

**PREDICTION AND REALITY: COMPARING LOGGERHEAD SHRIKE
LOCATIONS WITH PREDICTED DISTRIBUTION MAPS
BY MONTANA GAP ANALYSIS^{TWS}**

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Wildlife biologists and land managers often must make management recommendations with limited information and with limited distributional data for species such as the loggerhead shrike (*Lanius ludovicianus*). The Montana Gap Analysis Project (MT-GAP) may provide a tool to assist with such decisions. MT-GAP is a statewide assessment of biodiversity completed in 1998. For 425 species, ranges were delineated based on existing presence/absence data, and habitat associations were recorded in a wildlife-habitat relationships (WHR) database. After preparing GIS layers to represent specific habitat features, a raster-based modeling approach was used to combine range limits and WHR databases into predicted distributions. The loggerhead shrike model selected a number of shrub cover types, and also selected agricultural and grassland types where they fell within 500 m of the mesic shrub type. An elevation limit of 1950 m also was applied. Predicted habitat was 10,795,456 ha, or 28.35 percent of the state. An independent study recorded 101 locations of loggerhead shrikes statewide from 1997 to 1999. GIS analysis revealed that 44 point observations fell directly within the predicted distribution. To include the average home range size of loggerhead shrikes and to compensate for any locational inaccuracies, buffers then were applied to point observations, and overlap between buffers and predicted habitat was calculated. Sixty nine percent overlap was observed for 282 m home range buffers, and 80 percent for 500 m buffers. Despite the limitations of MT-GAP predicted distributions, they can be useful for broad-scale conservation planning, particularly for species with limited information.