Three members of the family of *Bufonidae* occur in South-western Morocco: *Pseudoepidalea brongersmai* (Frost et al., 2006), *Bufo mauritanicus* and *Bufo boulengeri* (Bons and Geniez, 1996; Stöck et al., 2006, 2008). Of these species, *P. brongersmai* is the most unknown one as only a few scientific studies on its biology have been published since it was described in 1972 (Hoogmoed, 1972; Grillitsch et al., 1989; Herrero et al., 1993; Bogaerts, 2001; Gallix 2002). The species ranges along the Southern Moroccan coast, the Anti-Atlas, both north and south of the High Atlas Mountains, and probably in north-eastern Algeria (Bons and Geniez, 1996; Schleich et al., 1996; Geniez et al., 2004). *P. brongersmai* occurs in dry habitats with temporary ponds in which they breed. In such a dry habitat, many available breeding places are man made, which imply a dualist vision for amphibian conservation: these artificial ponds are semi permanent systems which ensure a successful reproduction; however, some of these human constructions act like pitt-fall traps where many amphibian and reptile species die (Pedrajas et al., 2006).

In this study a water retention pool near the road between Agadir and Tafraoute, in the Anti-Atlas region (figure 1; 10 m. diameters; 2 m. tall vertical walls; 30 cm. water depth with abundant aquatic vegetation; 30º5.529 N, 9º10.238 W, 534 m.a.s.l.), was examined on 19th May of 2008. Two amphibian species were found which are known to co-occur in this area (Hoogmoed, 1972; Bons and Geniez, 1996): *B. boulengeri* and *P. brongersmai*. Both species were reproductively active (we noticed one amplexus for each species) around noon. Another two adult *P. brongersmai* specimens (one male and one female) and numerous recently metamorphosed juveniles of both species were also found. All collected adults showed clear signs of malnutrition (figure 2). However, no drowned specimens of these or any other species were found in the water mass because of the extremely dense vegetation. There were also a great...
number of freshly metamorphosed juveniles of both species trying to leave the water. A subsample of 15 freshly metamorphosed specimens of *P. brongersmai* were captured and photographed and the images were used to measure the snout-ventral length using ImageJ analysis software (*n* = 15; SVL mean ± SD = 19.52 ± 2.48 mm). The daily activity observed both in adults (reproductive behaviour) and freshly metamorphosed juveniles (water mass leaving behaviour) suggest a similar behaviour in the wild than behaviour observed under captivity (Bogaerts, 2001).

Bogaerts (2001) specified that this toad start reproduction in mid January (captive reproduction data) and showed certain data on the length of larval development (between 24 and 84 days). Grillitsch et al. (1989) reported a larval period of 15-20 days. Following these captive population data set, it is likely that the metamorphic specimen observed were born in February or March if breeding sites are available.

Most species of the former genus *Bufo* show an opportunistic reproduction in ephemeral ponds, as *P. brongersmai* do (Geniez et al., 2004). Moreover, it seems that *P. brongersmai* has a long reproductive period, which is typical of amphibian species in desert areas that need to take advantage of every water body available (Wells, 2007). Larval period also have a high plasticity (Grillitsch et al., 1989; Bogaerts, 2001) perhaps similarly adapted to maximize these period due to a low predation pressure in the aquatic environment (Schleich, 1996) and a high hostility in the terrestrial landscape (Werner, 1986; Schleich, 1996; Wells, 2007).

The reported data does not represent a significant increase in the knowledge of *P. brongersmai*, however give us new information about reproductive periods and alternatively breeding habitats. The species appears to be well adapted to their original habitat, but its apparently high capacity to take advantage of most of the scarce water resources may dramatically increase the risk of using human constructions which compelling leads to removing specimens from the natural populations. Moreover, this report also shows the serious risk that artificial human facilities for water retention imply for amphibians conservation in arid regions. This should be easily solved just laying a pile of stones in the corner, so that toads can crawl out and profit of this type of water retention in arid regions.

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Figure 3. Dry corner of the studied pool with 102 active recently metamorphosed specimens of *P. brongersmai* (mostly, also some *B. boulengeri* vouchers). Note the difficulty to hide under the rocks and the extremely high risk of desiccation.

**References**


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