

### A.) Study Area Home Range

If animal's 95% kernel home range (KHR) polygon overlaps the StudyArea, then the animal is considered 100% part of it.

Study Area = 350 km<sup>2</sup>

Count = 4 adults inside Study Area

Density = 4 / 350

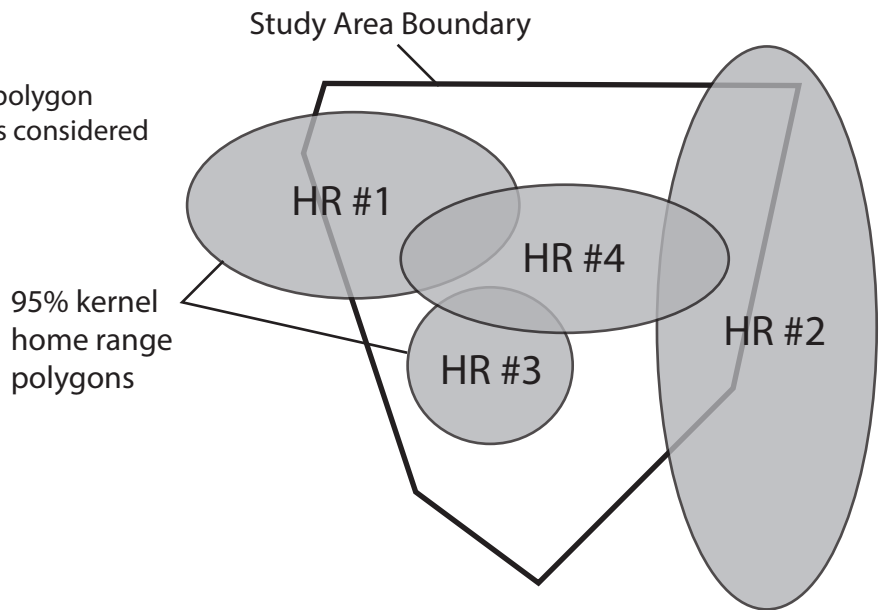
Home Range Sizes:

HR #1 = 105 km<sup>2</sup>

HR #2 = 183

HR #3 = 61

HR #4 = 98



### B.) Proportioned Home Range

Determine the area overlap between each animal's 95% KHR polygon and the Study Area polygon. The fraction of the KHR polygon equals the fraction of the animal counted towards density with respect to the Study Area.

Study Area = 350 km<sup>2</sup>

Proportion Calcs

HR #1 = 0.55 overlap

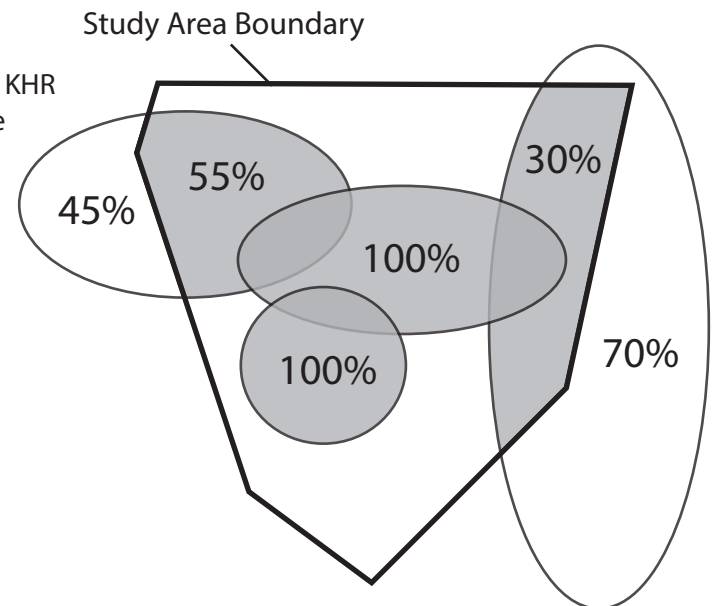
HR #2 = 0.30 overlap

HR #3 = 1.00 overlap

HR #4 = 1.00 overlap

Count = 2.85 adults utilizing the Study Area

Density = 2.85 / 350



### C.) Composite Home Range

Compile all home range collar points into a single shapefile. Create a 95% KHR from points. The Composite Study Area becomes the new study area. Ignore the old study area.

Composite Study Area = 447 km<sup>2</sup>

Count = 4 adults' KHRs comprise Composite Study Area

Density = 4 / 447

