

Table 2—Summary of predicted annual avian mortality. USDA Forest Service Gen. Tech. Rep. PSW-GTR-191. 2005

Mortality source	Annual mortality estimate	Percent composition
Buildings ¹	550 million	58.2 percent
Power lines ²	130 million	13.7 percent
Cats ³	100 million	10.6 percent
Automobiles ⁴	80 million	8.5 percent
Pesticides ⁵	67 million	7.1 percent
Communications towers ⁶	4.5 million	0.5 percent
Wind turbines ⁷	28.5 thousand	<0.01 percent
Airplanes	25 thousand	<0.01 percent
Other sources (oil spills, oil seeps, fishing by-catch, etc.)	not calculated	not calculated

¹Mid-range of fatality estimates reported from Klem (1990), 1 – 10 bird fatalities per house, extrapolated to 100 million residences

²Based primarily on a study in the Netherlands (Koops 1987), extrapolated to 500,000 miles of bulk transmission line in U.S.

³One study in Wisconsin estimated 40 million (Coleman and Temple 1996), there are 60 million cats claimed as pets in the U.S.

⁴Based primarily on one study in England (Hudson 1965, Banks 1979) that estimated 15.1 fatalities/mile of road each year, no searcher efficiency or bias adjustments in that study, updated based on increase in vehicle registrations

⁵Conservative estimate using low range of empirical fatality rate (0.1 to 3.6 birds/acre), studies typically adjusted from searcher efficiency and scavenging

⁶Estimates from models derived by Manville and Evans (M. Manville, pers. comm.).

⁷Mid-range of per turbine and per MW estimates derived from empirical data collected at several wind projects (*table 1*).