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CURRENT STATUS OF THE USAF BIRD AVOIDANCE MODEL (BAM)

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The United States Air Force (USAF) Bird Aircraft Strike Hazard (BASH) Team has been
developing versions of a Bird Avoidance Model (BAM) since the early 1980's. In the
developmental phases of the first models, it was recognized that avoiding birds on low-level
routes and ranges was the only solution to the significant problem of bird strikes to these military
operations nationwide. The early versions of BAM were limited in coverage, biological data,
and resolution. With the advent of sophisticated Geographic Information System (GIS)
technology and advances in computational capability, modern versions of the USAF BAM have
become increasingly robust and user friendly. The current version of BAM, released to the
USAF in 1999, incorporates data layers from many sources to display risk surfaces at 1km
resolution for the entire continental United States for each two-week period of the year and four
daily time periods. Data on over 60 bird species considered most hazardous to flight operations,
hundreds of environmental variables, infrastructure, and aeronautical charts are incorporated into
the model. The user interface is a menu-driven package that allows pilots and schedulers to
assess hazards on chosen routes with minimal effort in minutes. More sophisticated analyses are
possible for other user groups. Preliminary reports from the user community have indicated
savings of several million dollars in USAF aircraft assets in the first year of operation. Demand
from the military community outside the continental US and the civil aviation community
indicates a necessity for expansion of the BAM to other areas of the world and for continued
refinement of data layers. International cooperation in the development of models will be
necessary to ensure more global coverage and compatibility of systems between cooperating
nations. The USAF has demonstrated its willingness to share its technology and experience to
ensure such interoperability between cooperating agencies and nations.