

SAVE THE FROG

Debjani Roy*

Amphibians, as they possess an intimate contact with many components in the natural habitat, play a key functional role in many ecosystems and are the best indicators of environmental health (Blaustein *et al.*, 1994; Sparling *et al.*, 1995; Boyer and Grue 1995). Recently, the decline of amphibian species throughout the different localities of the world has attracted considerable attention (Corn 1994; Blaustein and Wake 1995) and the factors contributing to such a decline and/or extirpation are multiferous, including the natural (climatic and succession) and anthropogenic factors (Rand and Myers 1990; Dodd 1994; Corn 1994; Blaustein and Wake 1995; Boyer and Grue 1995; Carey and Bryant 1995). Among these, most of the causes are related to habitat alterations, and such threats are very apparent in evergreen (Daniels 1992) and tropical forests.



Frogs being dried for food in Northeast India. Photo by D.Roy

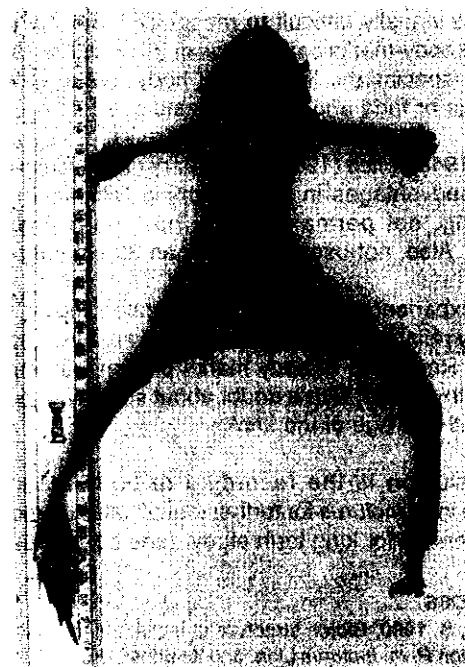
The amphibian anurans (frogs and toads) make up 91% of the total number of species of Indian amphibians, which is slightly more than their percentage over a worldwide basis (Inger and Dutta 1986). Two hundred and five species have been reported from India (Dutta, 1992). The distribution of these animals is very uneven across India-the highest concentration is found in the North Eastern Region and in the Western Ghats due to its heavy precipitation, varied topography and congenial climate. In North-eastern Region alone, 54 species of frogs and toads have been reported (Chanda, 1994). According to the IUCN Red Data Book worldwide there are 53 species of amphibians listed in the endangered category of which 3 are from India.

There is a growing concern about the fast -declining amphibian population worldwide and the same is applicable to India as well, specially in the North-east since these animals are being used as food (The Asian Age, July 15, 1996) by the local inhabitants of the various North-eastern States. These animals also are being used regularly for dissection purposes in Biology classes. In India alone in 1956 - 2.6 million frogs were dissected for school level teaching, which in 1987 shot upto 20 million - when the frogs were killed in the interest of science only for the 14 year old age group school students (The Hindu, September 28, 1996). The use of frogs in teaching and research continues upto advanced research level.

Moreover, the dried skin of frogs are sold for medicinal preparation by various tribes of the North-eastern States at the rate

of Rs. 50/- to Rs. 100/- depending upon the size. The amphibian skin has been proved to be a rich source of biologically active compounds that are assumed to have diverse physiological and defense functions. Skin secretions have a broad spectrum of antimicrobial peptides acting as anti-infective agent (Kreil 1994; Barra and Simmaco 1995; The Telegraph, October 23, 1995). The government might have banned the frogleg export but we are killing the frogs

ruthlessly for various purpose, along with the illegal export of froglegs. Amphibian populations are declining in number of locations worldwide. In most cases, the cause or causes are unknown but are assumed to result from man-made alteration in the environment. What will happen if the frogs die or dwindle to the extent that sanctuaries will have to be started



Rana tigrina skin sold for medicinal purpose. Photo by D.Roy

* Inst. Self Organising Systems & Biophysics, North Eastern Hill University, Shillong 793 022.

for them? The balance of nature will be upset; crops that are protected by frogs, will have to use chemical pesticides which will definitely be harmful. Tropical plantations in some countries import frogs for insect control. A frog eats its own body weight everyday in termites, insects and ants. If all the frogs were to disappear, insects would multiply unchecked and all life dependent on frogs - two species of birds, for example - which eat nothing else would vanish. The number of frogs is fast declining also due to habitat loss, introduction of exotic species, overexploitation, disease, climate change and decreasing water quality (like elevated pH, water temperature, unionized ammonia) may be associated with frog embryo mortality or malformation (Boyer and Grue 1995).

With global warming, deforestation, heavy pollution and sociocultural events in connection with urbanisation these animals are facing threats for their existence. Unless we in India start thinking right now and draw up action plans to breed and protect these animals in a systematic manner, soon we will have to suffer the consequences.

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