

## The Ocellated Turkey *Meleagris ocellata* in Chiquibul Forest, Belize, 1994–1996

Tony King and Nicodemus Bol

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El Guajalote Ocelado *Meleagris ocellata* es endémico de la Península de Yucatán, en Centroamérica. El Bosque Chiquibul, en el centro oeste de Belize, se encuentra en el límite sudeste de la distribución de la especie. Aquí se presentan observaciones informales sobre la distribución y biología de *M. ocellata* en Chiquibul, efectuadas durante los dos primeros años después de la apertura de una estación de investigación, entre julio de 1994 y agosto de 1996. Se encontró una población nidificante restringida al norte y oeste de los ríos Chiquibul, Monkey Tail y Lower Raspaculo, y probablemente continua con la población de Guatemala en el Petén norte. No se pudo establecer de manera fidedigna el estatus de esta población. En Las Cuevas, el cortejo comenzó en marzo. Tras cortejar a la hembra, el macho la monta y pisa, mientras ésta se mantiene agachada contra el piso, con las alas extendidas. Los nidos fueron hallados en mayo, en el suelo y entre la cobertura densa. Ocasionalmente se observaron hembras con polluelos, hasta una docena, en junio y julio. Parece que la mortalidad de los pollos resultó alta. Con el inevitable incremento de la presencia humana en el bosque, en parte debido a la mejora de los accesos y en parte a la colonización desde Guatemala, es probable que aumente la presión de caza. Para una especie de semejante valor nutricional, esta presión puede rápidamente amenazar la supervivencia de una población en el límite de su distribución natural, sin poder ser reforzada desde el sur o el este. Se recomienda una reevaluación de la distribución y estatus de *M. ocellata* en Chiquibul, y de las presiones que enfrenta la especie, para así implementar acciones que aseguren su supervivencia.

Ocellated Turkey *Meleagris ocellata* is a large, striking gamebird endemic to the Yucatán Peninsula of Middle America<sup>17</sup>. Its conservation status is currently assessed as Near Threatened<sup>1,9</sup> and the species' range extends from north Belize west to east Chiapas, Mexico, and south to north Petén, Guatemala<sup>3,11</sup>. Distribution is patchy, with subsistence hunting being the major threat. The species is thought to be most common in Belize<sup>2</sup>, where Wood *et al.*<sup>18</sup> reported it in the northern hardwood forests and Mountain Pine Ridge, but noted its absence from the southern hardwood forests and coastal savannas. Ocellated Turkey is reported to have seriously declined in Belize during the 1980s, possibly due to disease<sup>4</sup>, although the cause has not been substantiated<sup>2</sup>. As elsewhere, subsistence hunting is now probably the major pressure.

Chiquibul Forest, in central-west Belize (Fig. 1), is at the south-eastern limit of the species' range. In 1994 a research station was opened at Las Cuevas, in the heart of Chiquibul, permitting long-term observations of the local flora and fauna to be made for the first time. Here we present informal observations of the distribution and biology of *M. ocellata* in Chiquibul, made between July 1994 and August 1996.

### Chiquibul Forest

Chiquibul is c.180,000 ha in extent<sup>20</sup>. It borders Guatemala to the west, the main divide of the Maya Mountains to the south and east, and Mountain

Pine Ridge and Vaca Forest Reserve to the north. The forest is classified as being in transition from the 'Subtropical moist' to 'Subtropical lower montane wet' life zones of the Holdridge System<sup>8</sup>. Two main broadleaf forest types are recognised, one largely deciduous, the other semi-evergreen<sup>19</sup>. Annual rainfall is c.1,500 mm, with drought conditions (<100 mm per month) normal in February–April, and often in January and May<sup>10</sup>.

### Distribution within Chiquibul

Observations of *M. ocellata* within Chiquibul were patchy. The species was most commonly seen at the two major man-made clearings, at the Caracol archaeological site and Las Cuevas Research Station. It was also regularly seen along the main tracks, particularly in the vicinity of Caracol and Las Cuevas, but also in Mountain Pine Ridge, along the Chiquibul road between Guacamallo bridge and Millionario, and between Millionario and Grano d'Oro. Twice the species was observed as far south as Puente Natural (NB pers. obs., P. Rodewald & A. Dumin pers. comm.), but was not recorded during ornithological surveys of Smokey Branch<sup>5</sup> or Doyle's Delight<sup>6</sup>, or during a traverse of the Maya Mountains<sup>16</sup>. It appears that the Chiquibul River represents the southern limit of the population in Chiquibul, and indeed in Belize.

Although commonly observed in Las Cuevas clearing, *M. ocellata* was not seen more than a couple of kilometres east of Las Cuevas, and was not recorded during expeditions to the Upper

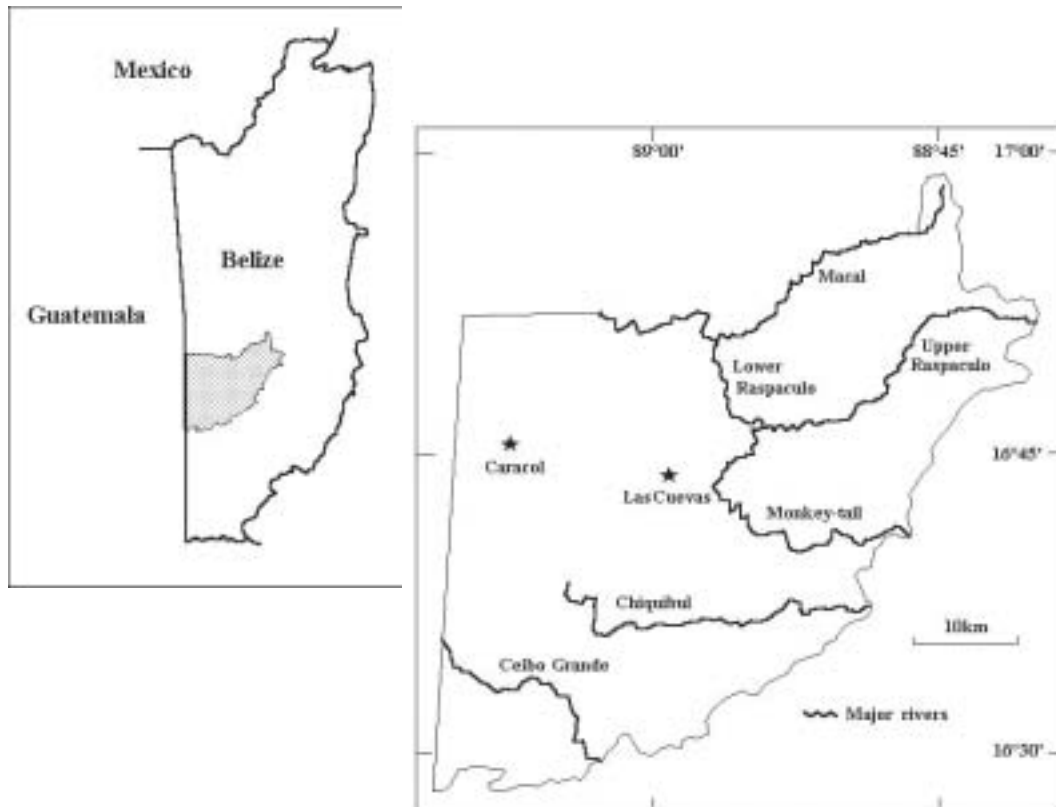


Figure 1. Chiquibul forest, Belize, and the position of major localities mentioned in the text.

#### Gazetteer

Location	Coordinates
Las Cuevas Research Station	16°44'N 88°59'W
Caracol archaeological site	16°46'N 89°08'W
Millionario	16°45'N 89°01'W
San Pastor	16°43'N 88°59'W
New Maria	16°49'N 89°01'W
Grano d'Oro	16°40'N 89°02'W
Guacamallo bridge	16°52'N 89°02'W
Puente Natural	16°36'N 89°01'W

Raspaculo<sup>12</sup> or Lower Raspaculo<sup>15</sup> rivers. The Monkey Tail River and Lower Raspaculo may therefore represent the eastern limit of the Chiquibul population.

The occurrence of *M. ocellata* at Caracol suggests that the population probably occurred further west in suitable habitat within Guatemala, although much of the forest west of the border had

been cleared and human population density was much higher than in Belize.

#### Status

Although *M. ocellata* often appeared common while driving through Chiquibul to Las Cuevas or to Caracol, it was difficult to ascertain the species' abundance in the area. Despite almost daily observations in the Las Cuevas clearing, *M. ocellata* was not recorded during ornithological surveys of the adjacent forest sampling plot, in 1995 or 1996, or in any of the other three forest plots, at San Pastor, New Maria and Grano d'Oro<sup>13,14</sup>. Therefore caution should be exercised when interpreting the apparent abundance of *M. ocellata* on the most frequented routes of Chiquibul.

#### Observations of *M. ocellata* at Las Cuevas

*M. ocellata* frequented the Las Cuevas clearing most days after the research station was established, in July 1994. Birds usually roosted in trees at the edge of the clearing, occasionally in the two large *Cedrella odorata* trees in the centre of the

clearing, and glided down into the clearing in the early morning. They spent the day foraging in the grass and dirt, taking a varied diet of seeds, insects and occasional frogs and rodents. On the rare occasions they were observed seizing vertebrates, the bird would spend considerable time tossing the animal and pecking at it, presumably trying to kill and dismember it.

The number of *M. ocellata* utilising Las Cuevas clearing gradually increased, albeit with seasonal fluctuations. In November 1994, the group consisted of five individuals. By January 1995 a sixth had joined. Unfortunately, no details of group composition were recorded, despite the relative ease of sexing and ageing individuals (tarsal spur long and pointed in adult males, short and rounded in yearling males, absent in females; greater secondary coverts broad in adults, narrow in yearlings<sup>17</sup>). Courtship commenced in late March, with two males competing for the females. During this period the males had inflated necks, snoods and head-knobs, and strutted around the clearing, their heads high and breast feathers puffed-out. They would frequently stop to make a courting 'song', consisting of several deep glugging noises, whilst extending the neck upwards, followed by a rapid gobble and retraction of the neck back to the shoulders. A successful male would mount and stamp the feet, while the female lay flat to the ground, wings spread. Following mating in April, the turkeys became more solitary and very elusive, whilst extending less frequently in the clearing. Two nests were found, on the ground in dense undergrowth at the edge of the clearing.

Females with small chicks, up to a dozen in number, were occasionally observed around the edges of the clearing in June–July, and as the chicks grew they were sometimes encountered on the roads. Females were very protective of the young, and a female became very aggressive towards a Land Rover parked close to her brood. Chick mortality appeared high, as the number of chicks observed with females steadily declined. However, as the turkeys became regular visitors to the clearing again, it was clear that at least some young had survived. In November 1995, a group of nine was counted in the clearing, possibly consisting of the six original individuals and three young.

Singles attempted to join the group in December, but were consistently driven off. However, with persistence some were admitted, the group growing to ten and then to 11 birds in February 1996. Another repeatedly attempted to join the group, but was never admitted. Once this turkey was chased to and fro across the width of the

clearing, before being engaged by the dominant male of the Cuevas group, the two jumping and kicking backwards at each other with the tarsal spurs. The lone turkey thereafter flew into a small tree, but was followed by the aggressive male, which continued to peck at the intruder until the latter eventually left the clearing.

The group did not grow larger than 11, before decreasing again in the courtship season. Again, as in 1995, the turkeys became elusive whilst the chicks were growing, but the clearing was regularly used by a group of four young males, in June–July 1996, though by late July they had apparently moved elsewhere, perhaps prompted by the return of some of the original group.

Our informal observations are consistent with those made during more detailed studies of the species at Tikal, in Guatemala<sup>7,17</sup>. In particular, Gonzalez *et al.*<sup>7</sup> reported similar seasonal changes in habitat use, and high juvenile mortality. Both Gonzalez *et al.*<sup>7</sup> and Steadman *et al.*<sup>17</sup> describe the natural history of the species in more detail than attempted here, and we believe similar work could usefully and successfully be developed in Chiquibul. Additionally, such studies should also be undertaken in neighbouring Mountain Pine Ridge reserve, in habitat not generally associated with *M. ocellata*.

## Conclusions

Chiquibul Forest appears to represent the extreme south-eastern limit of the range of *M. ocellata*. Observations in 1994–1996 indicated that a viable breeding population was present north and west of the Chiquibul, Monkey Tail and Lower Raspaculo rivers, and probably contiguous with the Guatemalan population of the northern Petén. However, the status of the population could not be reliably ascertained. Chick mortality appeared high, and the species exhibited a worrying complacency towards humans. With the inevitable increase in human presence in the forest, partially due to improved road access and partially due to mounting encroachment from Guatemala, hunting pressure will likewise increase. For a species of such high nutritional value, such pressure could quickly threaten the survival of a population on the limit of its natural range, with no possibility of reinforcement from the south or east. We recommend a rapid reassessment of the distribution and status of *M. ocellata* within Chiquibul, and of the pressures facing the species, with the aim of implementing action to ensure its continued survival.

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### Tony King

Projet Protection des Gorilles, BP 13977, Brazzaville, Republic of Congo. E-mail: ppg@uuplus.com.

### Nicodemus Bol

Las Cuevas Research Station, P.O. Box 410, Belmopan, Belize. E-mail: cuevas@btl.net.



Figure 2. Male Ocellated Turkey *Meleagris ocellata*, displaying outside of the courtsip season (note: no enlarged snood or head-knob), Las Cuevas, 1996 (Tony King)



Figure 4. Male Ocellated Turkey *Meleagris ocellata* completing a courtsip 'gobble' display (note very inflated neck, snood and head-knob), Las Cuevas, April 1995 (Tony King)



Figure 3. Male Ocellated Turkey *Meleagris ocellata* with enlarged snood and head-knob (diminished after the breeding season), Las Cuevas, July 1996 (Tony King)



Figure 5. Male Ocellated Turkey *Meleagris ocellata* mounting a female, Las Cuevas, April 1995 (Tony King)