

Project Update: March 2022

(1) We successfully followed up our previous survey to accomplish anuran species and their tadpoles. Currently, there are four tadpole species and 21 adult amphibian species. The number is predicted to increase as our survey still being carried out. This was our previous survey in revealing the adult amphibians and reptiles in Lembah Anai Nature Reserve.



Fig. 1. We were giving the poster to the coordinating office of Lembah Anai Nature Reserve.

(2) The common tadpole species that are encountered during the survey was *Leptobrachium* sp. This is the biggest tadpole we encountered with the total length reaching 89 mm.

The tadpoles inhabiting the edge of the rocky stream (ca. 5-6 m in width) are found at the site with very slow water current. The substrate in their microhabitat is white sand and or leaf litter. The iris is dark black with a narrow copper colored circle near the pupil



Fig. 2. Tadpole of *Leptobrachium* sp. older (top) and younger (bottom)

Head dark, trunk and tail are lighter than head. Bigger tadpole dorsal of the head apparently darker than the smaller tadpole, there is a gold dash-line in the head dorsum and lateral portion, there is a dark band in the junction of the head with the trunk but disappear as they grow larger, small black spots present in the larger and smaller individuals from about the middle of the trunk to the tip of the tail.

(3) The tadpole of *Odorrana hosii* (total length= 21 mm) is predominantly dark except in the region of upper and lower fin tail. The tail is relatively long. The iris is golden. There are many golden dots on the dorsum of the head. The habitat of this tadpole species is shallow clear water in the edge of the big rocky stream (ca. 5-6 m in width). The substrate is white to brown sand.

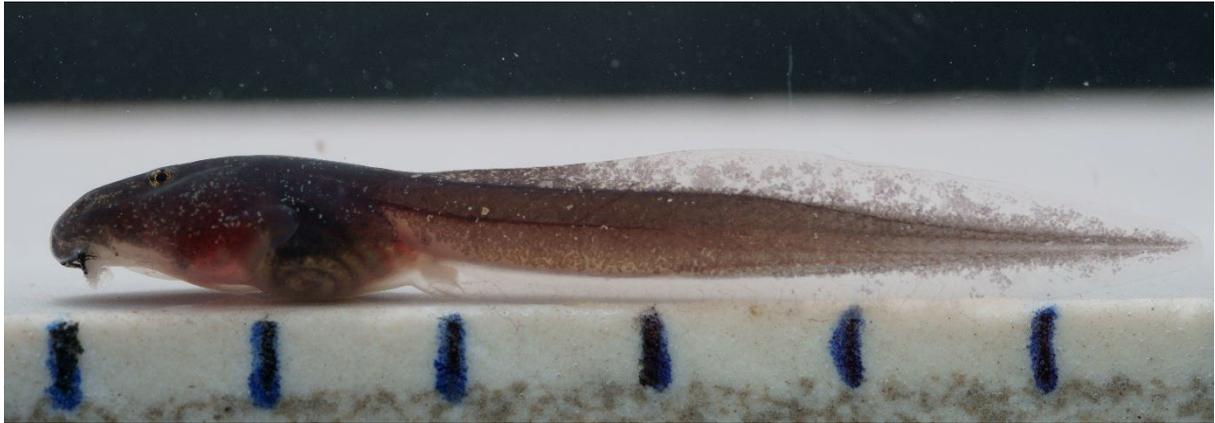


Fig. 3. Tadpole of *Odorrana hosii*.

(4) The tadpoles of *Pulchrana debussyi* were found in the smallest stream beside the hiking trail. The stream is shallow in depth. The substrate is like muddy ground. The body color in the lateral and dorsal is golden cream. Half portion of the tail at the anterior is without fin then connected to the tail muscle which is much smaller than anterior half portion of the tail. The irish is gold. There is a line from the eye to the nostril, the line is like an opened skin forming a groove to the nostril. This is the second biggest tadpole inhabiting Lembah Anai, with the total length reaching 53 mm.



Fig. 4. Tadpole of *Pulchrana debussyi*.

(5) The tadpole of *Megophrys* sp. inhabit smaller shallow stream (ca. 2 m in width), the substrate is gravel. The dorsum part of the head and body is golden cream. The tail muscle and fin are rather dark. The tail is relatively long with the anterior upper portion is golden cream. The irish color is copper with black pupil. The mouthpart is unique in having the umbelliform in shape and upwad directed.



Fig. 5. Tadpole of *Megophrys* sp.

(6) The tadpole of *Limnonectes* sp. is found in the stream similar to that of *Megophrys* tadpole was found. The head, the body and half portion of the tail is light brown, the rest portion of tail is white to grey. Black irregular spot was found in the posterior of tail. Tail is relatively long. The irish is golden.

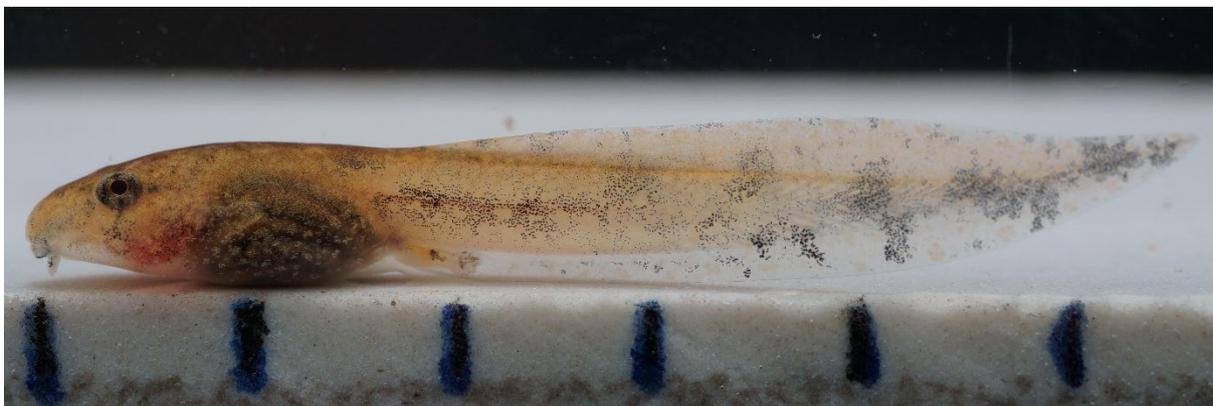


Fig. 6. Tadpole of *Limnonectes* sp.

(7) The abiotic factors measured from the observation sites.

Tadpole species	Microhabitat	Abiotic factors
<i>Leptobrachium</i> sp.	Edge of rocky stream, slow current water, clear, substrate with sand, gravel, leaf litter	Temp. : 20-21.9 °C pH: 6.9
<i>Odorrana hosii</i>	Edge of rocky stream, slow current water, clear, substrate with sand	Temp. : 20-21.9 °C pH: 6.9

<i>Pulchrana debussyi</i>	Small stream (ca. 0.5 m in width) beside the hiking trail, substrate with muddy ground	Temp. : 21-22.8 °C pH= 7.4
<i>Megophrys</i> sp.	Medium size stream with gravel in the bed, clear water, slow current water	Temp. : 21-21.9 °C pH: 6.8-7
<i>Limnonectes</i> sp.	Medium size stream with gravel in the bed, clear water, slow current water	Temp. : 21-21.9 °C pH: 6.8-7

(8) Habitat figures

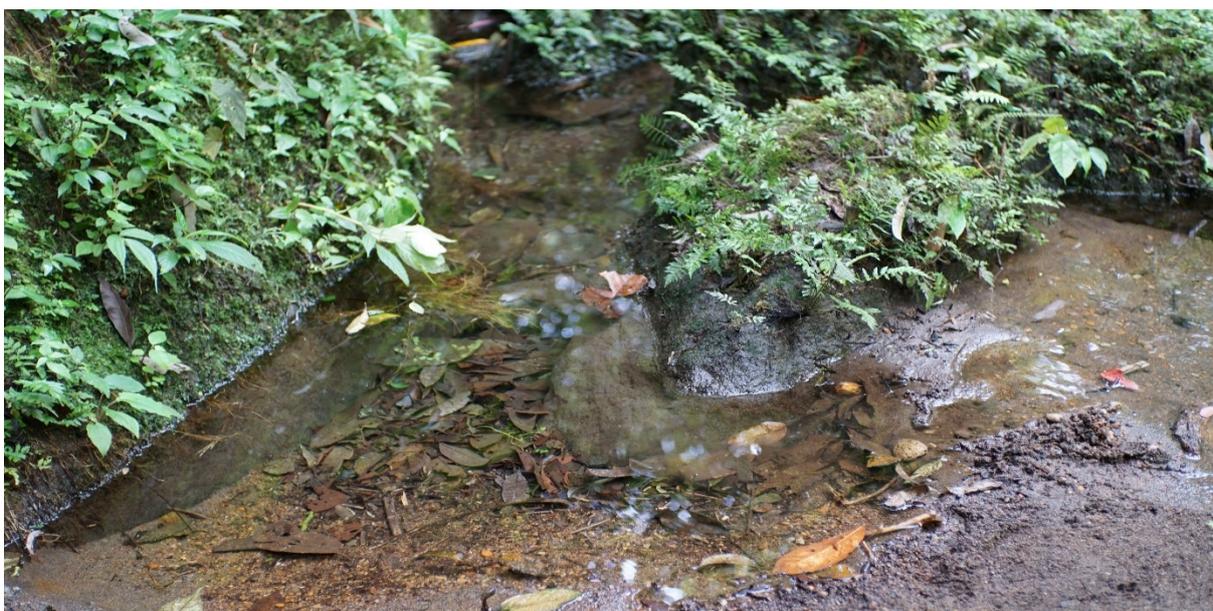


Fig. 7. Both pictures showed the microhabitat for tadpole of *Leptobrachium* sp.



Fig. 8. Microhabitat used by tadpole of *Megophrys* sp. and *Limnonectes* sp.



Fig. 9. The typical microhabitat by the tadpole of *Odorrana hosii*.

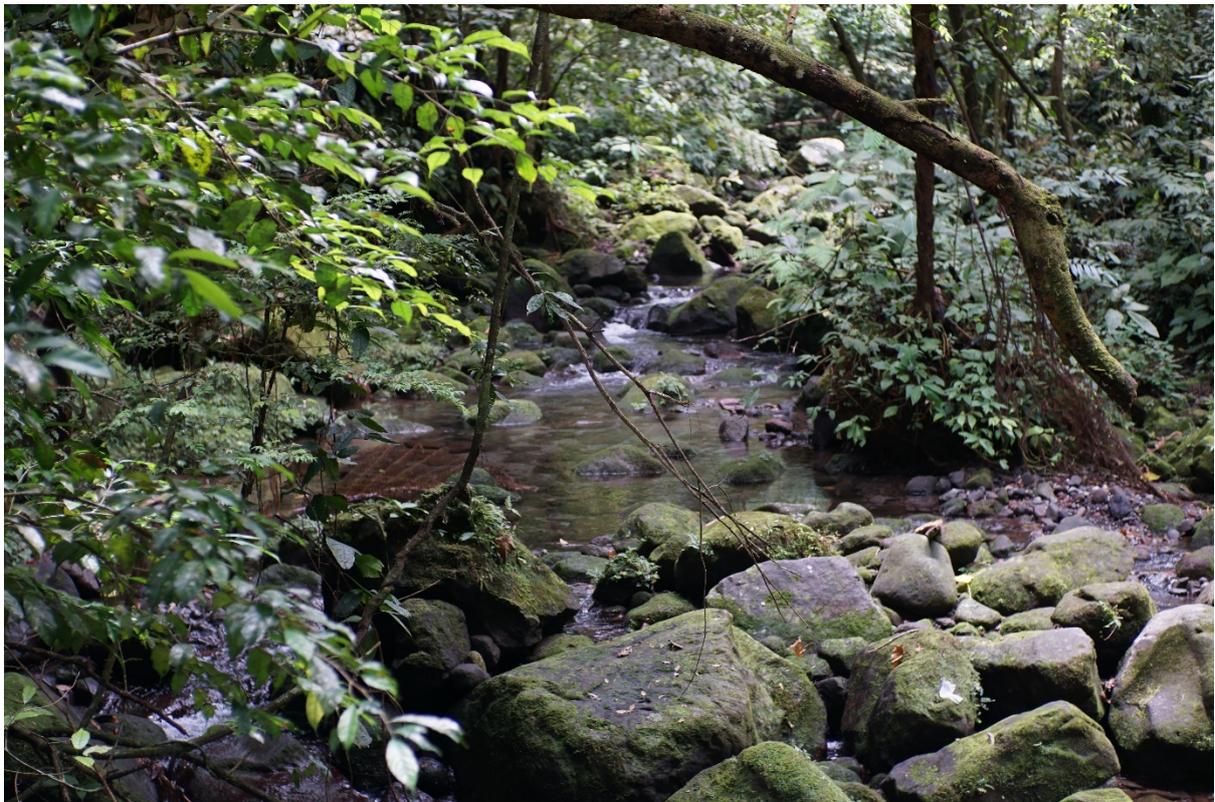


Fig. 10. The typical rocky stream in the Lembah Anai Nature Reserve