

## New country record of globally threatened *Uperodon assamensis* (Amphibia: Microhylidae) from Bangladesh, with an updated global distribution and taxonomic analysis

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### INTRODUCTION & AIM

Globally, 24 species of narrow-mouth frogs have been documented under the genus *Kaloula* and *Uperodon*, among them Assamese balloon frog, *Uperodon assamensis* (Das, Sengupta, Ahmed & Dutta, 2004), is a vulnerable (VU) species. This species was thought to be a morphological variant of *Kaloula pulchra* (Gray, 1831) and *Uperodon taprobanica* (Parker, 1934) until 2004, then described as a new species based on a holotype from Assam state in Eastern India (Das et al. 2004). In the following years, the species was reported from other localities of India, and also from Nepal. So far, only three species of narrow-mouth frog, e.g., *Kaloula pulchra* and *Uperodon taprobanica*, and *Uperodon globulosus* (Günther, 1864) have been reported from Bangladesh (IUCN Bangladesh 2015).

Although *U. assamensis* was expected to be present in Bangladesh, there was no confirmed record until now, and it has not been included in the country's existing checklist of the amphibian fauna.

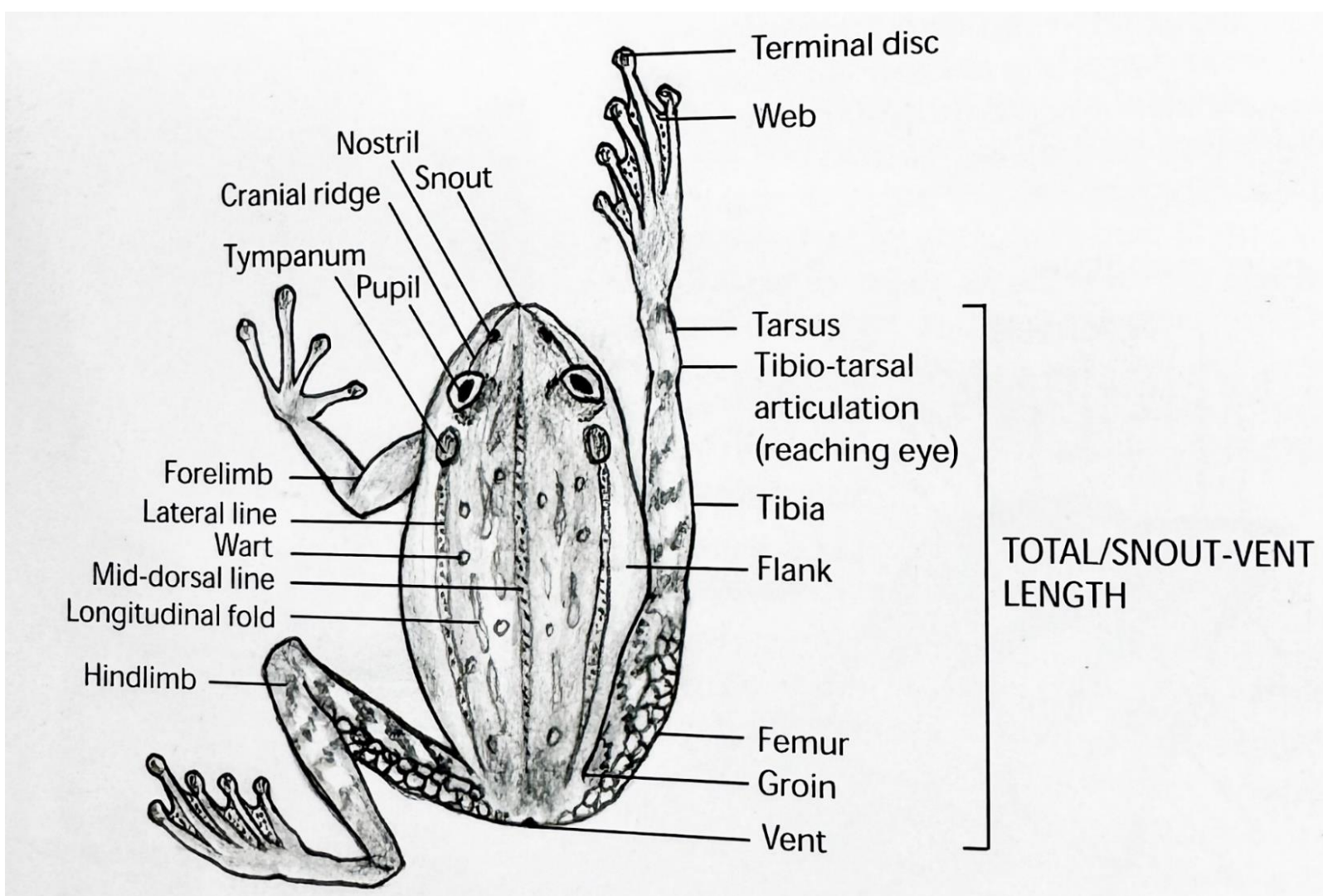
This study reports a new confirmed specimen of *U. assamensis* from the Madaripur district of southern Bangladesh based on morphological and morphometric characteristics of the holotype. We also compiled the known occurrence points and mapped the current global distribution of this threatened frog species.

### METHODS

We measured the key morphometric features of the studied specimen according to the literature by Das et al (2004).

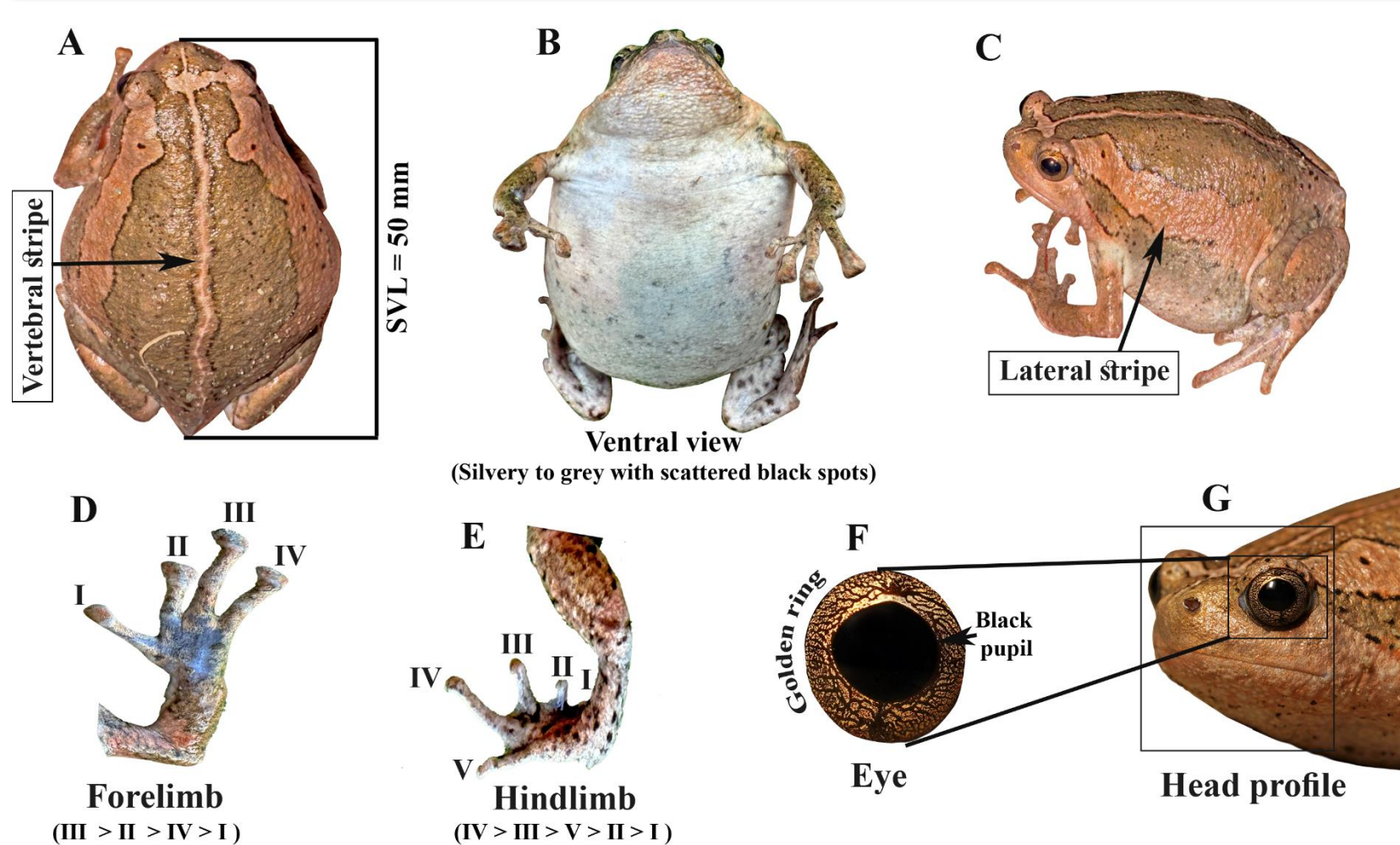
These features are:

Snout-vent length (SVL), Head length (HL), Head depth (HD), Tibia length (TBL), Eye diameter (ED), Upper eyelid width (UE), Interorbital distance (IO), Internarial distance (IN), Eye to snout distance (E-S), Eye to snout distance (E-S), Eye to nostril distance (E-N), Axilla to groin distance (A-G).

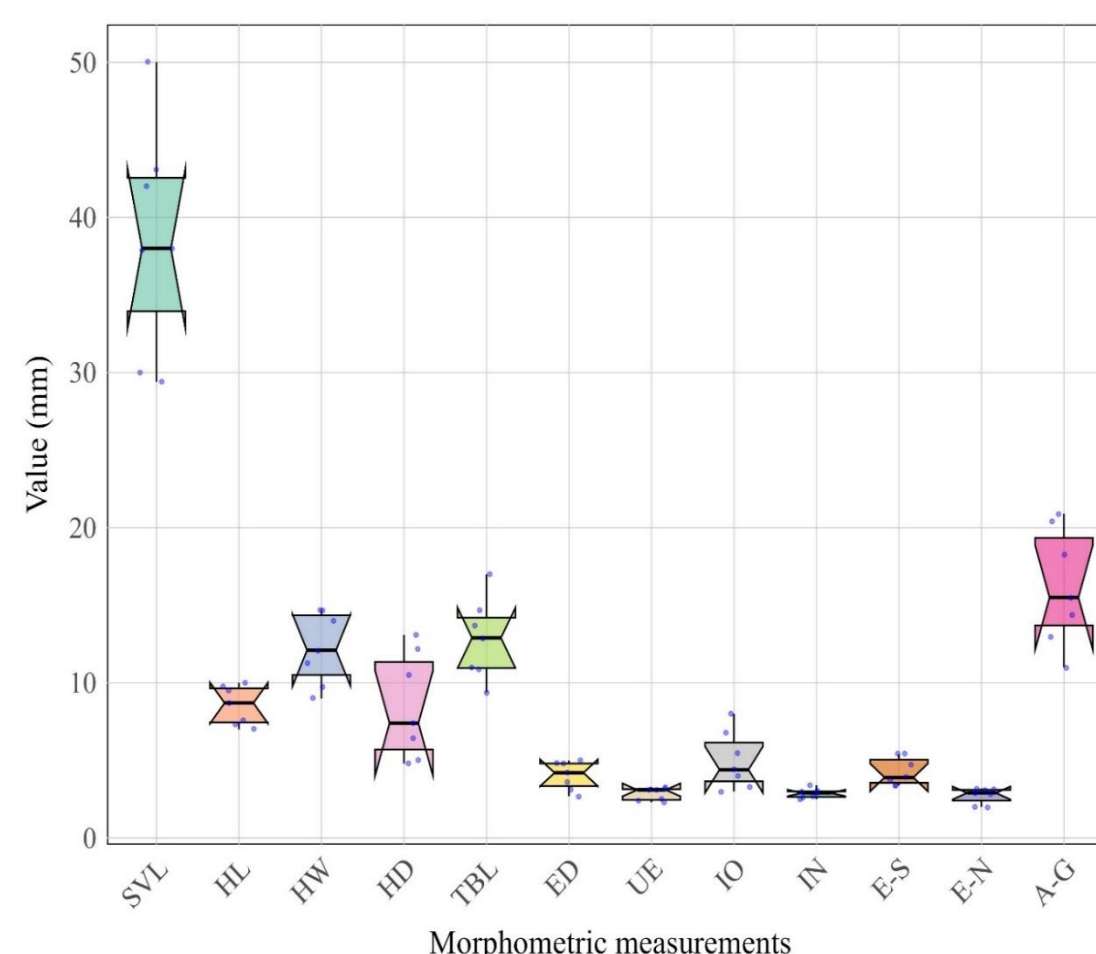


Measurements and identification keys for a frog according to Khan MMH (2018).

### RESULTS & DISCUSSION



**Figure 1.** Morphological features of *Uperodon assamensis* from the new distributional locality in Madaripur, Bangladesh. **A.** Dorsal view. **B.** Ventral view. **C.** Lateral view. **D.** Forelimb. **E.** Hindlimb. **F.** Close-up view of the eye. **G.** Head profile. (Photographs: Najmul Hasan & Christoph Andriiczuk)



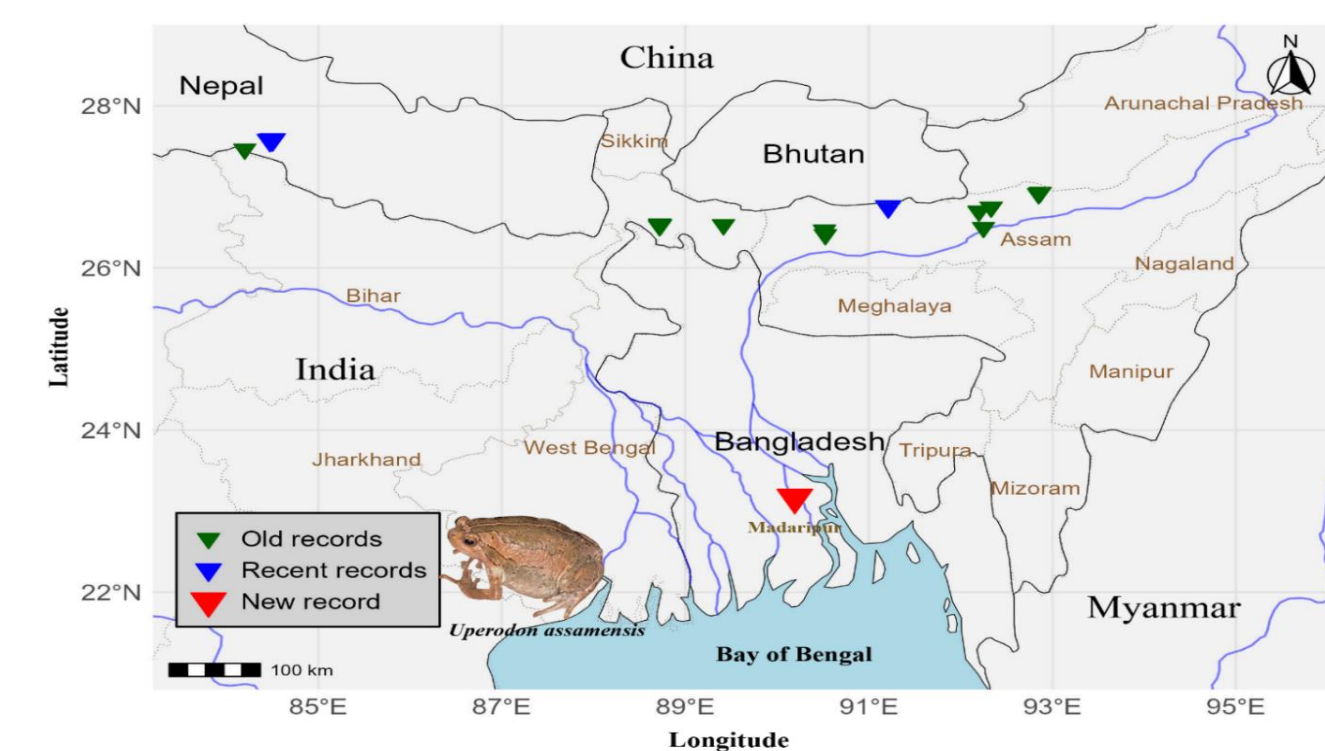
**Figure 2.** The morphometric data distribution of the type specimens of *Uperodon assamensis* (n=7) from distant geo-locations, including Bangladesh

#### Widely varied characters (In mm)

SVL: 29.4 to 50.0, HW: 9.0 to 14.7, HD: 4.8 to 13.1, TBL: 9.4 to 17, and A-G: 11.0 to 20.9 mm

#### Less varied characters (In mm)

ED: 2.7 to 5.0, UE: 2.3 to 3.3, IN: 2.5 to 3.4, E-N: 2 to 3.2, E-S: 3.4 to 5.4 mm



**Figure 3.** Global distribution of *Uperodon assamensis* including a new record from Bangladesh (Madaripur) confirming its presence in three south Asian countries (India, Nepal, and Bangladesh).

### CONCLUSION

Specimen based country record of *U. assamensis* from Bangladesh confirms its range extension contributing to better understanding of the current geographic distributions and highlighting the importance of continued field surveys in underexplored regions of South Asian countries. For the survival of this globally threatened species, proper conservation actions must be implemented to conserve the habitats in its current distribution ranges.

### FUTURE WORK / REFERENCES

As the holotype described by Das et al. (2004) was identified solely based on morphometric features and lacks molecular evidence for comparison with newly described specimens, we plan to undertake future collaborative research involving DNA sequencing of the holotype and type specimens from Bangladesh.

- Das I, Sengupta S, Ahmed MF, Dutta SK (2004) A new species of *Kaloula* (Anura: Microhylidae) from north-eastern India. Hamadryad 29: 101–109.