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The United States Bird Avoidance Model (USBAM) uses Geographic Information System (GIS) technology to analyze and correlate bird habitat, migration, and breeding characteristics, combined with key environmental and man-made geospatial features. The Application consists of raster grids covering the conterminous USA. The value for each grid pixel location is equivalent to the sum of the mean bird mass (in ounces), for all species present during a particular daily time period, for one of 26 2-week periods in a year. The original USBAM is a desktop application that has an intuitive design and includes separate interfaces for multiple user profiles such as Air Crews, and Planners/Schedulers. It is based on ESRI's ArcView GIS and can be used with other network, office, and technical applications. Geo InSight has recreated this functionality and interface in a web-based environment. The original data sets used to create the BAM (Christmas Bird Count [CBC] and Breeding Bird Survey [BBS] data from 1966-1992) have been updated to include more recent data (CBC to 1997 and BBS to 2000). An analysis of the species population records that were used for the original BAM surface with newly acquired data has been conducted. The results of these analyses and individual tests performed on a selection of priority species have resulted in an enhanced statistical methodology. These newly developed techniques have been employed on the updated datasets to improve the accuracy of the risk surface. Currently, research is being conducted to create a model to enhance the risk surfaces by linking species distributions and refined migration rules to selected co-registered environmental and topographic data layers. Based on the existing, working model, the refined migration rules for each species will be translated through a programmed logic structure. The objective of this enhanced model is to develop an improved predictive risk surface that will account for the dynamic nature of species distributions and migration patterns to and from source and destination areas.