Invasive raccoon dog (*Nyctereutes procyonoides*) and raccoon (*Procyon lotor*) monitoring in Lithuania based on camera traps data

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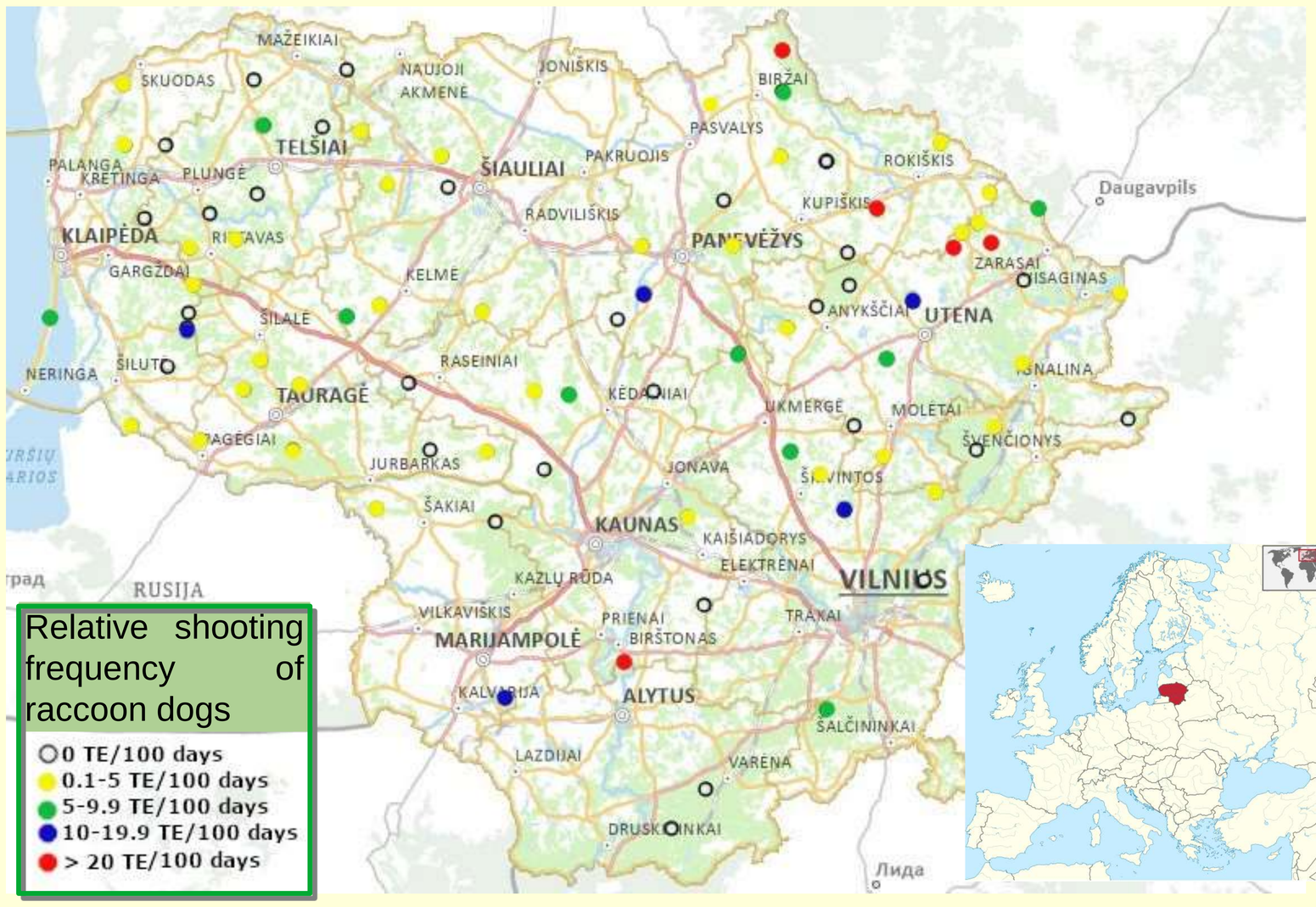
Raccoons taken with a trail cameras

Raccoon dogs taken with a trail cameras

Invasive mammal species outside their natural range are causing damage to the native ecosystems. Raccoon dogs were first observed in Lithuania in 1948 and since then spread across the country. Surveys of this species stopped in 1997, therefore numbers and trends currently are unknown. Raccoons were first observed in 2012, with only a few sporadical reports over the decade. Both species are listed as an EU species of concern. Between September 2019 and July 2021 we evaluated distribution and densities of these animals using camera traps (system with a motion trigger/sensor that activates a camera to take a photograph when an animal is present). We used LtlAcorn-5210A cameras. Sensors were set to the maximum sensitivity. The trigger interval was set at 0 sec. We used trail-targeted (passive camera) trapping design with no attractants. Cameras were mounted on the trees about 40–60 cm above ground and checked (replacing batteries and SD memory cards) 3–4 times during the year. Pictures taken with at least 1–hour interval were treated as independent observations (trap events). The study was carried out at 85 camera trap locations in Lithuania with a total sampling effort of 11501 camera trap days. Relative shooting frequency (photos/100 days) was calculated by formula: “Relative shooting frequency” = (TE / TD) * 100, where TE (trap events) = number of independent photographs; TD (effort of trapping days) = number of camera trapping days.

Raccoon dog was identified in 57 locations (67.1 % of all surveyed) and raccoon 1 location (1.2 %). The average relative shooting frequency of raccoon dogs was 5.12 photos/100 days and that of raccoons was 0.18 photos/100 days. The abundance of raccoon dog was not uniform. In northeastern part of Lithuania their relative shooting frequency was significantly higher than in western part (6.26 and 2.31 photos/100 days, respectively; $p < 0.05$). Raccoons were present in only one location, however, during the study period they were registered 21 times. This indicates that a viable population has developed and it can become a source of further invasion in the nearest future, requiring immediate control actions.

Locations of camera traps in Lithuania



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