

# Monk Parakeets

**Michael L. Avery**  
Supervisory Research Wildlife Biologist  
USDA-APHIS-Wildlife Services  
National Wildlife Research Center  
Gainesville, Florida

**James R. Lindsay**  
Principal Environmental Specialist  
Florida Power & Light Company  
Juno Beach, Florida



Figure 1. Monk parakeets (*Myiopsitta monachus monachus*) is an invasive species in the United States. The species became established through accidental and purposeful introductions.

## Human-Wildlife Conflicts

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Since their introduction to the United States in the 1960s, monk parakeets (*Myiopsitta monachus*) have thrived (Figure 1). Until recently, annual Christmas Bird Count data have shown the population to be increasing exponentially.

In the U.S., monk parakeets are an urban and suburban species with few natural predators, diseases or other factors limiting their population growth. They exploit backyard bird feeders and non-native ornamental plants for food.

Monk parakeets often construct nests on man-made structures, such as electric utility facilities and cell phone towers. Because the birds build and maintain nests throughout the year, management of parakeet populations has become an important issue for utility companies in several States. Currently, nest removal and trapping are the primary methods for managing parakeet damage. Reproductive control through contraception shows promise for long-term, nonlethal population management.



Figure 2. Monk parakeets at a nest in an electric utility substation in south Florida.



Figure 3. Monk parakeets feeding in a longan orchard in south Florida.

### Structures

The main conflict associated with monk parakeets in the U.S. is their impact on electric utility facilities due to the birds' nest-building behavior and their habit of constructing nests on electric utility substations, distribution poles, and transmission line towers (Figure 2). In south Florida, 60% of the monk parakeet nests in one study were located on energized electric utility equipment, 20% on other man-made structures, and 20% in trees. A given substation can host more than 30 parakeet nests, with estimated parakeet populations greater than 100 birds per site. The number of substations with parakeet nests in south Florida increased from 38 in 2001 to 62 in 2007. The high-voltage, energized environment around substations makes the removal of nests very dangerous unless the substation is taken offline—an unlikely occurrence given the associated expense and disruption of service to the local community.

The economic impacts due to monk parakeets include decreased electric reliability, damage to equipment, lost revenue from power outages, and increased costs associated with nest removal and repair of damaged structures. The frequency of power outages due to parakeet nests increases during wet weather. Outages result from nesting material completing a circuit between two energized components, or between an energized part

and a grounded part of electrical equipment. The nest itself can get too large and complete an electric circuit, or individual parakeets carrying nest material can cause a short circuit. Resulting fires can damage transformers and other utility equipment. Damage management options at electric utility facilities vary with the type of facility. Any management actions associated with electric utility facilities should be carried out by trained utility employees or their authorized agents.

### Landscapes

In south Florida, monk parakeets and other birds are responsible for damage to tropical fruit crops, such as longans and mangos (Figure 3).

## Damage Identification

Monk parakeets are unique among parrots as they use sticks and twigs to construct bulky nests which can house multiple nesting chambers. Parakeets in south Florida build nests principally on man-made structures, such as stadium light poles, cell towers, and electric utility facilities.

## Management Methods

Electric utility companies remove parakeet nests from their structures to maintain service reliability. The birds are also sometimes removed with long-handled nets or live traps. Combining the removal of nests with the removal of birds provides longer-term relief than either approach alone. Current management methods have been ineffective at preventing parakeets from nesting on substations, distribution poles or transmission towers.

### *Habitat Modification*

Nesting parakeets in south Florida demonstrate distinct preferences for certain types of transmission tower designs. In 2006, 86% of monk parakeet nests on transmission lines were on the H-frame concrete towers compared to less than 1% built on H-frame tubular towers. The tubular construction creates few flat surfaces and angles thereby greatly reducing preferred nesting substrates. New construction of transmission lines should incorporate such findings and adopt designs shown to be unattractive to parakeets. On existing structures, management actions are limited to nest removal by utility company crews (Figure 4).

Nest removal is the most common method used to manage parakeet problems on utility structures. This provides only short-term relief, however, because parakeets tend to rebuild their nests immediately (Figure 5). On distribution poles, the most effective control method is nest removal, preceded by trapping and euthanizing the nesting birds. Implementation of this management approach reduced the number of parakeet nests on distribution poles in south Florida from 349 in 2001 to 142 in 2006.

Another management approach is to provide parakeets with alternative nest platforms adjacent to distribution poles to encourage them to switch nesting locations. This approach would not be cost-effective or practical on a large scale, but it has been applied with limited success to address persistent, isolated problems at specific locations.



Figure 4. At electric utility substations, such as this A-frame structure in south Florida, monk parakeet nests are an ongoing maintenance concern.



Figure 5. Removal of monk parakeet nests from electric utility distribution poles is a short-term solution as birds quickly rebuild.



Figure 6. Special long-handled nets have been developed for parakeet removal at nests.

### Exclusion

No practical means exist for excluding monk parakeets from nesting on distribution poles or in substations. Electric track or other shock devices have not been evaluated for this use. On transmission line towers, installation of hard plastic anti-perching cones can be somewhat effective. Faulty installation, however, can create excellent nesting opportunities for parakeets. On distribution poles, parakeets usually start their nests by anchoring sticks on the brackets which attach transformers and capacitor banks to the pole. Monk parakeets may be discouraged from nesting on distribution poles by physically blocking their access to the utility wires in close proximity to the pole. The birds sit on these wires when bringing in nest material. Thus, they would be prevented from gaining access to the bracket attachment sites where they prefer to initiate their nests. The feasibility of applying this approach is unknown.

### Scare Devices

At an electric utility substation in south Florida, monk parakeets responded to red laser light by leaving the nest colony, but the effect was not permanent. In the 4-day trial, laser dispersal occurred nightly, but the birds returned the next day.

### Repellents

Various audio, chemical, and visual deterrents have been tested at substations to deter parakeet nesting, but none has proved effective.

### Toxicants

None are registered.

### Shooting

The vast majority of monk parakeets in the U.S. nest, feed, and fly in populated areas which severely restricts the use of firearms to reduce populations. When considering firearm use, check local firearm laws and regulations.

### Trapping

Trapping at the nest, with a long-handled net (Figure 6), is most effective after dark when the birds are less likely to disperse. Birds that are trapped can be humanely euthanized using carbon dioxide gas.

At substations, parakeets can be captured using small, baited cage traps. In south Florida, one utility company removed hundreds of birds at several substations by hiring a private contractor to implement this approach.



Figures 7 (left) and 8. Remotely triggered spring-loaded trap installed at monk parakeet feeding platform. After the observer confirms non-target species are not present, the trap is activated and parakeets are captured.

### *Fertility Control*

The oral contraceptive diazacon has shown promise as a way to reduce parakeet populations and subsequent nest sites. In a 2-year study in south Florida, the number of monk parakeet eggs and chicks decreased 68% at 100 nest sites where birds fed on diazacon-treated bait, compared to nest sites where birds did not feed on diazacon-treated bait. The use of fertility control is a long-term strategy. For now, this method remains experimental as diazacon is not registered with the U.S. Environmental Protection Agency.

### *Handling*

Monk parakeets have strong, sharp beaks and will inflict painful bites if handled carelessly. Stout gloves are recommended.

### Relocation

Relocation is the movement of an animal from one location within its home range to another. No data exist to support relocation as an effective management strategy. Many states prohibit the release of non-native species; several states prohibit possession, transport, sale or release of monk parakeets.

### Translocation

Translocation is the movement of an animal to a new location outside of its home range. Moving an invasive species such as the monk parakeet to a new area creates new problems. This is not an effective, practical management method and is prohibited in many states.

### Euthanasia

The American Veterinary Medical Association (AVMA) approves the use of carbon dioxide gas for euthanizing monk parakeets. AVMA also approves the use of cervical dislocation, if performed by “well-trained personnel who are regularly monitored to ensure proficiency.”

### Disposal

Check your local and state regulations regarding carcass disposal.

## **Economics**

Monk parakeets build and maintain their nests year-round, resulting in an ongoing maintenance problem for utility companies. Utility companies monitor their systems and determine when it is most appropriate to remove nests to prevent costly service interruptions. In south Florida, nest removal was estimated to cost \$415/nest to \$1500/nest, depending on the specific situation. From 2003 to 2007, the removal of 3,126 nests was estimated to cost \$1.3 to \$4.7 million. Monk parakeets nest seasonally, and nest removals can often be timed to avoid accidentally destroying eggs or nestlings.

## **Species Overview**

### *Identification*

The subspecies of monk parakeet that exists in the U.S. is *Myiopsitta monachus monachus*.

### *Physical Description*

The monk parakeet, also known as Quaker parakeet, is a medium-sized parrot (3 to 4 ounces body mass, approximately 11 inches total length). On average, adult males are slightly larger than adult females except during the breeding season when females slightly increase their body mass. Adult males and females are identical in plumage. The plumage is green on the back and tail, and grayish on the underside. The wings are dull green with the outer wing feathers blue. The gray head and breast of the species distinguishes it from other parrots in North America. The tail is long and graduated, and the bill is thick and yellowish brown with a brownish tip. Juveniles resemble adults with the exception that the feathers on the forehead of juveniles are darker (slate gray) than those of adults (gray-white).



Figure 9. Formerly, thousands of monk parakeets were imported to the United States from South America each year.

### Range

The monk parakeet is native to South America. It is found from central Bolivia and southern Brazil south to central Argentina. The species has become established in the mainland U.S., Canada, Puerto Rico, Bahamas, West Indies, England, Belgium, Italy, Spain, Israel, and elsewhere through accidental and purposeful introductions.

The species was imported in large numbers for the pet trade and became established in the U.S. during the 1960s (Figure 9). The monk parakeet first appeared in New York in 1968, and was first recorded breeding in Florida in 1969. Today, thriving populations of monk parakeets occur in several states, particularly New York, Connecticut, Illinois, Texas, Louisiana, and Florida (Figure 10).

### Voice and Sounds

Monk parakeets produce a variety of vocalizations. Distinctive contact calls are especially raucous and can be very annoying to homeowners living near to a colony.

### Reproduction

Monk parakeets are monogamous. One clutch of 4 to 8 eggs is produced annually during the spring breeding season. The female incubates the eggs and broods the nestlings while the male contributes nest materials and brings food to the female.

In Argentina, parakeets do not breed until their second year, and then only 50% to 63% of them do so. Each year, a substantial number of breeding age birds do not breed.



Figure 10. Monk parakeet distribution in North America.

### *Nesting*

The monk parakeet is unique among parrots in that it is not a cavity-nester, but instead constructs a large, bulky nest of sticks and branches. The nest is maintained throughout the year and is the focus of the social life of the resident pair and its offspring.

Nesting usually occurs in colonies. The colony includes single and compound nest structures closely spaced among a few trees, or on a cell tower, transmission line tower, or electric utility substation. A given compound nest structure may contain several chambers, each used by a different pair of birds. Massive nests in Argentina reportedly contained more than 200 nest chambers and weighed hundreds of pounds. Compound nests are maintained by all birds using the structure, including non-breeders.

### *Mortality*

In Argentina, annual survival rates of first-year birds and adults were estimated to be 61% and 81%, respectively.

In South America, monk parakeets are preyed upon by raptors, snakes, and white-eared opossum, but no documented predation has been reported in the U.S. Fish crows remove branches from parakeet nests and stick



Figure 11. Monk parakeets maintain their nest throughout the year.

their heads inside, apparently searching for eggs or nestlings.

### *Population Status*

In the U.S., monk parakeet populations are tracked through the Audubon Society's annual Christmas Bird Count. The overall population has shown exponential growth through the early 2000s. More recently, however, the trend appears to have turned downward, although the reason for this reversal is unknown.

### *Habitat*

In its native range, the monk parakeet typically inhabits open savannas and cropland with scattered native trees and groves of eucalyptus planted near houses for wind breaks. In the U.S., the species favors urban-suburban areas where abundant nesting sites and food sources are provided by humans. Persistent parakeet populations in cities with harsh winters, such as Chicago and New York, attest to the species' ability to adapt and flourish in urban environments.

### *Behavior*

Because the monk parakeet builds a nest of sticks and branches, it does not compete with other birds for nesting cavities. It feeds on a wide variety of seeds, fruits, and flowers, and frequents backyard feeders. There is no evidence that it competes with native birds for natural food sources. Wild parakeets are not known to carry any diseases that affect humans or wildlife. In 2004, a reported death of a bald eagle nestling may have been due to chlamydial infection associated with a monk parakeet nest situated at the base of the eagle nest, but no analyses were conducted to confirm this. Parakeets occasionally build nests at the base of osprey nests.

In general, movements to feeding sites are short, within 3 to 5 km (1.8 to 3.1 miles) of the nest colony. In South America, juvenile birds generally disperse less than 10 km (6.2 miles) from the natal site. In Florida, a median dispersal distance of 23.9 km (14.9 miles) was reported.

### *Food Habits*

Monk parakeets eat a variety of fruit, seeds, buds, and flowers. In its native range, the species is regarded as a major pest to crops, such as sorghum, sunflower, and rice. To date, widespread crop damage in the U.S. by monk parakeets has not materialized as originally anticipated. In the U.S., the monk parakeet diet varies seasonally as birds exploit the changing availability of native and introduced plants. Backyard bird feeders provide reliable sources of food, especially sunflower seeds, that are particularly important in winter.

## **Legal Status**

Monk parakeets are non-native and not protected by the Federal Migratory Bird Treaty Act. Their status at the State level varies considerably—from no regulation to complete protection. Thus, it is best to consult with the appropriate local wildlife management agency before initiating any control efforts. The monk parakeet is a popular cage bird, and although imports from South America have ceased, many are available in the U.S. through captive breeding and from individuals who take young birds from nests.

## Acknowledgements

Figure 1. Photo by USDA-APHIS-WS  
Figure 2. Photo by Michael L. Avery, USDA-APHIS-WS, NWRC  
Figure 3. Photo by Eric Tillman, USDA-APHIS-WS, NWRC  
Figure 4. Photo by Michael L. Avery, USDA-APHIS-WS, NWRC  
Figure 5. Photos by Michael L. Avery, USDA-APHIS-WS, NWRC  
Figure 6. Photo by Eric Tillman, USDA-APHIS-WS, NWRC  
Figure 7. Photo by Eric Tillman, USDA-APHIS-WS, NWRC  
Figure 8. Photo by Eric Tillman, USDA-APHIS-WS, NWRC  
Figure 9. Photo by Christina Romagosa, University of Florida  
Figure 10. Map by Birds of North America, The Cornell Lab of Ornithology  
Figure 11. Photo by Michael L. Avery, USDA-APHIS-WS, NWRC

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## Glossary

**Electric utility structure:** A substation, power distribution pole, or transmission line tower.

**Invasive species:** A non-native species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

**Nest removal:** Action taken by utility personnel to dismantle and dispose of a monk parakeet nest.

**Reproductive control:** Delivery of an oral contraceptive to monk parakeets to prevent successful breeding; a long-term population reduction management tool.

## Key Words

Electric utility structure, invasive species, monk parakeet, *Myiopsitta monachus*, nest removal, reproductive control

## Disclaimer

Wildlife can threaten the health and safety of you and others in the area. Use of damage prevention and control methods also may pose risks to humans, pets, livestock, other non-target animals, and the environment. Be aware of the risks and take steps to reduce or eliminate those risks.

Some methods mentioned in this document may not be legal, permitted, or appropriate in your area. Read and follow all pesticide label recommendations and local requirements. Check with personnel from your state wildlife agency and local officials to determine if methods are acceptable and allowed.

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## Resources

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## Appendix

### Damage Management Methods for Monk Parakeets

| Type of Control      | Available Management Options  |
|----------------------|---|
| Exclusion            | Hard plastic anti-perching cones may exclude monk parakeets from potential nest sites on power line transmission towers   |
| Fertility Control    | Field tests of the oral contraceptive diazacon resulted in 68% reduction in nest productivity. The compound is currently not registered with the U.S. Environmental Protection Agency for monk parakeet population control. |
| Frightening Devices  | Hand-held laser at nest sites, but its effect is not permanent  |
| Habitat Modification | Transmission line towers constructed with tubular girders do not provide suitable nesting substrates and are unattractive to parakeets.   |
| Nest Removal         | Nest removal provides only short-term relief because the birds quickly begin to rebuild.  |
| Repellents           | Application of methyl anthranilate spray at a substation failed to deter nesting parakeets  |
| Toxicants            | None registered   |
| Trapping             | Long-handled nets to capture birds at nests. Remotely-triggered, spring-loaded traps installed on platform feeders and small, baited live traps set on the ground.  |
| Shooting             | Monk parakeets in the U.S. are found predominantly in urban and suburban locales which limits control options with firearms.  |