

## **RODENT SURVEILLANCE IN GREEN SPACES AND SEWAGE SYSTEM IN BARCELONA (SPAIN)**

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**Abstract** The Agència de Salut Pública de Barcelona has developed and implemented a rodent surveillance plan in public green spaces and the sewage system. The aim is to monitor certain areas of the city and detect early rodent activity to prevent health problems and mitigate the effects of climate change on rodent activity. Surveillance zones were defined by considering previously recorded rodent activity data, the results of rat abundance studies in the city, indicators of socio-economic inequalities and proximity of schools. A specific software tool associated with a GIS was introduced into daily tasks to obtain geolocated data and outline the surveillance zones. Surveillance zones were inspected, monitoring points were placed and regular checks were conducted. Rodent activity was recorded for each checked point and control measures were taken when necessary. The first zones were defined by mid-October 2021 and were monitored until April 2023. In these zones, 3472 surveillance points in the sewage system and 983 in green spaces were checked 45,137 and 11,949 times, respectively. Rodent activity was detected in 77% of the sewage system points and 86% of the green spaces points. These initial results indicated a need to reinforce surveillance green space. In 2023, the number of surveillance points increased to 1,206, being checked 23,368 times. Less effort was allocated to the sewage system with 2,301 points checked 23,097 times. The number of surveillance points in 2024 remained similar to 2023: 1,487 for green spaces and 2,323 for the sewage system. However, the number of checks increased: 36,655 in green spaces and 30,581 in the sewage system (since in 2024, data were collected from January to December, in 2023, monitoring only began in mid-April 2023). In 2023, 93% of the points in green spaces recorded rodent activity at least once, compared to 77% in the sewage system. In 2024, 79% of green spaces points and 71% of sewage system points registered activity. Nevertheless, when considering the number of checks, the percentages differ significantly. The proportion of surveillance checks detecting activity was 24% in the sewage system and 25% in green spaces in 2022, 12% and 20% in 2023; and 19% and 18% in 2024. This suggests that that zones and point were effectively selected to detect activity, but the activity was not constant. It indicates that the measures successfully controlled the rodent activity. The results show that surveillance enables the monitoring and detection of rodent activity in the defined zones. During the first years of implementation a need to invest more effort in green spaces was identified,

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