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Lewis R. Davis

*California Department of Food and Agriculture, Riverside, California*

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## THE MONK PARAKEET: A POTENTIAL THREAT TO AGRICULTURE

LEWIS R. DAVIS, Biologist, California Department of Food and Agriculture, Riverside, California

ABSTRACT: Small flocks of monk parakeets, *Myiopsitta monachus*, were recently sighted and reported in Southern California. This avian species, native to Argentina, Brazil, Uruguay, Paraguay, and Bolivia, substantially damages grain, fruit, and vegetable crops grown within its native habitat. Overall crop losses in those areas range from two percent to 15 percent, with some as high as 45 percent annually. Because of its known ability to breed successfully in California and other states and to survive adverse climatic conditions, the possible effects of *M. monachus* on California's agricultural industry must be examined. This study evaluates the pest potential of this exotic avian species.

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### REPORTED SIGHTINGS IN CALIFORNIA

Monk parakeets have been reported from more than 50 percent of the continental United States. In California *M. monachus* has been detected and identified in San Diego and Orange Counties and sighted in Los Angeles and Sacramento Counties, although not verified by State personnel. Fifteen (15) monks were detected in San Diego in early Spring, 1972, in and near the San Diego Zoo where they had been intentionally released. Six months later all but two were trapped and recaged in the Zoo. The remaining two birds have not been reported since the initial release.

The sightings in Orange County involve two or perhaps three different flocks. One flock in Anaheim near Disneyland numbered 11 birds. At present, four of these continue to be observed, four have been shot, and the fate of three is undetermined. Nine (9) monk parakeets were seen in the city of Orange and another nine in Santa Ana (these may be the same flock). A single bird sighted in Orange is not considered part of the former group. The monks in Anaheim have constructed a nest and, presumably, bred successfully.

### ADAPTABILITY AND REPRODUCTION POTENTIAL

Monk parakeets are capable of adapting to a wide range of environmental parameters. They are known to live and breed in New York State where temperatures range from -17 degrees to +106 degrees Fahrenheit. A wild population of 25 monk parakeets in Northwood, North Dakota, is reported to have bred successfully. Monks in Saxony, England, have adapted to climatic conditions and produced offspring.

It is likely that wild populations of monk parakeets would reproduce in California. Those caged in outside aviaries at the Magnolia Bird Ranch in Anaheim have produced four to five clutches per year. Clutch size averages four to six eggs.

### DAMAGE TO AGRICULTURE

Observations of monk parakeets feeding in their native South America and of introduced monks in New Jersey, New York, Ohio, and California, indicate most fruit crops, vegetable crops, vineyards, and all grain crops could expect damage if monks were allowed to form wild populations. Their gregarious nature leads to the formation of large flocks capable of inflicting heavy immediate losses to fields and orchards.

In South America both grain and fruit crops suffer serious depredation from monk parakeets. Pears, grapes, apples, peaches, corn, sorghum, and sunflower are among the crops attacked. Crop losses range from two percent to 15 percent with some as high as 45 percent annually. In the United States (excluding California) applies, cherries, grapes, pears, corn, mulberries, acorns, and the seeds of sunflowers, dandelions, pines, grasses, and mixed bird seed are consumed by monk parakeets.

The present population of monks in Orange County has demonstrated a preference for fruits including oranges, apricots, figs, apples, persimmons, plums, and passion fruit. The buds of certain trees (Chinese elm and orchid) have also been included in their diet. When available fruits are scarce, monks have been observed gleaning weed seeds on the ground, including those of puncture vine.

ESTIMATED CROP LOSSES

The following (Table 1) lists specific crops grown in California that might be included in the feeding habits of the monk parakeet. Serious depredation to these crops would depend upon the establishment of numerous wild populations of monk parakeets throughout the State.

Table 1. The total value and acreage of each crop were taken from crop statistics for 1972 published by the California Crop and Livestock Reporting Service.

Crop	Acreage	Value
Almonds	186,700	\$ 81,900,000
Apples	21,500	21,758,000
Apricots	29,400	17,388,000
Artichokes	11,100	8,222,000
Asparagus	45,700	36,620,000
Avocados	19,000	24,553,000
Barley	926,000	75,376,000
Beans	195,700	18,007,000
Broccoli	40,000	34,429,000
Brussels Sprouts	6,100	7,663,000
Bushberries	900	1,663,000
Cabbage	10,000	7,064,000
Carrots	28,400	50,878,000
Cauliflower	21,600	22,947,000
Celery	16,900	57,402,000
Cherries	11,200	11,440,000
Citrus	240,800	209,289,000
Corn	229,500	45,454,000
Cucumbers	8,400	11,953,000
Dates	4,000	3,144,000
Figs	16,100	4,623,000
Grapes	443,400	330,015,000
Hops	1,500	1,739,000
Lettuce	140,600	183,454,000
Melons	129,300	141,744,000
Nectarines	9,900	15,222,000
Oats	133,000	6,376,000
Peaches	67,500	70,338,000
Pears	38,500	38,514,000
Peas	8,000	1,658,000
Peppers	12,500	18,983,000
Persimmons	500	238,000
Plums and Prunes	106,100	61,153,000
Pomegranates	1,300	460,000
Rice	331,000	120,790,000
Safflower	235,000	22,713,000
Sorghum	242,000	29,621,000
Spinach	11,200	7,769,000
Strawberries	7,800	67,564,000
Tomatoes	208,900	255,573,000
Wheat	487,000	42,012,000
TOTALS	4,684,000	\$2,167,709,000

If well established the monk parakeet could cause an estimated \$2,167,709,000 in agricultural damage. This is calculated at 0.1 percent of the total value of those crops listed. Surely the cost of eradicating small populations of monk parakeets when detected in California would not approach the total depredation losses these birds could cause.

AVIAN COMPETITION

Competition between monk parakeets and native bird populations has been reported from New York and New Jersey. The monks are very aggressive, frequently dominating feeding areas they visit. Monks in New Jersey have been observed killing several blue jays and a robin. It is possible that native bird populations would decrease or be eliminated if populations of monks were to increase.

## NEST CONSTRUCTION

Unlike any other member of the psitticine order, monk parakeets construct large communal nests of interwoven sticks and twigs. Additions are made continually to these nests. The nest is compartmentalized with each pair of monks having a separate compartment. Nests may increase to such size and weight that the supporting structure collapses.

Nests in New York and New Jersey were located in large trees, church steeples and on power poles, radio towers, grain elevators and house and barn eaves. The only nest observed in California was located at least 40 feet above the ground in the fronds of a palm tree. As monk parakeets are non-migratory, their nests are utilized throughout the year for roosting and nesting.

## NUISANCE FACTOR

Besides constructing a large unsightly nest, a small group of monks can produce an unbelievable amount of harsh squawking. Eight to ten birds can be heard a distance of five city blocks.

One resident in New Jersey refused to allow Fish and Game personnel to remove a nest constructed by a pair of monk parakeets on his property, because he enjoyed observing them. Within a month he was begging to have the nest removed and the birds destroyed because of intense racket being produced by the monks. In residential areas, noise pollution from monks could become a serious nuisance.

## TRANSMISSION OF DISEASES

Diseases carried by monk parakeets are another aspect to consider if a population were to become established and propagate. Newcastle and Exotic Newcastle disease are both known to be carried by infected psittacine birds. These diseases can be devastating to wild bird populations and the poultry and avian pet trade industries.

Monk parakeets can also carry psittacosis, a viral disease transmissible to humans through the droppings of psittacine birds. This disease has the potential of becoming widespread if a wild parakeet population were established. Psittacosis in extreme cases can be fatal to humans.

## IMPORTATION

The main reason monk parakeets have become established in the United States is the lack of importation regulations preventing their entry. Being the most abundant bird in Paraguay, it has been an ideal bird to export.

During the years 1968-1970, 34,627 monk parakeets were imported into the United States. Importation of all birds into the United States ceased with the enactment of the Exotic Newcastle Quarantine in early 1972. This ban has recently been lifted and once again monk parakeets can legally be imported unless Federal or State regulations prohibiting this species are enacted. Eastern states have already imposed such regulations and are enforcing them; New Jersey has levied fines up to \$500 for the possession of monk parakeets.

## LIFE HISTORY

### General Description

Monk parakeets are also known by the following other names: Quaker parakeet, grey-breasted parakeet, grey-headed parakeet, monk parrot. The overall length of the bird is 11-1/2 inches. Prevailing color is greenish-grey above, yellow on the under parts; wings are green with blue secondaries and flights; forehead, face, throat, and breast grey, most of the feathers having pale margins which convey the impression of scales. The tail is blueish-green, long and pointed. Beak rosy to dull flesh color; eyes dark brown; legs and feet yellowish-grey to dark grey. Sexes alike in coloration but hen tends to be more robust and have a longer and stronger beak.

### Nest and Eggs

The nest is built of sticks and twigs that are woven together. The nest increases in size continually and becomes communal with each pair of birds having a separate compartment.

The nest is occupied throughout the year. Nest material is added from year to year occasionally breaking the supporting structure by its weight. Nests are built at heights of 20 to 40 feet. Both sexes participate in the building. There are inner and outer chambers that are enlarged as the young mature. The eggs number four to six per clutch; are white and rounded. Up to six clutches are possible to hatch during one season.

#### Distribution

Non-migratory with a native range of Argentina, Paraguay, Uruguay, Southern Bolivia, and Southern Brazil. Occurrence in these countries are in areas of temperature variance from nine degrees to 112 degrees Fahrenheit and precipitation of 6.8 to 69.1 inches. They are most abundant in the subtropical zone with rainfall from 20 to 50 inches. Monk parakeets are naturalized to the British Isles and the United States. Early captive breedings have been reported in Austria in 1867 and Germany in 1896.

#### Behavior and General Habits

This is an unwary bird which may even seem to be tame. It is very gregarious throughout the year, flocks of 15 to 50 normally traveling in a loose aggregation. The birds often use the same group of trees or their immense stick nests for resting. The flight is swift, usually within 30 feet of the ground and the wingbeats are rapid. They have been known to travel up to 40 miles in search of food. The song is a harsh screeching usually done while in flight or at alarm. This reason makes them unsuitable for house pets.

#### Food

Wild berries, grain, and other seeds are normally eaten. Birds travel considerable distance, often in large flocks, to raid corn, sorghum, sunflower, millet, and other grain fields. Citrus fruits as well as more widespread fruits such as apples, are favored. Between harvest times, large amounts of wild seeds, particularly legumes, berries, and larger insects are taken. Within the United States they have been sighted feeding on sunflower seeds, mixed bird seed, pine cones from which the seeds are extracted, seeds of various grasses, dandelion seeds, puncture vine seeds, apples, cherries, grapes, pears, corn, mulberries, apricots, figs, persimmons, oranges, plums, passion fruit, acorns, and buds of various trees and plants.

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