Section VI -- Cowbird management, host population regulation and efforts to save endangered species

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Introduction

Concern over continental declines in the distribution and abundance of passerine birds, many of which are Neotropical migrants, has gained increased coverage in the scientific, as well as popular, literature (Hagan and Johnston 1992, Terborgh 1989, 1992, Martin and Finch 1995). These declines have been largely attributed by some workers (Robinson et al. 1995a) to increasingly fragmented and degraded breeding habitats in North America making populations more vulnerable to predation and parasitism. Alternatively, other researchers (Morton 1992, Rappole and McDonald 1992) have argued that habitat destruction

and degradation in the Neotropics is the primary cause of the declines.

However, recent studies have been generally inconclusive as to whether there are overall declines among passerines (Peterjohn et al. 1995, James et al. 1996). These studies show that while many species are decreasing, some at an alarming rate, many others are currently increasing. Furthermore, although some species or groups of species are decreasing in some regions, they are increasing elsewhere. For example, trends derived from the Breeding Bird Survey (Peterjohn et al. 1995) show that while most

Neotropical migrants are decreasing in the central part of North America, most are increasing in the West. Ornithologists may be coming to the realization that, even under normal conditions, passerine abundances and distributions may be much more dynamic than was thought to be the case (Johnson 1994) and that it may be normal for many species to be increasing while others are decreasing at any point in time. Nevertheless, there are some groups of birds, albeit with lower profiles than Neotropical migrants, that are showing widespread declines. For example, significantly more than half of all shrubland and grassland birds in eastern North America, most of which are short distance migrants, are decreasing (Askins 1993).

Peterjohn et al.(this volume) and Wiedenfeld's (this volume)

analyses of Breeding Bird Survey data failed to demonstrate a link between cowbird population trends and trends in common hosts. Although, local scales of observation show that brood parasitism can have significant impacts on the production of young in local populations of widespread host species, these local populations may not decline because numbers are maintained by emigrants from more productive populations (Brawn and Robinson 1996). However, it is likely that parasitism can endanger an entire taxon if habitat destruction and/or highly specific habitat requirements have limited the taxon to one to several small populations, all of which are heavily parasitized. In this overview, we discuss active cowbird management programs initiated to minimize the detrimental impacts of cowbird parasitism on four endangered species whose numbers have been reduced by extensive

degradation and loss of habitat. These four taxa differ in major ways as regards the reasons for their endangered status, their responses to cowbird management and the amount of reproductive loss they experience when parasitized. As regards the latter, only Kirtland's Warbler often fledges at least some of its own young if a cowbird egg hatches (Mayfield 1960). The other three species are smaller and nearly always lose all of their young if even a single cowbird egg hatches. We first briefly discuss each of these four endangered species and then highlight similarities

and differences among them and among the cowbird control programs designed to help their recoveries. We close with a brief discussion of the benefits and costs of cowbird control programs.

Kirtland's Warbler

The first and perhaps the best known of all cowbird management stories is the focus of DeCapita's (this volume) paper on the cowbird control program initiated to protect the Kirtland's Warbler (Dendroica kirtlandii). Unlike the other endangered species treated in this book, this one has had a limited range and population size throughout recorded history. It nests in several counties of northern lower Michigan and only in jack pine (Pinus banksiana) forests 6-24 years after fires. In the last 150 years, it is likely that its numbers peaked at around a few thousand individuals in the late 1800s, which is also the time that it probably became exposed to cowbirds (Mayfield 1960). Warbler numbers were much lower by the 1940s, due probably to fire suppression and cowbird parasitism and

interested parties resolved to conduct a complete census of the species every 10 years. Counts in 1951 and 1961 revealed 432 and 502 singing males. But the 1971 count showed a population crash to 201 singing males. This crash, along with evidence of increased rates of parasitism in the late 1960s and demographic