



COMMON QUESTIONS IN  
**COUGAR**  
COEXISTENCE

*An Educational Resource for the  
Wallis Annenberg Wildlife Crossing Project*

# **Common Questions in Cougar Coexistence**

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# Purpose



While working on the Wallis Annenberg Wildlife Crossing Project, partners through the #SaveLACougars campaign identified a critical need for communicating information about cougars, coexistence practices, and policy to the public. This resource was collaboratively developed by #SaveLACougars partners to comprehensively address questions about cougars, human-wildlife interactions, and coexistence strategies, and to serve as an educational resource to the Wallis Annenberg Wildlife Crossing Project, its partners, community members, coexistence managers, and all people with questions about cohabitating with cougars within and beyond California.

The goal of this resource is to inform, engage, and empower stakeholders living, recreating, and working in cougar habitat in Southern California surrounding the Wallis Annenberg Wildlife Crossing. Some questions and answers herein, especially concerning state and regional policy, contain information specifically pertaining to the Santa Monica Mountains, Verdugo Mountains, Simi Hills, Los Padres National Forest, and areas where cougars are a candidate species for protection under the California Endangered Species Act (CESA). However, the scientific and other coexistence strategy information included here are intended to inform any community members, wildlife managers, coexistence practitioners, stakeholders, or other interested parties wherever cougars and humans coexist. This project was funded by the National Wildlife Federation.





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The **Cougar Conservancy** offers wildlife coexistence support as an official partner of the National Wildlife Federation's **#SaveLACougars** campaign. The Cougar Conservancy provides educational opportunities for the public, outreaches to communities living and recreating in cougar habitat, and promotes science-based coexistence strategies throughout the region.



**Wallis Annenberg**  
*Wildlife Crossing*

The **Wallis Annenberg Wildlife Crossing** is a public-private partnership. The project's core partner team includes Caltrans, the National Park Service, the Santa Monica Mountains Conservancy - Mountains Recreation & Conservation Authority, the Resource Conservation District of the Santa Monica Mountains, Living Habitats LLC, and the National Wildlife Federation.



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# Sightings & Observations



# Sightings

## Definition Of Sighting

### Q: What is a wildlife sighting?

A wildlife sighting occurs when someone directly witnesses a wild animal or indirectly witnesses its presence using a trail camera.

## Reporting Observations

### Q: How do I report a cougar sighting?

If you encounter a cougar and wish to report the sighting, report it to the National Park Service (specifically, Santa Monica Mountains National Recreation Area, which has been studying mountain lions in the Santa Monica Mountains, including Griffith Park, the Simi Hills, Santa Susana Mountains, and the Verdugo Mountains since 2002). You can send an email to **SAMO\_mountainlions@nps.gov** or call **1-805-370-2317**. When reporting, please include the location, date, and time of the sighting, and any photos or video you may have.

For sightings outside of the above-mentioned areas, you can report via the California Department of Fish and Wildlife's (CDFW) **Wildlife Incident Reporting** (<https://apps.wildlife.ca.gov/wir>) system, or to the **Cougar Conservancy** (<https://cougarconservancy.org/assistance>).

### Q: How do I report other wildlife sightings?

You can report wildlife sightings using the California Department of Fish and Wildlife's (CDFW) **Wildlife Incident Reporting** (WIR) system, and to the CDFW Region 5 office by calling **1-858-467-4201**.

For bobcat sightings in the Santa Monica Mountains, including Griffith Park, the Simi Hills, Santa Susana Mountains, and the Verdugo Mountains, especially animals that appear to be sick with mange, email National Park Service biologist Joanne Moriarty at **joanne\_moriarty@nps.gov**.

You can also contribute your sightings to non-governmental community science platforms such as **iNaturalist** or a variety of alternative applications. Submitting a record of your sighting can help scientists around the world use your data.

California Department of Fish and Wildlife [CDFW]. 2021. Wildlife Incident Reporting (WIR). <https://apps.wildlife.ca.gov/wir>. Accessed 14 Sep 2021

Cougar Conservancy. 2021. Assistance. <https://cougarconservancy.org/assistance>. Accessed 14 Sep 2021.

Naturalist. 2021. How It Works. <http://inaturalist.org>. Accessed 14 Sep 2021.



# CDFW Regulations, Policies, & Law Enforcement

The goal of this section is to increase public understanding on policy as it relates to California's cougars.

## CDFW Regulations

### Legal Status Of Cougars

#### Q: What is the legal status of cougars in California?

Cougars have been legally classified as a “specially protected mammal” since **Proposition 117** was passed in 1990. It is illegal to **take**, injure, possess, transport, import, or sell a cougar or any part of or product made from a cougar because they are specially protected.

The California Department of Fish and Wildlife (CDFW) is prohibited from developing hunting seasons or hunting quotas for cougars due to their legal status.

In 2020, the Fish and Game Commission designated cougar populations located in Southern California and along the Central Coast as candidate species under California's Endangered Species Act (CESA). Under CESA, species classified as a candidate species are afforded the same protection as listed species.

CDFW is anticipated to complete their status review of the candidate populations in 2023. The Fish and Game Commission will then vote on this historic decision in 2023.

*California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.*

*California Fish and Game Commission [CFGC]. 2021. Mountain Lion. <https://fgc.ca.gov/CESA#ml>. Accessed 14 Sep 2021.*

*Center for Biological Diversity. 2021. Saving the California Mountain Lion. <http://savecalifornionalions.org/>. Accessed 14 Sep 2021.*

#### Q: Why is hunting cougars illegal in California?

A majority of Californians voted to reject the hunting of cougars based on scientific consensus and cultural values in 1990 with the passing of **Proposition 117**. Numerous studies have demonstrated there are higher rates of human-cougar conflicts where hunting cougars is legal. Cougar populations in California are not increasing due to lack of hunting. Cougar population densities are self-regulated through strong within-species competition.

*Beausoleil, R. A., G. M. Koehler, B. T. Maletzke, B. N. Kertson, and R. G. Wielgus. 2013. Research to Regulation: Cougar Social Behavior as a Guide for Management. *Wildlife Society Bulletin* 37:680-688.*

*California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.*

*Maletzke, B. T., R. Wielgus, G. M. Koehler, M. Swanson, H. Cooley, and J. R. Alldredge. 2014. Effects of hunting on cougar spatial organization. *Ecology and Evolution* 4:2178-2185.*

*Peebles, K. A., R. B. Wielgus, B. T. Maletzke, and M. E. Swanson. 2013. Effects of remedial sport hunting on cougar complaints and livestock depredations. *PLoS ONE* 18:1-8.*

*Teichman, K. J., B. Cristescu, and C. T. Darimont. 2016. Hunting as a management tool? Cougar-human conflict is positively related to trophy hunting. *BioMed Central Ecology* 16:1-8.*



## Cougar Management

### Q: Who manages cougars in California and how are they managed?

The California Department of Fish and Wildlife (CDFW) has a public trust responsibility to protect and conserve California's fish and wildlife.

CDFW strives to conserve cougar populations for their ecological and intrinsic values. To meet this goal, staff and agency partners work to:

- Maintain genetically diverse and demographically viable populations;
- Minimize conflicts between cougars and humans (e.g., public safety events, property damage);
- Identify and protect important habitats; and
- Improve public awareness of cougars; and
- Identify and research emerging issues that threaten cougar populations or the habitats upon which they depend.

*California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.*

## Poaching

### Q: What is poaching and how does it impact California wildlife?

Poaching is defined as the illegal **take** of fish and wildlife. Poaching a cougar is any take of a cougar not officially permitted by the California Department of Fish and Wildlife through the proper channels. Poachers devastate the state's natural resources by breaking laws designed to assure proper wildlife management and species survival, and its full impact on California's ecology is impossible to gauge.

An adult male cougar M-294, otherwise known as "Scar" and "El Cobre," from the endangered subpopulation within the Santa Ana Mountain range was illegally shot and killed in June of 2021, presumably in retaliation for several widely publicized depredation events. The loss of a mature male with an established territory such as Scar can have devastating consequences for a cougar subpopulation as vulnerable as the one in the Santa Anas, including the possibility of local male extinction as well as the potential for increased human-cougar conflicts with multiple dispersing male cougars competing to fill the vacuum left by a dominant individual.

*California Department of Fish and Wildlife [CDFW]. 2021. CalTIP - Californians Turn in Poachers and Polluters. <https://wildlife.ca.gov/Enforcement/CalTIP>. Accessed 14 Sep 2021.*

*California Department of Fish and Wildlife [CDFW]. 2021. CESA to the Federal Endangered Species Act. <https://wildlife.ca.gov/Conservation/CESA/FESA>. Accessed 14 Sep 2021.*

## Q: How do I report a poacher?

If you witness a poaching, polluting incident, or any fish and wildlife violation, or have information about such a violation, immediately dial the toll free CalTIP number **1-888-334-CALTIP**, 24 hours a day, seven days a week. Anyone with a cell phone may send an anonymous tip to the California Department of Fish and Wildlife (CDFW) by texting “CAL TIP”, followed by a space and the message, to 847411 (tip411).

Information from the call is relayed to the CDFW region where the offense occurred and an investigation is undertaken locally. If the information supplied by the caller results in an arrest the caller becomes eligible for a reward. (Rewards up to \$1,000 have been paid.) The case is then reviewed by a volunteer citizen’s group known as the “**CalTIP Rewards Committee.**”

California Department of Fish and Wildlife [CDFW]. 2021. CalTIP - Californians Turn in Poachers and Polluters. <https://wildlife.ca.gov/Enforcement/CalTIP>. Accessed 14 Sep 2021.

## Q: What are the legal consequences of poaching cougars?

A person who illegally takes, possesses, imports, exports, sells, purchases, barter, trades, or exchanges a cougar, or part of a cougar, for profit or personal gain, is guilty of a misdemeanor punishable by a fine of not less than \$5,000 nor more than \$40,000, or imprisonment in the county jail for not more than one year, or by both that fine and imprisonment.

If a person is convicted of a second or subsequent violation, that person shall be punished by a fine of not less than \$10,000 nor more than \$50,000, or imprisonment in the county jail for not more than one year, or by both fine and imprisonment.

A person that illegally takes a cougar belonging to subpopulations with candidate status under California Endangered Species Act will be fined \$25,000 to \$50,000, imprisoned for one year, or both. Subsequent violations will result in imprisonment for up to five years.

California Legislative Information. 2021. AB-645 Fish and wildlife: poaching: penalties: probation period. [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=202120220AB645](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB645). Accessed 14 Sep 2021.

California Department of Fish and Wildlife [CDFW]. 2021. Choosing the right CESA permit. <https://wildlife.ca.gov/Conservation/CESA/Permitting/Permits>



*P-38 was first caught in March 2015. This large male was killed when he was illegally shot in the head in June 2019.*

# CDFW Policies

## Definition Of Take

### Q: What is the legal definition of take?

**Take** is an umbrella term that means to hunt, pursue, catch, capture, kill, or attempt to hunt, pursue, catch, capture or kill. This definition ensures that the California Department of Fish and Wildlife can maintain legal control over actions interfering with threatened, endangered and fully protected animals, which include cougars, even where those actions may not have been intended to kill or hurt the animal.

*California Department of Fish and Wildlife [CDFW]. 2021. CESA to the Federal Endangered Species Act. <https://wildlife.ca.gov/Conservation/CESA/FESA>. Accessed 14 Sep 2021.*

### Q: Under what circumstances is the take of a cougar lawful in California?

The lethal take of a cougar is only lawful 1) if a depredation permit is issued to take a specific cougar that has injured or killed livestock or pets; 2) to preserve public safety; or 3) to protect listed bighorn sheep.

The California Department of Fish and Wildlife (CDFW) has implemented a **three-step protocol** for obtaining depredation permits to provide additional protections for Central Coastal and Southern California cougar populations. This procedure requires non-lethal options to be exhausted before a permit can be issued.

Research involving the pursuit and capture of cougars is included under the legal definition of take and must be authorized by CDFW via issuance of a **Scientific Collecting Permit**.

*California Department of Fish and Wildlife. 2013. Human / Wildlife Interactions in California: Mountain Lion Depredation, Public Safety, and Animal Welfare policy. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=68271&inline>. Accessed 14 Sep 2021.*

*California Department of Fish and Wildlife. 2017. Human/Wildlife Interactions in California: Mountain Lion Depredation, Public Safety, and Animal Welfare – Amendment to Department Bulletin 2013-02. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153021&inline>. Accessed 14 Sep 2021.*

*California Department of Fish and Wildlife. 2020. CDFW Memo: Amendment to Boundaries and Permit Requirements. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=177324&inline>. Accessed 14 Sep 2021.*

*California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.*



## Definition Of Depredation

### Q: What is a cougar depredation incident?

A depredation incident involving a cougar requires that a cougar is either immediately threatening to cause damage, in the act of causing damage, or one that has already caused damage to private property, including livestock and pets.

*California Department of Fish and Wildlife. 2017. Human/Wildlife Interactions in California: Mountain Lion Depredation, Public Safety, and Animal Welfare – Amendment to Department Bulletin 2013-02. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153021&inline>. Accessed 14 Sep 2021.*

## Depredation Policy Statewide

### Q: What is CDFW’s cougar depredation policy statewide?

The following is adapted and quoted directly from the California Department of Fish and Wildlife (CDFW):

CDFW’s statewide depredation policy is to prioritize non-lethal measures for cougar conflict avoidance and remedy.

“CDFW seeks to avoid, where possible, [cougar] mortality resulting from the issuance of depredation permits. Further, staff strive to improve training, communication, transparency, and decision-making as they relate to managing human-wildlife conflicts involving cougars. It is recognized that each depredation incident may be unique”, and “staff will provide property owners technical assistance” including educational materials, site-specific options, and guidance regarding depredation permits, where applicable.

#### **Fish and Game Code Section 4802. Report of Injury to property or livestock**

#### **Fish and Game Code Section 4803. Confirmation of Report**

#### **Fish and Game Code Section 4804. Issuance of permits; Conditions**

#### **Fish and Game Code Section 4805. Authorization for pursuit after and taking of depredating cougar**

#### **Fish and Game Code Section 4806. Report of capture, injuring, or killing of cougar**

#### **Fish and Game Code Section 4807. Immediate taking of cougar encountered while injuring or killing livestock or domestic animals; Report**

#### **Fish and Game Code Section 4808. “Agent”**

#### **Fish and Game Code Section 4809. Manner of taking**

*California Department of Fish and Wildlife. 2017. Human/Wildlife Interactions in California: Mountain Lion Depredation, Public Safety, and Animal Welfare – Amendment to Department Bulletin 2013-02. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153021&inline>. Accessed 14 Sep 2021.*

*California Department of Fish and Wildlife. 2020. CDFW Memo: Amendment to Boundaries and Permit Requirements. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=177324&inline>. Accessed 14 Sep 2021.*

*California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.*



## Depredation In Proposed CESA ESU

### Q: What is the depredation policy for the cougars living in Southern California and along the Central Coast under the California Endangered Species Act (CESA)?

The CDFW's approach to depredation shifted in 2017 when its depredation policy was amended to a stepwise permit process for the Santa Monica and Santa Ana Mountains. This shift in protocol added protection for cougars in these areas, requiring non-lethal options to be explored and three depredation-by-cougar events to be confirmed by CDFW before a lethal permit can be issued.

In 2019, the California Fish and Game Commission received a petition to list six genetically distinct cougar subpopulations located in Southern California and along the Central Coast as candidate species under the California Endangered Species Act (CESA). In February 2020, the stepwise permit policy area (from 2017) was expanded from the Santa Monica and Santa Ana Mountain boundaries to include the full extent of the proposed Southern California and Central Coast boundary as set forth by CESA petitioners. In April 2020, the Commission designated the proposed subpopulations as a candidate species under CESA. Under CESA, candidate species are afforded the same protection as listed species.

A primary focus of the stepwise process is to prioritize approaches and actions that are non-lethal, in accordance with Fish and Game Code Section 4801.5, which provides that non-lethal measures shall be used when issuing depredation permits unless otherwise stated. During the stepwise process, recommended measures may include, but are not limited to: 1) remove the carcass and carcass parts of depredated animals; 2) install/repair/replace exclusion fencing and cougar-proof enclosures; 3) implement more robust animal husbandry practices; 4) deploy temporary deterrent systems; 5) use livestock protection dogs; and 6) perform hazing (e.g., use of bean bag shots).

The final decision to issue the **lethal** permit is the final step in the 3-step process, and can only be made by the California Department of Fish and Wildlife's Response Guidance Team (RGT) and not by field personnel, and only after all other options have been exhausted and found ineffective. The RGT consists of the Chief of Wildlife Branch, Chief of Law Enforcement Division, Deputy Director of Wildlife and Fisheries Division, a representative from the Wildlife Investigations Lab, Regional Manager/District Assistant Chief where the activity/incident is occurring, the Deputy Director of the Office of Communications, Education, and Outreach (OCEO), or their named designees.

California Department of Fish and Wildlife. 2020. CDFW Memo: Amendment to Boundaries and Permit Requirements. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=177324&inline>. Accessed 14 Sep 2021.

California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.

## Authority To Issue Depredation Permits

### Q: Who issues depredation permits in California?

The California Department of Fish and Wildlife (CDFW) is the agency responsible for the issuance of depredation permits to individuals reporting livestock loss or property damage caused by cougars, if CDFW confirms the depredation has been caused by cougars.

Reporting parties, such as property owners and tenants, may report suspected depredation incidents using the online CDFW **Wildlife Incident Reporting** (WIR) system. A CDFW investigator (Wildlife Biologist or Wildlife Officer) will be automatically assigned for response, based on the geographic location of the reported incident. For incidents in **Region 5**, reporting parties can call the CDFW regional office for assistance at **1-858-467-4201**.

California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.

California Department of Fish and Wildlife [CDFW]. 2021. Wildlife Incident Reporting (WIR). <https://apps.wildlife.ca.gov/wir>. Accessed 14 Sep 2021.

## Relocation Policy

### Q: What is California's cougar relocation policy?

According to the California Department of Fish and Wildlife:

“If a cougar is deemed a “No Harm-No Foul” animal and does not pose a threat, California Department of Fish and Wildlife staff will work to encourage the animal back to its nearest suitable habitat. This may occur by monitoring and/or securing the local area to allow the animal to return on its own, actively hazing the animal to deter it, or conducting a capture to relocate it.

If a cougar displays unusually bold, inappropriate or aggressive behavior toward humans, the Department will not relocate the animal because of the risk it may pose to others. If a cougar is declared a public safety threat, the Department and local law enforcement work quickly to remove any threat in the most humane manner possible.

If a cougar is considered non-releasable (e.g., due to injury, disease, habituation), the Department will work with permitted facilities and agency partners to try and find permanent placement of the animal. Most facilities, including wildlife sanctuaries and zoos, have limited space or resources to accept large wild animals for exhibit.”

Relocation must be approved by the Response Guidance Team. Location must be an approved site. Relocation requires consultation with relevant federal, state, and local government entities and private landowners as necessary.

California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.

# Law Enforcement

## Definition Of Imminent Threat

### Q: What is the definition of an imminent threat?

Imminent threat means there is a likelihood of human injury based on the totality of the circumstances as determined via field investigation by the responding law enforcement officer or Department employee.

*California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.*

## Public Safety Incidents

### Q: Who has the authority to designate a wildlife encounter as a public safety incident?

Law enforcement designates public safety incidents. Those responding to a scene could be a California Department of Fish and Wildlife (CDFW) Wildlife Officer or Environmental Scientist, Sheriff, Police, Park Ranger, or Forest Service Enforcement.

*California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.*



NATIONAL PARK SERVICE



# Biology, Behavior, & Ecology



JASON KLASSI



# Cougar Biology

## Scientific And Common Names

### Q: What are all the common names and scientific name of the cougar?

Common names for the species *Puma concolor* include mountain lion, puma, cougar, lion, catamount, and panther. The scientific name for cougars is *Puma concolor*, which refers to their uniform coat color – concolor means “of the same color” in latin. In fact, there are so many unique and regionally specific names for cougars that the species holds the Guinness World Record for mammal with the most common names -- between multiple Indigenous languages, English, Spanish, and Portuguese cougars have 84 recorded names.

Barnes, C. T. 1960. *The cougar or mountain lion*. Page 176. Ralton Company, Salt Lake City, UT, USA.

The National Wildlife Federation [NWF]. 2021. Mountain lion. <https://www.nwf.org/Educational-Resources/Wildlife-Guide/Mammals/Mountain-Lion>. Accessed 20 June 2021.

Guinness World Records. 2021. Mammal with the most names. <https://www.guinnessworldrecords.com/world-records/78143-mammal-with-the-most-names>. Accessed 14 Sep 2021.

## Physical Traits

### Q: What physical traits characterize cougars?

Cougars are almost uniformly beige with a cream-colored belly and dark markings on both sides of their muzzle. The back tip of the ears and tip of the tail are black. Cougars are only spotted as kittens, and have rounded ears and long thick tails (the tail is nearly as long as the body). Adult cougars in California tend to weigh between 70 and 150 lbs.

Grigione, M. M., P. Beier, R. A. Hopkins, D. Neal, W. D. Padley, C. M. Schonewald, and M. L. Johnson. 2002. Ecological and allometric determinants of home-range size for mountain lions (*Puma concolor*). *Animal Conservation* 5:317-324.

The National Wildlife Federation [NWF]. 2021. Mountain lion. <https://www.nwf.org/Educational-Resources/Wildlife-Guide/Mammals/Mountain-Lion>. Accessed 20 June 2021.

### Q: How can you tell the difference between cougars, bobcats, and domestic cats?

Cougars, bobcats, and house cats all belong to the family Felidae but vary considerably in size and appearance. Cougars are the largest felid in California weighing between 70 and 150 lbs, while bobcats are only 12 to 25 lbs on average, and domestic cats are even shorter and smaller than bobcats.

Bobcat ears are pointy with a tuft of hair on the top, and are black with a noticeable white spot on the back. Bobcats also have a ruff of fur on their face, banding on their legs and face, and a short bobbed tail with a white underside. Cougar ears are more rounded with no tuft on the top, and tend to be solidly black-tipped, though some individuals can have lighter, almost white, patches of hair on the lower-mid back side. Cougar tails are long and the tip of the tail is solid black all the way around.

A bobcat's tail is much shorter than its body, while a cougar's tail is as long as its body. Domestic cats can have long or short tails so their size and variety of coat colors are the most reliable cues for distinguishing them from wild felids.

For a visual representation of the differences between cougars, bobcats, and domestic cats, check out this graphic created by the National Park Service. (<https://bit.ly/nps-cat-id>)

California Department of Fish and Wildlife [CDFW]. 2021. *Keep Me Wild: Mountain Lion*. <https://wildlife.ca.gov/Keep-Me-Wild/Lion>. Accessed 14 Sep 2021.

National Park Service. 2021. *Bobcats: Living on the Urban Edge*. <https://www.nps.gov/samo/learn/nature/bobcats.htm>. Accessed 14 Sep 2021.

# Cougar Behavior

## Daytime Movement

### Q: Is it normal to see a cougar in the daytime?

Cougars can be spotted any time day or night as they move throughout their ranges. Spotting a cougar during the day does not suggest abnormal behavior or that there is a threat to public safety. Cougars are often more active at night or during crepuscular times, around sunrise and sunset. Where people live and recreate, cougars may be more nocturnal (active at night).

Individual cougars, like people, can also vary significantly in their activity patterns. Two adult male cougars studied by the National Park Service, P-22 and P-41, occupied home ranges in isolated natural areas, and they altered their behavior relative to developed areas by time-of-day more than other animals.

Beier, P. 1995. *Dispersal of juvenile cougars in fragmented habitat*. *The Journal of Wildlife Management* 59:228-237.

Nickel, B. A., J. P. S. Suraci, M. L. Allen, and C. C. Wilmers. 2020. *Human presence and human footprint have non-equivalent effects on wildlife spatiotemporal habitat use*. *Biological Conservation* 241:1-11.

Riley, S. P. D., J. A. Siskich, J. F. Benson. 2021. *Big Cats in the Big City: Spatial Ecology of Mountain Lions in Greater Los Angeles*. *The Journal of Wildlife Management*. In Press.



## Diet

### Q: What is the cougar's diet in California?

Throughout most of the cougar's range, deer represent cougars' preferred prey, but this can vary by region and what type of prey is most abundant. There are cougar populations that specialize in other ungulate species besides deer such as bighorn sheep, wild pigs, elk, and even wild horses. Cougars, like many carnivore species, are also intraguild predators, meaning they are known to consume coyotes, raccoons, foxes, and bobcats.

Cougars in the Santa Monica Mountains consume a deer a week on average. As of 2021, National Park Service researchers have analyzed more than 700 kills in the Santa Monica Mountains and Simi Hills, of which 87% were mule deer while the second-most common prey was coyote and then raccoon.

*Benson, J. F., J. A. Siskich, and S. P. D. Riley. 2016. Individual and population level resource selection patterns of mountain lions preying on mule deer along an urban-wildland gradient. PLoS ONE 11:1-16.*

*National Park Service [NPS]. 2021. Lions in the Santa Monica Mountains. <https://www.nps.gov/samo/learn/nature/pumapage.htm>. Accessed 8 June 2021.*

*National Wildlife Federation [NWF]. 2021. Mountain lion. <https://www.nwf.org/Educational-Resources/Wildlife-Guide/Mammals/Mountain-Lion>. Accessed 20 June 2021.*

## Breeding

### Q: When do cougars reproduce? Are there breeding seasons in California?

In general, cougars have a much less specific breeding time than most carnivores and can reproduce throughout the year. Cougars in areas that experience harsh winters may have a more restrictive breeding season, and reproductive timing can also be influenced by prey abundance and climate. Most cougar kittens are born between April and September in North America. Cougars in Southern California breed all year round because the climate is so consistent.

*Beier, P. 1995. Dispersal of juvenile cougars in fragmented habitat. *The Journal of Wildlife Management* 59:228-237.*

*Pierce, B. M. and V. C. Bleich. 2003. Mountain Lion. Pages 744-757 in G. A. Feldhamer, B. C. Thompson, and J. A. Chapman, editors. *Wild Mammals of North America: Biology, Management, and Conservation*. 2nd edition. The Johns Hopkins University Press, Baltimore, Maryland, USA*

## Space Requirements

### Q: How much space do cougars need?

In California, average cougar home range sizes can range from a little over 30 to a little under 300 square miles depending on the sex and age of the cougar as well as geographic region. Coastal home ranges tend to be smaller and exhibit less seasonal fluctuations in size than inland home ranges.

Male cougars have much larger home ranges than do female cougars – generally two to three times as large – regardless of habitat type.

The National Park Service (NPS) in the Santa Monica Mountains recorded the smallest known adult male cougar home range size for cougar P-22 at 9 square miles. Another local cougar, P-41's home range is just 21 square miles. Their small respective habitat fragments are hemmed in Griffith Park and the Verdugo Mountains. The home range sizes for all other cougars studied by NPS in the Santa Monica Mountains region averaged 143 square miles for adult males and 51 square miles for adult females, similar to those reported by other cougar studies in the western United States.

Grigione, M. M., P. Beier, R. A. Hopkins, D. Neal, W. D. Padley, C. M. Schonewald, and M. L. Johnson. 2002. Ecological and allometric determinants of home-range size for mountain lions (*Puma concolor*). *Animal Conservation* 5:317-324.

Riley, S. P. D., J. A. Sikich, J. F. Benson. 2021. Big Cats in the Big City: Spatial Ecology of Mountain Lions in Greater Los Angeles. *The Journal of Wildlife Management*. In Press.

## Dispersal

### Q: How do cougars maintain stable population sizes and genetic diversity?

Cougar territoriality ensures a generally stable abundance of individuals in any given area. Males do not generally tolerate other males in their range, and females are similarly territorial with other females. Although cougars will sometimes tolerate close relatives overlapping their range, their territoriality coupled with large home range sizes for both sexes results in low population density and a relatively maintained abundance overall.

**Dispersal** occurs when a cougar leaves the territory of its mother to establish a new territory, sometimes in very faraway lands. The process of dispersal can be much harder for subadult male cougars because they must travel greater distances and face greater danger from intra-specific strife — conflict between cougars that is often deadly — than females whose presence is more often tolerated by other cougars.

Successful dispersal contributes to higher genetic diversity in two ways. First, and most importantly, when dispersers come into a population from a different one, they can bring added genetic diversity if those populations are genetically differentiated. The other way is by reducing opportunities for relatives to breed with one another, which can occur in areas where cougar populations become isolated by roads and development and dispersal is “frustrated.” In Southern California, cougar populations in the Santa Ana Mountains (SAM) and Santa Monica Mountains (SMM) cannot effectively disperse due to urban development and highways that separate them from adjacent natural areas. Inbreeding has led to dangerously low genetic diversity in these populations.

**Extinction risk** for these cougars is comparable to that faced by Florida panthers (*Puma concolor coryi*), an endangered and genetically isolated cougar subspecies in the Southeastern United States, in the early 1990's. In this situation, Texas cougars were translocated into the region to prevent extinction from inbreeding depression. Translocation is financially costly, dangerous for the animals, and was used as a last resort to prevent the extinction, and it should not be viewed as a universally applicable solution to the problems faced by isolated cougar populations.



Although there are similarities between what happened to the Florida panther and the situation facing some isolated cougar subpopulations in Southern California, there is one big difference between the scenarios. In California, there are still other viable populations in the state, and that could potentially be connected to those that are isolated, while the cougar population in Florida was and still is the only one that exists in the Eastern United States. Since there are substantial populations of cougars persisting in the West, conservation experts currently recommend increasing habitat connectivity in the region to promote natural gene flow through dispersal, rather than importing cougars from other areas.

Benson, J. F., P. J. Mahoney, T. W. Vickers, J. A. Sikich, P. Beier, S. P. D. Riley, H. B. Ernest, and W. M. Boyce. 2019. Extinction vortex dynamics of top predators isolated by urbanization. *Ecological Applications* 29:1-14.

Johnson, W. E., D. Onorato, M. E. Roelke, and D. Land. 2010. Genetic restoration of the Florida panther. *Science* 329:1641-1645.

Pimm, S. L., L. Dollar, and O. L. Bass Jr. 2006. The genetic rescue of the Florida panther. *Animal Conservation* 9:115-122.

Riley, S. P. D., L. E. K. Serieys, J. P. Pollinger, J. A. Sikich, L. Dalbeck, R. K. Wayne, and H. B. Ernest. 2014. Individual behaviors dominate the dynamics of an urban mountain lion population isolated by roads. *Current Biology* 24:1989-1994.

Vickers, T. W., J. N. Sanchez, C. K. Johnson, S. A. Morrison, R. Botta, T. Smith, B. S. Cohen, P. R. Huber, H. B. Ernest, and W. M. Boyce. 2015. Survival and mortality of pumas (*Puma concolor*) in a fragmented, urbanizing landscape. *PLoS ONE* 10:1-18.

# Cougar Ecology

## Ecological Role

### Q: What role do cougars play in Southern California ecosystems?

Cougars are the only large carnivore in many areas in Southern California, and are the main predator on the area's dominant herbivore, the mule deer. Many areas also have black bears, which are also considered a large carnivore based on size, but black bears are omnivorous and are not regular predators on deer. As such, cougars are an apex predator, and often the only apex predator in their Southern California ranges – in other words, they are at the top of their food chain and have no natural predators.

Apex predators can have various effects on the species they prey on, including prey behavior, which in turn can affect and structure other aspects of the ecosystem. Kills made by predators also attract a diverse crowd of scavengers, including mammals, birds, and insects. We do not fully understand all of the ways cougars may affect deer (their main prey species) or other smaller carnivores like coyotes, bobcats, and raccoons, or scavenger communities. However, given that cougars are the only apex predator species in Southern California, losing them and whatever roles they may play is not an experiment we want to conduct.

Elbroch, M. L., C. O'Malley, M. Peziol, and H. B. Quigley. 2017. Vertebrate diversity benefiting from carrion provided by pumas and other subordinate, apex felids. *Biological Conservation* 215:123-131.

Sarasola, J. H., J. I. Zanón-Martínez, A. S. Costán, and W. J. Ripple. 2016. Hypercarnivorous apex predator could provide ecosystem services by dispersing seeds. *Scientific Reports* 19647.

## Q: How do cougars affect prey species?

As apex predators, cougars can have various effects on the species they prey upon. Their influence on prey behavior can in turn affect and structure other aspects of the ecosystem. Kills made by predators also attract a diverse crowd of scavengers, including mammals, birds, and insects. We do not fully understand all of the ways cougars may affect deer (their main prey species), other smaller mammals, or scavenger communities. However, it has been found in multiple studies that deer populations unregulated by predators can have drastic effects on the structure of their environment by overgrazing otherwise stable vegetative communities.

Allombert, S., A. J. Gaston, and J. Martin. 2005. A natural experiment on the impact of overabundant deer on songbird populations. *Biological Conservation* 126:1-13.

Bateman, P. W., and P. A. Fleming. 2012. Big city life: carnivores in urban environments. *Journal of Zoology* 287:1-23.

Conover, M. R., W. C. Pitt, K. K. Kessler, T. J. DuBow, and W. A. Sanborn. 1995. Review of human injuries, illnesses, and economic losses caused by wildlife in the United States. *Wildlife Society Bulletin* 23:407-414.

Elbroch, M. L., C. O'Malley, M. Peziol, and H. B. Quigley. 2017. Vertebrate diversity benefiting from carrion provided by pumas and other subordinate apex felids. *Biological Conservation* 215:123-131.

Hurley, M. A., J. W. Unsworth, P. Zager, M. Hebblewhite, E. O. Garton, D. M. Montgomery, J. R. Skalski, and C. L. Maycock. 2011. Demographic response of mule deer to experimental reduction of coyotes and mountain lions in southeastern Idaho. *Wildlife Monograph* 178:1-33.

Furnas, B. J., R. H. Landers, R. G. Paiste, and B. N. Sacks. 2020. Overabundance of black-tailed deer in urbanized coastal California. *The Journal of Wildlife Management* 84:1-10.

McCullough, D. R. 1999. Density dependence and life-history strategies of ungulates. *Journal of Mammalogy* 80:1130-1146.

Pierce, B. M., V. C. Bleich, K. L. Monteith, and R. T. Bowyer. 2012. Top-down versus bottom-up forcing: evidence from mountain lions and mule deer. *Journal of Mammalogy* 93:977-988.

Prugh, L.R., C. J. Stoner, C. W. Epps, W. T. Bean, W. J. Ripple, A. S. Laliberte, and J. S. Brashares. 2009. The rise of the mesopredator. *BioScience* 59:779-791.

Salkeid, D. J., N. C. Nieto, P. Carbajales-Dale, M. Carbajales-Dale, S. S. Cinkovich, and E. F. Lambin. 2015. Disease risk & landscape attributes of tick-borne *Borrelia* pathogens in the San Francisco Bay Area, California. *PLoS ONE* 10:e0134812.

Seager, S. T., C. Eisenberg, and S. B. St. Clair. 2013. Patterns and consequences of ungulate herbivory on aspen in western North America. *Forest Ecology and Management* 299:81-90.

## Umbrella species

### Q: Why are cougars considered an umbrella species?

An **umbrella species** is one with expansive habitat requirements that when conserved will also protect a multitude of other species that share the same habitat.

In Southern California, the protection of genetically distinct cougar populations has required the conservation of approximately 4,000 square miles of natural habitats, including one of only 36 “biodiversity hotspots” in the world. Cougars in the Santa Monica Mountains serve as an umbrella species for 50 mammal, 35 reptile and amphibian, almost 400 bird species, and over 1,000 plant species.

Dellinger, J. A., K. D. Gustafson, D. J. Gammons, H. B. Ernest, and S. G. Torres. 2020. Minimum habitat thresholds required for conserving mountain lion genetic diversity. *Ecology and Evolution* 10:10687-10696.

Thorne, J. H., D. Cameron, and J. F. Quinn. 2006. A conservation design for the Central Coast of California and the evaluation of mountain lion as an umbrella species. *Natural Areas Association* 26:137-148.

## Historic And Current Range

### Q: Where do cougars live and how has this changed over time?

Cougars are one of the most wide-ranging terrestrial species in the world and are found in 28 countries throughout the Americas. Cougars still range from as far North as Alaska to as far South as Chile, but the species is thought to be in decline in some regions due to habitat loss and fragmentation, hunting, and retaliatory killings as a result of depredation events. The current range of cougars within the continental United States is only 60% of its original size prior to European colonization.

The California Department of Fish and Wildlife estimates that cougar populations can occupy approximately 63,000 to 67,000 square miles in California, but only about half of this area is currently protected from development. Cougars' ability to survive and reproduce is not only dependent on the availability of suitable habitat, prey, and demographic factors, but is also directly influenced by people's willingness to live alongside cougars.

Dellinger, J. A., B. Cristescu, J. Ewanyk, D. J. Gammons, D. Garcelon, P. Johnston, Q. Martins, C. Thompson, T. W. Vickers, C. C. Wilmers, H. U. Wittmer, S. G. Torres. 2019. Using mountain lion habitat selection in management. *The Journal of Wildlife Management* 2019:1-13.

Nielsen, C., D. Thompson, M. Kelly, and C. A. Lopez-Gonzalez. 2015. *Puma concolor* (errata version published in 2016). *The IUCN Red List of Threatened Species* 2015: e.T18868A97216466. <https://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T18868A50663436.en>. Accessed 14 Oct 2021.

Prugh, L.R., C. J. Stoner, C. W. Epps, W. T. Bean, W. J. Ripple, A. S. Laliberte, and J. S. Brashares. 2009. The rise of the mesopredator. *BioScience* 59:779-791.

## Abundance

### Q: How many cougars are there in California? The United States? The World?

In the 1990s, the California Department of Fish and Wildlife estimated there to be 4,000 to 6,000 cougars populating California. They have since recognized that this is likely a great overestimate of current occupancy in the state. Research efforts by CDFW staff are currently underway to update this estimate based on current knowledge of the statewide distribution of deer populations and usable natural habitat.

It is important to recognize that all population estimates are only approximations, and that it is especially difficult to get solid numbers on an elusive and wide-ranging species without markings that can be used to clearly identify individual animals.

In 2014, the International Union for Conservation of Nature (IUCN) classified cougars globally as a population of "Least Concern," while noting the population trend as "declining" in some regions.

California Department of Fish and Wildlife. 2021. *Mountain Lions in California*. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.

Nielsen, C., D. Thompson, M. Kelly, and C. A. Lopez-Gonzalez. 2015. *Puma concolor* (errata version published in 2016). *The IUCN Red List of Threatened Species* 2015: e.T18868A97216466. <https://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T18868A50663436.en>. Accessed 14 Oct 2021.



## Q: Can cougars overpopulate an area?

No. Cougar populations never get above certain very low densities because they are territorial and have very large home ranges. Cougar population size is directly linked to available prey and habitat, but even when prey is abundant, interactions between cougars of the same sex keep their population densities low.

Dispersal is a key behavior that enables populations to turn over and maintain genetic diversity. In Southern California, lack of habitat connectivity increases the risk of dispersing cougars being struck by cars, which is the number one source of mortality for adult cougars in the region, and a significant threat to the viability of populations in the Santa Monica and Santa Ana Mountains.

*Benson, J. F., J. A. Siskich, and S. P. D. Riley. 2020. Survival and competing mortality risks of mountain lions in a major metropolitan area. Biological Conservation 241:1-6.*

*Vickers, T. W., J. N. Sanchez, C. K. Johnson, S. A. Morrison, R. Botta, T. Smith, B. S. Cohen, P. R. Huber, H. B. Ernest, and W. M. Boyce. 2015. Survival and mortality of pumas (*Puma concolor*) in a fragmented, urbanizing landscape. PLoS ONE 10:1-18.*

## Q: Does seeing a cougar mean there are more in the area? Does seeing one mean it is living there?

No. Cougars are territorial and generally solitary. Mothers and their dependent offspring do travel together until the young disperse at 12-18 months, so it is possible to see multiple animals together sometimes. Moreover, cougars have huge home ranges (about 50 square miles for females and 150 square miles for males), so any particular location is a tiny fraction of where they live. They will sometimes be in one area for a few days if they have made a kill there, but they will then move on, and can be many miles away in a single night.

In general, cougars rarely enter developed areas. However, individuals may do so on rare occasions, especially younger animals that may be dispersing and looking for new home ranges.

*Beier, P. 1995. Dispersal of juvenile cougars in fragmented habitat. The Journal of Wildlife Management 59:228-237.*



DANIEL RODRIGUES/COUGAR CONSERVANCY

# Conservation



JOHANNA TURNER/COUGARMAGIC



# Threats to Cougars

## Threats

### Q: What threats do cougars face in Southern California?

The greatest threat to cougars in Southern California is habitat fragmentation caused by urbanization. Development and roads have turned nature preserves into islands that cougars can rarely escape, making it more likely for them to mate with close relatives (“inbreeding”), attack and kill each other at abnormally high rates, and come into closer contact with people and domestic animals. Human-cougar interactions are often deadly for cougars, potentially resulting in depredation permits, vehicle collision, poisoning, and poaching.

Cougars in the Santa Monica Mountains and Santa Ana Mountains could face extinction in less than 50 years if nothing is done to restore habitat connectivity and promote human-cougar coexistence. In the Santa Monica Mountains, intraspecific strife is the leading cause of death for sub-adult cougars, while vehicle-strikes and rodenticide poisoning accounts for the majority of adult cougar deaths. Vehicle collision and depredation are responsible for most cougar mortalities in the Santa Ana Mountains. Despite depredations occurring, these incidents haven’t been a significant cause of mortality for cougars in the Santa Monica Mountains. Because many impacted community members in this area have positive views toward cougars and are able to get connected with the resources they need to prevent future conflicts, the amount of lethal depredation permits taken-out has been reduced as a result (Domingo, K. March 2022. Cougar Conservancy, personal communication).

In addition to habitat fragmentation and human-cougar conflict, stochastic events intensified by climate change such as wildfire and drought can further-jeopardize vulnerable cougar sub-populations. Research efforts into how these events impact cougars are currently ongoing, and are a top management priority of the National Park Service and California Department of Fish and Wildlife. Restoring habitat connectivity and reducing human-wildlife conflicts through the promotion of effective coexistence practices can buffer cougar populations from the negative impacts of rapid environmental change that both urbanization and climate change represent.

*Benson, J. F., P. J. Mahoney, T. W. Vickers, J. A. Sikich, P. Beier, S. P. D. Riley, H. B. Ernest, and W. M. Boyce. 2019. Extinction vortex dynamics of top predators isolated by urbanization. Ecological Applications 29:1-14.*

*Benson, J. F., J. A. Sikich, and S. P. D. Riley. 2020. Survival and competing mortality risks of mountain lions in a major metropolitan area. Biological Conservation 241:1-6.*

*Gustafson, K. D., R. B. Gagne, T. W. Vickers, S. P. D. Riley, C. C. Wilmers, V. C. Bleich, and H. B. Ernest. 2019. Genetic source-sink dynamics among naturally structured and anthropogenically fragmented puma populations. Conservation Genetics 20:215-227.*

*Vickers, T. W., J. N. Sanchez, C. K. Johnson, S. A. Morrison, R. Botta, T. Smith, B. S. Cohen, P. R. Huber, H. B. Ernest, and W. M. Boyce. 2015. Survival and mortality of pumas (*Puma concolor*) in a fragmented, urbanizing landscape. PLoS ONE 10:1-18.*

## Cost Of Local Extinction

### Q: What are the consequences of cougars going locally extinct?

Conserving cougars in the Santa Monica Mountains is crucial to the maintenance of the region's landscape and wildlife communities. The Santa Monica Mountains represent one of the world's rare biodiversity hotspots which is home to 50 mammal, 35 reptile and amphibian, almost 400 bird, and over 1,000 plant species.

By regulating the movement patterns of more abundant prey species, cougars exert a strong influence over the structure and function of California's ecosystems that is disproportionate to their small population size. Cougars' preferred prey is deer, whose feeding patterns impact plant communities other species rely on. Cougars also influence scavenging mammal, bird, invertebrate, and soil microorganism communities by providing "leftovers" of essential nutrients from kills.

Benson, J. F., P. J. Mahoney, T. W. Vickers, J. A. Sikich, P. Beier, S. P. D. Riley, H. B. Ernest, and W. M. Boyce. 2019. Extinction vortex dynamics of top predators isolated by urbanization. *Ecological Applications* 29:1-14.

Elbroch, M. L., C. O'Malley, M. Peziol, and H. B. Quigley. 2017. Vertebrate diversity benefiting from carrion provided by pumas and other subordinate, apex felids. *Biological Conservation* 215:123-131.

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Gubanyi, J. A., J. A. Savidge, S. E. Hygnstrom, K. C. VerCauteren, G. W. Garabrandt, and S. P. Korte. 2008. Deer impact on vegetation in natural areas in southeastern Nebraska. *Natural Areas Journal* 28:121-129.

## Importance Of Individuals

### Q: Why does the protection of individual cougars matter to conserving populations?

In small, genetically isolated cougar subpopulations at risk of extinction, every individual counts toward the overall viability of the subpopulation. This is particularly true for reproductive adults, especially adult males. The home range of 1 adult male cougar overlaps with those of approximately 3 female cougars that may or may not be related to one another. This bias in the sex ratio, along with the higher risk of male cougar mortalities from human causes (like vehicle strikes and depredation permits taken-out on dispersing individuals) or other cougars, and the possibility of random events like wildfires, makes occasional male extinctions possible. If this occurs, emergency interventions such as translocation may be necessary as a last-ditch effort to prevent extinction.

California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.

Nielsen, C., D. Thompson, M. Kelly, and C. A. Lopez-Gonzalez. 2015. *Puma concolor* (errata version published in 2016). *The IUCN Red List of Threatened Species* 2015: e.T18868A97216466. <https://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T18868A50663436.en>. Accessed 14 Oct 2021.





## Translocation For Conservation

### Q: Why not just move cougars with new genetic material into the Santa Monica Mountains?

Restoring habitat connectivity by constructing wildlife crossings, culverts, and other travel corridors is preferred to translocating novel genetics into the isolated subpopulations in the Santa Monica Mountains and Santa Ana Mountains at this time. Translocation can be dangerous to both translocated and resident animals, and ultimately provides only a temporary solution to the genetic isolation problem. Furthermore, translocation of cougars benefits only one species, whereas restoring land connectivity across major freeway barriers is valuable for all species in the area.

Cougars were translocated from Texas to Florida to introduce much needed genetic diversity to the endangered population of the Florida Panthers in the 1990s. This highly controversial decision was made as a last-ditch effort to prevent the extinction of this population. It wasn't feasible to restore habitat connectivity between Florida panthers and their nearest cougar population in Texas. If connectivity is not restored for small, isolated populations such as those in the Santa Monicas and Santa Anas, and these populations continue to decline, translocation might be considered at some point in the future.

Pimm, S. L., L. Dollar, and O. L. Bass Jr. 2006. *The genetic rescue of the Florida panther*. *Animal Conservation* 9:115-122.

Benson, J. F., P. J. Mahoney, T. W. Vickers, J. A. Sikich, P. Beier, S. P. D. Riley, H. B. Ernest, and W. M. Boyce. 2019. *Extinction vortex dynamics of top predators isolated by urbanization*. *Ecological Applications* 29:1-14.

Johnson, W. E., D. Onorato, M. E. Roelke, and D. Land. 2010. *Genetic restoration of the Florida panther*. *Science* 329:1641-1645.



JOHANNA TURNER/COUGARMAGIC

## Wildland-Urban Interface

### Living In Cougar Habitat

#### Q: Am I in danger if my home is in or near cougar habitat?

Cougar activity may occasionally occur near people's homes if they are located in or near natural habitat, but this is not inherently a threat to public safety. Most cougars avoid coming near people even if our backyards sometimes fall within their home ranges.

Cougars that venture close to development do so almost exclusively at night, likely to reduce the risk of encountering people. Research suggests that cougars perceive interactions with people to be highly threatening. With awareness and the proper **coexistence tools**, people can safely reside in cougar habitat.

If you live in cougar habitat and have small children, ensure they are closely supervised while outdoors. If you must house domestic animals outdoors in cougar habitat, housing them in cougar-proof enclosures at night is crucial for preventing conflicts and the loss of pets and livestock. Avoid leaving free roaming domestic animals unattended as depredation can occur at any time of day or night.

Smith, J. A., J. P. Suraci, M. Clinchy, A. Crawford, D. Roberts, L. Y. Zanette, and C. C. Wilmers. 2017. Fear of the human 'super predator' reduces feeding time in large carnivores. *Proceedings B of the Royal Society* 284:1-5.

## Altered Activity Patterns

### Q: Why do cougars sometimes roam our neighborhoods?

Cougar presence is closely tied to that of their prey. Cougar prey species such as deer, coyotes, and raccoons are present on the urban edge, as residential areas with nearby natural cougar habitat can provide ample access to refuge and feeding opportunities.

Individual cougars, like people, vary in their propensity to explore novel environments. Sub-adult animals of both sexes may be more likely to pass through residential areas as they look for paths to disperse to new areas.

In the Santa Monica Mountains, research has shown that cougar locations are closer to development than we would expect by chance, which may be because their prey species are more common in or near developed areas. It is important to remember though that overall, cougars very rarely use urban areas. Analysis of the first 15 years of cougar research in the Santa Monica Mountains found that less than 1% of recorded locations of adult cougars were in developed areas, and that the average distance of cougars from developed areas was greater than 1 km.

For females, deer kill sites were also closer to development than expected, while male kill sites were closer to riparian woodlands, in natural cougar habitat. Adult females and sub-adults may hunt deer closer to developed areas in part to avoid aggression from adult males.

Eliminating attractants and taking actions to exclude cougar prey species will help prevent conflicts with cougars that do venture into our neighborhoods.

*Benson, J. F., J. A. Siskich, and S. P. D. Riley. 2016. Individual and population level resource selection patterns of mountain lions preying on mule deer along an urban-wildland gradient. PLoS ONE 11:1-16.*

### Q: How does urbanization alter cougar activity patterns?

Across the globe, wild mammals coexisting with people are becoming increasingly nocturnal, or almost exclusively active at night. This strategy enables wildlife to use the same space as people by timing their activity with human avoidance. Cougars are no exception to this rule, but this does not mean that daytime interactions are impossible.

Exposure to intense human daytime activity combined with light pollution in urban or urbanizing areas has profoundly impacted the behavior and evolutionary trajectories of many species of wildlife, but large mammalian carnivore species such as cougars are most affected by this.

*Benson, J. F., J. A. Siskich, and S. P. D. Riley. 2016. Individual and population level resource selection patterns of mountain lions preying on mule deer along an urban-wildland gradient. PLoS ONE 11:1-16.*

*Ditmer, M. A., D. C. Stoner, C. D. Francis, J. R. Barber, J. D. Forester, D. M. Choate, K. E. Ironside, K. M. Longshore, K. R. Hersey, R. T. Larsen, B. R. McMillan, D. D. Olson, A. M. Andreasen, J. P. Bechmann, P. B. Holton, T. A. Messmer, and N. H. Carter. 2021. Artificial nightlight alters the predator-prey dynamics of an apex carnivore. *Ecography* 44:149-161.*

*Gaynor, K. M., C. E. Hohnowski, N. H. Carter, and J. S. Brashares. 2018. The influence of human disturbance on wildlife nocturnality. *Science* 360:1232-1235.*

*Nickel, B. A., J. P. S. Suraci, M. L. Allen, and C. C. Wilmers. 2020. Human presence and human footprint have non-equivalent effects on wildlife spatiotemporal habitat use. *Biological Conservation* 241:1-11.*

*Patten, M. A., J. C. Burger, and M. Mitrovich. 2019. The intersection of human disturbance and diel activity, with potential consequences on trophic interactions. PLoS ONE 14:1-13.*

## Hunting

### Q: Is a cougar that hunts wild prey in residential areas a threat to public safety?

Cougar activity near people's homes is not inherently a threat to public safety. While cougars may occasionally utilize urban interface areas, most tend to avoid coming near people's homes. Cougars that do venture close to development tend to do so almost exclusively at night, likely to reduce the risk of encountering people.

Cougars tend to avoid people despite our neighborhoods sometimes harboring more abundant prey resources than adjacent natural habitat. In Colorado, cougars were more likely to hunt near residences when they had gone longer without recent success. This suggests that they don't prefer to use these areas and may perceive interactions with people to be highly threatening.

In reality, humans are a much greater threat to cougars than they are to us. Cougars are frequently in close proximity to humans in residential and recreational park areas like in the Santa Monica Mountains, where instances of cougar aggression are virtually absent.

Excluding deer and other cougar prey species from your backyard is highly effective at deterring cougars from hunting in developed areas. Eliminating attractants, landscaping practices that reduce available cover for wildlife to take refuge, and strategies like planting vegetative species that deer won't eat, are tools that can be used to prevent human-cougar conflicts which may arise from cougars' natural hunting behaviors.

Allredge, M. W., F. E. Buderman, and K. A. Blecha. 2019. Human-cougar interactions in the wildland-urban interface of Colorado's front range. *Ecology and Evolution* 9:10415-10431.

Benson, J. F., J. A. Siskich, and S. P. D. Riley. 2016. Individual and population level resource selection patterns of mountain lions preying on mule deer along an urban-wildland gradient. *PLoS ONE* 11:1-16.

Blecha, K. A., R. B. Boone, M. W. Allredge, and J. Gaillard. 2018. Hunger mediates apex predator's risk avoidance response in wildland-urban interface. *The Journal of Animal Ecology* 87:609-622.

Furnas, B. J., R. H. Landers, R. G. Paiste, and B. N. Sacks. 2020. Overabundance of black-tailed deer in urbanized coastal California. *The Journal of Wildlife Management* 84:1-10.

Riley, S. P. D., J. A. Siskich, J. F. Benson. 2021. Big Cats in the Big City: Spatial Ecology of Mountain Lions in Greater Los Angeles. *The Journal of Wildlife Management*. In Press.

## Food Caching

### Q: What do I do if I find a cached animal carcass?

If you find a cached animal in the Santa Monica Mountains, Simi Hills, Santa Susana Mountains, Verdugo Mountains, or Griffith Park, please report it to the National Park Service Mountain Lion Study by emailing [SAMO\\_mountainlions@nps.gov](mailto:SAMO_mountainlions@nps.gov) or by calling 1-805-370-2317. Make sure to include the location and date of cache sighting, and any photographs you may take of the carcass.

For sightings outside of the above-mentioned areas, you can report via the California Department of Fish and Wildlife's (CDFW) **Wildlife Incident Reporting** system, or if you require assistance in **Region 5** you can call the local CDFW office at 1-858-467-4201.



Avoiding the cache site for a week or so to allow the cougar to finish feeding and move on can help reduce conflict with cougars or any other wild animals that might territorially defend a carcass. If the carcass is cached in an unsafe location that may force cougars, pets, and/or people to interact, it is especially important to report your observation.

In some cases, removal of the carcass may be the appropriate action to take. This should be determined by California Department of Fish and Wildlife biologists or wildlife officers, who may also be able to assist with carcass removal. If a cached carcass is on a property and must be removed to prevent conflict, individuals of that property are financially responsible for carcass removal. Individuals with financial barriers may be eligible for the Cougar Conservancy's Carcass Disposal Program.

Allredge, M. W., F. E. Buderman, and K. A. Blecha. 2019. Human-cougar interactions in the wildland-urban interface of Colorado's front range. *Ecology and Evolution* 9:10415-10431.

Benson, J. F., J. A. Sikich, and S. P. D. Riley. 2016. Individual and population level resource selection patterns of mountain lions preying on mule deer along an urban-wildland gradient. *PLoS ONE* 11:1-16.

### **Q: Will cougars return to the location of their cache even if the carcass is removed?**

Often cougars will return to food cache locations as these sites are associated with hunting success, although most may avoid the vicinity of the cache immediately following the removal of the carcass. Pairing carcass removal with aversive conditioning is only moderately effective at deterring cougars from revisiting kill sites. A cougar revisiting a kill site is a natural behavior that should not be cause for alarm. Conflict prevention measures such as cougar-proof enclosures are still highly effective when cougars are hunting and consuming wild prey nearby.

Allredge, M. W., F. E. Buderman, and K. A. Blecha. 2019. Human-cougar interactions in the wildland-urban interface of Colorado's front range. *Ecology and Evolution* 9:10415-10431.

Benson, J. F., J. A. Sikich, and S. P. D. Riley. 2016. Individual and population level resource selection patterns of mountain lions preying on mule deer along an urban-wildland gradient. *PLoS ONE* 11:1-16.

## **Human-Cougar Conflicts**

### **Depredation**

#### **Q: How can one determine if an animal was killed by a cougar?**

Cougars tend to drag a carcass to a safe hiding spot and cover it under leaves and debris to hide it from scavengers and to prevent it from spoiling. Drag marks can often be found near a fresh large kill. Cougars are also known to scavenge, so an animal cached by a cougar may not have been killed by a cougar. If the cached carcass is a domestic animal that is someone's property, the depredation must be investigated by the California Department of Fish and Wildlife and officially ruled as caused by a cougar, before any actions (non-lethal or otherwise) can be taken to respond to the depredation. In most cases, it is not possible to determine which individual cougar, if any, was involved, so depredation permits for killing cougars are often not effective at reducing or preventing human-cougar conflicts. However, improved husbandry practices and permits to haze cougars are more effective.

## Q: Who do I contact if I have a suspected cougar depredation on my property?

Reporting parties, such as property owners and tenants, may report suspected depredation incidents using the online CDFW **Wildlife Incident Reporting** (WIR) system, and by calling the CDFW **Region 5** office at **1-858-467-4201**. A CDFW investigator (Wildlife Biologist or Wildlife Officer) will be automatically assigned for response, based on the geographic location of the reported incident.

For incidents in the Santa Monica Mountains, Simi Hills, the Santa Susana Mountains, the Verdugo Mountains, or Griffith Park, please report to the National Park Service Mountain Lion Study by emailing **SAMO\_mountainlions@nps.gov** or by calling **1-805-370-2317**. In your report, please include the location and date of the cache sighting, and any photographs you may take of the carcass.

If a cached carcass is on a property and must be removed to prevent conflict, individuals of that property are financially responsible for carcass removal. Individuals with financial barriers may be eligible for the Cougar Conservancy's **Carcass Disposal Program**.

California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.

California Department of Fish and Wildlife [CDFW]. 2021. Wildlife Incident Reporting (WIR). <https://apps.wildlife.ca.gov/wir>. Accessed 14 Sep 2021.

## Q: Do lethal depredation permits reduce human-cougar conflicts?

Killing cougars on depredation permits is not a long-term solution to conflicts with domestic animals. When depredation occurs, it is not because of a specific “bad actor.” We know that all cougars hunt opportunistically and that unprotected domestic animals can present easier hunting opportunities than wild prey. The lethal removal of individual ‘guilty’ cougars will never prevent future conflicts because killing cougars doesn’t fix the animal husbandry practices that allow depredation to occur.

The National Park Service study of cougars in the Santa Monica Mountains has documented 17 properties that have experienced multiple depredation events, with 10 of those properties recording different cougars visiting the same sites. One property had at least six individual cougars cause a depredation over the years (Sikich, J. September 2021. National Park Service, personal communication).

If a lethal depredation permit results in the removal of a territorial adult male cougar this can result in less-experienced juvenile males moving into an area to vie for territory. According to data collected by the California Department of Fish and Wildlife, subadult male cougars are the most represented demographic among cougars that come into conflict with domestic animals.

## Q: Why does depredation occur if cougars have plenty of deer to hunt?

Cougars are opportunistic hunters, which means they will take advantage of whatever opportunities arise to take down and consume prey. This means depredation can occur despite cougars having access to natural prey.

Most hunting attempts don't result in successful kills, and wild animals often fight to defend themselves, which can result in a cougar's injury or death. In contrast, an improperly housed, vulnerable, and inexperienced domestic animal can represent an easy meal that can save a cougar much needed time, energy, and perceived risk.

Cougars don't prefer domestic animals per se, but many will prey on unprotected animals if given the opportunity. An analysis by the National Park Service found that most kills made by cougars in the Santa Monica Mountains were deer, and even cougars who'd been involved in multiple depredation events continued to kill natural prey. In the Santa Ana mountains too, deer was found to be the most common prey while the second and third most frequent prey species were coyotes and raccoons.

*Blecha, K. A., R. B. Boone, M. W. Alldredge, and J. Gaillard. 2018. Hunger mediates apex predator's risk avoidance response in wildland-urban interface. The Journal of Animal Ecology 87:609-622.*

*National Park Service [NPS]. 2021. Lions in the Santa Monica Mountains. <https://www.nps.gov/samo/learn/nature/pumapage.htm>. Accessed 8 June 2021.*

*Gehrt, S. D., S. P. D. Riley, and B. L. Cypher, editors. 2010. Urban Carnivores: Ecology, Conflict, and Conservation. Johns Hopkins University Press.*

## **Q: What domestic animals are most at risk of depredation?**

Domestic animals free-ranging or in non-secure enclosures, especially those without strong antipredator defenses, are most at risk of depredation because they can represent an easily accessible food source.

Reports from the California Department of Fish and Wildlife show that of cougar depredation permits issued throughout the state between 2016 and 2021, goats were the most-often depredated domestic animal, followed closely by sheep. Together, these species made up a vast majority of depredated livestock. This was also true in the Santa Monica Mountains; between 2002 and 2020, goats were the most often depredated domestic animal, followed by sheep, alpaca, and then llamas (J. Sikich, National Park Service, personal communication, May 2022).

It is the responsibility of domestic animal caretakers to ensure their enclosures provide adequate protection from wild predators, both for the protection of domestic animals and for the protection of wildlife playing crucial roles in the environment

*Lucherini, M. 2018. Surplus killing by pumas *Puma concolor*: Rumors and Facts. Mammal Review 48:277-283.*

*Wildlife Investigations Lab. 2020. Report to the Fish and Game Commission regarding findings of necropsies on mountain lions taken under depredation permits in 2019. Natural Resources Agency, Wildlife Branch, Wildlife and Fisheries Division, California, USA.*

## **Q: Is depredation related to aggression toward people?**

There is no evidence to suggest that depredation increases the risk of a cougar behaving aggressively toward people. A cougar killing a domestic animal is no more dangerous to people than a cougar killing a deer - in either case, there is no connection to an attempt to attack people.

## Surplus Kills

### Q: Is it normal behavior for a cougar to kill multiple animals during a single depredation event?

Surplus killing, when predators kill more prey than they can eat, is a normal behavior for predators including cougars, though it occurs only under specific circumstances. For example, surplus killings happen when a cougar can get into an enclosure, but confined animals can't escape.

Cougars can easily jump fences less than 8 feet tall and can squeeze through small gaps in enclosures, or fall through unsecure roofs. In the wild when a cougar goes after a group of deer, they all have the opportunity to run, and a cougar is lucky to capture one individual. In an environment where animals cannot run away, a cougar's natural instincts to chase and kill prey can be directed toward every animal that can't escape. This occurs with other predators as well (such as foxes enclosed with chickens, i.e., "the fox in the henhouse").

A cougar that depredates multiple animals in a night is not "bloodthirsty" or abnormal, but acting naturally under circumstances that are deeply unfortunate for the livestock and for humans, though they are preventable.

*Lucherini, M. 2018. Surplus killing by pumas *Puma concolor*: Rumors and Facts. Mammal Review 48:277-283.*

## Protecting Domestic Animals

### Q: What nonlethal tools are used to deter cougars from harassing domestic animals?

There are many ways to prevent conflict and promote coexistence with cougars and other wildlife at home and on the trail. Some strategies for reducing conflict with cougars include eliminating attractants, applying landscaping practices that reduce cover, installing appropriate exclusionary fencing and infrastructure, incorporating aversive conditioning and hazing, and keeping specially trained livestock guardian dogs. We recommend pets be kept indoors, supervised outside, and leashed on trails.

See '[Efficacy of Nonlethal Tools](#)' for a comprehensive list of coexistence tools and what we currently know about their effectiveness.

## Attacks On People

### Q: How common are cougar attacks on people?

Instances of cougars attacking people are highly unusual and often overly sensationalized. Although rare, these events should not and have not been taken lightly. In California since 1986 – nearly a forty-year period – 22 people have been injured in interactions with cougars, 3 of which were fatal. In the United States and Canada combined, from 1890 to 1990, 48 human-cougar encounters resulted in injuries to people, while 10 of those encounters resulted in human deaths. From 1924 to 2018 in the United States, there were 74 injurious human-cougar encounters, 11 of which were fatal.



The Cougar Conservancy maintains that the most effective way to prevent these conflicts is to equip people with the knowledge and tools they need to safely coexist with their wild neighbors. Conflicts with wildlife can be prevented by being aware of one's surroundings, being knowledgeable about proper responses to encountering wild animals, and by closely supervising those who are most vulnerable. While on the trail, it is imperative to keep children within arm's reach, and small pets on a short leash, near an adult capable of acting defensively if necessary. Even at home, when living in cougar habitat, children should be supervised at all times and kept within arm's reach.

Beier, P. 1991. *Cougar Attacks on Humans in the United States and Canada*. *Wildlife Society Bulletin* 19:403-412.

California Department of Fish and Wildlife [CDFW]. 2022. *Wildlife Investigations Lab. Verified Mountain Lion-Human Attacks*. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion/Attacks>

Wang et al. 2019. *Cougar (Puma concolor) Injury in the United States*. *Wilderness & Environmental Medicine*.

## Anticoagulant Rodenticides

### Q: What are anticoagulant rodenticides and how do they impact cougars?

Anticoagulant rodenticides (ARs) are rodent poisons that, when ingested, cause internal bleeding which leads to slow death. ARs are sold in the form of bait, and while they are meant to target "problem" rodents, other non-target animals are also enticed to eat them.

Secondary poisoning occurs when predators consume the ARs stored in the bodies of poisoned prey. Some cougar prey species, like coyotes and raccoons, are also predators, and become poisoned secondarily when they consume poisoned prey. Tertiary poisoning then occurs when a cougar consumes a poisoned predator.

The use of ARs is widespread in both residential and commercial sectors, and they are killing non-target species at alarming rates in California. The California Department of Fish and Wildlife found that over 80% of tested bobcats, foxes, coyotes, hawks, owls, and 95% of cougars were exposed to ARs. Over 70% of these cougars tested positive for more than 3 distinct ARs, which suggests multiple points of exposure.

Experts doubt that the imperiled cougar populations in Central Coastal and Southern California can afford rodenticide casualties, which is alarming given the overwhelming prevalence of poison exposure in these regions.

The National Park Service (NPS), as part of a long-term cougar population study, found that the deaths of seven cougars (as of October 2022) were directly attributable to rodenticide poisoning. Poisoning, vehicle strikes, and intraspecific conflict are the major causes of death in this small at-risk cougar subpopulation.

More research is necessary to determine whether poison exposure contributes to other forms of human-caused mortality such as depredation or vehicle strikes, but a strong link has been made in bobcats between rodenticides and lethal incidences of notoedric mange, a parasitic skin disease.

#BreakThePoisonChain is a public awareness campaign started by NPS to empower people to use poison-free methods to resolve rodent conflicts.

California Department of Pesticide Regulation [CDPR]. 2018. An investigation of anticoagulant rodenticide data submitted to the Department of Pesticide Regulation. Sacramento, CA, USA.

Moriarty, J. G., S. P. D. Riley, L. E. Serieys, J. A. Sikich, C. M. Schoonmaker, and R. H. Poppenga. 2012. Exposure of wildlife to anticoagulant rodenticides at Santa Monica Mountains National Recreation Area: from mountain lions to rodents. *Proceedings of the 25th Vertebrate Pest Conference*:144-148.

National Park Service [NPS]. 2014. Griffith Park mountain lion exposed to poison, suffering from mange. <https://www.nps.gov/samo/learn/news/gp-lion-exposed-to-poison.htm>. Accessed 8 June 2021.

National Park Service [NPS]. 2019. Avoiding Unintentional Poisoning. [https://www.nps.gov/samo/learn/management/rodenticides.htm#:~:text=The%20use%20of%20anticoagulant%20rodenticide%20poison%20to%20control,and%20local%20wildlife%20are%20at%20risk%20of%20exposure](https://www.nps.gov/samo/learn/management/rodenticides.htm#:~:text=The%20use%20of%20anticoagulant%20rodenticide%20poison%20to%20control,and%20local%20wildlife%20are%20at%20risk%20of%20exposure.). Accessed 8 June 2021.

Serieys, L. E. K., A. J. Lea, M. Epeldegui, T. C. Armenta, J. Moriarty, S. VandeWoude, S. Carver, J. Foley, R. K. Wayne, S. P. D. Riley, and C. H. Uittenbogaart. 2018. Urbanization and anticoagulant poisons promote dysfunction in bobcats. *Proceedings of the Royal Society B* 285.

Uzal, F. A., R. S. Houston, S. P. D. Riley, R. Poppenga, J. Odani, and W. Boyce. 2007. Notoedric Mange in Two Free-Ranging Mountain Lions (*Puma concolor*). *Journal of Wildlife Diseases* 43:274-278.

## Mange

### Q: What is mange?

Mange is a parasitic skin disease that causes hair loss and itching, and in severe cases can cause severe emaciation and death in affected animals. The mite that causes mange may be common, and under normal circumstances animals can spontaneously recover from mild cases of the disease.

Severe mange has been linked to rodenticide poisoning in bobcats, and the link may also exist in cougars and other wildlife. The poison weakens immune system function in bobcats, which could cause mange-infected animals to have hypoallergenic responses to their mite infestation. Mortality associated with mange occurs through emaciation, loss of overall condition, or from secondary infection caused by wounds from scratching.

California Department of Pesticide Regulation [CDPR]. 2018. An investigation of anticoagulant rodenticide data submitted to the Department of Pesticide Regulation. Sacramento, CA, USA.

Moriarty, J. G., S. P. D. Riley, L. E. Serieys, J. A. Sikich, C. M. Schoonmaker, and R. H. Poppenga. 2012. Exposure of wildlife to anticoagulant rodenticides at Santa Monica Mountains National Recreation Area: from mountain lions to rodents. *Proceedings of the 25th Vertebrate Pest Conference*:144-148.

National Park Service [NPS]. 2014. Griffith Park mountain lion exposed to poison, suffering from mange. <https://www.nps.gov/samo/learn/news/gp-lion-exposed-to-poison.htm>. Accessed 8 June 2021.

Serieys, L. E. K., A. J. Lea, M. Epeldegui, T. C. Armenta, J. Moriarty, S. VandeWoude, S. Carver, J. Foley, R. K. Wayne, S. P. D. Riley, and C. H. Uittenbogaart. 2018. Urbanization and anticoagulant poisons promote dysfunction in bobcats. *Proceedings of the Royal Society B* 285.

## Pesticides

### Q: What are the impacts of pesticides on cougars and other wildlife?

The Precautionary Principle suggests that even if impacts are unknown, the use of pesticides and pollutants should be minimized just in case there are unforeseen consequences. Pesticides are designed to kill targeted organisms, but often have adverse effects on non-target species.

When pesticides must be used, it should be with strict adherence to standard operating procedures for human and wildlife safety, and should include proper disposal to avoid polluting the environment. Pollution is one of the greatest threats to biodiversity on earth, and the bioac-

cumulation of poisons through secondary and tertiary poisoning leave apex predators like the cougar extraordinarily vulnerable.

*California Department of Pesticide Regulation [CDPR]. 2018. An investigation of anticoagulant rodenticide data submitted to the Department of Pesticide Regulation. Sacramento, CA, USA*

## Vehicle Strikes

### Q: How often are cougars killed by vehicles in CA and near LA?

Although the exact total is not known, an estimated 100 cougars are killed by vehicle strikes throughout California annually. The National Park Service recorded 24 cougar deaths, including 10 study animals, caused by vehicle strikes in the Santa Monica Mountains and surrounding mountain ranges between 2002 and 2021. In the first 10 months of 2022, 7 cougars were killed by vehicle strikes in the Los Angeles area.

*Pollard, L. 2016. 100+ Calif. Mountain Lions a year killed by motor vehicles. Public News Service.*

*National Park Service [NPS]. 2021. Lions in the Santa Monica Mountains. <https://www.nps.gov/samo/learn/nature/pumapage.htm>. Accessed 8 June 2021.*

### Q: What can be done to prevent cougar casualties from vehicle strikes?

The risk of wildlife-vehicle collisions increases during low-light hours around dawn, dusk, nighttime, and in the fog and rain, especially in highly developed areas. This risk is heightened at these times both because of decreased visibility and because these are often the hours that wildlife are most active. Observing legal speed limits and other traffic laws, maintaining clear visibility through windshields and windows, avoiding distracted driving, and being aware of likely wildlife encounter areas promotes road safety and reduces the chances of collisions. Stay vigilant for oncoming wildlife and remember that deer often graze along the edges of roads and highways in close proximity to traffic.

Cougars and other wildlife are most vulnerable to vehicle strikes where roads bisect natural travel corridors — areas that connect one habitat patch to another. The placement of new roads can be planned to strategically avoid fragmenting cougar habitats. Existing transportation infrastructure can be retrofitted with overpasses or underpasses. These engineering feats are becoming commonplace worldwide due to their overwhelming success at reducing human-wildlife conflicts.

*Benson, J. F., J. A. Siskich, and S. P. D. Riley. 2020. Survival and competing mortality risks of mountain lions in a major metropolitan area. *Biological Conservation* 241:1-6.*

*Smith, J. A., T. P. Duane, and C. C. Wilmers. 2019. Moving through the matrix: promoting permeability for large carnivores in a human dominated landscape. *Landscape and Urban Planning* 183:50-58.*

# Wildlife Crossing at Liberty Canyon

## #SaveLACougars

### Q: How can we #SaveLACougars?

LA cougars are special because they persist on the outskirts of one of the world's largest megacities (with a growing human population of more than 18 million). Individual cougars naturally roam hundreds of square miles and fiercely defend their home ranges from other cougars, which are behaviors well-suited to wild landscapes but make individuals and their populations vulnerable to urban development. The survival of LA cougars depends on establishing safe travel corridors between the thousands of acres of their natural habitat currently fragmented throughout Southern California.

The National Park Service has been investigating the impacts of urbanization on over 100 monitored cougars in and around the Santa Monica Mountains since 2002, and concluded that lack of connectivity is the single greatest threat to cougars in the Santa Monicas. The threat is so immediate that experts are concerned the total loss of this subpopulation could occur within just 50 years – a blink of an eye in evolutionary time. This means that if nothing is done to restore connectivity, Angelenos alive today may face a tomorrow without local cougars. The Wallis Annenberg Wildlife Crossing at Liberty Canyon was devised for the express purpose of meeting this need.

Another important aspect of conserving LA cougars is providing assistance, education, and community to those who experience (or have the potential to experience) conflict with cougars, either perceived or actual. We must also continue to provide education about the alternatives to rat poisons (anticoagulant rodenticides) as a means of pest control.

We must also connect all Angelenos with wildlife by centering environmental and social justice at the core of our work. Including historically excluded voices and recruiting new audiences to the field of conservation makes our initiative more diverse, culturally aware, relevant, and resilient.

The very preventable loss of cougars in Los Angeles would be devastating both culturally and ecologically. These cougars are sacred kin to Indigenous people, who together have faced US government-endorsed genocidal policies in recent history, and continue to endure persecution through lack of acknowledgement for their intrinsic rights to exist and occupy their own homelands. Additionally, cougars have become a centerpiece for appreciating all urban wildlife in LA. P-22 Day, a city holiday named after the cougar of Griffith Park who captured the hearts of millions with his Hollywood journey, annually attracts crowds of tens of thousands to learn about and celebrate human-wildlife coexistence.

As the last remaining large carnivore in the area, cougars represent the only species occupying the apex predator role. We do not want to lose any ecological roles from the ecosystem, and apex predator species at the top of the food chain are especially valuable as their roles may



have significant impacts on many others. The continued presence of cougars helps the Santa Monica Mountains remain one of only 36 “biodiversity hotspots” in the entire world: home to 50 mammal, 35 reptile and amphibian, almost 400 bird, and over 1,000 plant species.

National Park Service [NPS]. 2021. Lions in the Santa Monica Mountains. <https://www.nps.gov/samo/learn/nature/pumapage.htm>. Accessed 8 June 2021.

## Date Of Completion

### Q: When will the Wallis Annenberg Wildlife Crossing at Liberty Canyon be complete?

The wildlife crossing will complete a wildlife corridor linking the Santa Monica Mountains (SMM) to the Simi Hills range (and moreover to the Los Padres National Forest) to restore the connectivity of natural habitats, and prevent the imminent extinction of this subpopulation of cougars.

Over the past several decades, this subpopulation has suffered from inbreeding and low genetic diversity, high rates of intraspecific killings, and vehicular casualties all related to the missing linkage between these major cougar habitat areas. A recent National Park Service (NPS) study discovered the first physical abnormalities in cougars linked to inbreeding depression when they captured a young male with reproductive and tail defects. Together, NPS and colleagues at UCLA have documented high levels of sperm abnormality in male cougars.

The biggest barrier to the movement and genetic diversity of SMM cougars, currently hemmed-in by urban development and the Pacific Ocean, is the 10-lane Highway 101, the future site of the Wallis Annenberg Wildlife Crossing. **Construction crews broke ground in 2022, and it is estimated that the crossing will be complete by 2025.**

Huffmeyer, A., J. A. Sikich, T. W. Vickers, S. P. D. Riley, and R. K. Wayne. 2022. First reproductive signs of inbreeding depression in Southern California male mountain lions (*Puma concolor*). *Theriogenology* 177:157-164.

## Stakeholders

### Q: Who are the stakeholders for the Wallis Annenberg Wildlife Crossing?

The wildlife crossing is a public-private partnership of monumental scope, leveraging the capacity, expertise, and leadership of dozens of organizations and institutions from the public and private sectors. The five organizations who serve as the Liberty Wildlife Corridor Partners are the National Wildlife Federation (NWF), California Department of Transportation (Caltrans), Santa Monica Mountains Conservancy (SMCC) & Mountains Recreation and Conservation Authority, National Park Service (NPS), and the Resource Conservation District of the Santa Monica Mountains (RCDSMM). An Executive Team with representatives from SMCC, NWF, NPS, and Caltrans serve as the leadership for the partners. Representatives from Senator Henry Stern and Assemblymember Richard Bloom’s offices attend the partner meetings, along with retired Senator Fran Pavley. The project partners also added a world-renowned design team led by a landscape architectural practice, Living Habitats LLC, that collaborates with Caltrans and coordinates with a broad team of wildlife crossing experts in the planning and design development of the wildlife crossing.

The Cougar Conservancy, as part of the #SaveLACougars campaign, is supporting this coalition's efforts through community outreach designed to prevent human-cougar conflicts and provide direct assistance to people experiencing conflicts. The Southern California Association of Governments, which represents 191 cities and over 18 million residents, are local stakeholders who passed a resolution supporting the crossing. Other stakeholders include folks all around the world who support engineering strategies that promote biodiversity.

## Cougars On The Crossing

### Q: How do we know cougars and other wildlife will use the crossing?

Wildlife crossings have become popular infrastructure-retrofitting tools around the world precisely because wild animals readily learn to use them. Photographic evidence from a wildlife bridge in Utah confirmed cougars were using the crossing within weeks of finishing construction, and cougars in California have also been documented using wildlife corridors, drainage culverts, tunnels, and underpasses.

The Wallis Annenberg Wildlife Crossing is being built in one of only two places where crossing the 101 is actually feasible, and is in an area where animals are already known to attempt the passage. To further ensure the success of cougars and other wildlife learning to use the new crossing, fencing will be constructed to guide them toward the corridor.

*Machemer, T. 2020. Animals are using Utah's largest wildlife overpass earlier than expected. <https://www.smithsonianmag.com/smart-news/animals-are-using-utahs-largest-wildlife-overpass-earlier-expected-180976420/>. Accessed 14 Oct 2021.*



## Q: Will the wildlife crossing attract more cougars to the area?

No. Cougars and other wildlife are already living in the natural areas of the Santa Monicas and Simi Hills, including around the crossing on both sides of Highway 101. The National Park Service estimates that only 10 to 15 adult and subadult cougars form a stable population within the Santa Monica Mountains - this is the area's carrying capacity due to cougars' territoriality, large home range requirements, and available habitat. The wildlife crossing will enable the introduction of much needed genetic diversity into the subpopulation by promoting movement among resident and neighboring cougars.

*i>Benson, J. F., J. A. Siskich, and S. P. D. Riley. 2016. Individual and population level resource selection patterns of mountain lions preying on mule deer along an urban-wildland gradient. PLoS ONE 11:1-16.*

## Conflict Related To The Crossing

### Q: Does the crossing threaten people and domestic animals living around it?

No. On the contrary, experts predict that human-cougar conflicts may be reduced by providing this habitat linkage. The National Park Service's long-term study of the Santa Monica Mountains cougar population showed that cougars have already been active in the Liberty Canyon area for the past 19 years. When nature preserves become islands surrounded by impenetrable oceans of concrete, cougars are forced to use the urban interface as they attempt to disperse or avoid adult male territorial aggression, which is the leading cause of death of male subadults. The crossing will allow safe passage and dispersal of cougars in natural spaces, outside of the urban interface.

Numerous studies of cougars in urban Central and Southern California found that cougars almost always selected natural habitat when it was available, and when humans used cougar habitat recreationally, cougars became more nocturnal to avoid human contact. Cougars and humans can coexist safely and without conflict when given the opportunities and resources to do so.

*Allredge, M. W., F. E. Buderman, and K. A. Blecha. 2019. Human-cougar interactions in the wildland-urban interface of Colorado's front range. Ecology and Evolution 9:10415-1043.*

*Benson, J. F., J. A. Siskich, and S. P. D. Riley. 2020. Survival and competing mortality risks of mountain lions in a major metropolitan area. Biological Conservation 241:1-6.*

*Smith, J. A., T. P. Duane, C. C. Wilmers. 2019. Moving through the matrix: promoting permeability for large carnivores in a human-dominated landscape. Landscape and Urban Planning 183:50-58.*





# Conflict Mitigation





# Efficacy of Nonlethal Tools

## Translocation and Relocation

### Q: What is the difference between translocation and relocation?

A **relocation** is when an animal is moved to an area within its home range or territory.

A **translocation** is when an animal is moved to an area outside of its home range or territory.

*Mengak, M. T. 2018. Wildlife Translocation. Wildlife Damage Management*

*Technical Series. U.S. Department of Agriculture, Animal & Plant Health Inspection Service, Wildlife Services National Wildlife Research Center, Fort Collins, Colorado.*

### Q: Why aren't cougars translocated to reduce human-cougar conflict?

Moving cougars in order to reduce depredation events or harassment of domestic animals is not a primary tool that wildlife managers use to solve conflicts. CDFW is authorized to move a cougar to the nearest suitable habitat only when it poses no threat to public safety.

There is no guarantee that a translocated cougar that has depredated in one area will not resort to depredation in another area, especially if the animal is desperate and confused in an unfamiliar territory where it may face threats from resident cougars.

*California Department of Fish and Wildlife. 2021. Mountain Lions in California. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion>. Accessed 14 Sep 2021.*

## Translocation and Relocation

### Q: What are cougar attractants and how can they be removed?

Natural food resources can be much more limited than those accidentally or intentionally provided by people. Easily accessible food is a very powerful attractant.

Avoid leaving pets and hobby livestock unattended, especially around sunrise, sunset, and at night when many wild animals including cougars are most active. Use cougar-proof animal enclosures for unattended pets and livestock. If you have a large number of animals and it is not practical to keep them in an enclosure at night, consider using livestock guardian dogs.

If the death of a domestic animal occurs, promptly and properly dispose of the remains, as cougars may return in the following days to feed on an animal they have killed.

**Don't feed wildlife.** Feeding wild animals habituates them to seeking-out humans as food resources, which can lead to dangerous encounters for humans and habituated animals. Wildlife are not pets, and wild animals looking for food can become a nuisance or exhibit aggression. Similarly, humans who do not want wildlife approaching them can pose a threat to the animals seeking food. Cougar prey species like deer, raccoons, and other animals that become conditioned to being fed by humans can be strong attractants to cougars seeking easy, predictable meals.

Pet food and water should not be left outside unattended. Pet food represents an easy meal to many wildlife species. Consider feeding and watering pets while indoors. If you store pet food outside, make sure it is inaccessible to wildlife.

Pick up fallen fruit from fruit trees in your yard and make sure no wild animals can raid your vegetable garden.

Secure trash and compost piles. Cougars may not raid your trash bin, but unsecured trash and compost piles often attract rodents and predators that prey on them. The activity of other wildlife may cause a cougar to investigate. Cleanliness can prevent this.

Reduce deer activity around your property by deer-proofing your yard. Cougars are deer specialists, so the presence of deer may attract cougars to an area as well. Plants that deer love to eat will invite them to visit and linger near your home. Repellant landscaping or fencing can encourage deer to move on.

*California Department of Fish and Wildlife [CDFW]. 2021. Keep Me Wild: Mountain Lion. <https://wildlife.ca.gov/Keep-Me-Wild/Lion>. Accessed 9 June 2021.*

## Landscaping

### Q: Can landscaping practices help prevent human-cougar conflicts?

Yes. Open areas without places to hide are naturally risky for wildlife, therefore, reducing possible cover objects through strategic landscaping can serve as a deterrent for cougars and their prey.

1. Trim vegetation above the ground. Communities in Southern California have successfully reduced conflicts with predators by trimming hedges 2-3 feet off the ground.
2. Keep hedges away from houses. This helps deter cougar prey species from making a backyard their home, and maintains the recommended 100 feet of Defensible Space around the home for wildfire readiness.
3. Reduce backyard clutter. This will eliminate spaces where wildlife can take refuge and will encourage cougars and their prey to move on.
4. Pick up fallen fruit from fruit trees. Fruit is a highly sought-after food resource and will attract many species that are natural prey to cougars such as raccoons and coyotes.
5. Remove and avoid planting vegetation that deer prefer. Plants that deer love to eat will invite deer to linger near your home, and cougars are deer hunting specialists. Repellant landscaping or fencing can encourage deer to move on.

*Cal Fire. 2021. Creating Defensible Space. <https://www.fire.ca.gov/DSPACE>. Accessed 9 June 2021.*

*California Department of Fish and Wildlife [CDFW]. 2021. Keep Me Wild: Mountain Lion. <https://wildlife.ca.gov/Keep-Me-Wild/Lion>. Accessed 9 June 2021.*

*Coey, B., and K. Mayer. 1991. A Gardener's Guide to Preventing Deer Damage. California Department of Fish and Game, Wildlife Programs Branch, California, USA.*



COUGAR CONSERVANCY

## Livestock Guardian Dogs

### Q: Can any dog be trained to be a livestock guardian?

**No, not just any dog can be used to guard livestock from cougars and other predators.** Specific livestock guardian dog (LGD) breeds were developed to have the physical endurance and behaviors necessary for the task. Even individuals within these breeds may not be suitable if improperly trained, or if their temperament is too docile, as is often the case within pet lines of these breeds. Similarly, overly aggressive dogs with high prey drives are not suitable. The key is striking a balance between an LGD's responsiveness to novel stimuli (attentiveness), submissiveness toward livestock (trustworthiness), and aggressiveness toward predator species (protectiveness).

Established LGD breeds in North America include Great Pyrenees, Anatolian Shepherds, Akbash, Komondors, and Maremmas. LGDs can be mixed-breeds, but if any non-LGD traits are observed in an individual, there's a good chance the dog is mixed with a non-LGD breed and is unsuitable for guarding livestock. There are specific physical characteristics to note when considering effective livestock guardian dogs. For example, LGDs with droopy eyelids are more vulnerable to injury from vegetation, and those with pink gums are more prone to early onset cancers. Also, because LGDs are large dog breeds, special emphasis should be placed on proper conformation, as these breeds are prone to joint issues.

For a comprehensive check-list on selecting LGD puppies, please consult this guide: (<https://bit.ly/lgd-puppy>).

Macon, D., R. Baldwin, D. Lile, J. Stackhouse, C. Koopman Rivers, T. Saitone, T. Schohr, L. Snell, J. Harper, R. Ingram, K. Rodrigues, L. Macaulay, and L. Roche. 2018. *Livestock protection tools for California ranchers*. Agriculture and Natural Resources Publication 8598:1-15.

Macon, D. K. and C. Whitesell. 2020. *Selecting a livestock guardian puppy*. <https://ucanr.edu/sites/placernevadasmallfarms/files/326059.pdf>. Accessed 11 June 2021.

## Q: How are livestock guardian dogs trained?

A livestock guardian dog (LGD) and their owner can be set up for successful training and implementation before the first commands and behaviors are ever taught. It is essential that LGDs come from reputable breeders of working LGD dogs, and that knowledgeable puppy selection is implemented before bringing home a new dog. There are many resources with information about suitable LGD puppy temperament, and helpful guides for selecting the appropriate breed and sex for specific livestock guardian requirements.

The training process of LGDs requires more knowledge than basic obedience training instilled in other breeds for other living situations. Many LGD breeders and trainers recommend puppies be imprinted on livestock (particularly the species they'll grow to protect) while whelping. It's also important to select and train dogs with low prey-drive, and to teach confidence and independence, as LGDs will often work without the supervision of their owners. One of the most important factors in LGD training is the development of a bond between the dog and the livestock it is tasked with guarding.

*Macon, D. K. 2020. The secret lives of livestock guardian dogs: Current knowledge and future research. Proceedings of the 29th Vertebrate Pest Conference. <https://escholarship.org/uc/item/8zffc2x9>. Accessed 11 June 2021.*

*Macon, D. K. and C. Whitesell. 2020. Selecting a livestock guardian puppy. <https://ucanr.edu/sites/placernevadasmallfarms/files/326059.pdf>. Accessed 11 June 2021.*

## Q: How much does a livestock guardian dog cost?

While the cost may vary based on geographic location, the initial cost of a livestock guardian dog (LGD) puppy can be upwards of \$500. You can also expect to pay around \$950 annually for food, veterinary bills, and other associated LGD expenses. Livestock guardian dogs represent one of the most effective deterrents against depredation, especially in circumstances with domestic animals that cannot be kept in enclosures.

*Macon, DK (2020). The secret lives of livestock guardian dogs: Current knowledge and future research. Proceedings of the 29th Vertebrate Pest Conference. <https://escholarship.org/uc/item/8zffc2x9>. Accessed 11 June 2021.*

## Q: Are animals besides dogs used to guard livestock from cougars?

Not usually. Common alternatives to livestock guardian dogs (LGDs) are donkeys and llamas, whose specific anti-predator defense strategies are much less effective against cougars than those of LGDs. For example, llamas are often known to flee from cougars rather than confront them, and are frequently lost to depredation according to annual reporting. The presence of these alternative guardian species may even attract rather than deter cougars.

*Macon, D., R. Baldwin, D. Lile, J. Stackhouse, C. Koopman Rivers, T. Saitone, T. Schohr, L. Snell, J. Harper, R. Ingram, K. Rodrigues, L. Macaulay, and L. Roche. 2018. Livestock protection tools for California ranchers. Agriculture and Natural Resources Publication 8598:1-15.*



## Motion-Activated Aversive Stimuli

### Q: Do motion-activated lights deter cougars?

Research suggests that motion-activated aversive visual stimuli such as strobe lights are not effective at deterring cougars in a commercial livestock setting or residential settings. However, motion-activated lights can be very useful in preventing conflicts by providing humans with nighttime visibility.

It is important to note that even if most cougars will avoid nighttime light sources, a cougar may still risk using permanently- or intermittently-lit areas if a strong enough attractant is present. For this reason, it's important that the use of deterrent lighting is paired with more effective coexistence tools.

*Macon, D., R. Baldwin, D. Lile, J. Stackhouse, C. Koopman Rivers, T. Saitone, T. Schohr, L. Snell, J. Harper, R. Ingram, K. Rodrigues, L. Macaulay, and L. Roche. 2018. Livestock protection tools for California ranchers. Agriculture and Natural Resources Publication 8598:1-15.*

*Ditmer, M. A., D. C. Stoner, C. D. Francis, J. R. Barber, J. D. Forester, D. M. Choate, K. E. Ironside, K. M. Longshore, K. R. Hersey, R. T. Larsen, B. R. Mic-Millan, D. D. Olson, A. M. Andreasen, J. P. Beckmann, P. B. Holton, T. A. Messmer, and N. H. Carter. 2021. Artificial nightlight alters the predator-prey dynamics of an apex carnivore. *Ecography* 44:149-161.*

### Q: Can a combination of motion-activated light and audio devices deter cougars?

Combining motion-activated light and audio devices are rarely effective at deterring cougars. These stimuli, if used, should be combined with other exclusionary strategies such as cougar-proof enclosures and/or livestock guardian dogs to prevent conflicts.

## Cougar-Proof Enclosures

### Q: How do you cougar-proof a domestic animal enclosure?

Practice good husbandry by housing animals in cougar-proof enclosures from dusk until dawn, during other low-light conditions, and when animals are unattended. Whether you are **retro-fitting an existing structure or building one from scratch**, cougar-proofing a domestic animal enclosure is simple and well-worth the reasonable cost of supplies.

If you have animals such as alpacas, llamas, pigs, fowl, sheep, or goats, it is recommended that they be housed in a fully enclosed, roofed structure, rather than in an open-air, fenced-in enclosure, as wild predators may be able to jump, dig, or climb into an area with only simple fencing.

Before cougar-proofing an enclosure, think about the needs of the species and number of animals you will house, your husbandry practices and limitations, the social dynamics between your animals, the structure requirements for providing adequate shelter from the elements, and how to exclude the predators in your area.

Exclude climbing predators like cougars with 11-gauge or thicker chain-link fencing. The diamond design of chain-link is much more difficult for predators to climb than vertically-aligned fencing.

Cougars can fit through very small spaces. Gaps greater than 4 inches are possible entry points, and reduce security by allowing enclosed animals to poke their heads outside. Wrap metal wire every 4 inches to secure fencing to the enclosure's main infrastructure. This binds structure elements very strongly so there are no breaking points or large holes.

The roof of the enclosure should be able to support about 200 lbs of weight to provide adequate defense against possible cougar intruders.

Don't build enclosures near trees or structures. Cougars can use these features like ladders to access roofs and other entry points.

Secure enclosure doors with a welded chain and "quick link" lock, which can be easily opened and closed without keys or combination codes. Never use a padlock in wildfire-prone areas unless absolutely necessary for security purposes. Keys can be easily misplaced during an emergency.

Add a tarp or weather-proof cover to your enclosure. Animals need protection from the elements, so your enclosure should provide shade and some insulation.

Get animals accustomed to using their enclosure. To acquaint your animals with a new enclosure, try coupling an auditory cue like a bell with their favorite treat, then pair the sound of the bell with your animal entering the enclosure.

To exclude coyotes and foxes, which can dig under enclosures, use a rubber mat as enclosure flooring, or bury excess fencing 1 to 2 ft underground as a skirt around the enclosure.

For more information about cougar-proofing your animal enclosures, you can visit the [Cougar Conservancy](http://cougarconservancy.org) website ([cougarconservancy.org](http://cougarconservancy.org)). The Cougar Conservancy is happy to provide recommendations for retrofitting existing structures and for new enclosure construction. You can also call their Conflict Hotline at **1-800-930-1087** or email [director@cougarconservancy.org](mailto:director@cougarconservancy.org).

### **Q: Does electric fencing exclude cougars?**

Electric fencing on its own is not sufficient for cougar conflict prevention. Research in a commercial livestock setting suggested that electric fencing is only moderately successful when permanently installed, and is even less effective when utilized temporarily. The only time an electric fence is practical for deterring cougars is when placed around a fully-enclosed structure. Using electric fences around property boundaries is ineffective; cougars can, and do, simply jump over them (Lotz, M. 2021. Florida Fish and Wildlife Conservation Commission, personal communication).

Macon, D., R. Baldwin, D. Lile, J. Stackhouse, C. Koopman Rivers, T. Saitone, T. Schohr, L. Snell, J. Harper, R. Ingram, K. Rodrigues, L. Macaulay, and L. Roche. 2018. Livestock protection tools for California ranchers. Agriculture and Natural Resources Publication 8598:1-15.

## Keep Domestic Animals Indoors

### Q: Is it safe to leave domestic animals unattended outdoors?

It is always risky to leave domestic animals outside unattended – predators represent only one of many types of risks. The domestication process has made our pets and hobby animals behaviorally and physically defenseless against predators compared to wild animals.

Keeping domestic animals inside is the best preventative measure to ensure their safety. If they must be outside, avoid leaving them unattended, especially at night and around dawn and dusk when many predators are most active.

There are easily-constructed and affordable enclosures for dogs and cats (“cattios”) that can be built from kits or from scratch if you want to give your pets access to the outdoors but cannot keep an eye on them.

## Aversive Conditioning

### Q: What is aversive conditioning and how can it be used to deter cougars?

Aversive conditioning refers to the long-term process of reducing the likelihood of unwanted behaviors in animals by associating those behaviors with a negative stimulus or experience. Strategies that may be used as part of aversive conditioning for cougars include removing carcasses cougars have cached in undesirable areas, tranquilization and relocation, and shooting bean bags at cougars to cause discomfort but not injury. This can teach cougars to associate people with stress that they may prefer to avoid.

Aversive conditioning is most effective when it is implemented prior to the establishment of substantial rewards for the unwanted behavior. When a cougar makes a kill in a residential area and their food cache is not immediately removed, the cougar may become more accustomed to people by finding the reward of the cache outweighs the risk of encountering humans. If a cougar has already formed unwanted habits, aversive conditioning may be less effective. A long-term study conducted in Colorado found that adult female cougars that frequented the urban interface were the least-affected by aversive conditioning.

Individual animals also vary significantly in their responses to aversive conditioning, just as individual people can respond uniquely to stressful situations. When considering aversive conditioning to mitigate conflict, it is important to understand that there is no one-size-fits-all solution. Aversive conditioning protocols should be developed with specific regard to context, individual history, and situational circumstances.

Alldredge, M. W., F. E. Buderman, and K. A. Blecha. 2019. Human-cougar interactions in the wildland-urban interface of Colorado's front range. *Ecology and Evolution* 9:10415-1043.

Dugatkin, L. A. 2020. *Principles of Animal Behavior*. University of Chicago, Chicago, Illinois, USA.

**Q: What is hazing and how can it be used to deter cougars?**

Hazing is a type of aversive conditioning. It is used as a short-term response to wildlife representing an immediate threat to humans or domestic animals in undesirable areas. Hazing stresses, but does not injure, the animal being hazed. For example, implementing loud noises, visual displays of strength and size, rock-throwing, bear spray, or the use of non-lethal mechanized projectiles (such as paintball guns and bean bag launchers) are common hazing strategies, for reducing conflict with bears in campgrounds.

If a cougar is encountered on a trail or near a home, hazing is a completely appropriate response that can protect both yourself and the cougar from possible negative repercussions. Face the cougar. Do not turn your back on a cougar or bend down to make yourself smaller. Raise your arms and clap while yelling to appear intimidating.

Throw rocks or sticks at the cougar to send the message that approaching you would be a bad idea. Cougars are intelligent animals and prefer conflict avoidance – they will take the hint under most circumstances.





### Q: How can I plan for being safe while on-the-trail?

Like many of us, cougars tend to avoid confrontation. While cougar attacks are extremely rare, it is important to take preventative measures while recreating in cougar habitat to ensure your own safety as well as that of the cougars and wildlife you share space with.

1. **Recreate during daylight hours.** Observe park recreation hours with closures from sunset to sunrise. Cougars are not the only species that become more nocturnal in areas with high human activity. Natural areas should be human-free at dawn, dusk, and nighttime to minimize the disturbance of wildlife.
2. **Be aware of your surroundings** when hiking, running, jogging, or bicycling in cougar habitat. The use of earphones impairs the ability to hear wildlife that may be nearby. Remember that choosing to recreate in wild areas is choosing to recreate in cougars' backyards.
3. **Stay on marked trails.** This will minimize stress on cougars and other wildlife, therefore reducing the chances of human-wildlife conflict. This is especially important during spring and summer months when many wild animals are tending to their young. Like humans, wild animals will try to protect their young from direct or perceived threats. The best way to not appear threatening is to not invade their spaces.
4. **Hike in groups and make noise.** Announce your presence to wildlife in the area by singing, talking loudly, or clapping your hands around blind turns. This will give cougars and other wildlife the opportunity to move away from you.
5. **Supervise children and make sure they stay close to adults.** Inform children on how to safely recreate in cougar habitat. Adults can ensure that children don't disrupt wildlife by giving them clear instructions and by setting a good example.
6. **Do not approach an animal carcass.** If you see a dead animal while hiking, don't go near it, as it is a source of food for wild predators and can indicate that a cougar is nearby. It is best to move-on to minimize disturbance to wildlife.
7. **Consider leaving pets at home.** Pets can damage natural habitat, injure wildlife, and become injured themselves if confrontation occurs. Improper disposal of pet waste in recreational areas can spread disease and decrease environmental quality. If you do choose to bring your dogs on the trail, **keep them on a leash less than 6ft long.** Off-leash dogs stress wildlife. It is never okay to let your dogs chase wild animals. Keeping your dogs close to you will prevent them going off trail and getting into trouble.
8. **Consider carrying an air horn or bear spray.** An airhorn can be used to deter a cougar away from an area. Bear spray is another form of protection that can be effective if you know how to use it. Always familiarize yourself with your tools BEFORE going out on the trail, so that in the event of an encounter, you are prepared to use them.

## Dog Walking Safety

### Q: How can I safely walk my dog in cougar habitat?

You can keep your dog safe (and prevent damage and stress to natural habitats and wildlife) by walking them on a leash no longer than 6 ft. Extendable leashes, especially those longer than 6 ft in length, remove control from humans, and are not as effective at keeping dogs close to their people. Your ability to control an emergency situation is critical for the safety of you, your pets, and wildlife.

It is never okay to let your dog chase wild animals. Off-leash dogs are more likely to be injured and to cause injury if confrontation with wildlife occurs. Keeping dogs close to you will prevent them from going off the trail and getting into trouble.

Improper disposal of pet waste in recreational areas can also spread disease and decrease environmental quality. Remember, “leave no trace.”

## Non-Cougar Wildlife Removal

### Q: How can I get help removing wildlife from my property?

Wild animals that occasionally act as unwanted guests in and near our homes, such as raccoons, skunks, opossums, and rodents, cannot legally be relocated, so people should understand that calling a removal specialist for these species most often means calling an exterminator.

The most effective and long-term methods for reducing conflicts with wildlife are removing attractants from your property and implementing exclusionary measures to prevent their entry when necessary. Removing individual animals, whether by killing or moving them, will not solve the problem if attractants are not eliminated. Lingering attractants mean other animals will soon be attracted as well.

There are measures people can take on their own to humanely encourage wild animals to move on, and there are organizations dedicated to connecting people with the resources they need to coexist.

WildCare is based near San Francisco and their mission is to help people humanely navigate interactions with wildlife to improve our ability to live side-by-side. You can access guides on how to coexist with specific species online through ([www.discoverwildcare.org](http://www.discoverwildcare.org)). Their solutions specialist can be reached through their hotline: (415) 456-7283.

Wildlife Care of Southern California and California Wildlife Center are organizations that provide similar resources that serve communities in the southern region of the state. Learn more at and ([www.cawildlife.org](http://www.cawildlife.org)).

# Wildfire & Drought



# Wildfire

## Coexisting In Fire Country

### Q: How do wildfires impact our ability to coexist with cougars?

Wildfires present a significant threat to cougar populations in California. A statewide analysis of the effects of the 2020 fire season estimated that 15% of cougars across the state perished, suffered injuries, or faced other negative impacts. An adult cougar and an older kitten studied by the National Park Service were casualties of the massive Santa Monica Mountains Woolsey Fire in 2018.

Major losses of vegetative cover make post-fire landscapes largely unsuitable for cougars and other wildlife, especially in periods immediately post-fire. This loss of suitability intensifies the effects of habitat fragmentation, reducing population connectivity, and potentially increasing the likelihood of negative human-wildlife interactions, such as vehicle strike mortality. During the fire, cougars and other wildlife seeking refuge may be forced into closer contact with humans. Wildfire prevention is part of our collective responsibility in environmental protection and enabling human-wildlife coexistence.

Fire-ready and cougar-proof animal enclosures ensure the safety of your animals in an emergency. It is also important to practice responsible landscape management and attractant elimination following wildfire events, even if it is tempting to leave attractants like water for wild animals near your home. Remember that habituating animals to human contact and proximity rarely ends well for the animals.

*Benson, J. F., P. J. Mahoney, T. W. Vickers, J. A. Sikich, P. Beier, S. P. D. Riley, H. B. Ernest, and W. M. Boyce. 2019. Extinction vortex dynamics of top predators isolated by urbanization. *Ecological Applications* 29:1-14.*

*Jennings, M. K., R. L. Lewison, T. W. Vickers, and W. M. Boyce. 2015. Puma response to the effects of fire and urbanization. *The Journal of Wildlife Management* 80:221-234.*

*Panthera. 2020. 300 to 600 Mountain lions killed, injured or negatively impacted by 2020 California wildfires estimates Panthera, global wild cat conservation organization. <https://www.panthera.org/300-600-mountain-lions-killed-injured-or-negatively-impacted-2020-california-wild-fires-estimates>. Accessed 8 June 2021.*

*Scauzillo, S. 2017. Don't leave buckets of water for wildlife fleeing Ventura, Los Angeles fires, says U.S. Forest service. *Pasadena Star-News*. <https://www.pasadenastarnews.com/2017/12/08/dont-leave-buckets-of-water-for-wildlife-fleeing-ventura-los-angeles-fires-says-u-s-forest-service/>. Accessed 8 June 2021.*

## Wildfire Response

### Q: What is the Wildlife Disaster Network?

During California's 2020 fire season, the Wildlife Disaster Network (WDN) was created to respond to disasters like wildfires. It is a coalition of veterinarians, wildlife biologists, ecologists, rehabilitators, and trained animal care volunteers partnered through the UC Davis School of Veterinary Medicine and the California Department of Fish and Wildlife (CDFW). The WDN assigns responders to conduct post-fire reconnaissance visits to find, treat, and rehabilitate injured animals with coalition support.



**Please report burned wildlife.** In 2020 the Cougar Conservancy's Conflict Task Force received communication from a resident living in the San Gabriel Mountains about a cougar on their property that had possibly been injured in the Bobcat fire. The task force responded quickly with a follow-up visit and confirmed there was a young cougar on-site with injuries. Officials have informed communities that wildlife may end up in unusual places – like your backyard – to escape from wildfires. The cougar's paws were badly burned, and she would certainly have perished from her injuries if not for the concerned community member who reported her. She was the first wildfire-injured cougar to be rescued, rehabilitated, and released in California history, and sparked the creation of the WDN.

You can learn more about Monrovia, named after the area she was discovered in, and her conservation success story on YouTube ([@CougarConservancy](#)).

You can call the Wildlife Disaster Network hotline at **1-800-942-6459**.

Kerlin, K. 2020. UC Davis News. Wildlife Disaster Network mobilizes aid for burned, injured wildlife. <https://www.vetmed.ucdavis.edu/news/wildlife-disaster-network-mobilizes-aid-burned-injured-wildlife>. Accessed 8 June 2021.

# Drought

## Coexistence During Drought

### Q: How does drought impact human-cougar coexistence?

California droughts are lasting longer than ever before, putting novel stress on wild animals and exacerbating conflicts with people.

Drought conditions may require cougars to travel longer distances to meet their nutritional needs, and may therefore increase their chances of utilizing available food and water at the urban interface.

To reduce the likelihood of encountering a cougar under drought conditions, do not feed or water wildlife. California wildlife have evolved with very dry conditions for half of every year in the area's Mediterranean climate, have survived periods of drought, and are capable of surviving without human assistance.

California Department of Fish and Wildlife [CDFW]. 2021. Actions taken during 2012-2017 drought to preserve and protect the state's fish and wildlife resources. <https://wildlife.ca.gov/Drought/2012-2017>. Accessed 14 Oct 2021.

California Department of Fish and Wildlife [CDFW]. 2017. DRAFT HWC Incident Reporting Summary September 1, 2015 – April 30, 2017. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=140409&inline>. Accessed 14 Oct 2021.

# Injured or Dead Wildlife



# Wildlife Injuries

## Reporting Injuries

### Q: What do I do if I see an injured cougar?

If you see an injured cougar, report it to the California Department of Fish and Wildlife (CDFW):

Southern California 24-hour dispatch: **1-951-443-2944**

Northern California 24-hour dispatch: **1-916-358-1312**

You can also call the CDFW veterinary hotline at the Wildlife Health Laboratory: **916-358-2790** or contact them via email at **WILAB@wildlife.ca.gov**.

For sightings in the Santa Monica Mountains (SAMO), eastern SAMO (all areas east of the 405, including Griffith Park), Simi Hills, Santa Susana Mountains, and the Verdugo Mountains area, report to the National Park Service by emailing **SAMO\_mountainlions@nps.gov** or by calling **1-805-370-2317**.

You can also report a sighting using the California Department of Fish and Wildlife's (CDFW) **Wildlife Incident Reporting (WIR)** system. Injured wildlife in **Region 5** can be reported to the local CDFW office by calling **1-858-467-4201**.

When reporting, please include the location, date, and time of the sighting, and any photos or video you may have.

### Q: What do I do if I see an injured wild animal?

If you encounter an injured wild animal, use CDFW's Wildlife Rehabilitation Partner List, organized by location, to get in contact with facilities near you that can provide assistance. Please be respectful when contacting these facilities, and note that not all may be able to transport or intake injured animals of a particular species at that time.

For help reaching the appropriate contact, you can call the CDFW Region 5 office at **1-858-467-4201**.

California Department of Fish and Wildlife [CDFW]. 2021. Wildlife rehabilitation facilities. <https://wildlife.ca.gov/conservation/laboratories/wildlife-investigations/rehab/facilities>. Accessed 8 June 2021.





# Disease and Mortalities

## Reporting Disease

### Q: What should I do if I see a diseased cougar or other wild animal?

If you see a cougar with signs of disease, report it to the California Department of Fish and Wildlife:

Southern California 24-hour dispatch: **1-951-443-2944**

Northern California 24-hour dispatch: **1-916-358-1312**

Region 5 Office: **1-858-467-4201**

Additionally, report sightings of diseased cougars or other wildlife to the Wildlife Health Laboratory (WHL) via email [WILAB@ca.wildlife.gov](mailto:WILAB@ca.wildlife.gov) or by using their **Mortality Reporting** system. The WHL monitors disease in wildlife populations for conservation and public health purposes.

In all cases, send any photographic evidence or other information you may have about the animal to help assess its disease status.

National Park Service [NPS]. 2014. Griffith Park mountain lion exposed to poison, suffering from mange. <https://www.nps.gov/samo/learn/news/gp-lion-exposed-to-poison.htm>. Accessed 8 June 2021.

## Reporting Mortalities

### Q: What do I do if I find a dead cougar?

If you find a dead cougar, report it to the California Department of Fish and Wildlife:

Southern California 24-hour dispatch: **1-951-443-2944**

Northern California 24-hour dispatch: **1-916-358-1312**

Region 5 Office: **1-858-467-4201**

You can also report the mortality to the California Department of Fish and Wildlife using their Mortality Reporting system (<https://bit.ly/cdfw-mortality>).

For cougars found in the Santa Monica Mountains (SAMO), eastern SAMO (all areas east of the 405, including Griffith Park), Simi Hills, Santa Susana Mountains, and the Verdugo Mountains area, report it to the National Park Service by emailing [SAMO\\_mountainlions@nps.gov](mailto:SAMO_mountainlions@nps.gov) or by calling **1-805-370-2317**.

When reporting, please include the location, date, and time of the sighting, and any photos or video you may have.

**Do not handle dead wildlife**, as doing so can expose you to disease and can disturb crucial evidence for investigators.

California Department of Fish and Wildlife [CDFW]. 2021. Mortality reporting. <https://wildlife.ca.gov/Conservation/Laboratories/Wildlife-Health/Monitoring/Mortality-Report>. Accessed 8 June 2021.



# | Resources



COLLIN ECKERT

# National Park Service Programs

## All About LA Cougars

### Q: Where can I learn more about LA cougars?

The National Park Service (NPS) has pioneered extensive research about the lives and challenges of the cougars persisting in the country's second-largest city. Many of the NPS studies' findings are easily accessible online, allowing public access to information about this ecologically significant species (<https://bit.ly/nps-pumapage>).

You can also access tons of stunning visual media content including detection maps, photos, and videos through the Santa Monica Mountains National Park Service Flickr account (<https://bit.ly/samo-nps-flickr>).

National Park Service [NPS]. 2021. Lions in the Santa Monica Mountains. <https://www.nps.gov/samo/learn/nature/pumapage.htm>. Accessed 8 June 2021.

National Park Service [NPS]. 2021. Santa Monica Mountains National Recreation Area's photos. <https://www.flickr.com/photos/santamonicamtnts/tags/mountainlions/>. Accessed 8 June 2021.

## P-22's Story

### Q: Who is P-22 and why are the lives of individual cougars like him important?

P-22 was an adult male cougar who likely survived two highway crossings only to find himself trapped within the natural cougar habitat island of Griffith Park, Los Angeles. He became the poster child of the #SaveLACougars campaign due to his resiliency and the very real precarity of his situation. P-22 was famously captured on film walking a path below the Hollywood sign by National Geographic wildlife photographer Steve Winter.

P-22 became an iconic ambassador for cougars and other wildlife. He was so beloved by Angelenos that tens of thousands of them turn out annually to celebrate the National Wildlife Federation's P-22 Day and Urban Wildlife Week, a festival that promotes human-wildlife coexistence through immersive and engaging educational outreach. He even has his own exhibit at the Natural History Museum of L.A. County.

After a decade of living in Griffith Park, P-22 sadly had to be euthanized in December of 2022. At the end in his advanced age, it was evident the limits of his unconnected space had been reached. P-22 never fully got to be a mountain lion. His whole life, he suffered the consequences of trying to survive in unconnected space, right to the end when being hit by a car led to his tragic end. He showed people around the world that we need to ensure our roads, highways, and communities are better and safer when people and wildlife can freely travel to find food, shelter, and families. The Wallis Annenberg Wildlife Crossing would not have been possible without P-22, but the most fitting memorial to P-22 will be how we carry his story forward in the work ahead. One crossing is not enough — we must build more, and we must continue to invest in proactive efforts to protect and conserve wildlife and the habitats they depend on — even in urban areas.



The stories of individual mountain lions, including that of P-22, have been pivotal for engendering goodwill and curiosity from the public toward wildlife. This curiosity and respect are crucial components in reducing and preventing human-wildlife conflicts. To encourage this positive relationship the National Park Service publishes the profiles of each and every one of the cougars they study, providing the public the opportunity to learn and care about real individual cougars in Southern California (<https://bit.ly/nps-pumapage>).

National Park Service [NPS]. 2021. Puma profiles. <https://www.nps.gov/samo/learn/nature/puma-profiles.htm>. Accessed 8 June 2021.

## Research Projects

### Q: What research is being done to conserve cougar populations in California?

The California Department of Fish and Wildlife is responsible for issuing Scientific Collecting Permits that grant researchers across the state the authority to study cougars through methods like radio-collar tracking of individual animals. Other techniques used to study cougars include using remote cameras, scat analysis, or hair snares are also used to study cougars. Information regarding who these research permits are issued to, and the resulting peer-reviewed publications, can be found online at CDFW's science and research webpage (<https://bit.ly/cdfw-scp-permit>).

California Department of Fish and Wildlife [CDFW]. 2021. Science and research. <https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion/Research-Permitting/#56231952-science-and-research>. Accessed 8 June 2021.

# Cougar Conservancy Assistance Programs & Services

## Conflict Prevention Visit

### Q: What happens during a Conflict Prevention Visit?

The Cougar Conservancy team provides expert advice on available conflict prevention measures as well as the prospective efficacy of specific tools based on the respective property and geographic area **before** a conflict occurs. Community members are given site-specific recommendations for preventing human-cougar conflict in their backyard or neighborhood.

## Post-Conflict Visit

### Q: What happens during a Post-Conflict Visit?

**After** a conflict occurs, the Cougar Conservancy team provides expert advice on future conflict prevention measures as well as the efficacy of different tools, based on the property and specific geographic area. Community members are given site-specific recommendations for preventing future human-cougar conflict. Community members with financial barriers to implementing coexistence measures may be eligible for financial assistance to build or retrofit cougar-proof enclosures and responsibly dispose of depredated carcasses. Learn more about the organization's assistance programs ([cougarconservancy.org/assistance](http://cougarconservancy.org/assistance)).



## Pen Building Assistance Program

### Q: How do I apply for the Cougar Conservancy's Pen Building Assistance Program?

People seeking financial assistance to build or retrofit a cougar-proof enclosure are encouraged to apply. Due to limited resources, applicants with a verified loss of a pet or hobby livestock by a cougar are prioritized.

Apply by visiting ([cougarconservancy.org/assistance](https://cougarconservancy.org/assistance)), by calling the Conflict Hotline **1-800-930-1087**, or by emailing [director@cougarconservancy.org](mailto:director@cougarconservancy.org). Please be advised that in some areas, permits may be required to build a cougar-proof enclosure.

## Carcass Disposal Program

### Q: What do I do with the carcass of a depredated animal?

Depredated animals need to be investigated by the California Department of Fish and Wildlife (CDFW) to determine the likelihood of it being a mountain lion kill. Do not disturb a carcass until it has been investigated by CDFW. If there are still unprotected animals on the property, securing their safety should occur immediately and before carcass disposal. Depredation incidents in **Region 5** can be reported to the local CDFW **Region 5** office by calling **1-858-467-4201**.

After CDFW has investigated, the carcass(es) should be removed promptly and safely, and should be properly disposed-of. Carcass disposal is the responsibility of individuals or agencies managing the property where the carcass was found. The Cougar Conservancy's Conflict Task Force can advise case-specific procedures, and some community members may be eligible for their Carcass Disposal Program.



The following are guidelines given by the California Department of Fish and Wildlife for the safe handling and disposal of carcasses:

1. All dead animals should be handled only while wearing gloves; this includes carrying of dead animals, during necropsy procedures, and the dressing out of carcasses. There are several types of gloves to choose from, including leather, rubber, and latex gloves. Rubber or latex gloves are preferred due to their low cost, wide availability, and ease of disinfecting (latex gloves are disposable).
2. The carcass should be placed in a plastic body bag and sealed as soon as possible. If a zoonotic disease is suspected (i.e., rabies, tularemia), it is recommended to double bag the carcass.
3. Avoid direct contact with the dead animal's body fluids (i.e., blood, urine, feces). If contact does occur, wash the skin area contacted with soap and water as soon as possible.
4. Avoid contact with the dead animal's external parasites (i.e., fleas and ticks). If possible, spray the carcass with a flea & tick spray prior to handling it. If pesticide poisoning is suspected as the cause of death and laboratory testing is to be performed on the animal's tissues, avoid spraying the carcass as it will interfere with laboratory results.
5. Proper disposal of the carcass (incineration, burying, etc.) is critical to prevent exposure of other wildlife and humans to disease. Three common effective methods of carcass disposal are: incineration, burying, and rendering. Incineration is the preferred method to use when the carcass is diseased; however, it can also be the most expensive. An acceptable alternative is to bury the carcass. The carcass should be buried at least 4 feet deep and covered with lime to discourage scavengers from uncovering and consuming it.
6. Persons who have direct contact with wildlife, especially carnivorous animals, on a regular basis are highly recommended to receive the rabies pre-exposure vaccination series. The pre-exposure series consists of a total of three vaccinations (refer to Appendix E - California Compendium of Rabies Control and Prevention, 2004) and is highly efficacious in preventing rabies. It is also recommended to have a rabies antibody titer checked every two years to determine the current level of protection.
7. Whenever there is an unusual mortality or die-off of wildlife the Wildlife Health Lab should be contacted to determine if a necropsy and disease investigation is recommended. The carcass(s) should be refrigerated as soon as possible until a decision is made as to its disposition. The Wildlife Health Laboratory can be contacted by phone at **(916) 358-2790** or by email at [WILAB@wildlife.ca.gov](mailto:WILAB@wildlife.ca.gov).

Allredge, M. W., F. E. Buderman, and K. A. Blecha. 2019. Human-cougar interactions in the wildland-urban interface of Colorado's front range. *Ecology and Evolution* 9:10415-10431.

California Department of Fish and Wildlife [CDFW]. 2022. Wildlife Health Laboratory. Protocols for Safe Handling and Disposal of Carcasses. <https://wildlife.ca.gov/Conservation/Laboratories/Wildlife-Health/Monitoring/Protocols>. Accessed 04 May 2022.

## Q: Who is eligible for the Carcass Disposal Program?

When there are financial barriers for the proper disposal of depredated animals, individuals may apply to obtain assistance for remains disposal. The application can be accessed through the Cougar Conservancy's assistance page at ([www.cougarconservancy.org/assistance](http://www.cougarconservancy.org/assistance)).

## Canvassing

### Q: There have been human-wildlife interactions in my community. Can an organization come canvas my neighborhood and talk to residents?

The #SaveLACougars campaign partners with the Cougar Conservancy, a local non-profit organization, to promote human-wildlife coexistence in the area. The Cougar Conservancy team may be able to canvas specific areas within your neighborhood, knock on doors, answer any questions residents may have about living with cougars, and provide educational resources.

The Cougar Conservancy is deeply committed to ensuring that communities living alongside cougars and other wildlife feel empowered to coexist with their wild neighbors by implementing sound and humane conflict prevention practices.

## Get Involved

### Q: How can I help conserve cougars?

The work of many wildlife conservation organizations would not be possible without philanthropic donations and dedicated volunteers.

All donations are valuable, big and small. Every penny counts toward direct community assistance, providing educational outreach programs, and preventing and resolving human-cougar conflicts. You can help by donating to the **#SaveLACougars campaign** at ([SaveLACougars.org](http://SaveLACougars.org)), donating to the **Cougar Conservancy** at ([cougarconservancy.org](http://cougarconservancy.org)), getting involved with fundraising in your area, creating a birthday fundraiser, and by voting.

Consider volunteering your time with the National Wildlife Federation, Cougar Conservancy, or your local land conservation agency. Volunteers share their knowledge, skills, and passions with their family, friends, and neighbors, which is crucial for increasing people's understanding and appreciation for cougars and other wildlife.

The Cougar Conservancy can help people get involved with cougar conservation policy in California at the local or state level. Invite people to attend commission meetings, support land conservation and wildlife crossing efforts, and use social media to amplify the work organizations are already doing!



# | General Assistance



# Help

## I Still Have Questions

### Q: I still have questions and/or need help not covered here.

If you have any questions not covered in this FAQ, or need help you aren't being directed to, you can visit ([cougarconservancy.org/assistance](https://cougarconservancy.org/assistance)), call the Conflict Hotline 1-800-930-1087, or email [director@cougarconservancy.org](mailto:director@cougarconservancy.org).

# Staying Up-to-Date

## Emails & News Releases

### Q: How can I stay up to date on the latest news regarding LA cougar conservation?

The National Park Service (Santa Monica Mountains National Recreation Area), Cougar Conservancy, and National Wildlife Federation (NWF) regularly send out news releases to help keep the public updated on the conservation status of LA cougars.

The latest news can be found at: (<https://www.nps.gov/samo/learn/nature/pumapage.htm>), ([www.cougarconservancy.org](http://www.cougarconservancy.org)), and ([www.savelacougars.org/stories](http://www.savelacougars.org/stories)).

To get updated via email, sign up for the Cougar Conservancy's newsletter by filling-out the form on our homepage at ([www.cougarconservancy.org](http://www.cougarconservancy.org)). You can also sign up for NWF's #SaveLACougars newsletter at ([www.savelacougars.org](http://www.savelacougars.org)).

You can also follow the NWF #SaveLACougars campaign on social media. The Cougar Conservancy can be followed on Twitter, Facebook, Instagram, and Youtube. P-22's Facebook page is another great source for updates on events and more.

### Q: Where can I find information on LA cougars?

Santa Monica Mountains National Recreation Area (NPS) publishes every mountain lion news release on their website here.

(<https://www.nps.gov/samo/learn/nature/pumapage.htm>)

The "Puma Profiles" webpages (<https://www.nps.gov/samo/learn/nature/puma-profiles.htm>) includes a short bio of every mountain lion captured and collared in our study since 2002. Each study cat is identified with a P, which stands for Puma, and then the corresponding number indicates the order in which they became part of the study.

You can also find more information on the Cougar Conservancy website here and ([www.savelacougars.org/stories](http://www.savelacougars.org/stories)).



**Q: I'm a member of the news media. How can I be added to cougar-related media contact lists?**

The National Park Service (Santa Monica Mountains National Recreation Area), Cougar Conservancy, and National Wildlife Federation regularly send out news releases to help keep the public updated on the conservation status of LA cougars.

To be added to a media contact list, please contact:

**samo\_newsmedia@nps.gov** (National Park Service)

Korinna Domingo, **director@cougarconservancy.org** (Cougar Conservancy)

Beth Pratt, **prattb@nwf.org** (National Wildlife Federation)

The latest news can be found at: (**<https://www.nps.gov/samo/learn/nature/pumapage.htm>**), (**[www.cougarconservancy.org](http://www.cougarconservancy.org)**), and (**[www.savelacougars.org/stories](http://www.savelacougars.org/stories)**).



# Educational Opportunities





# Public Presentations

## How To Request

### Q: Can I request a presentation for my community, group, or classroom?

You can request a presentation about coexisting with cougars by emailing [director@cougar-conservancy.org](mailto:director@cougar-conservancy.org). The Cougar Conservancy's presentations are tailored to specific audiences as the communities we work with vary in terms of their interests and needs. We will deliver information that is relevant, engaging, and culturally sensitive.

## How To Expect

### Q: What content can I expect for public presentations?

The Cougar Conservancy's educational outreach programs showcase best practices for coexisting with cougars and other wildlife to empower and inspire people to employ these tips within their communities.

The public presentations may demonstrate coexistence techniques like building a cougar-proof enclosure, interactive exhibits on how to stay safe in cougar country at home or on the trail, conflict-resolution highlights, and youth programs. Presentation content is designed to answer frequently asked questions regarding California policy, cougar conservation, and human-wildlife coexistence tools.







**#CoexistWithCougars**





JASON KLASSI

**Thank You.**

**#CougarCoexistenceFAQs**



Wallis Annenberg  
Wildlife Crossing



## Common Questions in Cougar Coexistence

**D**iscover the essence of successful cougar coexistence through *Common Questions in Cougar Coexistence*. This book is the result of careful research and synthesis, bringing together current research and the collective experiences and knowledge of researchers and coexistence practitioners.

In a world filled with conflicting information, this guide cuts through the noise to provide you with a clear and concise path towards harmonious living with cougars.

Whether you're a concerned community member, coexistence manager, or wildlife enthusiast, this book addresses all your questions about cougars, policy, human-wildlife interactions, and proven coexistence strategies.

Gain deep insights into cougar behavior, empowering you to create a safe environment for both humans and wildlife. From tried-and-true approaches to dispelling myths, this transformative guide offers practical advice for fostering a future where humans and cougars thrive side by side.