Utilizing UAS to Support Sustainability and Wildlife Hazard Management

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Abstract

Wildlife strikes to aviation are a serious economic and safety concern. The Federal Aviation Administration requires Part 139 airport operators to conduct a wildlife hazard assessment (WHA) when certain wildlife strike events occur at or around the airport. Furthermore, the implementation of a systematic, proactive, and well-defined scientific approach to mitigate wildlife hazards to aviation while ensuring sustainability may allow airport operators to spawn a realistic and efficient balance between safety and sustainable development. Utilizing wildlife behavior and location data collected by UAS, airport officials can efficiently identify harmless sustainability methods that can be incorporated to mitigate wildlife hazards. Data have been collected using a DJI Matrice 210 drone with a Zenmuse X5S camera and with a DJI Mavic 2 Enterprise Dual drone at Coe Field (8FA4), a privately used, general aviation airport located in Class G airspace. Different strategies to mitigate risks associated with manned air traffic and remote-controlled aircraft were implemented in our study, such as incorporating an automatic detection surveillance-broadcast flight box and Foreflight technologies as well as numerous visual observers during data collection.