

**A SEMI-PARAMETRIC MODEL FOR LINE TRANSECT
SAMPLING WITHOUT THE SHOULDER CONDITION**

Omar Eidous

Department of Statistics Yarmouk University,
Irbid - Jordan
E-mail: Email: omarm@yu.edu.jo

Summary

This paper introduces an appealing semi-parametric model for estimating wildlife abundance based on line transect data when the shoulder condition is invalid. Zhang (Statistics & Probability Letters, 53 (2001), 249) proposed a new estimator for the density of objects using line transect data. His estimator remedies the drawbacks of the boundary kernel estimator proposed by Mack et. al. (Comm. in Stat. Theory & Method 28 (1999) 2277). His limited simulation study demonstrated the significantly performances of his estimator over the boundary kernel estimator when the shoulder condition is not true. In this paper, a new estimator is proposed and its properties are studied mathematically and numerically. A simulation study demonstrates the significant performances of the proposed estimator for considered cases.

Keywords: Line Transect Method; Kernel Method; Reversed logistic model.