

MONTANA FISH, WILDLIFE & PARKS

PUBLIC COMMENTS:

2021 MOUNTAIN LION QUOTAS

1. I support this proposal. And I would support even higher quotas in the following years.

Ryan Greenside Missoula, MT

2. To whom it may concern, I respectfully disagree with the change/requirement that necessitates a Special Use Permit for setting traps on The Nature Conservancy Lands. A Special Use Permit creates a blanket exclusion from trapping Nature Conservancy Lands unless that special permit is granted by the powers that be. Instead, trapping should generally be allowed, except for specific, excluded areas with heavy use. Having applied for similar special use permits for state lands, I have personally seen the difficulty in obtaining such permits. Respectfully yours, D. Steintl

D. Steintl Missoula, MT

3. The quota that really needs addressed is the region 6 quota allowing only 4 lions in what amounts to slightly less than 1/4 of the state of Montana is slightly absurd. This is one of the fastest filling quota areas in the state and could easily support a quota of 12-15

BUD MARTIN zortman, MT

4. I think that it is imperative that the Lion Quota in unit 140 be raised. When FWP combined units 132 and 140 last year the quota was reduced. Historically these two units have had a larger quota and due to the new configuration of units for mountain lion that quota was reduced. As an outfitter and guide I have witnessed first hand the sheer volume of cats in this unit. Often times we will cross 5 or more mature lion tracks in a morning of hunting for lion. In addition, we are now encountering lion groups of 3-5 cats during the day in the fall season in this area. The mule deer hunting in this area has become horrible and I believe that is a direct correlation to the increase in the lion population. There is information that is readily available that this unit actually has one of the most dense populations of lions in the state. The following link shows that this area had the most observations of lions of any in the state for the last several decades
http://fieldguide.mt.gov/RangeMaps/GenObsMap_AMAJH04010_FS.jpg This is easily confirmed on fieldguide.mt.gov . So why is this unit not managed consistent with these confirmed sightings? We need to raise the quota in this unit to 20-25 cats at least.

Patrick M Tabor II Swan Lake, MT

5. ***From: Cody Carr <huntwithcody@yahoo.com>***

Sent: Monday, May 3, 2021 12:59 PM

To: FWP Wildlife <fwpwild@mt.gov>

Subject: [EXTERNAL] lion quotas

To the Commission: First off I want to thank each and every one of you as being a commissioner is a giant commitment and a big undertaking. I am a second generation outfitter in region 1 and 2, / MOGA director. I know not all of the information can be used for this meeting on lion quotas, but I feel this needs to be said. The graphs were provided by fwp and show my local area. Please call me with any questions. (406)360-8106 Thanks Cody

After talking to biologist Molly Parks, Jay Colbe, etc. I feel that all the biologist other than region 1 want mountain lions in Montana managed by a general quota or at least a season that has a cleanup like regions 2 hybrid season. We have incredible data (Region 1 and 2 mountain lion studies) setting in Helena that I was told would be out to the public by July. This was also what I was told last year. I know from what I was told that the Region 1 study will show region 1 will have way more cats than they thought they had. Our FWP commission needs to have their hands on this information even if it is not completely done.

Suggestions for Region 1 FWP quota setting.

1. On the three years I looked at our female and tom harvest: They have not been met to objective in region 1.
 - a. 2018 / 2019 females were under harvested by up to 70% in some region 1 districts. In order to fix this they made lion tags SEX specific. Region 1 quota for females in 2020 was 105 and only 61 were harvested. That's only a 58% harvest on females. Why do we have lion seasons structures that don't meet the exact number of lions that need to be removed off the land-scape. (ULM Ungulates Lives Matter!!!)
2. Get rid of sex specific tags. This tag system creates an enforcement issue as cats being sexed wrong and left under the tree as it is difficult to sex lions as a young hounds-men / hunter. There is no pressure to get out there and harvest your lion as your tag is good for the entire season. Anti-hunters can apply for tags and not hunt!
3. The FWP Commission needs to get their hands on the studies to make the best decisions with the intel they have at this time. Our ungulate populations should not have to wait because of covid excuses and etc.
4. The Data I was sent from my local biologist for my area in region 1 show that lions in region 1 age class is dropping considerably. This is due to lack of lions being harvested because of the special draw seasons. Too many cats and fangs out they're feeding on declining ungulate populations. This type of special draw system actually creates a younger age class of predators as they are over populated. If we have a special draw system in place I would assume region 1 fwp is trying to allow lion hunters the opportunity to harvest a big cat. This season structure is doing the exact opposite.
5. I know of a hounds-men that is treeing over 75 lions a year in region 122 for the last three years in a row and has only been running on the weekends. (TOO MANY CATS)
6. Unless the commission can get their hands on the lion studies I feel the Commission should increase all region 1 areas by 25% harvest and get rid of the sex specific tags as they do not work as planned. The reason for increase is the under harvest of lions years after year and the data does not lie. We now have young cats that are over populated trying to feed on a declining level of ungulates.
7. Recently district 130 was merged with another hunting district. This takes opportunity from many houndsmen as now district 130 fills from the now merged district. The quotas should be increased as 130 is next to urban areas and border vast roadless country. This districts quota should be increased.

8. Special lion tag holders have no incentive to harvest their lion. (Anti-hunters applying for tags / A cat hunter holding out for their biggest lion / people without hounds apply / etc.) Region one either needs to be a hybrid season or a general quota.
9. Our ungulate population should never follow our predator populations. Shouldn't it be the other way around!
10. Create hunter opportunity harvesting predators to create even more opportunity harvesting elk, deer, and moose!
11. FWP commission needs to determine a correlation between increased populations of predators and declining ungulate populations. Also hold FWP accountable for not managing our ungulates to a acceptable number and not looking at correlations of added predators to landscape. In the past at fwp meetings biologist in region one threaten sportsmen with turning their elk and deer areas into special draw if they complain about elk deer and predator populations. Special draw should always be the last tool fwp should look too. We can create opportunities for sportsmen in Montana harvesting predators and if that is not enough we can look to wildlife services. Idaho is doing this very thing as we speak!
12. Region one should look at their neighbor region two as a model as they do not have quota run overs like in the 90's. There is better technology and ability to shut the season down without run-overs. Region 2 harvest year after year the exact amount of lions from each district the biologist set to be harvested.
13. In areas with low ungulate levels or struggling Bighorn sheep populations fwp commission should establish predator management zones to give ungulates and sheep the recovery period they need.
14. Why do we still manage lions at the same levels when we have added wolves and grizzly to the predator pool. We should be harvesting lions as to the available ungulate population instead of their historical numbers with the addition of wolves and bears.

Suggestions for region 2:

1. I love the hybrid season as it give hunters the opportunity for a longer season if they were lucky enough to draw the tag, but there is a cleanup mechanism if they do not with the opening of the February 1 hybrid season.
2. Region 2 should drop their quota's in region 200 and 202 only for females by 20%. Tom quotas's should be raised in 202 and remain the same for 200

Information below obtained from Fwp and is for Region one

MOUNTAIN LION HARVEST:

Sanders County includes mountain lion management units (LMU) 121,122,123, and 124. We report lion harvest number retrospectively back to 1990 (or earliest available data) at the LMU level. Note that all 2020 numbers should be considered incomplete as the 2020-2021 season is still open in the hunting districts listed above at the time of data compilation. Results are shown in graphical format, but we provide tabular summaries in Appendix C.

1. LMU 121: West Clark Fork

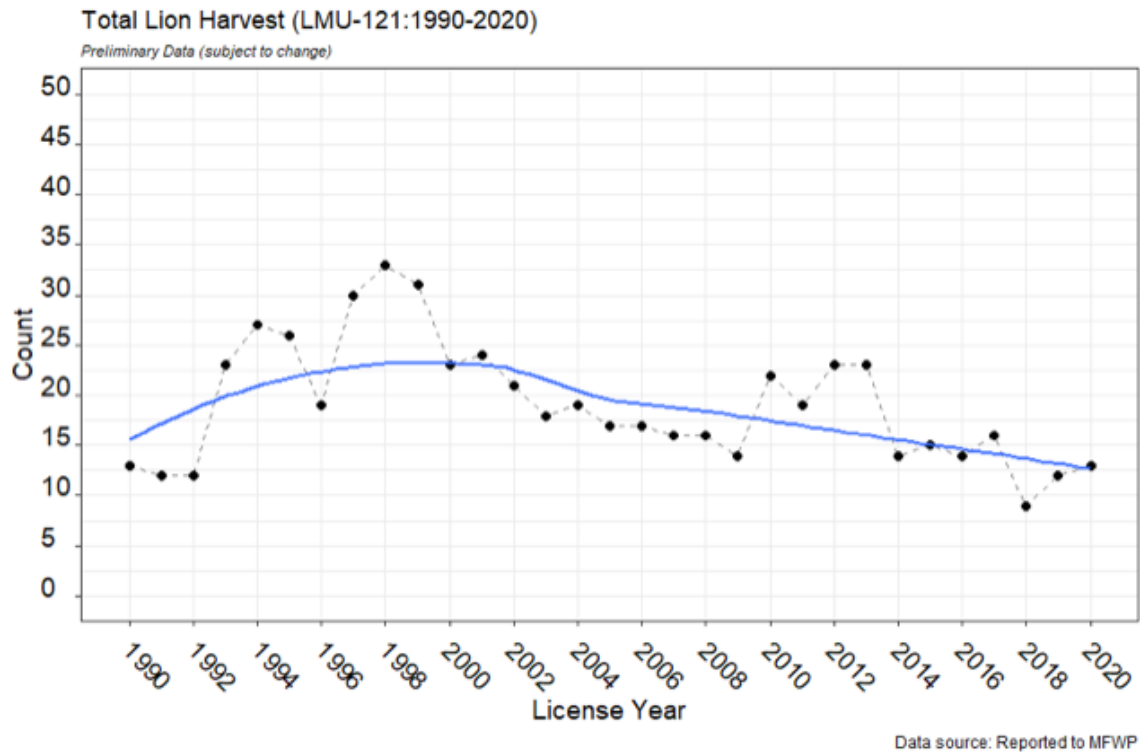


Figure 15. Total annual reported mountain lion harvest in LMU 121 (1990-2020). Solid blue line indicates smoothed trend (Loess regression).

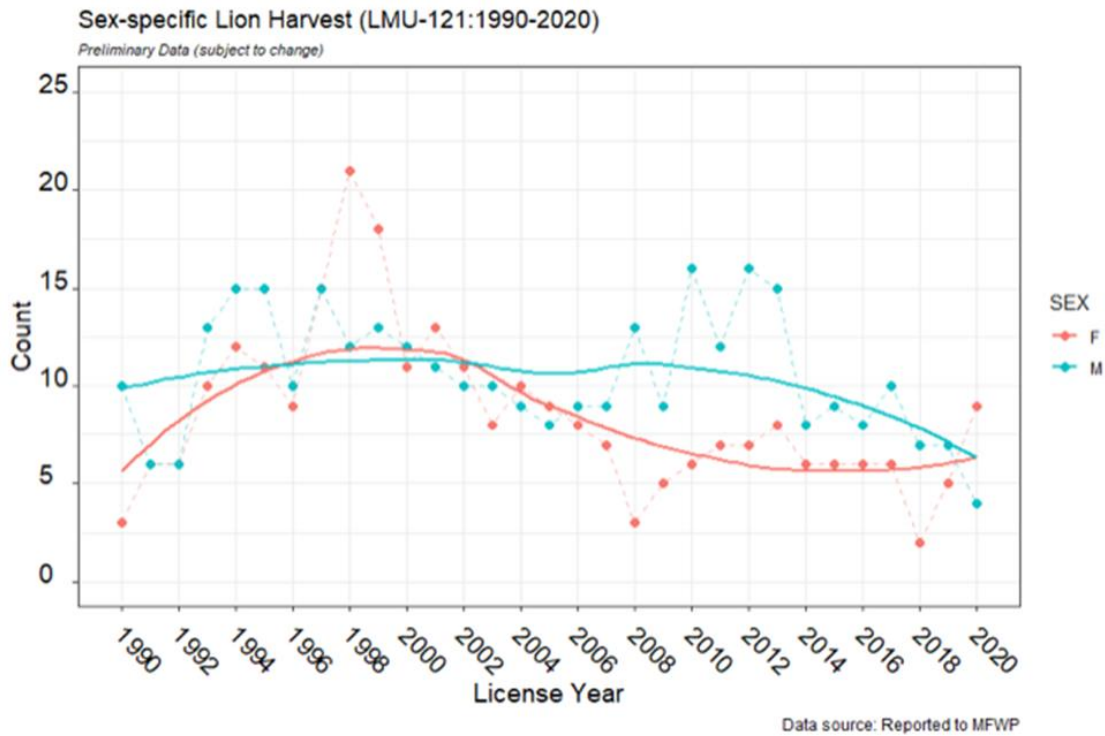


Figure 16. Sex-specific annual reported mountain lion harvest in LMU 121 (1990-2020). Solid lines indicate smoothed trends (Loess regression).

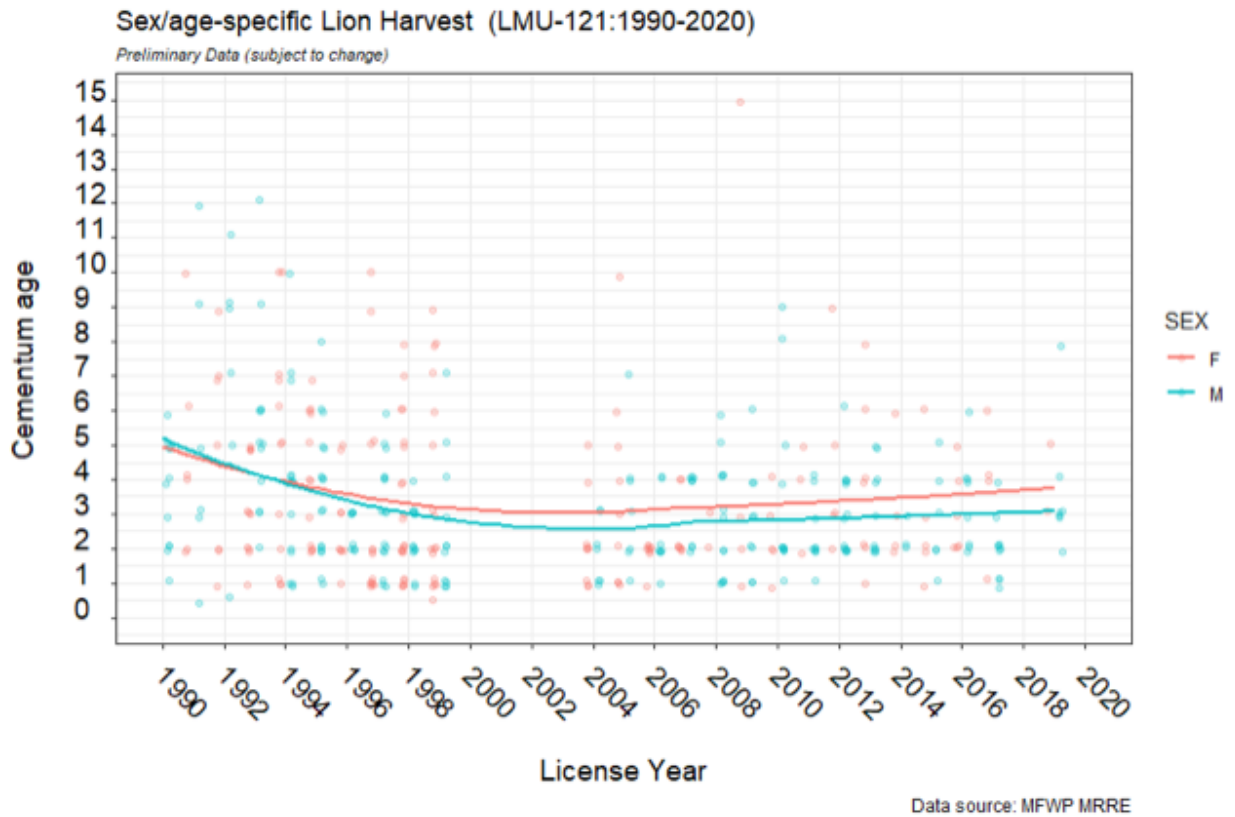


Figure 17. Sex-specific annual age estimates for reported mountain lion harvest in LMU 121 (1990-2020). Points represent cementum age estimates and are jittered for visual purposes. Solid lines indicate smoothed trends (Loess regression).

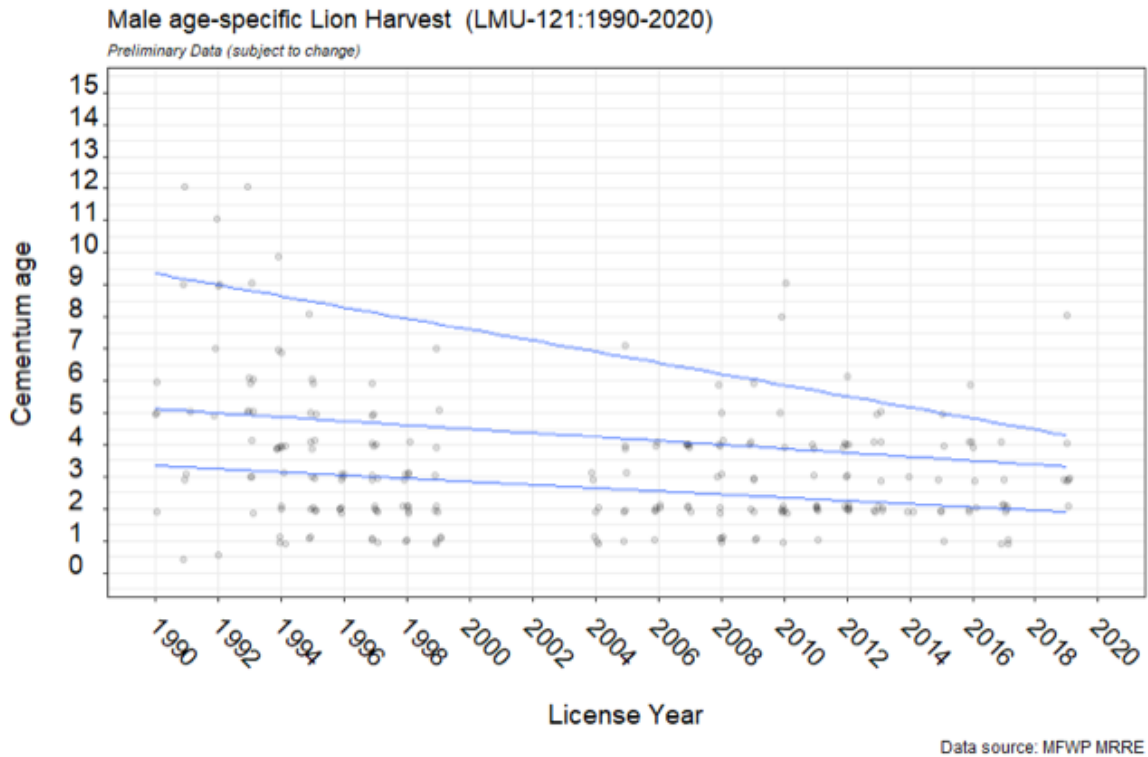


Figure 18. Male cementum age estimates for reported mountain lion harvest in LMU 121 (1990 to 2020). Points represent cementum age estimates and are jittered for visual purposes. Solid lines indicate quantile regression lines (50th, 75th, 95th quantiles). Although the average age has remained relatively constant (lowest blue line; quantile = 0.50), means can be misleading. Note that the oldest 5% of harvest male lions (top blue line; quantile = 0.95) have gotten younger over time.

2. LMU 122: Thompson River

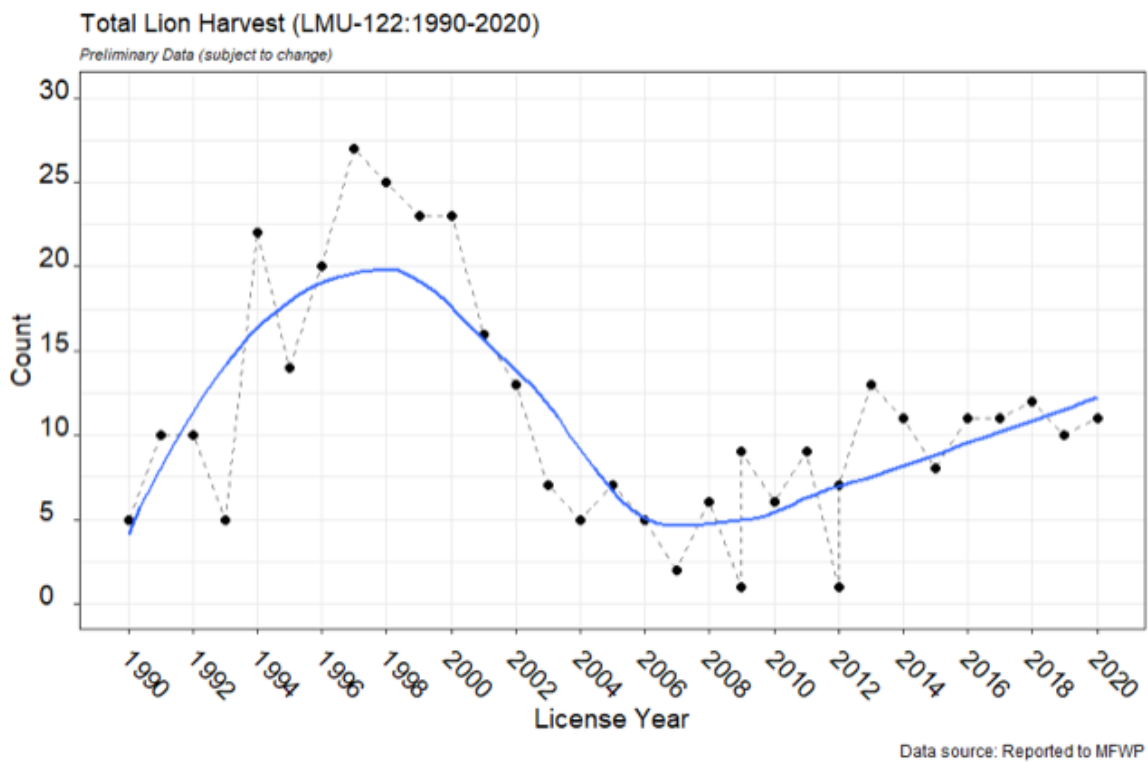


Figure 19. Total annual reported mountain lion harvest in LMU 122 (1990-2020). Solid blue line indicates smoothed trend (Loess regression).

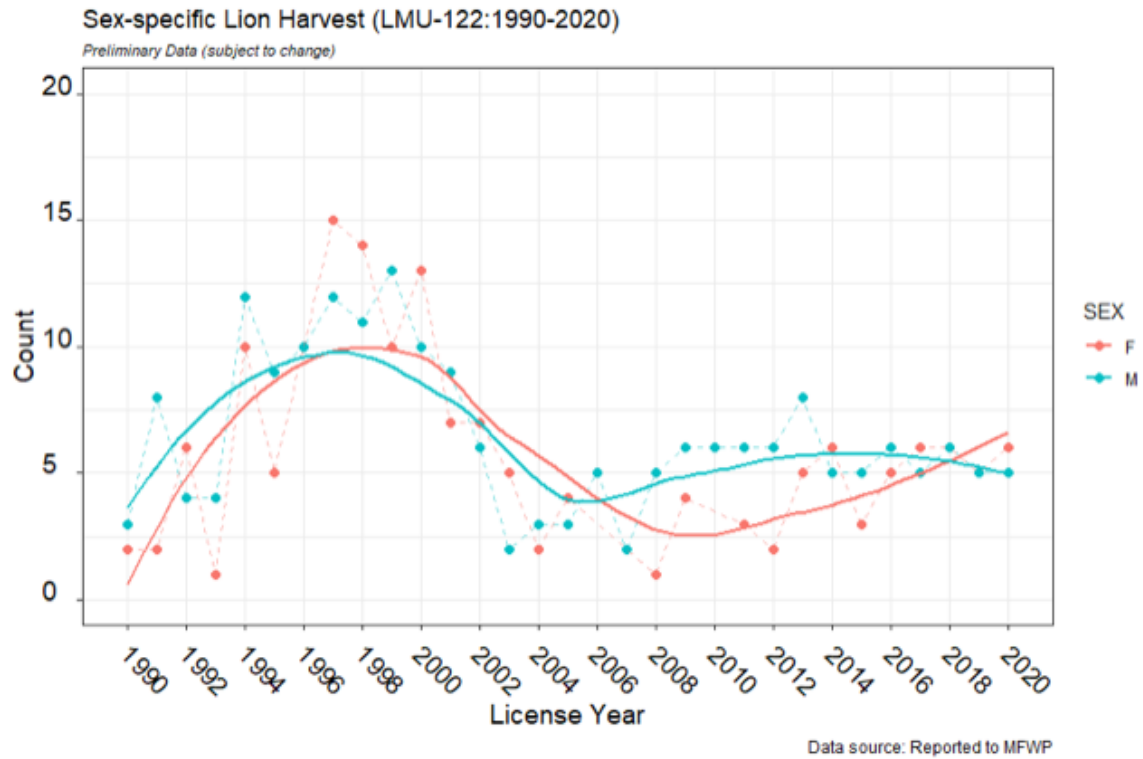


Figure 20. Sex-specific annual reported mountain lion harvest in LMU 122 (1990- 2020). Solid lines indicate smoothed trends (Loess regression).

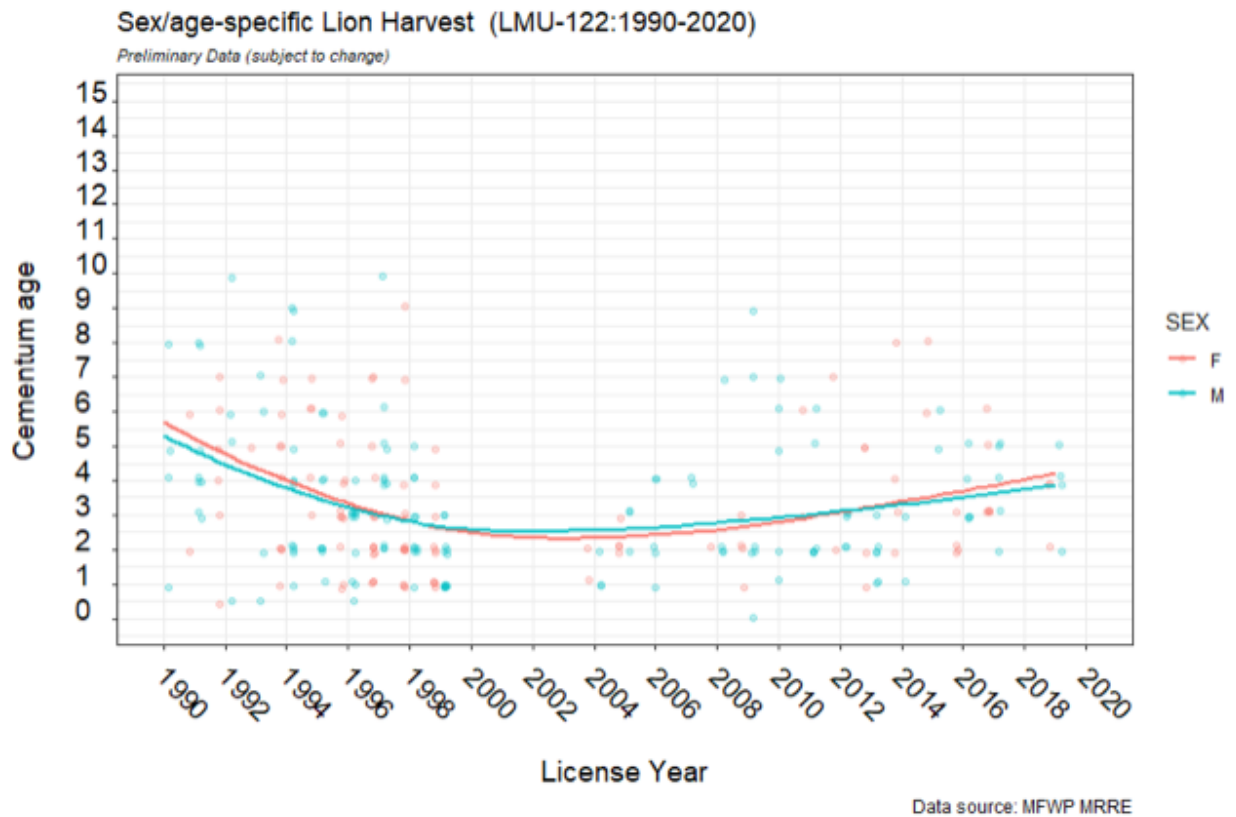


Figure 21. Sex-specific annual age estimates for reported mountain lion harvest in LMU 122 (1990- 2020). Points represent cementum age estimates and are jittered for visual purposes. Solid lines indicate smoothed trends (Loess regression).

3. LMU 123: Clark Mountain

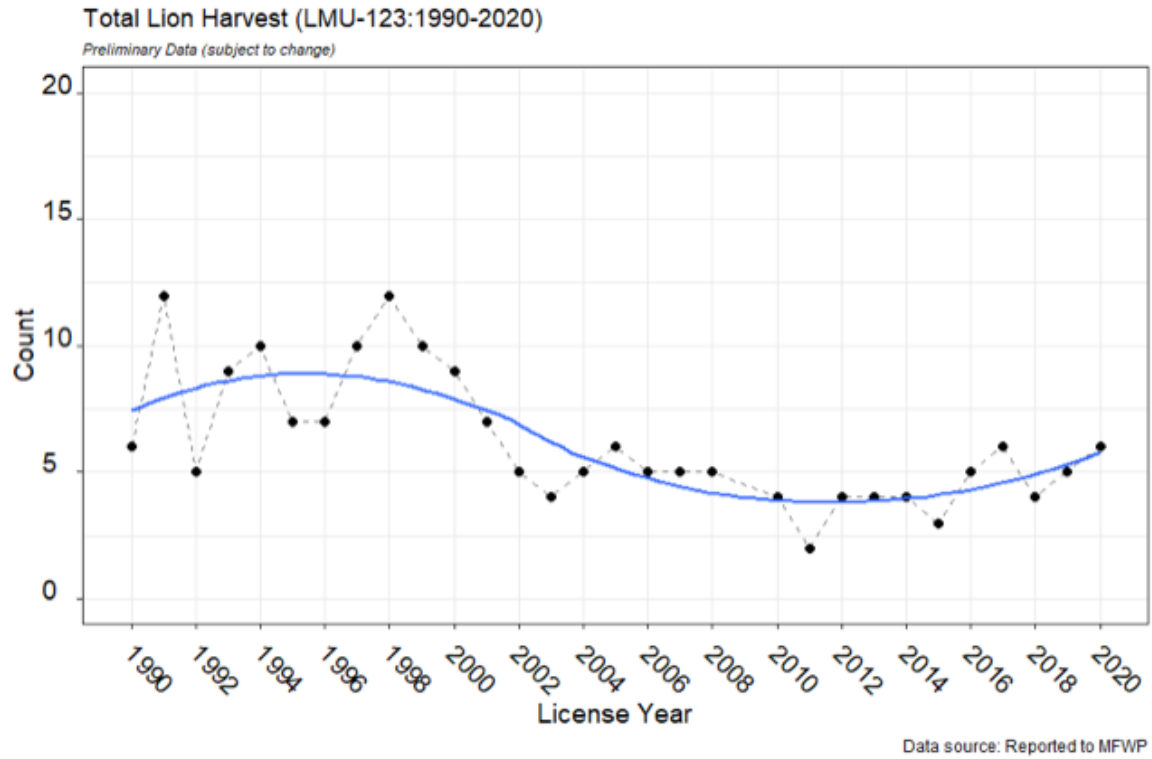


Figure 22. Total annual reported mountain lion harvest in LMU 123 (1990-2020). Solid blue line indicates smoothed trend (Loess regression).

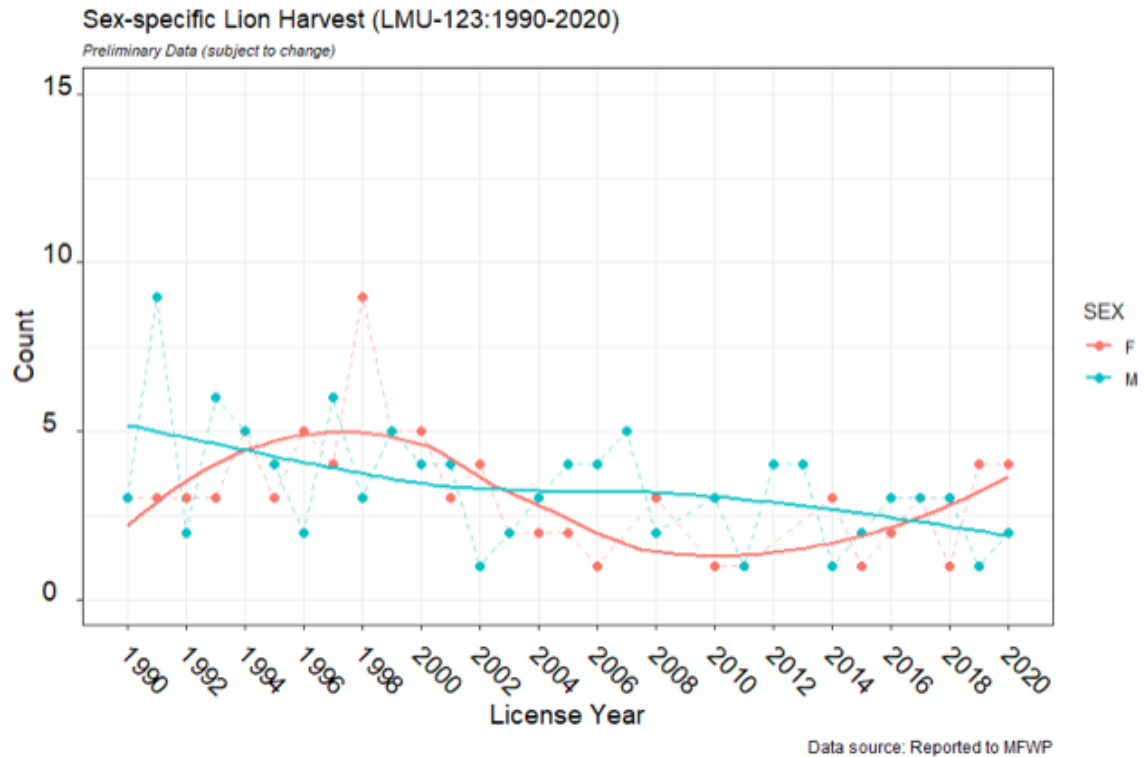


Figure 23. Sex-specific annual reported mountain lion harvest in LMU 123 (1990-2020). Solid lines indicate smoothed trends (Loess regression).

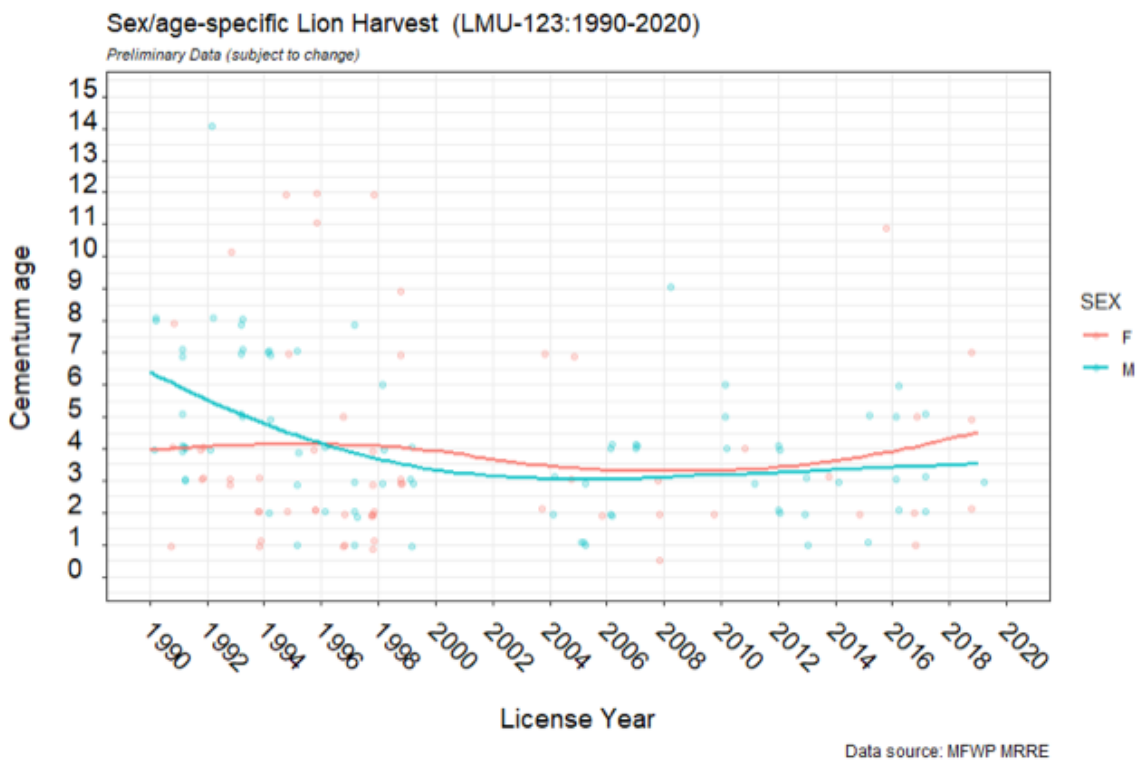


Figure 24. Sex-specific annual age estimates for reported mountain lion harvest in LMU 123 (1990-2020). Points represent cementum age estimates and are jittered for visual purposes. Solid lines indicate smoothed trends (Loess regression).

4. LMU 124: Arvilla

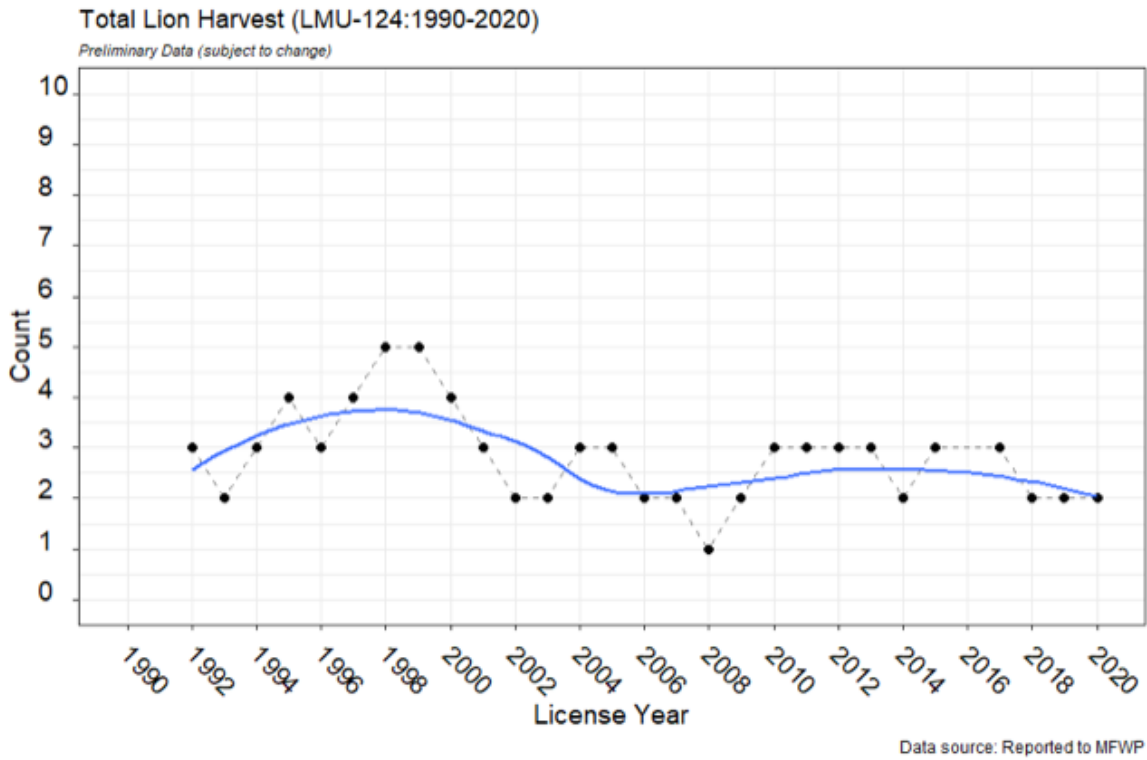


Figure 25. Total annual reported mountain lion harvest in LMU 124 (1990-2020). Solid blue line indicates smoothed trend (Loess regression).

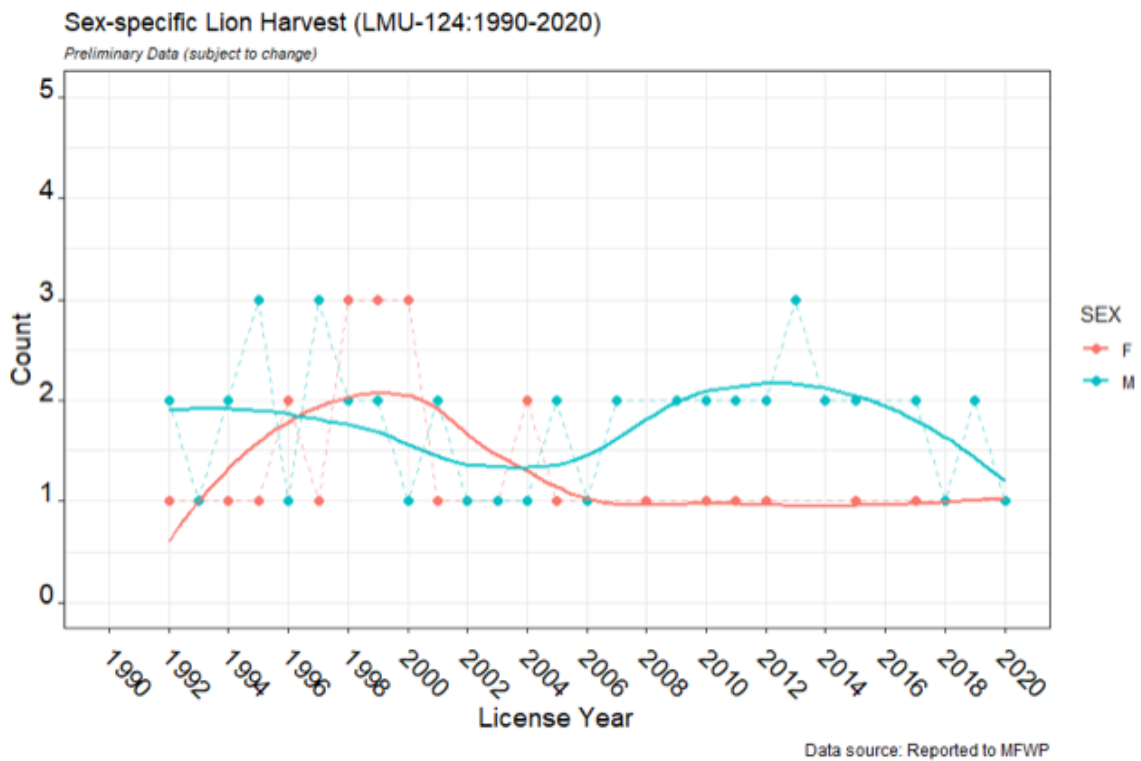


Figure 26. Sex-specific annual reported mountain lion harvest in LMU 124 (1990-2020). Solid lines indicate smoothed trends (Loess regression).

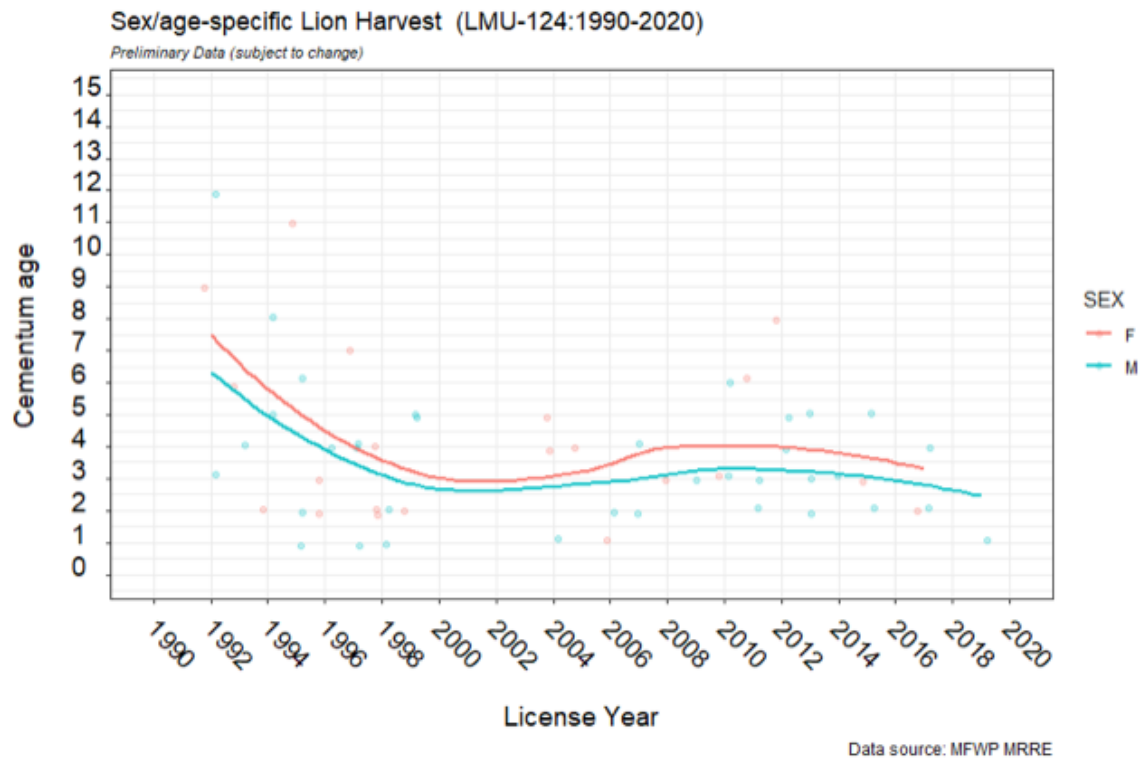


Figure 24. Sex-specific annual age estimates for reported mountain lion harvest in LMU 124 (1990-2020). Points represent cementum age estimates and are jittered for visual purposes. Solid lines indicate smoothed trends (Loess regression).

Appendix A: Black Bear Summary Tables

Table A.1. BMU 104 total annual harvest, age, and proportion of harvest that is females 2000-2019.

BMU	LICyr	Total Harvest	Age estimate sample size	Mean cementum age estimate	Std. dev. Cementum age estimate	Female proportion of total harvest
104	2000	78	78	8.03	5.79	0.29
104	2001	74	74	7.03	5.19	0.27
104	2002	82	82	5.46	5.01	0.26
104	2003	87	87	4.90	3.76	0.36
104	2004	92	91	5.23	4.38	0.33
104	2005	83	82	6.41	5.44	0.41
104	2006	81	80	5.66	4.73	0.23
104	2007	83	81	7.00	5.68	0.33
104	2008	43	43	7.21	5.71	0.21

104	2009	67	65	6.60	4.51	0.37
104	2010	78	0			0.33
104	2011	67	1	2.00		0.28
104	2012	79	0			0.30
104	2013	57	0			0.25
104	2014	84	0			0.15
104	2015	113	47	3.70	3.35	0.30
104	2016	92	70	6.59	5.50	0.47
104	2017	73	66	5.80	3.88	0.27
104	2018	73	65	5.80	4.56	0.33
104	2019	85	75	6.53	4.86	0.38
104	2020	65	0			0.28

Table A.2. BMU 105 total annual harvest, age, and proportion of harvest that is females 2000-2019.

BMU	LICYR	Total Harvest	Age estimate sample size	Mean cementum age estimate	Std. dev. Cementum age estimate	Female proportion of total harvest
105	2000	77	75	4.53	3.63	0.36
105	2001	86	86	4.51	4.14	0.35
105	2002	96	96	4.84	4.56	0.40
105	2003	128	118	5.52	4.05	0.32
105	2004	115	114	5.38	4.44	0.32
105	2005	89	85	5.14	4.66	0.33
105	2006	105	100	4.64	3.96	0.42
105	2007	128	124	4.67	4.07	0.39
105	2008	63	60	4.33	4.05	0.37
105	2009	91	88	4.53	4.87	0.36
105	2010	114	0			0.36
105	2011	120	0			0.36
105	2012	126	0			0.37
105	2013	132	1	22.00		0.33

105	2014	127	0			0.35
105	2015	151	68	2.54	2.29	0.33
105	2016	173	146	4.90	4.65	0.42
105	2017	127	115	4.76	3.93	0.30
105	2018	126	118	4.50	4.16	0.42
105	2019	139	119	4.34	3.36	0.34
105	2020	123	2	10.50		0.38

Table A.3. BMU 108 total annual harvest, age, and proportion of harvest that is females 2007-2019.

BMU	LICyr	Total Harvest	Age estimate sample size	Mean cementum age estimate	Std. dev. Cementum age estimate	Female proportion of total harvest
108	2007	60	57	3.82	3.77	0.33
108	2008	113	103	4.43	4.28	0.31
108	2009	122	113	5.00	4.20	0.30
108	2010	68	0			0.40
108	2011	81	0			0.44
108	2012	68	0			0.43
108	2013	46	0			0.37
108	2014	66	0			0.30
108	2015	58	21	3.81	4.35	0.34
108	2016	60	51	5.39	4.26	0.47
108	2017	56	49	5.67	4.62	0.36
108	2018	59	52	5.92	4.89	0.31
108	2019	67	59	6.22	5.07	0.19
108	2020	66	0			0.42

Appendix B: Wolf Harvest Summary Table

Table B.1. WMU 121 wolf harvest summary. Male, female, and total annual harvest. Note that when M+F \neq total, the difference reflects harvest for which sex was unknown. The proportion of annual harvest from hunters and trappers and the proportion of wolves with black pelts are included.

LICYR	males	females	total	Proportion Hunter	Proportion Trapper	Proportion pelt=black
2009	2	4	6	1.00	0.00	0.17
2011	7	5	12	1.00	0.00	0.00
2012	12	6	18	0.61	0.39	0.39
2013	8	9	17	0.65	0.35	0.12
2014	10	7	17	0.41	0.59	0.12
2015	12	9	21	0.33	0.67	0.10
2016	11	8	19	0.63	0.37	0.21
2017	10	8	18	0.28	0.72	0.39
2018	17	8	26	0.31	0.69	0.23
2019	12	15	27	0.33	0.67	0.33
2020	18	21	39	0.21	0.79	0.18

Appendix C: Mountain Lion Harvest Summary Tables

We report mountain lion harvest data for 2015-2020 only. Previous harvest summaries are available in the Region 1 2015 Mountain Lion Report (Coltrane, J. 2015).

Table C.1. Mountain lion harvest in LMUs 121,122,123, and 124 2015-2020.

HUNT DISTRICT	LICYR	Females	Males	Total
121	2015	6	9	15
121	2016	6	8	14
121	2017	6	10	16
121	2018	2	7	9
121	2019	5	7	12
121	2020*	9	4	13
122	2015	3	5	8
122	2016	5	6	11
122	2017	6	5	11
122	2018	6	6	12
122	2019	5	5	10

122	2020*	6	5	11
123	2015	1	2	3
123	2016	2	3	5
123	2017	3	3	6
123	2018	1	3	4
123	2019	4	1	5
123	2020*	4	2	6
124	2015	1	2	3
124	2017	1	2	3
124	2018	1	1	2
124	2019	0	2	2
124	2020*	1	1	2

* Season not closed at time of data compilation

6. **From: Michael Colpo <lzj@mtintouch.net>**

Sent: Sunday, May 2, 2021 9:15 AM

To: FWP Wildlife <fwpwild@mt.gov>

Subject: [EXTERNAL] Fwd: mountain lion proposal comments for May 3, 2021 deadline from Mike Colpo of Big Timber MT.

Mountain lion HD's 560, 520, 313,314,316,317 Quota changes HD 560 current quota 8 w/4 female sub quota – propose increase 4 Historical high for several years was 14 and the low was 7, female sub quota of 4 came into play about 8 to 10 years ago. Due to current data at hand for eco region 3 shows population trends on an upward curve to 1200 to 1400 mtn lions and a decreased number in mule deer numbers across the Absoroka Beartooth face in HD560. The number of sightings and frequency in the town of Big Timber and low-lying residencies in HD560 and take locations of mtn lion in 560 shows increased lion population in area. Age class of male lions has gone down over the years also showing an increase in lion populations and with more frequency of increased females treed and take in sub quota is showing increased lion population and increase in female population is tied to mule deer decline as we know female predation on deer is higher than males than large males that prey on larger ungulates as studies show. HD 520, 313, 314, 316, 317 are also in need of increase due to connectivity to 560 and Yellowstone Park in which we know by colored cats of travel to and from YP (YP has not been sharing data with FWP according to area Biologist) impacting population and predation. These HD's need an increase of 3 to 4 lions, In HD's 520, 313, 316 and 314 the impacts on bighorn sheep (560 has sheep also) has been evident hence the increase in quota is needed. HD 520 current quota 5 female sub quota 2 – propose increase 4 HD 313, 316 are combined current quota 4 - female sub quota 1 – propose increase 4 HD 314 current quota 6 female sub quota 2 – propose increase 4 HD317 current quota 6 female sub quota 2 – propose increase 4 The combination of increases in these areas was made in part in conversations with our area FWP Biologist as to this direction due to connectivity of areas and lions. He didn't so much make it a point to say region 3 areas should be increased as not to encroach on region 3 biologist, suggestion was more on a common-sense basis as to

connectivity of like region. Also, consideration was given to discussions with houndsman and landowners in these districts on increases in lions and in increased female populations. I don't know what the historical quotas are except for HD560 in which the Biologist and I live and hunt in but knowing impacts by traveling males and female density in HD560 it would lead one to believe that these bordering areas are seeing same increases in population. All areas are in eco region 3 except for 520, but all areas affect unlimited bighorn sheep areas. Note: That area Biologist did not give numbers that should be added, but he said doing the math and looking at data and upward trends shows in eco region 3 shows quota increase is warranted in HD560 with emphasis put on increased female quota. I know that proposals aren't germane to female and male take at this time just suggestion of lion quota increase, but explanation as to justification to increase is being explained.

Comments from Justin Paugh, FWP Wildlife Biologist R5, regarding the current lion situation in the Big Timber Area:

Track observations from lion hunters and big game hunters indicate lion numbers are higher than they were 5-10 years ago.

Complaints of lions in or near town were common over the past few years but seem to have lessened during the past year. Complaints from rural landowners about seeing lion tracks or lions are still frequent.

The lion harvest quota has not been reached in 570, the quota is not constraining harvest and complaints/conflicts are minimal.

The harvest quota in 580 has been reached 5 of the last 17 years. Harvest is primarily constrained by private land access, not quotas.

District 560 has hit or exceeded the harvest quota 8 of the last 11 years. In the past, quotas have been adjusted to track changes in lion numbers using the best available harvest data in conjunction with reports from hunters and landowners.

FWP Lion Management Plan population models suggest an increasing population across the state. These models have some limitations including their inability to address density dependent population growth. While they indicate an increasing population trend, the specific lion numbers estimated by the models should be used with caution.

Over the past four years, I've been reluctant to make lion quota changes in my districts because I've been waiting for completion of the new Lion Plan and lion management objectives. Currently, no lion management objectives have been established for R5 districts. Without established objectives, a wildlife biologist has no management direction. Are we managing for more lions, fewer lions, trophy lions, reduced conflict? I have personal opinions but the quota recommendations I make must be guided by management objectives, not my personal biases. We need objectives, then we can set quotas to move us towards those objectives. That is why I have not made recent quota change recommendations despite the apparent increase/high lion numbers in 560.

We've learned that managing lions at the geographic scale of an individual hunting district is ineffective considering the scale at which lions move across the landscape. If the objective is to reduce lion numbers, quota increases are needed across a group of adjacent hunting districts. Quota increases in one district won't

have significant impacts on the lion population. Increases to female harvest will reduce lion populations more effectively than increasing male harvest.

7. From: Haley Stewart <hstewart@humansociety.org>
Sent: Monday, May 3, 2021 10:45 AM
To: FWP Wildlife <fwpwild@mt.gov>
Subject: [EXTERNAL] Comments regarding proposed 2021 mountain lion quotas

Dear Chairperson Robinson, Chief Wakeling, and Members of the Commission,

I am submitting the attached comments regarding FWP's proposed 2021 mountain lion hunting quotas. Please do not hesitate to reach out if you have any questions. Thank you so much for your consideration.

Sincerely,

Haley Stewart

Haley Stewart

Program Manager, Wildlife Protection

hstewart@humansociety.org

P 240-660-0427

humansociety.org [humansociety.org]



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**THE HUMANE SOCIETY
OF THE UNITED STATES**

1255 23rd Street, NW
Suite 450
Washington, DC 20037
P 202-452-1100
F 202-778-6132
humanesociety.org

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David O. Wiebers, M.D.

May 3, 2021

Lesley Robinson, Chair
Montana Fish & Wildlife Commission
P.O. Box 200701
Helena, MT 59620-0701

Brian Wakeling, Game Management Bureau Chief
Montana Fish, Wildlife and Parks
P.O. Box 200701
Helena, MT 59620-0701

Submitted via email: fwcomm@mt.gov, fwpwld@mt.gov

RE: Proposed 2021-2022 Mountain Lion Quotas

Dear Chairperson Robinson, Chief Wakeling, 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 2021-2022 mountain lion (*Puma concolor*) hunting quotas.

Montana is second only to Idaho in the number of mountain lions that are trophy hunted in the state each year.¹ Between 2009 and 2018, trophy hunters have killed almost 5,500 mountain lions 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, as well as FWP's justification for allowing the trophy hunting of mountain lions in order to boost ungulate populations and decrease conflicts. As detailed below, trophy hunting of mountain lions is not only cruel and unnecessary, but also often results in increased conflicts with humans, pets and livestock.

We believe mountain lions should be managed for all Montanans, not just trophy hunters. 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.² As such, and for the reasons provided in Appendix A, we do not support the proposed 2021-2022 mountain lion hunting season, including the proposed quota increases in Regions 2 and 4, and call on FWP to end trophy hunting of mountain lions in Montana. Thank you for your consideration.

Sincerely,

Haley Stewart
Program Manager, Wildlife Protection
The Humane Society of the United States

Appendix

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.³ 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 that compelling evidence shows the animals hunted as trophies have sophisticated levels of “intelligence, emotion and sociality,” which is “profoundly disrupted” by trophy hunting.⁴ For the following 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.⁵ Human persecution affects their social structure⁶ and harms their persistence.⁷

Research shows that trophy hunting and predator control result in additive mortalities, causing total mortalities to far exceed what would occur in nature.⁸ In fact, the effect of human persecution of large carnivores is “super additive,” meaning that hunter kill rates have a multiplier effect on 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.⁹ 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.¹⁰

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.¹¹ Unfortunately, female mountain lions are frequent victims of trophy hunting, both directly from the trophy hunter, and indirectly from social chaos.¹² 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.¹³ Over-hunting harms a population’s ability to recruit new members, especially if too many adult females are removed.¹⁴ The loss of adult females ensures the death of orphaned kittens by starvation, dehydration, predation or exposure.¹⁵ Kittens up to 12 months of age are likely incapable of dispatching prey animals on their own.¹⁶ 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.¹⁷

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.¹⁸ Disrupting these communities can cause negative effects and increases conflicts by causing social chaos within their populations.¹⁹ Trophy hunting and predator control easily destabilize mountain lion populations, causing increased conflicts with humans, pets and livestock.²⁰

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.²¹ In order to survive, their populations must stay at a smaller size relative to their prey's biomass or risk starvation.²² They do this by regulating their own numbers.²³ When prey populations decline, so do mountain lion populations.²⁴ Mountain lion populations also require expansive habitat, with individual cats maintaining large home ranges that overlap with one another.²⁵

5.) *Trophy hunting increases complaints and livestock depredations:* Data show that mountain lions kill very few cattle and sheep across the country.²⁶ In Montana, mountain lions cause less than 1% of all cattle and sheep mortalities.²⁷ Moreover, only 14.5% of cattle operations reportedly used non-lethal methods to protect their animals from predation.²⁸

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.²⁹ Heavy hunting of lions skewed the ratio of young males in the population by causing compensatory immigration and emigration by young male lions.³⁰

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.³¹ 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%.³²

Hunting disrupts mountain lions' sex-age structure and tilts a population to one that is composed of younger males, who are more likely to engage in livestock losses than animals in a stable, older population.³³

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.³⁴ As such, conserving these large cats on the landscape creates a socio-ecological benefit that far offsets any societal costs.³⁵ Their protection and conservation have 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.³⁶ Additionally, carrion left from lion kills feeds scavengers, beetles, foxes, bears and other wildlife species, further enhancing biodiversity.³⁷

Mountain lions, as with most large carnivores, are also considered a keystone species because they help drive the ecosystems in which they live.³⁸ As a large predator, mountain lions regulate many of the other species in their communities, including herbivores, who then regulate the plant community.³⁹ 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.⁴⁰

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, in a study in Rocky Mountain National Park, researchers found lions preyed on mule deer infected with chronic wasting disease—which was found in Montana’s wild deer herd in 2017, and just found late last year in Montana’s wild elk herd.⁴¹ 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.⁴² They could also help prevent the need for game damage hunts in the winter.⁴³

8.) *Mountain lions provide economic benefits through tourism:* Killing mountain lions deprives citizens of their ability to view or photograph wild mountain lions.⁴⁴ Nonconsumptive users are a rapidly growing stakeholder group who provide immense economic contributions to the communities in which they visit.⁴⁵ 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.⁴⁶ Fewer of us Montanans want wildlife, such as grizzly bears, wolves and mountain lions killed for utilitarian purposes.⁴⁷

9.) *Hound hunting harms mountain lion 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.⁴⁸ The practice is stressful and energetically taxing to lions.⁴⁹ Hound hunting is not considered “fair chase” hunting by most.⁵⁰ Additionally, hounds chase non-target wildlife and trespass onto private lands.⁵¹

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.⁵² FWP currently allows practically unlimited trophy hunting of mountain lions, despite lacking a statewide population estimate. Even so, the current 2020 lion mortality total of 461 cats could be upwards of 17% of the statewide population, based on a modeling study by Robinson et al. (2015), which places the statewide population at 2,784 to 5,156 cats.⁵³ This rate is not considered sustainable by the best available science.⁵⁴

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.⁵⁵ Authors found that “both coyote and mountain lion predation was compensatory rather than additive.”⁵⁶ 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 importantly, the killing failed to change the long-term dynamics of the mule deer population.⁵⁷

Bishop et al. (2009), in their long-term, Colorado-based study, found that food limited the deer population, but it was especially influenced by the quality of winter-range habitats.⁵⁸ 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.⁵⁹ 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.⁶⁰ While predators are limited by the number of prey,⁶¹ a new metadata study reveals that an increase in the number of prey does not bring a proportional increase in 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.⁶²

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.⁶³

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.”⁶⁴ In other words, some deer are “doomed surplus,” who will die no matter what.⁶⁵ 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.⁶⁶

The scientific literature is clear that large herbivores are limited by their food resources.⁶⁷ Young animals that have access to fewer nutritional reserves are less likely to survive – a theory that has been well tested in the West.⁶⁸ 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.”⁶⁹

Moreover, FWP must acknowledge 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.

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² Cynthia Jacobson et al., "A Conservation Institution for the 21st Century: Implications for State Wildlife Agencies," *ibid.*74, no. 2 (2010); Michael P. Nelson et al., "An Inadequate Construct? North American Model: What's Missing, What's Needed," *The Wildlife Professional*, no. Summer 2011 (2011).

³ See e.g., "State of the Mountain Lion: A Call to End Trophy Hunting of America's Lion.," *Cougar Management Guidelines, Cougar Management Guidelines* (Bainbridge Island, WA: WildFutures, 2005).

⁴ 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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⁶ Stoner, Wolfe, and Choate, "Cougar Exploitation Levels in Utah: Implications for Demographic Structure, Population Recovery, and Metapopulation Dynamics.," Kaylie A. Peebles et al., "Effects of Remedial Sport Hunting on Cougar Complaints and Livestock Depredations," *Plos One* 8, no. 11 (2013); Wallach et al., "What Is an Apex Predator?,"; Heather M. Bryan et al., "Heavily Hunted Wolves Have Higher Stress and Reproductive Steroids Than Wolves with Lower Hunting Pressure," *Functional Ecology* (2014); C. T. Darimont et al., "Human Predators Outpace Other Agents of Trait Change in the Wild," *Proceedings of the National Academy of Sciences of the United States of America* 106, no. 3 (2009); Sterling D. Miller et al., "Trends in Intensive Management of Alaska's Grizzly Bears, 1980-2010," *Journal of Wildlife Management* 75, no. 6 (2011).

⁷ Chris T. Darimont et al., "The Unique Ecology of Human Predators," *Science* 349, no. 6250 (2015).

⁸ J. A. Vucetich, D. W. Smith, and D. R. Stahler, "Influence of Harvest, Climate and Wolf Predation on Yellowstone Elk, 1961-2004," *Oikos* 111, no. 2 (2005); G. J. Wright et al., "Selection of Northern Yellowstone Elk by Gray Wolves and Hunters," *Journal of Wildlife Management* 70, no. 4 (2006); L. L. Eberhardt et al., "A Seventy-Year History of Trends in Yellowstone's Northern Elk Herd," *ibid.*71, no. 2 (2007); Darimont et al., "The Unique Ecology of Human Predators."

⁹ Scott Creel and Jay Rotella, "Meta-Analysis of Relationships between Human Offtake, Total Mortality and Population Dynamics of Gray Wolves (*Canis Lupus*)," *PLoS ONE* 5, no. 9 (2010); D. E. Ausband et al., "Recruitment in a Social Carnivore before and after Harvest," *Animal Conservation* 18, no. 5 (2015); Darimont et al., "The Unique Ecology of Human Predators."

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