

Dataset Title: Long term monitoring of the dynamics of rodents, ticks and Lyme disease risk in Oak forests: Mouse and tick data, 1995-2005.

Dataset Version: 10.25390/caryinstitute.23611374 v.1

Geographic location: Research sites were located on Cary property at the small mammal and tick trapping grids. Specifically at Green Control, Henry Control, and Tea Control grids.

Taxonomic species or groups: *Ixodes scapularis*, *Peromyscus leucopus*

Methods:

Field Studies were conducted on the property of the Cary Institute of Ecosystem Studies in central Dutchess County, southeast New York (41° 50' N, 73° 45' W). Cary property is a mix of forest, old agricultural fields, and buildings. The term “mouse-mast” describes the 6 grids on the property of the Institute of Ecosystem Studies that are oak dominated forest and 2.25 hectares in size. Trapping has taken place every year from 1991 to the present for 2 grids, and from 1995 to the present for 4 grids. The 6 grids were arranged in three pairs consisting of 1 control and 1 experimental grid. Five of the grids are in an 11X11 array of permanent trapping stations, and 1 of the grids (Henry Experimental) has a 12X10 array due to landscape constraints. There are 15 meters between each trapping station. Trapping stations consist of 2 Sherman traps and a wooden coverboard to shield animals from rain and sun. There are 242 traps total for the 121 trap stations per grid.

Small mammals are live-trapped every year from April/May through November. Trapped grids are rotated so that 1 pair of grids is trapped each week, with 2-3 weeks before the next trapping session. Traps are baited with whole oats and opened between 4:00 and 6:00pm. During weeks where expected low temperature drops below 50F, black-oil sunflower seed and raw cotton is added to the traps in addition to the oats to provide a fattier food source and warm bedding material. Traps are then checked between 7:30 and 11:30am the following day. Each grid is trapped for two consecutive days.

Each captured mouse and chipmunk is given a uniquely numbered metal eartag during its first capture. For the first capture of every session we record trap location, species, tag number, status, location of ear tag, sex, age (for mice), mass in grams, reproductive condition, the number of black-legged tick larvae and nymphs (*Ixodes scapularis*) counted individually for each ear and the head, and anything out of the ordinary such as missing limbs or embedded bot fly larvae. For the second capture in the same session, only the tag number, location, and species are recorded. Thus, for all demographic data (status, ear, fate, sex), each animal will have only one record per trapping session. Animals captured only once in a 2-day trapping session have N/A in the Day.2 column; animals captured on both days have a trap location in the Day.2 column. Animals are released at point of capture. On the three experimental grids, mice and chipmunks were manipulated for several years. Experiments were conducted on the

‘experimental’ plots in 1995 with a mouse and chipmunk removal, 1997 with a mouse removal, and 1998 with a chipmunk removal, and monitoring conducted through the present. *For this data set, mouse removal grids were removed.* This includes 1995 and 1997 for the grids Green Experimental, Henry Experimental, and Tea Experimental. Other short-term, localized experiments have been performed on these grids through this lab and in conjunction with other P.I.’s, but they are thought to have little or no effect on the long-term demographics of these species. Please contact Rick Ostfeld (ostfeldr@caryinstitute.org) with any questions regarding secondary experiments.

Tick (*I. scapularis*) abundances are derived from tick drags. A tick drag consists of pulling a 1 square meter cotton cloth along the ground on three randomly chosen transects, for a total of 450 square meters sampled per site. Ticks were counted and removed from the cloth every 30 meters. Drags were conducted every three to four weeks starting in the spring of 1995 and continuing through the fall of 2005. Tick drags did not occur in the winter.

Data Tables

Table name(s): Cary_tick

Table description(s): *I. scapularis* tick observations on each grid between 1995-2005

Column name	Description	Unit	Code explanation or date format	Empty value code
Grid	Field site name			NA
DATE	Date		YYYY-MM-DD	NA
day.of.year	Day of year starting Jan.1			NA
n_larvae	number of <i>I. scapularis</i> larvae observed during tick drags	ticks / 450 m ²		NA
n_nymphs	number of <i>I. scapularis</i> nymphs observed during tick drags	ticks / 450 m ²		NA
n_adults	number of <i>I. scapularis</i> adults observed during tick drags	ticks / 450 m ²		NA

Table name(s): Cary_mouse

Table description(s): Mark-recapture of *Peromyscus leucopus* at Cary field sites

Column name	Description	Unit	Code explanation or date format	Empty value code
Grid	Field site name			NA
Full.Date.1	Date of first trapping day of bout		DD-MM-YYYY	NA

Full.Date.2	Date of second trapping day of bout		DD-MM-YYYY	NA
day.of.year	Day of year starting Jan.1			NA
Week	Week notation starts from July 16, 1991, adding one number for every week since that date			NA
Day.1	Location of trap if individual was captured		letter corresponds to row and number corresponds to column of trapping grid	NA
Day.2	Location of trap if individual was captured		letter corresponds to row and number corresponds to column of trapping grid	NA
Spp	species captured		PL = Peromyscus leucopus	NA
Tag..	Individual ear tag identifier			NA
Status	capture status of mouse		N = new tag P = tagged in previous trap session RT = retag R = recapture in same trap session	NA
Ear	location of ear tag		1 = right 2 = left	NA
Fate	fate of mouse		1 = alive with status P, RT, R 2 = alive with status N 3 = dead with status P, RT, R 4 = dead with status N / not tagged 5 = animal that was relocated off the grid	NA
Sex	sex of mouse		1 = male 2 = female	NA

