

Digestive morphology and enzyme activity in the Andean toad *Bufo spinulosus*: Hard-wired or flexible physiology?

Naya, Daniel E.

Farfán, Gonzalo

Sabat, Pablo

Méndez, Marco A.

Bozinovic, Francisco

Gut plasticity is a trait with implications on animal performance. However, and despite their importance as study models in physiology, research on gut flexibility in amphibians is scarce. In the present work, we analyse digestive adjustments of *Bufo spinulosus* adult individuals to cope with changes in diet quality and quantity at two organizational levels (i.e., digestive morphology and enzymes). We found that changes in gut size are related to the amount of food ingested, but not to diet composition. This is in agreement with "the gut seasonal change" hypothesis and offers a proximal explanation for this change. Digestive enzymatic activity (maltase and aminopeptidase-N) did not change with diet quality or quantity, which agrees with the hypothesis of "hard-wired physiology in adult amphibians". Both hypotheses are in agreement with the general theoretical framework of gut phenotypic flexibility when interpreted in light of amphibian natural history. In addition, our results indicate