

Main Points

1) A note about debate style and content

2) Landscape complexity and conservation efforts.

- metapopulation dynamics and the many meanings of “connectivity”**
- source-sink dynamics**
- example: mountain lion harvests in Utah**
- ecological traps**
- example: honeysuckle and songbird nest success**

Pre-reading: Thursday 15 Oct = Bui et al

Tuesday 10 Oct = Climate Science Panel

Tuesday 13 October = homework #2 due; debate evaluations due

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

Debate 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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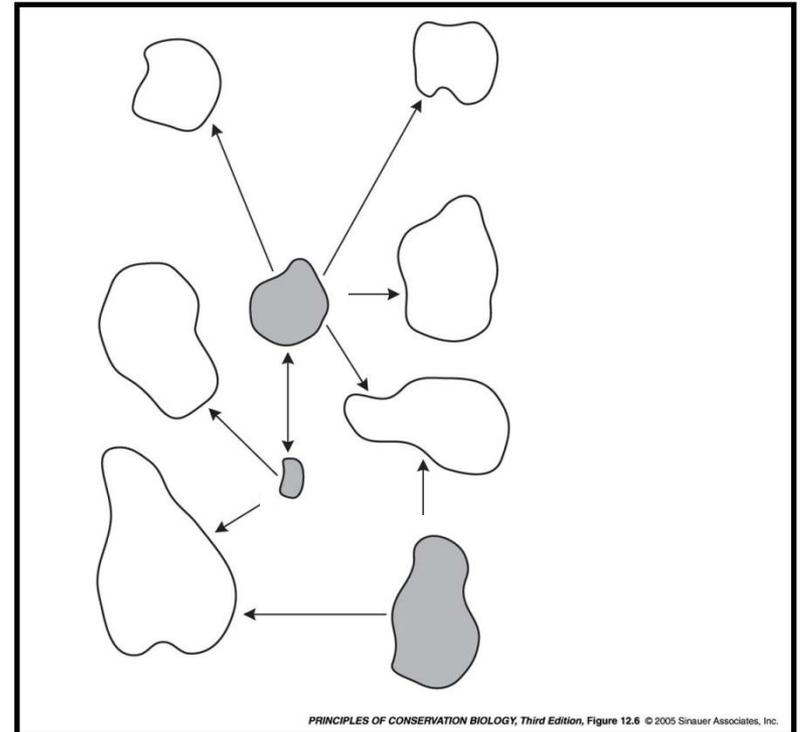
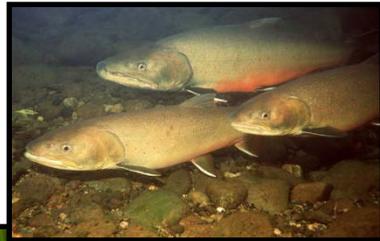
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7) Sometimes (in fact, often) less is more. Focus on teaching us fewer things, but at a pace and with a level of detail that we will understand.

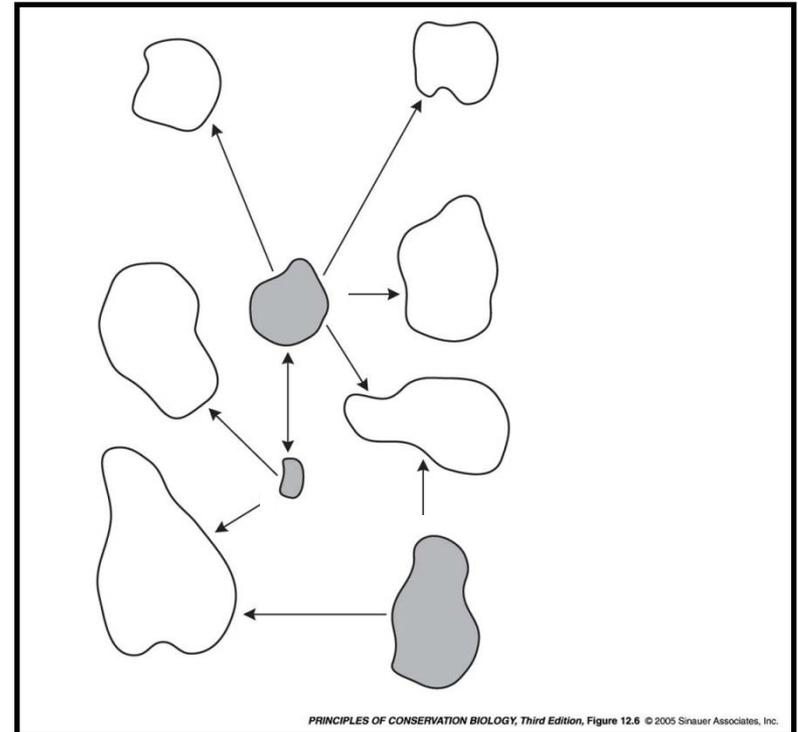
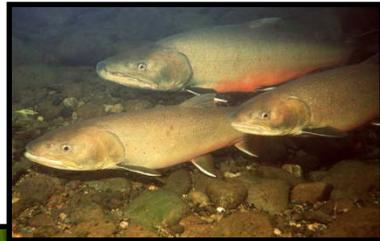
Landscape complexity in conservation biology

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

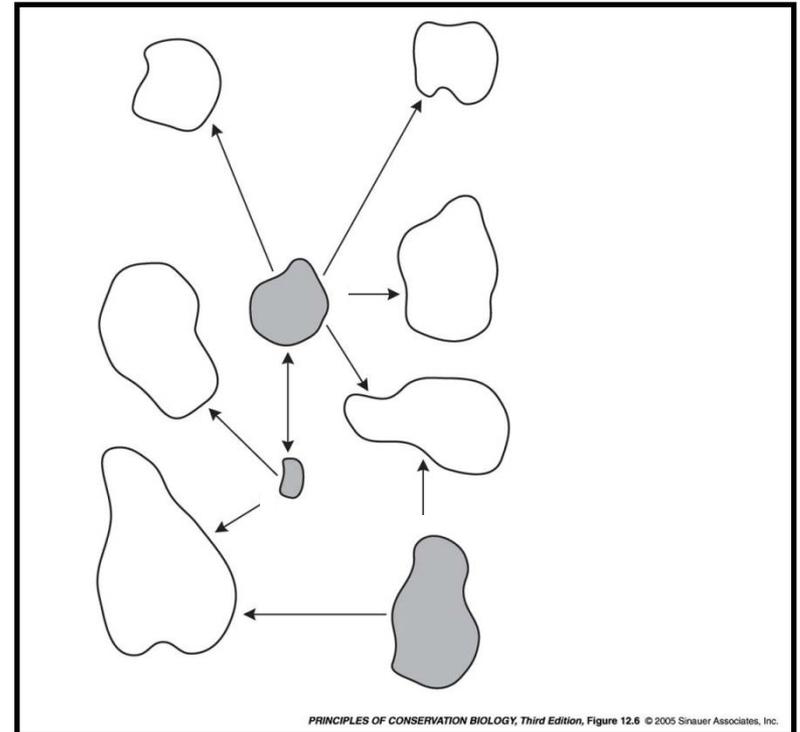
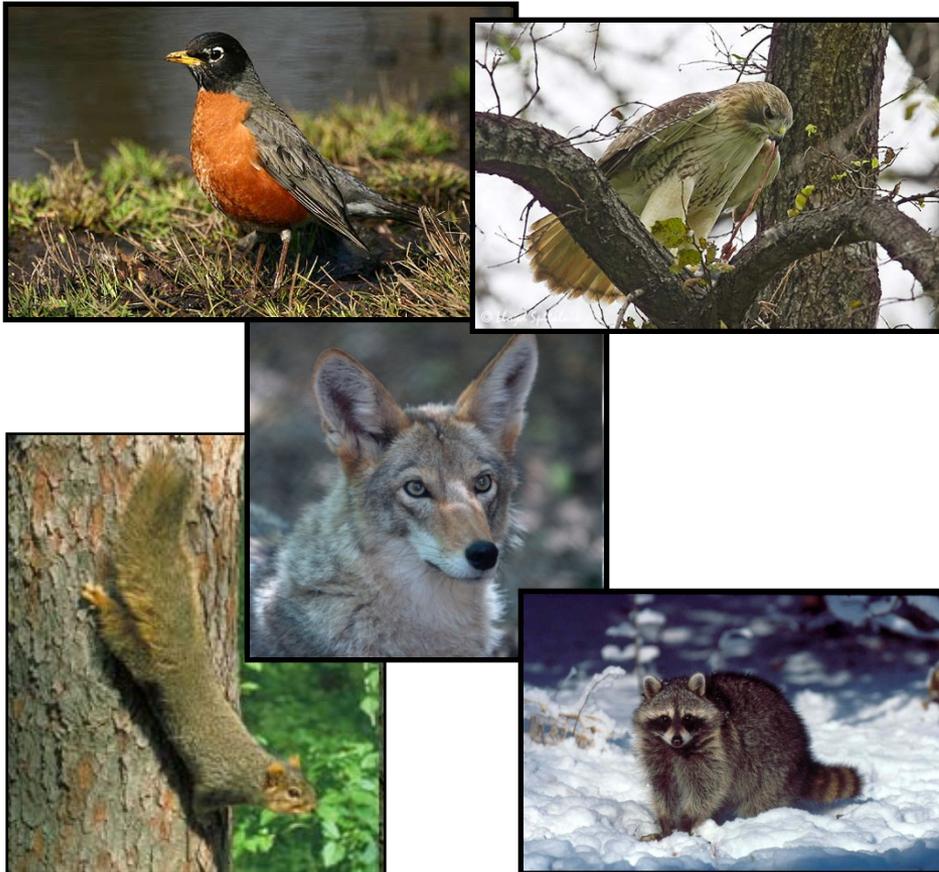


Landscape complexity in conservation biology

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

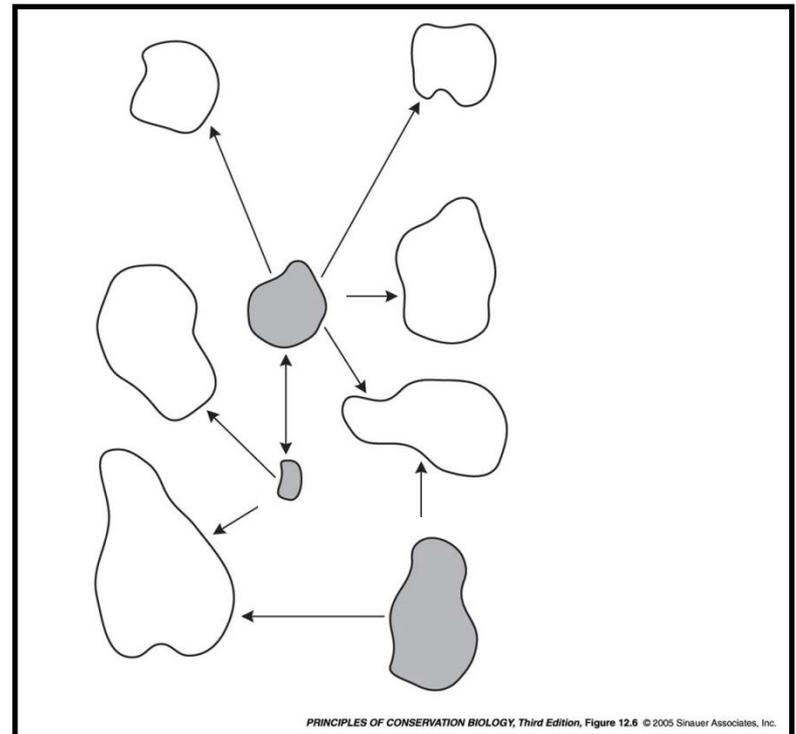


Discussion Q: The species below are among those that tend not to show metapopulation structure; that is, they do not occupy well-delineated habitat patches. Why not? What does this say about the definition of connectivity?



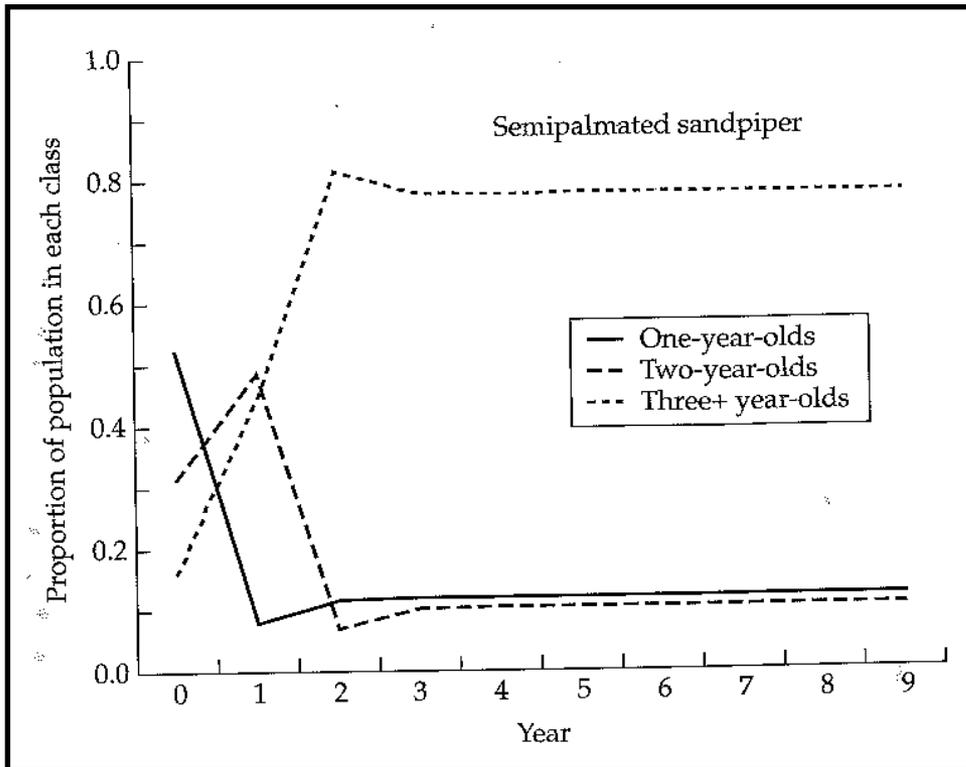
Landscape complexity in conservation biology

source-sink dynamic = spatial linkage of populations such that high-quality habitats (sources) provide excess individuals that disperse and maintain low-quality habitats (sinks)



Stable Age Distributions

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



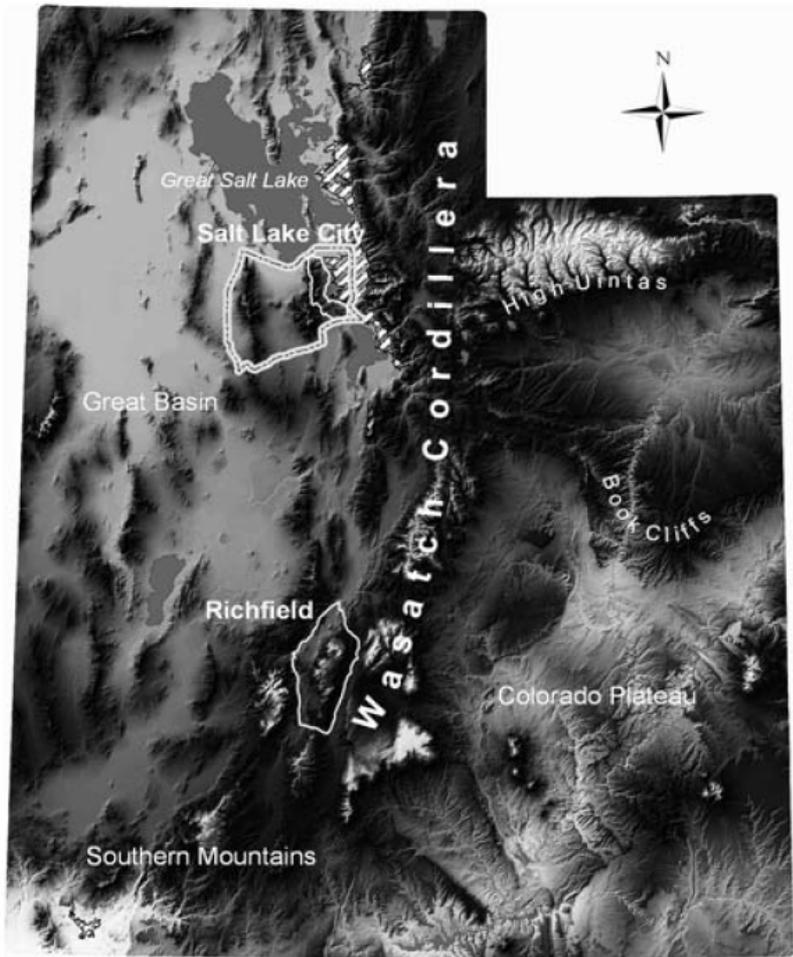
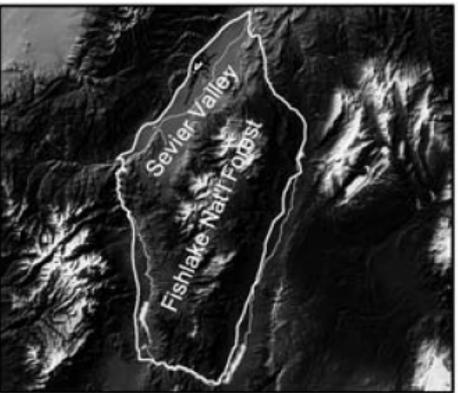
Stable Age Distributions and Source-Sink Dynamics

Oquirrh Mtn Study Area

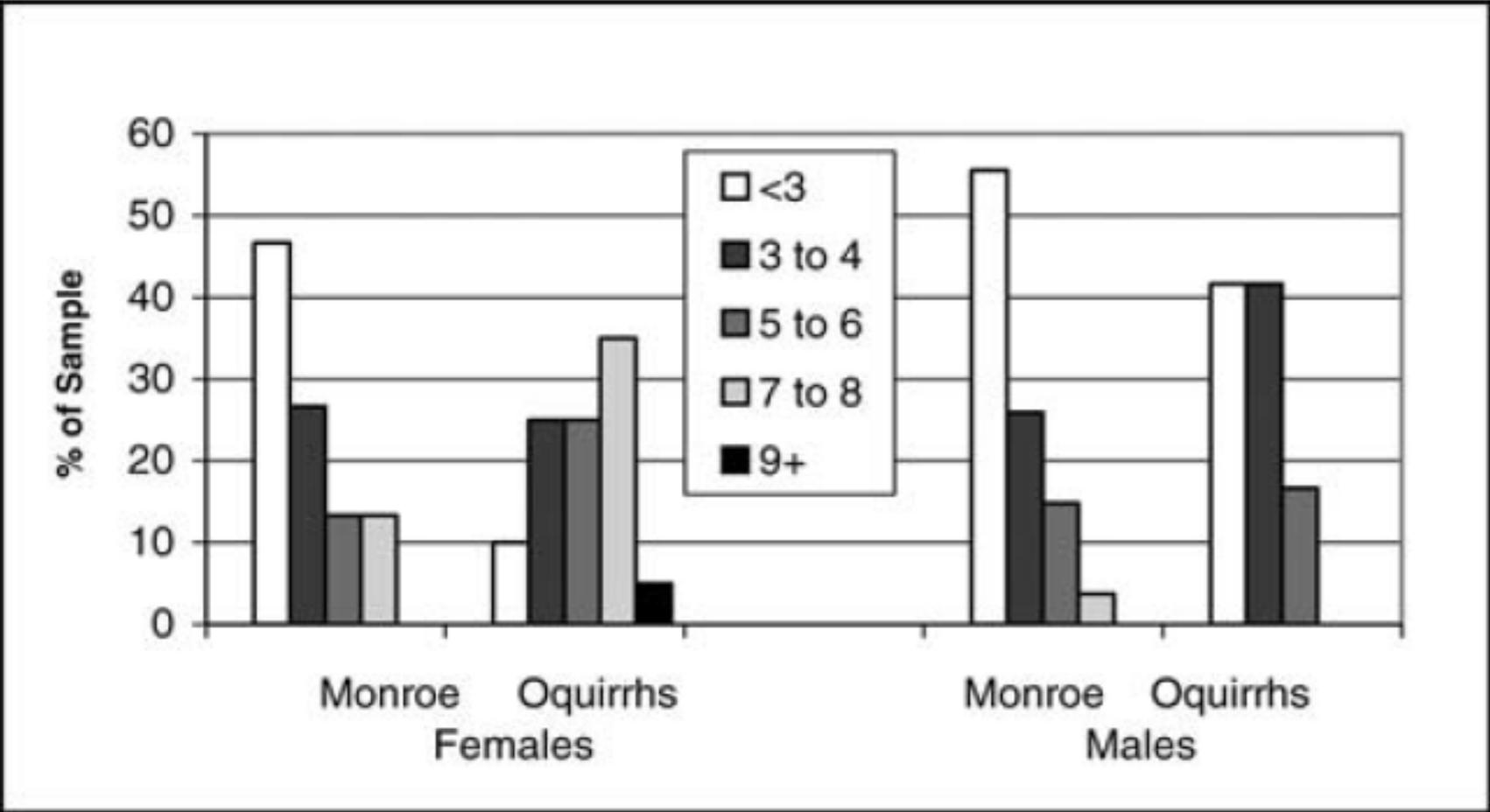


- Study area boundaries
- Cougar habitat
- Deserts
- Urban areas
- Oquirrh-Stans Mgmt Unit

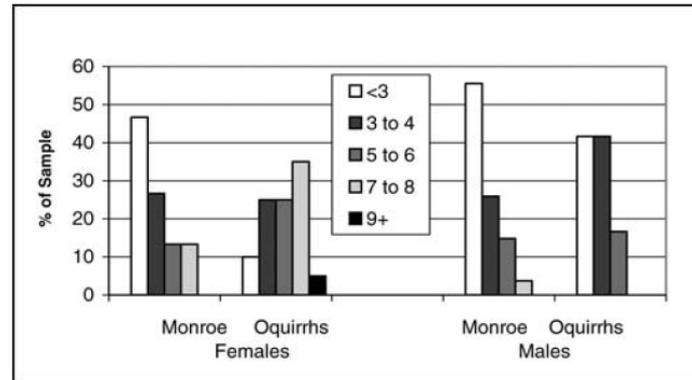
Monroe Mtn Study Area



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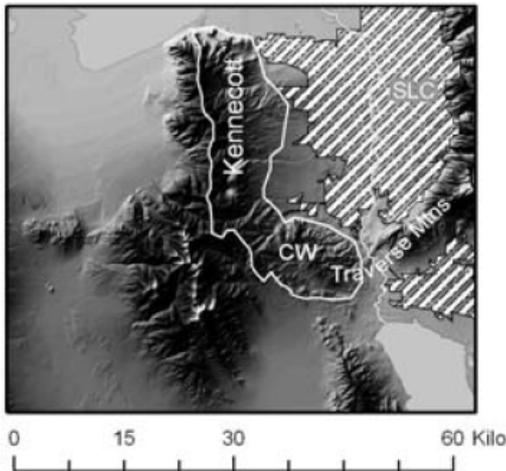


Discussion Q: exploited populations of mountain lions consisted of fewer individuals and females with age structure skewed to younger individuals. There are at least two interpretations of these data; what are they? How could you distinguish between the two of them?



Oquirrh Mtn Study Area

Monroe Mtn Study Area



Study area boundaries



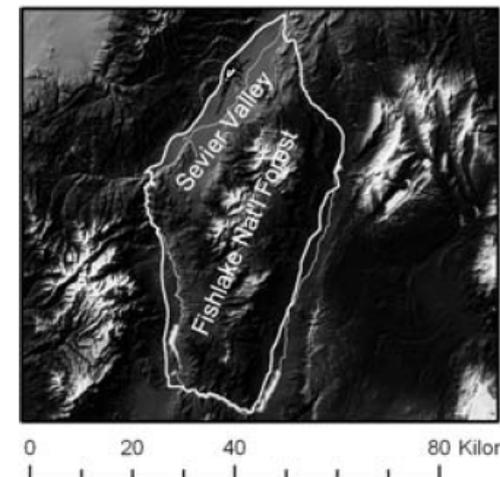
Cougar habitat



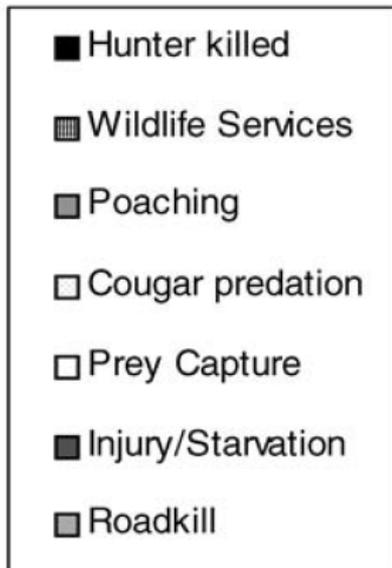
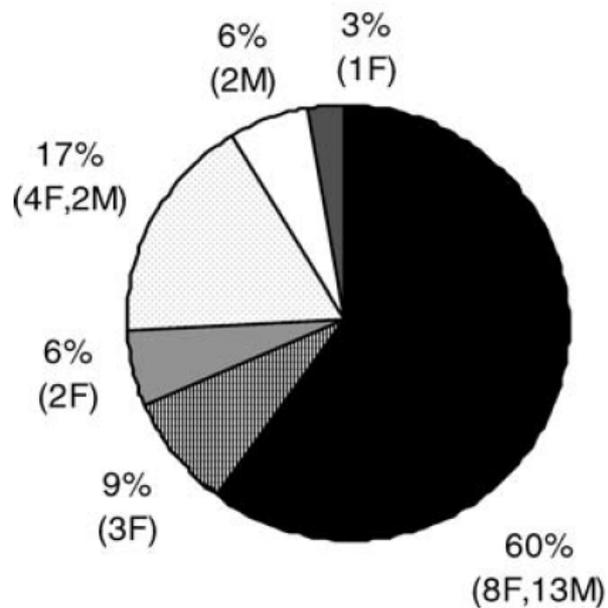
Deserts



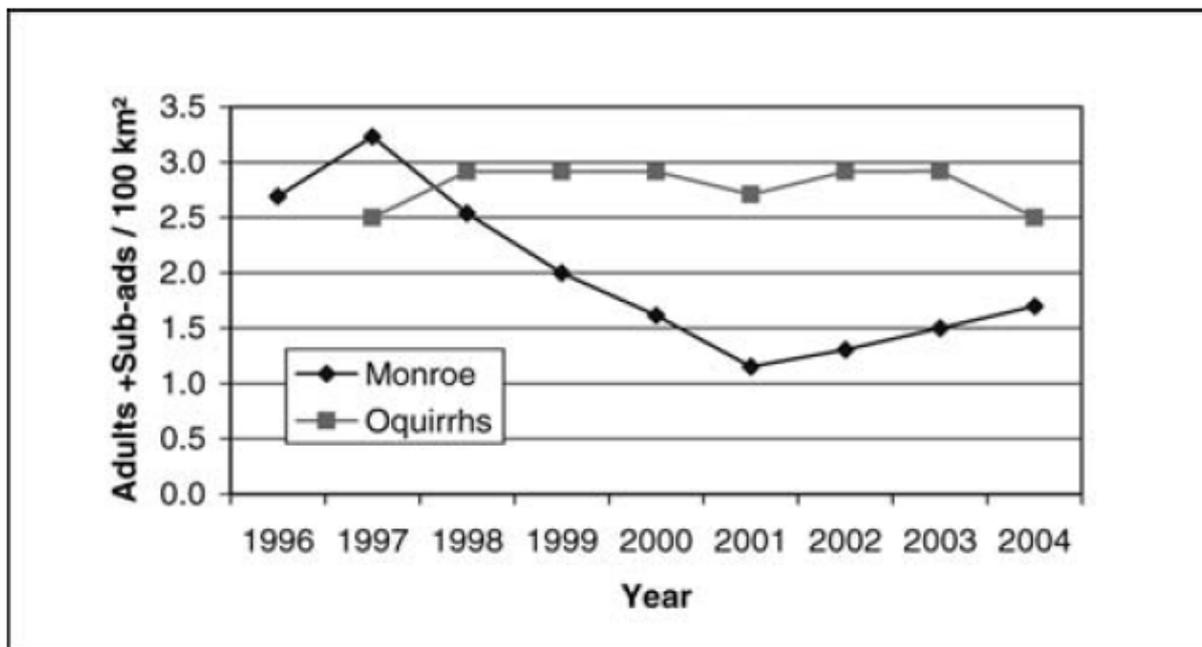
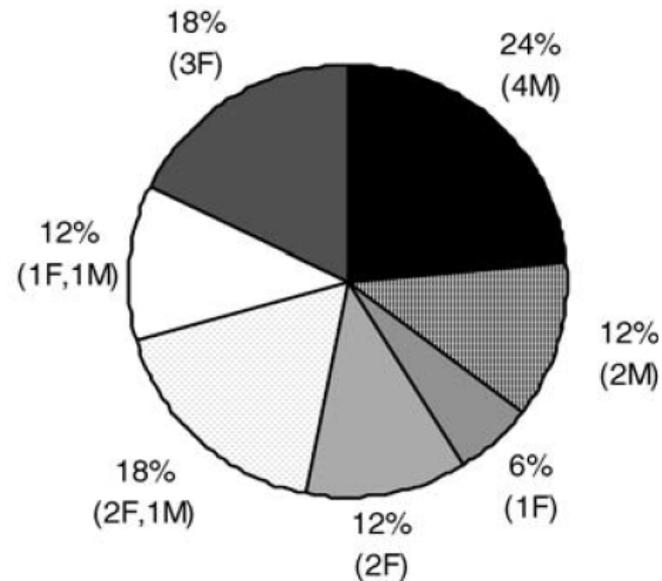
Urban areas



Monroe Mountain



Oquirrh Mountains



Ecological traps:

when good animals choose bad habitats

ecological trap = a low-quality habitat that is preferred over sources

		Habitat quality	
		high ($\lambda > 1$)	low ($\lambda < 1$)
Habitat selection response	chosen	source	trap
	avoided	source	sink

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