SPREADING THE WORD: THE ECOLOGY OF URBAN BIRDS OUTSIDE THE UNITED STATES, CANADA, AND WESTERN EUROPE

RUBÉN ORTEGA-ÁLVAREZ1 AND IAN MACGREGOR-FORS2,3

1Laboratorio de Ecología de Restauración, Centro de Investigaciones en Ecosistemas, Universidad Nacional Autónoma de México, Campus Morelia, Antigua Carretera a Pátzcuaro 8701, Morelia 58190, Michoacán, Mexico; and
2Laboratorio de Ecología Funcional, Centro de Investigaciones en Ecosistemas, Universidad Nacional Autónoma de México, Campus Morelia, Antigua Carretera a Pátzcuaro 8701, Morelia 58190, Michoacán, Mexico

Urbanization is one of the major forces driving land-use change across the globe. Over half of the world’s population now resides within urban areas (United Nations Population Fund 2007), and thus urbanization’s large footprint represents a threat to biodiversity (Vitousek et al. 1997, Czech et al. 2000). Ecologists have responded to this growing environmental concern by conducting research to assess the effects of urbanization on wildlife communities (McKinney 2008). For example, the National Science Foundation is supporting long-term ecological research in urban areas. Much of such research has focused on birds in an attempt to better understand how avian populations and communities respond to urbanization (see Marzluff et al. 2001, Chace and Walsh 2006, and references therein). However, ecological generalizations regarding this topic are disproportionately represented by research from temperate-upland urban areas carried out in the United States, Canada, and western Europe (hereafter US/CA/WE; Marzluff et al. 2001, Chace and Walsh 2006). By contrast, most of the largest cities in the world are located outside of these three regions, and given that the majority of future population growth is not expected to occur in US/CA/WE (Montgomery 2000), there is a mismatch between the literature on urban birds and the regions with the most rapid current and future urban growth.

Three major reviews have summarized ornithological research on urban birds in recent decades (Marzluff et al. 2001, Chace and Walsh 2006, Evans et al. 2009), but these included very few citations of research conducted in urban areas outside the US/CA/WE (i.e., 10 from Australia, 2 from Mexico, and 1 each from Japan, Brazil, Panama, Trinidad and Tobago, Indonesia, and Malaysia; Fonaroff 1974; Jones 1981; Inigo 1986; Ruszczyk et al. 1987; Catterall et al. 1989, 1991, 1998; Green et al. 1989; Indrawan and Wirakusumah 1995; Kentish et al. 1995; Wood 1996; Sewell and Catterall 1998; Petit et al. 1999; Sudhi et al. 1999; Hashimoto et al. 2005; Parsons et al. 2006; Arizmendi et al. 2007; Hodgson et al. 2007). The paucity of referenced research from urban areas outside the US/CA/WE by these reviews has left a message of a seeming scarcity of studies on how birds use urban habitats and how they respond to urbanization in other regions of the world (e.g., MacGregor-Fors 2008, Perepelizin and Faggi 2009, Villegas and Garitano-Zavala 2010). We believe that this is misleading and that, in fact, much relevant research resides latent in the current literature.

In an attempt to substantiate our position, we conducted a thorough review to locate studies of urban birds that were published between 1940 and 2008 and conducted in areas outside the US/CA/WE, between ~35°N and ~35°S, the region that broadly encompasses all tropical and subtropical areas of the world (Hornak 2002). We used the key words “urban” and “bird” to search the Web of Knowledge database (including Web of Science, Current Contents Connect, Biological Abstracts, and Zoological Record databases). We excluded publications that consisted of species lists or that limited their discussion to the threats that urbanization poses for biodiversity. This search yielded 129 studies conducted in 21 countries (Table 1).

We detected a rapid increase in the number of urban ornithology studies conducted outside the US/CA/WE in the past few decades, especially after 2003. These publications are mainly from Australia, Brazil, Argentina, and China but include at least one published study from each of 17 other countries (Table 1). Analyses of community structure were most common, followed by single-species population research and behavioral studies (e.g., foraging ecology, parental behavior). Surprisingly, few studies focused explicitly on conservation issues (Table 1). The reported results...