

THE EFFECT OF LENGTH OF DAYLIGHT ON BIRD-STRIKE RATES

Thomas C. Kelly Dr.^{1,4}, Patrick D. Bourke Prof.², Michael J.A. O'Callaghan Dr.³,
Gavin Fennessy Dr.¹, Ray Bolger⁴ & Sorcha Sheehy¹

¹Department of Zoology and Animal Ecology,
National University of Ireland Cork, Ireland..²Statistics Department, National University of
Ireland, Cork, Ireland

³Department of Applied Mathematics, National University of Ireland, Cork, Ireland

⁴Aer Rianta, Dublin Airport, Dublin, Ireland

* Corresponding author: Tel: +353214904188, Fax: +353214270562
E-mail: t.kelly@ucc.ie

Abstract

Most bird-strikes occur in late Summer and early Autumn. This seasonal pattern is not explainable solely by the seasonal increase in aircraft movements. One factor which appears to be important is the length of daylight. To investigate this, we have examined the pattern of bird-strikes at Dublin Airport for the period 1990-2002. There is clear evidence that bird-strikes in July and August occur throughout the relatively long hours of daylight, whereas they occur over a shorter interval as day-length declines in late Autumn - early Winter. Thereafter, the pattern is complicated by strikes involving the Lapwing (*Vanellus vanellus*) a proportion of which occur during the hours of darkness. Regression analysis has been employed as a means of quantifying the amount of variation in the number of bird-strikes explained by daylight-length. However, the relationship between the length of daylight and the number of bird-strikes is confounded to some extent by the fledging of the year's crop of young birds: initially these individuals through inexperience are at greater risk of collision, but this risk will decline as the birds mature, which coincides with the shortening of daylight-hours.

Keywords: seasonal pattern of bird strikes, length of daylight, regression analysis