Conservation of Toads in Urban Areas

Liron Goren

Urbanization and farming rapidly reduce open lands in different parts of the world adversely affecting biodiversity. The dependence of amphibians on terrestrial as well as aquatic habitats makes this animal group especially vulnerable to habitat destruction. Indeed amphibians are the vertebrate group most threatened. We recently initiated a study aimed at assessing the probability of survival in urban areas of the green toad (Bufo viridis), an endangered species in Israel (see photograph). Our hypothesis is that an amphibian population enclosed by an urban area (a remnant of a population that existed in the site prior to urbanization) will survive and breed successfully provided that they have access (via a corridor) to a breeding pond as well as to a site of an open land (or alternatively to a large park) that can support their terrestrial activity. We compare three situations, one of a population entirely enclosed by a build up area but with an access to a breeding pond and to a nearby park; a second population that breeds in a winter pond that we dug a year ago in an urban area in the vicinity of a stream park that provides riparian habitats; a third population is in a site that was recently modified and transformed from semi-natural state to an urban environment. In the latter case the green toad population, a remnant of a larger population that existed in the area, can either continue to breed in small puddles and drainage channels and carry on terrestrial activity in newly constructed city park, or move to a pond that was dug two years ago in a nearby agricultural area (within distance of 1 km). For the past 2-5 years we marked juveniles and adults of the green toad (with passive integrated transponder) in these sites and will continue to do so for the coming years. During the breeding period we record individuals present in the in the breeding ponds ant their vicinity. Outside the breeding period we will look for marked and unmarked individuals in terrestrial habitat within 1to 2 kilometers of the breeding sites. We plan to assess movements of green toad individuals in an out of these urban areas, determine survivorship, population age structure, number of breeding females and assess breeding success (metamorphs recruitment). We will gladly share information with other researchers with mutual interest.

Liron Goren (MSc student) – goren.liron@gmail.com

Department of Zoology, Tel-Aviv University, Ramat Aviv 69978, Israel

A female green toad recorded in a residential park