Wildagg - An R Package to Simplify Wildlife Aggregation Analyses

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The package `wildagg` is an R package designed to estimate, summarize, and visualize wildlife aggregation metrics using location information like GPS collar data. The motivation for the development of this package began with two research efforts studying the aggregation and density of elk on the National Elk Refuge, WY. We applied lessons learned to create a straightforward implementation for users that have a limited level of knowledge of R and related analyses. The package has three primary functions. The first is to calculate daily inter-animal distances for a population of collared individuals, second to estimate the dynamic interaction between pairs of animals based on the proportion of time spent per day within some distance buffer, and third to calculate kernel density estimates across temporal scales. All three of these metrics are useful in determining degrees of animal aggregation or density and provide a variety of avenues to derive potential mechanisms to explain observed aggregation patterns. The framework we present supports the evaluation of temporally varying management actions that influence aggregation broadly and can be easily implemented to answer questions related to disease transmission, human-wildlife conflict, or inter-species competition.