

Annotated Checklist of Freshwater Crabs of TamilNadu, India

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ABSTRACT

Tamil Nadu being a potentially biodiversity rich state in India is still in need of proper taxonomic revision on freshwater species especially on crabs. A proper inventory would describe the distribution and diversity of the species and also highlights the taxonomic revisions. This work is aimed to provide annotated checklist of freshwater crabs of Tamil Nadu which describes about the distribution, ecology and current status of these species. About 21 species of freshwater crabs has been reported from Tamil Nadu so far and nearly 50% of species are data deficient in IUCN 2021.

Key words: Checklist, Distribution, Ecology, Freshwater crabs, IUCN, Tamil Nadu.

Introduction

Tamil Nadu is one of the biodiverse states in India comprising dynamic and rich floral and faunal diversity. Among all ecosystem, freshwater ecosystem of the state is rich in floral as well as faunal population. But the diversity of this ecosystem is exclusively not well studied in this state especially on freshwater crabs. Even in India, the status of freshwater crab species is still unknown or poorly studied in this dynamic ecosystem (Cumberlidge, 2009). According to IUCN, about 27% of selected crustaceans are under threatened category which includes freshwater crabs as well (IUCN, 2019). Even in Western ghats (which also includes Tamil Nadu) about 22 species data are deficient and 31 species data are not evaluated by IUCN (Pati and Pradhan, 2020). These data deficient species require urgent need for conservation actions as it this group would fall into threatened or extinct category before acquiring proper data (Bland *et al.*, 2017). Therefore conservation becomes the need of the hour in conserving these species. Lack of documentation and aware-

ness about these species could lead to extinction of these species (Sruthi and Thirunavukkarasu, 2021). Checklists are important guide to view taxonomic hierarchies of organisms in the destined location and provide valid information about authors and distribution of those species (Laurenne *et al.*, 2014) and also provide valid information about species diversity and current status. A proper inventory of this group in Tamil Nadu had been reported by Srivastava, 2009 after that no proper checklist has been reported so far. The present work is an annotated checklist of freshwater crabs of Tamil Nadu along with notes on distribution, ecology and IUCN status of the species. A total of 21 species from 2 families has been reported in Tamil Nadu so far.

Materials and Methods

The present annotated checklist is prepared based on published literatures which indicated the distribution or reports from Tamil Nadu and also verified its current status in IUCN red list 2021.

Results and Discussion

Annotated checklist

Order Decapoda Latreille, 1802

Family Gecarcinucidae Rathbun, 1904

Genus *Barythelphusa* Alcock, 1909

1. *Barythelphusa cunicularis* (Westwood, 1836)

Distribution: Coonor Nilgiris, Shervaroy hills (Reported by: Alcock, 1909, Srivastava, 2005 and 2009, Bahir and Yeo, 2007, Pati *et al.*, 2014, Rajesh *et al.* 2017)

Elsewhere: Distributed throughout India except North-East India (By: Bahir and Yeo, 2007).

Ecology: Crabs can be found in shallow to deep streams and large crabs can be found under large boulders (By: Bahir and Yeo, 2007).

IUCN Status: Least Concern (IUCN, 2021)

2. *Barythelphusa guerini* (Milne- Edwards, 1853)

Distribution: Tamil Nadu (Reported by: Srivastava 2005, Bahir and Yeo, 2007). But Bahir and Yeo, 2007 reported a confusion on its distribution in Tamil Nadu and Karnataka because of taxonomic chaos exhibited by this species and doubtfulness in determining this species. Elsewhere: Assam, Karnataka, Madhya Pradesh, Maharashtra

Ecology: Crabs can be found in shallow to deep streams and river (By: Bahir and Yeo, 2007).

IUCN Status: Least Concern (IUCN 2021)

3. *Barythelphusa jacquemontii* (Rathbun, 1905)

Distribution: Coonor Nilgiris, Shervaroy hills, Ooty (Reported by: Alcock, 1909, Srivastava, 2009, Bahir and Yeo, 2007).

Elsewhere: Madhya Pradesh, Calicut (By: Alcock 1909), Maharashtra, Odisha.

Ecology: Crabs can be found in shallow to deep streams and river (By: Bahir and Yeo, 2007).

IUCN Status: Least Concern (IUCN 2021).

Genus *Cylindrothelphusa* Alcock, 1909

4. *Cylindrothelphusa steniops* (Alcock, 1909)

Distribution: Nilgiris, Gudalur- Manjeri (Reported by: Bahir and Yeo, 2007; Pati *et al.*, 2014, Rajesh *et al.* 2017).

Elsewhere : Kerala.

Ecology: Crabs can be found in open and shady areas also in deep burrows. Juveniles can be observed in muddy and sandy soil burrows (By: Bahir and Yeo, 2007).

IUCN Status: Least Concern (IUCN 2021).

Genus *Snaha* Bahir and Yeo, 2007

5. *Snahaescheri* (Roux, 1931)

Distribution: Vandaravu hills, Palani, Nilgiris (By: Bahir and Yeo, 2007; Pati *et al.*, 2014).

Remarks: *Snaha* species can be easily distinguished from *Gubernatoriana* by examining the differences in Carapace structure and male abdominal cavity (See Bahir and Yeo, 2007).

Ecology: Not known (By Bahir and Yeo, 2007).

IUCN Status: Data Deficient (IUCN, 2021)

Genus *Travancoriana* Bott, 1969

6. *Travancoriana convexa* (Roux, 1931)

Distribution: Tandikudi, Dindigul, Palani (By Bahir and Yeo, 2007; Pati *et al.*, 2014). Elsewhere: Kerala, Karnataka.

Ecology: Crabs can be found in small shallow streams under boulders and also found in paddy fields and muddy canals (By Bahir and Yeo, 2007, Pati *et al.*, 2014; Rajesh *et al.*, 2017).

IUCN Status: Least Concern (IUCN 2021).

7. *Travancoriana kuleera* Bahir and Yeo, 2007

Distribution: It is known only from Gudalur and Manjeri (Bahir and Yeo, 2007, Rajesh *et al.*, 2017).

Ecology: Crabs can be found from a very shallow streams under small stones (Bahir and Yeo, 2007, Rajesh *et al.*, 2017).

IUCN Status: Data Deficient (IUCN 2021)

8. *Travancoriana pollicaris* (Alcock, 1909)

Distribution: Tamil Nadu and Southern India (By Alcock 1909, Bahir and Yeo, 2007; Pati *et al.*, 2014).

Ecology: Crabs can be found in small rocky streams under boulders (Rajesh *et al.*, 2017).

IUCN Status: Data Deficient (IUCN 2021)

9. *Travancoriana schirnerae* Bott, 1969

Distribution: Nilgiris (By Srivastava, 2005; Bahir and Yeo, 2007; Pati *et al.*, 2014; Rajesh *et al.*, 2017). Elsewhere: Puducherry, Karnataka (Rajesh *et al.*, 2017).

Ecology: Crabs can be found in small rocky streams under boulders. (Bahir and Yeo, 2007; Rajesh *et al.*, 2017).

IUCN Status: Least concern (IUCN, 2021)

Genus *Vanni* Bahir and Yeo, 2007

10. *Vanni nilgiriensis* (Roux, 1931)

Distribution: Avalanche, Nilgiris (By Srivastava

2009; Bahir and Yeo, 2007).

Remarks: Srivastava, 2005 reported it as *Gubernatoriana nilgiriensis* but Bahir and Yeo, 2007 reported it as separate sub group and described under new genus by examining male gonopod G2 structure which was longin *Vanninilgiriensis* compared to vestigial G2 structure of *Gubernatoria nanilgiriensis* (See Bahir and Yeo, 2007).

Ecology: Ecology not known (Bahir and Yeo, 2007)

IUCN Status: Data Deficient (IUCN 2021)

11. *Vanni pusilla* (Roux, 1931)

Distribution: Avalanche, Nilgiris (By Bahir and Yeo, 2007).

Remarks: *Vanni* is a new genus, but Srivastava 2005 reported this species as *Gubernatorianapusilla* but it was re-examined and reported as *Vannipusilla* by Bahir and Yeo, 2007 and the reason remains the same as described for *Vanninilgiriensis*.

Ecology: Not known (Bahir and Yeo, 2007)

IUCN Status: Data Deficient (IUCN. 2021)

12. *Vanni travancorica* (Henderson, 1913)

Distribution: Tamil Nadu (By Bahir and Yeo 2007, Rajesh *et al.*, 2017). Elsewhere: Kerala and Karnataka (Bahir and Yeo, 2007; Pati *et al.*, 2014, Rajesh *et al.*, 2017).

Remarks: *Vannitravancorica* is considered to be valid species and differs in some morphological characters such as distinctly narrower G1 segment and comparatively long G2 distal segment with *Vannimalabarica* (Henderson, 1913) (Bahir and Yeo, 2007).

Ecology: Crabs can be found in shallow burrows next to small streams under stones and logs (Bahir and Yeo, 2007; Rajesh *et al.*, 2017).

IUCN Status: Data Deficient (IUCN 2021).

Genus *Vela* Bahir and Yeo, 2007

13. *Vela carli* (Roux, 1931)

Distribution: Nilgiris (By Bahir and Yeo, 2007; Pati *et al.*, 2014; Rajesh *et al.*, 2017). Elsewhere: Kerala (Bahir and Yeo 2007; Rajesh *et al.*, 2017).

Ecology: Ecology not known (Bahir and Yeo, 2007, Rajesh *et al.*, 2017)

IUCN Status: Data Deficient (IUCN 2021)

14. *Vela pulvinata* (Alcock, 1909)

Distribution: Ooty (See Alcock, 1909). Elsewhere: Coorg (Bahir and Yeo, 2007)

Ecology: Not known (Bahir and Yeo, 2007)

Remarks: It has been reported that *Vela pulvinata* can be differentiated from *Parathelphusa* (*Barythelphusa*) *pulvinata* (Alcock, 1909) by its slender convex carapace and long G2 segment (Bahir and Yeo, 2007). No further records on distribution of this species have been reported after Alcock 1909 in Tamil Nadu.

IUCN Status: Data Deficient (IUCN 2021)

Family Parathelphusidae Alcock, 1910

Genus *Ceylonthelphusa* Alcock, 1909

15. *Ceylonthelphusa austrina* (Alcock, 1909)

Distribution: Tamil Nadu (Srivastava, 2009). Elsewhere: South India (Alcock, 1909)

Ecology: Ecology of this species is not known

IUCN Status: Not evaluated

Genus *Oziotelphusa* Muller, 1887

16. *Oziotelphusa aurantia* (Herbst, 1799)

Distribution: Mahabalipuram, Tarangambadi (By Srivastava, 2005; Ng and Tay, 2001; Bahir and Yeo, 2005; Pati and Vargila, 2019). Elsewhere: Puducherry (Pati and Vargila, 2019).

Ecology: Crabs can be found in rice field embankments and burrows (Bahir and Yeo, 2005).

IUCN Status: Data Deficient (IUCN 2021)

17. *Oziotelphusa bouvieri* (Rathbun, 1904)

Distribution: Yercaud, Shervaroy hills, Gingee, Velanthangal (By Bahir and Yeo, 2005; Rajesh *et al.*, 2017; Pati and Vargila, 2019). Elsewhere: Puducherry, Kerala (Pillai, 1951).

Ecology: Crabs can be found in low lying rice fields (Bahir and Yeo, 2005; Rajesh *et al.*, 2017).

IUCN Status: Data Deficient (IUCN 2021).

18. *Oziotelphusa ravi* Smrithy Raj, Biju Kumar and Peter K. L. Ng, 2017

Distribution: Species is found only from Keeriparai, Nagercoil (Raj *et al.*, 2017)

Ecology: Crabs can be found in ditches, rice fields, ponds and drainage channels in deep burrows (Raj *et al.*, 2017).

IUCN Status: Not evaluated

19. *Oziotelphusa naga* Pati and Vargila, 2019

Distribution: Species is found only from the type locality Nagercoil, Kanyakumari (Pati and Vargila 2019).

Ecology: Crabs can be found from rice field embank-

ments in burrows (Pati and Vargila, 2019).
IUCN Status: Not evaluated.

Genus *Spiralothelphusa* Bott, 1968

20. *Spiralothelphusa hydrodroma* (Herbst, 1794)

Distribution: Tarangambadi (Origin), Karaikal, Parangipettai (Alcock, 1909; Ng and Tay, 2001) Pati and Sharma, 2014; Varadharajan and Soundarapandian, 2014; Rajesh *et al.*, 2017).

Elsewhere: Andhra Pradesh, Bihar, Goa, Kerala, Odisha, Puducherry, Uttar Pradesh, West Bengal.

Ecology: Crabs can be found in paddy fields (Varadharajan and Soundarapandian 2014, Rajesh *et al.*, 2017).

IUCN Status: Least Concern (IUCN 2021).

21. *Spiralothelphusa wuellerstorfi* (Heller, 1862)

Distribution: Madras (Now Chennai) (By Ng and Tay 2001, Rajesh *et al.*, 2017).

Elsewhere : Kerala, Maharashtra.

Ecology: Ecology not known

IUCN Status: Data Deficient (IUCN 2021).

Conclusion

At present about 21 species from 2 families (Gecarcinucidae and Parathelphusidae) has been reported from Tamil Nadu so far. Two new species namely *Oziothelphusaravi* Smrithy Raj, Biju Kumar & Peter, 2017 and *Oziothelphusanaga* Pati and Vargila, 2019 have been reported from Tamil Nadu recently. Srivastava (2009) reported *Travancorianamalabarica* (Henderson, 1912) in Tamil Nadu but it is from type locality Kerala and also endemic species of that region which is now regarded as *Vannimalabarica* (Henderson, 1912) (Rajesh *et al.*, 2017). Out of 21 species reported 11 species in IUCN Status are deficient of data and 3 species status are not evaluated. In order to prevent this species from the verge of extinction proper taxonomic reassessment has to be done. Tamil Nadu still need proper taxonomic study on these freshwater crabs as this is poorly studied group in the state. This present work is an updated inventory on freshwater crabs of Tamil Nadu which is in need of immediate and rigorous taxonomic work in order to highlight the actual diversity of species in this destined location.

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