

Richard S. Robinson,
Christopher F. Meehan,
Adriana Simancas Madison J.
Patterson, Rebecca J. Berzins
and Sean C. Sterrett

Eastern Box Turtles, a species of special concern, are flourishing in the face of detrimental suburban development

Spatial Ecology of an
Eastern Box Turtle
Population Persisting in an
Insularized County Park.

Preliminary Results

- 21 EBT (M:F = 0.75) were tracked an average 36.2 (± 3.7) times from June 16, 2022 to July 13, 2023
- Average 100% MCP Home Range: 3.1ha \pm 3.7
 - Female – 4.0ha \pm 4.7
 - Male – 1.9ha \pm 1.1
- Average 95% KDE home range across EBT: 1.3ha \pm 1.0
 - Female 1.4ha \pm 1.1
 - Male – 1.3ha \pm 1.0
- Average max carapace length: 128.8 mm \pm 8.1
 - Male: 132.6 mm \pm 9.4
 - Female: 125.0 mm \pm 4.0
- 235 Incidental EBT found



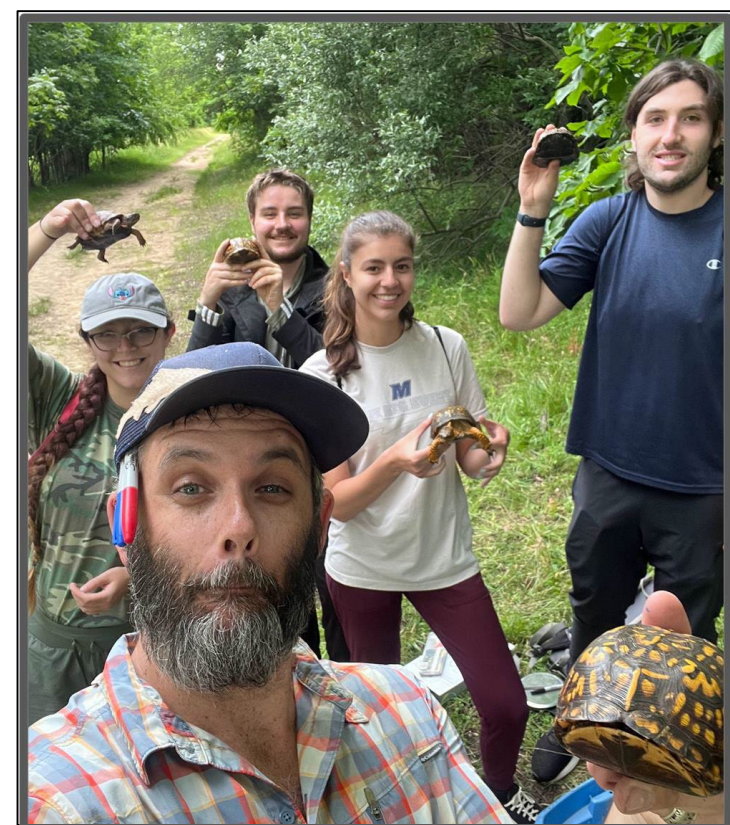
Discussion

- MCP estimates are lower than other studies of EBT in developed and undisturbed habitats (Currylow et al. 2023)
- The largest home range is EBT 4830: 12.55 ha
- The smallest home range is EBT 4836: 0.155 ha
- Larger home ranges are found on the west side of the park, containing mixed woodlands
- Average female MCP home range estimate is almost twice the male average, this could be because females may travel farther for suitable nesting sites

Department of Biology

Introduction

- Eastern box turtles (*Terrapene carolina*; hereafter EBT) is a species of greatest conservation need in New Jersey
- A significant population of EBT resides within an isolated county park in Monmouth County, New Jersey
- The study area is encased by suburban development that compress the population into this one undeveloped park
- The objective of this study is to understand how suburban development might restrict the movements of this species



Methods

- 23 EBT were initially found via working scent dog (Fly) and human effort
- 15g radiotransmitters were affixed to EBT, which were radio-tracked bi-weekly with locations marked via a GPS
- Minimum convex polygons (MCP) and kernel density estimates (KDE) were used to determine the home ranges of turtles within the park

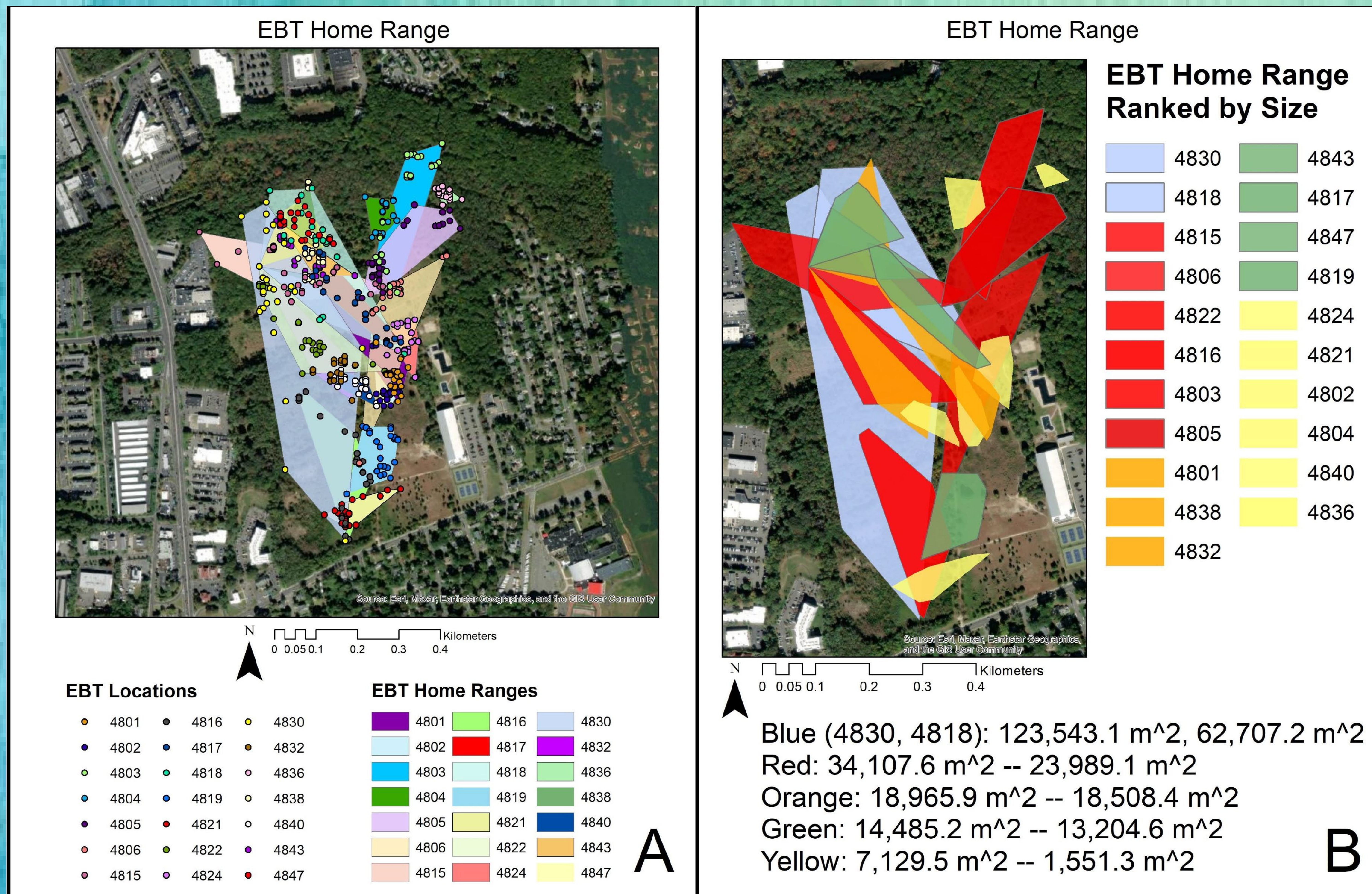


Figure 1: : Radio-tracked Eastern Box Turtle GPS locations and precursory home ranges (100% Minimum Convex Polygons) (A); and radio-tracked Eastern Box Turtle home ranges ranked by size (B) in a suburban area of Monmouth County, New Jersey

