

**BASKING ACTIVITY OF INDIAN MONITOR LIZARD  
(VARANUS BENGALENSIS) IN BULDHANA DISTRICT OF  
MAHARASHTRA (INDIA)**



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**ABSTRACT**

The current report is on the basking activity of Indian monitor lizard that was noted during 18 to 24 October of 2014 from an agriculture field of Jalgaon (Jamod), District Buldhana of Maharashtra (India) (Table1). Indian Monitor Lizard *Varanus bengalensis* (Daudin, 1802) is diurnal and ectothermic animal that rely largely on external heat sources such as sunlight for thermoregulation. The species exhibited basking at morning to afternoon and some time showed twice a day that is in morning and afternoon both. After basking, species became more active, showed fast movement and quick capture of

their prey.

**Keywords:** *Varanus bengalensis*, Basking activity, Buldhana, Maharashtra.

**Introduction**

The Indian monitor lizard *Varanus bengalensis* (Daudin, 1802) found widely distributed over the Indian Subcontinent (Daniel, 2002; Böhme, 2003; Venugopal, 2010). It has 'Least Concern' status in IUCN Red List of Threatened Species (Papenfuss et al., 2013). Indian monitors are usually solitary and mostly found on the ground, although the young are often seen on trees. It is ectothermic animal that rely largely on external heat sources such as sunlight to achieve their optimal body temperature for various bodily activities and thermoregulation. As species is diurnal, becoming active around 6 A.M. and bask in the morning sun (Auffenberg, 1994). Here this report provides the knowledge about basking activity of *Varanus bengalensis* from Buldhana District of Maharashtra (India).

**Methodology**

The basking activity of *Varanus bengalensis* were observed over 07 consecutive days during 18 to 24 October 2014 from Agriculture field of Jalgaon (Jamod), District Buldhana of Maharashtra (India). The habitat located between N 210 02' 31.2" and E 760 31' 56.64" at elevation of 291 m.

During study period, climate was generally dry as no rain occurred. The observations were made by 'Visual encounter method' suggested by Campbell and Christman (1982) for reptiles. The continuous observations were made with the help of using binoculars as well with necked eyes from early morning to late evening. During studied hours, temperature was also noted to establish their correlation with basking tenure.

**Figure 1. Google Earth Map of Study area from Agriculture field of Jalgaon (Jamod), District Buldhana (M.S.) India with location of habitat occupied by *Varanus bengalensis***



### **Observations and Results**

The current report is on the basking activity of Indian monitor lizard *Varanus bengalensis*. The Habitat of species was structurally a long hollow crevice with an opening width of size near about 50-60 cm. The species exhibited basking at morning to afternoon and some time show twice a day that is in morning and afternoon both. Morning basking observed begins around 07.30 A.M. to 09.30 A.M. while afternoon basking begins near about 01.00 P.M. to 02.00 P.M., and continues until 03.00 P.M. Species showed out its head from crevice opening at early morning suggesting that animal is waiting for the maximum sun light. As the light radiate to the opening of habitat, species move very slowly, comes straight out from crevice to gain maximum sun light. During basking activity, species remain steady for about an hour. After then species moved slowly up its head in direction of stimulus, captured prey or turn back to its crevice. Nearly same observations were also noted at afternoon period but the duration of exposures was less than morning hours. These observations were clear that the duration of basking increases with decrease in temperature (Figure 3). After basking, species was observed to be more active.

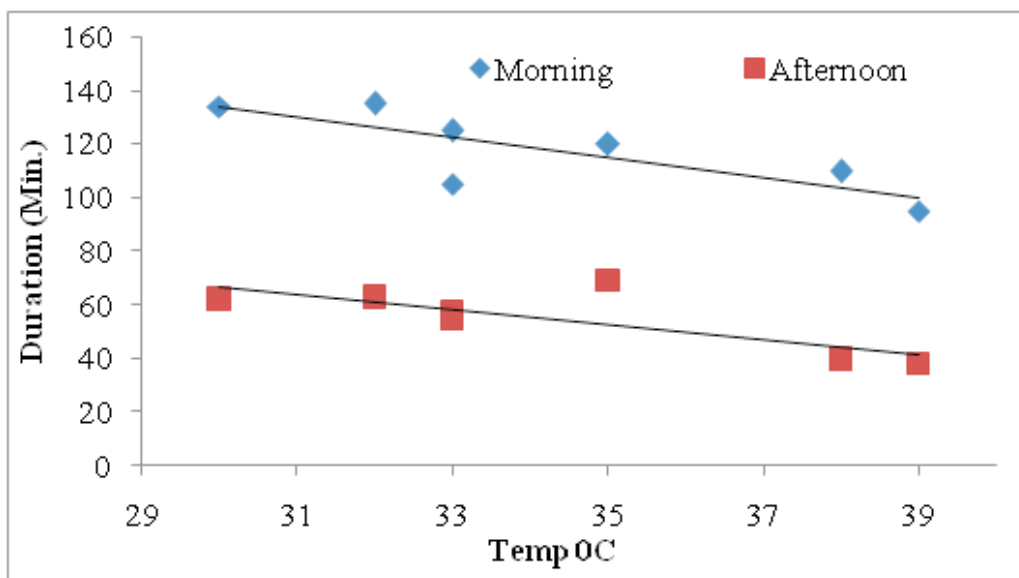
Figure 2: The Indian monitor lizard *Varanus bengalensis* (Daudin, 1802)



The observations on basking behaviour of Indian monitor lizard were as tabulated below.

Sr.	Date	Basking Duration (Min.)		Temperature (°C)
		Morning	Afternoon	
01	18-10-2014	110	040	38
02	19-10-2014	095	038	39
03	20-10-2014	125	057	33
04	21-10-2014	135	063	32
05	22-10-2014	120	069	35
06	23-10-2014	134	062	30
07	24-10-2014	105	055	33

Figure 3: Relation between Temperature and Basking duration





## **Discussion**

Study area has healthy environment and climatic condition, with classical demographic setup (Joshi et al., 2015). The available environment supports the life history of *Varanus bengalensis*. The monitor lizards bask by taking advantage of sun exposure (Pianka and King, 2004; Murthy, 2010; Islam and Saikia, 2013) that is evidence of their ectothermic nature which supports the thermoregulation mechanism of their body (Auffenberg 1994). With basking activity, monitor lizard increase its body temperature to the optimum level that physiological functions viz. heart rate and cardiovascular control can be well operated (Christian and Bedford, 1996; Seebacher and Grigg, 2001).

After basking, the *Varanus bengalensis* was observed to be more active, showed fast movement and quick capture of their prey. The present observations are in accordance with Traeholt (1997), in which the monitor followed sunlight to receive solar radiation and to increase its body temperature before commencing its daily activities (Rathnayake et al., 2003). This observation is also in agreement with the compiled knowledge that many reptiles regulate their body temperatures by basking in the sun until the temperature rises to the level requisite for their normal activity. Basking before returning to its refuge should be required in order to maintain physiological activity (Duengkae, 2008; Deungkae and Chuaynkern, 2009; Vitt and Caldwell, 2009).

The monitor lizard does not make its refuge. As found in previous research (Pattanavibool, 1993; Poonswad, 1997); it prefers to inhabit the refuge like long hollows crevice rather than burrows. Hence, the available refuge like long hollows crevice are an essential factor that supports the occurrence of *Varanus bengalensis* in the studied area from Buldhana District of Maharashtra (India) and should be considered as an important factor for the management and conservation of this incredible species or its congener.

## **Conclusion**

In conclusion, the *Varanus bengalensis* is usually solitary and mostly found on the ground. It is diurnal ectothermic animal that rely largely on external heat sources such as sunlight to achieve their optimal body temperature for various bodily activities and thermoregulation. The species exhibits basking at morning to afternoon and some time show twice a day that is in morning and afternoon. After basking, species became more active, showed fast movement and quick capture of their prey.

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