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Wild things in urban places: America's largest cities and multi-scales of governance for endangered species conservation

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A B S T R A C T

Endangered species live inside the world's most densely populated cities. In the United States, the Fish and Wildlife Service is responsible for the protection and recovery of endangered species – wherever those species are found. Unfortunately, very little is known about urban endangered species policy or programs. This paper presents a comparative analysis of the five largest cities in the United States and examines issue of governance around conservation. Cities have a responsibility to steward the environment, but through the 1973 Endangered Species Act, the Fish and Wildlife Service has a legal mandate to protect endangered species throughout the country. Thus, this paper asks: What is the USFWS doing inside cities to recover endangered species? What are cities doing? Conservation is a shared duty but it is not clear that anyone is taking responsibility for urban endangered species.

According to the United Nations, by 2050 "almost 3 billion additional people will inhabit the world's cities, and the world will have undergone the largest and fastest period of urban expansion in all of human history" (UNCBD, 2010). This rapid urbanization will have wide ranging impacts on natural habitat and the wildlife that depends on it. Unfortunately, in the United States urban areas are underappreciated in endangered species conservation policy, practice and literature. This is surprising given that endangered species no longer live only on farms and ranches, or even in the wilderness, but now reside across a variety of land parcels in the country, including small and large cities. In fact, 22% of endangered species in the US are in urban areas, which comprise only about 8% of the US landscape, but are where 50% of all Americans live (Brosi, Daily, & Davis, 2006; Schwartz, Jurjavcic, & O'Brien, 2002). Thus, what cities are doing – or not doing – to protect endangered species is of major consequence.

This paper takes seriously the idea that cities need to co-exist with biodiversity and, moreover, have an obligation to protect and recover endangered species found within the city. In the last decade social science research has paid greater attention to cities, especially in the environmental fields, such as climate change mitigation and adaptation. This is because cities can and must act. In a lot of social and environmental areas cities have authority over the things that matter, like transportation, energy, and housing programs. However, endangered species conservation is an interesting case study of multi-scale governance. Cities have a responsibility to steward the environment and are active participants in the creation of waste as well as air and water pollution, and are also managers of parks, rivers, trees and are potentially large landowners (Beatley, 2006). But the United States Fish and Wildlife Service (USFWS) has a legal mandate to protect endangered species wherever they are found – even inside cities – through the 1973 Endangered Species Act (ESA). Thus, this paper asks: What is the USFWS doing inside cities to recover endangered species? What are cities doing themselves, apart from the federal endangered species program, to protect species at risk? Conservation is a shared duty but it is not clear that anyone is taking responsibility for urban endangered species.

After a brief description of endangered species law in the US, the paper begins with an overview of the small literature on conservation of biodiversity and endangered species in urban areas. Following that discussion, the paper moves to a comparison of five large US cities: Chicago, New York, Los Angeles, Phoenix and Houston. There are federally listed endangered species inside each city and the USFWS is charged with their protection. The paper explains and compares conservation efforts inside these cities. The central finding is that little is being done by the USFWS to protect species inside cities – and only marginally more is being done by the cities themselves. Chicago stands out as a conservation friendly city as it alone has programs in place to protect and recovery not

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just its biodiversity, but its endangered species as well. Based on the comparison of the five cities, the paper concludes with some recommendations for endangered species protection in North America's large cities. Policy makers and city planners need to carefully assess the implications of urban growth for endangered species recovery and all scales of government, from local to federal, have a role to play.

American law in American cities

The American Endangered Species Act (ESA) is designed to protect and recover imperiled species and subspecies,[1] whether they be plants, insects, or any other members of the animal kingdom. The regulatory power of this law is housed in the Secretary of the Interior, through the Fish and Wildlife Services (USFWS), and the Secretary of Commerce, through the National Marine Fisheries Service. Section 9 of the ESA – which applies to all persons, including private individuals, corporations, and federal and non-federal government officials and entities – creates a prohibition against "taking" members of a listed species where to "take" is uniquely defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (ESA §1532). To "harm" includes significant habitat modification or degradation that actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding and sheltering (50 C.F.R §17.3). These definitions were upheld in the *Babbitt, Secretary of the Interior v. Sweet Home Chapter of Communities for a Great Oregon* Supreme Court Case in 1995 (515 U.S. 687).

The law mainly targets federal lands and federal projects that might threaten the protection or recovery of an endangered species. However, the ESA does extend regulatory reach to private property. While no landowner is required to take affirmative actions to help species (like federal agencies), the Act does restrict land uses by prohibiting the take of a species through habitat modification (Arnold, 1991; Easley, Stephanie, Holtman, Scancarelli, & Schmidt, 2001; Raymond & Olive, 2008). This means that the law applies to all lands, public or private, across the country. Thus, the land inside cities is regulated by the ESA and the USFWS has a mandate to recover species on any and all types of land parcels.

In 1995 the USFWS did establish a "small landowner exemption" that includes activities conducted on residential properties and lots 5 acres or less as well as other activities determined by the USFWS to have negligible effects on a *threatened* species. Essentially, small property owners are exempt from property regulation under the ESA unless there is direct evidence of intentional harm to a threatened species. But the USFWS does reserve the right to not extend this exemption to landowners in cases where the risk to the species is too great. Moreover, this exemption does not apply to cases where small landowners live on *endangered* species habitat. In those cases, all activities of landowners are open to scrutiny and attempts to alter an endangered species habitat by cutting down trees or putting in a backyard pool, for example, could be considered a violation of the ESA. Therefore, for all intents and purposes for small landowners, including urban dwellers, compliance amounts to avoiding the intentional "take" of a threatened or endangered species.

[1] The list of Endangered or Threatened species by the Fish and Wildlife Service and National Marine Fisheries Service include species, subspecies (SS), distinct population segments (DPS) or evolutionary significant unit (ESU). A high percentage of the listings below the species level are globally secure. An example would be the listed northern spotted owl (*Strix occidentalis caurina*), a subspecies of the globally secure spotted owl. Thus, when "extinction" is used in the context of the ESA, it is meant extinction of that listing, whether it be a species or something below the species level.

Under the ESA the USFWS is required to develop and implement recovery plans for all listed species – even though there is no specific timeline for the creation or implementation of recovery plans. Generally, a recovery plan entails a description of the species, present and past, its distribution and the reasons for its endangerment (Easley et al., 2001). The plan can also include an estimate target population for recovery and outline actions to promote recovery. Plans that were created prior to 1988 do not give specific guidance on how to best recover a species. In 1988 Congress added provisions to Section 4(f) that specified the template for recovery plans and made clear that plans should be "as explicit as possible" about recovery (Easley et al., 2001). Thus, a recovery plan for a species, even one found predominately inside a city, should detail how the USFWS plans to recovery the species, including habitat restoration and public outreach.

Urban biodiversity & habitat loss

A lot has been said about the American ESA. Most scholarly literature focuses on private property and large landowners, namely farmers and ranchers (see for example, Adler, 2011; Bromley, 2000; Brook, Zint, & De Young, 2003; Brosi et al., 2006; Farrier, 1995). While it is the US Courts that act as the main guiding force behind defining critical habitat and implementing the ESA, these scholarly studies have made a contribution to our understanding of critical habitat, perverse incentives, stewardship and the use of a broader set of policies beyond command-and-control. However, much less has been said by the courts or the literature about the ESA in the context of cities. There is a rather vibrant and growing literature on the relationship been biodiversity and urbanization from a global perspective (Beatley, 2006; see for Wilkinson, Parnell, and Sendstad, 2012 for a recent literature review). Endangered species conservation is a subset of biodiversity conservation and even though there is a US law in place to protect endangered species across all habitats, little is known about the protection and recovery of species with habitat in cities.

This lack of research is surprising given that there is an alarming rate of species loss occurring in the US. This is mainly due to intensifying urbanization (Beatley, 2000; Miller & Hobbs, 2002). The loss of farmland - an estimated 1.2 million acres annually- to urban sprawl has led to habitat destruction and fragmentation at an unprecedented scale (Hostetler & Drake 2009; Pauchard, Aguayo, Peña, & Urrutia, 2006). This process is compounded by the fact that population and development growth is occurring in regions with the highest levels of biodiversity and most diverse ecosystems (Beatley, 2000). Several case studies have examined the relationship between urbanization and habitat fragmentation in rapidly developing urban settings (Fernandez-Juricic & Jokimaki 2001; Riley et al., 2003; Zerbe, Maurer, Schmitz, & Sukopp, 2003). Ricketts and Imhoff (2003), in an examination of 76 regions for conservation in the United States and Canada, report that 16 regions are considered 'priority sets' where "high levels of biodiversity and human land use collide" (1). The most biologically diverse regions are found in the Southeastern United States, California, and Texas, and are most at risk for ecosystem degradation due to urbanization and agriculture activities (Ricketts & Imhoff, 2003). However, no part of the North American landscape, including even the Arctic tundra, is safe from the impacts of human activities related to city-building (Olive, 2013).

McKinney (2006) explores how the diversity of native species decreases within urban centers because urbanization creates favorable habitats for those species that can adapt to changing environmental conditions (McKinney, 2002; McKinney, 2006). For example, animals such as bobcats and coyotes are now increasingly found in urban areas (as well as the occasional bear) and they have