

Data file description

Estimating transient populations of unmarked individuals at a migratory stopover site using generalized N-mixture models

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1.count_matrix

Matrices of raw counts of ruddy turnstones surveyed at Westhampton Island, New York, during northward migration of 1997–1999. Each row reflects ‘survey transect’ and each column reflects ‘survey date’ labeled in the Julian date format.

2.covariate_matrix

Matrices of environmental covariates, in which the number of rows matches with that of the count_matrix, and the number of columns is a multiplication of ‘the number of columns in the count_matrix × the number of covariates’. The first three columns indicate *year*, *subsite*, and *transect*. From the fourth column and on, the following prefix denote different environmental covariates and the following three-digit numbers denote the Julian date.

- *X*...: the number of days since the beginning of survey for that year.
- *t*...: the time of survey (ex., 821 for 8:21, or 1558 for 15:58).
- *wlt*...: the predicted tidal height at the time of each survey (feet).
- *i*...: the number of weeks into the migration window.
- *r*...: daily total precipitation (mm).
- *wd*...: daily average wind direction (0–360°).
- *ws*...: daily average wind speed (m/s).
- *bh*...: a dummy variable to form bimodal peaks, with a shallower peak in front.
- *sh*...: a dummy variable to form bimodal peaks of the same height.
- *fh*...: a dummy variable to form bimodal peaks with a taller peak in front.

3.unmarked_Rpkg_model_input

An object that contains the count data along with standardized covariates for each survey year, prepared by using the `'unmarkedFramePCO'` function and is ready to be passed to the `'pcountOpen'` model-fitting function in R package *unmarked*.