

Manville, A.M., II. 2009. Towers, turbines, power lines, and buildings – steps being taken by the U.S. Fish and Wildlife Service to avoid or minimize take of migratory birds at these structures. *In* C.J. Ralph and T.D. Rich (editors). Proceedings 4th International Partners in Flight Conference, February 2008, McAllen, TX.

Abstract: As imperiled bird populations continue to increase, new challenges arise from the effects of growing numbers of communication towers, power lines, commercial wind facilities, and buildings. This paper briefly reviews steps the USFWS is taking to seriously address structural impacts to migratory birds. New findings will be briefly reviewed that address lighting impacts, new challenges facing birds from tower radiation, and collision and habitat fragmentation effects on avifauna. See the paper in this volume by Klem on his ongoing research with building glass, lighting and windows for details in trying to resolve those challenges.