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Research note

Pretty, but dangerous! Records of non-native Monk Parakeets (*Myiopsitta monachus*) in Mexico

¡Bonita pero peligrosa! Registros de la cotorra argentina (*Myiopsitta monachus*) en México

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Abstract. The Monk Parakeet (*Myiopsitta monachus*) is native to South America and has been introduced by the pet market to several countries around the world. In this note, we compiled records for this species in Mexico and report the first sight-recording of this species in the state of Michoacán and several nesting localities within the Metropolitan area of México City. Most records are of individuals escaped or released from captivity. Also, we review the negative effects that this species has had in invaded areas from around the world. Our analysis suggests the possible beginning of an invasion in Mexico that could have dramatic negative ecological and economic effects throughout this biodiverse country.

Key words: invasive exotic bird, pet trade, pest, urban, agriculture, Quaker Parakeet.

Resumen. La cotorra argentina (*Myiopsitta monachus*) es nativa de Sudamérica y ha sido introducida a través del comercio de mascotas en diversos países del mundo. En esta nota compilamos los registros de esta especie para México, además de reportarla por primera vez para el estado de Michoacán y diversas localidades de anidación en la zona metropolitana de la ciudad de México. La mayoría de los registros son de individuos que han escapado o han sido liberados intencionalmente del cautiverio. Además, discutimos los efectos que ha tenido esta especie en otros lugares del mundo. Los registros compilados en esta nota sugieren el inicio de un proceso masivo de invasión por parte de la cotorra argentina, el cual podría tener efectos económicos y ecológicos dramáticos en un país biodiverso como México.

Palabras clave: ave exótica invasiva, comercio de mascotas, peste, urbano, agricultura, perico monje.

The Monk Parakeet (*Myiopsitta monachus*) is a medium-sized psittacid native to South America. Its natural distribution includes Argentina, Bolivia, Brazil, Paraguay, and Uruguay, where it inhabits forests, forestry plantations, orchards, savannas, and urban settlements (Davis, 1974; Aramburú and Corbalán, 2000; Naroski and Yzurieta, 2003; InfoNatura, 2007). Unlike other psittacids, the Monk Parakeet is not a cavity-nester and builds communal dome stick nests on trees and man-made structures (Avery et al., 2002). This gregarious parakeet damages grain, fruit, and vegetable crops grown within its native distribution (Davis, 1974; De Grazio, 1978), and has been used as an ornate bird both in South America and other regions of the world (Fitzwater, 1988; Naroski and Yzurieta, 2003).

Feral Monk Parakeets have been recorded, in some cases with successful reproductive populations, in the United States, Puerto Rico, Canada, Great Britain, France, Germany, Switzerland, Austria, the former Yugoslavia, Spain, Portugal, Italy, Israel, Kenya, Japan, and Mexico (Davis, 1974; Spano and Truffi, 1986; Campbell, 2000; Allen, 2006; Roll et al., 2008; Pablo-López, 2009). Studies in both the United States and Europe established that the feral populations of Monk Parakeets come from cage-escaped and released birds (Spano and Truffi, 1986;

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Fitzwater, 1988; Muñoz and Real, 2006; Rusello et al., 2008). This parakeet has several natural history traits similar to other invasive bird species from around the world, that make it a highly successful invader, including reproductive strategies that result in high population growth rates, successfulness of establishment, and tolerance to novel environments (Blackburn et al., 2009): *(1),* monogamy with high extra-pair paternity values; *(2),* excellent dispersal capability; *(3),* ability to adapt to a variety of human disturbances and habitats (e.g., urban, suburban, rural, agriculture fields), and *(4),* communal year-round nesting that allows rapid population growth (Hyman and Pruett-Jones, 1995; Martin and Bucher, 1995; Spreyer and Bucher, 1998; South and Pruett-Jones, 2000; Muñóz and Real, 2006; Gonçalves da Silva et al., 2010). In this research note, we compile records for this parakeet in Mexico, and also report the first sight-recording of this species in the state of Michoacán and several nesting localities within the Metropolitan area of México City.

Several cage escapes, intentional releases, and successful nests of this parakeet have been reported in Mexico. There are records for México City (first record 1999), the city of Puebla (2008), the city of Oaxaca and surrounding areas (2008), the mouth of the Loreto River, Baja California Sur (2009), the city of Tuxtla Gutiérrez (2009), and the city of Celaya (2010) (Fig. 1; eBird http://ebird.org; Chávez, 1999; Álvarez-Romero et al., 2008; Pablo-López, 2009). Additionally, we sight-recorded 1 Monk Parakeet in the city of Morelia (2009), and several nesting localities within the Metropolitan area of México City (Fig. 1). The altitudinal range comprised by all the gathered records ranges from sea level to 2 500 m.

While most records are sight-recordings of 1 or 2 individuals (Puebla, Celaya, Loreto River, Tuxtla Gutiérrez, Morelia), records from México City and Oaxaca include groups of several individuals (México City: up to 40 individuals; pers. obs.; Meléndez, Wilson, Gómez de Silva, Ramírez-Bastida pers. comm.; Oaxaca: up to 6 individuals; Pablo-López, 2009), and communal nests (México City: up to 27 nests with 2-5 pairs using each nest; pers. obs.; Meléndez, Wilson, Gómez de Silva, Ramírez-Bastida pers. comm.; Oaxaca: up to 4 nests; Pablo-López, 2009). The recorded communal nests have been constructed on Gum Trees (*Eucalyptus* sp.), Bonpland Willows (*Salix bonplandiana*), palm trees, and billboards (Pablo-López 2009; Meléndez, Wilson, Gómez de Silva, Ramírez-Bastida, pers. comm.).

The presence of this species in 7 geographically distant and independent locations in Mexico indicates that the source of these individuals is most likely the pet trade. This is particularly worrisome, as trading of native psittacid species has become illegal in this country, and Monk Parakeets are being used to replace some of them in the market. Additionally individuals of this species are being raised in captivity in Mexico for the pet trade and the production of ornamental feathers. Although no reports exist to date from the Mexican border with the United States, this parakeet could also invade northern Mexican cities due to their proximity to invaded locations in the southern United States (e.g., El Paso, Texas–Ciudad Juárez, Chihuahua; Romero et al., 2008).

Previous studies have documented several economic, health, and environmental problems caused by this invasive parakeet. Throughout their natural distribution, Monk Parakeets have caused dramatic economic losses to agriculture (De Grazio, 1978; Long, 1981). This species has also been found to cause economic losses to agriculture in Spain and Israel (Conroy and Senar, 2008; Roll et al., 2008). In the United States, agricultural damage to date is limited to some tropical fruit producers in South Florida (Tillman et al., 2001); however, the species nests on electric utility structures causing power outages (Avery et al., 2002; Tillman et al., 2004; Pruett-Jones et al., 2007). This parakeet also has a great potential for dissemination of Newcastle disease, which could have devastating effects on wild bird communities and the poultry/avian pet trade industries (Fitzwater, 1988). Finally, the parakeet has been identified as highly aggressive towards other bird species in the areas it has invaded. In the United States, Monk Parakeets have been recorded aggressively defending their nesting and feeding territories to the point of killing Blue Jays (*Cyanocitta cristata*), American Robins (*Turdus migratorius*), and House Sparrows (*Passer domesticus*) (Davis, 1974; Freeland, 1976; Long, 1981).

As with other exotic invaders, if this species undergoes a rapid population explosion at newly invaded areas, it could cause an ecological meltdown (Simberloff and Von Holle, 1999), requiring massive management efforts to reduce their population size that would be extremely expensive and unlikely to be sustainable (Pruett-Jones et al., 2007). Although management activities to control Monk Parakeet populations seem inefficient and unfeasible due to the logistical and social constraints in which managers operate (Conroy and Senar, 2008), some authors have proposed several techniques and approaches to remove invasive populations of this species: *(1),* trapping in urban areas and shooting in rural areas during the summer-winter period (Conroy and Senar, 2008); *(2),* trapping and shooting near nesting sites (Fitzwater, 1988); *(3),* capturing adults and fledglings occupying nests during the night (Tillman et al., 2004); *(4),* long-

Figure 1. Map of the sites where Monk Parakeets have been recorded in Mexico: *(1),* the Loreto River (Baja California Sur); *(2),* Morelia; *(3),* Celaya; *(4),* México City; *(5),* Puebla; *(6),* Oaxaca; *(7),* Tuxtla Gutiérrez.

term trapping and/or chemical sterilization (Pruett-Jones et al., 2007; Yoder et al., 2007; Avery et al., 2008), and *(5),* establishing educational programs to convince the public that controlling this exotic species is a high-priority conservation issue (Temple, 1992).

At present, Monk Parakeets do not have either environmental or economic effects in Mexico. However, we believe that the establishment of breeding populations in 2 Mexican cities and their vicinity, and the evidence of this species' negative environmental and economic effects in other countries should raise concerns regarding the potential danger posed by this species to Mexico and other countries where the parakeet is sold as a cage bird. Due to the negative impacts that this invasive parakeet could cause, mainly in urban areas associated with large agricultural landscapes, we strongly recommend that its importation, captive breeding, and commerce as a pet be re-evaluated by the Mexican government to avoid a short- to medium-term unmanageable invasion scenario. Since bird individuals are caught in the wild and are traded on the pet market, they become the most successful invaders (Carrete and Tella, 2008), and special attention should be paid to the importation of Monk Parakeets from South America. We also find it crucial to eliminate the known nesting populations in México City and Oaxaca before they spread (as recommended by Simberloff, 2003), study the invasion and establishment rates in new cities and rural areas, and establish an alert system to monitor their presence in Mexico, mainly in the central portion of the country where agricultural activities are highest and major urban areas are present. Woefully, as Temple (1992) noted, we should seriously consider that exotic birds are a growing problem with no easy solution.

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