# PUBLIC COMMENT ON MOUNTAIN LION QUOTAS

The public comment period ran from April 25, 2019 to May 21, 2019 and we received 31 comments

Survey Monkey Comments (27) …….……1

Email/Letter Comments (4) …….4

1 Michael colpo Big timber MT I am in favor of increased lion quota for HD560 for all reasons stated in Quota Change Supporting information document HD 560.

2 Jeff Burrows Hamilton MT I support the harvest increase.

3 Connie Poten Missoula MT What is the reason for the increased quota? Does this take into consideration the number of mountain lions killed by vehicles, traps and for human/livestock protection? Unless there is a documented proof of an over-population of lions that causes direct harm, I can't see any reason to increase the kill rate. There are numerous videos on the internet of Montana lion hunters who chase them with their dogs, injuring many lions for fun. The high tech radio receivers the dogs now wear pinpoint where the lions are treed. This isn't hunting, this is like a playing a video game that maims our wildlife and then the 'hunters' post their exploits for bragging rights. The regulations for mountain lion hunting need to be studied and changed to be in line with fair chase rules. Thank you for the opportunity to comment.

4 BUD MARTIN ZORTMAN MT I believe the region 6 lion quotas are FAR below what they should be. I personally live in Zortman area and we see lions on a regular basis. Our lion hunts are short as the quotas fill in hours of the first snow. Season will normally close 24 hours after the first snow.

5 Mark Kuhn Greencastle PA The quota for the Zortman area should be more than 4 cats. Plenty of cats in that zone.

6 Kelly Hess Ennis MT Not Enough

7 Sherri Roundup MT Do not raise the quota. Lived here in the Bulls 20 yrs, hiked/biked, never seen one. Just leave it alone. Nature is a balance that is capable of working without human intrusion

8 Terry L. Zink Marion MT I would to see the quota in HD 120 increased by 3-4 lions. Last year the male quota was filled in 1 or 2 weeks (a race). HD 120 holds a larger number of lions than what the quota is showing. So in order to make this hunt last longer please increase the male numbers. I have been in and talked this over Neil Anderson region 1 head biologist. Thank you, Terry L. Zink - Houndsman (life long)

9 Adam Mace Big Timber MT I would like to see the quotas in HD313 and HD560 increased. In the past years the quotas have been filled fast. I still chased many different cats in these districts, with that being said I also see the mule deer population declining fast!

10 Brent Race Corvallis MT I agree with the increased quota. This area is supporting an abundance of lions.

11 m mcintosh bozeman MT disgusting

12 Stuart Segrest Helena MT I disagree with the increases proposed for the 2019 lion quotas.

13 Jody Mann ColstripMT I totally disagree with the logic for raising the quota in 530 and 590. In examining the increase in the female quota and harvest recently, most likely the landowner conflicts are management created. Killing more females obviously leaves more juveniles without mothers adding to human conflict issues. Also a 50% harvest increase is too drastic and unacceptable. If it matters, I have hunted mountain lions for almost 40 years and I feel as though I understand these populations and this animals habbits as well as anybody. Thank you for your consideration. Jody Mann

14 Austin Sweeney Lewistown MT I do not support the quota change in 530/590. If they want to regulate the mountain lion population better then there needs to be a cap on Tom lions so that females will get harvested. If there is no cap on the Toms people are going to just hold out tell they tree a nice Tom lion and Harvest it. Witch will increase the lion population and decrease the quality/age of Tom lions in not only 530/590 but the surrounding areas as well.

15 Tim Vanek Helena MT There is insufficient truthful and honest justification to increase these quotas. More than enough of these cats are being killed through permits and by uncontrollable poaching. The emphasis should be on conservation.

16 Tad Lisowski Kalispell MT Please increase the quotas in region 1, especially in the upper Whitefish and Stryker areas. The Mule Deer population has declined significantly in my 20 years of recreating in these areas.

17 Dorian V Boling Libby MT I support what ever the biologist data supports. If the amount of mountain lions are strong enough to hold that change then go for it. If the biological data or fwp biologist do not support it then neither do I. Not like your going to listen to the correct people on this. Just because a group of people say it's a good idea does not mean you listen. Just like HD103-50 , fwp commissioners listened to the wrong people. Now that the map has been released there have been people that supported the mule deer area get posses off. Now that group of people think they have power to get what they want , eliminate hunters out of the woods and bully people around. Also it would not surprise me if a person wined and dined the commissioners because thAt is the appearance giving with the mule deer trophy area and Mercer being in Helena right before the design was made. I guess at the end of the day if your not a banker or a bully group that lies to people then your opinion does not matter. FWP can not even correctly count opinions so the whole situation is crooked! So good luck deciding which way my opinion is counted about the mountain lion

18 Animae Chi Gainseville FL Hunting is an ineffective and unnecessary way to manage mountain lion populations. Mountain lion populations are self-regulating and do not need to be hunted. Sport hunting will trigger more conflicts between mountain lions and domestic animals. Most people no longer support trophy hunting and believe it should be banned entirely. The start of the hunting season should be delayed until December 1 to protect kittens. Researchers have found that hunting mountain lions is not an effective way to boost mule deer populations.

19 Freya Atlanta GA There is no justification for hunting mountain lions. They are part of an ecosystem that has existed and been just fine for millions of years. People do not hunt them out of necessity, only for bragging rights and a throw rug or a stuffed head on the wall.

20 Barb Knight Mars Hill NC Please stop killing God's precious Mountain lions!

21 Lisa Neste High point NC Hunting is an ineffective and unnecessary way to manage mountain lion populations. Mountain lion populations are self-regulating and do not need to be hunted. Sport hunting will trigger more conflicts between mountain lions and domestic animals. Most people no longer support trophy hunting and believe it should be banned entirely. The start of the hunting season should be delayed until December 1 to protect kittens. Researchers have found that hunting mountain lions is not an effective way to boost mule deer populations.

22 Veronica B. Placerville CA Please Save the Mountain Lions!!!

23 S Jitreun Ann Arbor MI Save them all. No such quota to kill a single life.

24 Michelle Taylor Boise ID The only good hunter is a dead one.Hunt the hunters! An eye for an eye!

25 Betty Kowall Penngrove CA Stop hunting wildlife!!!

26 Lisa Mazzola Tampa FL Hunting is an ineffective and unnecessary way to manage mountain lion populations. Mountain lion populations are self-regulating and do not need to be hunted. Sport hunting will trigger more conflicts between mountain lions and domestic animals. Most people no longer support trophy hunting and believe it should be banned entirely. The start of the hunting season should be delayed until December 1 to protect kittens. Researchers have found that hunting mountain lions is not an effective way to boost mule deer populations.

27 Raleigh koritz Plymouth Hennepin County MN Leave them alone. We need them to keep the planet balanced. Stop messin it up now!

## Email/Letter Comments:

1 No, Montana has some of the highest rates of harvest in the country. Justification used to increase harvest numbers are not based on sound data. Hunting has a major effect on mountain lion populations. cindy jolley cjolley1967@gmail.com

2 If you want more elk and mule deer, harvest more predators. Plain and simple. Sportsmen (and non-sportsmen, but wildlife lovers) prefer to have and see ungulates, as opposed to the (virtually) unseen mountain lions. Nothing against mountain lions, but they need controlling. You can't control any species by just harvesting males. The best way to harvest more females is to knock down the male population, so hunters will "settle" for a female. Either that, issue two tags at a time, and make it mandatory to harvest a female first, before a "trophy" male can be harvested.

You could easily double the lion quotas in most units. I realize it is politically incorrect to do that in a year, so keep up the good work and keep inching these quotas up, year by year. Thanks for all you guys do.

Best regards,
John Andre
President

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# MOUNTAIN LION FOUNDATION

*Saving America's Lion*

May 21, 2019

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**RE: 2019 Mountain Lion Quotas**

Dear Fish and Wildlife Commission members,

The Mountain Lion Foundation asks that you consider the following concerns raised by the proposed 2019 Mountain Lion Quotas put forth by Montana Fish, Wildlife, and Parks for mountain lion (*Puma concolor*) hunting in Montana.

The views expressed are the official position of the Mountain Lion Foundation and the 7000 supporters of the organization.

Trophy hunting is the greatest source of mortality for mountain lions throughout the majority of their range in the United States.[i] Conservation biologists have established that the practice of trophy hunting is destructive and unnecessary, as it profoundly disrupts a population's social structure.[ii] Hunting mountain lions results in additive mortality – rates that far exceed what would happen in nature[iii] – and can lead to population instability and decline, as well as an increase in conflicts with humans and domestic animals.[iv]

Additionally, one of the established rationales behind hunting mountain lions is to increase populations of prey animals like deer. While researchers have known for decades that mountain lions have minimal influence on deer populations, a recent study suggests that heavily hunted mountain lion populations may inadvertently put more pressure on deer populations than anticipated.[v] For these reasons, we would politely request that the Commission consider ending hunting of mountain lions entirely.

The Foundation, which is strongly opposed to the hunting of mountain lions, respectfully requests that the Commission, at the minimum, reduce the current unsustainable quotas to below the sustainable limit established by researchers: 12-14% of the adult population. The Foundation asks that the limit be reduced to 10% or less than that of the known population to account for additional human-caused mortality including vehicle strike, incidental snaring or trapping, poaching, public safety removal and so on. Additionally, we request that the use of hounds to pursue mountain lions no longer be permitted as this practice is unethical and is not considered to be fair chase. We are also asking that the start of all of the mountain lion hunting seasons be delayed until December 1 to protect dependent young from being orphaned by hunters. Lastly, we want to emphasize that over-hunting mountain lions may not have the

desired impact of increasing mule deer populations. In fact, hunting of these apex predators may have the opposite effect.

The Foundation respectfully requests these actions for the reasons outlined below:

**The quota should be reduced to 10% of the known population to account for any additional human-caused mortality.**

In order to sustain viable populations of mountain lions, prevent human-wildlife conflict and avoid compromising the long-term viability by failing to account for all human-caused sources of mortality, hunting of adult lion populations should not exceed the intrinsic growth rate of the population of interest.[vi] The intrinsic growth rate for mountain lion populations is established by researchers to be between 15-17%.[vii] Setting human-caused mortality limits at 10% or less of the adult population facilitates the maintenance of home ranges and social stability, reducing the likelihood of increased conflict with humans and population decline.[viii]

Additionally, trophy hunting of mountain lions leads to an increase in kitten mortality in heavily hunted populations.[ix] Killing an adult female with kittens results in the death of her dependent young by dehydration, malnutrition, predation and exposure; even those who are at least six months to a year old[x]. This impacts a population's ability to recruit new members if too many adult females are removed, making the population less resilient to hunting and other causes of mortality[xi]; both human-caused and natural.

As such, we ask that, when making quota decisions in the future, the Commission votes to reduce the number of mountain lions that can be killed by hunters to 10% or less of the total adult population to account for additional human-caused mortality to maintain healthy, stable lion populations.

**Killing mountain lions is unnecessary and results in an increase in conflicts with humans and domestic animals.**

For Hunt Districts 530/590 and 560, the proposal presented by FWP suggests increasing the harvest quota from 10 to 15 for any legal lion and from 7 legal lions (with a sub-quota of 3 females) to 8 legal lions (with a sub-quota of 4 females) respectively with the goal of lowering the number of landowner complaints about mountain lions. However, studies have shown that mountain lion populations are self-regulating and that killing established adult lions may actually lead to increased conflict with humans as a result of the disruption of mountain lion social structure and increased immigration of dispersing individuals.[xii]

Mountain lions occur at low densities relative to their primary prey.[xiii] In order to survive, they regulate their own numbers by staying at a smaller population size relative to their prey's biomass or they risk starvation.[xiv] In other words, when prey populations decline, so do mountain lion populations. Because of these predator-prey dynamics, mountain lion populations do not need to be managed by humans.

In general, hunters target older and larger mountain lions. However, doing so results in a younger overall age structure, which increases the likelihood of conflict with humans.[xv] As it stands, conflicts with mountain lions are exceedingly rare. Overhunting will disrupt resident populations, eventually leading to an increase in conflicts with people, pets and livestock.

A study in Washington state showed that, as wildlife officials increased quotas and lengthened hunting season, mountain lion complaints increased rather than decreased. The heavy hunting pressure resulted in a higher ratio of younger males in the population as a result of immigration and emigration.[xvi]

Contrary to popular belief, killing mountain lions results in an increase in complaints and livestock depredation due to disruption of their social structure.[xvii]

To ensure healthy social structures and territorial behavior, mountain lion populations should not be hunted for trophies or recreation. This will also help to reduce conflicts with people, pets, and livestock.

**Using hounds to pursue mountain lions is unethical and is not considered to be fair chase.**

Hounding is an inhumane and outdated sport that has been banned in two-thirds of the United States. Hounding poses significant risk to the hounds as well as to young wildlife, including dependent kittens and cubs, who may be attacked and killed by hounds.[xviii] Hounds also disturb or kill non-target wildlife and trespass onto private lands.[xix] This practice is not fair chase and is highly controversial, even among hunters.[xx]

Fair chase hunting is based upon the premise of giving the animal an equal opportunity to escape from the hunter.[xxi] Using hounds, especially those equipped with GPS collars, provides an unfair advantage to hunters.

Many proponents of hound hunting claim that hunters can be more selective using this technique. Since hunters can get so close to a treed animal, hound hunting advocates assert that hunters can determine the sex, size, and general age of an animal before determining whether or not they are permitted to harvest that individual. Knowing the sex and other demographic status of the individual being hunted could be helpful in maintaining a viable population. However, a review of 30 years of records from game managers throughout the western United States found that, although technically feasible, most hunters could not tell the size and sex of an animal up a tree. Hunters had roughly 50% accuracy when determining sex; the same as if they had determined the sex with a coin toss.

For the reasons outlined above, we ask that the use of hounds to pursue mountain lions be no longer permitted. If the Commission decides to continue to allow the use of dogs then, at the very least, GPS collars should be prohibited as the practice does not align with fair chase values.

**Delay the start of the mountain lion hunting seasons until December 1 to protect dependent young.**

While it is not permitted in Montana to kill any females accompanied by spotted kittens, dependent young may not always be in the presence of their mother. Without kittens in her presence, a hunter may not be aware that a female has offspring and may kill her. As mountain lions offspring are dependent on their mothers for survival up to around 18 months of age, the loss of their mother prior to reaching adulthood would likely result in the death of her young, even if they are around a year old.

A recent study has shown that delaying the start of hunting seasons until December 1 would protect about 91 percent of kittens from perishing as a result of being orphaned by hunters.[xxii] By better aligning hunting seasons with denning periods, hunters will have the best opportunity to identify females with kittens. This, ultimately, will benefit both mountain lions and hunters that want to ensure that their populations remain healthy into the future.

**Targeting mountain lions to boost mule deer may have the opposite effect.**

Hunting mountain lions has long been thought to bolster populations of game species like mule deer, while reducing competition for this shared resource. However, a recent study evaluated the impacts that heavy hunting of mountain lion has on mule deer and elk. The study found that heavy hunting pressure on these apex predators had the opposite effect on mule deer.[xxiii] As trophy hunters often target the large, dominant male, they inadvertently reduce the age structure of mountain lions in the area, leaving younger, less experienced lions on the landscape. According to the study, these younger predators typically selected for mule deer instead of larger prey species like elk. As a result, the researchers noted

that, despite increased survival of fawns and females, the removal of mountain lions did not yield a growth in the mule deer population. Instead, they suggested that hunting may actually be increasing the number of mountain lions that specialize in targeting deer.

To summarize, we are asking the Commission to establish quotas in the future that are more in line with the best available science. Specifically, we request that the limit be reduced to 10% or less of the total adult and sub-adult population. We are also asking that hounds are not permitted at any time to aid trophy hunters in their pursuit of mountain lions. The use of hounds is inhumane, does not constitute as fair chase and offers hunters an unfair advantage. If hounds are permitted, we ask that GPS collars to track their movements are prohibited to better align with fair chase principals. We are also asking that the start of the mountain lion season in Montana be delayed until December 1. Doing so could prevent the death of a female with dependent young and could ultimately prevent the orphaning and deaths of approximately 91 percent of kittens. Lastly, we politely ask that the Commission factor in the recent findings about the impacts of high hunting quotas on both mountain lion and deer populations and include this information when setting limits now and in the future.

Thank you for your consideration. Please make this comment letter a part of the official record regarding this decision.

Respectfully,

Lynn Cullens

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Questions or requests regarding this comment letter may be directed to:
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## REFERENCES


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[i] Cougar Management Guidelines (2005)

[ii] Batavia et al. (2018)

[iii] Vucetich et al. (2005), Eberhardt et al. (2007), Darimont et al. (2015)

[iv] Creel and Rotella (2010), Ausband et al. (2015), Darimont et al. (2015)

[v] Elbroch and Quigley (2019)

[vi] Beausoleil et al. (2013)

[vii] Robinson and DeSimone (2011)

[viii] Maletzke et al. (2014)

[ix] Stoner et al. (2006), Wielgus et al. (2013)

[x] Stoner et al. (2006)

[xi] Anderson and Lindzey (2005)

[xii] Tiechman et al. (2016)

[xiii] Stoner et al. (2006)

[xiv] Wallach et al. (2015)

[xv] Cooley et al. (2009)

[xvi] Tiechman et al. (2016)

[xvii] Peeble et al. (2013)

[xviii] Lindzey et al. (1992), Logan and Sweanor (2001), Elbroch et al. (2013)

[xix] Hristienko and McDonald (2007)

[xx] Posewitz (1994), Teel et al. (2002), Cougar Management Guidelines (2005)

[xxi] Posewitz (1994)

[xxii] O'Malley et al. (2018)

[xxiii] Elbroch and Quigley (2019)

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May 20, 2019

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**RE: Proposed Montana 2019 Mountain Lion Quota Changes**

Dear Chief Vore and Members of the Commission:

On behalf of the Humane Society of the United States and our supporters in Montana, I thank you for the opportunity to submit the following comments in opposition to Montana Fish, Wildlife and Parks' (FWP) proposed hunting quota increases for mountain lions (*Puma concolor*).

Montana is second only to Idaho in the number of mountain lions that are trophy hunted in the state each year.[1] Between 2007 and 2016, 4,438 mountain lions were killed by trophy hunters in Montana. The Humane Society of the United States is concerned by the high rates of mountain lion offtake in Montana, particularly its high levels of female quotas and subquotas, as well as FWP's scientifically unsound justification for increasing quotas in order to boost ungulate populations and decrease conflicts. As detailed below, trophy hunting of mountain lions is not only cruel and unnecessary, it often results in increased conflicts with humans, pets and livestock.

FWP has proposed an increase in trophy hunting of mountain lions for the 2019 hunting season. The proposal will increase the mountain lion hunting quota in Hunting District (HD) 560 from seven to eight mountain lions with a female subquota increase from three to four, and in HD 530/590 from 10 to 15 mountain lions. We believe mountain lions should be managed for all Montanans, not just trophy hunters. As such, and for the reasons provided herein, we do not support the proposed quota increases and call on FWP to end trophy hunting of mountain lions in Montana.

## I. Trophy hunting is harmful to mountain lions and increases conflicts

Trophy hunting is the greatest source of mortality for mountain lions throughout the majority of their range across the western and midwestern United States.[2] The practice is harmful to more than just the wild cats who are killed. Conservation biologists have derided this practice as unnecessary and wasteful. Batavia et al. (2018) write: Compelling evidence shows that the animals hunted as trophies have sophisticated levels of "intelligence, emotion and sociality" which is "profoundly disrupted" by trophy hunting.[3] For these reasons, FWP must not allow trophy hunting of mountain lions in our state:

*1.) Trophy hunting is unsustainable and cruel:* Mountain lions are sparsely populated across vast areas, invest in few offspring, provide extended parental care to their young, have a tendency towards infanticide, females limit reproduction and social stability promotes their resiliency.[4] Human persecution affects their social structure[5] and harms their persistence.[6]

Research shows that trophy hunting and predator control results in additive mortalities, causing total mortalities to far exceed what would occur in nature.[7] In fact, the effect of human persecution is "super additive," meaning that hunter kill rates on large carnivores has a multiplier effect on the ultimate increase in total mortality over what would occur in nature due to breeder loss, social disruption and its indirect effects including increased infanticide and decreased recruitment of their young.[8] When trophy hunters and predator-control agents remove the stable adult mountain lions from a population, it encourages subadult males to immigrate, leading to greater aggression between cats and mortalities to adult females and subsequent infanticide.[9]

*2.) Trophy hunting and predator control is particularly harmful to mountain lion kittens and their mothers:* Biologists maintain that females are the most important demographic of a lion population; they ensure the continuation of the species.[10] Unfortunately, female mountain lions are frequent victims of trophy hunting, both directly from the trophy hunter, and indirectly from social chaos.[11] In heavily hunted populations, female mountain lions experience higher levels of intraspecific aggression (fights with other cats) resulting in predation on themselves and their kittens.[12] Over-hunting harms a population's ability to recruit new members, especially if too many adult females are removed.[13] The loss of adult females ensures the death of orphaned kittens by starvation, dehydration, predation or exposure.[14] Kittens up to 12 months of age are likely incapable of dispatching prey animals on their own.[15] Thus, a trophy hunter or trapper kills more than just the animal in the crosshairs: trophy hunting causes a sudden disruption in mountain lion social structures that leads to additional mortalities that are never counted in states' hunting quotas.[16]

*3.) Trophy hunting harms entire mountain lion communities:* A study on mountain lions in the Teton region of Wyoming shows that mountain lions are quite social and live in "communities," with females sharing kills with other females and territorial males, while males may protect their females and kittens from incoming, competing males.[17] Disrupting these communities can cause negative effects and increases conflicts by causing social chaos within their populations.[18] Trophy hunting and predator control easily destabilizes mountain lion populations, causing increased conflicts with humans, pets and livestock.[19]

*4.) Trophy hunting is unnecessary as mountain lions are a self-regulating species*: Mountain lions occur at low densities relative to their primary prey, making them sensitive to bottom-up (prey declines) and top-down (human persecution) influences.[20] In order to survive, their populations must stay at a smaller size relative to their prey's biomass or risk starvation.[21] They do this by regulating their own numbers.[22] When prey populations decline, so do mountain lion populations.[23] Mountain lion populations also require expansive habitat, with individual cats maintaining large home ranges that overlap with one another.[24]

*5.) Trophy hunting increases complaints and livestock depredations:* Data show that mountain lions kill very few cattle and sheep across the country.[25] In Montana, mountain lions cause less than 1% of all cattle and sheep mortalities.[26] Moreover, only 14.5% of cattle operations reportedly used non-lethal methods to protect their animals from predation.[27]

A Washington state study shows that as mountain lion complaints increased, wildlife officials lengthened seasons and increased bag limits to respond to what they believed was a rapidly growing lion population. However, the public's perception of an increasing population and greater numbers of livestock losses

was actually a result of a declining female and increasing male demographic in the population.[28] Heavy hunting of lions skewed the ratio of young males in the population by causing compensatory immigration and emigration by young male lions.[29]

Study authors found that the sport hunting of mountain lions to reduce complaints and livestock depredations had the opposite effect. Killing lions disrupts their social structure and increases both complaints and livestock depredations.[30] Peebles et al. (2013) write:

> . . . each additional cougar on the landscape increased the odds of a complaint of livestock depredation by about 5%. However, contrary to expectations, each additional cougar killed on the landscape increased the odds by about 50%, or an order of magnitude higher. By far, hunting of cougars had the greatest effects, but not as expected. Very heavy hunting (100% removal of resident adults in 1 year) increased the odds of complaints and depredations in year 2 by 150% to 340%. [31]

Hunting disrupts mountain lions' sex-age structure and tilts a population to one that is comprised of younger males, who are more likely to engage in livestock losses than animals in stable, older population.[32]

*6.) Killing large numbers of mountain lions halts their ability to create trophic cascades in their Montana ecosystems, which benefits a wide range of flora, fauna and people:* Mountain lions serve important ecological roles, including providing a variety of ecosystem services.[33] As such, conserving these large cats on the landscape creates a socio-ecological benefit that far offsets any societal costs.[34] Their protection and conservation has ripple effects throughout their natural communities. Researchers have found that by modulating deer populations, mountain lions prevented overgrazing near fragile riparian systems, resulting in greater biodiversity.[35] Additionally, carrion left from lion kills feeds scavengers, beetles, foxes, bears and other wildlife species, further enhancing biodiversity.[36]

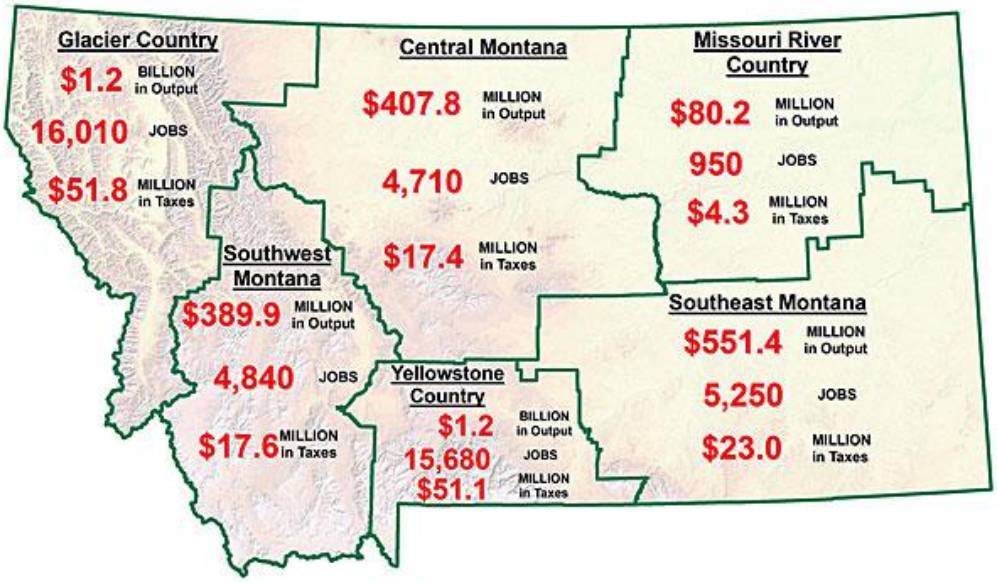
Mountain lions, as with most large carnivores, are also considered a keystone species because they help drive the ecosystems in which they live.[37] As a large predator, mountain lions regulate many of the other species in their communities, including herbivores, who then regulate the plant community.[38] Wildlife managers and biologists also consider mountain lions to be an 'umbrella' species – by protecting lions and their large habitat, a wide array of additional plants and animals in this habitat will also be protected.[39]

*7.) Mountain lions remove deer infected with chronic wasting disease:* Mountain lions can help maintain the health and viability of ungulate populations by preying on sick individuals, reducing the spread of disease. For example, a study in Rocky Mountain National Park, researchers found lions preyed on mule deer infected with chronic wasting disease, which was just found late last year in Montana's wild deer herd.[40] A reduction in the lion population could eliminate one of the best defenses against the spread of this deadly disease. Mountain lions also reduce vehicle collisions with deer, saving drivers $1.1 million in collision costs annually in South Dakota alone.[41] They could also help prevent the need for game damage hunts in the winter.[42]

*8.) Mountain lions provide economic benefits through tourism*: Killing mountain lions deprives citizens of their ability to view or photograph wild mountain lions.[43] Nonconsumptive users are a rapidly growing stakeholder group who provide immense economic contributions to the communities in which they visit.[44] For 2016, the University of Montana's Institute for Tourism and Recreation Research (ITRR) found that 12 million non-resident visitors generated $3.16 billion in revenue while they were in Montana, generating 35,000 jobs and saving Montanans $424 in lowered household taxes.[45] The majority of nonresident spending occurred in Glacier and Yellowstone travel regions[46] (Fig. 1). A 2018 study co-

sponsored by the Western Association of Fish and Wildlife Agencies, Manfredo et al. (2018), found that more Montanans value and appreciate wildlife than ever.[47] Fewer of us Montanans want wildlife, such as grizzly bears, wolves and mountain lions killed for utilitarian purposes.[48]

**Fig. 1: 2016 Economic Contribution of Nonresident Travel Spending in Montana**[49]




*9.) Hounding harms cougar kittens, non-target wildlife and the hounds themselves:* Trophy hunting with hounds is cruel and causes harm to more than just the mountain lions being chased. Hounds kill kittens, and lions often injure or kill hounds.[50] The practice is stressful and energetically taxing to lions.[51] Hounding is not considered "fair chase" hunting by most.[52] Additionally, hounds chase non-target wildlife and trespass onto private lands.[53]

If FWP is to continue allowing trophy hunting of mountain lions, it must at the very least ensure that mortality from human persecution not exceed the species sustainable rate of growth, thought to be approximately 12% to 14% of the population.[54] FWP currently allows practically unlimited trophy hunting of mountain lions, despite lacking a statewide population estimate. Even so, the 2015 lion mortality total of 494 cats could be upwards of 18% of the statewide population, based on a modeling study by Robinson et al. (2015), placing the statewide population at 2,784 to 5,156 cats.[55] This rate is not considered sustainable by the best available science.[56]

**II. Killing mountain lions to increase mule deer populations is unlikely to produce positive results.**

FWP has repeatedly claimed ungulate predation reduction as a justification for permitting trophy hunting of mountain lions. The most current and best available science on mule deer survival reflects two key points:

1.) *Because ecological systems are complex, heavily persecuting mountain lions will fail to address the underlying malnutrition problems that deer face:* Recent studies demonstrate that predator removal, actions "generally had no effect" in the long term on ungulate populations.[57] Authors found that "both coyote and mountain lion predation was compensatory rather than additive."[58] In other words, if predators had been absent from those ecosystems, the deer would have died from some other cause anyway. In Idaho, study areas where mountain lions and coyotes endured heavy-killing regimens, the massive amounts of native carnivore killing failed to change the population trends for mule deer.

Hurley et al. (2011) conclude that the benefits of predator killing are marginal and short term in nature, and more important, the killing failed to change the long-term dynamics of mule deer population.[59]

Bishop et al. (2009), in their long-term, Colorado-based study, found that food limited the deer population, but especially the quality of winter-range habitats.[60] They determined that if deer had access to adequate nutrition that neither mountain lions nor coyotes negatively affected the deer population. They also suggest that mountain lions selected for deer that had poor body condition.[61] In a follow up, Colorado-based study, Bergman et al. (2014) found that managing winter range for deer, weed control and reseeding, benefitted deer greatly.[62] While predators are limited by the number of prey,[63] a new metadata study reveals that an increase in the number of prey does not bring a proportional increase predators because in crowded ungulate systems, the number of offspring is low. Thus, predator populations stay at a much lower size relative to prey biomass than previously thought.[64]

2.) *Mule deer need adequate nutrition to survive, reproduce, and recruit new members to their population:* Mule deer populations in the western United States have experienced population declines over the latter part of the last century because of myriad factors including habitat loss or fragmentation, changes in forage quality, competition with other ungulates, predation, disease, increased hunting, poaching, stochastic weather events, fire suppression, noxious weeds, overgrazing by livestock, energy development, and changes in hydrology caused by global warming—including changes in snow pack and temperature.[65]

In their review article that surveyed 48 predation studies involving mule deer, Forrester and Wittmer (2013) determined that while predation was the "primary proximate cause of mortality for all age classes" of deer, all of the predator removal studies indicate that "predation is compensatory, particularly at high deer densities, and that nutrition and weather shape population dynamics."[66] In other words, some deer are "doomed surplus;" that is, they die no matter what.[67] If Montana wants to grow its ungulate population, then FWP must foster survival of adult female ungulates to reduce declines; and it must increase nutritional conditions for mule deer as these factors are the most important for mule deer survival.[68]

The scientific literature is clear that large herbivores are limited by their food resources.[69] Young animals that have access to fewer nutritional reserves are less likely to survive – a theory that has been well tested in the West.[70] Mule deer survival is absolutely reliant on their ability to gain access to adequate nutrition – but that nutrition can be hindered by weather, habitat loss, oil and gas development, fire suppression, and other causes. To underscore, the underpinnings of ungulate population density is their access to nutrition, or what biologist call their "nutritional carrying capacity."[71]

Moreover, FWP must look towards human hunting as a major contributor to ungulate mortality. FWP should seriously consider potential reductions in mule deer and elk hunting quotas rather than increasing the trophy hunting of mountain lions and other native carnivores. Addressing unsustainable hunting of ungulates by increasing trophy hunting of mountain lions is not a suitable wildlife management strategy.

**III. Conclusion.**

FWP must not increase the mountain lion trophy hunting quota as doing so would only provide further trophy hunting of this iconic and ecologically significant species without considering the biological and social repercussions. FWP continues to allow significantly high rates of mountain lion trophy hunting despite spending over a decade on field research about the effects of hunting on Montana's mountain lion population.[72] Increasing hunting quotas to benefit trophy hunters is harmful to mountain lion subpopulations, especially females and kittens.

Montana's mountain lions are an important component of our natural wild heritage and deserve reasoned management so that their populations are conserved for future generations.[73]Thank you for your consideration. Should you have any questions, please contact me at whergenraeder@humanesociety.org.

Sincerely,

Wendy Hergenraeder
Montana State Director
The Humane Society of the United States

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[3] Batavia et al. (2018) write: "...nonhuman animals are not only physically, socially, and emotionally disrupted [by trophy hunters], but also debased by the act of trophy hunting. Commoditized, killed, and dismembered, these individuals are relegated to the sphere of mere things when they are turned into souvenirs, oddities, and collectibles. We argue this is morally indefensible. Nonhuman animals are not mere objects but living beings with interests of their own, to whom we owe at least some basic modicum of respect (Regan, 1983). To transform them into trophies of human conquest is a violation of duty and common decency; and to accept, affirm, and even institutionalize trophy hunting, as the international conservation community seems to have done, is to aid and abet an immoral practice." Authors then argue that trophy hunting cannot be "presumed [to be] integral to conservation success."
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