

PLASTIC FIBRES CAUSE A BROOD FAILURE IN A LONG-LEGGED BUZZARD *Buteo rufinus* NEST

Plastična vlakna kot vzrok propada legla rjaste kanje *Buteo rufinus*

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The Long-legged Buzzard *Buteo rufinus* expanded its breeding range in SE and Central Europe in the second half of the 20th century (MUNTEANU *et al.* 1997, MEBS & SCHMIDT 2006). Its largest European population is found in Bulgaria with about 800–1,000 pairs and conservation status Vulnerable (VATEV *et al.* 2011). Nests on the rocks are preferred than on trees or power-transmission towers in Bulgaria, and several pairs breed in quarries. Due to the generally greater burdening of the environment with plastic waste, the Long-legged Buzzard increasingly uses more artificial materials for nest lining (MILCHEV 2009), contrary to the former reports from Bulgaria (VATEV 1987, SIMEONOV *et al.* 1991). The nests in the quarries are always lined inside with plastic bags, fibre, string, and metal wire (MILCHEV 2009). The use of plastic materials by birds in the nest construction is an innovation, operationally defined as “a new or modified learned behaviour not previously found in the population” (READER & LALAND 2003). The plastic strings appear to be a new factor contributing to clutch losses and adult bird mortality usually owing to the entanglement of the nestling’s legs and rarely of the brooding bird (MONTEVECCHI 1991, PTASZYK 1994, DOLATA 2006, VOTIER *et al.* 2011). In this study we report on a similar recorded case concerning this raptor.

A Long-legged Buzzard pair bred in the abandoned part of a stone quarry in the municipality Elhovo, SE Bulgaria, for the first time in 2010. The birds had two eggs and successfully reared two fledglings. The nest was inaccessible for predatory mammals and the pair used it again in the ensuing year. But in that year, the nest lining comprised multiple elastic plastic fibres partially intertwined with other nesting materials and twigs (Figure 1). An adult bird was seen sitting on the



Figure 1: An abandoned Long-legged Buzzard *Buteo rufinus* nest with net of plastic fibres as nest lining in a stone quarry, SE Bulgaria (photo: B. Milchev)

Slika 1: Opuščeno gnezdo rjaste kanje *Buteo rufinus* z mrežo iz plastičnih vlaken, ki so bila uporabljena kot gnezditveni material v kamnolomu, JV Bolgarija (foto: B. Milchev)

neighbouring rocks on 29 Apr 2011, but the brood with two eggs had apparently been abandoned. One of the eggs inside the nest had already been broken, the other covered by plastic fibres. They formed a kind of a net but were not flattened by the body of the incubating bird. The net had maintained its bulk structure, virtually encasing the eggs in it. This obviously hindered the incubation, the turning of the eggs, and movements of the brooding bird in the nest. We conclude that it was the net of plastic fibres that caused the brood abandonment.

The previous findings of plastic materials in the Long-legged Buzzard’s nest linings and pellets had not provided any proven negative impact on its breeding success (MILCHEV 2009). The same was established in the nests and pellets of the Egyptian Vulture *Neophron percnopterus* in SE Bulgaria (MILTSCHIEW & GEORGIEVA 1994, MILTSCHIEW 1996, *own data*). However, these materials were made of softer plastic, which did not form elastic net structures. This first case of the abandoned Long-legged Buzzard brood caused by plastic fibres intertwined in nest lining should have been taken into account also in the conservation measures developed in respect to the Egyptian Vulture, which is an Endangered species (category EN) with about 60–75 pairs in Bulgaria (KURTEV *et al.* 2011, IUCN 2011).

Povzetek

Največja evropska populacija rjaste kanje *Buteo rufinus* živi v Bolgariji, kjer najpogosteje gnezdi v skalnih

stenah, nekaj parov pa tudi v kamnolomih. Zaradi vse večjega obremenjevanja okolja s plastičnimi odpadki so pri vrsti v zadnjem času zabeležili porast uporabe plastičnih materialov pri graditvi gnezd. Uporaba le-teh za gnezditveno gradivo je opredeljena kot inovacija oziroma novo naučeno vedenje, pred tem nepoznano v njeni populaciji. Dne 29.4.2011 je bila na gnezdišču v mestni občini Elhovo (JV Bolgarija), kjer je bilo gnezdenje para leta 2010 uspešno, opazovana odrasla ptica ob gnezdu z opuščenim leglom. Očiten vzrok za takšno stanje je bil preplet plastičnih vlaken, ki je oblikoval gosto in elastično mrežo ter prekrival jajci in s tem domnevno oviral valjenje oziroma obračanje jajc v gnezdu. Avtorja sta zaključila, da so plastična vlakna povzročila propad legla. Prejšnje najdbe plastičnih materialov v gnezdih rjastih kanj niso potrdile negativnega vpliva na gnezditveni uspeh. Podatek o propadu legla zaradi plastičnih vlaken bi morali upoštevati tudi pri načrtovanju varstvenih ukrepov za globalno ogroženega egiptovskega jastreba *Neophron percnopterus*.

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