

OPEN ACCESS



The Journal of Threatened Taxa is dedicated to building evidence for conservation globally by publishing peer-reviewed articles online every month at a reasonably rapid rate at www.threatenedtaxa.org. All articles published in JoTT are registered under [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/) unless otherwise mentioned. JoTT allows unrestricted use of articles in any medium, reproduction, and distribution by providing adequate credit to the authors and the source of publication.

Journal of Threatened Taxa

Building evidence for conservation globally

www.threatenedtaxa.org

ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

SHORT COMMUNICATIONS

SMALL CARNIVORES OF SILENT VALLEY NATIONAL PARK, KERALA, INDIA

Devika Sanghamithra & P.O. Nameer

26 July 2018 | Vol. 10 | No. 8 | Pages: 12091–12097

10.11609/jott.2992.10.8.12091-12097



For Focus, Scope, Aims, Policies and Guidelines visit <http://threatenedtaxa.org/index.php/JoTT/about/editorialPolicies#custom-0>

For Article Submission Guidelines visit <http://threatenedtaxa.org/index.php/JoTT/about/submissions#onlineSubmissions>

For Policies against Scientific Misconduct visit <http://threatenedtaxa.org/index.php/JoTT/about/editorialPolicies#custom-2>

For reprints contact info@threatenedtaxa.org



SMALL CARNIVORES OF SILENT VALLEY NATIONAL PARK, KERALA, INDIA

Devika Sanghamithra¹ & P.O. Nameer²

^{1,2} Centre for Wildlife Studies, College of Forestry, Kerala Agricultural University, Thrissur, Kerala 680656, India

¹ devikasanghamithra@gmail.com, ² nameer.po@kau.in (corresponding author)



ISSN 0974-7907 (Online)
ISSN 0974-7893 (Print)

OPEN ACCESS



Abstract: A study on the small carnivores in Silent Valley National Park (SVNP), southern Western Ghats, Kerala, India was conducted from September 2015 to April 2016, using the camera trap technique. Seven species of small carnivores were recorded during the study. The most common species of small carnivore of SVNP was *Viverricula indica* (44%) followed by *Paradoxurus jerdoni* (20%) and *Herpestes vitticollis* (17%). The other small carnivores found at SVNP were *Herpestes fuscus* (7%), *Prionailurus bengalensis* (6%), *Aonyx cinereus* (5%) and *Martes gwatkinsii* (1%). *P. jerdoni* and *M. gwatkinsii* are endemic to the Western Ghats. We discuss the niche partitioning among small carnivores in SVNP.

Keywords: Camera traps, civets, martens, mongoose, otters, small cats, Western Ghats.

The need to undertake biodiversity studies is accelerated by the rapid destruction of forests, particularly in the tropics including the Western Ghats. The number of small carnivore species reported from different protected areas of Kerala vary, e.g., 11 species from Parambikulam Tiger Reserve (Sreehari & Nameer 2016), nine species from Eravikulam National Park (Nikhil & Nameer 2017), and Wayanad Wildlife

Sanctuary (Sreekumar & Nameer 2018). The first record of *Martes gwatkinsii* from Parambikulam Tiger Reserve was reported by Sreehari & Nameer (2013), and the social behavior, feeding habits and activity pattern of *Martes gwatkinsii* were reported from Pampadum Shola National Park (PSNP) (Anil et al. 2018). Sreehari et al. (2013) reported the presence of *Herpestes smithii* in Parambikulam Tiger Reserve and Chinnar Wildlife Sanctuary, and *Herpestes fuscus* in Parambikulam Tiger Reserve and Eravikulam National Park. The lack of details on small carnivores from the Silent Valley National Park (SVNP), except on the sighting records of *M. gwatkinsii* (Christopher & Jayson 1996) and habitat characterization of *M. gwatkinsii* (Balakrishnan 2005), prompted the present study. We report the status and distribution of small carnivores in SVNP.

MATERIALS AND METHODS

Study Area

Silent Valley National Park is part of the Nilgiri Biosphere Reserve and has an extent of 237.52km². The

DOI: <http://doi.org/10.11609/jott.2992.10.8.12091-12097> | **ZooBank:** urn:lsid:zoobank.org:pub:A49C8986-C249-47B5-9C2C-C4A23B414032

Editor: H.N. Kumara, SACON, Coimbatore, India.

Date of publication: 26 July 2018 (online & print)

Manuscript details: Ms # 2992 | Received 16 March 2018 | Final received 16 May 2018 | Finally accepted 25 June 2018

Citation: Sanghamithra, D. & P.O. Nameer (2018). Small carnivores of Silent Valley National Park, Kerala, India. *Journal of Threatened Taxa* 10(8): 12091–12097; <http://doi.org/10.11609/jott.2992.10.8.12091-12097>

Copyright: © Sanghamithra & Nameer 2018. Creative Commons Attribution 4.0 International License. JoTT allows unrestricted use of this article in any medium, reproduction and distribution by providing adequate credit to the authors and the source of publication.

Funding: Kerala Agricultural University.

Competing interests: The authors declare no competing interests.

Acknowledgements: We thank Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Kerala Forest Department for granting the permission to study the small carnivores of Silent Valley National Park (WL10-49846/2014 dated 15-05-2015). We thank Wildlife Warden of Silent Valley National Park, the Asst. Wildlife Wardens and other staff of the Silent Valley Division for helping with the logistics and other support in the field. Dr. Neelesh Dahanukar helped us with the analysis of the data. Devipriya, K. S., Aswathy Chandran, U. B., Aby Crusha, Vishnu, M., Niyas, P., Akhil Das, Jobin Joseph, and Sachin K Aravind accompanied us in the field on various occasions. Our thanks are due to the Dean, College of Forestry, Kerala Agricultural University for encouragement. The Kerala Agricultural University provided the financial assistance for the study. We are grateful to the anonymous reviewers and the Subject Editor for their critical comments.



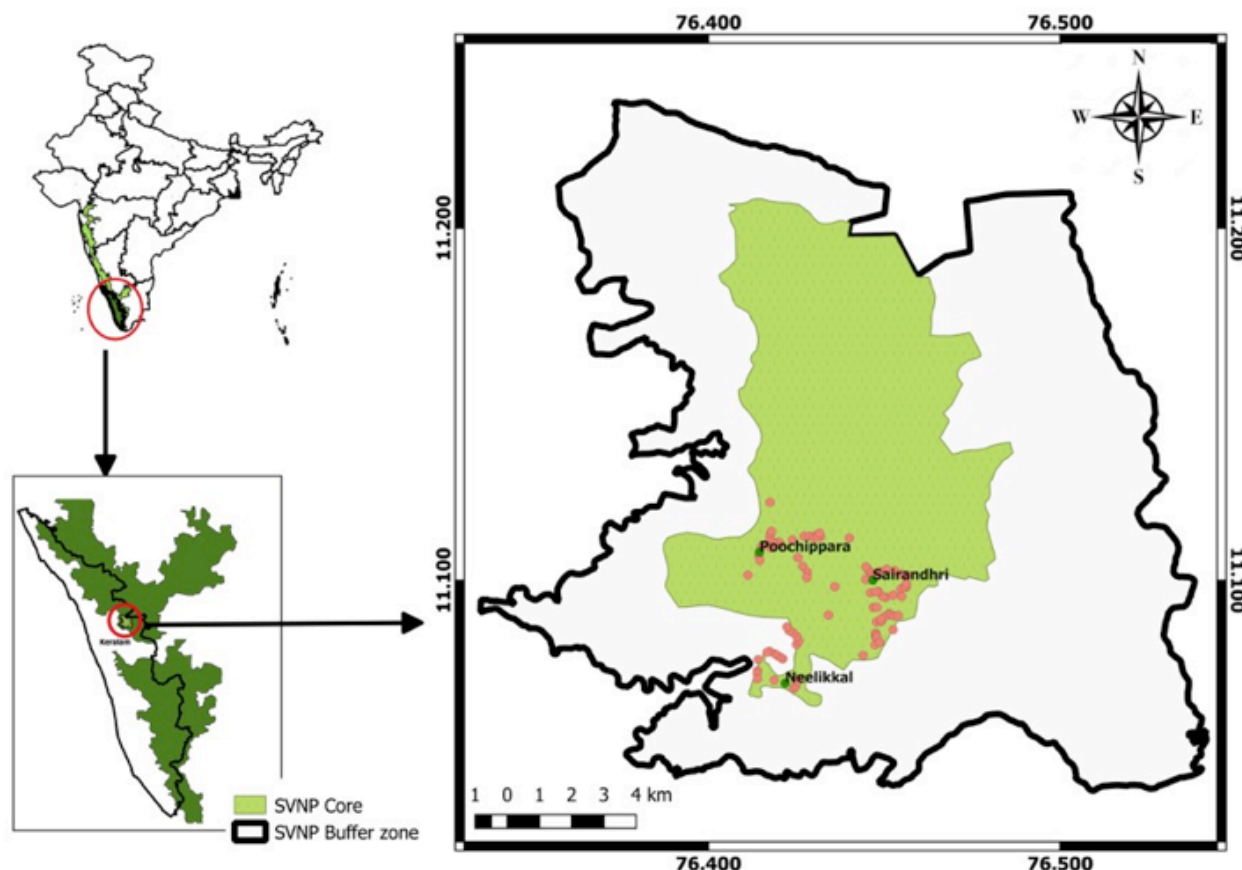


Figure 1. Camera trap locations at Silent Valley National Park

original extent of the Silent Valley National Park was 89.52sq.km. Subsequently in 2007 an area of 148sq.km. was added to the National Park as buffer zone. The SVNP is located within $76.25\text{--}76.58^\circ\text{E}$ & $11\text{--}11.25^\circ\text{N}$. The elevation ranges from 900–2,300 m with Anginda being the highest peak (2,383m) (Fig. 1) (Anonymous 2012). The study was conducted in the core area of SVNP from September 2015 to April 2016.

Camera Trap Survey

Digital scout cameras having passive infra red sensors for heat and motion detection (Cuddeback Attack model C1) were used for the current study. Camera trap stations were placed in the west coast tropical evergreen forest (1A/C4) and southern montane wet grasslands (11A/C1/DS2). Overall a 100 trapping stations (Fig. 1) were identified based on the presence of the indirect evidence of the small carnivores (Mudappa 1998). The camera traps were set at a height of 30cm above the ground and at least 250m apart from each other (Sreehari & Nameer 2016; Nikhil & Nameer 2017; Sreekumar & Nameer 2018). The cameras were set up

in default mode with the time-delay between pictures as fast as possible in daytime and the time-delay of five seconds between pictures during night time. The camera trap locations were marked using Garmin GPS eTrex 30. The cameras were kept open for 24 hours a day. The date and time of exposure were automatically recorded by the camera on the images, as and when the images were taken. At each trapping stations, each camera was opened for 15 days. Thus, a total of 1,500 camera-trap days, monitoring 36,000 hours were carried out in the Silent Valley National Park. The data analysis was done using the statistical packages such as the XL STAT (Version 2016.03.30846), and PAST (Hammer et al. 2001).

Microhabitat parameters were documented at each of the camera trapping sites. Microhabitat parameters that are crucial for the survival of the small carnivores, such as, canopy height (clinometer), canopy cover (visual estimation), height of shrubs (stems <10cm girth at breast height) and ground vegetation (herbaceous plants <50cm in height, measured with tape), litter depth (average of four measurements taken around the

trap using a calibrated probe), and basal area of trees >30cm girth, densities of shrubs (within 2m radius), trees, climbers, buttresses and canes, and distance to the nearest large tree (measured with a tape to a tree >60cm girth), frequency of natural hollow in the trees etc., were taken in the camera trapping sites. At each camera trap site, a circular plot having a dimension of 5m radius was taken and 100 such plots were enumerated for the microhabitat parameters listed above. Thus, a total of 7,850m² area was sampled. The relationship between these microhabitat variables on the distribution of small carnivores in the study area was analysed using discriminant analysis.

RESULTS AND DISCUSSION

We recorded seven species of small carnivores in SVNP representing four families such as Viverridae, Herpestidae, Mustelidae and Felidae. This comprises two herpestid, mustelid, and viverrid species each, and one felid species (Fig. 2; Table 1).

Of the total 607 photographs of all the mammals (20 species) obtained, 165 images (seven species) were of small carnivores. The most common species recorded was *Viverricula indica* (72, 44%) followed by *Paradoxurus jerdoni* (33, 20%) (Table 1). The camera trap success rate of small carnivore was 10.90%.

Family Viverridae

Out of the three species of viverrids (Nameer 2015) of Kerala, *V. indica* (Image 1) and *P. jerdoni* (Image 2) are found in SVNP. *V. indica* was the most common species of small carnivores, photo-captured 72 times (Fig. 3), between an altitudinal range of 900–1,200 m, and from the rainforests as well as from the grasslands. In the previous studies done in the Kerala part of the Western Ghats in Parambikulam Tiger Reserve (Sreehari & Nameer 2016) and in Wayanad WS (Sreekumar & Nameer 2018), *V. indica* was the most abundant species

Table 1. Small carnivores recorded from Silent Valley National Park

Family	Species	Number of captures	Relative abundance (%)
Viverridae	<i>Viverricula indica</i> Small Indian Civet	72	43.64
	<i>Paradoxurus jerdoni</i> Brown Palm Civet	33	20.00
Herpestidae	<i>Herpestes fuscus</i> Brown Mongoose	11	6.67
	<i>Herpestes vitticollis</i> Stripe-necked Mongoose	29	17.58
Mustelidae	<i>Aonyx cinereus</i> Asian Small-clawed Otter	8	4.88
	<i>Martes gwatkinsii</i> Nilgiri Marten	2	1.21
Felidae	<i>Prionailurus bengalensis</i> Leopard Cat	10	6.06

of small carnivore. Mudappa (2002), however, had reported that the *V. indica* is the most common small carnivore in the drier forests of the southern Western Ghats and rare in the tropical wet evergreen forests.

Paradoxurus jerdoni (Image 2) is an endemic small carnivore restricted to the rainforests of the Western Ghats (Rajamani et al. 2002). *P. jerdoni* was the most common small carnivore in Kalakkad-Mundanthurai Tiger reserve followed by *V. indica* (Kumar et al. 2002). A total of 33 captures of *P. jerdoni* were obtained during the study period from SVNP, and there was a single direct sighting in the night (06 October 2015) from Sairandri (Fig. 3). All the captures of the *P. jerdoni* were from the tropical evergreen forest and between the altitudes of 900–1,200 m.

Family Herpestidae

Four species of mongoose are known from the Western Ghats (Mudappa 2013) of which two species, *Herpestes vitticollis* and *H. fuscus* are seen at SVNP. The *H. vitticollis* (Image 3) is a wide-spread species of small carnivore that occurs in well-wooded habitats of



Image 1. Small Indian Civet *Viverricula indica*



Image 2. Brown Palm Civet *Paradoxurus jerdoni*

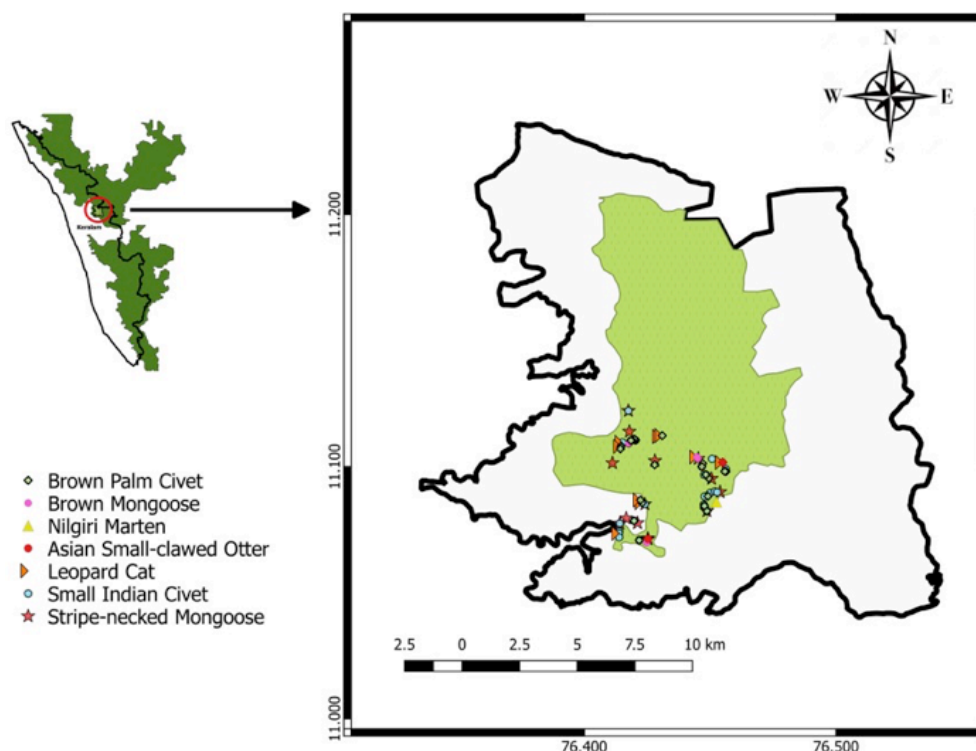


Figure 2. Camera trapped locations of the seven species of small carnivores in SVNP

the Western Ghats (Ramachandran 1985; Madhusudan 1995; Mudappa 2013; Rompaey & Jayakumar 2003; Pillay 2009; Kumara et al. 2014; Sreehari & Nameer 2016; Nikhil & Nameer 2017; Sreekumar & Nameer 2018), and the northernmost distribution range is Kolhapur and Sindhudurg districts of Maharashtra (Punjabi et al. 2014). During the present study, 27 captures were obtained, and there were also two independent sightings of the species from Sairandri (07 October 2015) and another from Panthanthode (24 February 2016) (Fig. 4).

H. fuscus (Image 4) is found in the forests of the southern Indian hill ranges at 900–1,850 m (Mudappa 1998) and is also seen in Sri Lanka (Phillips 1984). The previous records of this species from the Western Ghats are from Parambikulam Tiger Reserve (Sreehari et al. 2013; Sreehari & Nameer 2016), and Eravikulam National Park (Sreehari et al. 2013; Nikhil & Nameer 2017). During the present study, 10 captures were obtained between an altitude range of 900 and 1,200 m (Fig. 4). In southern India, *H. fuscus* is found from an altitude range of 492 and 2,032 m and is reported from different hill ranges of the Western Ghats such as Coorg, Nilgiri Hills, Palni Hills, Anamalai Hills, High Wavy Mountains and Agasthyamalai Hills (Sreehari et al. 2013; Mudappa & Jathanna 2015).

Family Mustelidae

Martes gwatkinsii (Image 5) is endemic to the Western Ghats and is currently listed in the IUCN Red List as *Vulnerable* (Choudhury et al. 2012). During the present study, two captures were obtained in the camera trap near a fig tree (*Ficus* sp.) in the evergreen forest (Fig. 5). *M. gwatkinsii* is also reported from various parts of the Western Ghats including Kalakkad-Mundanthurai Tiger reserve (Kumar et al. 2002), and Karnataka State (Kumara & Singh 2007; Krishna & Karnad 2010).

Of the two species of the otters seen in the Western Ghats, only the *Aonyx cinereus* could be found in SVNP that was captured five times during the current study (Fig. 5, Image 6), and all the captures were above 1,000m. The only previous records of the *Aonyx cinereus* from the Western Ghats were from Eravikulam National Park (Perinchery et al. 2011; Nikhil & Nameer 2017), Anamalai Tiger Reserve (Prakash et al. 2012) and Wayanad WS (Sreekumar & Nameer 2018). There is, however, a record of this species from the northern Western Ghats in Maharashtra (Punjabi et al. 2014).

Family Felidae

Prionailurus bengalensis (Image 7) is the only small cat recorded during the present study and 10 camera trap images were obtained from the SVNP between an altitude range of 900 and 1,200 m in evergreen forest

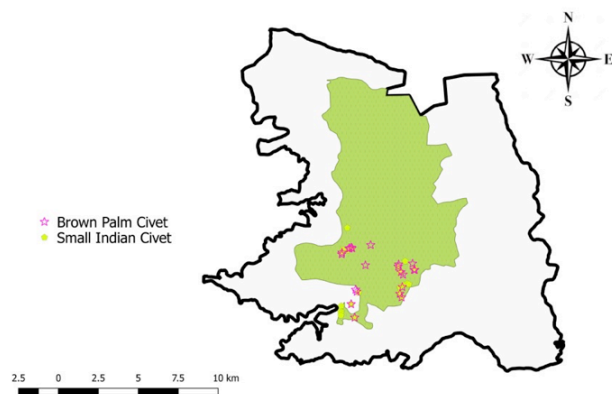


Figure 3. Camera trapped locations of Small Indian Civet and Brown Palm Civet in SVNP

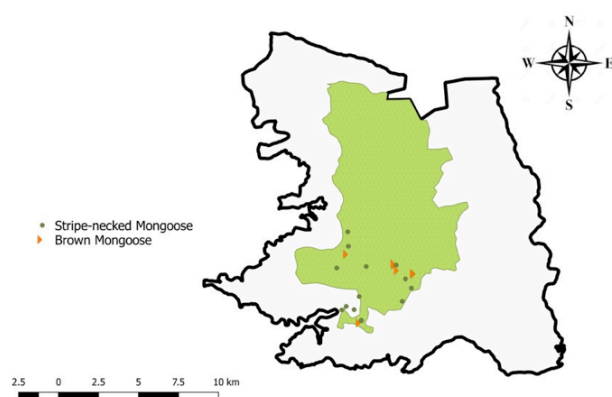


Figure 4. Camera trapped locations of Stripe-necked Mongoose and Brown Mongoose in SVNP

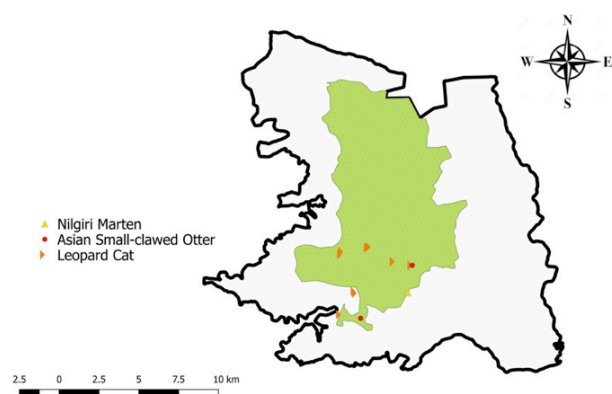


Figure 5. Camera trapped locations of Leopard Cat and Mustelids in SVNP

(Fig. 5). The other records of this species from the Western Ghats are from Peppara Wildlife Sanctuary (Jayson & Christopher 1996), Kalakkad-Mundanthurai Tiger Reserve (Mudappa 2002), Bilgiri Rangaswamy Tiger Reserve (Kumara et al. 2014), Parambikulam Tiger



Image 3. A pair of Stripe-necked Mongoose *Herpestes vitticollis*



Image 4. A pair of Brown Mongoose *Herpestes fuscus*



Image 5. Nilgiri Marten *Martes gwatkinsii*

Reserve (Sreehari & Nameer 2016), Eravikulam National Park (Nikhil & Nameer 2017), and Wayanad Wildlife Sanctuary (Sreekumar & Nameer 2018).

The microhabitat preference of the selected small carnivores in Silent Valley NP

The differential preferences for microhabitat variables in the study area by small carnivores were examined using discriminant analysis (Table 2). This helps to understand whether there is any niche partitioning between and among the species concerning the habitat

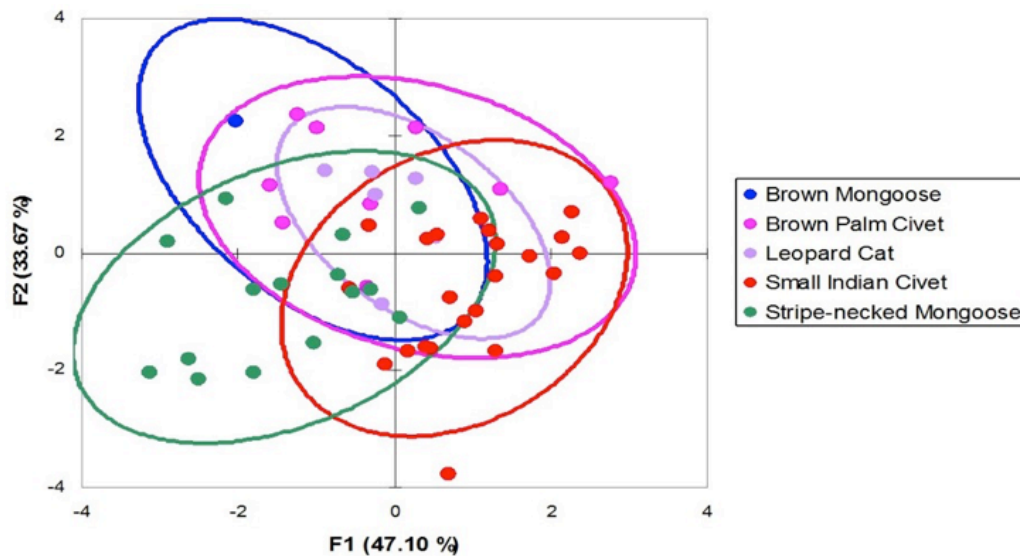
Image 6. Asian Small-clawed Otter *Anonyx cinereus*Image 7. Leopard Cat *Prionailurus bengalensis*

Figure 6. Niche partitioning of small carnivores in Silent Valley National Park

Table 2. Summary statistics on the microhabitat variables recorded at the camera trap stations at Silent Valley National Park

Parameters	Mean (n=100)	SD
Canopy Height (m)	21.2	8.50
Canopy cover (%)	61.52	27.45
Litter depth (cm)	1.75	1.26
Shrub density	35.28	35.88
Tree density	7.58	5.06
Climber density	2.46	3.31
Buttress density	0.63	0.98
Canes density	0.29	1.22
distance to largest tree (m)	5.26	6.37
Width of the waterbody	1.42	3.52
GBH (cm)	139.09	99.21
Slope (degrees)	21.4	15.02

variables studied. The pair-wise Fisher's distances (blue cells) and associated P values (red cells) clearly show that there is no significant difference in the clusters, thus indicating that the selected small carnivores show no significant niche partitioning (Table 3, Fig. 6).

CONCLUSION

The Silent Valley National Park which constitutes one of the few pristine rainforests of the Western Ghats is a home for many endemic and threatened species including small carnivore fauna. Even though some of the high-altitude areas of the SVNP could not be surveyed due to logistical reasons, it supports seven species of small carnivores. The disturbed habitats are vulnerable to incursions by more widespread species at the cost of restricted range species. The absence of widespread species of small carnivores in the national park indicates the intact habitats of SVNP.

Table 3. Fisher's distance matrix

	Brown Mongoose	Brown Palm Civet	Leopard Cat	Small Indian Civet	Stripe-necked Mongoose
Brown Mongoose		0.721	0.777	1.457	0.956
Brown Palm Civet	0.787		0.389	0.908	1.616
Leopard Cat	0.728	0.989		0.767	1.116
Small Indian Civet	0.136	0.579	0.739		1.757
Stripe-necked Mongoose	0.525	0.082	0.361	0.051	

REFERENCES

- Anil, G., N. Kishor, G. Naseef, N. Ommer & P.O. Nameer (2018). Observations on the Nilgiri Marten *Martes gwatkinsii* (Mammalia: Carnivora: Mustelidae) from Pampadum Shola National Park, southern Western Ghats, India. *Journal of Threatened Taxa* 10(1): 11226–11230; <http://doi.org/10.11609/jott.3446.10.1.11226-11230>
- Anonymous (2012). Silent Valley National Park Management Plan 2012–2022. Kerala Forest Department, Thiruvananthapuram, 244pp.
- Balakrishnan, P. (2005). Recent sightings and habitat characterization of the endemic Nilgiri Marten *Martes gwatkinsii* in Western Ghats, India. *Small Carnivore Conservation* 33: 14–16.
- Choudhury, A., W.C. Wozencraft, D. Muddapa & P. Yonzon (2012). *Martes gwatkinsii*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.1. www.iucnredlist.org
- Christopher, G. & E.A. Jayson (1996). Sightings of Nilgiri Marten (*Martes gwatkinsii* Horsfield) at Peppara Wildlife Sanctuary and Silent Valley National Park, Kerala, India. *Small Carnivore Conservation* 15: 3–4.
- Hammer, O., D.A.T. Harper & P.D. Ryan (2001). PAST: Paleontological Statistics Software Package for Education and Data Analysis. *Palaeontologia Electronica* 4(1): 9.
- Jayson, E.A. & G. Christopher (1996). Sighting of two cat species (*Felis* sp.) from the Western Ghats, south India. *Journal of the Bombay Natural History Society* 93(3): 582.
- Krishna, Y.C. & D. Karnad (2010). New records of the Nilgiri Marten *Martes gwatkinsii* in Western Ghats, India. *Small Carnivore Conservation* 43: 23–27.
- Kumar, A., R. Chellam, B.C. Choudhury, D. Mudappa, K. Vasudevan, N.M. Ishwar & B. Noon (2002). Impact of rainforest fragmentation on small mammals and herpetofauna in the Western Ghats, south India: A summary of research findings. Final Report 2002. Wildlife Institute of India, Dehra Dun, India
- Kumara, H.N. & M. Singh (2007). Small carnivores of Karnataka: distribution and sight records. *Journal of the Bombay Natural History Society* 104(2): 155–162.
- Kumara, H.N., O. Thorat, K. Santhosh, R. Sasi & H.P. Ashwin (2014). Small carnivores of Biligiri Rangaswamy Temple Tiger Reserve, Karnataka, India. *Journal of Threatened Taxa* 6(12): 6534–6543; <http://doi.org/10.11609/JoTT.03766.6534-43>
- Madhusudan, M.D. (1995). Sighting of the Nilgiri Marten (*Martes gwatkinsii*) at Eravikulam National Park, Kerala, India. *Small Carnivore Conservation* 13: 6–7.
- Mudappa, D. (1998). Use of camera-traps to survey small carnivores in the tropical rainforest of Kalakad-Mundanthurai Tiger Reserve, India. *Small Carnivore Conservation* 18: 9–11.
- Mudappa, D. (2002). Observations of small carnivores in the Kalakad-Mundanthurai Tiger Reserve, Western Ghats, India. *Small Carnivore Conservation* 27: 4–5.
- Mudappa, D. (2013). Herpestids, viverrids and mustelids, pp. 471–498. In: Johnsingh, A. & N. Manjrekar (eds.). *Mammals of South Asia*. University Press, Hyderabad.
- Mudappa, D. & D. Jathanna (2015). *Herpestes fuscus*. The IUCN Red List of Threatened Species 2015: e.T41612A45207051. Downloaded on 28 June 2016. <http://doi.org/10.2305/IUCN.UK.2015-4.RLTS.T41612A45207051.en>
- Nameer, P.O. (2015). A checklist of mammals of Kerala, India. *Journal of Threatened Taxa* 7(13): 7971–7982; <http://doi.org/10.11609/JoTT.2000.7.13.7971-7982>
- Nikhil, S. & P.O. Nameer (2017). Small carnivores of the montane forests of Eravikulam National Park in the Western Ghats, India. *Journal of Threatened Taxa* 9(11): 10880–10885; <http://doi.org/10.11609/jott.2211.9.11.10880-10885>
- Perinchery, A., D. Jathanna & A. Kumar (2011). Factors determining occupancy and habitat use by Asian Small-clawed Otters in the Western Ghats, India. *Journal of Mammalogy* 92(4): 796–802.
- Phillips, W.W.A. (1984). *Manuals of the Mammals of Sri Lanka. Part III. Wildlife and Nature Protection Society of Sri Lanka. II Revised Edition*, 389pp.
- Pillay, R. (2009). Observations of small carnivores in the southern Western Ghats, India. *Small Carnivore Conservation* 40: 36–40.
- Prakash, N., D. Mudappa, R.T.R. Shankar & A. Kumar (2012). Conservation of the Asian Small-clawed Otter (*Aonyx cinereus*) in human-modified landscapes, Western Ghats, India. *Tropical Conservation Science* 5(1): 67–78.
- Punjabi, G.A., A.S. Borker, F. Mhetar, D. Joshi, R. Kulkarni, S.K. Alave & M.K. Rao (2014). Recent records of Stripe-necked Mongoose *Herpestes vitticollis* and Asian Small-clawed Otter *Aonyx cinereus* from the north Western Ghats, India. *Small Carnivore Conservation* 51: 51–55.
- Rajamani, N., D. Mudappa & H.V. Rompaey (2002). Distribution and status of the Brown Palm Civet in the Western Ghats, South India. *Small Carnivore Conservation* 27(2): 6–11.
- Ramachandran, K.K. (1985). A note on the scavenging behavior of Stripe-necked Mongoose on tiger's kill. *Journal of the Bombay Natural History and Society* 82(1): 182–183.
- Rompaey, V.H. & M.N. Jayakumar (2003). The Stripe-necked Mongoose *Herpestes vitticollis*. *Small Carnivore Conservation* 28: 14–17.
- Sreehari, R. & P.O. Nameer (2013). The first records of Nilgiri Marten *Martes gwatkinsii* from Parambikulam Tiger Reserve, Southern western Ghats, India. *Small Carnivore Conservation* 49: 40–42
- Sreehari, R. & P.O. Nameer (2016). Small carnivores of Parambikulam Tiger Reserve, southern Western Ghats, India. *Journal of Threatened Taxa* 8(11): 9306–9315; <http://doi.org/10.11609/jott.2311.8.11.9306-9315>
- Sreehari, R., C.T. Fredy, R. Anand, C.R. Aneesh & P.O. Nameer (2013). Recent Records of Ruddy Mongoose (*Herpestes smithii*) and Brown Mongoose (*Herpestes fuscus*) from Kerala, southern western Ghats, India. *Small Carnivore Conservation* 49: 34–36.
- Sreekumar, E.R. & P.O. Nameer (2018). Small carnivores of Wayanad Wildlife Sanctuary, the southern Western Ghats, India. *Journal of Threatened Taxa* 10(1): 11218–11225; <http://doi.org/10.11609/jott.3651.10.1.11218-11225>



OPEN ACCESS



The Journal of Threatened Taxa is dedicated to building evidence for conservation globally by publishing peer-reviewed articles online every month at a reasonably rapid rate at www.threatenedtaxa.org. All articles published in JoTT are registered under [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/) unless otherwise mentioned. JoTT allows unrestricted use of articles in any medium, reproduction, and distribution by providing adequate credit to the authors and the source of publication.

ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)

July 2018 | Vol. 10 | No. 8 | Pages: 11999–12146

Date of Publication: 26 July 2018 (Online & Print)

DOI: 10.11609/jott.2018.10.8.11999-12146

www.threatenedtaxa.org

Communications

Habitat suitability and threat analysis of Greater One-horned Rhinoceros *Rhinoceros unicornis* Linnaeus, 1758 (Mammalia: Perissodactyla: Rhinocerotidae) in Rautahat District, Nepal

-- Saru Rimal, Hari Adhikari & Shankar Tripathi, Pp. 11999–12007

Camera-trapping survey to assess diversity, distribution and photographic capture rate of terrestrial mammals in the aftermath of the ethnopolitical conflict in Manas National Park, Assam, India

-- Dipankar Lahkar, M. Firoz Ahmed, Ramie H. Begum, Sunit Kumar Das, Bibhuti Prasad Lahkar, Hiranya K. Sarma & Abishek Harihar, Pp. 12008–12017

In plain sight: Bacular and noseleaf morphology supports distinct specific status of Roundleaf Bats *Hipposideros pomona* Andersen, 1918 and *Hipposideros gentilis* Andersen, 1918 (Chiroptera: Hipposideridae)

-- Bhargavi Srinivasulu & Chelmala Srinivasulu, Pp. 12018–12026

The amphibian diversity of selected agroecosystems in the southern Western Ghats, India

-- M.S. Syamili & P.O. Nameer, Pp. 12027–12034

Taxonomic status and additional description of White's Stalked-eyed Fly *Cyrtodiopsis whitei* (Curran, 1936) (Diptera: Diopsidae) from India with a key to the allied species and note on its habitat

-- Basant Kumar Agarwala, Pp. 12035–12043

Community structure of benthic macroinvertebrate fauna of river Ichamati, India

-- Arnab Basu, Indrani Sarkar, Siddhartha Datta & Sheela Roy, Pp. 12044–12055

Conservation status of Mascarene Amaranth *Aerva congesta* Balf.F. Ex Baker (Eudicots: Caryophyllales: Amaranthaceae): a Critically Endangered endemic herb of the Mascarenes, Indian Ocean

-- Kersley Bruno Pynee, David Harold Lorence & Poojanraj Khurun, Pp. 12056–12063

Vegetative and reproductive phenology of *Aquilaria malaccensis* Lam. (Agarwood) in Cachar District, Assam, India

-- Birkhungur Borogayary, Ashesh Kumar Das & Arun Jyoti Nath, Pp. 12064–12072

Conservation Application

Taking the first steps: Initial mapping of the human-wildlife interaction of the Mauritius Fruit Bat *Pteropus niger* (Mammalia: Chiroptera: Pteropodidae) in Mauritius by conservation organizations

-- Brandon P. Anthony, Vikash Tatayah & Deborah de Chazal, Pp. 12073–12081

Peer Commentary

The term human-wildlife conflict creates more problems than it resolves: better labels should be considered

-- Priya Davidar, Pp. 12082–12085

Short Communications

First photographic evidence of Snow Leopard *Panthera uncia* (Mammalia: Carnivora: Felidae) outside current protected areas network in Nepal Himalaya

-- Rinzin Phunjok Lama, Tashi R. Ghale, Madan K. Suwal, Rishi Ranabhat & Ganga Ram Regmi, Pp. 12086–12090



Small carnivores of Silent Valley National Park, Kerala, India

-- Devika Sanghamithra & P.O. Nameer, Pp. 12091–12097

Status survey and conservation of the House Sparrow *Passer domesticus* (Aves: Passeriformes: Passeridae) through public participation in Kannur, Kerala, India

-- R. Roshnath, C.P. Arjun, J. Ashli, D. Sethu & P. Gokul, Pp. 12098–12102

The ecology and distribution of percoid fish *Dario neela* from Wayanad in the Western Ghats of Kerala, India

-- Dencin Rons Thampy & C.P. Shaji, Pp. 12103–12107

A checklist of the ornamental fishes of Himachal Pradesh, the western Himalaya, India

-- Indu Sharma & Rani Dhanze, Pp. 12108–12116

Odonate diversity of Nalsarovar Bird Sanctuary - a Ramsar site in Gujarat, India

-- Darshana M. Rathod & B.M. Parasharya, Pp. 12117–12122

Root holoparasite *Balanophora polyandra* Griff. (Balanophoraceae) in eastern Himalaya (Sikkim, India): distribution, range, status and threats

-- Prem K. Chhetri, Alexander R. O'Neill & Bijoy Chhetri, Pp. 12123–12129

Notes

Transfer of *Storena gujaratensis* Tikader & Patel, 1975 to the genus *Suffasia* Jocqué, 1991 (Araneae: Zodariidae)

-- Reshma Solanki, Manju Siliwal & Dolly Kumar, Pp. 12130–12132

Intraguild predation of green lacewing larvae (Neuroptera: Chrysopidae) on spider eggs and spiderlings

-- K.K. Srikumar, S. Smitha, B. Suresh Kumar & B. Radhakrishnan, Pp. 12133–12136

Rediscovery, extended distribution and conservation assessment of *Cinnamomum goaense* (Lauraceae) in the Western Ghats, India

-- M.P. Geethakumary, S. Deepu & A.G. Pandurangan, Pp. 12137–12139

***Coltriciella dependens* (Berk. & M.A. Curtis) Murrill, a new addition to wood-rotting fungi of India**

-- Ayangla S. Pongen, Kuno Chuzho, N.S.K. Harsh, M.S. Dkhar & Manoj Kumar, Pp. 12140–12143

Book Review

The need of conservation laws coherent with communities for complete success

-- S. Suresh Ramanan & Lalit Upadhyay, Pp. 12144–12145

Miscellaneous

National Biodiversity Authority