

Selected Mt. Lion background information from Ca. DF&W
for July 2014 RMAC Meeting

Trends in Mountain Lion Encounters

The California Department of Fish & Wildlife logs hundreds of Wildlife Incident Reports annually related to mountain lion sightings. On average, fewer than three percent of these reports result in a mountain lion being identified as an imminent threat to public safety and killed under the CDFW's Wildlife Public Safety Guidelines.

Many of these reports are resolved by providing information about the natural history and behavior of mountain lions. Other reports are legitimate threats posed by mountain lions that can be resolved by modifying human behavior.

Below is a breakdown of reported mountain lion incidents where the presence of a mountain lion was verified by responding personnel (incidents) and situations where the mountain lions killed for public safety reasons (safety) from January 1, 2009 through December 31, 2013.

2013 – 95 incidents/2 Safety

- Tehama 1 female
- Inyo 1 male

2012 – 162 incidents/7 Safety

- Butte 1 not reported
- Modoc 1 female
- San Mateo 2 unknown
- Los Angeles 1 male
- Orange 1 male
- Stanislaus 1 female

2011 – 214 incidents/3 Safety

- San Bernardino 1 female
- San Bernardino 1 male
- Tulare 1 female

2010 – 127 incidents/7 Safety

- Kern 1 female
- San Joaquin 1 female
- Fresno 1 male
- San Bernardino 1 male
- Alameda 1 not reported
- San Bernardino 1 male
- San Luis Obispo 1 male

2009 – 141 incidents/1 Safety

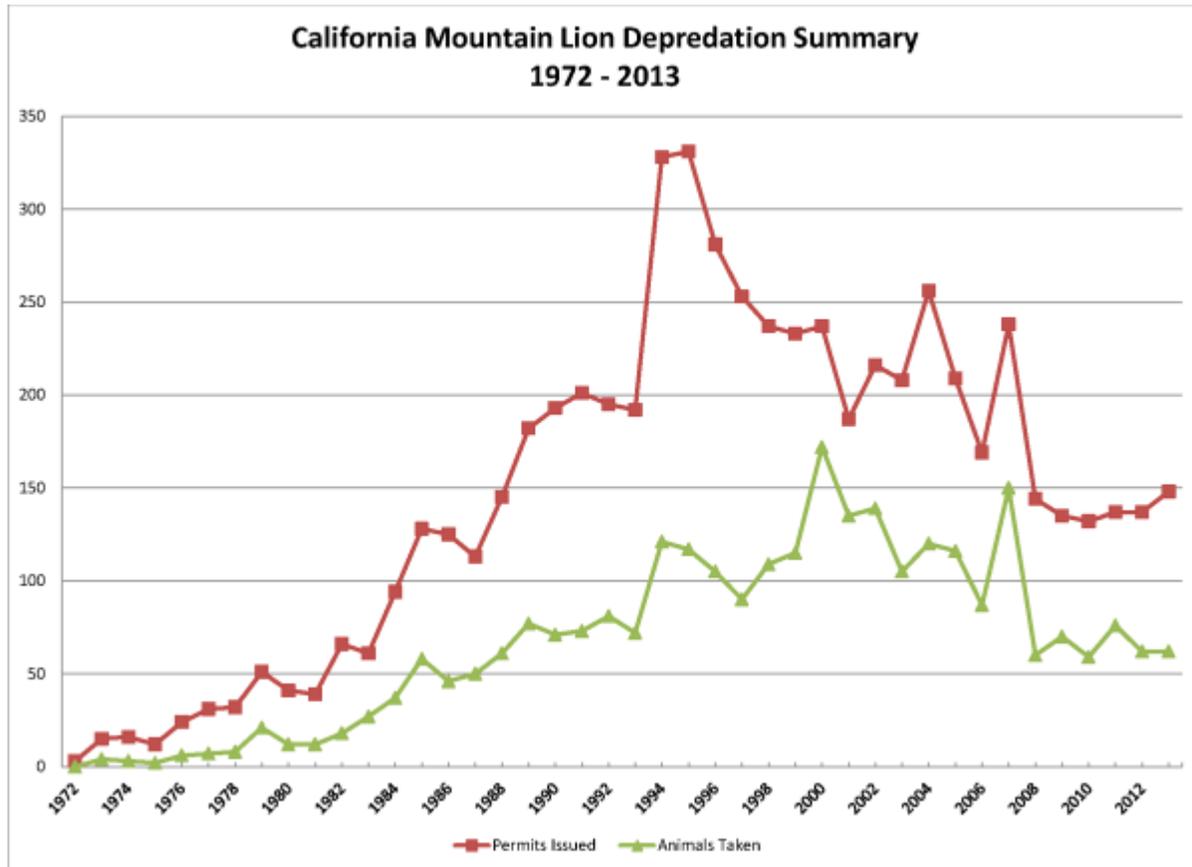
- San Diego 1 male

Data compiled 02/06/2014

<https://www.dfg.ca.gov/wildlife/lion/trends.html>

Mountain Lion Depredation Statistics Summary

Pursuant to California Fish and Game Code Section 4802 (et. Seq.), the Department of Fish and Wildlife shall, upon request, issue (depredation) permits to individuals reporting livestock loss or damage caused by mountain lions, if the loss or damage is confirmed by CDFW staff to have been caused by mountain lions. The permittee is required to report the fate of the permit to the CDFW upon expiration or fulfillment of the permit. Below is a summary of the annual number of depredation permits issued by the CDFW and the resultant take as reported to CDFW Headquarters. Please note that some permits and reports may be outstanding at the time of this compilation.



[Click Graph to Enlarge](#)

Year	Depredation Permits Issued	Animals Taken
1972	3	0
1973	15	4
1974	16	3
1975	12	2
1976	24	6
1977	31	7
1978	32	8
1979	51	21
1980	41	12

Year	Depredation Permits Issued	Animals Taken
1981	39	12
1982	66	18
1983	61	27
1984	94	37
1985	128	58
1986	125	46
1987	113	50
1988	145	61
1989	182	77
1990	193	71
1991	201	73
1992	195	81
1993	192	72
1994	328	121
1995	331	117
1996	281	105
1997	253	90
1998	237	109
1999	233	115
2000	237	172
2001	187	135
2002	216	139
2003	208	105
2004	256	120
2005	209	116
2006	169	87
2007	238	150
2008	144	60
2009	135	70
2010	132	59
2011	137	76
2012	137	62
2013	148	62
Total	6175	2816

Updated 01/29/2014 – <https://www.dfg.ca.gov/wildlife/lion/depredation.html>

Verified Mountain Lion Attacks on Humans in California (1986 through 2013)

The CDFW defines a mountain lion attack as an incident resulting in direct physical contact between a human and a mountain lion resulting in physical injury or death to the person. The CDFW considers an attack to be verified only when a physician, law enforcement officer or CDFW personnel determine the injuries were caused by a mountain lion.

Date	Type	Attack Location	County	Victim Sex	Age
March 1986	Nonfatal	Caspers Wilderness Park	Orange	Female	5 yrs.
Oct. 1986	Nonfatal	Caspers Wilderness Park	Orange	Male	6 yrs.
March 1992	Nonfatal	Gaviota State Park	Santa Barbara	Male	9 yrs.
Sept. 1993	Nonfatal	Cuyamaca State Park	San Diego	Female	10 yrs.
Apr. 1994	Fatal	Auburn State Recreation Area	El Dorado	Female	40 yrs.
Aug. 1994	Nonfatal	Mendocino County (remote)	Mendocino	Male	50s
	Nonfatal			Female	50s
Dec. 1994	Fatal	Cuyamaca State Park	San Diego	Female	56 yrs.
Mar. 1995	Nonfatal	Mt. Lowe (San Gabriel Mtns.)	Los Angeles	Male	27 yrs.
Jan. 2004	Fatal	Whiting Ranch Regional Park	Orange	Male	35 yrs.
Jan. 2004	Nonfatal	Whiting Ranch Regional Park	Orange	Female	30 yrs.
June 2004	Nonfatal	Sequoia National Forest	Tulare	Female	28 yrs.
Jan. 2007	Nonfatal	Prairie Creek Redwoods State Park	Humboldt	Male	70 yrs
Jul. 2012	Nonfatal	Confluence of Shady Creek and Yuba River	Nevada	Male	63 yrs

Note: According to historical reports, four additional fatal incidents involving six victims occurred around the turn of the previous century. Furthermore, two additional incidents have been reported by the media as attacks. However, they do not fit the criteria of verifiable attacks on humans and were not confirmed. One incident involved a turkey hunter who was camouflaged and calling for turkeys when a mountain lion approached from behind. Immediately after the mountain lion confronted the hunter and realized that the hunter was not a turkey, the lion ran away. This is not judged to be an attack on a human. Every indication suggests that if the hunter had not been camouflaged and calling like a turkey, the mountain lion would have avoided him. The other incident on the Los Padres National Forest was described as a mountain lion attack on a boy near a stream. However, the alleged injuries were not verified by a physician, law enforcement officer or CDFW personnel.

<https://www.dfg.ca.gov/wildlife/lion/attacks.html>

Why can't mountain lions be hunted in California?

With the passage of Proposition 117 in 1990, mountain lions became a "specially protected species," making mountain lion hunting illegal in California. This status and other statutes prohibit the California Department of Fish and Wildlife from recommending a hunting season for lions, and it is illegal to take, injure, possess, transport, import, or sell any mountain lion or part of a mountain lion. Mountain lions may be killed only 1) if a depredation permit is issued to take a specific lion killing livestock or pets; 2) to preserve public safety; or 3) to protect listed bighorn sheep.

https://www.dfg.ca.gov/wildlife/lion/lion_faq.html

Currently Permitted Mountain Lion Research Projects

Pursuant to Fish and Game Code section 4810, the California Department of Fish and Wildlife may issue a Scientific Collecting Permit to entities for research projects involving mountain lion captures. This page provides an Executive Summary for CDFW-permitted mountain lion research projects currently occurring in California.

Southern California Mountain Lion Study

University of California, Davis - Wildlife Health Center

Dr. Walter Boyce, DVM, PhD, MPVM, Dr. Winston Vickers, DVM, MPVM

Mountain lions in California are important indicators of ecosystem health and connectivity, especially in southern California where the landscape is highly fragmented by previous and ongoing / planned human development. This research will expand knowledge regarding mountain lion disease and toxin exposure, genetics, and interactions with wildlife prey species, humans, and domestic animals. Additionally, this research will assess mountain lion use of specific southern California conserved lands, linkages, and road crossings in order to help guide conservation and road planning decisions.

Santa Cruz Puma Project

University of California, Santa Cruz

Dr. Chris W. Wilmers, PhD

This study will contribute to the knowledge of natural wildlife ecosystems by evaluating the relationship between landscape features, energetic demand, physiological capabilities, and foraging strategies in the puma. For the first time, field energetic costs of a large carnivorous felid will be measured and related to the behavior and ecology of individuals. We will use a laboratory-to-field approach to develop, calibrate and test a collar, the ANIMA (Accelerometer Network Integrator for Mobil Animals) that can be used to assess continuous time-energy budgets, movement patterns, behavioral diaries, and daily energetic costs of puma.

Habitat loss and fragmentation are well known to cause species declines and extinctions (Pimm et al. 1995, Fahrig 2003). Fragmentation has also been shown to influence the stability of predator-prey interactions (Levin 1976, Hastings 1977, Hanski and Ranta 1983), yet experimental tests are based largely on small scale experiments using insects (e.g., Kareiva 1987). While it is generally known that as habitat patch size declines, large

predators become locally extinct resulting in meso-predator release (Crooks and Soule 1999), the degree to which fragmentation influences predator energy costs and ecological impacts is not well understood. A mechanistic theory that can predict, not just whether a species can persist or not, but also the extent to which its ecological impact is attenuated, magnified or otherwise altered as fragmentation increases is needed.

Human development in and near open space in the United States and internationally is increasingly fragmenting wilderness areas causing declines and local extinctions of top predators. Developing an understanding of the physiological demands and ecology of large predators in fragmented habitats will thus be crucial to preserving these species and their impacts on ecosystem processes. Yet most studies of large predators are conducted in large national or otherwise protected parks. By conducting our study on pumas in a highly fragmented area of both public and private lands in the San Francisco Bay Area, our proposed project will support the sustainability and survival of puma populations and healthy ecosystems.

East Bay Puma Project Felidae Conservation Fund

Zara McDonald, MBA, Dr. Anne M. Orlando, PhD

Pumas in the San Francisco East Bay region represent an apparently intact population of an apex predator living close to humans. We propose a long-term ecological research and public outreach program to conserve viable populations of pumas and associated wildlife communities in this developing region, containing a mixture of dense urban, suburban, and rural development interspersed with wild lands. Further development has the potential to increase conflicts with humans, increase puma mortality rates, and to isolate segments of the population making them no longer viable, with potentially negative impacts on ecological functions. The project will provide information needed to ensure the future of pumas in this region, and to guide puma management in areas with increasing human presence. We will study puma ecology using a combination of intensive field tracking, remote cameras, lightweight GPS collars, GIS spatial modeling, and advanced genetics work at the population and individual levels. Information collected will be used to estimate, delineate and determine the genetic health of the population; create habitat use profiles and rank habitat values across the region; identify barriers to movement and create habitat linkage strategies; study puma behavior at the urban interface; aid in the design of wildlife crossings for highways; and alleviate human-caused puma mortality and puma-human conflict. Linked to this study, we will conduct an education and outreach program in local schools and communities to promote and enable coexistence of humans and wildlife communities, including pumas, in the urban interface.

Intent to collar and monitor mountain lions in the Kings River Area of the Sierra National Forest

United States Department of Agriculture, Forest Service

Dr. Craig M. Thompson, PhD

Over the past 5 years, research on fisher (*Pekania pennanti*) ecology in the Sierra Nevada Mountains has identified mountain lion predation as a primary source of mortality for fishers, accounting for 36% of all mortality and 50% of all predation. Specifically, predation on adult female fishers during the denning season appears to be a potential limiting factor to population expansion. What is unknown is whether current lion predation rates on fishers are

similar to historical rates, or whether changes in predator densities, forest structure, fire frequency, or human activity have altered the balance between the two native species. In the Kings River area of the Sierra National Forest, fisher monitoring, including trapping, telemetry, and scat detector dog surveys, has been ongoing since 2007, with current funding available through 2013. In 2010, the Sierra National Forest initiated a multi-stakeholder project (Dinkey Collaborative) charged with designing and implementing fuel reduction projects in the same area. Discussions are currently underway to extend the fisher monitoring program through 2018 in order to capitalize on the before-after/control-impact research opportunity: monitoring the impacts of fuel treatment activities on fisher survival, reproduction, and habitat use. We propose to capture, collar, and monitor lions within the two primary watersheds of the Kings River area, concurrent in space and time with both the fisher monitoring program and the fuel reduction program. Primary objectives would be 1) to concurrently document fisher and lion movement patterns, and to identify areas or habitats where interactions were likely, 2) to generate a 'risk-based' habitat model for fishers to quantify the likeliness of encountering a mountain lion, 3) to better understand how vegetation and fuel management by the USFS can mitigate or enhance this risk, and 4) to quantify predation rates by lions on numerous prey species including ungulates and mesocarnivores. Secondary objectives include 1) overlapping the work described above with ongoing bobcat (*Lynx rufus*) monitoring in the area led by G. Wengert to better understand carnivore community interactions and how these interactions are impacted by vegetation management, 2) evaluate the exposure of mountain lions to rodenticides, insecticides, and other toxins currently being found in fishers and presumed to come from illegal marijuana cultivation sites, and 3) conduct a concurrent camera trapping grid to validate a non-invasive approach to estimating lion abundance currently being developed in Wyoming. Sufficient funding and in-kind contribution have been secured to address the first three primary objectives. Funding is currently being sought to address the remaining objectives.

<http://www.dfg.ca.gov/wildlife/lion/approved-projects.html>