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Effects of urban environment on health in the great tits

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How urban stressors such as chemical pollution or food availability can affect the ecological and physiological traits of birds is important to understand the mechanisms by which birds can colonize urban environment. To highlight how species can adapt to urban constraints, we studied the fitness of the Great tit (*Parus major*) during three years along an urban gradient around Strasbourg (France). Three areas were followed on this gradient (one in Strasbourg, two outside). We showed that they were different according to the atmospheric and ground pollution, the food availability and the vegetation cover around the nests. In the town (few food, less polycyclic aromatic hydrocarbons and pesticides), few great tits pairs bred, adults were smaller and reproductive success of these birds was lower compared to the two other areas. We will present results concerning oxidative stress and telomere attrition as physiological parameters in adults and fledglings. In addition, we will propose an international collaboration on the great tits as an urban ecological and physiological observatory.