

OVERLOOKED IMPORTANCE OF WATERING TROUGH FOR YELLOW-BELLIED TOAD IN EXTENSIVELY USED AGRICULTURAL AREAS

Short notes

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ABSTRACT

Artificial sources of water - water troughs - have primarily been developed to maintain populations of large herbivores in in water-scarce areas for commercial production. They are crucial for maintaining regional biodiversity, yet they are vulnerable to human induced landscape change. Their significance for amphibians is often overlooked, even though water troughs may represent the only permanent water points for amphibian reproduction, especially for the rare frog populations of Yellow-bellied toad *Bombina variegata* (Linnaeus, 1758) in human modified landscapes.

KEYWORDS

antropotelmata, *Bombina variegata*, amphibian reproduction, agriculture, conservation

Water troughs are important on the farm for livestock feed and water. However, the maintenance of water troughs is often neglected by farmers. Especially in time, when extensive external production changes to intensive indoor “quick production”. Thus left alone functioning watering trough can become interesting for animals that can use this environment for their lives (e.g. CURADO et al., 2011; HARTEL & WEHRDEN, 2013). This short post wants to pick up the importance of watering trough - anthropogenic aquatic ecosystems belonging to antropotelmata (LELLÁK & KUBÍČEK, 1992; WILLIAMS, 2006) for the conservation of rare frog populations of Yellow-bellied toad *Bombina variegata* (Linnaeus, 1758) (see e.g. GREEN, 1997; KAUTMAN et al., 2001; KUZMIN et al., 2009) in Slovakia.

In one watering trough (Šarišské Sokolovce village, Slovakia) consisting of 5 interconnected troughs (200 cm x 30 cm x 30 cm; see Figs. 1, 2) were recorded together 8 adults and about 400 tadpoles of this species (see Tab. 1).



Figure 1. Schema of Watering trough.

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Figure 2. Photos of watering trough and Yellow-bellied toad *Bombina variegata* in watering trough (photo: B. Baranová).

Table. 1 Presence of Yellow-bellied toad in Watering troughs.

troughs (see Fig. 1)	number of adults	number of tadpoles
A	2	> 10
B	2	> 100
C	3	< 150
D	0	< 50
E	1	> 50

The maintaining of this kind of antropotelmata (relatively common, especially in farmed areas) or their rebuilding in the country could have a positive effect not only for Yellow-bellied toad population, but also on the population of other amphibians, wild animals and birds (e.g. GARCIA-GONZALEZ & GARCIA-VAZQUEZ, 2011). Although these antropotelmata represent only a remnant of times past in Slovakia, which is gradually disappearing from the country. We assume that its significance is far greater than watering trough for livestock. They have also value as freshwater shelters for amphibian diversity and amphibian conservation. With appropriate management can have a beneficial effect on local biodiversity, wild animals, birds, and even rare amphibians whose natural habitats are gradually disappearing from nature thanks to human activities and intervention in the country (e.g. BUONO et al., 2019).

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