Introduction

- Fine-scale patterns = dispersion
- Large-scale patterns = distribution
- **Dispersal** – movement from place of birth to place of reproduction
- **Migration** – movement between summer and winter range
- **Local movement** – movement within a home range
- **Dispersion** is the pattern of spatial distribution taken up by the animals of an area
- **Distribution** is the area occupied by a population or species

Dispersal

- An action performed by an individual
- **Presaturation dispersal** involves juveniles leaving their natal range even when density of the population is low
- **Saturation dispersal** is when animals disperse because a population reaches a threshold determined by food limitation (**density-dependent**)
- Patterns of dispersal related to type of mating system
    - Females concerned with gaining resources and are therefore philopatric (remain at natal range)
    - Males concerned with gaining mates
    - Both sexes disperse in monogamous species
- Dispersal categories
    - Competition for mates
    - Avoidance of inbreeding
    - Competition for resources
- Dispersers have lower survival than counterparts

Dispersion

- Dispersion can be random, clumped, or spaced
    - Most common is clumped (aka contagious)
    - Determined by dividing an area into quadrats and the frequency distribution of animals per quadrat is recorded. The variance of that distribution will equal its mean if the animals are randomly distrivuted (*Poisson*), will be greater than the mean if the animals are clumped, and will be less than the mean if the animals are spaced
- Scale is important
- Alternate to frequency distribution quadrats (gets around issue of scale) is nearest-neighbor distances – problem is that there is no simple measure presently available for distributions of distances that clearly differentiates between classes of dispersion
- Dispersion is affected by home range of an individual

Distribution