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43/2 Varadarajulu Nagar, 5th Street West, Ganapathy, Coimbatore, Tamil Nadu 641035, India
Ph: +91 9385339863 | www.threatenedtaxa.org
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continued on the back inside cover

Cover: Mugger Crocodile basking on the banks of Savitri River at Mahad in Maharashtra, India. © Utkarsha M. Chavan.



Lyngdoh 2021). Despite its rarity in northeastern India (Choudhury 1999) and the infrequency with which it is generally detected range-wide, the spotted linsang is listed as 'Least Concern' on the IUCN Red List of Threatened Species (Duckworth et al. 2016). However, it is considered a CITES Appendix I species and a Schedule I species by the Indian Wildlife (Protection) Act (1972).

Recently, there have been no direct efforts to research Spotted Linsangs in northeastern India, as only some opportunistic records exist. This report is part of a larger study to assess the diversity of and threats to small carnivores, with particular reference to felids and their relatives, in eastern Mizoram, a biodiversity hotspot of the Indo-Burma region.

MATERIALS AND METHODS

Our study site occurred in the part of Murlen National Park (MNP) (23.53–23.7°N & 92.21–92.45°E), which is located in the Champhai district of Mizoram and is part of the Indo-Burman Biodiversity Hotspot (Myers et al. 2000). This protected area covers 100 km² and the recorded peak elevation is 1,929 m within the park. (highest point is recorded inside the park by gps) (Amit Kumar Bal's pers. obs.). The predominant forest types occurring in the park are tropical and subtropical mixed evergreen forests, which are distributed across undulating hills and mountainous terrain (Sharma et al. 2017). Several ongoing human activities such as logging, encroachment of livestock inside the park, widespread Jhum cultivation, and illegal hunting using firearms, snares, and other projectiles has severely threatened the wildlife diversity of MNP. (Amit Kumar Bal's pers. obs. between November 2019 – May 2022).

Our sampling occurred as part of an exploratory survey between November 2019 and May 2022. We initially overlaid a grid cell network of 1 × 1 km² over the area of MNP and deployed ten Cuddeback (WI, USA) C1 type digital camera-traps (20.0 megapixel) enabled with a white flash. Camera-traps were enabled to take three photos in rapid succession every time the motion sensor was triggered. Each camera-trap was installed for 40 days with a trap night of 400 days. Camera trap stations were spaced 1 km apart from nearby traps (average trap distance = 910 m). Camera-trap sensitivity was set low (minimum value), and units were placed between 1.8–4.5 m away from an animal trail, depending on the angle of intersection, so that each camera had sufficient time to detect an animal (i.e., specifically small carnivores), and take full-frame pictures. Individuals of certain carnivores, including spotted linsangs, were identified from their unique pelage markings/patterns in

photographs.

Records

We obtained six images of spotted linsangs from six camera-trap stations over 400 trap nights in and around MNP (Image 1). The first individual was captured on 20 February 2020 (23.6586°N, 93.3004°E) at an elevation of 1,563 m, and the last was photographed on 26 March 2022 (23.6354°N, 93.2907°E) at an elevation of 1,800 m. We used right flanks only to identify a minimum of four different individuals (Image 2) in these six photographs; the other photos of left flanks may or may not have represented additional individuals. These are the first ever confirmed photographic records of this species from Mizoram, validating a previously suspected range extension further south into northeastern India and the Myanmar border (Figure 1). The characteristics of all records are mentioned in the table below (Table 1).

On 28 January 2022, we also discovered the carcass of a Spotted Linsang (Image 3) in the house of a local hunter in the village Murlen. After some discussion with locals to determine the reason for this individual's death, we identified that it was shot and killed by a handheld catapult or slingshot (Image 4), a local weapon that is often used by children in the area to kill birds for food and to sell locally. The hunter initially thought the species was a leopard cat when he first saw it. Despite being a lifelong resident of the region, he told us he had never seen this species before, noting that the bones, claws, and teeth of leopard cats were somewhat valuable for sale locally. He also told us that, as far as he knew, other local hunters had never encountered spotted linsangs before, and thus they don't consume its meat. The specimen was a female, and it measured at 69 cm from snout to tail, of which the tail was 35 cm in length (Image 3).

CONSERVATION IMPLICATIONS

Possibly due to their arboreal, nocturnal nature and ambush predatory tactics (Van Rompaey 1995; Lyngdoh et al. 2011), there are only a handful of camera-trap records of spotted linsangs across their range. Despite their 'Least Concern' status, this may be cause for concern, as habitat loss and degradation, hunting and trade all remain important threats to the species (Schreiber et al. 1989; Lau et al. 2010; Bhupathy et al. 2013). Although the risk of linsangs being killed by hunters or poachers may be lower relative to other more terrestrial, diurnal, and gregarious mammals (Duckworth et al. 2016), the observation we report here still suggests they are vulnerable to local opportunistic hunters (Amit

Distribution map

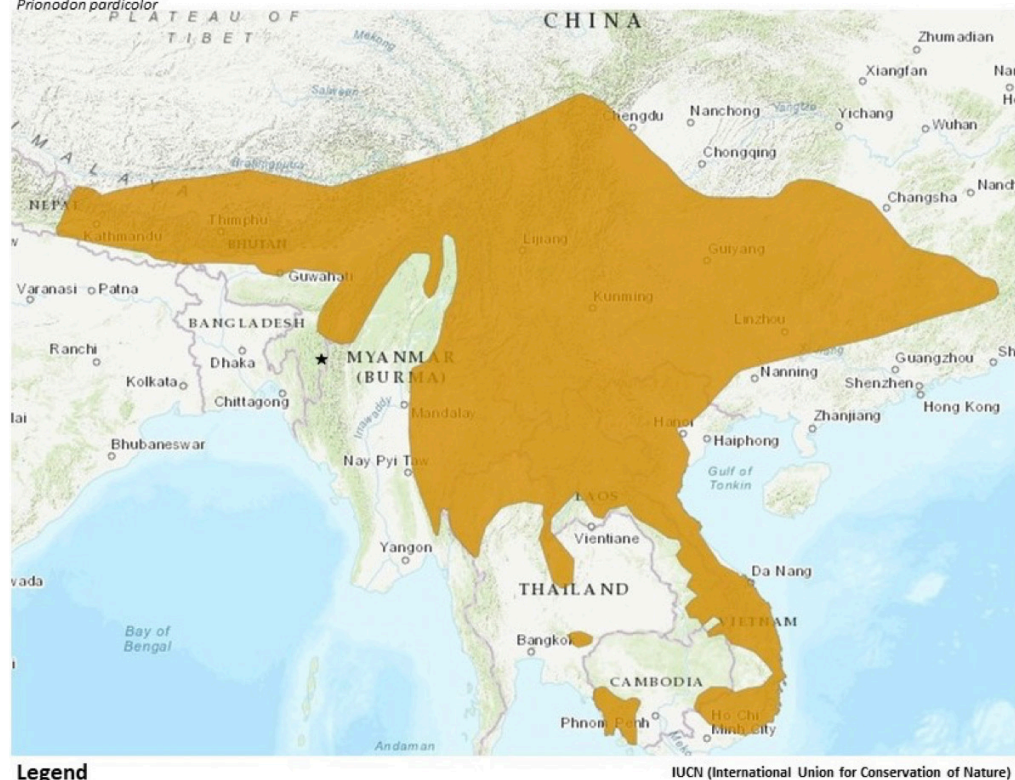
Prionodon pardicolor

Figure 1. Range extension of spotted linsang further south into northeastern India added on IUCN global distribution map of Spotted Linsang.

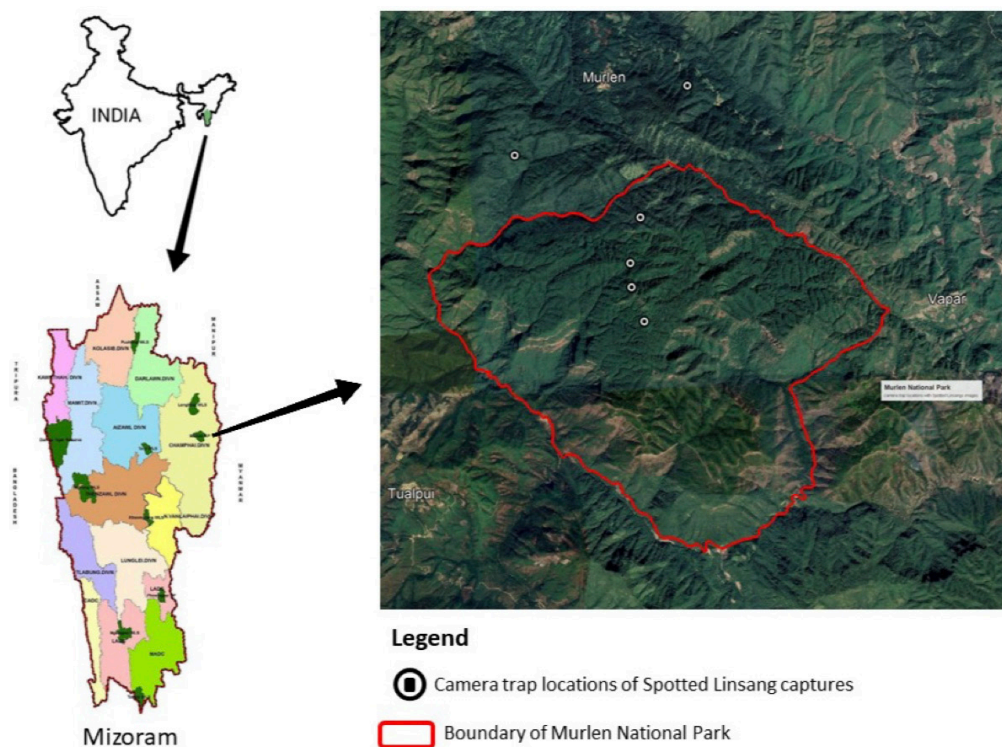


Image 1. Murlen National Park showing camera trap locations of Spotted linsang captures.



Image 2. Four individuals of Spotted Linsang photographed in Murlen national Park, Mizoram.

Table 1. The characteristics of all Spotted Linsang records.

Record No	Individual No (by right flank)	Habitat type	Elevation (in meters)	Time of day	Date
1	01	Bamboo mixed evergreen forest	1563	19:11:00	20.ii.2020
2	02	Bamboo mixed evergreen forest	1745	19:16:00	22.ii.2020
3	(Left Flank)	Bamboo mixed evergreen forest	1458	19:50:00	05.iii.2020
4	(Left Flank)	Bamboo mixed evergreen forest	1763	18:38:00	02.i.2021
5	03	Bamboo mixed evergreen forest	1748	02:28:00	12.v.2021
6	04	Bamboo mixed evergreen forest	1800	03:58:00	26.iii.2022

Kumar Bal's pers. obs. November 2019 to May 2022). In the Lower Subansiri district of western Arunachal Pradesh, indiscriminate noose-traps (i.e., snares) kill spotted linsangs (Lyngdoh et al. 2011), and Datta et al. (2008) suggested they are also killed for ornamental purposes (i.e., their skins & pelts for display) and in retribution for killing poultry. These threats suggest that diverse threats from opportunistic hunting still persist in some parts of the linsang range. To better understand the ecology and potential threats of this little-known

species, we urge additional range-wide surveys and local studies specifically targeting linsangs and their behaviour highlighting its proper global conservation context.

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Image 3. Carcass of Spotted Linsang and during the measurement of the specimen. © Amit Kumar Bal.



Image 4. Catapult slingshot which is used to kill the Spotted Linsang. © Amit Kumar Bal.

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Tamil Nadu 641035, India
ravi@threatenedtaxa.org

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Communications

New records of pteridophytes in Mount Matutum Protected Landscape, South Central Mindanao, Philippines with notes on its economic value and conservation status

– Christine Dawn Galope-Obemio, Inocencio E. Buot Jr. & Maria Celeste Banaticla-Hilario, Pp. 22039–22057

Some threatened woody plant species recorded from forests over limestone of the Philippines

– Inocencio E. Buot Jr., Marne G. Origenes, Ren Divien R. Obeña, Elaine Loreen C. Villanueva & Marjorie D. delos Angeles, Pp. 22058–22079

Status of mangrove forest in Timaco Mangrove Swamp, Cotabato City, Philippines

– Cherie Cano-Mangaoang, Zandra Caderon Amino & Baingan Brahmin Mastur, Pp. 22080–22085

A comparative analysis of the past and present occurrences of some species of *Paphiopedilum* (Orchidaceae) in northeastern India using MaxEnt and GeoCAT

– Debonina Dutta & Aparajita De, Pp. 22086–22097

Foraging activity and breeding system of *Avicennia officinalis* L. (Avicenniaceae) in Kerala, India

– K. Vinaya & C.F. Binoy, Pp. 22098–22104

Diversity patterns and seasonality of hawkmoths (Lepidoptera: Sphingidae) from northern Western Ghats of Maharashtra, India

– Aditi Sunil Shere-Kharwar, Sujata M. Magdum, G.D. Khedkar & Supriya Singh Gupta, Pp. 22105–22117

Population trends of Mugger Crocodile and human-crocodile interactions along the Savitri River at Mahad, Maharashtra, India

– Utkarsha Manish Chavan & Manoj Ramakant Borkar, Pp. 22118–22132

Paresis as a limiting factor in the reproductive efficiency of a nesting colony of *Lepidochelys olivacea* (Eschscholtz, 1829) in La Escobilla beach, Oaxaca, Mexico

– Alejandra Buenrostro-Silva, Jesús García-Grajales, Petra Sánchez-Nava & María de Lourdes Ruiz-Gómez, Pp. 22133–22138

Notes on the nesting and foraging behaviours of the Common Coot *Fulica atra* in the wetlands of Viluppuram District, Tamil Nadu, India

– M. Pandian, Pp. 22139–22147

Population abundance and threats to Black-headed Ibis *Threskiornis melanocephalus* and Red-naped Ibis *Pseudibis papillosa* at study sites in Jhajjar district, Haryana, India

– Anjali & Sarita Rana, Pp. 22148–22155

Crop raiding and livestock predation by wildlife in Khaptad National Park, Nepal

– Ashish Bashyal, Shyam Sharma, Narayan Koirala, Nischal Shrestha, Nischit Aryal, Bhupendra Prasad Yadav & Sandeep Shrestha, Pp. 22156–22163

Review

An annotated checklist of odonates of Amboli-Chaukul-Parpoli region showing new records for the Maharashtra State, India with updated state checklist

– Dattaprasad Sawant, Hemant Ogale & Rakesh Mahadev Deulkar, Pp. 22164–22178

Short Communications

The new addition of Blue Pimpernel of Primulaceae to the state flora of Assam, India

– Sushmita Kalita, Barnali Das & Namita Nath, Pp. 22179–22183

A new species of genus *Neocerura* Matsumura, 1929 (Notodontidae: Lepidoptera) from India

– Amritpal Singh Kaleka & Rishi Kumar, Pp. 22184–22189

Rediscovery of an interesting preying mantis *Deiphobella laticeps* (Mantodea: Rivetiniidae) from Maharashtra, India

– Gauri Sathaye, Sachin Ranade & Hemant V. Ghate, Pp. 22190–22194

Camera trapping records confirm the presence of the elusive Spotted Linsang *Prionodon pardicolor* (Mammalia: Carnivora: Prionodontidae) in Murlen National Park (Mizoram, India)

– Amit Kumar Bal & Anthony J. Giordano, Pp. 22195–22200

Notes

First sighting record of the Orange-breasted Green-Pigeon *Treron bicinctus* (Aves: Columbiformes: Columbidae) from Chittaranjan, West Bengal, India

– Shahbaz Ahmed Khan, Nazneen Zehra & Jamal Ahmad Khan, Pp. 22201–22202

Book Reviews

Decoding a group of winged migrants!

– Review by Priyanka Iyer, Pp. 22203–22204

First steps of citizen science programs in India

– Review by Aishwarya S. Kumar & Lakshmi Nair, Pp. 22205–22206

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