

ABSTRACT

In an increasingly populated world, habitat fragmentation is common. When these habitat fragments are in urban environments, they are often impacted by pollution and other disturbances. Yet populations of some species like *Regina septemvittata* (Queen snakes, QS) and *Nerodia sipedon sipedon* (Northern watersnakes, NWS), may persist in such environments and they are the focus of this research. Along an urban stream, a mark-recapture study was done on QS and NWS. Passive Integrated Transponder (PIT) tags were used to mark snakes and the site was checked multiple times per year over an 11-year time period (2008-2018) to obtain recaptures, and basic measurements used for size/age analyses. Ninety unique QS and 45 unique NWS were captured which were large enough to PIT tag and most of these snakes were found only once. Three age cohorts were determined for each species based on the sizes of captured snakes. The population estimate for 2018 using the Schnabel method was 28 QS and 68 NWS. Using the Jolly-Seber method for QS over the period of the study yielded an average population size of 28 snakes. QS recapture probability was 37% and annual survival rate was 52%. Similar estimates for survival rate and recapture probability could not be done for the NWS due to lack of recaptures between years. This research gives a glimpse into these snakes' populations which seem to be thriving despite the less than optimal environment.