

GAJAHA Software

For about the last ten years, the *Asian Elephant Specialist Group* has advocated the search for a reliable and practical method to collect and analyze data to estimate elephant density. While there has been success in standardizing methods of collecting data on field, analytical procedures for treating this data have not been critically examined.

Stochasticity in parameter values and inappropriate integration of parameter variances while estimating confidence intervals for densities, have led to skepticism about previously used analytical methods.

The *Asian Elephant Conservation Centre* has been working towards eliminating some of the more serious flaws in existing analytical techniques and has developed a software, GAJAHA, as a result.

GAJAHA primarily estimates elephant densities and their statistical confidence limits using field data obtained by different methods. Apart from estimating densities, GAJAHA also estimates dung decay rate and defecation rate and their confidence limits.

GAJAHA makes extensive use of stochastic simulations that use Monte Carlo drivers to, both sample from parameter distributions and to incorporate their variances in the final estimates. Stochastic simulations based on field data are also used to estimate dung decay rate.

Data from block counts (direct sightings) and line transects (direct and indirect methods) can be used by the software. GAJAHA estimates elephant densities with data from,

- (a) block counts using equal-sized sampling units,
- (b) block counts using unequal-sized sampling units,
- (c) direct counts using line transect, and
- (d) indirect or dung count using line transect.

GAJAHA also estimates

- (e) dung decay rate, and
- (f) daily defecation rate.

GAJAHA (Release 1.0) runs on DOS and will work on IBM compatibles. The software is being 'field' tested.

For more details write to:

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