Rodent Management – Session 1

Biological control of urban rats in the World Heritage town of Luang Prabang, northern Laos

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Here we present results of a campaign of biological rodent control in the World Heritage town of Luang Prabang in Northern Laos that was implemented in 30 sub-districts ('villages') or 3,706 households, which constituted a large part protected under UNESCO (about 197 ha). Rat bait containing lethal quantities of the parasitic protist Sarcocystis singaporensis was applied by residents during the dry season (February to June) in the so-called ‘wetlands’ and ‘heritage zone’, both of which are part of peninsular Luang Prabang (at the confluence of the Mekong and Khan rivers). Levels of rodent infestation before and after treatment were monitored by the percentage of footprint-positive tracking patches, live-trapping, and interviews with residents. The only rodent species observed in the town were the Asian house rat (Rattus rattus; Rattus tanezumi) and the Pacific rat (Rattus exulans).

The campaign significantly reduced rodent activity in the protected area: By 44.5% - 91.3% in the heritage zone (average reduction: 69.8%), and 27.3% - 95.5% in the wetlands (average: 67.1%) according to the post-campaign data in June/July (wet season). Rodents activity increased or remained at pre-campaign level in three untreated villages. Interviews with residents revealed similar results: They observed significantly fewer rodents on their properties after the campaign. We detected significant correlation between villagers’ observations and rodent activity, lending credibility to the former. Almost all villages, except two, observed dead rats after application of rat bait. Interestingly, we trapped higher proportions of Pacific rats and juvenile House rats after the campaign, suggesting that a considerable part of the adult House rat population had been removed. Based on the spatial distribution of the Pacific rat in the town, we speculate about the possible origin of this species in Northern Laos. Results are discussed in view of the development of a sustainable, urban rodent management concept for Luang Prabang.
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