SHORT COMMUNICATIONS, NOTES AND REPORTS

King Vulture (*Sarcoramphus papa*) scavenging at green turtle (*Chelonia mydas*) carcasses in Tortuguero National Park, Costa Rica

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The King Vulture (*Sarcoramphus papa*) is the third largest New World vulture, with a geographical range that extends from southern Mexico to northern Argentina (del Hoyo *et al.* 1994, Henderson *et al.* 2010). It is categorized on the global IUCN Red List as a species of Least Concern but shows a declining population trend that is mainly due to loss of habitat (Birdlife International 2016).

The King Vulture is a carrion-eater that, like other vultures (Whelan *et al.* 2008), plays an important ecological role in clearing carcasses and preventing the spread of diseases. It is generally solitary or found in small family groups, and in most cases only one or two individuals can be seen feeding at a carcass, although up to ten or more have been recorded at large carcasses (Wallace & Temple 1987, *del Hoyo et al. 1994*, Mallon *et al*. 2013). It has also been reported that at a carcass, King Vultures dominate smaller vulture species (Wallace & Temple 1987, Bull 1991, Mallon *et al.* 2013). Herein, we report two observations in which a King Vulture was seen scavenging from green turtle (*Chelonia mydas*) carcasses in Tortuguero National Park, Costa Rica.

The protected area of Tortuguero is located on the northeastern Caribbean coast of Costa Rica (10°32’28’’ N - 83°30’08’’ W; Figure 1). It encompasses an area of 76,316 ha (37% terrestrial and 63% marine), where the predominant ecosystem is the Tropical Wet Forest

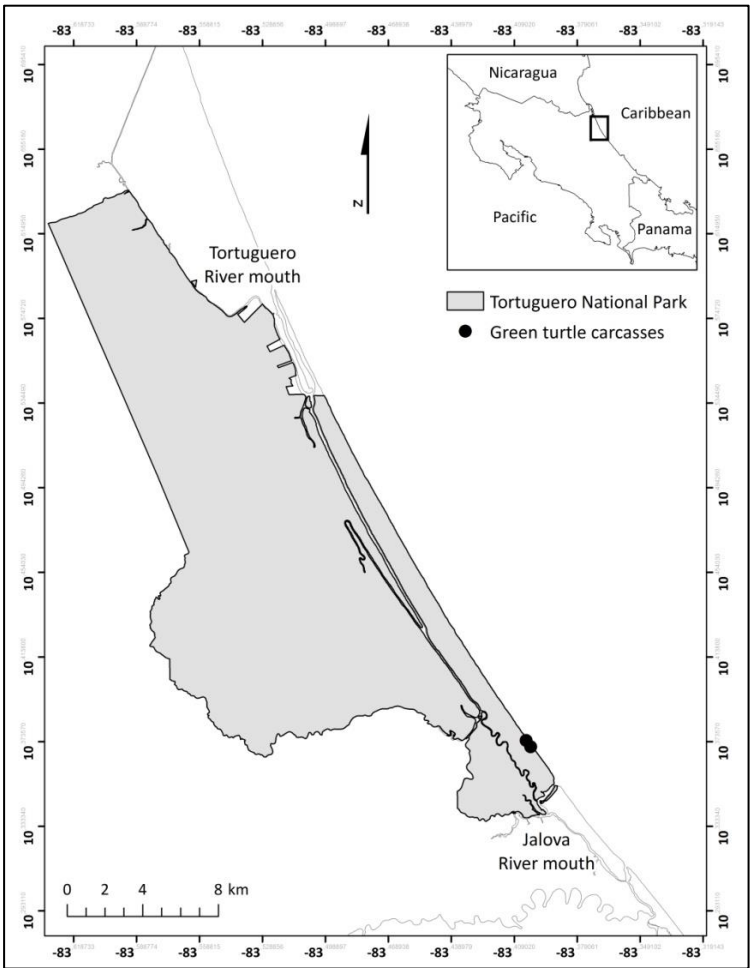

Figure 1. Study area in Tortuguero National Park, Costa Rica.

(Holdridge 1969). Average temperatures range from 25°C to 30°C, with a mean annual precipitation of 6,000 mm. Elevations range from 0 m to 311 m above sea level (Bermúdez & Hernández 2004).

Tortuguero hosts the largest remaining green turtle rookery in the Atlantic (Troëng & Ranking 2015). The park also hosts a small nesting population of leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*) and loggerhead (*Caretta caretta*) turtles. The first record of jaguars predating upon marine turtles was documented in 1981, and it has increased since then (Veríssimo *et al.* 2012, Arroyo-Arce & Salom-Pérez 2015, Guilder *et al.* 2015). This trend could be due to habitat degradation, anthropogenic pressures or in response to an increase in the local jaguar population (Troëng 2000, Arroyo-Arce *et al.* 2014, Arroyo-Arce & Salom-Pérez 2015). However, current predation rates suggest that jaguars do not represent a significant threat to the local nesting population (Arroyo-Arce & Salom-Pérez 2015).

A long-term monitoring program of jaguar predation on four species of marine turtles that nest on Tortuguero beach has been conducted since 2005. As part of this program, one or two camera traps (Bushnell HD Trophy Cam or Browning Strike Force HD) were installed at locations of recent predation events (<24 h since predation) over a period of four days. The cameras were programmed to take videos of 20 s in length at intervals of 10 s (Arroyo-Arce & Thomson 2016). In 2015 we recorded the King Vulture scavenging from two different green turtle carcasses. Based on Schlee (1991) we used the wattle conformation as a criterion for recognizing individual adult, and determined that only one individual was recorded.

The first carcass (10°22’40.3’’N - 83°24’17.1’’W) was monitored from October 6th until the 9th. On the third day (October 8th) an adult King Vulture was recorded at the site from 14:06 h to 14:20 h. It first perched on driftwood located roughly 2-3 m away from the carcass, while a group of American Black Vultures (*Coragyps atratus*) fed from the neck of the turtle. After a few minutes the King Vulture began to feed from the carcass, forcing the other vultures to cede position. Throughout this event, the American Black Vultures attempted to feed on several occasions but appeared skittish and were forced to retreat by the

movements of the King Vulture (Figure 2).

The second carcass (10°22'27.5''N - 83°24'09.8''W) was monitored from October 11th to the 14th. On the third day (October 13th) an adult King Vulture was recorded from 07:48 h to 08:48 h. During this event we recorded the King Vulture feeding from various

Figure 2. An adult King Vulture (*Sarcoramphus papa*) establishing dominance over American Black Vultures (*Coragyps atratus*) at the carcass of a depredated green turtle (*Chelonia mydas*), Tortuguero National Park, Costa Rica.

parts of the turtle (internal organs, flippers, neck). We also recorded several examples of hierarchical disputes amongst the American Black Vultures present at the site; however, all of them seemed to cede their position to the King Vulture. Occasionally the King Vulture struck out at the American Black Vultures that were in close proximity, causing them to withdraw. At the end of this feeding bout, the King Vulture had a noticeably distended crop (Figure 3).

Although there have been reports of the King Vulture in Tortuguero National Park (Widdowson &

Widdowson 2000, Groom 2011), during the five years of monitoring carcasses with camera traps, to our knowledge the above two observations constitute the first documentation of King Vultures scavenging from green turtle carcasses. Since so little is known regarding King Vultures, our data

Figure 3. An adult King Vulture (*Sarcoramphus papa*), with a distended crop, feeding from a green turtle (*Chelonia mydas*) carcass, Tortuguero National Park, Costa Rica.

make an important contribution to better understanding the species.

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