Country finch-city finch: Does urbanization affect the chemical profiles of Darwin’s finch preen oil?

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The increase in urbanization can have a strong effect on ecological and evolutionary processes, which can be amplified on islands such as the Galapagos Islands due to their isolation. Many avian species are urban adapters by adjusting their behaviour and communication to account for urban anthropogenic stimuli. We know urbanization impacts avian species vocal communication due to urban factors such as anthropogenic noise. Much less work has focussed on olfactory communication and chemical signaling, yet recent research has shown chemical signaling such as through preen oil could play an important role in communication. Urban and non-urban finches on the Galapagos have adapted in a variety of ways which could affect their preen oil composition and therefore, potentially, their communication. We hypothesize that preen oil chemical composition will differ between urban and non-urban Darwin’s finches. Using gas-chromatography mass-spectroscopy (GCMS) we analyze the chemical profiles of preen oil from urban and non-urban Darwin’s finches. Our results will contribute to our understanding of chemical signaling, preen oil function, and how Darwin’s finches are adapting to urbanization.