

Indian Bullfrog

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Indian bullfrogs introduced in the Andaman islands are invasive, and eat native wildlife including fish and lizards. Now, experiments reveal that the frogs take to this invasive behaviour early in their lives. Even in the developmental stages, the large bullfrog tadpoles eat other native frog tadpoles, finds a study.

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Part of the **Indo-Burma biodiversity hotspot**, the **Andaman archipelago consists of 300 tropical islands with 40% of its reptiles and amphibians endemic to the area – residing only in the islands**. As a result, these species are vulnerable when faced with invasions by exotic species. Since 2009, the range of the Indian bullfrog, *Hoplobatrachus tigerinus*, has expanded exponentially in the Andaman archipelago. It has now **gained a foothold in six out of eight of the human-inhabited islands**.

Unless managed effectively, invasive populations of the Indian bullfrog are likely to spread to the Nicobar Islands, which are currently uncolonised by the bullfrog, and expand in new locations of the Andaman Islands. **The large-bodied frog, measuring about 160 mm from snout to vent, commonly inhabits plantations and agricultural fields, preying on small native vertebrates**. Its diet is similar to that of large native frogs. Tadpoles are carnivorous, consuming other larvae and occasionally engaging in cannibalism.

The bullfrogs are **prolific breeders**: they have short breeding seasons, and each egg clutch can contain up to 5,750 eggs. To discern the impacts that bullfrog tadpoles have on native frog tadpoles, researchers used a series of experiments. They first collected egg clutches (four each) of Indian bullfrogs, and native endemic frogs *Microhyla chakrapani* and *Kaloula ghoshi*.

Once the tadpoles emerged, they mixed the clutches and randomly assigned individuals to seven different 'treatments' or combinations in circular plastic pools containing 30 tadpoles each.

Their results, published in reveal that Indian bullfrog tadpoles – which grew to be the largest (around 20 millimetres) – also grew the fastest. **The survival of both endemic frog tadpoles reduced to zero when bullfrog tadpoles were present.** In the three-species treatment too, all individuals of the endemic frog tadpoles in most pools were eaten by bullfrog tadpoles within the first week itself.