Why Did the Terrapin Cross the Runway?

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ABSTRACT: Diamondback terrapins (*Malaclemys terrapin*) have been nesting at John F. Kennedy International Airport (JFK) for decades. In 2009, the airport experienced a surge in terrapin activity that led to closing a portion of a runway. Runway closures may delay aircraft traffic at JFK which in turn can cause a ripple effect with delays at airports across the country. During the months of June and July, the terrapin nesting season coincides with peak travel for aircraft passengers with about 1,200-1,300 aircraft movements per day. The airport began collecting data on terrapins in 2010 to help understand the dynamics. From 2000-2012, aircraft struck an average of 3.8 terrapins per year. However, no aircraft were damaged as a result of striking terrapins and there were no other negative effects on flights. The airport did experience operational effects such as brief runway closures in order to move terrapins off runways or taxiways. Data collected from 2010-2012 showed increases from 200 to 1,300 terrapins relocated during the annual nesting season. At peak times, more than 200 terrapins have been relocated in a two-hour period. The dates of the peak nesting activity varied by year; however, there was a peak during the second week of June and no nesting activity observed after 17 July. The number of terrapins nesting and relocated per day was similar in 2011-2012, ranging from about 50-200 terrapins. In contrast, researchers observed 30-50 terrapins nesting each day in 2011-2012 at the nearby Jamaica Bay Wildlife Refuge. Terrapins that were collected in 2010-2012 were also measured to determine plastron and carapace length, marked with shell notches and passive integrated transponder (PIT) tags, and then released. In 2012, over 84% of the terrapins collected were $\leq$ 160 mm, suggesting that this is a young terrapin population. Terrapins at JFK also captured the attention of media around the world and resulted in positive images of the airport's wildlife program. Management of terrapins at the airport must take into account the socio-political aspects of the issue, but also address potential safety hazards and operational problems posed by the large numbers of terrapins in the aircraft movement area. The airport was directed by FAA to address the terrapins in 2012 and set up a trial of two different barriers. Trail cameras were used to test the effectiveness of the barriers and provided results that helped to refine our survey techniques.

Key Words: aircraft strikes, JFK airport, Terrapin

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