DEPARTMENT OF
ENVIRONMENT
CAYMAN ISLANDS GOVERNMENT

White-tailed Tropicbird (*Phaethon lepturus*)

Report on nesting habitat on Grand Cayman 2022

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Background

White-tailed Tropicbirds (*Phaethon lepturus*) are breeding summer visitors to the island of Grand Cayman (Brunt & Davies 1994). Recorded on Grand Cayman prior to the year of 1916, the species has been monitored locally since 1984. Nesting in rock crevices where geology allows, this seabird species is gregarious and usually nests in colonies, however, loose aggregations have been observed where nesting cavities are sparse (Lowrie *et al.*, 2012). Nesting is restricted to areas where daily commutes allow the reach of suitable prey and where predators can be avoided. Being highly pelagic, White-tailed Tropicbirds are rarely seen within the vicinity of land unless they are nesting or displaying courting behaviour (Lee and Walsh-McGehee 2000).

Of Grand Cayman's 160 km coastline, suitable nesting habitat makes out just 3.1% as the bluff, starting from west of Pedro St. James runs east of Beach Bay with a total length of 5 km, see Figure 1 below. As described by Patricia E. Bradley:

> "*A small colony breeds in holes in the 12 m high bluff from west of Pedro St. James along 5 km east to Beach Bay, 1984-2004. Extreme migrant dates 21 December-24 September*"

(Bradley and Norton 2009)

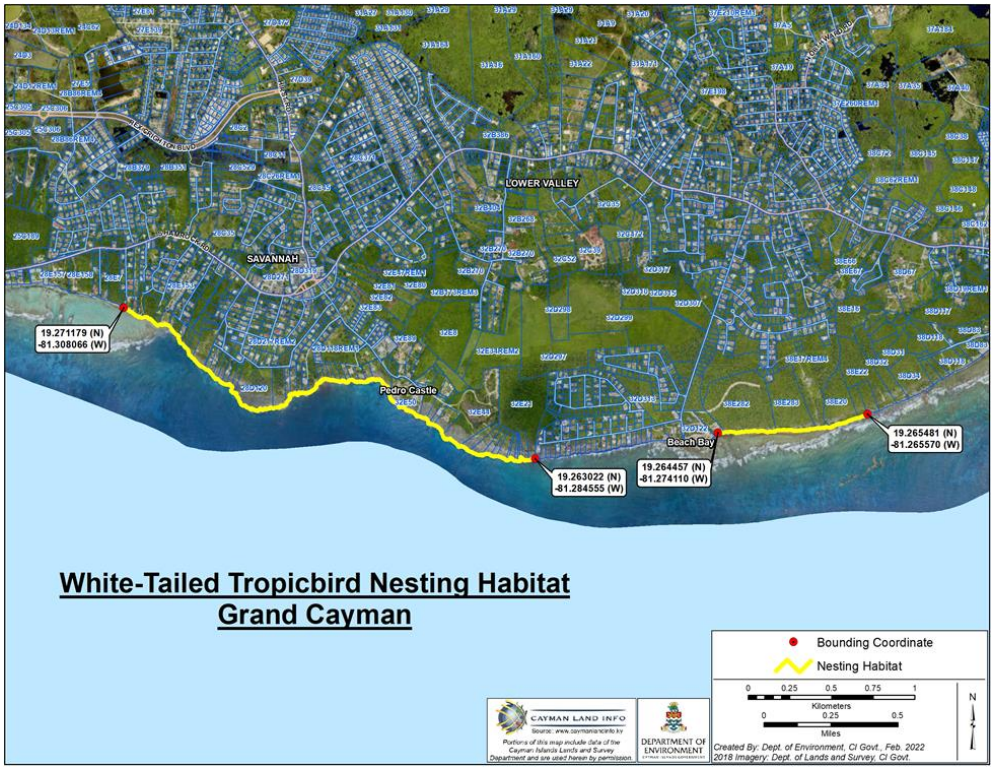

Figure 1: White-tailed Tropicbird Nesting habitat on Grand Cayman.

A summary of historic numbers of the total breeding pairs counted on Grand Cayman can be found below in Table 1.

Year	Total (pairs)
1986	15-20
1985	15
1996	10
1997	10
2000	9
2003	10
2004	5

Table 1: Historic data of White-tailed Tropicbirds breeding on Grand Cayman. The table is adapted from Bradley and Norton 2009, table 6.2, p. 61.

Since 2004, local birders have continued to record White-tailed Tropicbird numbers and potential nesting locations (eBird 2022). In 2017 a staff member of the Royal Society for the Protection of Birds (RSPB), Charlie Kitchin, visited Cayman for a sabbatical to record remaining White-tailed Tropicbird nest sites. One key finding was that the birds had started utilising rock holes below the splash zone, as a bird was seen entering and exiting a cavity in between wave action, see Figure 2.

Figure 2: Rock hole below splash zone was actively used by White-tailed Tropicbirds in 2017.

Current White-tailed Tropicbird Surveys

The Department of Environment's Terrestrial Resources Unit (TRU) has been conducting White-tailed Tropicbird surveys on Grand Cayman throughout January and February of 2022. This season a maximum of 10 (ten) individuals have been counted and 5 (five) nest sites have been located by Pedro St. James, including one abandoned egg. Surveys are conducted by foot, searching crevices and counting adults in the air. Drone surveys are not recommended for this species as nests are extremely camouflaged and can often not be detected even within 5 m on foot, see Figure 3.

Figure 3: Tail emerging from current nest site (left) and abandoned egg in nest (right). Photos by Jane Haakonsson

Upon visiting the Beach Bay nesting site on February 25 2022, TRU officers Jane Haakonsson and Vaughn Bodden discovered several potential nest sites. Elevation was favorable and comparable to that of the known nest sites of this season, and cavities of desirable size and depth were identified. When investigating the most optimal nesting cavities, however, large Green Iguanas (*Iguana iguana*) were found inside, see Figure 4. Skin and faeces from Green Iguanas were seen throughout this stretch of White-tailed Tropicbird nesting habitat and 4 (four) adult Green Iguanas were seen.

When conducting a count of White-tailed Tropicbirds, 4 (four) adults were seen flying at sea from the site at Beach Bay.

Figure 4: Tails of adult Green Iguanas were seen in optimal White-tailed Tropicbird nesting cavities at the Beach Bay site.

Extirpation and Disturbance

It is highly likely that the Green Iguanas have prevented the White-tailed Tropicbirds from utilising the Beach Bay nesting habitat in recent years, as vegetation and accessibility prevents iguana cullers from accessing this particular area. Rat faeces was also found on the site and the effects of both invasive species combined can have detrimental effects on successful tropicbird nesting as can human disturbance.

Artificial Nests

Given the decline in breeding pairs of White-tailed Tropicbirds on Grand Cayman as well as the limited safe nesting resources, the Terrestrial Resources Unit (TRU) began in 2020 to experiment creating safe artificial nesting cavities with guidance from the Bermuda Audubon Society and the Government of Bermuda's Department of Environment and Natural Resources (DENR 2022). Given the vulnerability of the nesting birds, their eggs and chicks, tropicbird igloos have been used with great success elsewhere in the Caribbean. See Figure 5.

Fig 5. Left: Department of Environment staff experimenting to create safe artificial Tropicbird nesting cavities as done in Bermuda, right (photos from https://environment.bm/longtail-igloos).

Recommendations

To ensure the long-term sustainability of the White-tailed Tropicbird population breeding on Grand Cayman, suitable nesting habitat must remain intact. Contrary to common belief, the birds utilise the top of the bluff as well as the vertical and near-vertical cliff faces, see Figure 6.

Figure 6: This nest site on Grand Cayman is set back from the edge of the bluff by 11 meters.

It is strongly recommended that nesting habitat identified in Figure 1 is managed for invasive species, particularly Green Iguanas who seem to be causing direct intra-specific competition for the sparse rock cavities on Grand Cayman. Human disturbance should be kept to a minimum during nesting.

“The construction of sea walls, filling in coastal property, and the carving out of cliffs for development have taken their toll on tropicbird populations” (BirdLife International 2022)

“Tropicbirds have mostly been reduced to nesting on inaccessible sea cliffs and remote islands and cays” (Lee and Walsh-McGehee 2000)

References

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