

Feeding mechanism of *Calyptocephalella gayi*.

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The helmeted water toad *Calyptocephalella gayi* is currently classified as endangered. It is a highly aquatic species, which occurs in lakes, rivers and ponds in Chile. It is assumed that *C. gayi* is adapted to the food intake under water, like many other aquatic vertebrates.

There are many publications about terrestrial food intake mechanisms in frogs, which distinguish the three different tongue mechanisms: “Mechanical Pulling”, “Inertial Elongation” and “Hydrostatic Elongation”. However, there is little knowledge about aquatic food intake mechanisms in frogs. They use forearm scooping, ram feeding, jaw prehension, a combination thereof or suction feeding.

A major goal of this diploma thesis is to compare the aquatic and terrestrial feeding mechanisms of *C. gayi*. To which degree the adaptation to the medium water has evolved and which terrestrial feeding mechanism this frog uses, when feeding on land, are part of the investigation.

Therefore, the food intake-mechanisms are investigated via high-speed filming. The films are analysed by using a MatLab-based tracking software. Variables like motion, duration and velocity of the kinematic profil will be analysed and compared to related frogs.

Preliminary results show that during aquatic feeding, they usually use both hands and the accuracy is much higher than in terrestrial feeding. Interestingly, the tongue seems not to be the main organ for food uptake on land, just larger prey is caught by mechanical pulling of the tongue.

The animals are temporarily provided from Zoo Schönbrunn’s conservation breeding program.