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WESTERN MEADOWLARK IMPALED ON BARBED-WIRE FENCE-- Recently, Allen and Ramirez (1990, *Wilson Bull.* 102:553-558) summarized known observations of bird mortality associated with barbed-wire fences. Most reported cases of bird mortality from barbed-wire fences were of non-passerine birds. On 16 June 1993 in Slope County in western North Dakota (NW 1/4, Sec. 10 T134N R103W), I found a dead western meadowlark (*Sturnella neglecta*) with its right wing impaled by a barb on the middle strand of a three-strand barbed-wire fence. Barbs on the wire were spaced about 12-15 cm apart. The bird was adult-sized, but plumage characteristics indicated that it was a young-of-the-year with well-developed flight feathers. The fence was situated along a right-of-way of a seldom-traveled gravel road. Surrounding habitat on both sides of the road was native mixed-grass prairie. The position of the bird suggested that it collided with the fence and was impaled while flying from the prairie toward the right-of-way, indicating that the bird had not been forced from the roadside into the fence by an approaching vehicle.

Barbed-wire fences are common throughout western North Dakota. Western meadowlarks regularly use wires and associated fence posts as perches (Lanyon 1994, *Western meadowlark (Sturnella neglecta) in The birds of North America*, No. 104 [A. Poole and F. Gill, eds.]. Philadelphia: The Academy of Natural Sciences; Washington, D.C.: The American Ornithologists' Union). To my knowledge, this is the first reported case of a western meadowlark death by a barbed-wire fence. Inexperience and unfamiliarity with fences (Knight et al. 1980, *West. Birds* 11:202) by this young meadowlark may explain this accident. For woodland grouse (*Tetrao* spp.), Catt et al. (1994, *Forestry* 67:105-118) found that collisions with fences were slightly more frequent for first-year than older birds.

Why are there so few observations of passerine mortality associated with barbed-wire fences? Siegfried (1972, *Wilson Bull.* 84:486-487) and Faanes (1987, *Bird behavior and mortality in relation to power lines in prairie habitats*. U.S. Fish Wildl. Serv., Fish Wildl. Tech. Rep. 7) suggested several factors that may influence the likelihood of bird collisions with human-made objects (including flight speed, diurnal activity, altitude gain, and take-off and landing patterns.) Juxtaposition of fences with wetlands is one of the most important factors contributing to waterbird mortality associated with barbed-wire fences (Cornwell and Hochbaum 1971, *Wilson Bull.* 83:305-306). The body size of the bird also may influence the chances of a collision with a barbed-wire fence or the likelihood of impalement or entanglement. Indeed, many of the known cases of bird deaths associated with barbed-wire fences were of larger birds such as waterfowl, cranes, herons, hawks, and owls (Allen and Ramirez 1990). Smaller birds, such as most passerines, may be more likely than larger

birds to maneuver around or between strands of barbed wire when they encounter a fence. Also for smaller birds, chances of impalement or entanglement during a collision with a fence would likely decrease as the spacing between the barbs increases. Lack of observations of carcasses, however, is not reliable evidence to rule out extensive mortality of small birds by barbed-wire fences. Carcasses of small birds are quickly assimilated into the environment with few observable remains, and observations of a carcass may be strongly influenced by such factors as visibility, decomposition rates, and removal by scavengers (Wobeser and Wobeser 1992, *J. Wildl. Diseases* 28:548-554). Cornwell and Hochbaum (1971) remarked that collisions with wires are common for waterfowl, but go largely unnoticed and unreported.

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