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USE OF FORESTED SPOIL ISLANDS BY NESTING AMERICAN OYSTERCATCHERS IN SOUTHEAST FLORIDA

BRIAN TOLAND

Florida Game and Fresh Water Fish Commission
Office of Environmental Services
110 43rd Avenue, S.W.
Vero Beach, Florida 32968 USA

Abstract.—From 1986 to 1990 spoil islands in a 3.75-km section of the Indian River Lagoon were surveyed for nesting American Oystercatchers (*Haematopus palliatus*). Of the 11 nests found, two, located during 1990, were on islands entirely covered by Australian pine (*Casuarina equisetifolia*) forest. Successful nesting was documented for both pairs of oystercatchers using the forested nest sites, while only three of nine (33%) of the oystercatcher nests in open beach sites on neighboring islands were successful.

The use of atypical forested habitat for nesting by American Oystercatchers may be an adaptive response to increased human activities on open sandy beaches. The relatively lower nesting success for oystercatchers in their traditional open sand habitat, compared to oystercatchers nesting on forested islands without beaches, is attributed to disturbance from intensive human recreation activities.

UTILIZACIÓN DE ISLOTES CUBIERTOS DE VEGETACIÓN PARA EL ANIDAMIENTO DE *HAEMATOPUS PALLIATUS*

Sinopsis.—De 1986 al 1990 se examinaron islotes, en una sección de 3.75 km. de largo de la Laguna Indian River, para determinar la presencia de nidos del ostrero *Haematopus palliatus*. De los 11 nidos encontrados, dos localizados durante el 1990, fueron construidos en islotes cubiertos por el Pino Australiano (*Casuarina equisetifolia*). Ambos nidos fueron exitosos, mientras que sólo tres 33% (de los nueve remanentes) localizados en el habitat tradicional (áreas abiertas con arena) tuvieron éxito. El uso de habitat atípico como lo son islotes cubiertos de vegetación, parece ser una adaptación del ave, en respuesta al incremento de actividades en playas arenosas por parte de humanos. El bajo éxito de anidamiento de los ostreros en habitats de arena, en comparación con islas cubiertas de vegetación y sin playas, es atribuido al disturbio causado por una alta intensidad de actividades recreativas por parte de humanos.

American Oystercatchers (*Haematopus palliatus*) usually inhabit open coastal habitats that are sparsely vegetated (Bent 1929, DeGange 1978, Lauro and Burger 1989, Schreiber and Schreiber 1978, Zaradusky 1985) and typically nest on sand or shell substrate near the shoreline on beaches, mudflats and spoil islands (Bent 1929, DeGange 1978, Lauro and Burger 1989). Recently American Oystercatchers also have been reported to nest occasionally in salt marshes (Lauro and Burger 1989, Shields and Parnell 1990, Zaradusky 1985).

American Oystercatchers were formerly common in all suitable habitats on both coasts of Florida (Howell 1932). Intensive coastal development and human recreation have precipitated a rapid population decline of breeding oystercatchers in Florida (DeGange 1978, Ogden 1973, Sprunt 1954), however. This species is now rare and locally distributed, especially on the east coast of Florida, and is listed as a species of special concern by the Florida Game and Fresh Water Fish Commission (Wood 1990).

This note describes the use of forested spoil islands by nesting American Oystercatchers in Indian River County, Florida.

Solitary nesting pairs of American Oystercatchers in Florida have traditionally inhabited isolated beaches and spoil (dredged material) islands. In 1986, I began describing nest site characteristics of American Oystercatchers during wildlife and vegetation surveys of 10 Indian River Lagoon spoil islands (designated as IR 32–40 by the Florida Department of Natural Resources Indian River County Spoil Island Management Plan) in Indian River County near Vero Beach. From 1986 to 1989 I found seven nests; all were typically excavated in coarse sand-shell substrate between the high water line and a line of pioneering vegetation. Invariably, only one pair of oystercatchers nested per island on spoil islands that ranged in area from 0.2 to 1.2 ha.

During the spring of 1990 I again surveyed the 3.75-km chain of 10 spoil islands for nesting American Oystercatchers. Of the four oystercatcher nests found, two nest sites discovered on forested spoil islands IR 37 and 38, respectively, were noteworthy, as the nest scrapes were placed in Australian pine (*Casuarina equisetifolia*) woodlots.

Both islands are typical Indian River County spoil islands. IR 38 covers approximately 1.54 ha and is about 300 m from the mainland shoreline. The island has minimal topographical relief with a maximum elevation of about 1.5 m above mean sea level. The island's uplands consist of a near monoculture of 10–15-m tall Australian pines with a scattered understory of Brazilian pepper (*Schinus terebinthifolius*). The forest floor is covered with a 5–10-cm deep layer of decomposing pine debris. The perimeter wetland transitional area and mangrove fringe average 15 m in width, dominated by red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*) and buttonwood (*Conocarpus erectus*). Rocky oyster reefs along the island's shore and a lack of open beaches make access by boat extremely difficult.

On 2 May 1990, I observed a pair of vocalizing oystercatchers and discovered a nest scrape with a single egg. The nest scrape was excavated in the pine litter 7 m into the woodlot and 15 m from the mean high water line on the eastern shore. On 10 May, the site was again checked and the nest scrape contained a clutch of three eggs. Subsequently, two flightless, young oystercatchers accompanied by an adult were observed on 15 June, and at least one juvenile fledged successfully and was observed flying with two adults on 7 July.

IR 37 is 750 m north of IR 38, is 2.5 ha in area, and is about 450 m from the mainland shoreline. Elevation is 1 m above the mean high water line. This island is also dominated by a homogeneous canopy of Australian pines, fringed by white, black and red mangroves and buttonwood. There are no open beaches and the eastern shoreline is protected by extensive oyster reefs.

On 2 May I located a nesting pair of oystercatchers that had excavated a nest scrape in decomposing pine humus 10 m into the pine forest and about 15 m from the mean high water line on the eastern side of the

island. The three eggs were deposited on a lining of shells and one side of the scrape was bordered by sea lavender (*Limonium carolinianum*). On 10 May I observed an adult oystercatcher incubating the three eggs. On the morning of 15 June, three chicks were detected among the mangroves while the adults flew nearby vocalizing persistently and performing distraction displays. Finally, on 7 July, at least two immature oystercatchers were observed flying with an adult in the immediate vicinity of the island.

The use of forested spoil islands for nesting by American Oystercatchers is probably an adaptive response to increased human activity on open, sandy beaches of the barrier islands and more recently on the Indian River Lagoon spoil islands (pers. obs.). Recently, Indian River County barrier island beaches have been impacted by intensive development and burgeoning recreational use, severely reducing the availability of undisturbed beach habitat (Fernald et al. 1982). Spoil islands with sand/shell beaches or spits also are experiencing more and more use by boaters and anglers (Fisk 1978, Schreiber and Schreiber 1978). Of the 10 Indian River spoil islands surveyed, five have some open sand/shell substrate typically utilized for nesting by American Oystercatchers. Only three of nine (33%) nests that I found on these islands successfully fledged at least one young. I attribute this relatively low success to frequent disturbances caused by intensive human recreational use of sandy beaches. Conversely, both nests on forested, inaccessible islands were successful.

Evidence of flexibility in nesting habitat selection by American Oystercatchers in other portions of their range has been documented in New York (Lauro and Burger 1989), New Jersey (Frohling 1965), and North Carolina (Shields and Parnell 1990), and is probably an adaptive response to heavy human use of barrier islands (Lauro and Burger 1989, Shields and Parnell 1990). All previously reported shifts in nesting habitat use by American Oystercatchers have been from beaches to inland salt marshes (Frohling 1965, Lauro and Burger 1989, Shields and Parnell 1990); the shift to mature forest habitat in southeast Florida indicates the possibility of even greater behavioral plasticity in American Oystercatchers.

The American Oystercatcher is the most recent of a succession of beach-nesting avifauna that have begun to respond to human encroachment by utilizing atypical, untraditional nesting habitats in southeast Florida, including Least Tern (*Sterna antillarum*), Roseate Tern (*S. dougallii*), Royal Tern (*S. maximus*), Black Skimmer (*Rynchops nigra*), Wilson's Plover (*Charadrius wilsonia*) and Killdeer (*C. vociferus*) (Altman and Gano 1984, Fisk 1978, Greene and Kale 1976, Toland and Gilbert 1987).

The relative importance of forested spoil islands to local populations of American Oystercatchers in southeast Florida should be assessed in the future by expanding systematic surveys in the Indian River Lagoon to include islands, both with and without open sandy beaches.

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