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## **Massive Roost of Fish Crows at Drum Island, Charleston, South Carolina**

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I watched a massive roosting flight of Fish Crows (*Corvus ossifragus*) at Drum Island, Charleston, S.C. from 13 to 17 November 1985. On each evening, I estimated the number of Fish Crows as they approached the roost. My estimates ranged from 45,000 to 60,000 crows (counts on 14 and 15 November with W. Post). We found it difficult to count crows with great accuracy, though I believe the estimate of 45,000 should be regarded as an absolute minimum. Crows were impossible to see approaching the roost from several directions. Scouting trips prior to and after my counts indicated relatively few crows approached the roost from these directions, though the number was perhaps 2,000 to 3,000 birds.

The great majority of crows approached the roost from the west and northwest directions. The greatest concentration occurred at the Romney Street dump along the Cooper River, just 3 km north of the roost. Crows flew from here directly to the roost or stopped at pre-roost staging areas on old disused barges alongside salt marshes north of the Cooper River bridge, on rooftops of buildings at the Charleston Port Authority Terminal (directly across from the roost site at the southern tip of Drum Island south of the Cooper River bridge); on trees, telephone lines and poles, ship masts and spars, and other structures near the roost. The location of other pre-roost staging areas at a distance farther away than the Romney Street dump is not known. Fish Crows do cross both the Ashley and Cooper Rivers to reach the Drum Island roost. The preponderance of Fish Crows seen flew in over the peninsula of Charleston and North Charleston, from tidewater and open residential areas favored by this species.

The duration of passage of the roosting flight to Drum Island varied from 26 to 30 minutes. Time of arrival at the roost varied from 5 minutes before sunset to 26 minutes after sunset. The most concentrated movement each evening occurred from 10 to 24 minutes after sunset, when one extended flock accounted for approximately 75% of all crows each even-

ing. The greatest concentrated movement was 4000 crows per minute. The Fish Crows flew from 10 to 60 m high, lower than Post (1961) observed them in evening flights to a roost near Aiken. Herons and bitterns flew lower than the Fish Crows when approaching the same roost site at Drum Island.

My observations of flock behavior at pre-roost staging areas are similar to Post's (1961, 1967). Unlike Post, however, I found Fish Crows vocal when making the final flight in the evening to the roost. Calling was least frequent during the most concentrated movements to the roost. Some play behavior was accompanied by 'caaach' calls, low intensity calls which may occur in agonistic contexts.

The previous fall (1984), W. Post and I estimated that 10,000 Fish Crows used the Drum Island roost on 28 and 29 November (McNair 1985). Post (pers. comm.) stated that the roost declined in numbers soon thereafter. My counts on 4 and 5 February 1986 of 11,000 Fish Crow also indicate that Fish Crow numbers in midwinter were lower than in the late fall of 1985 at the Drum Island roost. Apparently, many of the Fish Crows in November are still migrating south, which agrees with the published information elsewhere (McNair, in press).

Sprunt and Chamberlain (1970:617) remarked that an "enormous" roosting flight of Fish Crows occurred at Runnymede on the Ashley River in 1794 and still persisted though in diminished numbers. The only current roost site known in the Charleston area is at Drum Island, though other sites have not been searched for recently. More precise counts are needed at Drum Island and other roost sites if they exist to determine the population of this species during the non-breeding season.

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