

Ecological Studies on the Rock Dove in Southeastern Oregon

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Distribution

THE ROCK DOVE (*Columba livia*) is a native to the islands of the eastern Atlantic from the British Isles to the Cape Verdes and through southern Europe and northern Africa east to China.

European immigrants introduced the rock dove to North America during the sixteenth and seventeenth centuries. It has subsequently become established throughout the temperate areas of much of the continent; and, due to its common association with human habitations, has become widely known as the domestic pigeon (Pough, 1946).

Habitat Preference

Rock bluffs along the Atlantic coast were the original principal habitat of the rock dove. Man created similar habitats in his cities and farms with the erection of buildings. Urban pigeon populations are proportionate to the available food source, most of which comes through direct feeding of the birds in the cities or through the scavenging of grains used in feeding livestock. This pattern of life is true of both the Old and New World pigeon populations (Pough, 1946).

Extension of Range into Southeastern Oregon

The rock dove accompanied man in his westward advance across the North American continent. The settlement of the Snake River valley and the tributary valleys of the Malheur and Owyhee rivers occurred in the 1860's. Flocks of barnyard pigeons were common on the farms and ranches during early periods in this area. Gradually pigeon populations increased in size until all suitable nesting sites were occupied. Population pressures evidently forced the habitation of sites of submarginal quality until these too were exhausted.

Mortality of domestic pigeon flocks was considerably lower than the steady increase through reproduction. Humans killed some for sport or meat; in rural areas magpies (*Pica pica*) and crows (*Corvus brachyrhynchos*) took some eggs; domestic cats (*Felis domestica*) undoubtedly killed young

pigeons when opportune situations occurred. Nonetheless the rock dove increased in numbers. Food sources were more than ample, but the vital nesting and roosting sites became limited.

During the late 1940's a profound change in rock dove habitat preference occurred among a portion of the southeastern Oregon population. Semiarid desertlands surround the irrigated agricultural lands which had been the habitat for this bird. These upland deserts are often quite rugged. Steep-walled canyons with perpetual or occasionally intermittent streams along the floor are common. It was here that the rock dove found a habitat similar to its ancestral sea bluff home of Europe.

The Succor Creek Canyon

Succor (Sucker by some) Creek rises in the Silver City Mountains of Owyhee County, Idaho. It enters Oregon to parallel the Idaho-Oregon boundary for some 25 miles before returning to Idaho at Homedale where it discharges into the Snake River. The stream has formed a deep canyon along a portion of its Oregon extent. The rock dove colonized this canyon about 1945. This establishment is typical of that in numerous neighboring canyons in the area.

The writer studied this population during all seasons of the year, from 1958 through 1963. At least 1,000 rock doves live the year around on the rock cliffs of the Succor Creek canyon. The nesting, roosting, foraging, and migrational habits of the local population were investigated to determine if the pigeons were competing with other wildlife species of the area.

Nesting

Mating activity and display commences on the narrow ledges of the vertical canyon walls during February and March. Individual birds occupy specific ledges and aggressively defend these sites against the approach of other pigeons.

The initial egg hatch normally is complete by mid-April. Empty egg shells are dropped to the canyon floor at the base of the respective cliff.

Foraging

Flocks of from 10 to over 50 pigeons leave the cliff ledges at intermittent intervals during the daylight hours. These flocks may soon return to their ledges or may leave the canyon for the 10-mile flight to the agricultural lands and livestock feedlots near Homedale. Here the feral pigeons join their domestic companions for consumption of feed grains and corn. The birds then return the 10 air miles to the canyon. This foraging pattern occurs the entire year with very little variation in foods consumed. Crop and stomach analysis indicates that daily feeding is common.

The contents of crops from 20 Succor Creek pigeons were analyzed. Specimens were collected during all seasons of the year. On a percentage of the total volume basis, domestic grains accounted for 95.5 per cent of the ingested material; of this 35 per cent was corn and 60.5 per cent wheat and similar grains. Seeds from wild plant species native to the local area occupied 3.5 per cent of the total volume. Wild grasses and forbs amounted to only 1 per cent of the crop contents.

Considering the data from a percentage of occurrence basis, 80 per cent of the crops contained corn, 90 per cent contained wheat and similar grains, 60 per cent contained wild plant seeds, and 20 per cent contained wild grasses and forbs.

Further Range Extension

The Succor Creek investigations show that rock doves will colonize canyon cliffs 10 air miles distant from their food source. Thus daily round trips of 20 air miles are tolerated.

The Owyhee Ridge, some 24 air miles from the nearest pigeon food supply, contains many miles of canyons which would apparently be ideal habitat. Leslie Gulch, one of these canyons, had no resident rock doves prior to 1962. Since that time a small local population has become established. Evidently population pressure has again forced the rock dove to pioneer new habitats; each is further from the feed source which is essential to the species' livelihood.

The question arises as to how far this species will commute for food. If population pressures push the dove excessive distances from the domestic food sources, will the doves adopt wild foods—and thereby compete with other species of wildlife?

Literature Cited

- Pough, R. H. 1946. Audubon Guides. All the birds of eastern and central North America. Doubleday and Company, Inc., Garden City, New York. 352 p.