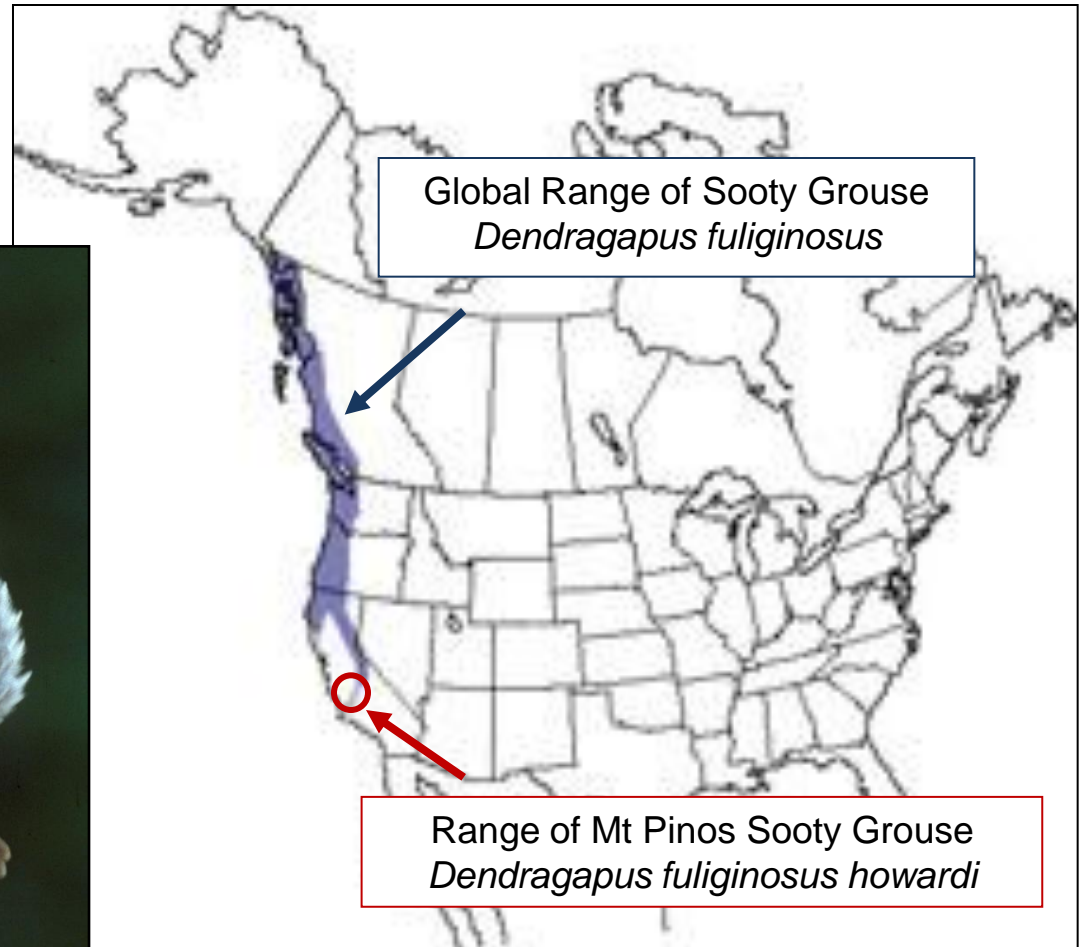


Regional Extirpation of Mount Pinos Sooty Grouse



An endemic California subspecies

Knowledge prior to surveys:

Not rare north of Kern Gap

In contiguous forest cover

Rare or extinct south of Kern Gap

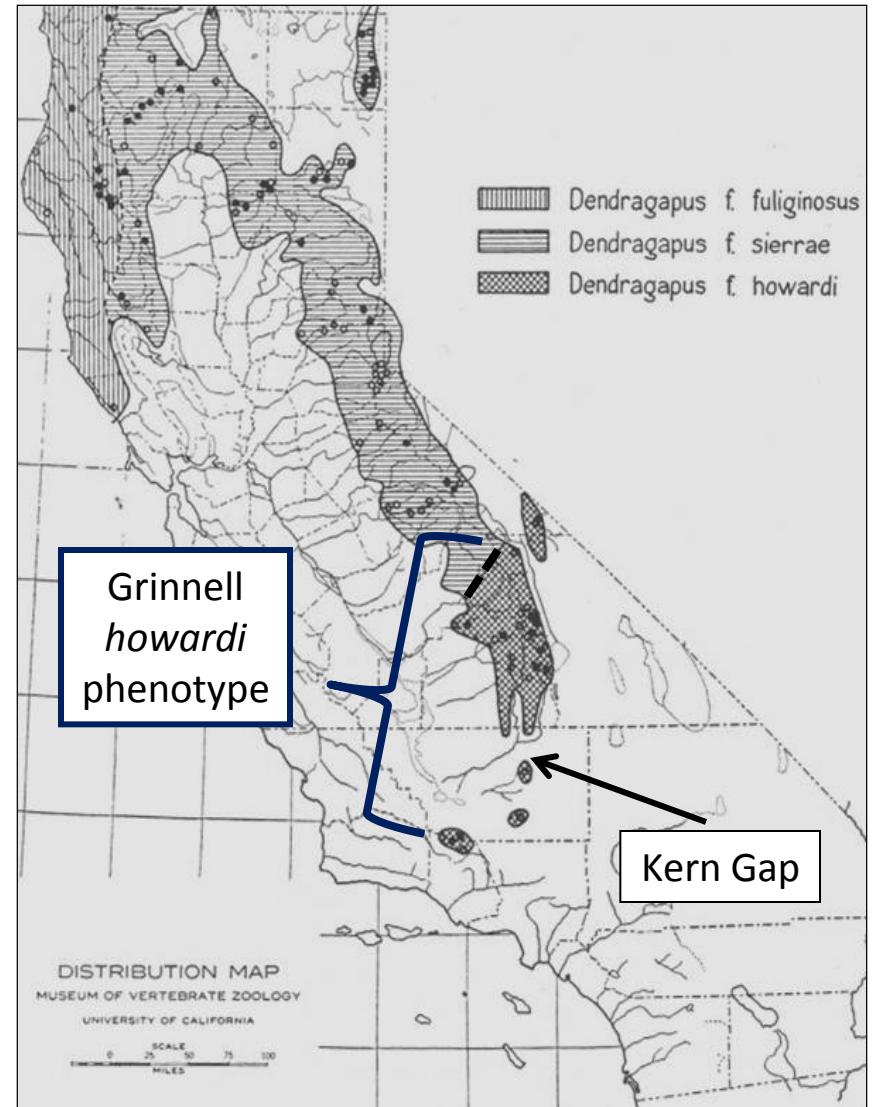
On habitat islands

Habitat:

Open montane forest , ~moist

North-tending slopes >1800 m

Old forest structures, big firs



Published timeline

1891 - first observed on Mt Pinos

1923 - designated a unique subspecies

1928-65 - reports claiming extreme rarity @ Mt Pinos

1978, 1979, 1988-1992 - surveys @ Mt Pinos fail to detect

1992 - last well-substantiated sighting on Mt Pinos

2008 - designated a California Bird Species of Special Concern
(including northern population segment)



Overall ***survey area***:

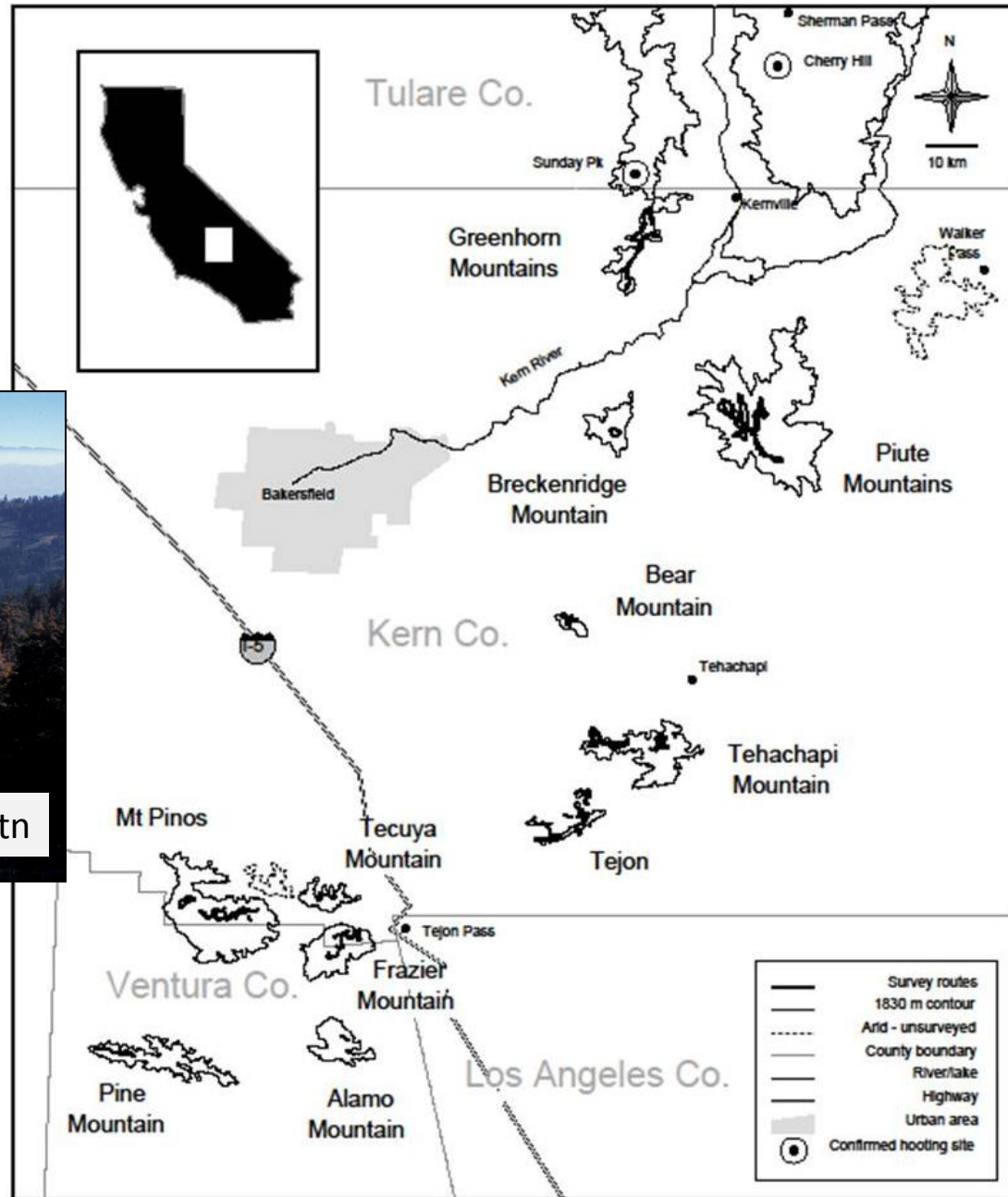
~125 km north of LA

“Sky Islands” of so-cent CA
(Kern & Ventura Counties)



11 ***study areas***:

1830 m (6000 ft) contour



Methods

Survey track placement:

Upper north slopes

Large white firs (*Abies*)

Timing:

Peak hooting

15 April - 31 May

Years: 2002-2005, 2009

Survey procedure:

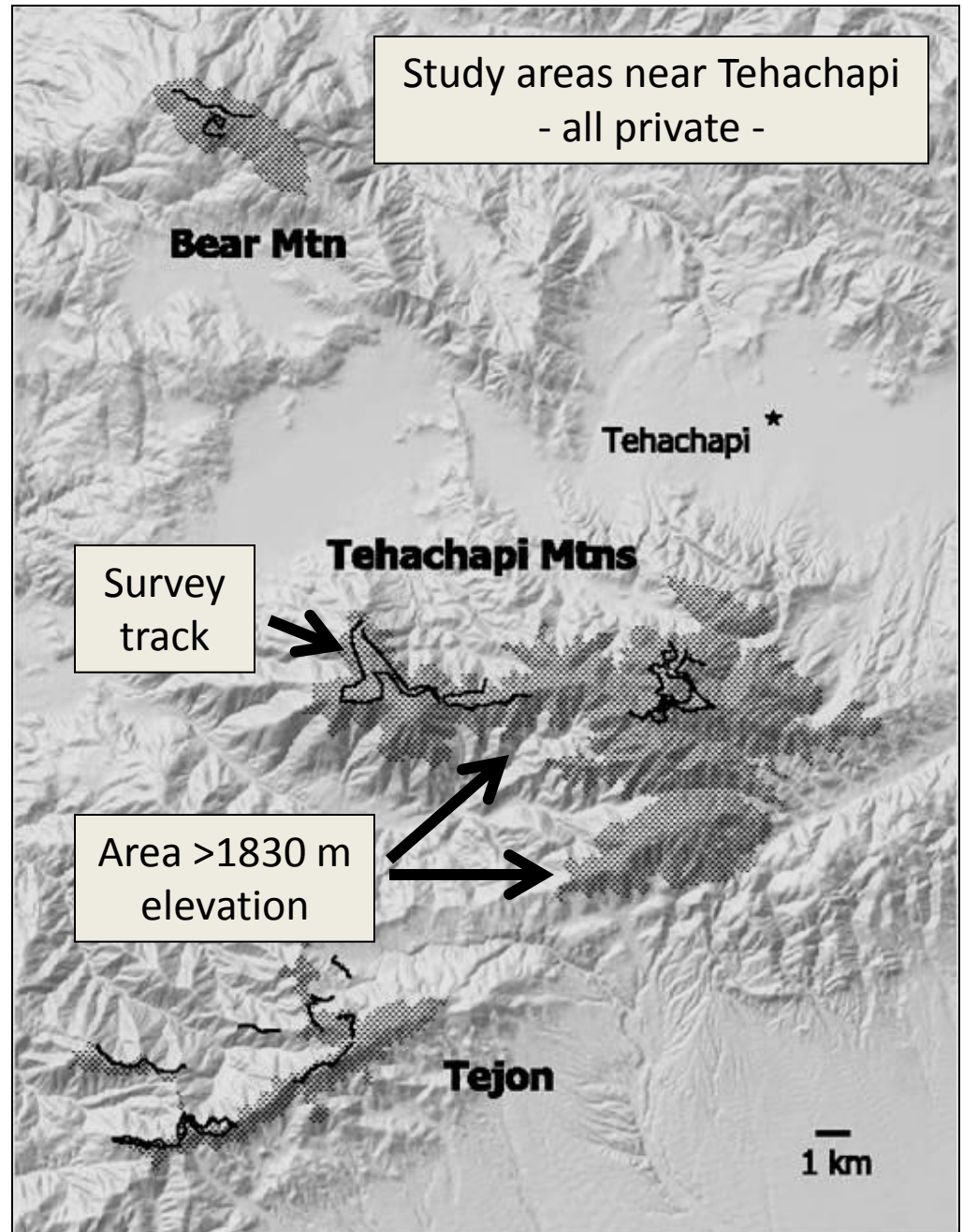
Walk track

Look for feces & feathers

Stop every 300-500 m

Listen

Broadcast female call



Results

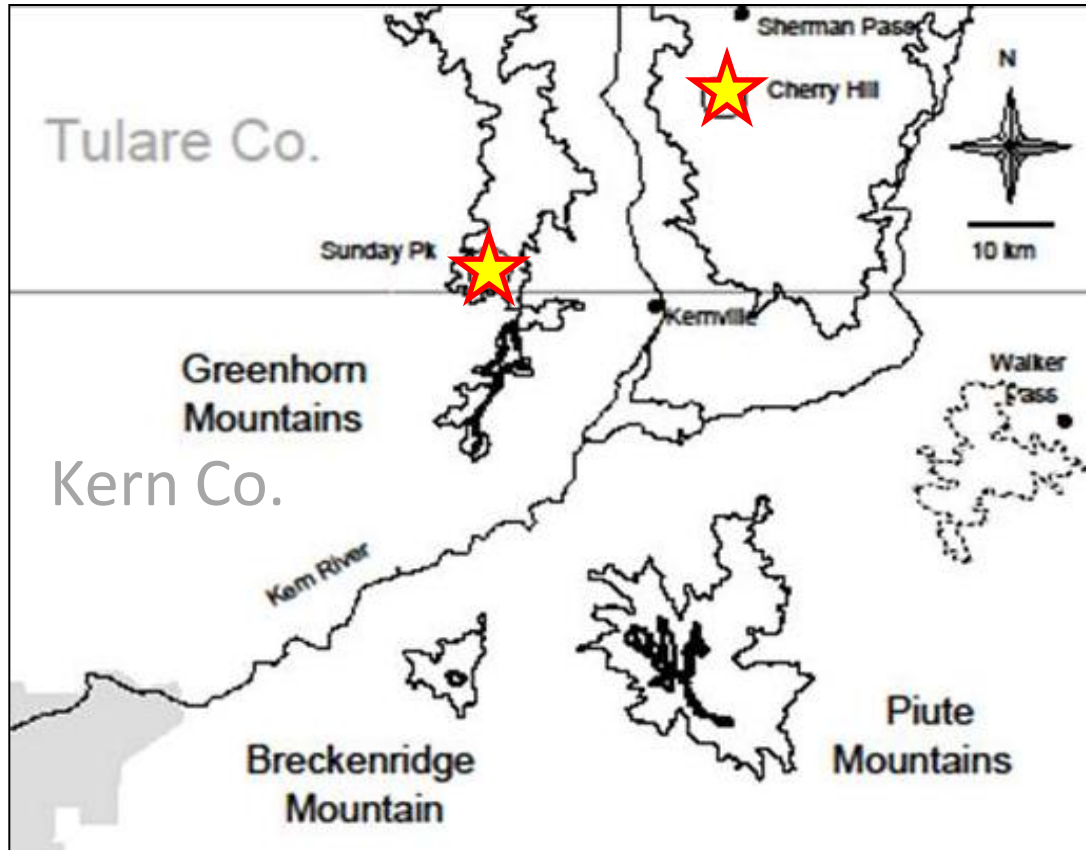
Conducted 214 km (133 mi) of surveys

No vocalizations, feathers, or fecal droppings on sky islands

Did detect hooting males 4 & 26 km north of survey area

Belong to “mainland” Sierra Nevada population

Southernmost confirmed SOGR breeding sites



Conclusions

MPSG has probably been extirpated from the sky islands

If silent birds were present, not a viable breeding population

No credible sightings since 1992

Degraded habitat condition, especially old forest elements



Grouse everywhere? (Piute Mtns)

Possible scenario for decline

Ancestral Sooty Grouse arrived in so. CA ~50,000-100,000 y.b.p.

Habitat widespread during cool period ~1,500-4,000 y.b.p.?

Droughts beginning ~1,500 y.b.p. could have contracted range

Habitat became islands, metapopulation system developed

Intermediate islands might have been critical for movement

Early 20th century

Present on Pinos, Tehachapi, & Piutes – specimens collected

Status on other islands unknown

Widespread & unregulated logging, grazing, & hunting

>40 specimens collected from Mt Pinos, 1921-1933

Sawmill on Breckenridge Mtn, 1930s



Mid-late 20th century

Remnant population(s) small, isolated, vulnerable to:

- Stochastic events, both environmental & demographic

- Loss of large trees – territorial songposts

- Commercial logging

- Fire suppression led to catastrophic fires

- Housing development (private lands in Tehachapi region)

Last bout of sightings occurred in late-1970s (@Mt Pinos)

Possibly already functionally extinct

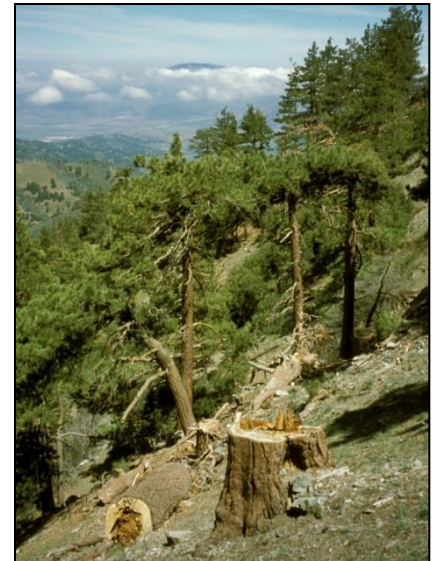
Piute Mtns, clearcut harvest



Mt Pinos, no fire >100 yrs



Tehachapi Mtns,
selective harvest



Few legal protections

Federal or State Endangered Species Act – **None** (in 70s & 80s)

The ***species*** was considered secure elsewhere

California Forest Practices Act – **None** (in 70s & 80s)

Nests of T&E species and certain predators

National Forest Management Act - **Some**

Forest Plans: must provide for “viability” of native vertebrates

LPNF’s 1st Plan (1988): treat grouse as FS Sensitive Species

Management guidelines, critical habitat designation

No evidence of follow-through

Intervention might have spared MPSG as rare local endemic

But considered a “marginal” subpopulation at the time:

~Sierra Sooty Grouse in poor habitat, therefore rare

Responsible agencies had other priorities

Prospects for natural recolonization

Not good

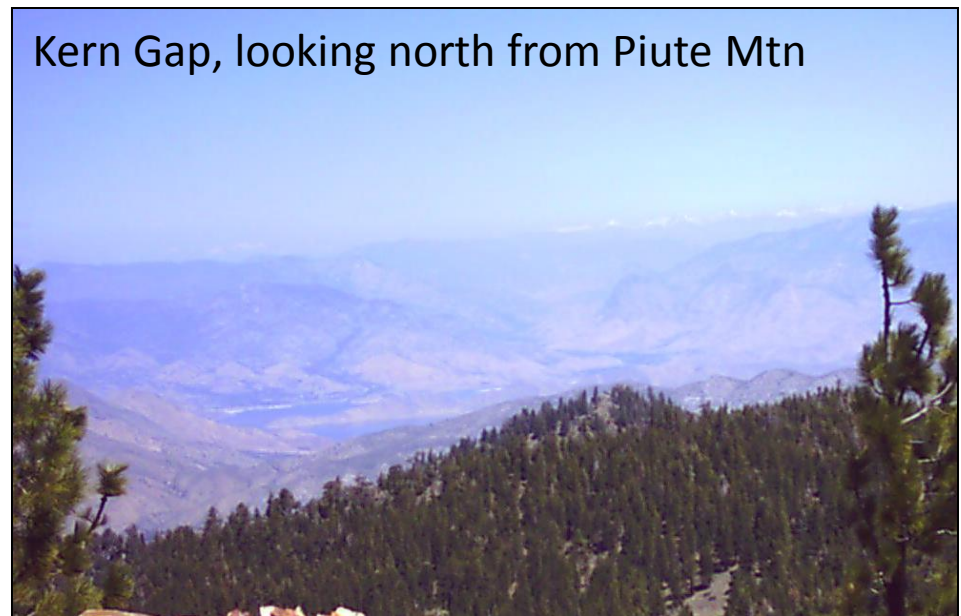
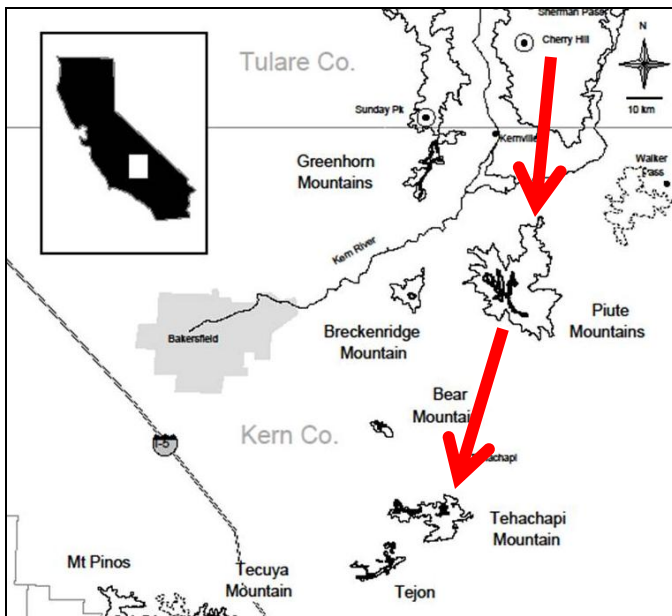
Habitat degradation continues

1st major steppingstone, Piute Mtns, burned in 2008

2nd major steppingstone, Tehachapi Mtns, low-dens. housing

Southward emigration might be unprecedented

mtDNA: little or no historic gene flow



Prospects for reintroduction

Maybe impossible

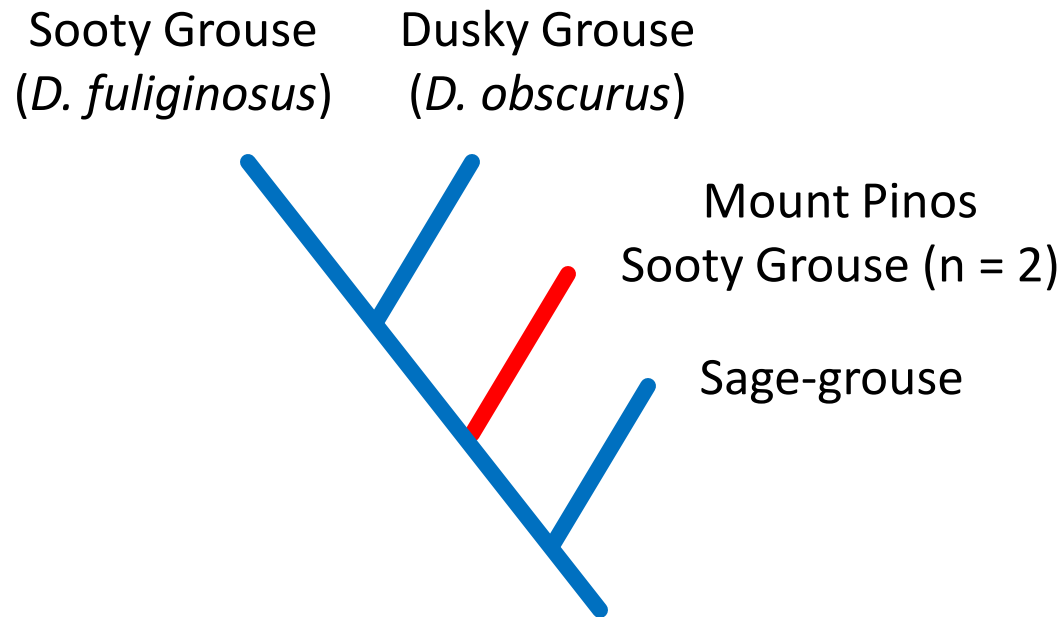
Ongoing mtDNA studies:

Samples from Mt Pinos: unique, previously unrecognized species

Samples from So. Sierra Nevada: *D. f. sierrae* haplotype

Appropriate genetic source appears to be unavailable

Further genetic work may confirm MPSG is an extinct species



Update, May-June this year:

Single male discovered hooting in s. Greenhorn Mtns
7.5 km south of southernmost breeding site

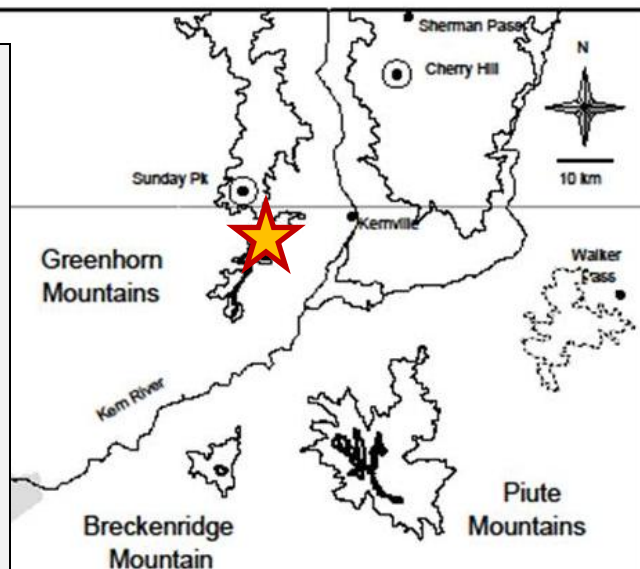
Attempt to re-colonize?

Habitat disturbed - "sawmill ridge"

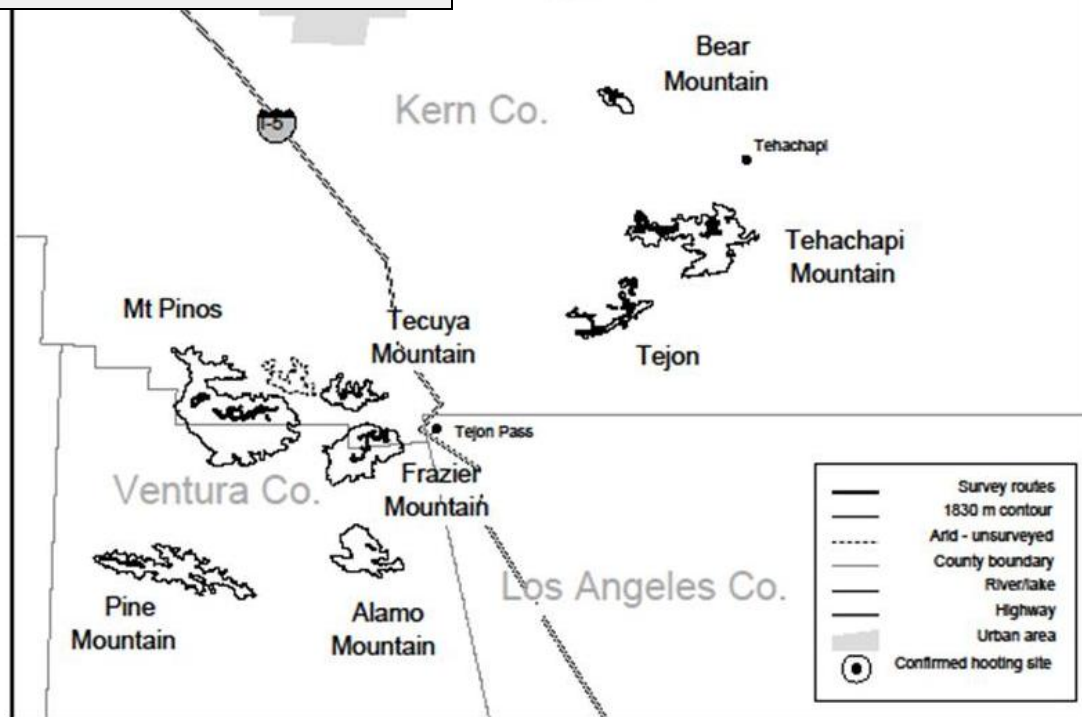
Nearly connected to north

North of Kern Gap

Sierra haplotype



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Support

Santa Monica College

California Department of Fish and Game

Field help, access & other logistics

Keith Axelson, Bob Barnes, Teresa Benson, Mike Foster,
Rick Howard, John Kelly, Larry Layne, Clark Moore,
Meenakshi Nagendran, Joe Sovinsky, Michael White