

# Status and Distribution of White-tailed Jackrabbits in the Tahoe Basin



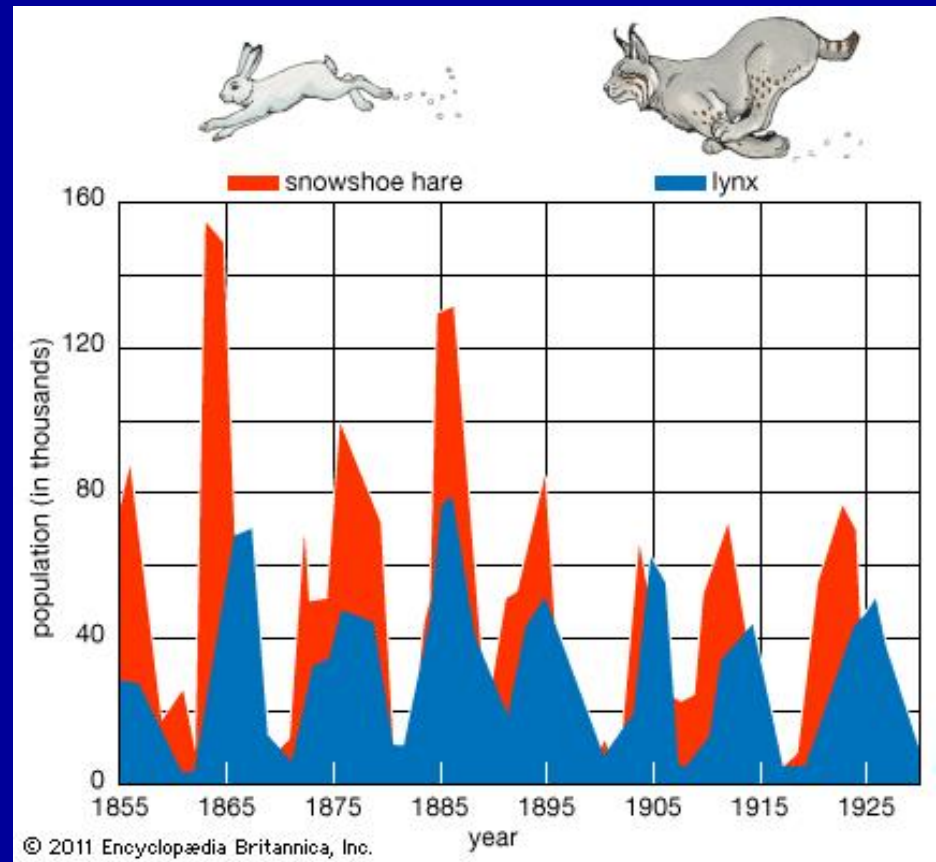
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Science

# Montane Lagomorphs

- Ignored by recent monitoring efforts at Tahoe and throughout Sierra
- Hold keystone positions in shaping both vegetation structure and predator communities
- Famously fecund

# Montane Lagomorphs



# Montane Lagomorphs



# Montane Lagomorphs

- Pika (*Ochotona princeps*)
- Nuttall's Cottontail (*Sylvilagus nuttallii*)
- Snowshoe Hare (*Lepus americanus tahoensis*)
- Black-tailed Jackrabbit (*L. townsendii*)
- White-tailed Jackrabbit (*L. californicus*)

# White-tailed Jackrabbits

- Large, alpine jackrabbit
- Prefers open habitat
- Formerly widespread and common
- Pop. now fragmented and apparently declining drastically
- Considered extirpated from Tahoe Basin (USFS-LTBMU, NDOW)
- No documented Tahoe records for decades





# White-tailed Jackrabbits



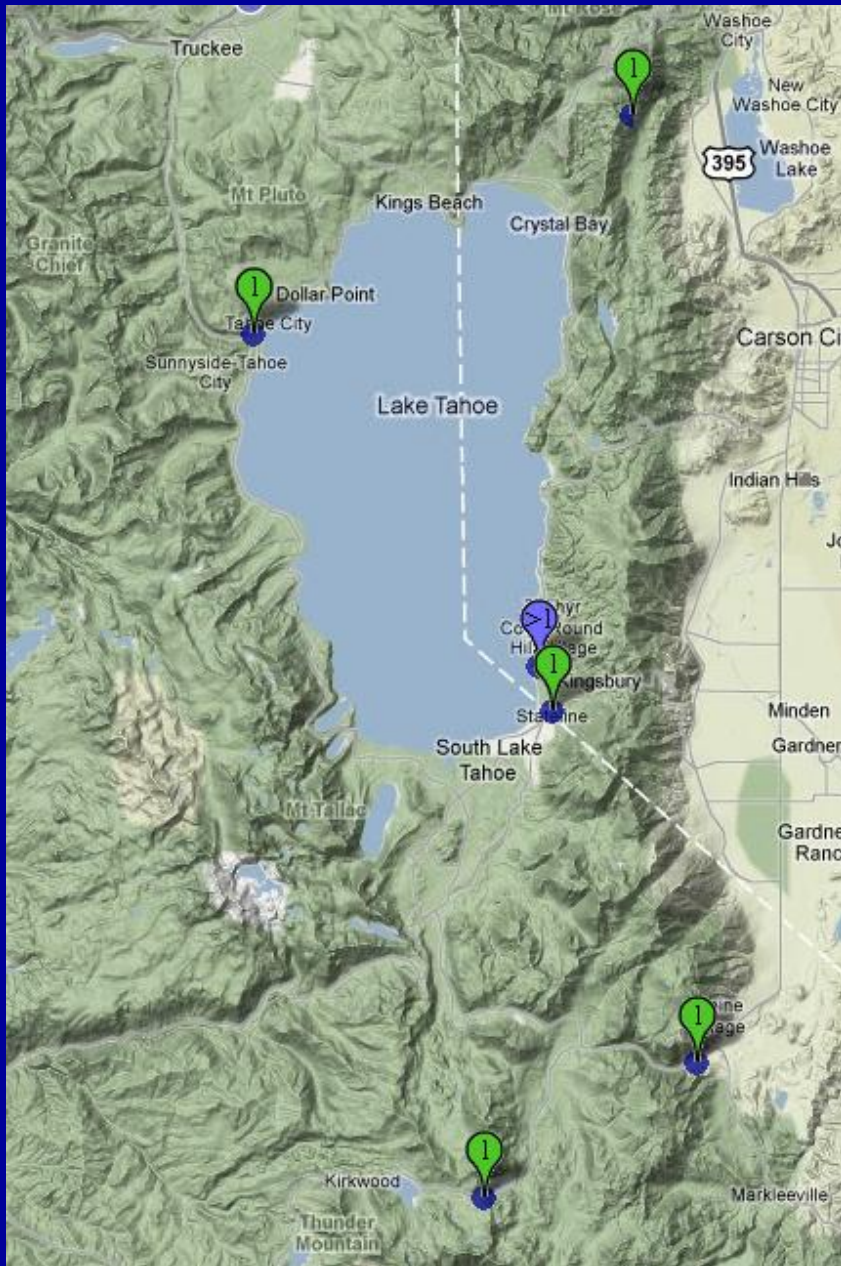
# White-tailed Jackrabbits

- Why no records?
  - High elevation
  - Cryptic and shy
  - Nocturnal
  - Confusion with Snowshoe Hare
  - Nobody's been looking
- Restricted to higher elevations
  - “Close to or above timber line”
  - Mostly above 8500’
- Potentially impacted by global climate change



# White-tailed Jackrabbits

- Objectives
  - Confirm and document persistence of species in Tahoe
  - Document baseline distribution
  - Estimate population within region
  - Identify habitat associations
- Methods
  - Diagnostic sign
    - Pellets
    - Tracks
  - Camera trapping
    - Trailmaster (film)
    - TrophyCam (digital)
  - Direct Observation



# Specimen Record

- “Tahoe City”
- “Edgewood”
- “3 mi, S. Mount Rose, 8500 feet”
- “Woodfords
- “Hope Valley, 5270 feet”
- Round Mound - 1927

# Sign

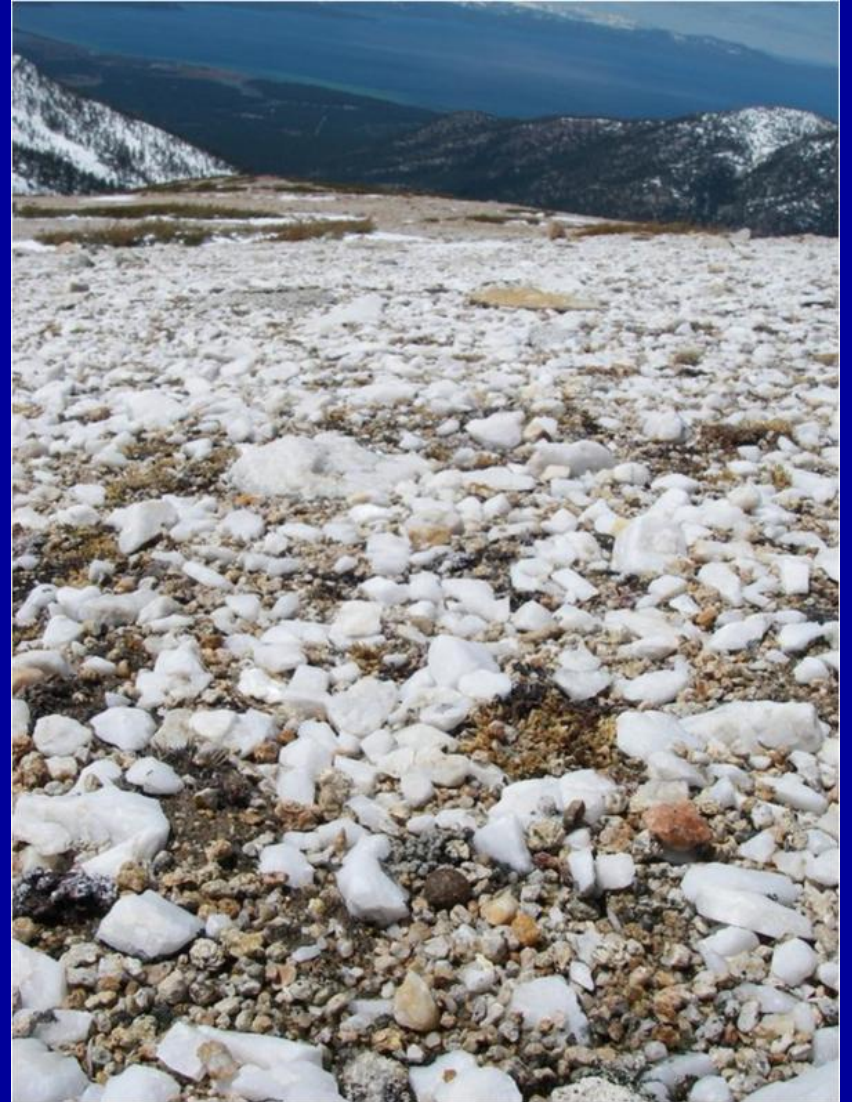
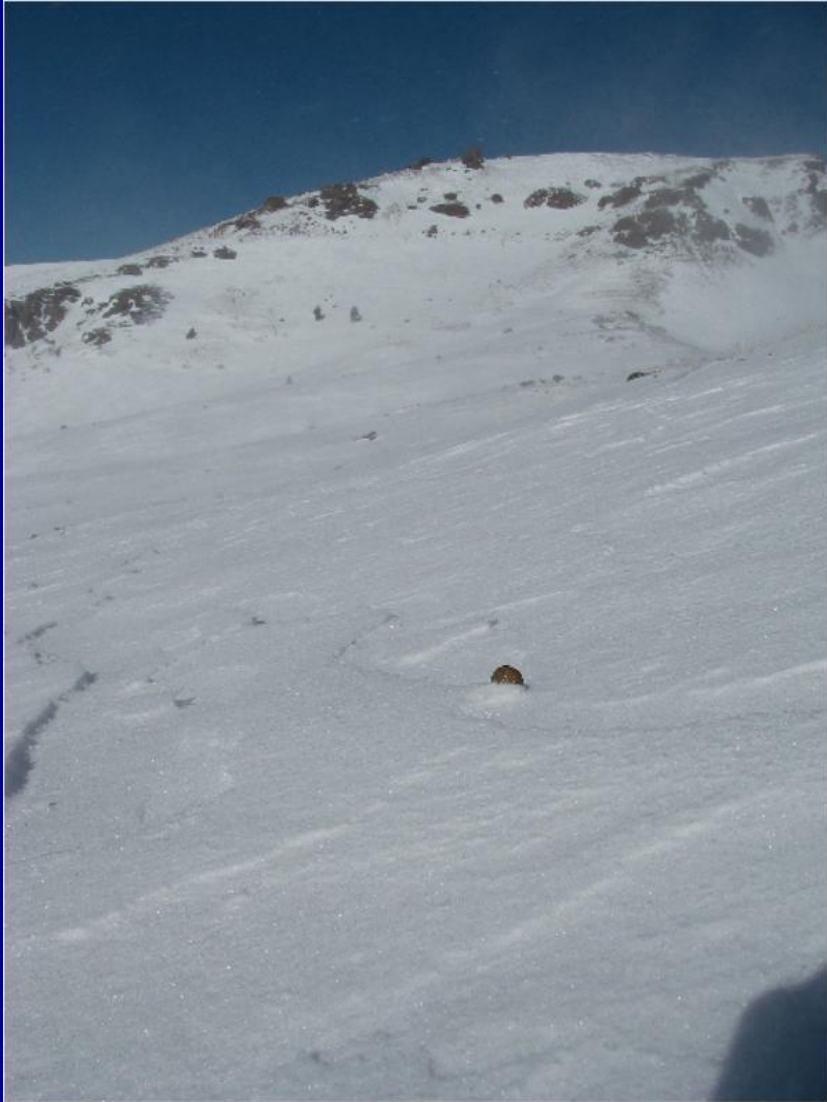


# Sign





# Sign



# Sign





# Sign





# Sign



# Sign





# Black-tailed Jackrabbit!



# Sign



# Complications





# Complications



Bushnell

03-06-2011 18:35:37

# Complications





# Complications



# Complications



# Why Winter?

- Easier to find tracks and pellets
- Less cover = more concentrated animals
- Less by-catch
- Easier backcountry travel





**Bushnell**

03-27-2011 04:01:08





**Bushnell**

01-02-2010 09:50:37







**Bushnell**

02-18-2010 15:26:47



**Nuttall's Cottontail**



**White-tailed Jackrabbit**









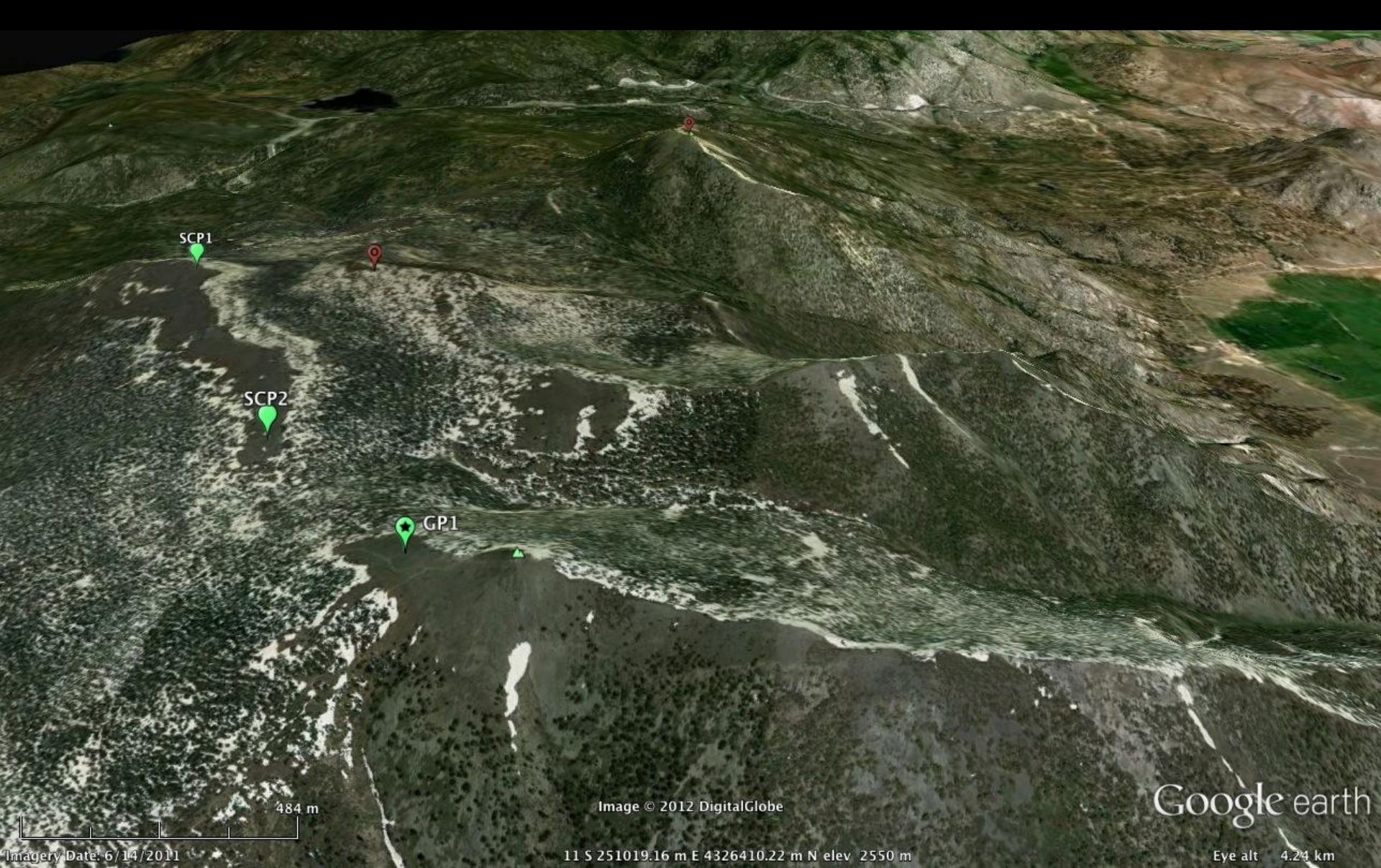
# Spatial and Temporal Patterns

- Habitat associations conformed to expectations
  - subalpine and alpine slopes and flat-topped ridges
- Soil type may play a role
  - very little evidence in sandy, decomposed granite
- Dominant vegetation was consistent
  - *Artemisia tridentata*
  - *Leptodactylon pungens*\*
  - *Holodiscus* sp.
  - *Chrysothamnus* sp.
  - *Pinus albicaulis*
  - *Juniperus occidentalis*

# Spatial and Temporal Patterns

- Greatest apparent densities associated with largest expanses of preferred habitats
- Animals may move downslope in winter where it is easy to do so
- Limits to dispersal
- Metapopulation dynamics?





SCP1

SCP2

GP1

484 m

Image © 2012 DigitalGlobe

Google earth

Imagery Date: 6/14/2011

11 S 251019.16 m E 4326410.22 m N elev 2550 m

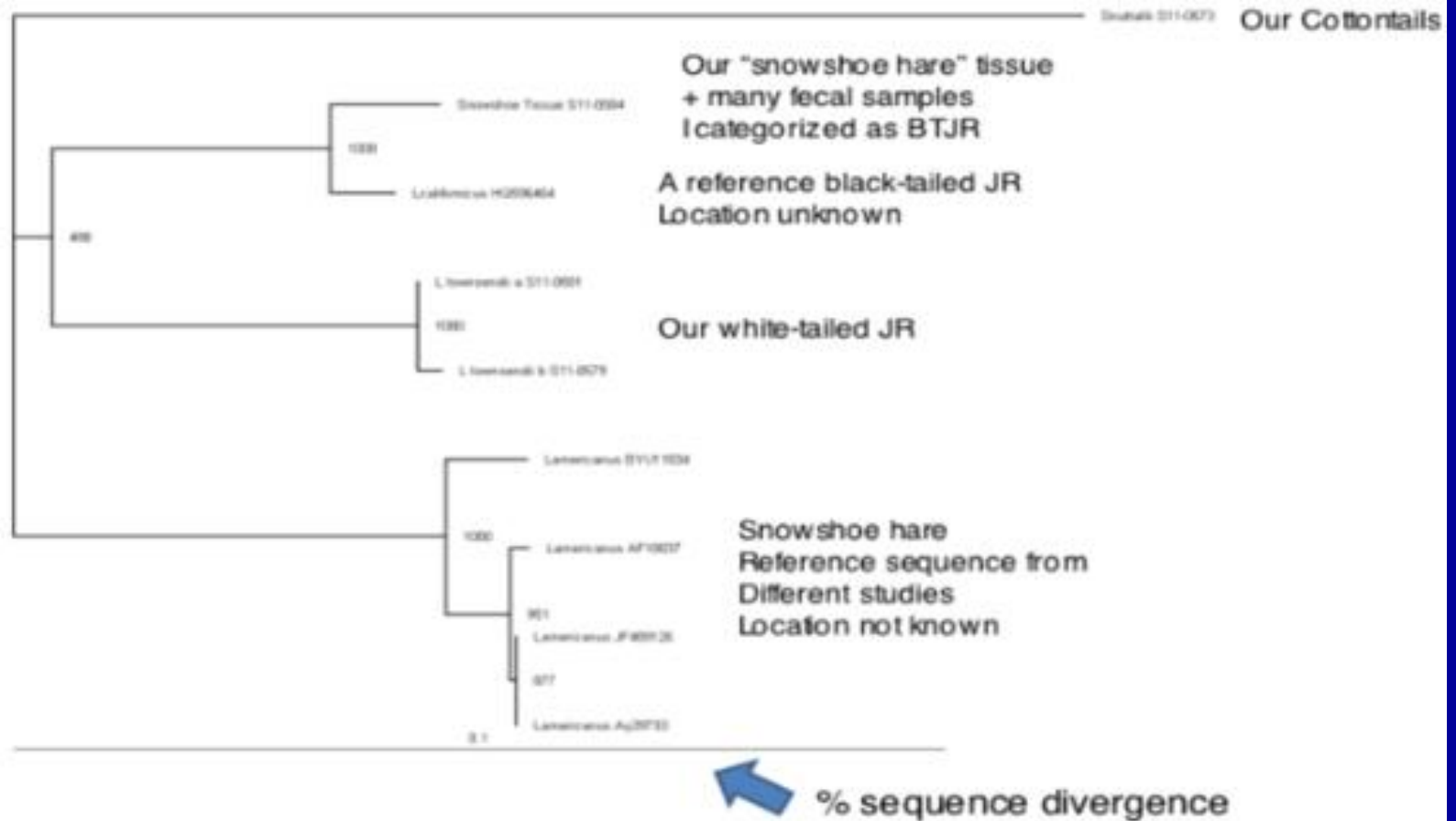
Eye alt 4.24 km

# Pellet Surveys

- Confident Species ID w/ DNA techniques
- Easier to randomize sampling
- More efficient, less dependent on cooperative weather
- Population Estimates
  - Pellet Counts
  - Genetic Techniques
- Connectivity of population(s)



# DNA analysis of pellets



## Many Thanks To:

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