

# Effects of installing amphibian tunnels and amphibian fence on roads in Poland and Denmark.

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The monitoring of the use of amphibian tunnels and fences in Poland and Denmark is presented on discussed on two lane roads as well as on motorways. The ecological effects as well as the maintenance of different tunnel shape in concrete and fence systems in concrete, polymer beton, metal and plastic are presented

The first Polish amphibian tunnels were installed in 2000 in the table Mountains National Park in order to guide tens of thousands of common *Rana temporaria* and *Bufo bufo* from the hills to the breeding pond in the valley. The second Polish amphibian tunnels were build on Via Baltica express road near Lithuania-Polish border to in 2002 in order to secure connection an ecological connection between breeding pond and terrestrial habitats for 9 species of amphibians among them 5 listed on the EU habitat directive annex IV (*Bombina bombina*, *Pelobates fuscus*, *Triturus cristatus*, *Rana arvalis* and *Rana lessonae*).

In Denmark the first amphibian tunnels-fence system was build in 1998 targeted 5 species among them *Pelobates fuscus* and *Rana arvalis*. In 2008 the Danish motorway build a demonstration project with 4 types of amphibian fence for the test of the ecological effects, test of longetivity of materials as well as the test in maintenance cost of the material and maintenance cost of the vegetation along the fence types. The system was build were large populations of *Rana arvalis*, *Rana temporaria*, *Bufo bufo*, *Triturus cristatus* and *Triturus vulgaris* occur.