CRESTED CARACARA

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LISTING CLASSIFICATION

The crested caracara is not included on the U.S. Fish and Wildlife Service list of threatened and endangered species (U.S. Fish and Wildl. Serv. 1987b). Although not listed as endangered in Arizona, it is considered vulnerable if habitat conditions worsen (R. Glinski, pers. commun.). Crested caracaras are not listed in Texas (B. Thompson, pers. commun.), Oklahoma (J. Sleen, pers. commun.) or New Mexico, although they were listed as endangered in New Mexico until July 1983 when they were delisted because of their irregular and peripheral occurrence (Hubbard et al. 1979:B17; J. Hubbard, pers. commun.).

Oberholser (1974:252) suggests that the name caracara is derived from the Guaraní Indian characterization of its call: "cara-cara" or "traro-traro." The currently accepted common name is crested caracara. Other common names include Audubon's caracara, Mexican eagle, caracara eagle, Totache, Mexican buzzard, black-capped eagle, king of the buzzards and common caracara (May 1935:97).

PRESENT DISTRIBUTION AND STATUS

Distribution

The crested caracara's range extends from the southern United States south to Tierra del Fuego (Fig. 1) (Brown and Amadon 1968:736). It is an uncommon or rare resident in southern Arizona, casual in New Mexico, and common in favorable habitat in southern, central and coastal Texas. Stragglers occur throughout most of southern Arizona, southern New Mexico, northern Texas, but rarely in Oklahoma. It is a long-established, if decreasing, breeding bird in Florida with current population estimates varying from 100 to 500 birds (Heinzman 1970, U.S. Fish and Wildl. Serv. 1987b). Individuals occasionally reported in Ontario, Canada, Oregon, Pennsylvania, New Jersey, North
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TAXONOMY

Despite its appearance and general behavior, the crested caracara is classified in the family Falconidae. The generic and specific names have been revised several times: named Polyborus cheriway Jacquin in the first edition of the Checklist of North American Birds (Am. Ornithol. Union 1886:116), it later appeared as both Falco cheriway Jacquin (Peters 1931) and Caracara cheriway Jacquin (Am. Ornithol. Union 1957:116) and was finally named P. plancus Miller (Am. Ornithol. Union 1983:122-123). The single subspecies in North America is P. plancus cheriway Jacquin (Stresemann and Amadon 1979:393).

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The caracara is a common to uncommon resident in the south Texas brush country, along the Gulf Coast, and in the central interior as far north as San Antonio and Gonzales counties. It is rare and somewhat irregular north to Tarrant, Hunt and Dallas counties and Orange County on the northeast Gulf coast; rare and irregular northwest to Sonoma, Conchos County and in Big Bend National Park. Stragglers are seen in the northern Panhandle and eastern Trans-Pecos. The population on the Texas Gulf Coast extends eastward into Louisiana where it is considered a rare resident (Lowry 1974:243).

B. Thompson (pers. commun.) suggested that the crested caracara is becoming more widely distributed over two-thirds of Texas and more common in southern Texas. Occasionally, large concentrations are reported during winter months, especially in Palmetto State Park where 50 or more are regularly recorded during Christmas Bird Counts published annually in the July issue of American Birds (Volume 34: page 592; 35:648; 36:676; 37:689; 38:719; 39:713). This part harbors the highest concentrations of caracaras in the United States: 123 birds were recorded in December 1982 (Monroe 1983) and 121 in December 1984 (Monroe 1985). Smaller concentrations of caracaras in the United States: 123 birds were recorded in December 1982 (Monroe 1983) and 121 in December 1984 (Monroe 1985). Smaller concentrations of caracaras in the United States: 123 birds were recorded in December 1982 (Monroe 1983) and 121 in December 1984 (Monroe 1985).

Status

Many accounts suggest that from the turn of the century until recently crested caracara declined throughout much of its range. Bent (1938:129) reported a rapid decline in parts of Texas where the caracara was once plentiful. F. Packard and C. Hagar (unpubl. data) also noted that early ornithologists reported the caracara as one of the most abundant resident raptors along the Texas coast with a concentration center at Corpus Christi. They suggested that its decline coincided with general reductions in open prairie and livestock ranching. In eastern Texas, the number of nesting pairs on the Welder Wildlife Refuge declined from 35 pairs in the 1950s to one or two pairs in 1975 (Porter and White 1977). Oberholser (1974:252) documented the decline in Texas on the basis of Christmas Bird Count data; a sharp decline began in 1957 and continued throughout the early 1970s. Coinciding with the Texas data, Monson and Phillips (1981:25) reported that the caracara was considerably more common in Arizona before 1920.

Accounts suggesting a general population decline in Texas and Arizona contrast sharply with reports during the last 10 years. B. Thompson (pers. commun.) reported that the species is common, widespread and increasing over much of Texas. In Arizona, several recent nesting accounts exist for the Tohono O'odham Indian Reservation (H. Byrnes, pers. commun.; D. and C. Ellis and W. Whaley, pers. obs.) at sites some distance from nest sites reported by Levy (1961). Observations of individuals and occasionally of groups of crested caracaras are reported in recent issues of American Birds (31:1032; 32:826; 33:303; 35:324; 36:204; 37:209; 38:231, 344 and 756; 39:86 and 334) indicating that the species' range in Arizona is probably as great now as formerly.

LIFE HISTORY

Diet

The crested caracara actively searches for carrion and offal, often in association with vultures (Bent 1938:131, Sutton 1951:101, Glazener 1964). Large numbers of crested caracaras may be attracted to food sources such as slaughterhouses (Bent 1938:131). Sutton (1951:101) noted caracaras flying over Mexican highways at daybreak, presumably looking for road kills.

Although Sutton (1951:101) suggested that caracaras are displaced by vultures from carrion, Glazener (1964) observed crested caracaras kleptoparasitizing turkey vultures by swooping down on them in flight, causing the vultures to disgorge food. The caracaras either caught the disgorged food in midair or landed and picked it up. Crested caracaras have also been recorded as kleptoparasites of the brown pelican (Pelecanus occidentalis), crows (Corvus spp.) and northern harriers (Bent 1938:133) and Simmons (1925:109) noted that caracaras occasionally hunt in pairs, and Bent (1938) related observations of pairs attempting to lure lambs from their mothers. Caracaras may also search along streams, irrigation canals and ponds for dead fish or wade in the shallows in search of live frogs, fish, turtles, young alligators (Alligator mississippiensis) and a variety of invertebrates (Bent 1938:132).

Caracaras occasionally hunt birds, sometimes with success. Bent (1938:133) described a caracara hunting and killing a white ibis (Eudocimus albus), and Brown and
Amadon (1968:738) noted the pursuit and capture of an egret by three or four caracaras. Whitacre et al. (1982) observed pairs of caracaras hunting cattle egrets (*Bubulcus ibis*) and an unsuccessful attempt of two caracaras to capture a brown jay (*Cyanocorax morio*).

The caracara’s prey handling method depends on prey size. Food fragments and small prey are carried in the bill or less often with the feet and talons. Large food items are carried with the feet and are torn with the bill and feet. The young are fed falconlike, unlike young vultures which are fed by regurgitation.

Crested caracara food habits have not been quantified in the southwestern United States, although qualitative information is available (Table 1) (see Sherrod 1978:93). We gathered prey remains below nests and perches at a few sites on the Tohono O’Odham Indian Reservation from 1977 to 1985. We also observed one caracara pair from a blind for a few days in 1977. Although analysis of prey remains has not been completed, some generalizations can be made. Regal horned lizard (*Phyrnosoma solare*) crowns are conspicuously present in the debris below perches while direct observations indicated that amorphous, hairy masses (probably chunks of domestic livestock) were most frequently brought to the nest. The nest was usually empty of food debris because adults cache surplus food in the vicinity. D. Ellis observed a female bring a lizard to the nest, then fly approximately 40 m to a palo verde (*Cercidium spp.*) and place the lizard in a dense clump of mistletoe (*Phoradendron spp.*) in its branches. Thirty minutes later the female returned to the cache, retrieved the lizard and flew off.

### Habitat

Across the four-state area, the crested caracara is found almost exclusively in open habitats. In Arizona, almost all recent observations and breeding records are in the Arizona Upland subdivision of the Sonoran Desert. The occasional stragglers recorded in New Mexico have been observed in or near zones of Chihuahuan desertscrub. In Texas, the caracara is associated with grasslands or open savanna including the northern limits of the Tamaulipan scrub forest, but it is apparently absent from dense scrub forests. For example, the caracara is common in the open agricultural lands near the Santa Ana National Wildlife Refuge but sel-

<table>
<thead>
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<th>Source</th>
<th>Specific items</th>
<th>Reference</th>
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<tbody>
<tr>
<td>Kleptoparasitism</td>
<td>Fish from brown pelican, carrion from vultures, small mammals from crows and harriers</td>
<td>Fisher (1893:128), Bent (1938:133), Glazener (1964), Hamilton (1981)</td>
</tr>
<tr>
<td>Hunting mammals</td>
<td>Rodents, esp. rats, mice, gophers, squirrels, prairie dogs, rabbits</td>
<td>Fisher (1893:128), May (1935), Bent (1938:132)</td>
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<tr>
<td>Birds</td>
<td>White ibis, misc. passeriformes, cattle egret, brown jay</td>
<td>Bent (1938:133), Whitacre et al. (1982)</td>
</tr>
<tr>
<td>Herptiles</td>
<td>Turtles, young alligators, frogs, snakes, lizards, turtle eggs, horned lizards</td>
<td>Bent (1938:132), Sprunt (1946), D. Ellis (pers. obs.)</td>
</tr>
<tr>
<td>Coconuts</td>
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<td>Haverschmidt 1947</td>
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dom observed in the brushy woodlands within the refuge boundaries (J. Idekr, pers. commun.).

The distribution of the crested caracara is closely linked to food supply. D. Brown (pers. commun.) credited its presence as a breeding bird on the Tohono O'Odham Indian Reservation to unsanitary livestock carcass disposal practices. Groups of caracaras are also commonly observed at the Sonoya, Sonora dump, just across the Mexican border (M. Dalliano, pers. commun.). Inadequate food resources may explain the absence of caracaras in certain portions of Arizona. Extensive raptor surveys of the Sonoran Desert of southern Arizona conducted during the 1970s and 1980s by J. Dawson, R. Glinski, B. Millsap, and the authors failed to locate breeding pairs outside of the Tohono O'Odham Indian Reservation. The disappearance of caracaras from the Santa Cruz Valley with the closing of a carcass dump (G. Monson, pers. commun.) provides additional evidence for the relationship between their presence and food supply.

The caracara distribution in Texas has also been linked with habitat and food supply (Oberholser 1974:202-3, 252). F. Packard and C. Hagar (unpubl. data) noted that the crested caracara decline in Texas followed a general reduction in open prairie. Conversely, Porter and White (1977) tentatively linked a population decline on the Welder Wildlife Refuge with brush removal operations in the vicinity of the refuge.

Because of the caracara's marked preference for grasslands and open savanna, its range has greatly expanded in tropical America concurrent with extensive deforestation (Reichhoff 1974, Hilty 1985). Conversely, its range in the southern United States and northern Mexico has apparently declined with the invasion of overgrazed rangelands by woody species such as mesquite (Prosopis spp.) (Bent 1938:128). In Florida, nests are most often found in cabbage palms (Smith 1928:186, Bent 1938:128). Extensive brush removal operations and controlled grazing in many areas have reversed this trend and may explain, in part, the increased number of crested caracara observations in recent years in Arizona and Texas.

Breeding Biology

Across the United States the crested caracara nesting season extends from late December through July and occasionally later, depending on the fate of previous nesting attempts. The best indication of the nesting season in Texas is made by projecting hatching and fledging data (Fig. 2). One brood per season is normal, but two or three clutches per year have been reported following egg removal (Bent 1938:130).

Nest materials may be collected as early as December (Simmons 1925:110) in Florida and somewhat later in the western states. Nest construction was observed in Arizona on 20 March (Levy 1961).

Nests are constructed mostly of long, fine stems of weeds and twigs with an average stem diameter of 3 mm or less. These sometimes overlay a strata of bulky sticks and twigs (D. Ellis, pers. obs.). The diameter of 45 woody twigs from an Arizona nest ranged from 0.8 to 7.3 mm. Only six of these had a diameter greater than 3 mm. Ten herbaceous stems from the same nest ranged from 0.6 to 1.2 mm in diameter. Common raven (Corvus corax), red-tailed hawk and Harris' hawk nests in the same region were built of much coarser woody stems and were, for this reason, easily distinguished from those of the crested caracara. Other nest materials reported include corn husks, briars, mesquite twigs (Bent 1938:129), wire and cactus blossoms (D. Ellis, pers. obs.).

Nest bowls may be quite deep and were often unlined, however, some nests were lined with grasses, pellets of wool regurgitated by the parents, downy feathers, dry dung, bits of bone and occasionally pieces of trash (Bent 1938:128, Brown and Amadon 1968:739). Reused nests may become large and bulky, depending on the number of seasons a nest is used. In central Texas, two-thirds of 35 nests reported by A. Schutze (Bent 1938:129) were occupied year after year. Old hawk nests were occasionally appropriated (Bent 1938:129).

Nest sites include trees, bushes, yuccas (Yucca spp.), cacti and cabbage palms (Sabal palmetto) (Bailey 1928:186, Bent 1938:128-129). In Florida, nests are most often found in cabbage palms (Bent 1938:128). In central Texas, nests are constructed in cabbage palms (Smith 1910) and low bushes and trees 1.5-15.3 m high (Oberholser 1974:252). Texas nest sites include 35 nests in branches of live oak (Quercus spp.) or elm (Ulmus spp.), a nest 2.4 m high a Spanish dagger yucca and another nest 12.2 m high in a hackberry (Celtis spp.) (Bent 1938:129). Bent (1938:129) noted that caracara nests in Mexico and southern Arizona were in branches of giant cacti and possibly on cliffs. Recent nests reported for Arizona were located 4-8 m high in crotches of large saguaros (Carnegiea gigantea) (Levy 1961; D. and C. Ellis and W. Whaley, pers. obs.).

Usually two or three eggs are laid per nest, rarely one or four. Of 119 fresh clutches from Texas, 22% contained two eggs, 76% contained three eggs, and 2% had four eggs. Thirty-nine percent of 41 Texas clutches that were well into incubation contained two eggs and 61% had three eggs. Bent (1938:130) gave average measurements of 57 eggs as 59.4 x 46.5 mm.

Egg dates vary considerably. In northern Mexico, dates range from 1 March to 8 June (egg cards from the Western
Foundation of Vertebrate Zoology), while in Arizona, 26 and 27 May 1976 were recorded for two nests (W. Whaley, pers. obs.) and 4 May 1977 for another (D. Ellis and W. Whaley, pers. obs.). On 29 July 1978, D. Ellis found an adult still incubating two eggs which were collected on 1 September, after abandonment. Nests with fresh clutches were collected in Texas from early February through late June with March and April being the peak months for oviposition (Fig. 2).

The incubation period for crested caracaras is given as 28 days (Bent 1938:130) and 30 days (Layne 1978:34), with both sexes participating in incubation duties. Levy's (1961) dates for month-old nestlings from an Arizona nest are 24 May 1960; recently fledged young from the same nest were observed on 9 June 1960. We found a nest with two young approximately three weeks old on 30 May 1977. Another nest on the Tohono O'Odham Indian Reservation observed by H. Byrnes (pers. commun.) in May 1982 contained nestlings. A nest in Kaufmann County, central Texas had two young on 2 July. The family group of adults and fledglings is maintained for several weeks after young have fledged. In central Texas, Dillon (1961) observed a family regularly in late June and July.

The behavior of the young is unique in several ways. Three- to four-week-old young beg for food with a high pitched "swee swee" quite similar to begging calls of a young prairie falcon. Another begging call given by a three-week-old nestling resembled the feeding call of a large nestling black-billed magpie (Pica pica). Both adults apparently feed the young although the female assumes most of the duties. When young are slow to take food, adults may give a very short croaking chuckle similar to a raven's croak but shorter and quieter (D. Ellis, pers. obs.).

Adults are usually shy during the nesting cycle and are quick to take flight when the nest is approached. We noted a unique nest defense call also described by May (1935:97). An adult caracara, in a horizontal perching position, rapidly swings its head backward so that the crown contacts or nearly touches the back. The call emitted during this movement is a "croak clatter" consisting of a rapid series of short guttural notes of about the same duration and timbre.

The defecatory behavior of adults and young is unique among raptorial birds. The nest sites of the crested caracara in Arizona are readily identifiable because of the adult's habit of evacuating its cloaca atop its favored perches, saquaro cacti arms. The excrement is vented vertically onto the cactus and runs in a stream, often more than 3 m down the furrows from the cactus top. The green and white striped saguaros are clearly visible from great distances and may be used in locating areas frequented by the caracara. Nestling caracaras, even those near fledging, lack nest sanitation behavior observed in most other raptorial birds and defecate in a forceful stream directly onto the nest.

MANAGEMENT

Management Recommendations

From an economic standpoint, the crested caracara is worthy of protection as a scavenger of carrion and a
Research Needs

Remarkably little is known about the crested caracara in the southwestern United States. Specific research goals include determining nesting habitat, nesting phenology, seasonal food habits and seasonal movements of adults and young.

Acknowledgments.—A project of this nature would have been impossible without the cooperation of the many agency personnel cited in the text. G. Monson deserves special mention for compiling observations on the crested caracara for several decades. L. Kiff and his co-workers at the Western Foundation of Vertebrate Zoology have our thanks for providing us with the egg records. C. Henny, M. Keller, R. Ginski and R. Gabel reviewed the manuscript.

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