

National Protected Area Systems Analysis

Case Study: The Jabiru Stork

Problem statement: How well is the Jabiru (*Jabiru mycteria*) protected within the current Protected Areas System?



Introduction:

The Jabiru is the largest flying bird of Belize. The species occurs in low densities and for its nesting it is dependant on free standing large trees near the feeding habitat. The feeding habitat exists of flooded fields including savanna's, rice fields and freshly drained shrimp farms. The principal food consists of swamp eels.

Recent analyses and comparisons of the Mesoamerican and South American populations have shown that the Belizean Jabirus are demonstrating genetic differentiation from the birds of the Brazilian Pantanal. Moreover, completely different alleles have been identified in our Belize birds (Omar Figueroa, pers. comm.). These findings have significant conservation implications. The Mesoamerican population is

clearly different from the more common South American counterparts and should be given conservation priority. Belize has the healthiest population in the region and preliminary results from telemetry study indicate that these birds are resident and non-migratory, spending the entire annual cycle in Belize.

With the birds being sensitive to disturbance on the nesting site, the question is whether the present protected areas network offers adequate protection to the local population.

Based on recent research the nesting sites of the Jabiru in Belize are fairly well know (Figueroa in press, 2005). Although Jabiru's can on occasion be seen throughout the Belizean lowlands, the nesting is very much a northern Belize affair with the highest density occurring in the Belize District and some in the Orange Walk District (figure 1). When not breeding, the birds can congregate in suitable shallow water habitats. Congregations in the Crooked Tree Lagoons and in the Blue Creek (Orange Walk) rice fields are well known amongst birders.

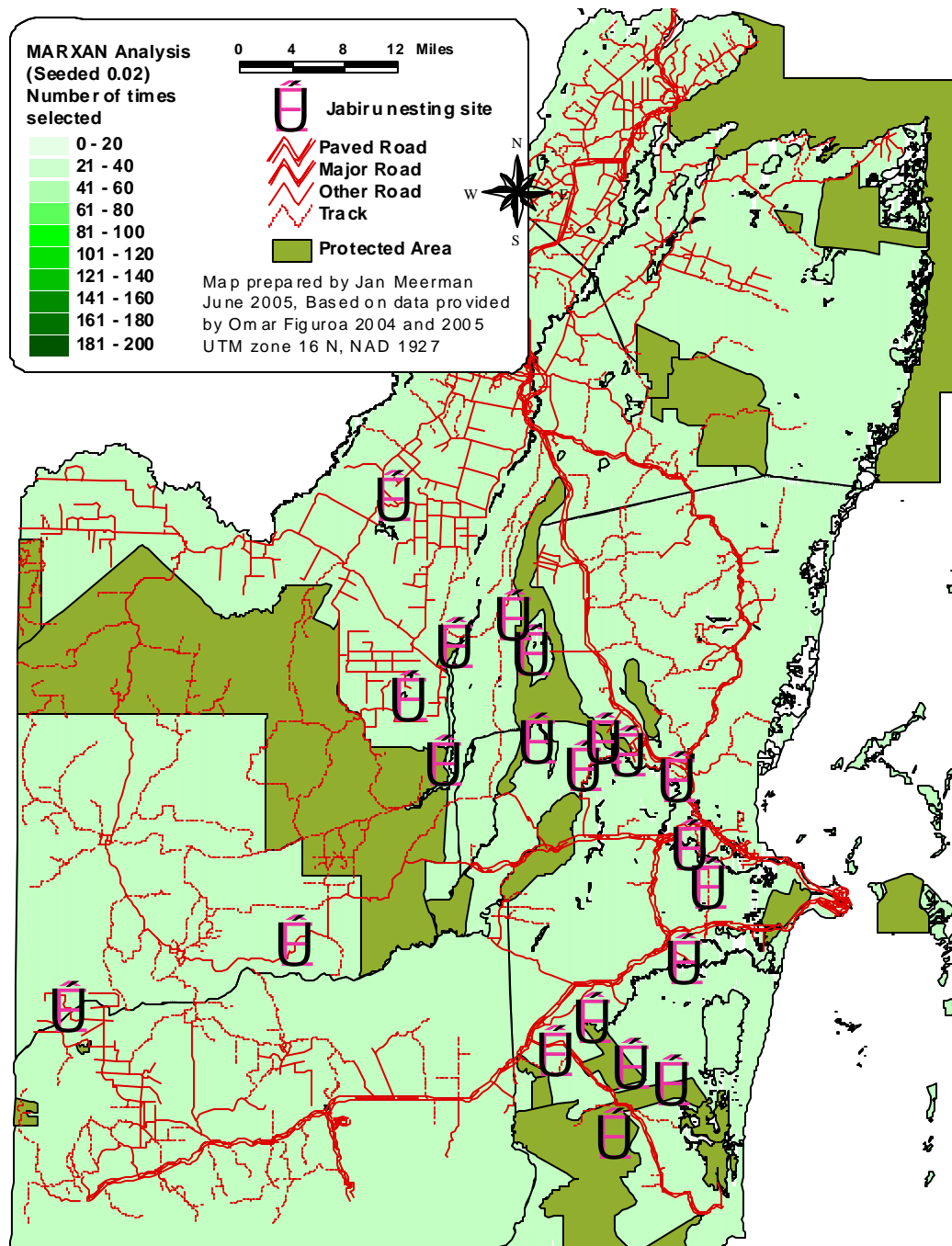


Figure 1. Jabiru nesting sites in Belize with indicated the current protected areas system

Findings:

Figure 1 clearly demonstrates that the majority of nesting sites is located outside existing protected areas. Even when inside of Protected Areas, the nest are located on the fringes. Important Protected Areas for this species are Crooked Tree Wildlife Sanctuary, Manatee River Forest Reserve and Runaway Creek Private Reserve. This dependence of the Jabiru on nesting sites outside protected areas clearly presents a problem for the long term management of this species.

The majority of known nesting sites were incorporated in the MARXAN analysis and the outcome can be analyzed using the <seeded_02> file¹ (figure 2).

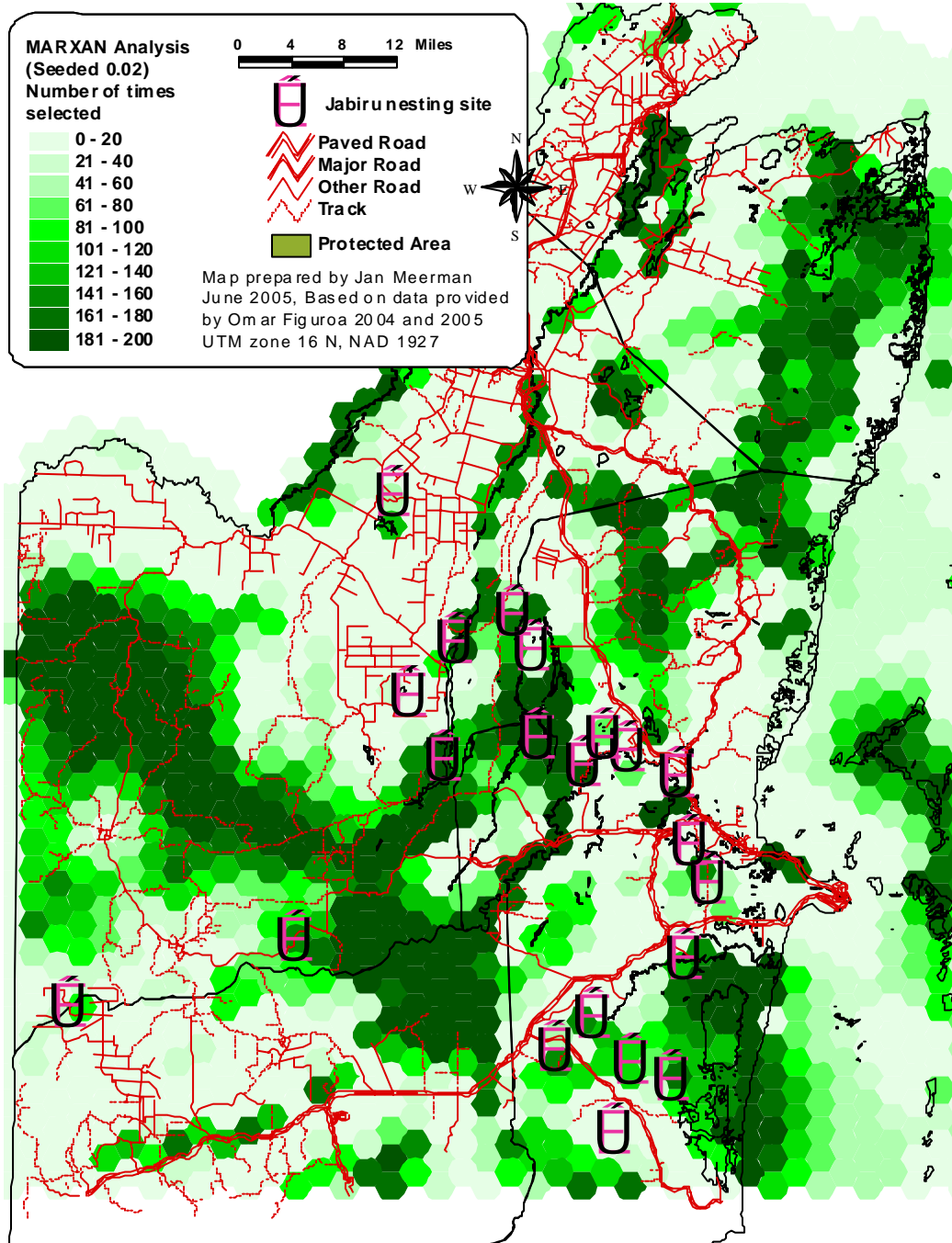


Figure 2 shows that most of the Jabiru nesting sites have been selected within this particular analysis (3 sites recorded in 2005 were not incorporated in the analysis but are included on

¹ Original ArcView file included on the resource CD

this map for reasons of completeness). The conservation feature target % was set at 60% for this species, explaining why not all sites were equally selected.

The analysis did not include the feeding grounds of the Jabiru. Recent research (Figuroa 2005 pers. comm.) has established activity ranges for juvenile storks (carrying satellite transmitters) from 4 nests. These activity ranges include most notably the New River Lagoon and the Crooked Tree Lagoon but also wet savanna's west of Southern Lagoon (Manatee) and a wet savanna near Santa Martha on the old Northern Highway. These observations indicate the importance of wet savanna habitats for the maintenance of the Jabiru population. Rice fields, notably those near Blue Creek in the Orange Walk district also form important feeding habitat.

Conclusions:

The MARXAN analysis shows that it will not always be possible to incorporate multiple nesting sites in (new) protected areas.

The following options exist:

- Conglomeration will be possible by strengthening – consolidating the Manatee Forest Reserve and Runaway Creek Private Reserve protected areas
- The MARXAN analysis links the Crooked Tree Lagoon with the southern New River and parts of the New River Lagoon. Creating and expanding protected areas here would strengthen the Jabiru position.
- Most other nesting sites are localized and the analysis has not identified adjacent areas with significant conservation features. Consequently specific conservation activities need to be developed here which might include “micro” reserves managed by landowners or communities. Such sites do not need to be strict reserves but would include a ban on felling trees and a closed (no access) season during the courtship and breeding season.