# HIGHEST SINGLE-DAY COUNT OF MIGRATING OSPREYS (*PANDION HALIAETUS*) FOR CUBA AND THE INSULAR CARIBBEAN

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Abstract.—We report a count of 279 Ospreys (*Pandion haliaetus*) in 3:05 h of observation on 30 August 2001 from an observation point at La Gran Piedra, Sierra Maestra, in southeastern Cuba. This constitutes the highest count for the species reported for Cuba and the entire insular Caribbean. These data confirm the importance of Cuba for migration of the Osprey in its passage through the Caribbean.

Key words: Cuba, migration, Osprey, Pandion haliaetus

Resumen.—EL MAYOR CONTEO EN UN DÍA DE AGUILAS PESCADORAS (Pandion haliaetus) MIGRATORIAS PARA CUBA Y EL CARIBE INSULAR. Se reporta el conteo de 279 Aguilas Pescadoras (Pandion haliaetus) en 3:05 h de observación el 30 de agosto de 2001 en el punto de observación de La Gran Piedra, Sierra Maestra, en el sudeste de Cuba. Este constituye el conteo más grande de la especie reportado hasta el momento para Cuba y todo el Caribe insular. Estos datos confirman la importancia de Cuba para la migración del Aguila Pescadora en su viaje a través del Caribe.

Palabras clave: Aguila Pescadora, Cuba, migración, Pandion haliaetus

OSPREYS (PANDION HALIAETUS) are complete, long-distance migrants throughout their cosmopolitan range (Kerlinger 1989). They have been reported as common winter residents and transients in Cuba (Garrido and Kirkconnell 2000). Data based on counts (Hoffman and Darrow 1992), band recoveries (Henny and Van Velzen 1972, Poole and Agler 1987) and satellite telemetry (Martell et al. 2001, Rodríguez et al. 2001) suggest that the major part of the population of this species from the eastern seaboard of the United States passes through Cuba during autumn migration. Although great numbers of Ospreys can be seen principally in Cuba and Hispaniola during autumn migration, few counts have been done (Crouse and Keith 1999, Rodríguez et al. 2001). Here, we report the highest daily count for Osprey in the insular Caribbean. This effort was part of the first autumn raptor migration count made in La Gran Piedra, southeastern Cuba.

#### **METHODS**

Observations were made from the summit of La Gran Piedra (1234 m) in the eastern Sierra Maestra mountain range, which runs parallel to the southern coast of eastern Cuba. On 30 August 2001, three persons made observations with 10x binoculars. A cumulative effort of 3:05 h was made from 10:55 h

until 14:00 h when the count was stopped because of rain. Weather conditions were recorded using the standardized daily report suggested by the Hawk Migration Association of North America. Wind speed and temperature were measured with a Kestrel 2000 weather station. A mechanical counter was used to tally hourly counts.

#### RESULTS AND DISCUSSION

We observed 279 Ospreys in flight, with numbers peaking from 11:00 to 12:00 h (n = 171) (Table 1).

The counts carried out at La Gran Piedra during the fall of 2001 (Rodríguez Santana, unpublished data) and satellite telemetry data (Martell et al. 2001) confirm early suggestions regarding Cuba as an important stopover site for migrating Ospreys (Henny and Van Velzen 1972, Poole and Agler 1987, Hoffman and Darrow 1992, Rodríguez et al. 2001). The Sierra Maestra mountain range, which is 267 km long and up to 35 km wide, appears to be an important pathway for migrating Ospreys once they reach eastern Cuba by providing a "highway" of mountainside updrafts and thermals which the birds exploit while traveling east through the region. Several previous reports exist for Ospreys migrating along the Sierra Maestra range (Rodríguez et al. 2001).

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Table 1. Weather variables and Osprey totals per hour at La Gran Piedra study site.

Variable <sup>1</sup>	Hour			
	10:00-11:00	11:00-12:00	12:00-13:00	13:00–14:00
WSPD (km/h)	4	3.4	2.5	3.8
WFM	NE	NE	NE	E-NE
TEMP (C°)	24.3	24.5	25.2	26.4
CLCV (%)	50	50	65	70
VISB	VC	VC	VC	VC
FDIR	Е	Е	Е	E
HTFL	M	M	Н	М-Н
OBVS	1	3	3	3
DURA	5	60	60	60
Osprey	5	171	79	24

<sup>1</sup>WSPD = wind speed; WFM = wind from; TEMP = temperature; CLCV = cloud cover; VISB = visibility: VH (very hazy), H (hazy), C (clear), VC (very clear); FDIR = flight direction; HTFL = height of flight overhead: L (Low), M (medium), H (high); OBVS = number of observers; DURA = duration of observations (min); Osprey = number of birds observed.

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## LITERATURE CITED

CROUSE, D. G., JR., AND A. R. KEITH. 1999. A remarkable Osprey flight and first record of Swallow-tailed Kite for Hispaniola. Pitirre 12:91.

GARRIDO, O. H., AND A. KIRKCONNELL. 2000. Field guide to the birds of Cuba. Ithaca, NY: Comstock Publishing Associates. Cornell University Press.

HENNY, C. J., AND W. T. VAN VELZEN. 1972. Migration patterns and wintering localities of Ameri-

can Ospreys. J. Wildl. Manage. 36:1133-1141.

HOFFMAN, W., AND H. DARROW. 1992. Migration of diurnal raptor from the Florida Keys into the West Indies. Hawk Migration Assoc. N. Amer. Migration Stud., Oct.:7–14.

KERLINGER, P. 1989. Flight strategies of migrating hawks. Chicago, IL: University of Chicago Press.

MARTELL, M. S., C. J. HENNY, P. E. NYE, AND M. J. SOLENSKY. 2001. Fall migration routes, timing, and wintering sites of North American Ospreys as determined by satellite telemetry. Condor 103:715–724.

POOLE, A. F., AND B. AGLER. 1987. Recoveries of Ospreys banded in United States, 1914–84. J. Wildl. Manage. 51:148–155.

RODRÍGUEZ, F., M. MARTELL, P. NYE, AND K. L. BILDSTEIN. 2001. Osprey migration through Cuba. Pp 107–117 *in* Hawkwatching in the Americas (K. L. Bildstein and D. Klem, Jr., Eds.). North Wales, PA: Hawk Migration Assoc. North America.

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