

MINIMIZING BIRD-AIRCRAFT COLLISIONS CAUSED BY RESIDENT RAPTORS IN ISRAEL**Dr. Ofer Bahat¹ and Major Oded Ovadia²**¹ Department of Environmental Science and Chemistry, University of Indianapolis,
Mar Elias Campus, Ibillin, IsraelTel: 972-528911615, Fax: 972-46293186, Email: bahat@shani.net² Birdstrike Avoidance Section, Air Control HQ, Israeli Air ForceTel: 972-36067007, Fax: 972-36067589, Email: air91@idf.gov.il**Abstract**

Most of the severe bird-aircraft collisions outside airfield zones in Israel occurred in relatively low flying altitudes of less than 3,000 ft involving fighting jets. Migratory birds usually held responsible for these accidents. However, recent analysis of bird strike database showed that resident species of nesting raptors account for one third of these accidents, which occurred outside the migration periods. Griffon Vultures (*Gyps fulvus*) are a severe threat to aircraft due to their high body mass (6-11 kg) and gregarious habits and indeed caused several accidents. In addition, Long-legged Buzzards (*Buteo rufinus*), and Golden Eagles (*Aquila chrysaetos*) were also responsible for some severe collisions, including ejections of pilots and loss of jet fighters. Accordingly, our project was aimed to reduce the risk of aircraft collisions caused by resident raptors by conducting the following steps: Correlate flight routes with major active nesting territories of raptors; Study the raptor species diversity and richness; Assess the potential risk of the nesting raptors to aircraft in each nesting and training area; Recommend (and when possible implement) flight restrictions (in terms of routes and altitudes) that will minimize collision hazard. Systematic ornithological surveys showed several major nesting areas of raptors in Israel, which are located at the Galilee and Golan in the north, and in the Judean and Negev deserts in the south. Based on these findings, the IAF restricted low flights of all aircraft in some major raptor nesting sites and recommended avoidance of low flight of all aircraft in other dangerous sites when possible from an operational standpoint. In addition, helicopter low flights were restricted in all sites both for safety reasons and to avoid disturbance to the nesting birds. Moreover, feeding stations for Griffon Vultures in the desert areas are operated outside major flight zones to further minimize collision risk.

Keywords: resident raptors, raptor-aircraft collision, low flights, fighting jets, nesting areas, altitude avoidance, closed flight zones, minimize collision risk.