

The Eurasian Collared-Dove arrives in the Americas

P. William Smith

If the Cattle Egret is the “white starling,” is this species destined to become the “gray starling?”

IN THE SPRING OF 1986, H. W. KALE II and I determined for certain that a burgeoning southeast Florida population of collared *Streptopelia* doves was in fact *S. decaocto*, the Eurasian Collared-Dove (Smith and Kale 1986). Although some observers had independently identified them correctly (e.g. White 1986), these birds had been overlooked for several years by the birding and ornithological communities on the assumption that they were Ringed Turtle-Doves (*S. risoria*).

Because this population is now well established and is increasing and spreading rapidly, it deserves attention. What is the Eurasian Collared-Dove? How does it differ from the Ringed Turtle-Dove shown in most North American field guides? How did it get here? What are its prospects?

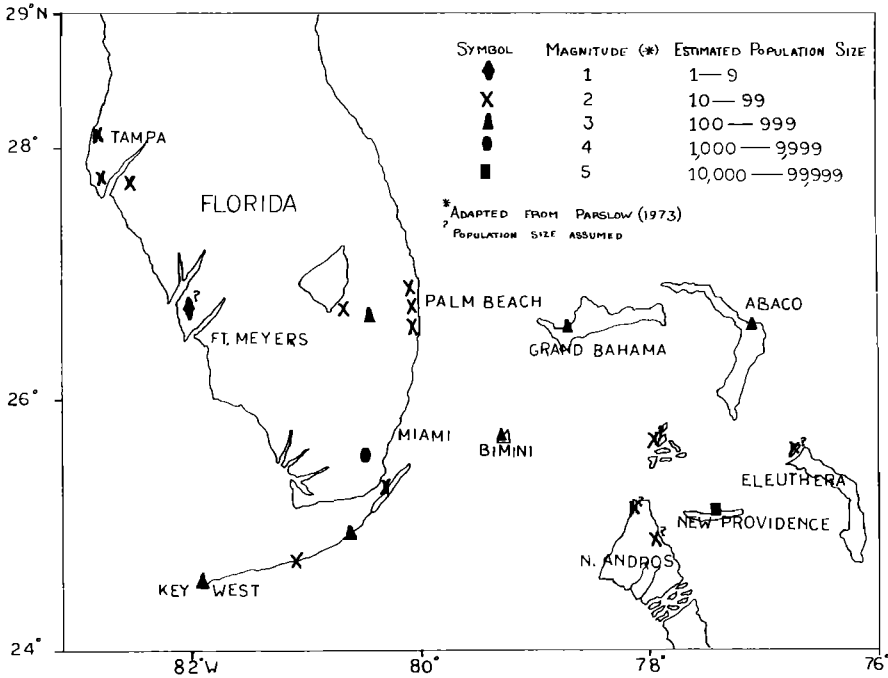
The Eurasian Collared-Dove

The Eurasian Collared-Dove was formally described, in 1838, from what is now Bulgaria, by the Hungarian naturalist Frivaldszky, who named it *decaocto* after an ancient Greek myth about a dove's call (from Fisher 1953). Fisher, citing others, believed that it spread westward or was introduced into Asia Minor and the Balkans from its principal range farther east, primarily India, during the 16th century. This theory, however, may be inconsistent with the notion that it was known to the ancient Greeks. For approximately 400 years and perhaps much longer, its European range was confined to a relatively small area around the Black and Aegean seas. It was first reported on the east side of the Adriatic Sea in what is



Eurasian Collared-Dove. Florida, August 1987. Photo/Reed Bowman.

1987 Americas range of Eurasian Collared-Dove



Map/Susan A. Smith.



Domestic collared-doves grace the roof of a homeowner in St. Petersburg, Florida, September 1, 1986, who feeds them regularly. Also present are Eurasian Collared-Doves, hybrid Eurasian x domestic doves and Mourning Doves (*Zenaida macroura*). Photo/P. William Smith.

now Albania and Yugoslavia in the late 19th century.

About 1930, the Eurasian Collared-Dove began what has been called “the most impressive example . . . of the expansion of an animal species in zoogeography” (Nowak 1971). As Fisher (1953) put it, the main spread gathered its momentum primarily in the great

plains and valleys of the Danube. The species was first found breeding in Roumania and Hungary in the early 1930s. By 1945, it had reach West Germany and by the early 1980s the population there exceeded a million (Cramp and Simmons 1985). In The Netherlands, there were five pairs in 1950, about 5000 pairs in 1963, and

perhaps as many as 100,000 pairs in 1977. The species first bred in Britain in 1955 and increased geometrically in numbers for about 10 years before slowing and finally leveling off at around 50,000 pairs (Sharrock 1976; Cramp and Simmons 1985). The population in northwestern Europe may have reached equilibrium, but expansion is still occurring to the northeast into the Union of Soviet Socialist Republics, and also to the southwest. The species crossed the Pyrenees about 1974 (Cramp and Simmons 1985) and reached Morocco in 1986 (Sharrock *et al.* 1987).

The expansion of the Eurasian Collared-Dove in Europe has been so thoroughly chronicled (*e.g.*, Fisher 1953, Cramp and Simmons 1985, and numerous references contained therein) that it seems pointless to further review it. Studies suggest that it disperses mainly in spring, primarily westward, perhaps due to saturation of local nesting locations. It often appears several hundred kilometers from the nearest known nesting site, with backfilling eventually occurring in suitable areas. In Western Europe, the species prefers suburbs, small towns, and agricultural settlements, shunning urban centers, open countryside, and forested areas. Heavily associated with civilization, it survives by taking food, particularly grain, usually indirectly rather than directly from man.

The Ringed Turtle-Dove

The name “Ringed Turtle-Dove” is a neologism, probably coined by Robert Ridgway to refer to small 19th century feral populations of *Streptopelia ‘risoria’* on several Caribbean islands, including Cuba (Ridgway 1916). In Europe its English name has long been the Barbary Dove. The name “*risoria*”, meaning laughing, refers to its excited “heh-heh-heh” notes. According to Hartert (1916), it was described by Linnaeus in 1758 based on the writings and drawings of a 16th century naturalist, Aldrovandus, who called it ‘*Turtur Indicus*’. Eleazar Albin, writing in 1738, referred to them as “tame and pretty birds, kept in cages by the curious, in which they will breed and bring up their young.” In Linnaeus’ time it was widespread as a cagebird in Europe, but no one knew its origins. Based on Aldro-

vandus' name, however, Linnaeus and others of the period apparently *supposed* that it originated in India.

After the similar *S. decaocto* was described in 1838 and was found to occur in India, some contemporary ornithologists concluded that it must be the progenitor of *S. 'risoria'*. The African Collared-Dove (*S. roseogrisea*), a native of the arid zone south of the Sahara Desert east to the Arabian peninsula, was described later, in 1857. People such as Shelley (1883), familiar with the vocalizations of all three, were convinced that the affinities of *S. 'risoria'* were with *roseogrisea* rather than with *decaocto*. However, according to Hartert (1916), E. C. Stuart Baker erroneously resurrected the presumed relationship between *'risoria'* and *decaocto* in an influential treatise on Indian pigeons and doves published in 1913. It has not been until recent years that the relationships have again been properly sorted out (see Smith and Kale 1986 for a brief review). There no longer appears to be any significant dispute among ornithologists that *S. roseogrisea* is the progenitor of *S. 'risoria'* or that *S. decaocto* is a different, although possibly closely related, species.

The Ringed Turtle-Dove appears to be a naturally occurring recessive mutant of the African Collared-Dove (Goodwin 1983), which may have been domesticated in neolithic times (Zeuner 1963). The dove, distinct from the pigeon (*Columba livia*) and the migratory turtle-dove (*S. turtur*), plays a prominent role in the mythology of the ancient Semites, a people thought to have originated in Southern Arabia (Langdon 1931) where the African Collared-Dove occurs naturally. Although scholars still debate which species is involved, the dove is important to both Judaism and Christianity. A dove, bringing an olive branch as proof, told Noah that the flood had receded (Genesis 8:11). Jesus' act of destroying the dove-sellers' seats in the temple (Matthew 21:12, Mark 11:15, John 2:14) in part led to His crucifixion.

As recently as 35 years ago, Goodwin (1952) commented about the remarkable stability of the Ringed Turtle-Dove's plumage under domestication. About that time, however, a Californian aviculturist named Steinbeck imported some "wild" collared-doves, presumably Africans, for his aviary (Goodwin 1983, W. Miller *in litt.*). Some were made available to geneticists working



Above and below: Eurasian Collared-Dove (left) and nearly "wild" domestic (=African) collared-dove. Note Eurasian's larger size, darker primaries, dark outer web of outer rectrices, and gray belly and undertail coverts. Photo/P. William Smith.





In both the Eurasian and domestic collared-doves, the shading of the head, back, mantle, and underparts can vary depending on the angle of the sun. Photo/Reed Bowman.

with Ringed Turtle-Doves at the University of Wisconsin and later at the University of Iowa (W. Miller *in litt.*). Over the ensuing period, numerous phenotypes have been isolated. They have been spread by members of the American Dove Association (Motto: "We Love Doves") and others, including the International Dove Society based in Texas. Dove fanciers, who refer to them collectively as "ring-necked doves," now have and show a number of varieties including "wild" (*i.e.*, similar in appearance to the parent African Collared-Dove), fawn or blond (the original Barbary Dove), white, ivory, peach, rosy, orange, tangerine, etc. Most of the colors can be mixed with white to provide a set of pied morphs. There now is also an assortment of silky types, reflecting a defect in feather structure. Some of these phenotypes have made their way into the commercial pet trade and are now widely available.

Thus, the long-stable Ringed Turtle-Dove has recently become more variable, something akin to the domestic pigeon. To avoid confusion, therefore, I prefer to refer to all the domesticated varieties collectively merely as domestic

collared-doves *S. 'risoria'*. The quotes around '*risoria*' follow the practice of Goodwin (1983) and Cramp and Simmons (1985), suggesting that it is not the name of a valid species.

Domestic collared-doves in the United States

Domestic collared-doves have been in the United States for a long time, but they did not come to the attention of the ornithological community until H. H. Bailey published a short note to the effect that he had captured a live Ringed Turtle-Dove in Dade County, Florida, "no doubt . . . blown over from Cuba," and proclaimed it a new addition to the A. O. U. Check-list (Bailey 1922). Nevertheless, Bailey had no difficulty in procuring more, for in 1927 he provided a few pairs to John Levi, the developer of Star Island, winter home of the notorious gangster Al Capone, in Biscayne Bay, off Miami Beach, Florida (Bailey 1935). These were released and flourished in the vicinity at least into the 1930s. Although the feral population there quickly grew to more than 300

birds (Horn 1931), this colony apparently did not survive the area's economic difficulties after prohibition and during the depression; probably no one continued to feed them.

In February 1929, Joseph Grinnell discovered a feral population of domestic collared-doves in Pershing Square, Los Angeles, California (Grinnell 1929), which has persisted nearby to this day. In attempting to establish its origin, he found them to be very common locally among aviculturists. Now urbanization, and perhaps the absence of continued nearby releases, makes these birds' prospects tenuous at best. Another feral population, in St Petersburg, Florida, was found in 1953 (Grimes 1953) and still persists today in a neighborhood where it is heavily fed. The latter population now shows so much variation in plumage that it evidently has been bolstered by many additional releases over the years. As discussed subsequently, the St. Petersburg population is also threatened by introgression from the invading Eurasian Collared-Doves.

These two appear to be the only feral populations of domestic collared-doves in the United States that have existed for any length of time. Several others, including one in Tucson, Arizona, represent privately owned flocks maintained at liberty (K. Kaufmann *pers. comm.*, Roger Baker *pers. comm.*) There are over 300 members of the American Dove Association alone who breed them. Like many kinds of domesticated birds such as duck-pond Mallards and Muscovies (Hoffmann 1986), the domestic collared-dove has apparently lost its ability to disperse and flourish in the wild (Goodwin 1983). It is arguable whether it deserves a place on any list of wild birds.

Separating Eurasian from domestic collared-doves

Because of the difficulties of describing the subtleties of dove coloration and the tremendous variation now found in domestic collared-doves, explaining the visual differences between them and Eurasian Collared-Doves is nigh impossible. The shading of the head, back, mantle, and underparts of both species varies with the season, age, and sex of the individual, and may appear significantly different depending on the angle

and directness of the sun Eurasian Collared-Doves are usually larger and more robust than domestic collared-doves, and their undertail coverts are normally gray. Their primaries are ordinarily darker, and from below the outer web of each outer tail feather is more extensively dark. Conversely, domestics have white undertail coverts, and depending on overall coloration, may show a whiter belly compared to the pinker or creamier breast. The outer web of each outer tail feather is also mainly white. These differences are summarized in Table 1. Juveniles of both species are similar to adults but may lack most or all of the neck ring during their first few months of life. With some domestic phenotypes, the neck ring has been bred completely away.

As difficult as it may be to separate them visually, voice is diagnostic and may often be the simplest way to tell Eurasians from domestics in the field. The Eurasian Collared-Dove's repeated and normally trisyllabic "kuk-kooooooooo-kook" call, given frequently from telephone poles or wires, TV antennas, and similar singing perches during the extended breeding season, differs significantly from the domestic's rolling, often softer, usually bisyllabic "kooeek-krrrrroooo(aw)" call. The Eurasian's harsh, single-noted excitement cry, which normally is given only in flight or while alighting, reminds many people of a loud Gray Catbird (*Dumetella carolinensis*). It is very different from the domestic's soft but repeated chuckling sounds, usually given only at rest, which gave rise to the name 'risoria'.

There is also a naturally occurring cream-colored mutant of the Eurasian Collared-Dove (Goodwin 1973, Macdonald 1984) which in plumage is much like the Ringed Turtle-Dove illustrated in most American field guides. I have seen one near Homestead since 1986, and another in Key West. They can be identified in the field by their bulk, the characteristics of the outer tail feathers, and especially by their voice. In the Bahamas, especially on Bimini, some are abnormally dark in color but seem to have normal Eurasian vocalizations.

Hybrids between the Eurasian Collared-Dove and the domestic varieties are well-known in European aviculture (Chappuis 1974). They also occurred naturally in Denmark with feral domestics when Eurasians first appeared



Although it is difficult to separate the two species visually, the simplest way to tell Eurasians from domestic collared-doves in the field is by voice. Photo/Reed Bowman.

Table 1. Key differences between Eurasian (ECD) and domestic (DCD) collared-doves

		ECD	DCD
1. Call	(*)	Unrolled "kuk-kooooooooo-kook". Often in series with brief pauses between phrases.	Rolled "kooeek-krrrrroooo(aw)" Usually longer pauses between phrases.
2. Note	(*)	Harsh screaming mew, like muffled peafowl or loud catbird, given in flight or while alighting.	Soft jeering laugh, "heh-heh-heh-heh", usually given only at rest.
3. Size		Much larger and more robust than Mourning Dove.	Variable, but usually smaller, daintier than ECD (still usually larger than Mourning).
4. Color		Pale sandy brown with buffy gray neck, head, underparts.	Variable, but often creamier or pinker, lacking the gray tones.
5. Vent and undertail coverts	(*)	gray, much like rest of underparts.	whitish, often contrasting with rest of underparts.
6. Wings		Primaries obviously darker than rest of wing.	Primaries often not much darker than rest of wing.
7. Tail		Long, rounded or square-looking.	Often shorter, but some are very long-tailed. Often looks more pointed.
		Dark basal underside roughly reaches tip of undertail coverts.	Dark basal underside rarely approaches tip of undertail coverts.
	(*)	Outer web of outer tail feathers mostly dark.	Outer web of outer tail feathers mostly white.
8. Behavior		Usually sly. May seem confiding until one tries to approach.	Meek. Usually quite approachable, can sometimes be picked up.

Note: The "Ringed Turtle-Dove" is one of many phenotypes of the domestic collared-dove, all of which are descendants of the African Collared-Dove.

(*) Most consistent and dependable differences

there (Fisher 1953) Similarly, hybrids appear to be present in St. Petersburg, Florida. Birds which I believe to be hybrids have nearly the bulk and coloration of the Eurasian, a similar excitement cry, and a call close to it, without the domestic's rolling quality but with a slight quiver. Like the domestic, however, these hybrids usually have white or whitish undertail coverts. Thus, they look much like the domestic's parent African Collared-Dove (except for subtly less pinkish tones to the head and breast), but sound much like the Eurasian. Such hybrids may become more commonplace in the United States if the Eurasians become widespread among dove fanciers.

Eurasian Collared-Dove's probable American origin

Rarely is it possible to trace the specific likely origin of a foreign species, for often the trail is cold long before it is realized that it is newly established somewhere. Fortunately, because of the explosive growth of the Eurasian Collared-Dove in the Americas, it was still possible to locate and speak directly with the individuals who appear primarily responsible for its arrival. At their request, I have agreed to protect their anonymity.

The Bahama Islands have a relatively small permanent human population (about 210,000 as of 1980, about one-half of whom live on the island of New Providence where Nassau, the capital, is located), and lack the affluence and commercial infrastructure necessary for a viable pet trade. The 1985 Nassau Yellow Pages list only one pet shop on New Providence, and it was no longer in business in June 1986. However, there are a few individuals who have both the means and opportunity to bring birds and other animals into the islands on an informal basis.

In the early 1970s, an individual with a small pet business in Nassau, wishing to establish a local breeding stock of domestic collared-doves, asked an acquaintance in a position to do so to obtain ten pairs of "ring-necked doves" for him. The acquaintance obliged on a subsequent trip to The Netherlands, but his source overseas was only able to supply "Indian ring-necks," the name by which *S. decaocto* is known among European aviculturists, rather than *S.*

'*risoria*' Not knowing the difference, the acquaintance acquired and delivered them to the prospective breeder.

In December 1974, the breeder's aviary was broken into by youths looking for parakeets. Some of the collared-doves escaped, discouraging the breeder who decided to abandon his plans and release the rest of them. The exact number involved at the time is unknown, but it is thought to have been no more than 50 birds. Additional releases may have come from people who purchased some of the dealer's stock and found that they were less well adapted to captivity than the usual domestics (Green 1977, D. Knowles *pers. comm.*, P. Maillis *pers. comm.*).

Denis Knowles, a Nassau resident, first noted Eurasian Collared-Doves nesting on his property in the summer of 1975 (*pers. comm.*). The population growth on the 207-square kilometer island of New Providence was dramatic, aided in part by dove lovers who established elaborate feeding operations (A. Sprunt IV *pers. comm.*). It was not long before the birds came to the attention of local hunters; by the 1980s, organized dove-hunts were being held in late summer and people were describing dove flocks as "darkening the sky" (P. Maillis *pers. comm.*). While no formal census of the population on New Providence has been attempted, evidence from several sources including my own observations of density in some residential areas suggests that it already may be Magnitude 5 (10,000–99,999, see map).

Given the species' history of range expansion, it is not surprising that it would disperse rather quickly to other islands within the Bahamas (see map). In September 1978, the species was first noted (although misidentified) at Fresh Creek, Andros, about 40 kilometers southwest of New Providence (Attrill 1978). In July 1979, it was found at Morgan's Bluff, Andros (D. Knowles *pers. comm.*), about 55 kilometers northwest of Fresh Creek. It is now by far the commonest breeding bird species at Alice Town on North Bimini. Currently, Eurasian Collared-Doves are also known to be established on Grand Bahama (West End and Freeport), Abaco (including some offshore cays), Spanish Wells (north of Eleuthera), and on several of the Berry Islands northwest of New Providence. No evidence of dispersal southeastward towards the

southern Bahamas has thus far come to my attention

In some cases, intra-Bahamian dispersal was man-assisted. In 1982 and 1983, Stewart Stratton (*pers. comm.*), a prominent conservationist living in Marsh Harbour, Abaco, arranged for 37 Eurasian Collared-Doves to be captured in Nassau and released there. His object was to reduce local hunting pressure on the White-crowned Pigeon (*Columba leucocephala*). As of mid-1986, the population in Marsh Harbour, then up to several hundred, appeared to concentrate daily around his feeding operation. In December 1983, however, E. Brinkley (*in litt.*) referred to the species as "abundant throughout the Abacos," suggesting that natural arrival probably occurred there as well.

While it is impossible to state categorically that Florida's population of Eurasian Collared-Doves arrived naturally from the Bahamas, it is the simplest and most logical explanation and is consistent with the normal westward axis of the species' dispersal. Its abundance at tiny North Bimini, only about 80 kilometers from the coast of Florida, strongly supports this hypothesis. The likelihood that it has become established by escape from within Florida is small. I contacted or visited every known bird wholesaler and dove breeder in southern Florida, and dozens of pet shops in the area; none knew of or unknowingly held Eurasians. The 1986 roster of the American Dove Association shows only six of the several hundred members claiming to keep the species, all of whom are located west of the Mississippi. Roger Baker, the Association's president, suggests (*pers. comm.*) that even this small number is probably overstated, since in his experience, some members fail to understand the difference between it and the "wild" domestic, *i.e.*, the African Collared-Dove. Indeed, three western dove breeders contacted me asking for Eurasian breeding stock! The only North American zoo claiming to keep Eurasian Collared-Doves is in Calgary, Alberta (*vide* ISIS 12/31/86 Species Distribution Report).

Available bird importation records and conversations with numerous dove fanciers and dealers uncovered no collared-dove importation of any kind into the United States over the past 20 years, other than a few novel tangerine-colored domestics developed in Germany and brought in *via* Canada (R. Burger



The Bahamas are the most logical origin of the Eurasian Collared-Doves, here pictured in a palm, now found in the Americas. Photo/Reed Bowman.

pers. comm.) and some Red Collared-Doves (*S. tranquebarica*), a small distinctive species sometimes used in genetics experiments. Indeed, the commercial value of collared-doves as pets is currently very small, usually under \$10 retail, and they are often available free because they breed so prolifically in captivity. Consequently, there seems to be no incentive for anyone to import any kind of collared-dove into the United States for commercial purposes.

On the other hand, the chance of natural vagrancy of the Eurasian Collared-Dove to North America, even ship-assisted, is equally small. The species has not colonized the Azores or Canaries, and although it has bred in Iceland, it is not established there. Annual Icelandic bird reports published for the years 1979–1984 (Pétursson and Skarphéthinsson 1980, 1982, 1983; Pétursson and Ólafsson 1984, 1985, 1986) show a total of only about six records over that period, some involving known ship-transported individuals. Although the species lands on ships in the eastern North Atlantic occasionally, especially during the spring dispersal period, the nearest one reported to have been transported toward the United States involved an individual which rode the MV *King George* westward for seven

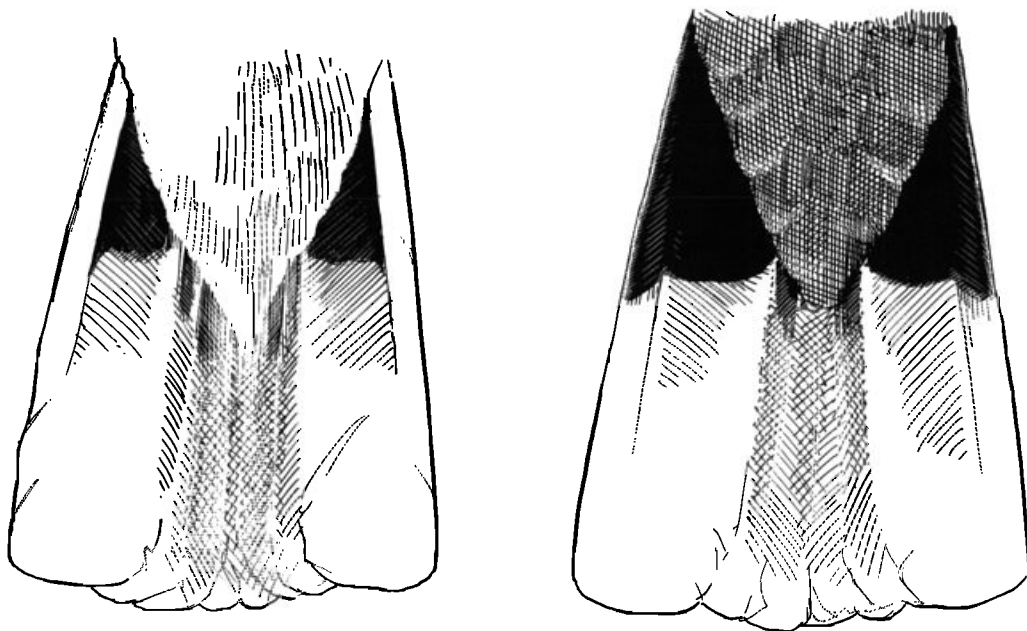
days in April 1981, before disappearing from the ship in mid-ocean, 400 miles east of Bermuda (Will in Casement 1983). Thus, there is no evidence that the species has sufficient long-distance flight or survival capability to establish a viable overseas breeding population by itself.

Current Eurasian Collared-Dove status in Florida

Because it was supposed for several years that the collared-doves in southeastern Florida were domestics, no special effort was initially made to follow the Eurasian's appearance and expansion (see map). It is now impossible to determine when they first appeared. Collared-doves were observed in the late 1970s in the Homestead area (O. Bass *pers. comm.*), and Eurasian Collared-Doves were definitely nesting there by 1982 (Smith and Kale 1986). The first published modern collared-dove record for the Keys was at Islamorada on December 30, 1980, and 80 Eurasian Collared-Doves were there at a single feeder in November 1985 (Smith and Kale 1986). It is impossible to determine whether the Keys' population, which now extends as far as Key West, and

the Homestead population were derived from each other or represent independent dispersal from the Bahamas. In late March 1987, one was even found at Garden Key in the Dry Tortugas, 110 kilometers west of Key West (M. Robertson *pers. comm.*), and isolated individuals have been found in other unexpected places, such as at Flamingo in far southwestern Everglades National Park by my wife, S. A. Smith, in August 1987.

Another population of Eurasian Collared-Doves occurs in several locations in Palm Beach County, about 100 kilometers west of Grand Bahama Island, which may well reflect independent dispersal from the Bahamas. Homestead, a greater distance away, is in a direction from which dispersal is less likely. Eurasian Collared-Doves were noted in Delray Beach about 1982 (P. Sykes *in litt.*) and now are found in several locations in the county north to Riviera Beach and west to South Bay, particularly around the equestrian-oriented community of Wellington. Another population is on Florida's Gulf coast in the Tampa Bay area. In Pinellas County, Florida, and in St. Petersburg, they occur in the same vicinity as the feral population of domestic collared-doves, and there is evidence from per-



Domestic (African) collared-doves (Ringed Turtle-Doves) (left) have white undertail coverts and white outer webs to the outer rectrices. This is in contrast to the Eurasian Collared-Dove (right) which has gray undertail coverts and dark outer webs to the outer rectrices. A domestic's undertail coverts usually extend well beyond the often more restricted dark bases to the underside of the tail. Drawing/David A. Sibley.

sonal observation of apparent interbreeding of the two species. However, continued immigration of Eurasians to the area probably limits introgression from domestics, and very few birds there currently show intermediate characteristics. At least 25 pairs are now in Pasco County, on the Gulf coast north of Tarpon Springs, where they were first noted about 1983 (D. Goodwin *pers. comm.*). In Hillsborough County, where Eurasians were located near Ruskin on the east shore of Tampa Bay in 1986 (R. Paul *in litt.*), a small but vigorous population is now present. Small numbers were also discovered in 1987 near Cleveland, Charlotte County (W. Hoffmann, *vide* R. Bowman).

All reports of collared-doves that I received from northern Florida and the rest of North America following a 1986 appeal appear to refer to domestics. All collared-dove specimens from Florida known to me taken prior to those collected in Florida City in 1986 (Smith and Kale 1986) are *S. 'risoria'*. As mentioned by Smith and Kale (1986), domestic collared-doves are frequently released in wedding and other religious ceremonies, and by breeders who find that they multiply as fast as the proverbial rabbit. Moreover, as stated previously, some people keep their flock of doves at liberty, leading to observations in the vicinity of the aviary; sometimes, members of the flock breed on their

own nearby. Domestic collared-doves do not have the same homing proclivities as domestic pigeons, however, and some left loose by their owners wander off, sometimes being observed by birders before becoming prey for a neighborhood cat or passing hawk.

While the Florida population of Eurasian Collared-Doves has not been formally censused, in 1987 it is certainly at least Magnitude 4 (1000–9999) and perhaps already Magnitude 5 (10,000–99,999). In the Homestead area alone, I estimate the breeding population in 1987 to be well over 1000 pairs. It is spread out erratically over more than a 200-square kilometer suburban and agricultural region primarily south and west of the city, but also northeast as far as Cutler Ridge, Dade County. A few were seen on Key Biscayne southeast of Miami in the late summer of 1986, but were thought to have fallen prey to the heavy fall raptor flight there (B. Neville *pers. comm.*). The population in Monroe County (the Florida Keys) is comprised of at least several hundred pairs, chiefly at Islamorada and Key West, but also at Key Largo, Marathon, and most other inhabited keys. The population in the Palm Beach area and on Florida's Gulf coast total at least a few hundred additional pairs. Undoubtedly, other outposts are yet to be discovered or will be established in the next few years.

Prospects for the future

The Eurasian Collared-Dove's colonization of Western Europe has been continuing for more than 50 years. There, a pair annually raises three to six broods, each usually of two (Cramp and Simmons 1985). In subtropical Florida and the Bahamas, with a limited native avifauna and paucity of predators, reproductive success should at least equal that in Europe. Breeding seems to be occurring almost year round, except during the autumn when molt is in progress. In Pasco County, predation by Fish Crows (*Corvus ossifragus*) has been reported (D. Goodwin *pers. comm.*). Corvid predation, noted also in Europe (*e.g.*, Macdonald 1984), does not appear to have materially slowed the Eurasian Collared-Dove's expansion there.

Thus, although there are no assurances, there is every reason to believe that the species will spread here in much the same fashion as in Europe. Eventually it could span the North American continent, as has the European Starling (*Sturnus vulgaris*) and the Cattle Egret (*Bubulcus ibis*). Because dispersal is primarily westward, it may take a few more years before the species breaks out of the Florida peninsula. However, expansion then might occur rapidly across the southeastern states because of the region's many small towns and exten-

sive farming economy. Indeed, after this article was written, a credible report was received that a small colony of Eurasian Collared-Doves was discovered in late 1987 near Fort Walton Beach in the Florida panhandle, about 800 kilometers northwest of Homestead (P. Sykes *pers. comm.*).

If the United States population of the Eurasian Collared-Dove in 1987 is about 10,000, simple geometric expansion would suggest a population in excess of 40,000,000 by the year 2000 if equilibrium is not reached earlier. This figure, however, should not be interpreted as a forecast, for biological or other controls should begin to limit the population sooner. The species is potentially attractive as a gamebird, so runaway growth to the point of its becoming an agricultural pest seems an unlikely prospect. It is not particularly fond of urban areas, so it also seems unlikely to become an urban pest. Nevertheless, its status should be monitored by agricultural and wildlife interests, and its interaction with American species should be studied. Perhaps better than any other avian species, the Eurasian Collared-Dove has learned to thrive symbiotically with man. On that basis alone, one can predict that it should do exceedingly well in the Americas.

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