When things go wrong: Depredation causes and context

This talk has been adapted from its original version to focus on content rather than presentation

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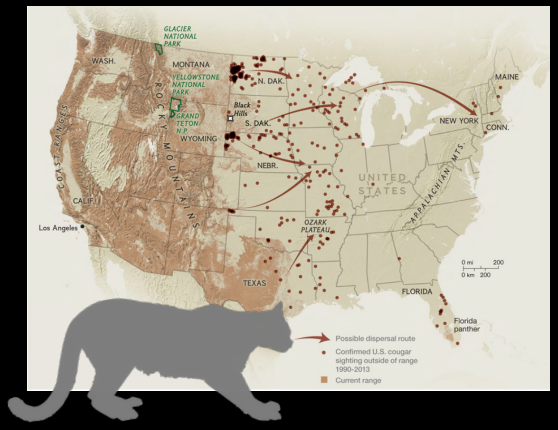
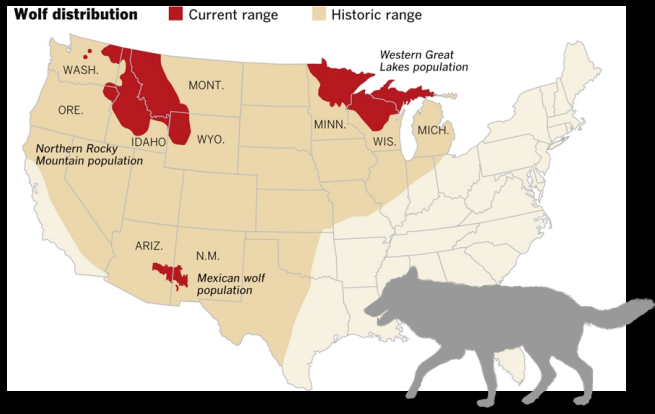
Current Context





Historically, people have had a troubled relationship with carnivores. Our traditional practice was to shoot animals that threatened our livelihoods by eating our livestock More recently, attitudes have shifted and we've realized that they are an important part of the landscape. There is an unprecedented tolerance for carnivores, and now many of the populations that we nearly wiped out or did wipe out are making recoveries.

The ESA, regulating hunting, removing bounties, and increasing habitat preservation have helped wolves, mountain lions, and grizzly bears recover in parts of their historic ranges across the U.S.

For this presentation, we'll focus on mountain lions in California.

Why does the population seem to be increasing?

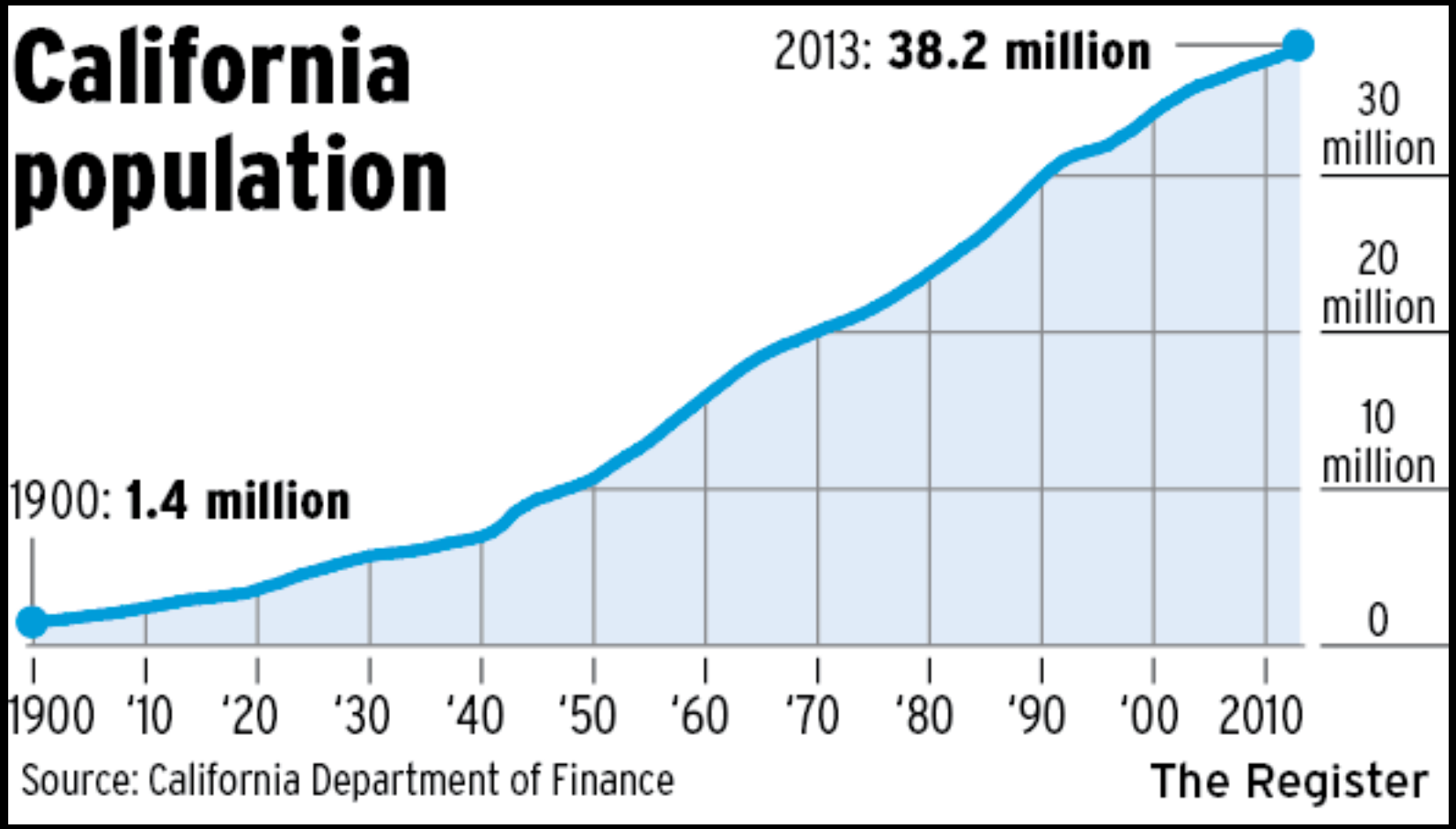
1907-1963

1990

In order to understand the current status of mountain lions, we need to look at the history.

- Traditionally, large-scale government-sponsored predator eradication was the norm
- By 1900, mountain lions were considered rare in two thirds of the U.S.
- In California, there was a bounty on pumas from 1907-1963
- Heavy hunting depressed the population and may have reduced it by up to 90%
- In the 80s and 90s, the population started to recover
- There are likely more mountain lions than there were 100 years ago, but almost certainly not more than there were historically

Why does the population seem to be increasing?



The human population has grown, so there are more people to see pumas

Why does the population seem to be increasing?

More Remote Cameras:

A couple decades ago, before home surveillance systems became common, this man would have never known that a puma hopped on top of his car

Better Information Sharing:

We hear about sightings/ encounters more often in part because social medial allows us to broadly share information.

What happens when things go wrong?

Domestic animals are inherently more vulnerable than wild prey.

We have seen cases where mountain lions kill multiple goats or sheep in one night and not eat them, what then?

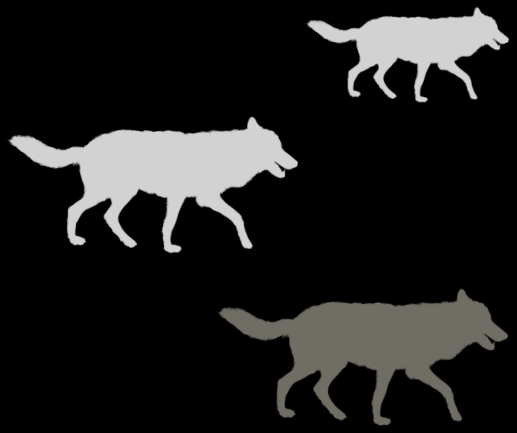
This is likely a case of evolutionary mismatch: mountain lions did not evolve for a situation in which their prey cannot escape. In nature, when they kill a deer, any other members of the herd flee. In a pen, remaining members may repeatedly trigger the mountain lion's predator instinct, even in situations where the mountain lion has already killed sufficient food.

Why not use lethal control in these situations?

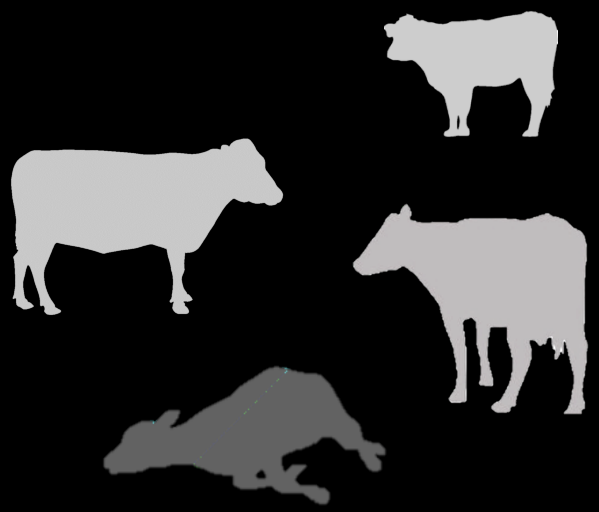
In short, it could make the problem worse.

- Carnivore social structure keeps the population steady
- Removing a dominant individual may create a social vacuum filled by multiple younger individuals
- This could increase the number of carnivores in a given area
- These younger individuals are less experienced and could cause more depredations

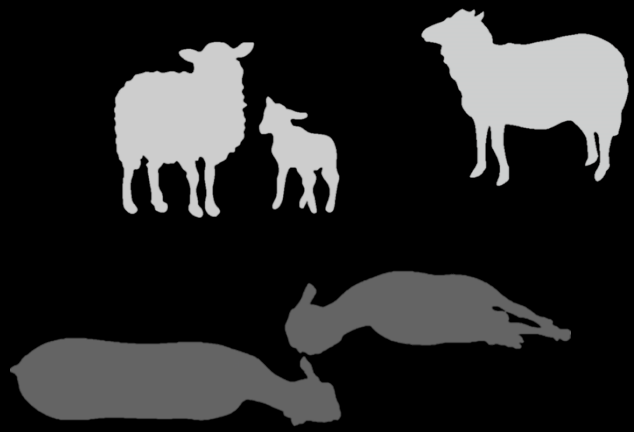
Lethal control



For each wolf killed, researchers saw a +4-6% increase in conflict



For each mountain lion killed, researchers saw a +36-240% increase in conflict



Fencing

Electronet

Permanent Electric

Temporary Electric

Fencing has been a traditional tool use to avoid predation, but unfortunately this is not terribly effective with mountain lions.

Mountain lions are skilled climbers and good jumpers, which means they can scale nearly any type of fence.

Some people have had good luck by combining two sets of electric fencing: an electronet plus an additional hot wire 3 to 4 feet around the outside perimeter. Setting the perimeter fence any closer than 3 feet is too close and mountain lions may be able to leap over both fences at once.

If you are protecting against coyotes, keep in mind that an adult coyote can squeeze thru a 4 inch by 6 inch opening

Preventative Tools: Livestock Guarding Animals

Dogs

One of the most effective tools for open range

-Protect stock without displacing predators (don't shift depredations to neighboring allotments)

- May increase grazing efficiency
- Effective on all types/sizes of operations
- Dogs need to be properly trained

Donkeys

More effective at deterring coyotes, dogs and foxes than mountain lions

- Typically cheaper than dogs
- Most effective in pastures under 600 acres/fewer than 400 animals
- Eat the same forage as livestock
- Must remove donkeys during birthing season
- Must not have access to rumensin

Llamas

Better tool for protecting against coyotes than pumas

- Same dietary requirements as ruminants
- Can be effective on small to mid-sized operations (250-300 head on 250-300 ac pastures)
- Single llamas work best

Reference: Andelt 2004

Frightening Devices

Frightening lights

Newest class of tools that work by making your operation unpredictable to carnivores, novel stimuli frighten them away.

These are likely most suitable for short term, small scale use, as each of these has limited reach and runs the risk of habituation.

Tools that are activated by behavior rather than broadcasting a random signal are likely to be more effective.

Motion-activated speakers

Motion-activated sprinklers

Other Potential Tools

Increased human presence

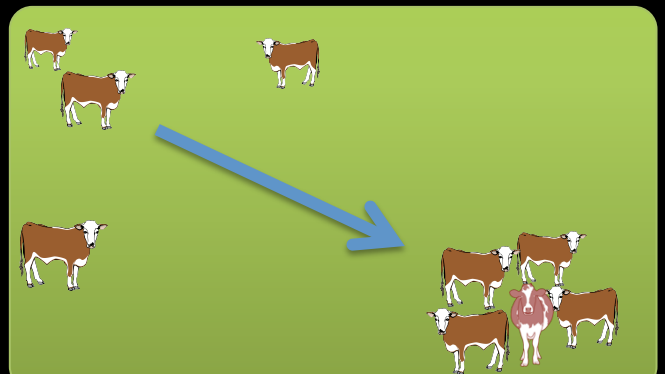
Remove attractants

Cull poor condition animals

Night Penning

Protected calving grounds

Aggregate herding



Alter production calendar

Identify hotspots

Living with Lions

Questions?

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