org. We look forward to seeing you in Bangkok!

ANNUAL MEETING 2018
18-21 OCTOBER
BANGKOK, THAILAND



KEY DATES

Deadline of early bird rate
15 September 2018

Deadline for pre registration
5 October 2018

ZOO'S PRINT

Communicating science for conservation

ZOO'S PRINT Publication Guidelines

We welcome articles from the conservation community of all SAARC countries, including Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka and other tropical countries if relevant to SAARC countries' problems and potential.

Type — Articles of semi-scientific or technical nature. News, notes, announcements of interest to conservation community and personal opinion pieces.

Feature articles — articles of a conjectural nature — opinions, theoretical, subjective.

Case reports: case studies or notes, short factual reports and descriptions.

News and announcements — short items of news or announcements of interest to zoo and wildlife community

Cartoons, puzzles, crossword and stories

Subject matter: Captive breeding, (wild) animal husbandry and management, wildlife management, field notes, conservation biology, population dynamics, population genetics, conservation education and interpretation, wild animal welfare, conservation of flora, natural history and history of zoos. Articles on rare breeds of domestic animals are also considered.

Source: Zoos, breeding facilities, holding facilities, rescue centres, research institutes, wildlife departments, wildlife protected areas, bioparks, conservation centres, botanic gardens, museums, universities, etc. Individuals interested in conservation with information and opinions to share can submit articles ZOOS' PRINT magazine.

Manuscript requirements

Articles should be typed into a Word format and emailed to zooreach@zooreach.org. Avoid indents, all caps or any other fancy typesetting. You may send photos, illustrations, tables.

Articles which should contain citations should follow this guideline: a bibliography organized alphabetically and containing all details referred in the following style: surname, initial(s), year, title of the article, name of journal, volume, number, pages.

Editorial details

Articles will be edited without consultation unless previously requested by the authors in writing. Authors should inform editors if the article has been published or submitted elsewhere for publication.

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ZOO'S PRINT magazine is informal and newsy as opposed to a scientific publication. ZOO'S PRINT magazine sometimes includes semi-scientific and technical articles which are reviewed only for factual errors, not peer-reviewed.

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