WARM VEGETARIANS? HEAT WAVES AND DIET SHIFTS

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The warmer temperatures arising with the current climatic changes revived the interest for the influence of temperature on nutrient acquisition by omnivorous ectotherms. At higher temperatures, these organisms may optimize energetic intake by avoiding protein-rich diets and shifting toward higher herbivory. We revealed an association between the larval feeding preferences of three anurans and their thermal background, herbivory increasing with the temperature at which they live in nature. We found decreased efficiency of carnivorous diets and increased efficiency of herbivorous diets at higher temperatures. All species increased herbivory under short or long heat waves, a generalized response that may impact the structure and function of freshwater environments.

Photo 1. Adult Iberian painted frog (*Discoglossus galganoi*). This Iberian species is widely distributed in Portugal, but occurs in fragmented populations that although commonly found in a variety of habitats depend on temporary and ephemeral ponds for breeding. In Portugal, *D. galganoi* is listed as near threatened. Photograph by Maria Alho.

Photo 2. Adult European tree frog (*Hyla arborea*). This Eurasian species is present in most of Portugal, but its populations are fragmented, in the south occurring only along the coast and the species is commonly found near permanent water bodies. Photograph by Germán Orizaola.

Photo 3. Adult Mediterranean tree frog (*Hyla meridionalis*). This Mediterranean species occurs mostly in the centre and south of Portugal and is typically found in temporary and permanent habitats. Photograph by Tiago Jesus.

These photographs illustrate the article "Warm vegetarians? Heat waves and diet shifts in tadpoles" by B. M. Carreira, P. Segurado, G. Orizaola, N. Gonçalves, V. Pinto, A. Laurila, and R. Rebelo, accepted for publication in *Ecology*. doi:10.1002/ecy.1541