

Checklist of Amphibian Fauna of Chandoli National Park, District Sangli, Maharashtra, India

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ABSTRACT

Chandoli National Park disseminates along the North Sahyadri Range of Western Ghats near the Chandoli Dam in Taluka Shirala, District Sangli of Western Maharashtra, India. It is located between 17°03' to 17°20' N and 73°46' to 73°53' E, with the elevation of about 589-1044 m above the sea level. An extensive survey for amphibian diversity was carried out by visual encounter method during June 2014 to May 2017 in selected spots from Chandoli National Park. A total of 27 species of amphibians belonging to 18 genera and 9 families and 2 orders were recorded from the study area. 18 species are endemic to the Western Ghats and 2 species are endangered. Due to high altitude, perennial streams, reservoir and evergreen forest, the environmental conditions persist here are cool and humid. These conditions render good habitat to amphibian fauna.

Key words: Amphibian diversity, Chandoli National Park, Western Ghats, Maharashtra

INTRODUCTION

India has two well known biodiversity hotspots among the 35 biodiversity hotspots of the World (Sloan *et al*, 2014). Of these The Western Ghats of India ranked among 34 biodiversity hotspots rich in flora and fauna (Mittermeier *et al*, 2005). As far as biodiversity is concerned the central and southern part of Western Ghats is more explored for amphibians than northern Western Ghats. The Western Ghats constitute the range of hills running almost parallel to Arabian Sea through Kerala, Tamilnadu, Karnataka, Goa, Maharashtra and Gujarat. Government of India declared Koyana wild life sanctuary and Chandoli National Park as “Sahyadri Tiger Reserve” in 2010.

Chand (1995) recorded 8 species of amphibians from Indrawatti Tiger Reserve. Pande and Pathak (2005) reported 5 species of amphibians from the Chandoli National Park. Lawate and Mule (2009) reported 16 species of amphibians in a checklist of herpetofauna of the Chandoli National Park.

Kumbar and Patil (2010) have given checklist of 9 anuran species from Palus tehsil and Sagarshwar wildlife sanctuary in the Sangli district. Bhandarkar *et al.*, (2012) surveyed herpetofaunal diversity at Navegaon National Park and recorded 13 species of anurans. Jadhav *et al.* (2012) listed 55 species of amphibians from Koyana, Patan tehsil of Northern Western Ghats. Padhye and Ghate (2012) represented 53 species of amphibians from Maharashtra. Walmiki *et al.* (2012) enlisted 5 species of anurans from Maharashtra Nature Park, Mumbai. Katwate *et al.* (2013) listed 22 species of amphibians with Northward range extension of two species *Minervarya sahyadris* and *Fejervarya caperata* in Western Ghats. Abdar (2014) has listed of 4 species of amphibians from the Chandoli National Park. Yadav and Yankanchi (2014) surveyed Radhanagari Wildlife Sanctuary to study herpetofaunal diversity and listed 22 species of amphibians. More (2015) reported 15 species of amphibians from Sangli district. More (2017) reported 15 species of amphibians from Radhanagari Wildlife Sanctuary, particularly from Bavali and Talegaon region. Sajjan *et al.* (2017) reported 30 species of amphibians from Sangli district. However, most of the studies on amphibians are limited to short surveys. Amphibian diversity and its species composition is unknown from other parts of Northern Western Ghats which is especially true for the Chandoli National Park. Hence the present survey was undertaken to make an extensive and systematic study of the amphibian diversity from Chandoli National Park. This survey provides baseline data and scientific information for conservation of amphibians.

Study area

The study area, Chandoli National Park is Southern portion of the Sahyadri Tiger Reserve, disseminates along the North Sahyadri Range of Western Ghats near the Chandoli Dam in Taluka Shirala, District Sangli of Western Maharashtra, India. It is located between 17°03' to 17°20' N and 73°46' to 73°53' E, with the elevation of about 589-1044 m above the sea level. The present study is restricted to Rundiv, Sidheshwar, Chandel, Gothane and Zolambi region of Chandoli National Park. National Park is spread in 318.67 Km² area in the Deccan trap and spread over the geographical area of 30 villages located at the junction of Sangli, Satara, Kolhapur and Ratnagiri districts. The climate is moderate. The national park has flat topped mountains, barren rocky lateritic plateaus, large boulders with forest types- mixed deciduous forests, semi-evergreen forest and grass lands. Warna River

originates in national park near village Patharpung. Park has perennial streams and Chandoli reservoir (dam).

METHODOLOGY

The present study has been carried out from June 2014 to May 2017. Field studies were mainly done by visits to Chandoli National Park of Sangli district. At all locations, intensive search for amphibians was undertaken by visual encounter method (Crump, Heyer *et al.*, 1994). Here all possible sites such as open land, dense forest, mixed forest, the river bank, near water bodies, along streams, swamps and hilly waterfalls, grasslands, under leaf litter, on tree trunks, on foliages, under stones, logs, rock crevices and decaying vegetation were searched. The searching is made of frogs and toads using torch lights during night. On every amphibian sighting, information on species, habitats, microhabitat and altitude were recorded. All amphibians observed during the study were photographed and after taking Morphometric measurements they are released back into their natural habitat. Species identification was made on the basis of morphological characters, morphometry, calls and available literature *viz.* Boulenger (1890), Chanda (2002), Daniels (2005), Dutta (1997), Gururaja (2012), Inger & Dutta (1986), with the help of other taxonomists. The nomenclatures of species were updated with the checklist by Dinesh *et al.* (2017) and Frost (2017).

RESULTS

A total of 27 species of amphibians were reported from study area in Chandoli National Park of Sangli district belonging to 18 genera of 9 families and 2 orders (Table-1). Considering number of species in each family Dicroglossidae dominated with 8 species followed by Microhylidae 3 species, Ranidae 3 species, Ranixalidae 3 species, Rhacophoridae 3 species, Bufonidae with 2 species, Nyctibatrachidae 2 species, Ichthyophidae 2 species and 1 species of Indotyphlidae (Fig- 1). Of these 18 species recorded during the study are endemic to the Western Ghats and 9 species are non endemic. 27 species of amphibians of national park fall under the various categories of the IUCN red list; endangered 2, critically endangered 1, vulnerable 3, least concerned 14, data deficient 1, near threatened 2 and 4 not assessed (Fig- 2).

Table 1. Checklist of Amphibian Fauna of Chandoli National Park Sangli District with Endemism and IUCN Status.

SR. NO.	NAME OF SPECIES	COMMON NAMES	ENDEMISM	IUCN RED LIST
ORDER: ANURA (Fischer von Waldheim)				
FAMILY: BUFONIDAE (Gray)				
01	<i>Duttaphrynus melanostictus</i> (Schneider 1799)	Common Indian Toad	NE	LC
02	<i>Xanthophryne koyanayensis</i> (Soman, 1963)	Koyana Toad	E	EN
FAMILY: DICROGLOSSIDAE (Anderson)				
03	<i>Euphlyctis cyanophlyctis</i> (Schneider, 1799)	Indian Skittering Frog	NE	LC
04	<i>Fejervarya cepfi</i> (Garg and Biju, 2017)	CEPF Burrowing Frog	E	NA
05	<i>Fejervarya sp.</i>	Unknown Fejervarya	E	NA
06	<i>Fejervarya syhadrensis</i> (Annandale, 1919)	Bombay Wart Frog	NE	LC
07	<i>Hoplobatrachus tigerinus</i> (Daudin, 1802)	Indian Bull Frog	NE	LC
08	<i>Sphaerotheca breviceps</i> (Schneider, 1799)	Indian Burrowing Frog	NE	LC
09	<i>Sphaerotheca dobsonii</i> (Boulenger, 1882)	Dobson's Burrowing Frog	E	LC
10	<i>Sphaerotheca pashchima</i> (Padhye, Dahanukar, Sulakhe, Dandekar, Limaye and Jamdade, 2017)	Western Burrowing Frog	NE	NA
FAMILY: MICROHYLIDAE (Gunther)				
11	<i>Microhyla ornata</i> (Dumeril and Bibron, 1841)	Ornate Narrow- mouthed Frog	NE	LC
12	<i>Uperodon globulosus</i> (Gunther, 1864)	Grey Balloon Frog	NE	LC
13	<i>Uperodon marmorata</i> (Rao, 1937)	Marbled Ramanella	E	EN
FAMILY: NYCTIBATRACHIDAE (Blommers-Schlösser)				
14	<i>Nyctibatrachus humayuni</i> (Bhaduri and Kripalani, 1955)	Bombay Night Frog	E	VU
15	<i>Nyctibatrachus petraeus</i> (Das and Kunte, 2005)	Castle Rock Night Frog	E	LC
FAMILY: RANIDAE (Rafinesque)				
16	<i>Clinotarsus curtipes</i> (Jerdon, 1853)	Bicoloured Frog	E	NT
17	<i>Hydrophylax bahuvistara</i> (padhye, Jadhav, Modak, Nameer and Dhanukar, 2015)	Fungoid Frog	E	LC
18	<i>Indosylvirana caesari</i> (Biju, Garg, Mohony, Wijayathilaka, Senevirathne and Meegaskumbura, 2014)	Bronzed Frog (Maharashtra Golden Backed Frog)	E	NT
FAMILY: RANIXALIDAE (Dubois)				
19	<i>Indirana beddomii</i> (Gunther, 1875)	Beddome's Leaping Frog	E	LC
20	<i>Indirana chiravasi</i> (Padhye, Modak and Dahanukar, 2014)	Amboli Leaping Frog	E	NA
21	<i>Indirana leithii</i> (Boulenger, 1888)	Leith's Leaping Frog	E	VU
FAMILY: RHACOPHORIDAE Hoffman				
22	<i>Polypedates maculatus</i> (Gray, 1834)	Common Indian Tree Frog	NE	LC
23	<i>Pseudophilautus amboli</i> (Biju and Bossuyt, 2009)	Amboli Bush Frog	E	CE
24	<i>Raorchestes bombayensis</i> (Annandale, 1919)	Bombay Bush Frog	E	VU
ORDER: GYMNOPIHONA (Muller)				
FAMILY: ICHTHYOPHIIDAE (Taylor)				
25	<i>Ichthyophis beddomei</i> (Peters, 1879)	Beddome's Caecilian	E	LC
26	<i>Ichthyophis bombayensis</i> (Taylor, 1960)	Bombay Caecilian	E	LC
FAMILY: INDOTYPHLIDAE (Lescure, Renous, and Gasc)				
27	<i>Indotyphlus maharashtraensis</i> (Giri, Gower and Wilkinson, 2004)	Maharashtra Caecilian	E	DD

E- Endemic to Western Ghats, NE- Non Endemic

EN- Endangered, CE- Critically Endangered, VU- Vulnerable, LC- Least Concerned, DD-Data Deficient, NT- Near Threatened, NA- Not Assessed

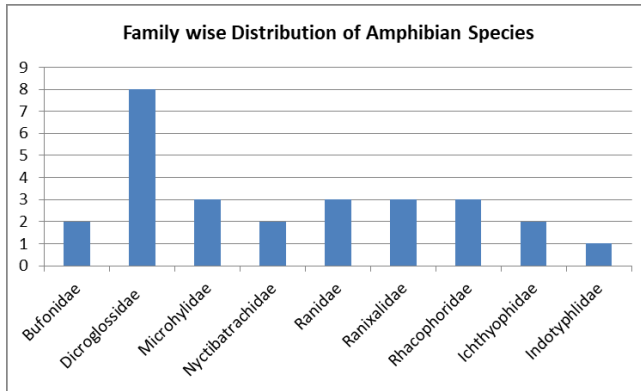


Fig. 1 Family wise Distribution of Amphibian Species

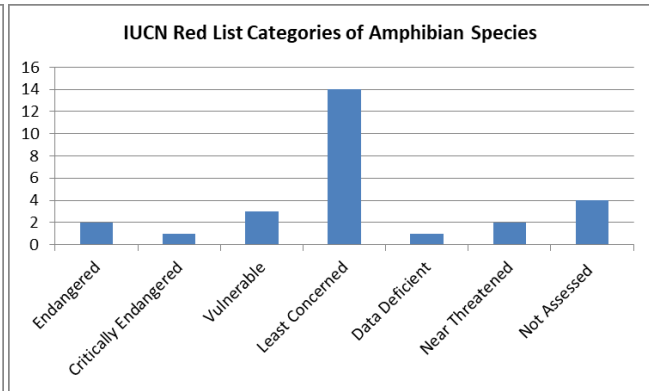


Fig. 2 IUCN Red List Categories of Amphibian Species

Due to high altitude, perennial streams, reservoir and evergreen forest, the environmental conditions persist here are cool and humid. These conditions render good habitat to amphibian fauna.

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REFERENCES:

- Abdar MR (2014) Faunal diversity of Chandoli national park, Western Ghats, Maharashtra state, India. *Biolife Journal*, 2(2): 480-485.
- Bhandarkar WR, Paliwal GT, Bhandarkar SV and Kali AA (2012) Herpetofaunal diversity at Navegaon National Park, Dist. Gondia, Maharashtra. *International Journal for Environmental Rehabilitation and Conservation*, 3(1): 42-49.
- Boulenger GA (1890) Fauna of British India, Reptilia and Batrachia. *Francis & Taylor, London*.
- Chanda SK (1995) Amphibia. In: Fauna of conservation Areas No. 6. Fauna of Indravatti Tiger Reserve. *Zoological Survey of India*. pp 71-75.
- Chanda SK (2002) Handbook of Indian Amphibians. *Zoological Survey of India, Kolkata*. pp: 1-335.
- Crump ML and Scott NJ Jr. (1994) Visual Encounter Surveys. pp: 84-92 in: Heyer W R, Donnelly MA, McDiarmid RW, Hayek LC and Foster MS (eds.) *Measuring and Monitoring Biological Diversity: Standard Methods for Amphibians*. Smithsonian Institution Press, Washington, D. C.
- Daniels RJR (2005) Amphibians of Peninsular India. *Universities Press, Hyderabad*, pp: 1- 268.
- Dinesh KP, Radhakrishnan C, Channakeshavamurthy BH and Kulkarni NU (2017) A Checklist of Amphibia of India Updated till April 2017. *Mhadei Research Center, Online Version*.
- Dutta SK (1997) Amphibians of India and Sri Lanka (Checklist and Bibliography). *Odyssey publication house, Bhubaneswar, Orissa, India*, pp: 1-342.
- Frost DR (2017) Amphibian Species of the World: an online reference. Version 6.0 (30/04/2017). <http://research.amnh.org/lvz/herpetology/amphibia/index.html>. *Journal of American Museum of Natural History, New York, USA*.
- Gururaja KV (2012) Pictorial guide to Frogs and Toads of Western Ghats. *Gubbi Labs LLP. http:// www. gubbilabs.in*, pp: 1-153.
- Inger RF and Dutta SK (1986) An overview of the Amphibian Fauna of India. *Journal of Bombay Natural History Society*, 83(Suppl.): 135-145.
- Jadhav BV, Salvi RC, Gurav PD, Shelake VJ and Vishal P (2012) Study of Amphibian fauna from Koyana, Patan Tehsil of northern Western Ghats, Maharashtra. *Proceeding of National conference at Adarsha College, Hingoli*. pp: 82-90.
- Katwate U, Apte D and Raut R (2013) Diversity and Distribution of anurans in Phansad
- Wildlife Sanctuary (PWS), Northern Western Ghats of India. *Journal of Threatened Taxa*, 5(2): 3589-3602.
- Kumbar SM and Patil SS (2010) Checklist and habitat of anurans species in Sangli District, Maharashtra. *Frog leg*, 14: 21-24.
- Lawate DV and Mule MB (2009) Herpetofauna of Chandoli National Park of Western Ghats of Maharashtra. *Journal of Environmental Science*, vol.2: 33-36.
- Mittermeier RA, GilP PR, Hoffman M, Pilgrim J, Brooks T, Mittermeier CG, Lamoreux J and de Fonseca GAB (2005) Hotspots Revisited: Earth's Biologically Richest and most Endangered Terrestrial Ecoregions. *Cemex, Mexico*, pp392.

- More SB (2015) Amphibian diversity from Sangli District (MS, India). *World Journal of Pharmaceutical Sciences*, 3(4): 729-731.
- More SB (2017) Inventorization of amphibian diversity from Bavali and Talegaon region of Radhanagari Wildlife Sanctuary (M.S.) India. *International Journal of Researches in Biosciences, Agriculture and Technology*, 5(2): 1-5.
- Padhye AD and Ghate HV (2012) Fauna of Maharashtra. *State Faunal Series 20, Zoological survey of India*, pp: 239-246.
- Pande P and Pathak N (2005) National parks and Sanctuaries in Maharashtra. *Reference Guide*, Volume-II.
- Sajjan MB, Jadhav BV and Patil RN (2017) Diversity, Distribution and Status of the Amphibian fauna of Sangli district, Maharashtra, India, *International Journal of Life Sciences*, 5 (3): 409-419.
- Sloan S, Jenkins CN, Joppa LN, Gaveau DLA and Laurance WF (2014) Remaining natural vegetation in the global biodiversity hotspots. *Biological Conservation* 177:12-24
- Walmiki N, Awsare V, Karangutkar S, Wagh V, Yengal B, Salvi S and Pillai R (2012) Herpetofauna of Maharashtra Nature Park, Mumbai, Maharashtra (India). *World Journal of Environmental Biosciences*, 1(2): 90-99.
- Yadav OV and Yankanchi SR (2014) Preliminary study of herpetofaunal diversity in Radhanagari Wildlife Sanctuary (WLS), Kolhapur, Maharashtra, India. *Biolife*, 2(4): 1154-1159.

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