

COMMUNAL ROOSTING OF THE JAMAICAN CROW (*CORVUS JAMAICENSIS*)

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Abstract: Communal roosting is reported for the first time in the Jamaican Crow (*Corvus jamaicensis*). Crows roosted in an isolated cluster of tall trees (*Albizia falcataria*) that emerged from an area of mixed agriculture at the northern edge of Cockpit Country, Trelawny Parish, Jamaica. Evening roost counts, 21-23 February 2008, varied from 53 to 64 crows. Crows arrived at the roost after sunset in near darkness (1826-1841) and departed before sunrise (0600-0622). Crows roosted on thin branches high in the canopy, possibly as a defense against the nocturnal Jamaican boa (*Epicrates subflavus*).

Key words: Cockpit Country, communal roost, *Corvus jamaicensis*, *Epicrates subflavus*, Jamaica, Jamaican boa, Jamaican Crow, Trelawny Parish

Resumen: DORMITORIOS COMUNALES DEL CUERVO DE JAMAICA (*CORVUS JAMAICENSIS*). Dormitorios comunales se reportan por primera vez en el Cuervo de Jamaica (*Corvus jamaicensis*). Los cuervos dormían en un grupo aislado de árboles altos (*Albizia falcataria*) que emergían sobre un área de agricultura mixta en el borde norte de Cockpit Country, Trelawny Parish, Jamaica. Conteos vespertinos en el dormitorio, el 21-23 de febrero de 2008, variaron desde 53 hasta 64 cuervos. Los cuervos llegan al sitio después de la puesta del sol, casi en la oscuridad (1826-1841) y se marchan antes del amanecer (0600-0622). Los cuervos dormían en ramas finas, altas en el dosel, posiblemente como una defensa contra la boa nocturna de Jamaica (*Epicrates subflavus*).

Palabras clave: Cockpit Country, Cuervo de Jamaica, *Corvus jamaicensis*, Jamaica, sitios de descanso comunales, Trelawny Parish

Résumé : REGROUPEMENT EN DORTOIR CHEZ LA CORNEILLE DE LA JAMAÏQUE (*CORVUS JAMAICENSIS*). Un regroupement en dortoir est signalé pour la première fois chez la Corneille de la Jamaïque (*Corvus jamaicensis*). Les oiseaux se sont regroupés dans un bosquet de grands arbres (*Albizia falcataria*) qui émerge d'une zone agricole à l'extrémité nord de Cockpit Country, Trelawny Parish, en Jamaïque. Des comptages en soirée, du 21 au 23 février 2008, recensaient de 53 à 64 individus. Les corneilles sont arrivées au dortoir après le coucher du soleil, dans l'obscurité presque complète (1826-1841) et reparties avant le lever du soleil (0600-0622). Elles étaient perchées sur de fines branches à la cime des arbres, peut-être afin de se défendre contre le Boa de la Jamaïque (*Epicrates subflavus*), prédateur nocturne.

Mots clés : Boa de la Jamaïque, Cockpit Country, Corneille jamaïcaine, *Corvus jamaicensis*, dortoir, *Epicrates subflavus*, Jamaïque, Trelawny Parish

Surprisingly little is known about the natural history of the endemic corvids of the West Indies and only the White-necked Crow (*Corvus leucognaphalus*) of Hispaniola has been studied in any detail (Wiley 2006). The endemic Jamaican Crow (*Corvus jamaicensis*) is largely restricted to moist limestone forest of Mount Diablo (S. Koenig pers. comm.), Cockpit Country, and the John Crow Mountains. It exhibits low population density throughout its range. Although the crow has been known to naturalists since the early 18th century (Sloane 1725, Browne 1756), knowledge of its social behavior is limited to anecdotal accounts (Gosse 1847, Jeffrey-Smith 1956). Gosse (1847:210) noted, "In some parts of the mountains they are not uncommon, though their loquacity would induce us to think them more numerous than they are, for we rarely

see more than two or three at once. They are social, but not gregarious..." Scattered notes published in the Gosse Bird Club Broadsheet (1963-2007) corroborate Gosse's observations that the crow usually occurs in pairs or small groups (3-6 individuals). Two published reports mention larger congregations. Jeffrey-Smith (1956:61) noted "In Trelawny they were always abundant at Mahogany Hall, and yet never crossed over to Woodlands, an adjoining property, on the Stewart Town area until 1951, when flocks were seen flying across the dividing hill." More recently, Fletcher (2006) reported a group of 20 crows at Castleton Gardens, St. Mary Parish.

In this paper, I report the first documented observation of communal roosting in the Jamaican Crow at Windsor, Trelawny Parish (18°21.48' N, 77°



Fig. 1. Jamaican Crow roosting in the canopy of a tall (22 m) *Albizia falcataria* at Windsor, Trelawny Parish. Photographed by Brian K. Schmidt with a Canon EOS 40D (100-400L IS lens) and strobe flash.

38.90' W; WGS-84). The only previous reference to communal roosting in the Jamaican Crow (Madge and Burn 1994) was based on a single sentence extracted from Jeffrey-Smith (1956:62), "At eventide the crows fly back from some feeding ground to roost together." However, Jeffrey-Smith did not observe the roost nor indicate whether she was referring to a pair of crows, a small family group, or a larger flock. Windsor, near the northern margin of Cockpit Country, has long been known as a reliable location for the Jamaican Crow (Jeffrey-Smith 1956), and a resident pair has been observed on the grounds of the Windsor House for the past decade (S. Koenig pers. comm.). Windsor lies in a cockpit flanked by steep dome-shaped hills that rise ~70 m above the valley. The cockpit flats currently support a mosaic of rough pasturage, sugar cane (*Saccharum*), shade coffee (*Coffea*), yam (*Dioscorea*) fields, and second growth forest. The surrounding hills are cloaked with mid-succession forest that was logged intensively in the 1930s and 1940s.

METHODS

Several hours after arriving at Windsor on 20 February 2008, I noticed an unusually large assemblage of a dozen or more crows. This observation led to the discovery of a communal roost and precipitated a brief study of roosting behavior (21-28 February 2008). I spent the first three afternoons (1645-1845) monitoring the arrival of crows in the valley from outlying areas. The roost, presumably a non-breeding assemblage, was located on the eve-

ning of 23 February. Thereafter I made daily dawn (0535-0700) and dusk (1745-1845) roost counts through the morning of 28 February. Sunrise (0631-0634) and sunset (1814-1815) varied little during the observation period. Given time limitations I focused on (1) the movement of crows among staging areas, (2) group size of arriving and departing crows, (3) accurate roost counts, and (4) roost site characteristics.

RESULTS

EVENING ARRIVAL

Sight lines were somewhat limited in the Windsor cockpit but the roost appeared to attract crows from several km to the south, west, and northeast. It is possible that some crows originated from more distant areas (> 5 km). The first crows from the south arrived well before sunset (1645-1700), usually in pairs, and formed a loose flock on the summit of Twin Peaks, as the hill is known locally. Arrivals from the west and northeast flew to Lion Hill, situated across the valley about 0.5 km northwest of Twin Peaks. As the afternoon progressed, the majority of crows on Twin Peaks flew to Lion Hill, which seemed to be the more important staging area. Crows in pre-roosting assemblages perched conspicuously on hilltops, often in silhouette. Some cavorted with neighbors and made frequent short wheeling flights while others preened or foraged. A flock of 6-12 individuals was observed on three consecutive evenings at the blossoms of a large silk cotton tree (*Ceiba pentandra*) at the foot of Lion Hill. Assembled crows engaged in garrulous vocal exchanges including the complex guttural yodeling and jabbering that has been likened to human language by earlier authors (Gosse 1847).

The Lion Hill assemblage typically moved down slope a few minutes before sunset and the frequency of vocalizations decreased noticeably. Crows arrived at the roost via two routes. From 1810-1822, singletons, pairs, and small groups (3-6) flew to a staging point in the valley, a tall, isolated tree (*Albizia falcataria*) about 200 m from the base of Lion Hill. The roost itself was a cluster of three relatively isolated *A. falcataria* (20-22 m) with interlaced crowns situated about 65 m from the staging tree. The exodus to the roost was completed in near darkness (1826-1841). On cloudy overcast evenings, crows began arriving at the roost 5-10 min earlier. Because the roost trees were isolated and silhouetted against the evening sky, I was able to make accurate counts of arrivals. Evening roost

counts varied from 53-64 crows. On 26 February, for example, 33 crows flew from the staging tree to the roost and another 31 arrived directly from Lion Hill; the size of arriving groups varied substantially (in rank order): 1, 1, 1, 1, 1, 1, 2, 2, 3, 4, 4, 5, 5, 7, 10, 14. Roosting crows uttered only a few calls in total during five evenings and no vocalizations were given after 1839. However, on two evenings I heard a crow calling in the distance just before dark, suggesting that some crows in the area did not join the roost. Roosting crows perched high in the canopy near the tip of thin branches, which seemed barely capable of supporting the weight of a crow. Some pairs were perched no more than a body length apart but the average distance between crows appeared to be ~1.5-2.0 m.

MORNING DEPARTURE

Crows began shifting from perch to perch within the roost by 0555-0600, about 30 min before sunrise. Departure from the roost commenced soon afterward (0600) with the last individual departing at 0615-0622. The majority of roosting crows flew to the staging tree before dispersing to outward areas, presumably to territories. On 26 February, for example, 47 crows flew from the roost to the staging tree, 12 flew directly to Lion Hill, and two flew directly to Twin Peaks. Group size of departing crows varied significantly (in rank order): 1, 1, 1, 1, 1, 1, 2, 2, 3, 5, 6, 6, 11, 20. Larger flocks (> four individuals) were observed only in the vicinity of the roost. Crows were silent at the roost and those in the staging tree did not begin to vocalize until 0614. Roost departure was delayed 5-10 minutes on cloudy overcast mornings.

DISCUSSION

Communal roosting is common among continental species of crows and ravens (Swingland 1977, Stouffer and Caccamise 1991, Engel *et al.* 1992) but it has been observed infrequently in the endemic crows of tropical islands (Wiles 1998). Communal roosting in birds is believed to confer multiple benefits including increased foraging efficiency mediated through information-sharing, a reduction in thermoregulatory demands, and a decrease in predation risk (Eiserer 1984, Beauchamp 1999). Pre-roosting assemblages of Jamaican Crows have an overtly social function to be sure, but it is difficult to see how foraging efficiency would be enhanced through information-sharing because crows returned to dispersed territories at dawn in pairs or small flocks. Likewise, there was little evidence to sug-

gest that communal roosting reduced the thermoregulatory demands of individual crows (~335 g). *Albizia* trees have relatively sparse foliage that would have provided little thermal insulation or protection from rain or wind (Fig. 1). Moreover, crows roosted too far apart to gain a thermoregulatory benefit from one another.

Roost sites in *Albizia* offered little concealment from the two nocturnal raptors in the Windsor area, the Jamaican Owl (*Pseudoscops grammicus*) and Barn Owl (*Tyto alba*), neither of which is known to take prey as large as the Jamaican Crow (Buden 1974, McFarlane and Garrett 1989, Graves 2007). On the other hand, roosting on thin branches in tall isolated trees may provide some protection from the nocturnal Jamaican boa (*Epicrates subflavus*), which has been implicated as a significant source of predation on nestling parrots in the Windsor area (Koenig 2001, Koenig *et al.* 2007). Large boas may be unable to reach the tips of thin branches without disturbing roosting crows. It is also worth noting that the canopies of the roost trees lacked macroepiphytes and vines, whose presence facilitates boa access (Koenig *et al.* 2007). Wiles (1998) suggested that communal roosting in the Mariana Crow (*Corvus kubaryi*) on Guam evolved as a response to predation from the introduced brown tree snake (*Boiga irregularis*).

Communal roost sites are often used by birds for years or even decades (Eiserer 1984). Because communal roosting of Jamaican Crows may serve an important behavioral function, especially in facilitating the social cohesion of local populations, the discovery and protection of traditional roost sites should be a high conservation priority if future surveys reveal that crow populations are declining.

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