An Updated Checklist of the Amphibians of Bangladesh: Taxonomic Diversity, Distribution, and Conservation Status

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Abstract

Bangladesh is situated at the confluence of the Indo-Himalayan and Indo-Burma biodiversity hot spots and is home to a rich but poorly known amphibian fauna. By synthesizing published literature, museum records, historical reports, online biodiversity databases, recent taxonomic revisions, newly described species, and verified field observations, this study provides an updated checklist of amphibians of Bangladesh. The revised checklist recognizes 96 native amphibian species in 2 orders, 9 families, and 37 genera, of which 94 species are anurans and 2 are gymnophionan species, and no member of the order Urodela has been recorded from the country. Of the species, 6.25% are endemics and 93.75% are native non-endemics. The most species-rich family is Dicroglossidae (26 species), followed by Rhacophoridae (24 species), Ranidae (16 species), Microhylidae (15 species), Megophryidae (7 species), Bufonidae (5 species) and Chikilidae, Ichthyophiidae and Hylidae (1 species each). Several taxa are still only supported by historical or controversial records and need further confirmation. The study also identifies possible high-risk areas for the predicted distribution of *Batrachochytrium dendrobatidis*, highlighting emerging conservation issues. This revised checklist provides a critical baseline for further taxonomic, ecological and conservation studies, and provides important information for biodiversity assessment and habitat management in Bangladesh.

Keywords: Amphibia, Bangladesh, Checklist, Biodiversity, Taxonomy, Endemism, *Batrachochytrium dendrobatidis*, Conservation

1. Introduction

Bangladesh possesses a rich amphibian diversity in terms of species count and endemism due to its habitat diversity, tropical climate, and the strategic location between the Indo-Himalayan and Indo-Burma biodiversity hotspots. Its amphibian fauna is characterized mainly by elements from the Oriental biogeographic realm. The remarkable Bangladeshi amphibian fauna has long caught the interest of foreign herpetologists and scientists for a long

time, and later awareness regarding Bangladeshi amphibian taxonomy increased among Bangladeshi researchers at the end of the 20th century. During the last three decades, scientists have significantly increased their knowledge of Bangladesh's amphibian diversity, resulting in the discovery of new species and extending our knowledge of the amphibians of this region. The first checklist of Bangladeshi amphibians was published by Khan (1982), listing only 19 species, but later listing 42 species in his 2010 checklist. Later, IUCN Bangladesh (2015) listed 49 species of amphibians from Bangladesh. However, the most recent study by Rahman (2021) suggested that there are 62 confirmed species of amphibians in Bangladesh. According to him, the most diverse family is Dicroglossidae (32.26%), followed by Rhacophoridae (22.58%), Microhylidae (17.74%), Ranidae (16.13%), Megophryidae (4.84%), Bufonidae (3.23%), Chikilidae (1.61%), Ichthyophiidae (1.61%). Although there are quite a few publications on Bangladeshi amphibian taxonomy, the data set for amphibian assemblages is still poor and heavily fragmented. This paper presents an updated checklist of the amphibians of Bangladesh based on previously fragmented checklists, new species records, and historical records. This paper includes all the confirmed species, along with some debated species, such as *P.kempi* and *D. himalayanus,* and some species such as *I. alfredi* and *I. daribokensis* are excluded due to the lack of any strong evidence of regional occurrence.

2. Literature Review

Amphibians are among the most ecologically important groups of vertebrates, with important roles in food webs, nutrient cycling and environmental health. Amphibians, due to their permeable skin and biphasic life cycle, are particularly vulnerable to habitat change, pollution, climate change and emerging diseases. Thus, amphibians are widely considered as important bioindicators for ecosystem health assessment and biodiversity conservation. During the last three decades, the world amphibian taxonomy has been extensively revised, leading to the discovery of many new species and changes in generic and familial classifications, due to advances in molecular phylogenetics, integrative taxonomy and intensive field exploration.

Bangladesh is located at the junction of the Indo-Himalayan and the Indo-Burma biodiversity hotspots and thus an important region for amphibian diversity of South Asia. The country's varied habitats such as evergreen forests, hill tracts, wetlands, floodplains, mangrove forests, agricultural lands and freshwater ecosystems host a diverse amphibian fauna. Despite this high conservation value, amphibians have historically been less attended to in Bangladesh than mammals, birds or reptiles. As a result, for many decades information on species diversity and distribution has been incomplete.

The first documented information on the amphibians of Bangladesh was scattered in faunal surveys and taxonomic descriptions during the British colonial period. Most of these early

works treated Bangladesh as part of the greater Indian subcontinent and only provided limited locality records. Khan (1982) initiated the comprehensive national documentation and recorded only 19 species of amphibians and thus the first checklist of amphibians of Bangladesh was compiled. This checklist was the first systematic baseline for further studies on amphibians of the country.

Later herpetological surveys gradually lead to our knowledge on the amphibian diversity of Bangladesh. Khan (2010) carried out extensive field investigations and taxonomic revisions and increased the number of recognized amphibian species to 42. This large increase was due to better survey coverage, better taxonomic understanding and the recognition of several species already missed in earlier surveys.

Another important milestone was the publication of Red List of Bangladesh by IUCN Bangladesh (2015). The Red List recorded 49 amphibian species and assessed their national conservation status according to the IUCN criteria. In addition to conservation assessments, the publication brought together available information on species distribution, habitat preferences, population trends and threats, thus serving as an important reference for biodiversity conservation and environmental management in Bangladesh.

Over the last decade, a revolution in the understanding of amphibian diversity in South and Southeast Asia has occurred, with advances in molecular taxonomy and an increase in field surveys. Many cryptic species have been described, several species complexes revised and the taxonomic status of many genera updated. These regional revisions have had an immediate impact on the taxonomy of amphibians in Bangladesh, as many species occurring in the country have overlapping distributions with northeastern India, Myanmar, Bhutan and neighbouring areas. Thus several previously described species have been taxonomically revised and many new species have been recorded from the areas immediately adjacent to Bangladesh.

The most comprehensive modern assessment of the amphibians of Bangladesh was presented by Rahman (2021) confirming 62 amphibian species. The study showed Dicroglossidae to be the family with highest species richness followed by Rhacophoridae, Microhylidae, Ranidae, Megophryidae, Bufonidae, Chikilidae and Ichthyophiidae. Rahman also noted that the actual diversity was probably underestimated, as many forested and remote areas were still under-surveyed. The study also emphasizes the importance of molecular techniques for resolving taxonomic uncertainties and identifying cryptic species.

Recent studies have added more records of amphibians from Bangladesh through field surveys, DNA-based taxonomic studies and regional biodiversity assessments. New locality records, new species descriptions and revisions of generic assignments have greatly enhanced the

known diversity of Bangladeshi amphibians. The species of the families Dicroglossidae, Rhacophoridae, Ranidae, Microhylidae and Megophryidae have undergone particularly extensive taxonomic revisions. Based on molecular phylogenetic analyses, many species belonging to traditional genera have been reclassified into newly recognized genera, and national checklists need to be updated continuously.

Museum collections also are an important source of information for documenting amphibian diversity. Re-examination of museum specimens under modern taxonomic concepts has led to the correction of historical misidentifications and the identification of previously unrecognized taxa. Likewise, global biodiversity databases and digital repositories have enhanced access to historical specimen records, type localities, distributional information and taxonomic literature, thus enabling more precise species inventories.

Although considerable progress has been made, there are still considerable knowledge gaps in the amphibian fauna of Bangladesh. A good many remote forest ecosystems are not yet adequately surveyed, especially the Chittagong Hill Tracts and the northeastern hill forests. For many species, distributional limits are poorly known and some historical records need to be confirmed with voucher specimens or molecular data. Taxonomic uncertainty still exists for some controversial species, and the presence of some taxa reported from neighbouring countries has not been verified in Bangladesh. On the other hand, several species reported from Bangladesh have been later questioned due to lack of supporting evidence.

The need for the preparation of updated national checklists has therefore become increasingly important. Accurate checklists are the taxonomic backbone for biodiversity research, ecological studies, conservation planning, environmental impact assessments, protected area management and Red List assessments. They also enable comparisons between neighboring countries and aid in regional biodiversity monitoring. Considering the rapid rate of taxonomic changes and constant discovery of new species in South Asia, periodic revision of national amphibian checklists is crucial to keep an accurate knowledge on amphibian diversity in Bangladesh.

In this study the aforementioned studies are expanded with the merging of published scientific literature, museum records, historical reports, online databases of biodiversity, recent taxonomic revisions, new described species and validated field observations. This study presents the most complete and updated checklist of the amphibians of Bangladesh available today, by integrating different sources of information, and identifies taxa that require further taxonomic verification and research in the future.

3. Methods and Material

The species included in this checklist were compiled from multiple sources of information. The data were cross-checked and supplemented by information from online databases, peer-reviewed publications, and historical records dealing with species present in Bangladesh and describing new amphibian species from Bangladesh. The previously published checklists, such as Khan (1982, 1996, 2004, 2010), IUCN Bangladesh (2015), and Rahman et al. (2021), were used as baseline references. In addition, information on amphibian distribution from online databases such as IUCN Red List, AmphibiaWeb, Amphibian Species of the World, and Animalia.bio was evaluated. Additional amphibian records published during the last decade were added, and some questionable species appearing in previous checklists and historical records were evaluated and either verified or excluded from the present list. The checklist follows the higher-level taxonomy of Amphibian Species of the World (Frost, 2026). Orders and families are arranged systematically, and genera and species are arranged alphabetically within each family. Previously published checklists of Bangladesh (Khan, 1982, 1996, 2004, 2010; IUCN Bangladesh, 2015; Rahman et al., 2021) are used as baseline references for species occurrence. Some species were excluded from the checklist because (1) taxa were synonymized (e.g., *I. husaini*); and (2) they lacked reliable records within the country (e.g., *I. alfredi*).

4. Findings/Results

The present checklist recognizes 96 amphibian species occurring in Bangladesh, belonging to 2 orders, 9 families, and 37 genera. Among these, 6 species (6.25%) are endemic to Bangladesh, whereas 90 species (93.75%) are non-endemic natives (Figure 1).

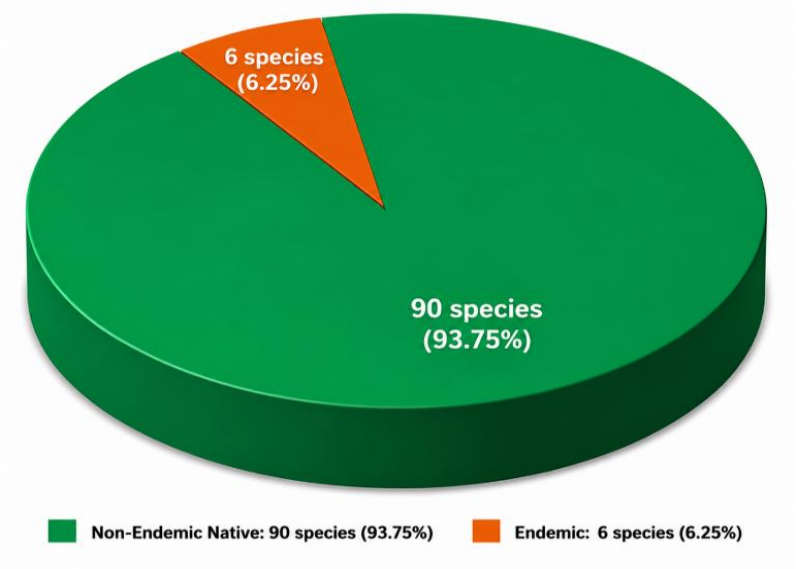

Figure 1: Endemic and native species percentage in Bangladesh

Order Anura is the most species-rich order. At the family level, the family Dicroglossidae (27.08%) is most diverse, followed by Rhacophoridae (25.00%), Ranidae (16.67%), Microhylidae (15.63%), Megophryidae (7.29%), Bufonidae (5.21%), Ichthyophiidae (1.04%), Chikilidae (1.04%), and Hylidae (1.04%) (Figure-1).

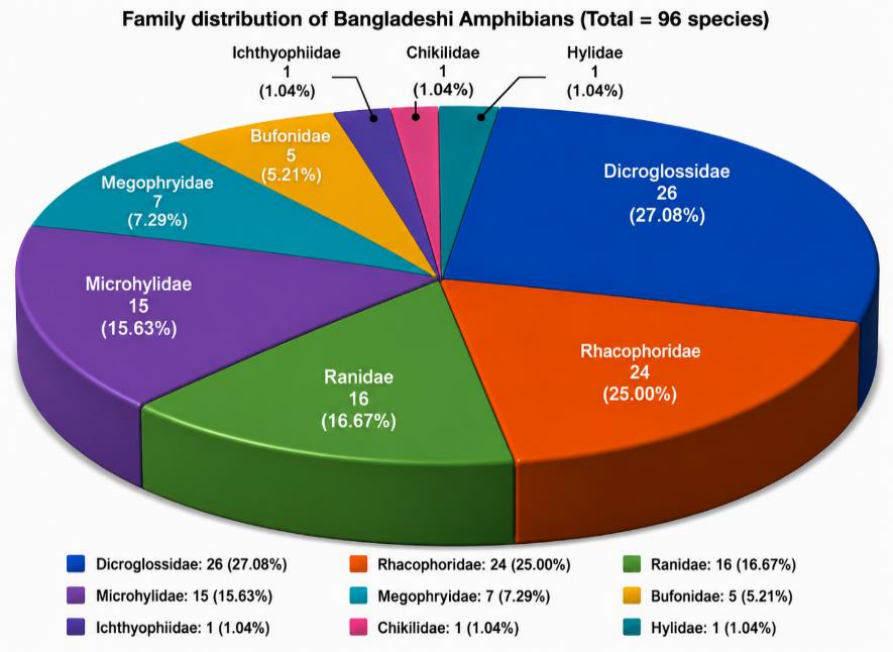

Figure 2: Family Distribution of Bangladeshi Amphibians

These families comprise Dicroglossidae (26 species), Rhacophoridae (24 species), Ranidae (16 species), Microhylidae (15 species), Megophryidae (7 species), Bufonidae (5 species), Ichthyophiidae (1 species), Chikilidae (1 species), and Hylidae (1 species) (Figure 3).

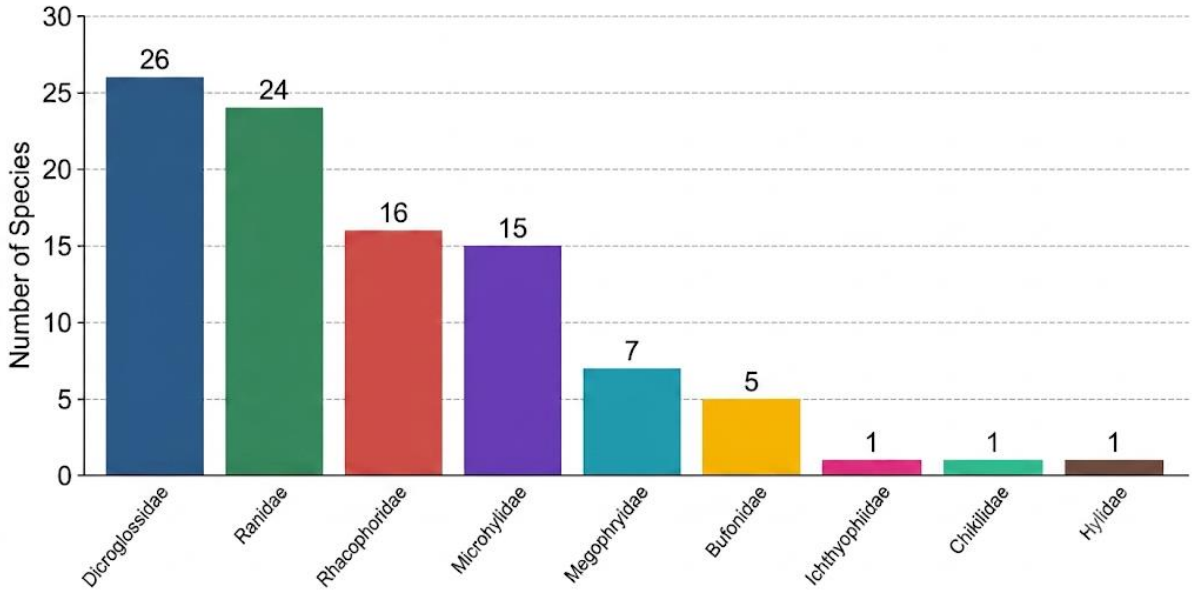

Figure 3: Number of Species in Different Families

4.1. Order-1: Anura

4.1.1 Bufonidae

Bufonidae: rough body with a prominent parotid gland and four short limbs. The family Bangladesh has five species of Bufonidae which covers 5.21% of the total amphibian diversity of this country. The genus Duttaphrynus includes four species (*D. bengalensis, D. melanostictus, D. stomaticus, D. himalayanus*) and the genus Pedostibes includes one species (*P. kempi*). Among these *D. melanostictus* (Asian Common Toad) is most distributed and frequently encountered species throughout Bangladesh. The presence of *D. himalayanus* and *P. kempi* needs to be confirmed through further field verification and taxonomic confirmation as records of their presence are limited or disputed. The genus Duttaphrynus is based on the taxonomic revision of Frost et al. (2006) that segregated several Asian species from the former genus Bufo.

Table 1: Bufonidae Type Amphibians

S.N	Bengali name	Zoological name	Common name
1.	কুনো ব্যাঙ	*Duttaphrynus bengalensis* (Daudin, 1802)	Bengal Toad
2.	হিমালয়ী কুনো ব্যাঙ	*Duttaphrynus himalayanus* (Günther, 1864)	Himalayan toad, Himalayan Boar-Skulled toad (Debated, mentioned in khan 2015, Rizvi and Bursey, 2014 IUCN Redlist 2004)
3.	কুনো ব্যাঙ	*Duttaphrynus melanostictus* (Schneider, 1799)	Asian Common toad
4.	খসখসে ব্যাঙ	*Duttaphrynus stomaticus* (Lütken, 1864)	Marbled Toad, Indus Valley Toad
5.	কেম্পের গেছো ব্যাঙ	Pedostibes kempi (Boulenger, 1919)	Kemp's Asian Tree Frog(Occurence doubtful mentioned in Khan,1982)

4.1.2 Dicroglossidae

***Dicroglossidae*:** usually have smooth skin, webbed toes, pointed tips, horizontal pupils, and a toothed upper jaw. *AmphibaiWeb.org* still considers it as a sub-family Dicoglossinae under Ranidae.

The amphibian family Dicroglossidae is the richest family in Bangladesh with 26 species (27.08% of total amphibian fauna) under 10 genera: Euphlyctis, Fejervarya, Hoplobatrachus, Ingerana, Limnonectes, Minervarya, Occidozyga, Phrynoderma, and Sphaerotheca. The genus Minervarya is the most diverse with seven species, followed by Fejervarya (six species), Euphlyctis (three species) and Hoplobatrachus (three species). The family contains a number of newly described species such as *Euphlyctis kalasgramensis*, *Hoplobatrachus litoralis*, *Minervarya asmati*, *Minervarya dhaka*, *Occidozyga swanbornorum* and *Ingerana occidens*, indicating the rapid pace of amphibian taxonomy in Bangladesh. Most species are well documented, but *Fejervarya frithii* is known only from a single lost specimen collected in 1868, and needs to be rediscovered and further verified in the field. Among the recorded amphibian families of Bangladesh, Dicroglossidae has the highest diversity and the widest ecological distribution.

Table 2: Dicroglossidae type Amphibians

S.N	Bengali name	Zoological name	Common name

6.	কটকটি ব্যাঙ	*Euphlyctis adolfi* (Gunther, 1860)	Adolf's Skittering Frog
7.	পাতি কটকটি ব্যাঙ	*Euphlyctis cyanophlyctis* (Schneider, 1799)	Common Skitterring frog, Studded Frog, Indian Skipping, Frog
8.	কালাসগ্রাম কটকটি ব্যাঙ	*Euphlyctis kalasgramensis* (Howlader, Nair, Gopalan, & Merilä, 2015)	Kalshagram Skittering Frog
9.	ফ্রিথের ঝিঁঝিঁ ব্যাঙ	*Fejervarya frithii* (Theobald, 1868)	Frith's Cricket Frog(No record after specimen was collected from Jessore in 1860s) needs a new specimen record
10.	ঝিঁঝিঁ ব্যাঙ	*Fejervarya limnocharis* (Gravenhorst, 1829)	Indian Cricket frog
11.	মুডির ঝিঁঝিঁ ব্যাঙ	*Fejervarya moodiei* (Taylor, 1920)	Moodie's Crab- eating Frog
12.	ওড়িশা ঝিঁঝিঁ ব্যাঙ	*Fejervarya orissaensis* (Dutta, 1997)	Orissa Frog, Indo-Burman Grass Frog
13.	ব্রামার ঝিঁঝিঁ ব্যাঙ	*Fejervarya brama*(Lesson, 1829)	Brama's Cricket Frog
14.	কাঁকড়াভূক ব্যাঙ	*Fejervarya cancrivora (Gravenhorst, 1829)*	Crab-eating Frog, Mangrove Frog
15.	জারডনের কোলা ব্যাঙ	*Hoplobatrachus crassus* (Jerdon, 1859)	Jerdon's Bullfrog, Malabar bullfrog
16.	উপকূলীয় কোলা ব্যাঙ	*Hoplobatrachus litoralis* (Hasan et al., 2012)	Bangladeshi Coastal Bullfrog
17.	কোলা ব্যাঙ	*Hoplobatrachus tigerinus* (Daudin, 1802)	Indian Bullfrog
18.	উত্তরাঞ্চলীয় বন ব্যাঙ	*Ingerana borealis* (Boulenger, 1908)	Northern Dwarf Frog
19.	পশ্চিমা ঝর্ণা ব্যাঙ	*Ingerana occidens* (Naveen et al., 2026)	Western Trickle Frog
20.	চ্যাপ্টা-মাথা কোলা ব্যাঙ	*Limnonectes khasianus* (Anderson, 1871)	Corrugated Frog
21.	ধানক্ষেতের ব্যাঙ	*Minervarya agricola* (Jerdon, 1853)	Common Indian Cricket Frog
22.	আসমতের ঝিঁঝিঁ ব্যাঙ	*Minervarya asmati* (Howlader, 2011)	Asmat's Cricket Frog
23.	ঢাকা ঝিঁঝিঁ ব্যাঙ	*Minervarya dhaka* (Howlader, 2016)	Dhaka Cricket Frog
24.	নেপালি ঝিঁঝিঁ ব্যাঙ	*Minervarya nepalensis* (Dubois, 1975)	Nepal Wart Frog
25.	পিয়েরের ঝিঁঝিঁ ব্যাঙ	*Minervarya pierrei* (Dubois, 1975)	Pierre's Wart Frog

26.	সাইহাড্রা ঝিঁঝি ব্যাঙ	*Minervarya syhadrensis* (Annandale, 1919)	Southern Cricket Frog
27.	তরাই ঝিঁঝি ব্যাঙ	*Minervarya teraiensis* (Dubois, 1984)	Terai Wart Frog
28.	ছাগল-ডাকা ব্যাঙ	*Occidozyga lima* (Gravenhorst, 1829)	Puddle Frog
29.	সোয়ানবর্নের পুকুর ব্যাঙ	*Occidozyga swanbornorum* (Scott Trageser et al.2021)	Swanborn's Puddle Frog
30.	সবুজ ব্যাঙ	*Phrynoderma hexadactylum* (Lesson, 1834)	Indian Five-fingered Frog, Green Frog, Green Pond Frog
31.	ভারতীয় গর্তবাসী ব্যাঙ	*Sphaerotheca breviceps* (Schneider, 1799)	Indian Borrowing Frog

4.1.3 Hylidae

***Hylidae*:** tree frogs with claw-shaped terminal phalanges. In Bangladesh only one species of the family Hylidae, *Hyla annectans* (Jerdon's or Assam Tree Frog) occurs. This species constitutes 1.04% of the amphibian fauna of the country. The occurrence of this species in Bangladesh is still under discussion. The IUCN Red List considers it possibly still present in the country, while AmphibiaWeb and Amphibian Species of the World (ASW) consider the occurrence debatable due to the absence of recent confirmed records. So, further field surveys and voucher-based taxonomic studies are required to confirm its present distribution and conservation status in Bangladesh.

Table 3: Hylidae type Amphibians Amphibians

S.N	Bengali name	Zoological name	Common name
32.	জার্ডনের গেছো ব্যাঙ	*Hyla annectans* (Jerdon, 1870)	Assam/Jerdon's Tree Frog (Debated; IUCN registers it as "Possibly Extant" in BD. ASW lists it as Controversially present in Bangladesh.)

4.1.4 Megophryidae

Megophryidae: are litter frogs, living in forest leaf litter covered forest floors. Seven species represent the family Megophryidae in Bangladesh, constituting 7.29% of the country's amphibian diversity. These species belong to two genera, Leptobrachium (three species) and Xenophrys (four species) and are mainly associated with forest leaf litter habitats in the hilly evergreen and semi-evergreen forests of northeastern and southeastern Bangladesh. One of

these, *Leptobrachium sylheticum*, is a newly described species that is endemic to the Sylhet region, underscoring the importance of this region for amphibian diversity. *Leptobrachium rakhinense* and *Xenophrys robusta* are listed as uncertain occurrence in Bangladesh by the IUCN Red List and further field investigations and voucher-based confirmation are needed. The family contains a number of habitat specialist species that are valuable indicators of healthy forest ecosystems.

Table 4: Megophryidae type Amphibians

S.N	Bengali name	Zoological name	Common name
33.	স্মিথের পাতাঝরা ব্যাঙ	*Leptobrachium smithi* (Matsui, Nabhitabhata & Panha, 1999)	Smith's Litter Frog
34.	রাখাইন পাতাঝরা ব্যাঙ	*Leptobrachium rakhinense* (Wogan, 2012)	Rakhine Litter Toad (Listed as "Presense Uncertain" by IUCN)
35.	সিলেটি লালচোখ ব্যাঙ	*Leptobrachium sylheticum* (Al-Razi, Maria & Poyarkov, 2021)	Sylhet Litter Toad, Sylhet Red-eyed Toad
36.	আঁচিলযুক্ত শিংওয়ালা ব্যাঙ	*Xenophrys serchhipii* (Mathew & Sen, 2007)	Serchhip's Horned Toad, Common Warty Horned Toad
37.	বৃহৎ শিংওয়ালা ব্যাঙ	*Xenophrys major* (Boulenger, 1908)	White-lipped Horned Toad
38.	ছোট শিংওয়ালা ব্যাঙ	*Xenophrys parva* (Boulenger, 1908)	Concave-crowned Horned Toad
39.	বলিষ্ঠ শিংওয়ালা ব্যাঙ	*Xenophrys robusta* (Boulenger, 1908)	Bengal Spadefoot Toad (Listed as "Presense Uncertain" by IUCN Red List)

4.1.5 Microhylidae

***Microhylidae*:** none have any parotid gland, narrow-mouthed. The family Microhylidae is represented by 15 species in Bangladesh, comprising 15.63% of the country's amphibian fauna. These species belong to six genera: Kalophrynus (2 species), Kaloula (1 species), Microhyla (7 species), Micryletta (1 species), and Uperodon (4 species). The genus Microhyla is the most diverse within the family and includes several recently described species, such as *Microhyla mukhlesuri*, *M. mymensinghensis*, and *M. nilphamariensis*, reflecting the rapid progress of amphibian taxonomy in Bangladesh. Likewise, *Micryletta aishani* and *Uperodon assamensis* have been added through recent taxonomic studies. However, the occurrence of *Microhyla fissipes* and *Microhyla rubra* in Bangladesh remains uncertain according to the IUCN Red List and requires additional field verification. Overall, the family exhibits considerable diversity and is widely distributed across forests, wetlands, agricultural lands, and rural habitats throughout Bangladesh.

Table 5: Microhylidae type Amphibians

S.N	Bengali name	Zoological name	Common name
40.	ভারতীয় দাগী আঠালো ব্যাঙ	*Kalophrynus orangensis* (Dutta, Ahmed & Das, 2000)	Striped Sticky Frog, Pieball Narrowmouthed Frog
41.	ভেঁপুব্যাঙ	*Kaloula pulchra*(Grey, 1831)	Painted Frog
42.	সরুমুখো ব্যাঙ	*Kalophrynus interlineatus* (Blyth, 1855)	Burmese Sticky Frog
43.	বড় চিনা ব্যাঙ	*Microhyla berdmorei*(Blyth, 1856)	Large Pygmy Frog
44.	মখলেসুরের লাউবিচি ব্যাঙ	*Microhyla mukhlesuri* (Hasan et al., 2014)	Mukhlesur's Narrow- mouthed Frog
45.	ময়মনশিংহের লাউবিচি ব্যাঙ	*Microhyla mymensinghensis* (Hasan et al. 2014)	Mymensingh Narrow- mouthed Frog
46.	নীলফামারীয়া সরুমাথা ব্যাঙ	*Microhyla nilphamariensis* (Howlader, Nair, Gopalan & Merilä, 2015)	Nilphamari Narrow-mouthed Frog
47.	চিনা ব্যাঙ	*Microhyla ornata* (Duméril & Bibron, 1841)	Ornate Rice Frog, Ant Frog
48.	আইশানী ধানক্ষেত ব্যাঙ	*Micryletta aishani*(Das et al., 2019)	Northeast Indian Paddy Frog
49.	ফিসিপিস ক্ষুদ্র-মুখ ব্যাঙ	*Microhyla fissipes* (Boulenger, 1884)	Taiwan Rice Frog (Listed as "Presence Uncertain" by IUCN Red List)
50.	লাল লাউবিচি ব্যাঙ	*Microhyla rubra*(Jerdon, 1854)	Red Paddy Frog (Registered as "Presence Uncertain by IUCN)
51.	আসামি বেলুন ব্যাঙ	*Uperodon assamensis* (Das et al., 2019)	Assamese Balloon Frog, Assamese Balloon Frog,
52.	ভারতীয় বেলুন ব্যাঙ	*Uperodon globulosus* (Günther, 1864)	Grey Balloon Frog, Indian Globular Frog
53.	মার্বেল বেলুন ব্যাঙ	*Uperodon systoma* (Schneider, 1799)	Common Balloon Frog
54.	রঙিন ভেঁপু ব্যাঙ	*Uperodon taprobanicus*(Parker, 1934)	Sri Lankan Bullfrog,Sri Lankan Painted Frog

4.1.6 Ranidae

The family Ranidae is represented by 16 species in Bangladesh, accounting for 16.67% of the country's amphibian diversity. These species are distributed among four genera: Amolops (4 species), Clinotarsus (1 species), Hylarana (9 species), and Odorrana (2 species). The genus Hylarana is the most species-rich within the family. Most ranidae frogs are associated with streams, waterfalls, forest floors, and moist hilly environments, particularly in the northeastern

and southeastern regions of Bangladesh. Several species, including *Amolops formosus*, *Amolops marmoratus*, *Hylarana taipehensis*, and *Hylarana nicobariensis*, are listed by the IUCN Red List as having uncertain presence in Bangladesh, while the occurrence of *Amolops viridimaculatus* (Yunnan Cascade Frog) and *Hylarana garoensis* remains debatable due to limited or controversial records. These findings indicate that further systematic surveys and molecular taxonomic studies are needed to clarify the distribution and conservation status of several ranid species in Bangladesh.

Table 6: Ranidae Type Amphibians

S.N	Bengali name	Zoological name	Common name
55.	ঝর্ণা ব্যাঙ	*Amolops formosus* (Günther, 1876)	Assam Sucker Frog (IUCN lists it as "Presence Uncertain" in Bangladesh, even after (Günther, 1876)
56.	ইউনান ঝর্ণা ব্যাঙ	*Amolops yunnaniensis* (Annandale, 1912)	Yunnan Cascade Frog, (Occurrence doubtful; mentioned as "Controversially Present" In ASW, and the only photographic evidence was captured by Anisuzzamn Khan in 2017 at Barkal Reserved Forest in Rangamati)
57.	ইন্দো-বার্মিজ ঝিরি ব্যাঙ	*Amolops indoburmanensis* (Dever et al.2012)	Indoburman Torrent Frog
58.	মার্বেল ঝর্ণা ব্যাঙ	*Amolops marmoratus* (Blyth, 1855)	Marbled Sucker Frog (listed as "Presence Uncertain" by IUCN Red List)
59.	পাহাড়ি ঝর্ণা ব্যাঙ	*Clinotarsus alticola* (Boulenger, 1882)	Assam Hills Frog
60.	গারো পাহাড়ি ব্যাঙ	*Hylarana garoensis* (Boulenger, 1920)	Garo Hill frog (Debated species of Bangladesh)
61.	কাঁধ-দাগযুক্ত ব্যাঙ	*Hylarana humeralis* (Boulenger, 1887)	Bhamo Frog
62.	খারের উড়ুক্কু ব্যাঙ	*Hylarana khare* (Kiyasetuo & Khare, 1986)	Indian Flying Frog, Khare's Gliding Frog
63.	ক্রন্দনধ্বনি ঝর্ণা ব্যাঙ	*Hylarana lacrima* (Sheridan & Stuart, 2018)	Chin Wood Frog
64.	মুরগি-ডাকা ব্যাঙ	*Hylarana leptoglossa* (Cope, 1868)	Cope's Assam Frog, Assam Forest Frog
65.	কালো-ডোরা ব্যাঙ	*Hylarana nigrovittata* (Blyth, 1856)	Dark-Sided Frog, Black-Striped Frog
66.	হলুদ ডোরা ব্যাঙ	*Hylarana tytleri* (Theobald, 1868)	Yellow-Striped Frog, Tytler's Wood Frog
67.	তাইপেই ঘাস ব্যাঙ	*Hylarana taipehensis* (Van Denburgh, 1909)	Taipei Frog(Listed as "Presence Uncertain" by IUCN Red List)
68.	নিকোবর ঝরনা ব্যাঙ	*Hylarana nicobariensis (*Stoliczka, 1870)	Nicobar Island Frog (Listed as "Presence Uncertain" by IUCN Red List; only two individuals were found in a small ditch in

			Roangchari, Bandban by Khan, 2012)
69.	সবুজ ঝর্ণা ব্যাঙ	*Odorrana chloronota* (Günther, 1876)	Chloronate Huia Frog
70.	সবুজ ক্যাসকেড ব্যাঙ	*Odorrana livida* (Blyth, 1856)	Green Cascade Frog

4.1.7 Rhacophoridae

The family Rhacophoridae is represented by 24 species in Bangladesh, making it the second most species-rich family and accounting for 25.00% of the country's amphibian fauna. These species are distributed across nine genera: Chirixalus (2 species), Chiromantis (1 species), Feihyla (1 species), Nasutixalus (1 species), Polypedates (5 species), Raorchestes (9 species), Rhacophorus (1 species), Theloderma (1 species), and Zhangixalus (2 species). The genus Raorchestes is the most diverse, followed by Polypedates, reflecting the rich diversity of bush frogs and tree frogs in Bangladesh's hill forests. Several species, including *Raorchestes rezakhani*, *Polypedates bengalensis, Raorchestes barakensis,* and *Raorchestes boulengeri*, have been recognized through recent taxonomic revisions, demonstrating the rapidly evolving understanding of rhacophorid diversity in the region. However, the occurrence of *Polypedates taeniatus, Raorchestes barakensis, Raorchestes boulengeri,* and *Zhangixalus feae* remains uncertain or controversial according to the IUCN Red List or Amphibian Species of the World (ASW), highlighting the need for additional field surveys and molecular confirmation. Most members of this family are arboreal and are primarily distributed in the evergreen and semi-evergreen forests of northeastern and southeastern Bangladesh.

Table 7: Rhacophoridae Type Amphibians

S.N	Bengali name	Zoological name	Common name
71.	দরিয়ার ক্ষুদে গেছো ব্যাঙ	*Chirixalus doriae* (Boulenger, 1893)	Doria's Asian Tree Frog
72.	সিমাস গেছো ব্যাঙ	*Chirixalus simus* (Annandale, 1915)	Assam Asian Tree Frog
73.	চেরাপুঞ্জি গাছ ব্যাঙ	*Chiromantis cherrapunjiae* (Roonwal & Kripalani, 1966)	Cherrapunji Bubble- Nest Frog
74.	হ্যানসেনের গেছো ব্যাঙ	*Chiromantis hansenae* (Cochran, 1927)	Hansen's Bushfrog
75.	জার্ডনের বুদবুদ-বাসা ব্যাঙ	*Nasutixalus jerdonii* (Günther, 1876)	Jerdon's Bubble-Nest Frog
76.	খয়েরি দাগ গেছো ব্যাঙ	*Polypedates bengalensis* (Das et al., 2025)	Brown Blotched Bengal Tree Frog (First Recorded by Purkayastha et al.2014 at 23.3188°N, 88.8937°E)
77.	পাতি গেছো ব্যাঙ	*Polypedates maculatus* (Das et al., 2025)	Common Indian Tree Frog
78.	পটিয়া পাত ব্যাঙ	*Polypedates leucomystax* (Garvenhorst, 1829)	Javan Whipping Frog, Asiatic Tree Frog

79.	তেরাই গেছো ব্যাঙ	*Polypedates teraiensis* (Dubios, 1987)	Terai Whipping Frog
80.	তেরাই গাছ ব্যাঙ	*Polypedates taeniatus* (Boulenger, 1906)	Terai Tree Frog(Registered as "presense Uncertain" by IUCN Redlist.
81.	অ্যান্ডারসনের ঝোপ ব্যাঙ	*Raorchestes andersoni* (Andersson, 1939)	Andersson's Bubble-Nest Frog
82.	বারাক ঝোপ ব্যাঙ	*Raorchestes barakensis* (Deepak & Das, 2025)	Barak Bush Frog(listed as "controversially Present" by ASW)
83.	বুলেঞ্জারের ঝোপ ব্যাঙ	*Raorchestes boulengeri* (Deepak & Das, 2025)	Boulenger's Bubble-Nest Frog(Listed as "Controversially Present" by ASW)
84.	গারো পাহাড়ি ঝোপ ব্যাঙ	*Raorchestes garo* (Boulenger, 1919)	Garo Hills Bush Frog
85.	কেম্পের ঝোপ ব্যাঙ	*Raorchestes kempiae* (Boulenger, 1919)	Kemp's Bush Frog
86.	মাওসিনরাম ঝোপ ব্যাঙ	*Raorchestes mawsynramensis* (Khowgwri, 2010)	Mawsynram Bush Frog
87.	ক্ষুদ্র ঝোপ ব্যাঙ	*Raorchestes parvulus* (Boulenger, 1893)	Karin Bubble-nest Frog
88.	রেজা খানের ঝোপ ব্যাঙ	*Raorchestes rezakhani* (Al-Razi, Maria & Muzaffar, 2020)	Reza Khan's Bush Frog
89.	অ্যানান্ডেলের ঝোপ ব্যাঙ	*Raorchestes annandalii* (Boulenger, 1906)	Coppersmith Frog
90.	লংচুয়ান ঝোপ ব্যাঙ	*Raorchestes longchuanensis* (Yang & Li, 1978)	Longchuan Bush Frog (Mentioned in Al-Razi et al., 2020)
91.	দুই-দাগযুক্ত উড়ন্ত ব্যাঙ	*Rhacophorus bipunctatus*(Ahl, 1927)	Twin-Spotted Tree Frog
92.	বাইবুং গর্ত-চোখ ব্যাঙ	*Theloderma baibungense* (Chou, Nguyen & Chan, 2003)	Baibung Wart Frog (Recorded on 18 june 2014 from Lauachara National Park)
93.	ফেয়ার উড়ন্ত গাছ ব্যাঙ	*Zhangixalus feae*(Boulenger, 1893)	Fea's Tree Frog(mentioned in ASW as "Controversially Present")
94.	পান্না গেছো ব্যাঙ	*Zhangixalus smaragdinus*(Blyth, 1852)	Emerald Tree Frog

4.2 Order 2: Gymnophiona

4.2.1 Chikilidae

Chikilidae: endemic to northeastern India and Bangladesh; the genus features deep-burrowing behaviour and laying eggs directly underground. Unlike most amphibians, the genus lacks a larval stage. The family Chikilidae is represented by a single species, *Chikila fulleri* (Fuller's Caecilian), accounting for 1.04% of the amphibian fauna of Bangladesh. This family belongs to the order Gymnophiona and is endemic to northeastern India and Bangladesh. *Chikila fulleri*

is a fossorial (deep-burrowing) caecilian that inhabits moist soils in forested habitats and exhibits direct development, laying eggs underground without a free-living larval stage. Its secretive lifestyle and limited distribution make it one of the least studied amphibians in Bangladesh, emphasizing the need for further ecological and distributional research.

Table 8: Chikilidae type

S.N	Bengali name	Zoological name	Common name
95.	ফুলারের চিকিলা	*Chikila fulleri*(Alcock, 1904)	Fuller's Caecilian

4.2.2 Ichthyophiidae

Ichthyophiidae: wet forest floor and stream-associated species, the genus features an aquatic larval stage. The genus features tiny but visible eyes and carnivorous behavior. The family Ichthyophiidae is represented by one species, *Ichthyophis garoensis* (Garo Hills Caecilian), comprising 1.04% of the amphibian fauna of Bangladesh. Belonging to the order Gymnophiona, this species is a fossorial caecilian that inhabits moist forest floors and stream-associated environments in the hilly regions of the country. Unlike members of the family Chikilidae, *I. garoensis* has an aquatic larval stage, possesses small but distinct eyes, and exhibits carnivorous feeding habits. Due to its secretive underground lifestyle and limited distribution, ecological and distributional information on this species remains scarce, warranting further field surveys and conservation research.

Table 9: Ichthyophiidae type

S.N	Bengali name	Zoological name	Common name
96.	গারো পাহাড়ি সিসিলিয়ান	*Ichthyophis garoensis* (Pillai & Ravichandran, 1999)	Garo Hills Caecilian

4.3 High-risk Areas for Amphibians

The figure 4 illustrates the predicted probability of Bangladesh occurrence. High-risk areas (red) are characterized by environmental conditions (temperature and humidity) known to favor the fungus Batrachochytrium dendrobatids, which caused the disease Chytrdiomycosis in amphibians.

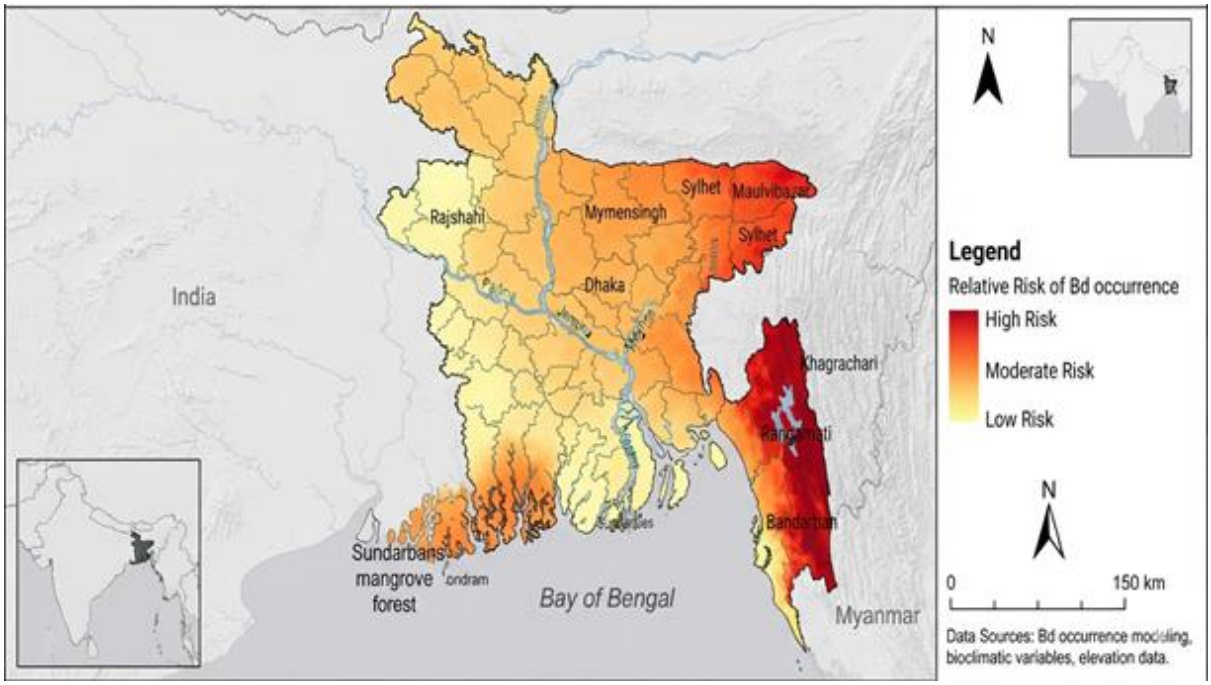

Figure 4: High-risk Areas for Amphibians Vulnerable to Chytridiomycosis **(Source: Author)**

5. Discussion

In Bangladesh, the amphibians are legally protected under several acts, viz. Wildlife Act, 1974/2012; Forest Act, 1927/2010 and Bangladesh Environment Conservation Act, 1995. Bangladesh is also a signatory to conservation- related international conventions, such as Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention), and Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention). Throughout the country, there is a network of poorly managed national protected areas covering many areas that are hotspots for amphibians. A significant improvement in the legal status of the protected areas occurred after the formulation and implementation of the Bangladesh Wildlife Act in 1974, which was replaced by the new Wildlife Act in 2012. The National Parks, Wildlife Sanctuaries, Eco-Parks, Safari Parks, Botanical Gardens, Community Conservation Areas, etc., are defined and declared under this Act. There are a total of 17 national parks, 1 heritage site, and 2 Ramsar sites that contain a biodiverse hotspot for amphibians. However, outside of the protected areas, amphibians are still threatened by rapid human activity. On top of that, the protected areas are still threatened by severe illegal logging, habitat fragmentation, use of synthetic pesticides, climate change-induced alteration of microhabitats, and predation by invasive species. Compounding these threats is the emerging fungal pathogen *Batrachochytrium dendrobatidis*, which causes chytridiomycosis and has been detected in wild amphibian populations. It is now considered to be lethal to 9 different species belonging to 4 families. The microhabitats are the most affected

by the chytrid fungus. However, further law enforcement, habitat restoration, and connection and synthetic pesticide restriction are essential conservation measures.

The present study provides the most updated and comprehensive checklist of the amphibians of Bangladesh documenting 96 native species from 2 orders, 9 families and 37 genera. Results show an amazing increase in the recognized amphibian diversity of Bangladesh compared to previous national checklists. Khan (1982) had only 19 species which increased to 42 species in Khan (2010) followed by 49 species in IUCN Bangladesh Red List (2015) and 62 confirmed species in Rahman (2021). The present checklist recognizes 96 species, which is a result of not only intensified field surveys but also major advances in molecular taxonomy, integrative systematics and ongoing taxonomic revisions across South and Southeast Asia.

The family composition in the present study is largely similar to previous studies with Dicroglossidae being the most species-rich family, followed by Rhacophoridae, Ranidae and Microhylidae. These four families account for almost 85% of the total amphibian fauna of Bangladesh. This indicates that the amphibian diversity of Bangladesh is dominated by aquatic frogs, stream-associated frogs, tree frogs and narrow-mouthed frogs. Family-level dominance of a similar nature has been documented in neighbouring regions of northeastern India and Myanmar, which is indicative of the common biogeographical history of the Indo-Burma biodiversity hotspot.

The significant increase in the number of recognized species is mainly attributable to recent taxonomic revision and the discovery of several new species. Many species of Minervarya, Microhyla, Raorchestes, Polypedates, Leptobrachium and Euphlyctis have been described or taxonomically revised in the last decade. Molecular phylogenetic analyses have uncovered several cryptic species complexes previously considered as single widespread species. Thus, the amphibian diversity of Bangladesh has turned out to be much richer than previously estimated.

The checklist also indicates that Bangladesh is home to several endemic amphibians, highlighting the importance of the country for regional biodiversity conservation. They make up a relatively small proportion of the total fauna, but endemic species' restricted distributions make them particularly vulnerable to habitat degradation and climate change. Priority areas for conservation are the evergreen and semi-evergreen forests of the Sylhet region and the Chittagong Hill Tracts, which support most endemic and range-restricted species.

Another important finding is the presence of several species whose occurrence is uncertain or controversial. Species like *Duttaphrynus himalayanus*, *Pedostibes kempi*, *Hyla annectans*,

Leptobrachium rakhinense, Xenophrys robusta, Amolops formosus, Amolops viridimaculatus, Hylarana taipehensis, Hylarana nicobariensis, Polypedates taeniatus, and *Zhangixalus fea*e are known only from historical records, isolated observations or dubious reports in international databases. Similarly, Fejervarya frithii has not been re-collected since historical times . These uncertainties emphasize the need for voucher specimen verification, DNA barcoding and repeated field surveys before the confirmation of national distributions.

The study also showed that the amphibian diversity in Bangladesh is mostly concentrated in forest ecosystems, wetlands, streams and hill areas. The families Rhacophoridae and Megophryidae are highly associated with evergreen forests whereas Dicroglossidae and Microhylidae occur in a wider range of habitats such as agricultural lands, floodplains, ponds and temporary wetlands. This ecological diversity implies that an effective amphibian conservation cannot be based only on protected forests, but must also consider wetlands, agricultural landscapes and freshwater ecosystems .

The predicted distribution of *Batrachochytrium dendrobatidis* brings an important conservation dimension to the study. The country's amphibian-rich forest areas largely coincide with the highest risk areas for chytridiomycosis. To date, there have been no major outbreaks of chytridiomycosis in Bangladesh, but the presence of suitable environmental conditions suggests the pathogen could pose a significant threat if introduced or established. Given the devastating effects of Bd on amphibian populations worldwide, long-term disease monitoring and early detection programs should be incorporated into national amphibian conservation strategies.

The findings also point to some important gaps in knowledge. Many remote forest areas are poorly surveyed and the ecology, population size, breeding biology and conservation status of many species are largely unknown. Also many historical records need verification by modern taxonomic methods. There are no long-term monitoring programs, so we don't know much about population trends or the effects of habitat loss, climate change, pollution, invasive species, and emerging diseases.

The revised checklist provides an important baseline for future taxonomic, ecological and conservation research in Bangladesh. It contributes to a more accurate understanding of the amphibian diversity of the country, and provides valuable information for biodiversity assessments, protected area planning, environmental impact assessments, Red List assessments and national conservation policies. Given the ongoing changes in amphibian taxonomy based on molecular and integrative approaches, the amphibian inventory of Bangladesh will need

periodic updating of national checklists to keep pace with the current state of scientific knowledge.

6. Conclusion

This study provides the most comprehensive and updated checklist of the amphibians of Bangladesh recognizing 96 native species belonging to 2 orders, 9 families and 37 genera. The results show a greater diversity of amphibians in Bangladesh than previously reported and are a reflection of recent taxonomic revisions, new species discoveries and improved field investigations. The dominant families are Dicroglossidae and Rhacophoridae, with several endemic and range-restricted species highlighting the country's importance for conservation within the Indo-Burma biodiversity hotspot.

The study also highlights some species with uncertain or controversial occurrence, emphasizing the importance of ongoing field surveys, voucher-based documentation and molecular taxonomic studies. In addition, the potential distribution of *Batrachochytrium dendrobatidis* indicates possible disease threats in forested areas harboring diverse amphibian populations, highlighting the importance of long-term ecological monitoring and disease surveillance.

Overall, the updated checklist provides a valuable baseline for future taxonomic, ecological and conservation studies, and will support biodiversity assessment, Red List evaluation, habitat management and national conservation planning. Regular updates with new discoveries and modern taxonomic evidence will be important for accurately documenting and conserving the amphibian diversity of Bangladesh.

Reference

Alam, M. S., Igawa, T., Khan, M. M. H., Islam, M. M., Kuramoto, M., Matsui, M., Kurabayashi, A., & Sumida, M. (2008). *Genetic divergence and evolutionary relationships in South Asian dicroglossid frogs*. https://doi.org/10.1016/j.ympev.2008.04.020

Al-Razi, H., Maria, M., & Muzaffar, S. B. (2020). *A new species of bush frog (Anura: Rhacophoridae: Raorchestes) from northeastern Bangladesh*. *ZooKeys, 927*, 127–151. https://doi.org/10.3897/zookeys.927.48733

Al-Razi, H., Maria, M., & Poyarkov, N. A., Jr. (2021). *A new species of Leptobrachium (Anura: Megophryidae) from the mixed-evergreen forests of northeastern Bangladesh*. *Journal of Natural History, 55*(1–2), 85–119. https://doi.org/10.1080/00222933.2020.1856506

AmphibiaWeb. (2026). *Information on amphibian biology and conservation*. University of California, Berkeley. https://amphibiaweb.org

Animalia. (n.d.). *Animalia*. https://animalia.bio/

Biju, S. D., & Bossuyt, F. (2009). *Systematics and phylogeny of Old World tree frogs (Rhacophoridae). Molecular Phylogenetics and Evolution, 51*, 537–550.

Das, A., Garg, S., Hamidy, A., Smith, E. N., & Biju, S. D. (2019). *A new species of Micryletta (Anura: Microhylidae) from Northeast India*. *PeerJ, 7*, e7012. https://doi.org/10.7717/peerj.7012

Das, A., Mondal, K., Mitra, A., Chaudhuri, A., & Das, I. (2019). *A new species of Polypedates Tschudi, 1838 (Anura: Rhacophoridae) from West Bengal, India*. *Zootaxa, 4646*(2), 280–302.

Das, I. (2002). *A photographic guide to snakes and other reptiles of India*. New Holland Publishers.

Deepak, P., & Das, I. (2025). *Integrative taxonomy reveals two new species of cryptic bush frogs (Raorchestes: Anura: Rhacophoridae) from North-East India*. *Journal of Herpetology, 59*(1), 44–61.

Dubois, A. (1992). *Notes sur la classification des Ranidae (Amphibiens Anoures)*. *Bulletin Mensuel de la Société Linnéenne de Lyon, 61*, 305–352.

Frost, D. R. (2026). *Amphibian Species of the World: An Online Reference* (Version 6.2). American Museum of Natural History. https://amphibiansoftheworld.amnh.org/

Frost, D. R., Grant, T., Faivovich, J., Bain, R. H., Haas, A., Haddad, C. F. B., de Sá, R. O., Channing, A., Wilkinson, M., Donnellan, S. C., Raxworthy, C. J., Campbell, J. A., Blotto, B. L., Moler, P., Drewes, R. C., Nussbaum, R. A., Lynch, J. D., Green, D. M., & Wheeler, W. C. (2006). *The amphibian tree of life*. *Bulletin of the American Museum of Natural History, 297*, 1–370.

GBIF Secretariat. (2024). *GBIF backbone taxonomy and occurrence data*. Global Biodiversity Information Facility. https://www.gbif.org

Hasan, M., Islam, M. M., Kuramoto, M., Alam, M. S., Khan, M. M. R., & Sumida, M. (2014). *Description of two new species of Microhyla (Anura: Microhylidae) from Bangladesh*. *Zootaxa, 3755*(5), 401–418.

Hasan, M., Kuramoto, M., Islam, M. M., Alam, M. S., Khan, M. M. R., & Sumida, M. (2012). *A new species of genus Hoplobatrachus (Anura, Dicroglossidae) from the coastal region of Bangladesh*. *Zootaxa, 3312*(1), 45–48.

Hasan, M. K., et al. (2014). *Amphibian diversity and distribution patterns in Bangladesh*. *Herpetological Conservation and Biology, 9*, 123–145.

Howlader, M. S. A. (2011). *A new species of Fejervarya (Anura: Dicroglossidae) from Bangladesh*. *Zootaxa, 2761*(1), 50–57.

Howlader, M. S. A. (2016). *A new species of Minervarya (Anura: Dicroglossidae) from Dhaka, Bangladesh*. *Zootaxa, 4162*(3), 501–522.

Howlader, M. S. A., Nair, A., Gopalan, S. V., & Merilä, J. (2015). *A new species of Euphlyctis (Anura: Dicroglossidae) from Barisal, Bangladesh*. *PLOS ONE, 10*(2), e0116666. https://doi.org/10.1371/journal.pone.0116666

IUCN. (2026). *The IUCN Red List of Threatened Species* (Version 2026-1). https://www.iucnredlist.org

IUCN Bangladesh. (2000). *Red book of threatened amphibians and reptiles of Bangladesh*. IUCN Bangladesh.

IUCN Bangladesh. (2015). *Red List of Bangladesh Volume 4: Reptiles and Amphibians*. IUCN, International Union for Conservation of Nature, Bangladesh Country Office. https://portals.iucn.org/library/node/46326

Jahan, H., Nasrin, D., Anee, H. K., Alam, M. S., & Begum, R. A. (2024). *Molecular identification of cryptic amphibian species in Bangladesh using 16S and 12S rRNA genes*. *Dhaka University Journal of Biological Sciences, 33*(2), 27–52. https://doi.org/10.3329/dujbs.v33i2.75815

Kamei, R. G., Gower, D. J., Wilkinson, M., & Biju, S. D. (2013). *Discovery of a new family of amphibians (Gymnophiona: Chikilidae) from northeast India*. *Proceedings of the Royal Society B, 280*, 20122317.

Khan, M. A. R. (2010). *Wildlife of Bangladesh: A checklist: From Amphibia to Mammalia, with Bengali names*. Shahitya Prakash.

Khan, M. M. H. (2008). *Field guide to the amphibians and reptiles of Bangladesh*. Arannayk Foundation.

Khan, Mohammad Ali Reza. (1982). *Wildlife of Bangladesh: A checklist*. University of Dhaka, Dhaka, Bangladesh.

Khan, Mohammad Ali Reza. (1996). *Bangladesher bonnoprani [Wildlife of Bangladesh]*. Bangla Academy, Dhaka, Bangladesh.

Naveen, R. S. (2026). *A river in between: a new species of Ingerana Dubois (Anura: Dicroglossidae) from the Garo and Khasi Hills, with a redescription of Ingerana borealis (Annandale) from the Abor Hills, India*. *Journal of Natural History, 60*(3), 112–134.

Oliver, L. A., Prendini, E., Kraus, F., & Raxworthy, C. J. (2015). *Systematics and biogeography of the Hylarana radiation*. *Molecular Phylogenetics and Evolution, 90*, 176–192.

Prothom Alo. (n.d.). *বাংলাদেশে নতুন প্রজাতির ব্যাঙ*. https://www.prothomalo.com/bangladesh/environment/kku1kyfai0

Rabbe, M. F., Jaman, M. F., Alam, M. M., Rahman, M. M., & Sarker, M. A. R. (2022). *Species diversity, composition, and distribution of the herpetofauna in the northwestern region of Bangladesh*. *Amphibian & Reptile Conservation, 16*(1), 226–234.

Rahman, M. M., Nneji, L. M., Hossain, M. M., Nishikawa, K., & Habib, K. A. (2021). *Diversity and distribution of amphibians in central and northwest Bangladesh, with an updated checklist for the country*. *Journal of Asia-Pacific Biodiversity, 14*(4), 516–525. https://doi.org

Rahman, M. M., Nneji, L. M., Hossain, M. M., Nishikawa, K., & Habib, K. A. (2022). *Diversity and distribution of amphibians in central and northwest Bangladesh, with an updated checklist for the country*. *Journal of Asia-Pacific Biodiversity, 15*, 147–156. https://doi.org/10.1016/j.japb.2021.12.002

Sheridan, J. A., & Stuart, B. L. (2018). *A new species of Hylarana (Anura: Ranidae) from the Chin Hills of Myanmar*. *Zootaxa, 4374*(3), 411–424.

The Daily Star. (2017, January 20). *Nature Quest: Rare frog spotted*. https://www.thedailystar.net/backpage/nature-quest-rare-frog-spotted-1355218

Trageser, S., Al-Razi, H., Maria, M., Nobel, F., Asaduzzaman, M., & Rahman, S. C. (2021). *A new species of Phrynoglossus Peters, 1867 (Dicroglossidae) from southeastern Bangladesh, with comments on the genera Occidozyga and Phrynoglossus*. *PeerJ, 9*, e11998. https://doi.org/10.7717/peerj.11998