two pairs that nested at MAERC. One pair had a territory in the northcentral region, and during both seasons was accompanied by three fledglings. A second pair was established to the south and was accompanied by two fledglings in 1990, and three in 1991. Observations were made from within a car, with the help of binoculars, whenever a caracara was observed perched by the roadside.

Of a total of 78 observations, 56 (72%) involved the northern pair and 22 (28%) the southern pair. Observations were biased toward the northern pair because they hunted within the limits of MAERC. The southern pair hunted in the southwest region of the ranch and on adjacent private land. Caracaras were perched on fence posts for 36% of the observations, and on Cabbage Palms for 18%. They were observed in flight 19 times; 6 (7%) in high transit flight and 13 (16%) in low, sweeping flights over open pastures. On 10 (12%) occasions they walked on a pasture and scanned and scratched at the base of grasses. On seven (9%) instances they fed on road-killed Armadillos (*Dasypus novemcinctus*) and Raccoons (*Procyon lotor*), and on one occasion (1%) at the carcass of a domestic cow killed by lightning. While at the carcasses and on the fence posts, they were always with Turkey (*Cathartes aura*) and/or Black Vultures (*Coragyps atratus*).

While perched on fence posts, adults intently followed the activities of parent songbirds tending nests. Ground nesting birds were a focus, but birds in shrubs or trees were also watched. On two occasions caracaras watched Eastern Meadowlarks (*Sturnella magna*) arriving at the meadowlarks' nest in the pasture and then attempted to stalk them on the ground. After reaching the general vicinity where the meadowlark landed, they examined the base of grasses apparently looking for nests. We observed no successful raid on a meadowlark's nest. However, we did observe three successful raids of nests of tree-nesting Loggerhead Shrikes (*Lanius ludovicianus*) and one on a nest of Northern Mockingbirds (*Mimus polyglottos*). On all four occasions the caracara flew away from the nest tree with one or more nestlings in its beak. Although the mockingbirds followed the caracara, and screamed incessantly, they did not attack it. In contrast, both shrikes chased and attacked the caracara striking it mostly on the nape and back. The caracara twisted and turned in flight but did not release the young shrike.—**Reuven Yosef and Dalit Yosef, Department of Zoology, Ohio State University, Columbus, OH 43210, and Archbold Biological Station, P.O. Box 2057, Lake Placid, FL 33852.**

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MIGRANT PEREGRINE FALCONS IN NORTHWESTERN NORTH DAKOTA IN SPRING

Peregrine Falcon (*Falco peregrinus*) migration has been described for central Alberta (D. Dekker 1979, *Can. Field-Nat.* 93:296–302 and 1984, *Raptor Res.* 18:92–97). Few other published data exist on peregrines in migration through mid-continent North America, except for scattered reports in *American Birds* and routes implied by J.K. Schmutz et al. (1991, *Wilson Bull.* 103:44–58). Spring data are particularly scarce. Records of timing and areas used by peregrines migrating through this region may be valuable to manage the species in the United States and Canada, where it is currently listed as endangered or threatened (M. Martin 1979, Report to Committee on the Status of Endangered Wildlife in Canada, Environment Canada, Ottawa, Canada; U.S. Fish and Wildlife Service 1991, Federal Register 50 17–11).

Incidental to our other field studies during 1985–90, we made from one to several observations during each May ($N = 12$) of Peregrine Falcons at or adjacent to Lostwood National Wildlife Refuge in Burke and Mountrail counties, in northwestern North Dakota. The refuge consists of rolling mixed-grass prairie with 10–50 wetland basins/km^2. Migratory waterfowl and shorebirds are common to abundant in spring, and many remain to nest there (R.K. Murphy 1990, Vertebrate fauna of Lostwood National Wildlife Refuge, Refuge Publication, U.S. Fish and Wildlife Service). Peregrine Falcons are exclusively migratory in North Dakota, having been extirpated as a breeding species from the state in the 1950s (R.E. Stewart 1975, Breeding Birds of North Dakota, Tri-College Center for Ecological Studies, Fargo, ND).

We observed peregrines during 7–26 May ($\bar{x}$ = 27 May, SD = 4.9 d), somewhat later than reported by Dekker (1979, 16 April to 30 May, peak 4–7 May for adults and 12–15 May for immatures) for central Alberta. All falcons we observed were in adult plumage. As Dekker (1979) noted, however, immature birds of the *F. p. tundrius* subspecies can be mistaken for Prairie Falcons (*F. mexicanus*) which are fairly common on the refuge in spring. We may have overlooked some immature peregrines. Two peregrines were observed together three times in 1990. We suspect two, and possibly all three, observations were of the same falcons. In all three cases the pair appeared to pursue prey

cooperatively, suggesting that they were a mated pair migrating together. Other observations were of single birds. Most (75%) peregrines were seen near or over large (20–100 ha), semi-brackish to saline wetlands. Four observations were of peregrines catching or feeding on prey including an American Coot (*Fulica americana*), Green-winged Teal (*Anas carolinensis*), White-rumped Sandpiper (*Erolia fuscicollis*), and Black Tern (*Chlidonias niger*). Another peregrine was observed stooping and scolding a nesting pair of Great Horned Owls (*Bubo virginianus*), as reported by C.S. Houston and K.A. Wylie (1985, *Blue Jay* 43:42–43). Peregrine Falcons rarely are observed in autumn on this refuge.

We thank J.H. Enderson for encouraging us to report these observations.—**Robert K. Murphy, Lostwood National Wildlife Refuge, RR 2 Box 98, Kenmare, ND 58746; Michael T. Green, Department of Biology, University of North Carolina, Chapel Hill, NC 27599.**

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A NORTHERN GOSHAWK NEST IN THE TUNDRA BIOME

The holarctic Northern Goshawk (*Accipiter gentilis*) is a bird of the forest and typically nests in a large tree in mature forest (P.S. Johnsgard 1990, Hawks, eagles, and falcons of North America, Smithsonian Inst. Press, Washington DC). It has been encountered well north of the treeline in Alaska in winter or early spring (L. Irving 1960, Birds of Anaktuvuk Pass, Kobuk, and Old Crow: a study in arctic adaptation, U.S. Nat. Mus. Bull. No. 217; A.M. Bailey 1948, Birds of arctic Alaska, Popular Series No. 8, Denver Mus. of Nat. Hist., Denver, CO) and nests in "white willow thickets" in the "forest-tundra" of the Soviet Union (G.P. Dementiev and N.A. Gladkov [EDS.] 1951, Birds of the Soviet Union, 1966 Israel Program of Science Translations, Jerusalem, Israel). However, nesting has not been previously reported for the tundra regions of North America.

We discovered a Northern Goshawk nest on 25 June 1985 145 km north of treeline at the confluence of the Oolamnagavik and Colville Rivers on the North Slope of Alaska (68°59'N 154°02'W, 150 m elevation). The nest contained one young about 15 d old and was defended by two goshawks in adult plumage. The young was flying well during the last visit to the nest on 25 July.

The nest was located 3 m up in a 5 m tall Feltleaf Willow (*Salix alaxensis*) in a willow stand covering about 100 ha. The tall shrub community of willows and occasionally Balsam Poplars (*Populus balsamifera*) is associated with large river drainages in the northern foothills of the Brooks Range. The numerous discontinuous stands of willows along the Colville River are surrounded by a vast expanse of open tundra. The willows at the confluence of the Colville and Oolamnagavik Rivers are among the tallest (up to 8 m) in the region (B. Kessel and T.J. Cade 1958, Birds of the Colville River, Northern Alaska, Biol. Paper No. 2, Univ. of Alaska, Fairbanks, AK).

Peregrine Falcons (*Falco peregrinus*) nested from 1980 to 1984 on a small bluff about 100 m from the nest site used by the goshawks in 1985. During 1985, the peregrines, individually identifiable by color bands, moved to a previously vacant bluff 2 km upriver. Normal movement by peregrine pairs between bluffs in this area is rare (pers. observation). The goshawks possibly displaced the peregrines from their usual nesting site. Goshawks were not found again during field searches of this area between 1986 and 1991.

Northern Goshawks occasionally hunt in open areas adjacent to woodlands (S. Cramp and K.E.L. Simmons [EDS.] 1980, Handbook of the birds of Europe, the Middle East and North Africa Vol. 2, Oxford Univ. Press, Oxford, U.K.) However, goshawks usually hunt from a perch (R.S. Palmer [ED.] 1988, Handbook of North American birds, Vol. 4, Yale Univ. Press, New Haven, CT) and when hunting they frequently change perches (R.E. Kenward 1982, *J. Animal Ecol.* 51:69–80). The home range of a pair of goshawks, therefore, often includes numerous hunting perches as well as a suitable nesting site. The occurrence of isolated stands of willows and Balsam Poplars along major rivers of the North Slope provides at least marginal nesting habitat for Northern Goshawks in the tundra biome. The marginal quality of this habitat is suggested by the use of the territory for only one year and the production of only one young.

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