

# Main Points

1) A note about debate style and content, and group meetings

2) Landscape complexity and conservation efforts

- metapopulation dynamics and the many meanings of “connectivity”
- source-sink dynamics
- example: mountain lion harvests in Utah

Pre-reading: Tuesday 17 October = NA (guest lecture).

Thursday 19 October = Bui et al.

Tuesday 17 October = help session for tutorial/extra credit #2.

Tuesday 17 October = Presentation 1 evaluations due by 5pm as .pdf's

YOURLASTNAME\_singlespecies or YOURLASTNAME\_multispecies

Thursday 19 October = homework/extra credit #2 due at 5pm as a .doc emailed to Jake.

Terms: metapopulation, matrix, connectivity, source, sink, stable age (stage) distribution

# Group Presentation Pointers

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- 3) **If you include something on a slide, explain it. Walk your audience through it. Connect the dots. Hold their hands.**

**Tip: Use “white boxes” in power point to cover things irrelevant to your points.**

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8) Use examples to illustrate concepts, but avoid just presenting a string of examples. Spend some time (or slides) on a concept, then present an example to illustrate it.

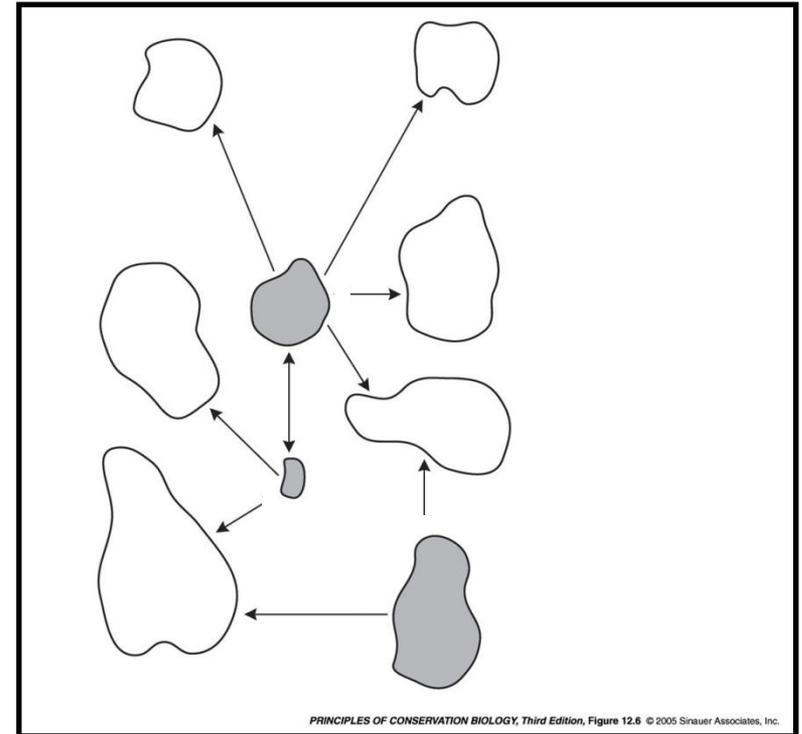
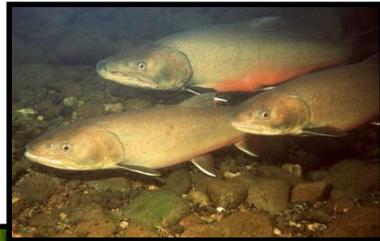
# **Group Meeting Pointers**

**Come with an outline of concepts and examples.**

**The outline doesn't have to be final, but it needs to be polished enough that I can understand what your presentation is going to be like.**

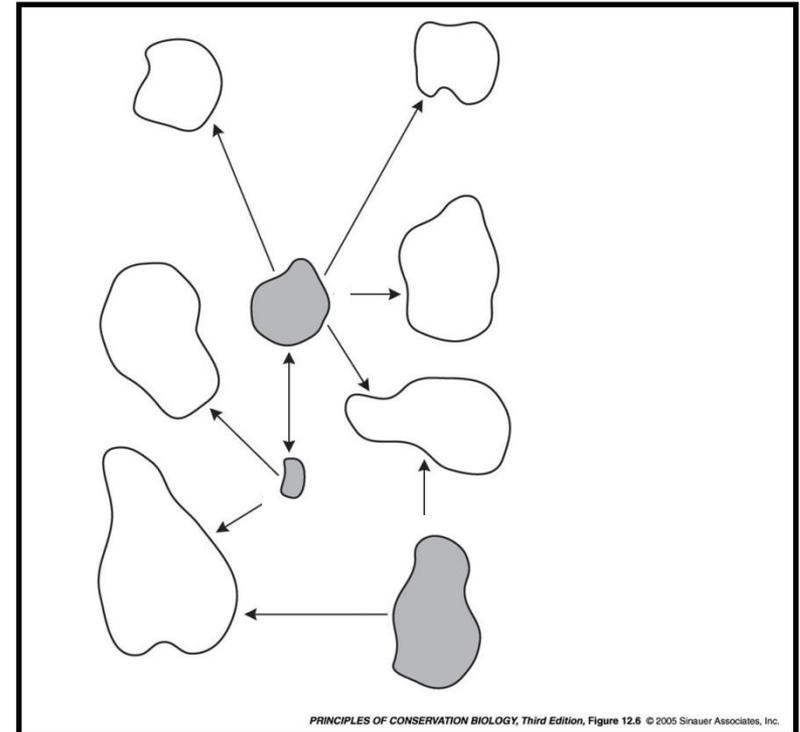
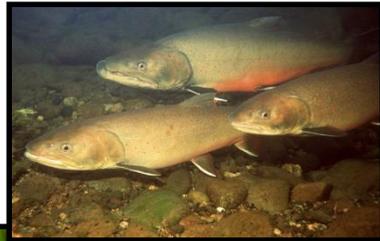
# Landscape complexity in conservation biology

**metapopulation** = a series of populations linked by occasional dispersal and embedded in an inhospitable **matrix**

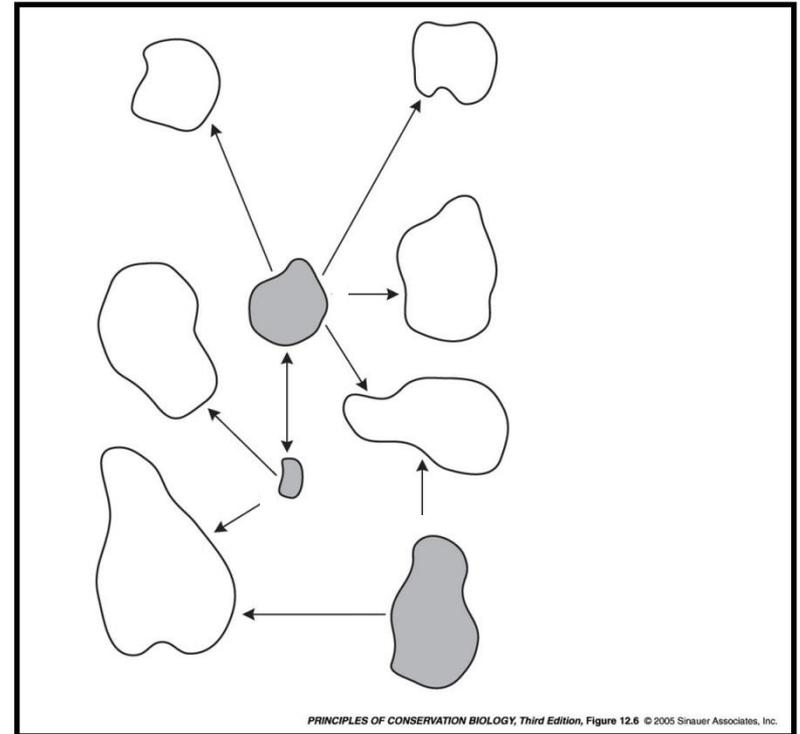
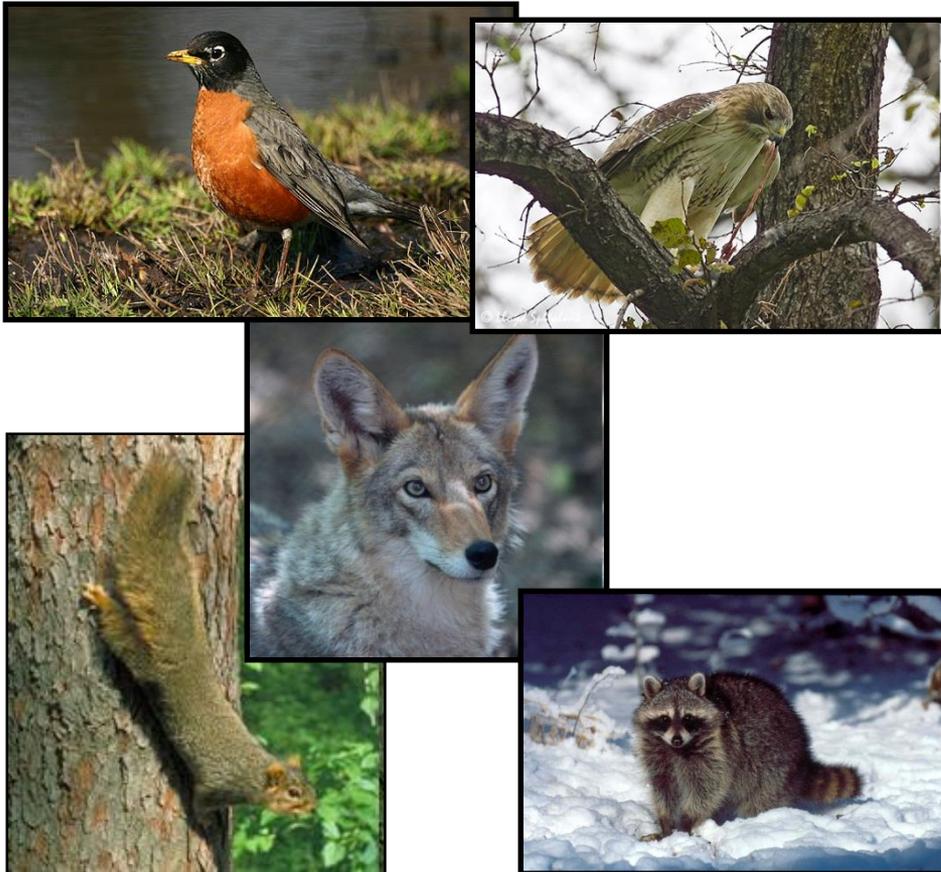


# Landscape complexity in conservation biology

**connectivity = the degree to which the landscape facilitates movement among discrete habitat patches**

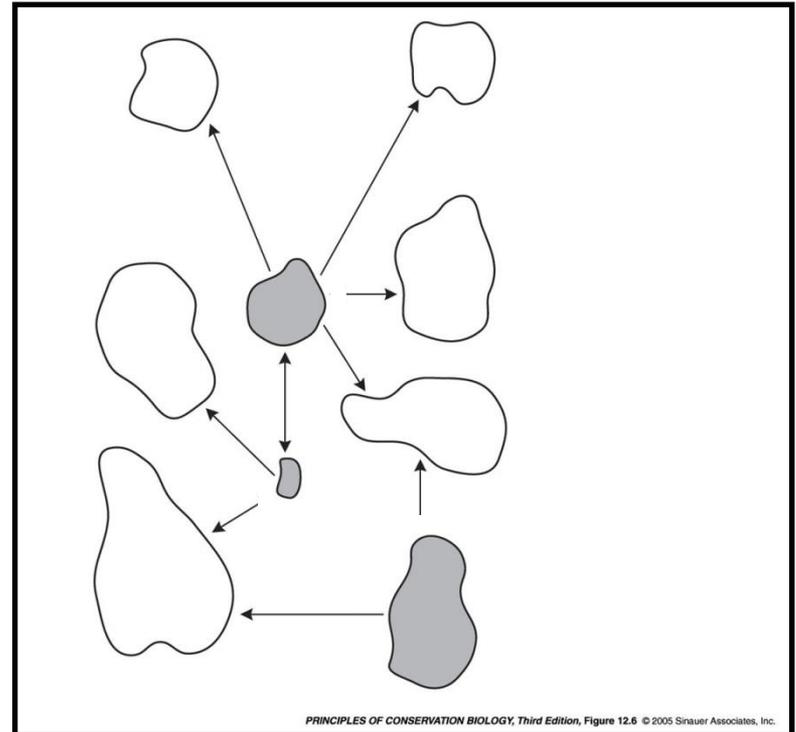


**Discussion Q: The species below are among those that tend not to show metapopulation structure; that is, they do not occupy well-delineated habitat patches. Why not? What does this say about the definition of connectivity?**



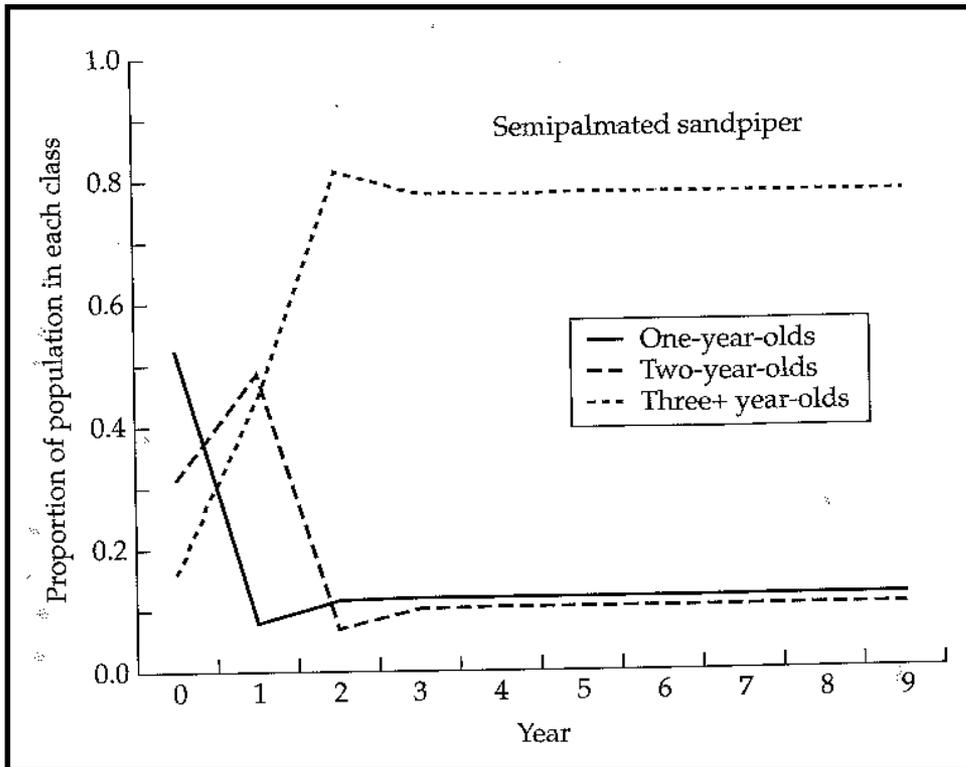
# Landscape complexity in conservation biology

**source-sink dynamic = spatial linkage of populations**  
such that high-quality habitats where  $\lambda > 1$  (**sources**)  
provide excess individuals that disperse and maintain  
low-quality habitats where  $\lambda < 1$  (**sinks**)



# Stable Age Distributions

**Stable age (or stage) distribution** = the proportion of individuals falling into age classes (or stages) toward which the population tends





# Stable Age Distributions and Source-Sink Dynamics

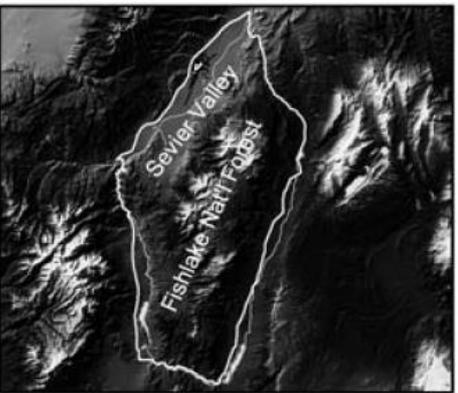
Oquirrh Mtn Study Area --no lion hunting



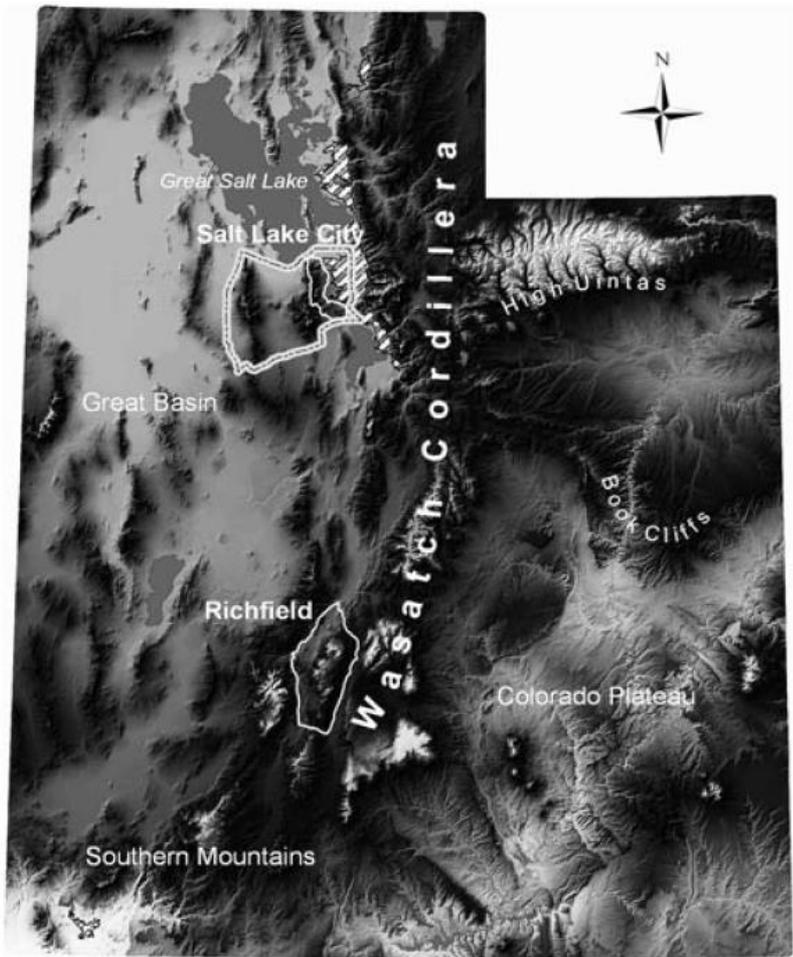
- Study area boundaries
- Cougar habitat
- Deserts
- Urban areas
- Oquirrh-Stans Mgmt Unit

0 15 30 60 Kilometers

Monroe Mtn Study Area --lion hunting

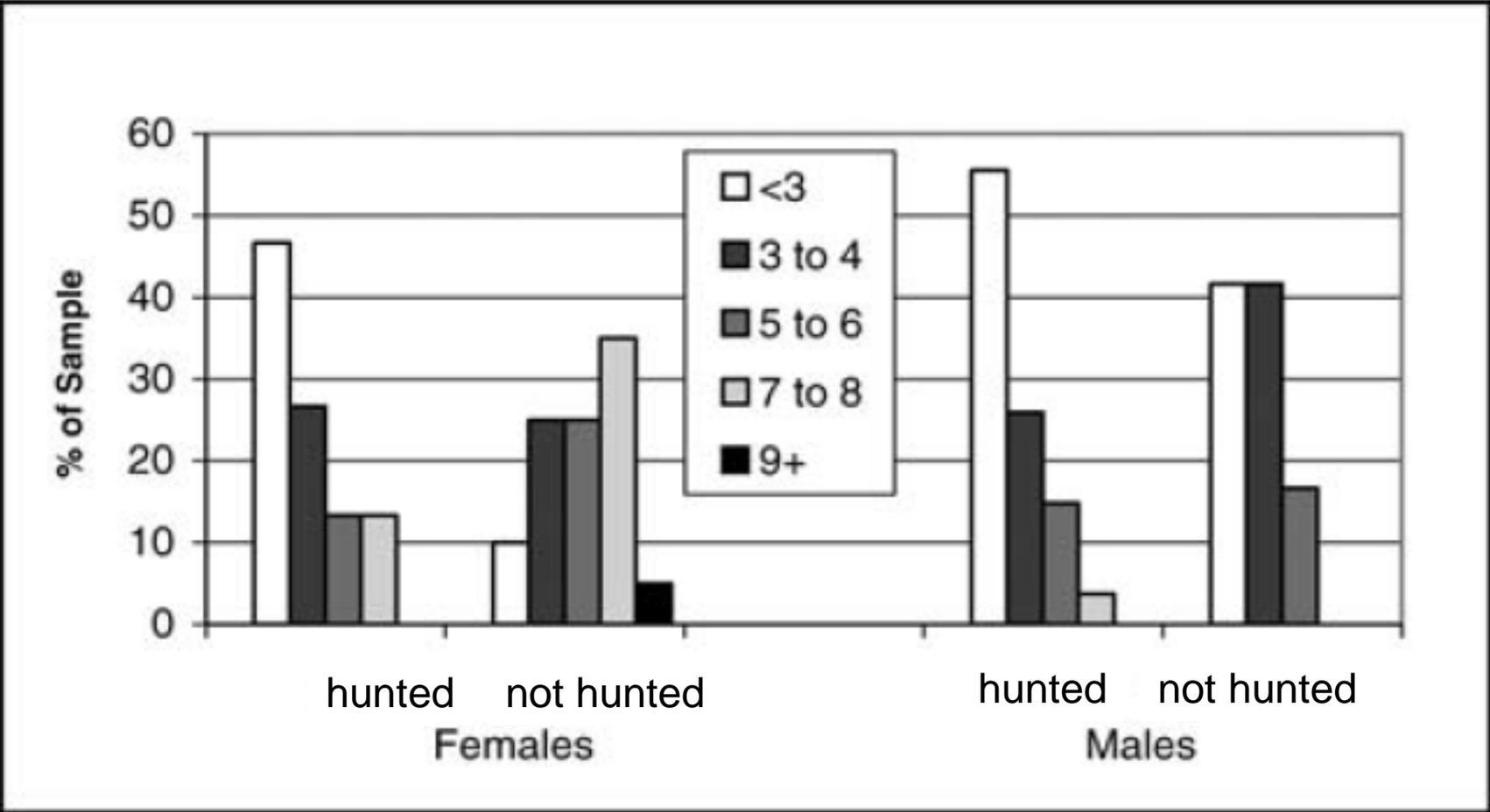


0 20 40 80 Kilometers



0 65 130 260 Kilometers

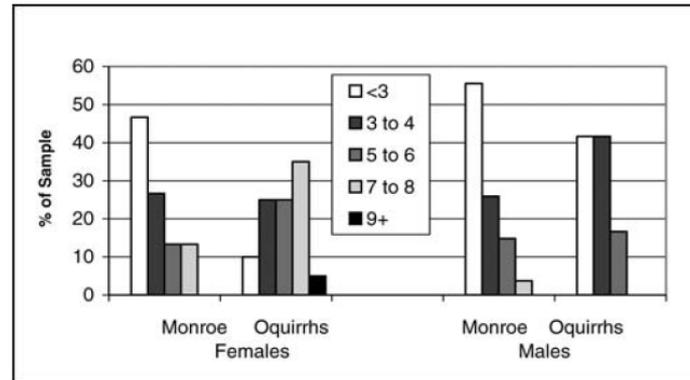
# Stable Age Distributions and Source-Sink Dynamics



**Discussion Q: exploited populations of mountain lions consisted of fewer individuals and age structure skewed to younger individuals. There are at least two interpretations of these data; what are they? How could you distinguish between the two of them?**

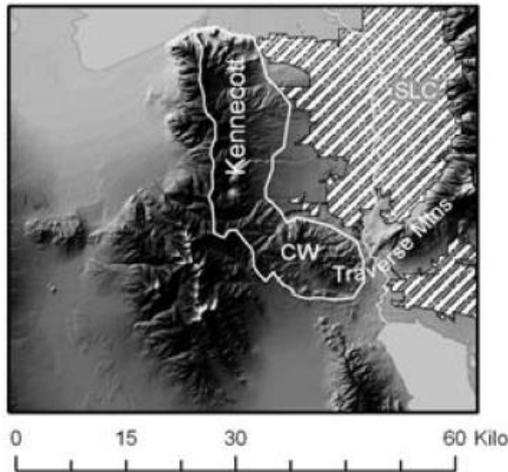


not hunted

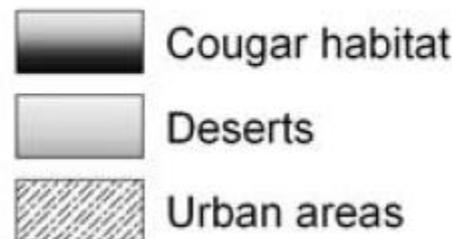


hunted

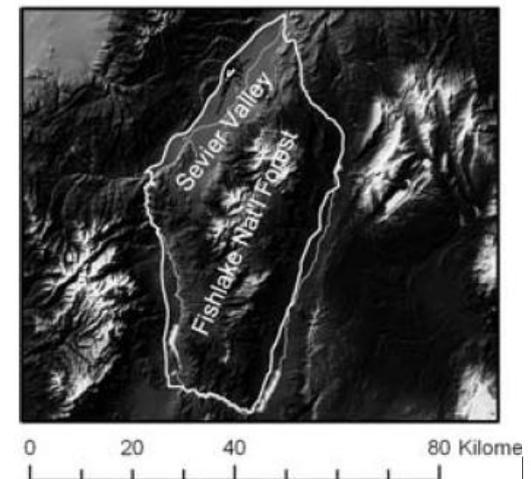
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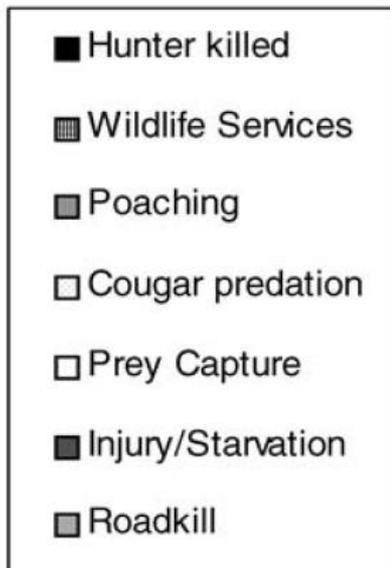
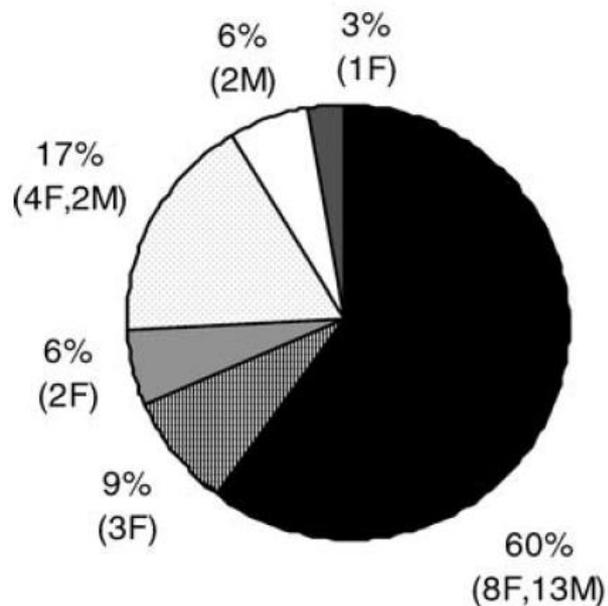
Study area boundaries



Monroe Mtn Study Area



### Monroe Mountain



### Oquirrh Mountains

