Exhibit D

Supplemental
Public Correspondence received as of
September 13, 2019

Roxann B Borisch

From: Joshua Faville <favillecustominteriors@gmail.com>
Sent: Thursday, September 12, 2019 9:47 PM
To: odfw.commission@state.or.us

Dear Commissioners,

Re: the proposed changes to 261A1 and 261A2, Clear Lake-Deadhorse hunts

I think that this change is unadvisable, but if you are going to change it to have only one 261A Clear Lake-Deadhorse hunt then this proposed change is better than eliminating the later 261A2 (December).

I have been hunting in Oregon my whole life and my first hunt in eastern Oregon was about 20 years ago.

I had the opportunity to review my thoughts with a fellow hunter and he gave me the opportunity to use some of his wording to express my thoughts.

Here is why I think you should leave both 261A hunts as is:

1. The two hunts have been effective in moving around the overly dense elk on grazing lands.

2. Having both hunts available gives hunters more opportunities, with differing weather conditions and therefore with differing "adventures."

3. I do not think ranchers/landowners have complained about having 2 hunts.

4. If having two hunts means more overall tags, this should be more revenue for Oregon.

5. If having two hunts means more overall tags, this is more hunting for more hunters.

If you must eliminate a hunt, I would suggest and agree with you keeping the 261A2 hunt in December and eliminating the 261A1 in November.

1. More elk are living in denser conditions in the Clear Lake-Deadhorse area during December than earlier in the year, and therefore dispersion is more needed.

2. The later 261A2 in December, due to more winter-like weather conditions than the A1, offers a wonderful and different hunting adventure than the earlier A1. This serves more hunters better. Other earlier elk hunts exist for those who want to hunt in October and November.

3. The later 261A2 in December, due to more extreme winter-like weather conditions than the A1, offers a great and more challenging hunting adventure than the earlier A1, and this is something that many of us hunters from the Willamette Valley cherish. It gives us thrills and joy to be able to hunt in some more extreme weather and experience things in the outdoors, with the flora and fauna, that we almost never get to experience. This serves more hunters better.

Please e-mail or call me if you would like to discuss this more.

Thank you for listening and considering my thoughts!

Sincerely,

Josh Faville

Salem Oregon

503-871-9394

Roxann B Borisch

From: Brian Ray <bray@nheri.org>
Sent: Thursday, September 12, 2019 8:32 PM
To: odfw.commission@state.or.us
Subject: FW: Proposed changes to 261A1 and 261A2, Clear Lake-Deadhorse hunts for 2020

P.S. If you decide to cut it back to only the December hunt, it seems that you should make the total number of tags the same as if you had both hunts, and not less, because ...

1. It will give hunters the same amount of opportunities.
2. It will put similar pressure on the elk to continue meeting the objectives.

Would you please confirm that you saw this before your decisions?

Sincerely,
Brian D. Ray
Ph.D. in science education, Oregon State University
Salem, Oregon

From: Brian Ray [mailto:bray@nheri.org]
Sent: Tuesday, September 10, 2019 1:29 AM
To: 'odfw.commission@state.or.us' <odfw.commission@state.or.us>
Cc: Ray Bri (bray@nheri.org) <bray@nheri.org>
Subject: Proposed changes to 261A1 and 261A2, Clear Lake-Deadhorse hunts for 2020

Dear Commissioners,

Re: the proposed changes to 261A1 and 261A2, Clear Lake-Deadhorse hunts

***would you be so kind as to confirm receipt of this e-mail?

I think that this change is unadvisable, but if you are going to change it to have only one 261A Clear Lake-Deadhorse hunt then this proposed change is better than eliminating the later 261A2 (December).

I would like to attend the meeting in Gold Beach but I cannot due to my schedule, therefore I am writing you. Here is a little context before my comments and reasoning. I have a B.S. in biology from the University of Puget Sound, and M.S. in zoology from Ohio University, and a Ph.D. in science education from Oregon State University. I have "loved animals" since I was a child. I did not begin hunting and seeing many, many places in Oregon until I was in my early 40s; now I am in my early 60s. I have hunted all over Oregon. I have been really enjoying hunting northeast Oregon during the past 10 years.

Here is why I think you should leave both 261A hunts as is:

1. The two hunts have been effective in moving around the overly dense elk on these grazing lands.
2. Although I am from Salem, I have developed a positive relationship with a rancher/landowner in the area and he tells me that the two hunts have been effective at meeting the ODFW's and his objectives.
3. I am working to develop a good relationship with at least one more rancher/landowner in the area.
4. The local ODFW biologist says the hunts have been effective.
5. They have been effective at moving the elk more into the canyons.
6. It has helped in making the plant/grass life healthier.
7. Having both hunts available gives hunters more opportunities, with differing weather conditions and therefore with differing "adventures."
8. I do not think ranchers/landowners have complained about having 2 hunts.
9. If having two hunts means more overall tags, this should be more revenue for Oregon.
10. If having two hunts means more overall tags, this is more hunting for more hunters.

Here is why I agree with your proposed change (keep 261A2, December) and eliminate 261A1 (November), as you have proposed, if you think you must eliminate one:

1. The 261A2 (December) has been effective at dispersing the elk.
2. 261A2 has been effective at helping the plant/grass be healthier.
3. The rancher/landowner tells me 261A2 has been effective.
4. The biologist says 261A2 has been effective.
5. More elk are living in denser conditions in the Clear Lake-Deadhorse area during December than earlier in the year, and therefore dispersion is more needed.
6. The later 261A2 in December, due to more winter-like weather conditions than the A1, offers a wonderful and different hunting adventure than the earlier A1. This serves more hunters better. Other earlier elk hunts exist for those who want to hunt in October and November.
7. The later 261A2 in December, due to more extreme winter-like weather conditions than the A1, offers a great and more challenging hunting adventure than the earlier A1, and this is something that many of us hunters from the Willamette Valley cherish. It gives us thrills and joy to be able to hunt in some more extreme weather and experience things in the outdoors, with the flora and fauna, that we almost never get to experience. This serves more hunters better.

Please e-mail or call me if you would like to discuss this more.

Thank you for listening and considering my thoughts!

Sincerely,

Brian

Brian D. Ray, Ph.D.
Salem, Oregon
5030364-1490.

Roxann B Borisch

From: Zachary Ray <zerarcht@gmail.com>
Sent: Thursday, September 12, 2019 5:17 PM
To: ODFW Commissioners
Subject: Proposed Changes to Big Game Hunting Seasons

Dear Commissioners,

Re: the proposed changes to 261A1 and 261A2, Clear Lake-Deadhorse hunts

I think it is best that you keep both 261A1 (November) and 261A2 (December). However, if you are going to eliminate one, please keep 261A2, the December full-month hunt, and increase the number of tags in December. I have hunted 261A2 several times and I think that the December hunt is a good adventure weather-wise and it is a great way to allow hunters to move elk off of grazing land.

I also generally agree with my brother, Brian D. Ray, Ph.D.

Please be sure to give my comments to the commissioners before they make their decision.
Please confirm you did so.

Thank you,

Zachary

Zachary E. Ray
ARCHITECT
P.O. Box 66428
Portland, OR 97290
503-772-4035
(land line--cannot receive texts)

Roxann B Borisch

From: dan ray <8dan.ray@gmail.com>
Sent: Thursday, September 12, 2019 5:06 PM
To: odfw.commission@state.or.us
Subject: Concerning the changes in policy and possible hunts

Dear ODFW folks,
I Appreciate that you guys are trying to manage the wildlife in our beautiful state well. In my opinion concerning two Hunt's that I have personally been involved in, it would best that you keep both 261A1 (November) and 261A2 (December) due to the nature of the range and the amount of animals (as an aside also because it spreads out the amount of hunters who are out in the area at a time). However, if you are going to eliminate one, I believe keeping 261A2, the December full-month huntWould be better since it's later in the season, and after talking with numerous ranchers and folks you live in that area I would put forth that you might increase the number of tags in December. I have hunted 261A2 several times and I think that the December hunt is a great adventure weather-wise and it is a great way to allow hunters to move elk off of grazing land. Please make sure and pass on my comments to the commissioners before they make their decision.

Sincerely,

Daniel

Sent from my iPhone

Roxann B Borisch

From: Anne Kinsey <oca@orcattle.com>
Sent: Thursday, September 12, 2019 3:44 PM
To: ODFW Commission
Cc: Jerome Rosa; Robyn Smith
Subject: Comments for consideration
Attachments: Elk Damage Comments_09122019.pdf

Importance: High

Please accept the attached comments from the Oregon Cattlemen's Association in regards to the 2020 Big Game Season section of the Commission meeting scheduled for September 13th in Gold Beach. Thank you.

Anne Elise Kinsey

OCA Office Administrator
1320 Capitol St NE, Suite 150
Salem, OR 97301
(503)361-8941

Oregon Cattlemen's Association

Oregon Cattlemen's Association

1320 Capitol Street NE. Suite 150
Salem, Oregon 97301
503-361-8941
orcattle.com

September 13, 2019

ODFW Commission

REL/ Proposed changes to 2020 Elk Hunting Regulations

The Oregon Cattlemen's Association purpose is to advance the economic, political and social interests of the Oregon cattle industry. As the voice of the cattle industry in Oregon, our mission is to promote environmentally and socially sound industry practices; to promote a positive, contemporary image of the industry; to improve and strengthen the economics of the industry; to assure a strong political presence in all areas affecting the industry; and to protect our industry communities and private property rights.

The Oregon Cattleman's Association (OCA) supports, with reservations, proposed changes to the year 2020 hunting regulations. The proposed changes reflect an attempt by ODFW to mitigate elk damage to private property through expanded general season hunts. However, OCA is concerned that:

1. State-wide application of the proposed regulation changes will not facilitate elk damage control in all regions or situations. Different regional and area conditions may affect elk behavior and timing of private land use. The proposed changes should be amended to allow regional/management area and landowner input into hunting season timing and length.

2. The proposed changes should be amended to allow hunters with unfilled elk tags to exchange their general season tags for elk damage control tags. Depending on the specific private land damage situation, hunters who have already filled their general season tags should be allowed to obtain a damage control tag.

Sincerely,

Dennis Sheehy
OCA Wildlife Committee Chair.

Roxann B Borisch

From:	J.R. Cook <cookslandw@gmail.com>
Sent:	Thursday, September 12, 2019 11:54 AM
To:	odfw.commission@state.or.us
Cc:	Shannon Hurn; Boblevy@windyriverfarms.com; agcattle@outlook.com; savage@gorge.net; brichardson@rmef.org; alvinelkins@yahoo.com; William Perry; george.murdock@umatillacounty.net; jdoherty@co.morrow.or.us
Subject:	Commission Comments (Proposed 2020 Elk Regulation Changes)
Attachments:	Commission Testimony Letter_Letterhead (1).pdf; Exhibits 1_2.pdf; Exhbit 3.pdf

Good afternoon-

CL&W has been assisting the South Umatilla/Morrow County Elk Coalition (SUMCEC) with various matters relating to minimizing and preventing elk depredation on private lands in South Umatilla County and Morrow County.

I have been asked by Adam Green and Bob Levy, coordinators of the SUMCEC and copied to this email, to submit the attached comments to the Oregon Fish and Game Commission on their behalf and on behalf of the SUMCEC.

Attached please find the SUMCEC's comments relating to concerns that the damage unit recommendations will not, by and of themselves, help address either the current damage experienced in the region nor prevent future re-occurrence of the problem.

The SUMCEC appreciates the opportunity to provide comments to the Commission regarding these proposed changes and hopes that continued regional dialogue and action can continue to be fostered and implemented in our region.

Best regards,

JR Cook (on behalf of the SUMCEC Coordinators)

SOUTH UMATILLA/MORROW COUNTY ELK COALITION

Via Electronic Mail: odfw.commission@state.or.us

September 12, 2019

Oregon Fish and Game Commission
Attn: Michael Finley, Chair
4034 Fairview Industrial Drive SE
Salem, OR 97302

RE: Proposed 2020 Big Game Regulations and Excessive Elk Damage to South Umatilla and Morrow County

The South Umatilla/Morrow County Elk Coalition (SUMCEC) is a grassroots group of landowners that has organized to constructively and holistically address a burgeoning elk crisis in our region. Our region, and landowner representation, includes the northerly portion of unit 48 (Heppner Unit) as well as unit 44 which is a ODFW designated elk "deemphasis area."

The SUMCEC appreciates the interests of the Oregon Fish and Wildlife Commission (Commission) and Oregon Department of Fish and Wildlife (ODFW) staff in statewide elk depredation issues. As a group that has been working, first as independent producers and now as an organized coalition, for many years on this issue we feel that direct involvement by the Commission and formal acknowledgement of the statewide elk problem by ODFW is a critical step to moving any holistic management approach to fix regional problems forward.

While we appreciate acknowledgement of "damage" with the proposed formation of "Damage Units" in the proposed 2020 regulations, we feel that the one-size fits all approach within the new units will not help our region make solid progress on the current elk depredation crisis, nor will the program prevent future reoccurrence and re-habituation of new elk creating the same damage in the future. We feel that regional plans and regional leads in each damage control area are necessary to combat the statewide elk depredation problems.

Overview of the SUMCEC Problem

The area north of the Heppner Ranger District boundary from Highway 395 to an area east of the city of Heppner was designated as elk wintering habitat under the Morrow and Umatilla County Comprehensive Plans at the request of ODFW back in the late 1970's and early 1980's. This historical, mapped "winter range area" has gradually been moving north since the late 1970's when the original "winter range" was designated by these counties. New maps developed by ODFW now show winter range extending well beyond the original, historic, mapped acreage included in the original comprehensive plans of the county. The growth in elk population that

now winters there is overburdening wheat and livestock producers. The overpopulation and lack of proportionate elk distribution across the entire winter range has led to disproportionate damage to wheat fields, fences, haystacks, and loss of grazing for domestic livestock due to forage competition, elk eating from domestic livestock feeding location and invasion of noxious weeds. Elk are now, essentially co-mingling with domesticated livestock in high concentrations at domestic feeding locations on private land. This depredation now extends north far as the Umatilla River, miles outside of, even the new, mapped range and into Unit 44 ODFW Elk Deemphasis Areas. The issue has quickly grown to a point that puts unacceptable financial burden on agriculture producers and a lack of consistent, coordinated action has exacerbated the hard winters as habituated resident elk co-mingle with non-habituated elk that normally do not frequent the GPG area but are moving north to escape hard winters. Exhibit 1 shows pertinent information about the area under consideration.

In summary, this population is already beyond an acceptable carrying capacity and has become a financial crisis to some cattle operations. The problem is growing and is moving further and further north from grazing to dry land and into high-value irrigated farmland. More elk are becoming habituated as more habituated cows produce off-spring that never migrate.

Elk populations have evolved in Unit 48 over the last 15 years from 2,200 in 2004 to over 5000 in 2019. At least 4186 were verified by aerial photographic counts in the GPG subarea. Populations in the GPG area prior to 2019 have generally been between 3,000 and 4,500 head. The SUMCEC has called for a proportional elk distribution throughout the winter range of Unit 48 (e.g. recommendations of 1,300 head in the SUMCEC area during historic winter ranging months or 10% of AUMS total devoted to elk winter forage). To date, no specific management number has been agreed to by ODFW as numbers continue to grow.

During this same time, the elk use of the traditional winter range on the ODFW managed Bridge Creek Wildlife Area on the BLM managed property located on the North Fork of the John Day on what is known as the JV Ranch, and in the lower elevations on the USFS Heppner District has almost disappeared. Our understanding from SUMCEC meetings with state and federal agency staff as well as hunting organizations is that habitat degradation and human pressure are to blame for this disappearance.

SUMCEC Response to Problem

In response to the problem the agriculture and livestock producers organized into the SUMCEC to more effectively communicate and work with ODFW. This group was formed on the heels of a multiyear effort led by ODFW to find a solution to the statewide elk problem, we don't know

of any acceptable solutions brought forth by that group. The SUMCEC represents most of the area in yellow in Exhibit 1 and much of the area to the north and west. The SUMCEC and ODFW have met for several years and our request to ODFW is in Exhibit 2. We made further recommendations to ODFW in a March 2019 letter to the ODFW administration (attached as exhibit 3).

ODFW Response to Problem

ODFW has proposed to address the SUMCEC elk population/distribution problem, in addition to other regions of the State experiencing elk damage, with changes to the 2020 hunting regulations.

SUMCEC Concerns with ODFW Response

The proposed changes may address some of the issues in various parts of the State, but they will not help the SUMCEC. A statewide one-size-fits-all approach that avoids common sense biology shows a need for more discussion and dialogue to avoid continuing conflict. Exhibit 3 is a summary of the concerns we had with the proposed regulation changes and other issues. The following are a few of our most important recommendations and comments in support of additional dialogue.

- The proposed August 1 through November 30 General Season in Unit 248 will not address the elk redistribution issue. The elk that need to be eliminated generally don't migrate in large numbers into the proposed boundaries of the damage unit until September but are habituated to congregate in large numbers beginning in December, which is after the proposed season closes. Shooting the wrong elk in the wrong place does not help.
- Proposed continuation of the Unit 244 hunt from August 1 through March 31 will also not address the issue. Previous years have shown that the area draws 131 first choice applicants, not enough tags to help the situation.

A second elk tag opportunity or exchanging unfilled tags for EDT's would address some of our concern if clear direction is given by the Commission for ODFW staff to use this tool and coordinate these hunters with existing hazing resources that have been used in past years. The SUMCEC has continually expressed our interest in coordinated/managed public access damage control hunting with hazing efforts but funding and efforts to secure policy direction to ODFW to become actively involved in the coordination have not been requested or secured in a formal

fashion that would lead the SUMCEC to believe that this effort will be given a legitimate chance at success.

Conclusion

The attempt to address the statewide elk distribution problem through changes in the 2020 regulations is ignoring the magnitude of the problem. The Capital Press contains article after article about the seriousness of the situation in Washington, if one digs deeper the same problem exist in many Western states. It is time Oregon admit to the problem and address it in regional, holistic plans that contain clear management goals including herd reduction and/or re-distribution. In addition to short and long-term management goals, accurate counting and reporting data that can be used to track progress and recommend adjustments to plan deliverables is critical to understanding the breadth of the problem as well as to analyze the success of options chosen to minimize and/or prevent future re-occurrence. .

We recommend that the commission take decisive action by appointing a senior ODFW staff person in each region with the authority and experience to deal with this issue. We feel that these regional positions should clearly be charged with the responsibility to reach conclusions and avoid the meetings for meeting sake that plagued the last group trying to tackle the problem on a statewide level. We further recommend that the appointed person brings to the commission a detailed work plan to address the problem in collaboration with regional stakeholder groups.

Our region has experience with trying to tackle statewide natural resource problems on a statewide level. For over 30 years we attempted to fix our local, regional water problems under a statewide approach and made little to no progress despite multiple localized efforts and coalitions formed to recommend regional solutions. In 2013 basin stakeholders and agencies including ODFW signed the Columbia River – Umatilla Solutions Taskforce (CRUST) "Declaration of Cooperation" that localized the water problems and memorialized localized short and long-term solutions to tackle the problem. Since 2013 we have made solid headway in our water efforts. We feel that the CRUST process is a good model for addressing the elk problems of the GPG. We strongly recommend that the Commission task staff with bringing back a report that looks at processes such as the CRUST, including recommendations on how ODFW could use the same type of model for regional elk depredation problems.

We appreciate the opportunity to highlight our regional elk problem as part of the testimony regarding changes to the 2020 big game regulations and look forward to future dialogue and action on this crisis.

Best regards,

BL (Via Electronic Signature)
Bob Levy, Coordinator

AG (Via Electronic Signature)
Adam Green, Coordinator

CC: Curt Melcher, ODFW Director (Via Electronic Mail to Shannon Hurn)
SUMCEC ListServ (Via Electronic Mail)
Oregon Hunters Association
Rocky Mountain Elk Foundation

Exhibits: Exhibit #1: Unit 48 Overview
Exhibit #2: Request to Commission
Exhibit #3: SUMCEC letter to ODFW administration (March, 2019)

Exhibit 1
Heppner Unit 48
Boundary in Red.

- **Total Acres 922,372 in Unit 48**
- Habitat Acres
  - Summer Fall, 268,054
  - Winter spring, 654,318
- **GPG area in yellow 154,000**
- 99% Private
- Represents 16% of total acres
- Supports 84% of Elk MO of 5,000

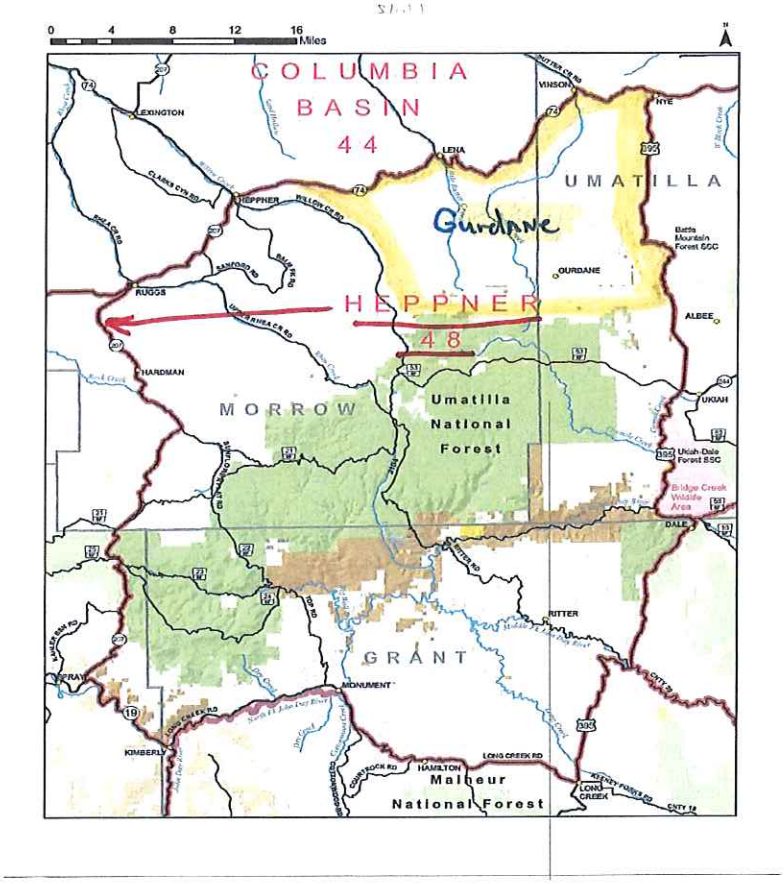

Exhibit 1 page 2
Heppner Unit 48 & GPG Area
Rocky Mountain Elk

Year	Unit 48 Elk Pop.	GPG Elk Pop.	% on GPG	State Population MO	State Pop estimate
2004	2,200			62,000	60,000
2008	3,500				
2013	5,400				
2016	6,000	3,139	52%	74,000	70,000
2017	5,600	2,957	52%		
2018	5,000	3,404	68%		
2019	5,000	4,184	82%		

Number of elk in GPG area varies by Year and month
Elk count, ODFW Flight Data, Plus North of 74
Rocky Mtn Elk population, ODFW Report 2017 (estimate)
Blanks are data we could not find..

Exhibit 2
Request to ODFW Commission

- Direct ODFW Staff to clearly report on the magnitude of the state wide issue and provide landowners with tools to help address the problem .
- Direct Staff to pursue parallel paths to give short and long term relief to the area including.
  - Develop methodology to accurately count the elk in Unit 48 an in GPG area.
  - Re-examine the Heppner MO and lower it to a population that fits the resource.
  - Bring into balance the population of elk that will be "compatible with primary uses of the land"
  - Provide financial assistance for;
    Replace fences in high elk traffic area with wildlife friendly fences
    Hazers and EDT to move elk out of GPG area
    Partner with groups in range restoration efforts.

SOUTH UMATILLA/MORROW COUNTY ELK COALITION

Via Electronic Mail and Hand Delivery

March 11, 2019

Shannon Hurn
ODFW, Deputy Director
4034 Fairview Industrial Drive SE
Salem, OR 97302

Douglas Cottam
ODFW, Wildlife Division Administrator
4034 Fairview Industrial Drive SE
Salem, OR 97302

RE: Gurdane Unit (2/20/19 Meeting Re-Cap and Confirmation of Direction)

Dear Shannon and Doug-

Thank you for taking the time to meet with us on February 20, 2019 to discuss our short and long-term goals for addressing elk depredation problems within the proposed Gurdane Unit (GU). We feel that the agency, landowners, and groups having interest in this issue are in general agreement that an ODFW air survey count of at least 3404 elk on less than 16% of the mapped winter range in Unit 48 and spill over into Unit 44 (which is planned to have 0 elk and is an elk de-emphasis area) is not a socially or economically acceptable burden to the private landowners. To address this issue will require both short and long-term decisive action.

Short Term: Immediate Action to begin herd reduction within the GU beginning in September of 2019 and continuing through March of 2022.

Summary: Established habits of migrating groups of elk combined with reproduction rates of elk herds have resulted in a population that is over an acceptable carrying capacity of the GU. Without herd reduction, this problem will continue to increase regardless of any long-term actions taken by ODFW to improve habitat on public and higher elevation lands and track elk movements to better manage seasons and access.

Requested Action Items:
1. ODFW to officially establish a goal, and direct staff to implement measures to harvest elk that are migrating into the GU and the associated area of Unit 44 adjoining the northly boundary of the GU. Reduce & stabilize the Heppner Unit elk herd(s) with specific measures/goals requested include:
a. Increase elk harvest in the GU by 200 head per year (over 2017/2018 harvest levels) each year until a range utilization objective can be established that does not exceed 10% of available AUM's.
b. Update the Columbia Basin Unit regulations to include the GU as a special hunt area and to allow for "any elk" harvest from September 1 to March 30 of each year, beginning in 2019.
c. Develop and implement measures to improve hunter access and utilization of existing elk management tools including coordinating land owner access, hazing operations and habitat restoration/improvement and fencing resources to better manage and disburse elk numbers across more of the historic ODFW mapped winter range.
d. Clearly define the agency decision making hierarchy and the individual responsible for implementation and success of this program.

e. Appoint an advisory committee to meet, quarterly to review progress, recommend modifications and resolve conflicts.

Long Term: Appoint an Elk Habitat and Migration Work Group to address habitat degradation, migration habits and other factors that have led to the current problems experienced within the GU and prevent reoccurrence.

Summary: There is general consensus that a better understanding of migration habits and sources of elk herd(s) utilizing all, or portions of the GU is imperative to a successful program outcome. Additionally, habitat improvement on public lands needs to be addressed or elk migration habits will continue to degrade habitat further and further north, away from historic winter ranges.

Action Items:
1. Appoint an Elk Habitat and Migration Work Group to oversee development and results of the following:
   a. Elk collaring program
   b. Habitat improvement needs (Analysis, action plans and funding)
   c. Updates to Management Objectives for big game units and updates to seasons, bag limits, etc.
   d. Funding needs generally

2. Develop an initial goal of requiring no more than 10% of the established AUM's per private landowner or tract being dedicated to winter range needs of wildlife in GU.

3. At a minimum we would recommend the following organizations be appointed to work with ODFW on this deliverable and they meet on an as needed basis:

- Oregon Cattlemen's Association
- Rocky Mountain Elk Foundation
- Representatives of the local stakeholders
- NRCS
- Oregon Hunters Association
- Oregon State University (livestock extension specialist)

Funding
ODFW has been supplying a seasonal employee to conduct hazing and landowner coordination operations the last several years. The cost to the Agency has been approximately $70,000 for the

biennium (including vehicle costs). We encourage ODFW to find a way within its existing budget to cover the costs of this position as permanent position.

We again thank ODFW for continuing to work with our landowners and organizations to find both short and long-term solutions to the GU elk depredation issue. We feel that we have developed a plan that enhances hunter opportunity in the short-term along while also addressing private land owner concerns. Additionally, we feel that the two deliverables together will provide the state and region with healthy elk populations for current and future Oregonians to enjoy while minimizing the likelihood of conflicts with private landowners and land practices within the GU.

Best Regards,

Bob Levy

Adam Green

Other Committee Members and supporting landowners signatures to Follow

Roxann B Borisch

From:	Anthony Eliseuson <aeliseuson@aldf.org>
Sent:	Thursday, September 12, 2019 12:30 PM
To:	odfw.commission@state.or.us; curt.melcher@state.or.us
Subject:	Animal Legal Defense Fund Comments Opposing 2020 Cougar Hunting Proposal
Attachments:	2019-9-12 -- Animal Legal Defense Fund Comments Opposing 2020 Cougar Hunting Proposal.pdf

I am attaching a short letter containing Animal Legal Defense Fund's comments opposing the 2020 cougar hunting proposal that is set for consideration tomorrow. We greatly appreciate your time and consideration of our comments.

We respectfully request and would greatly appreciate it if you would provide copies of this letter to each of the commissioners.

Thank you for your consideration,
Tony

Tony Eliseuson | Senior Staff Attorney
Animal Legal Defense Fund | aldf.org
aeliseuson@aldf.org | 707.795.2533, ext. 1043

ANIMAL LEGAL DEFENSE FUND

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ANIMAL LEGAL DEFENSE FUND EST 1979

525 East Cotati Avenue
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info@aldf.org
aldf.org

September 12, 2019

Via Email

Mike Finley, Chair
Oregon Fish and Wildlife Commission
4034 Fairview Industrial Drive SE
Salem, Oregon 97302
odfw.commission@state.or.us

Curt Melcher, Director
Oregon Department of Fish and Wildlife
4034 Fairview Industrial Drive SE
Salem, Oregon 97302
curt.melcher@state.or.us

Re: Comments in opposition to 2020 Cougar Hunting Regulations

Dear Chairman Finley, Director Melcher, Commissioner Zarnowitz, Commissioner Bittle, Commissioner Wolley, Commissioner Wahl, Commissioner Spelbrink, and Commissioner Labhart:

On behalf of the Animal Legal Defense Fund ("ALDF")—a national non-profit organization and its more than 200,000 members and supporters—we submit the following comments in opposition to the Oregon Department of Fish and Wildlife's ("ODFW") proposed cougar trophy-hunting quotas for the 2020 hunting season, which are being presented for your approval during the September 13, 2019 Commission Meeting.

Animal Legal Defense Fund joins in and adopts fully the comments provided by the Humane Society of the United States through its September 11, 2019 submission. Animal Legal Defense Fund submits this letter to further emphasize and expand on several points.

ODFW's own 2017 Cougar Management Plan recognizes that cougars play a vital role in providing balance within Oregon's rich ecosystem. Cougars, as a possible keystone species, serve as a check on overpopulation of herbivores, such as deer, and provide significant benefits to lower trophic levels.

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In recent years, scientific literature—often led by the work of Oregon State University Professor Robert Beschta—has increasingly demonstrated the vital impacts of cougars and other predators in this important top-down conservation process.[1] As Professor Beschta's scientific studies have demonstrated, a decline in cougar populations can have devastating downstream effects. In just one example at Yosemite National Park, Professor Beschta observed:

> Numerous cougar were removed in the Yosemite area during the late 1910s. By 1920 cougar were scarce in Yosemite Valley and a rapid increase in the valley's mule deer population soon followed (Dixon, 1934a). The Park Superintendent's 1929 report indicated wildflowers were "becoming very scarce" and evening primroses "which once carpeted the Valley floor have almost entirely disappeared and now bloom only in very small areas where they are protected [from deer]." California black oak seedlings were also being intensively browsed (Dixon, 1934b). Deer-proof fenced exclosures, constructed in 1934, provided additional perspectives of vegetation impacts (Allen et al., circa 1970). For example, at a meadow enclosure a variety of plants comprised dense tall growth inside the fence but were entirely absent outside because of deer foraging. In his paper entitled Wildlife Surpluses in National Parks, Cahalane (1941) concluded: "Deer have thus increased on the floor of popular Yosemite Valley, where their ancestral enemy, the cougar dares not follow . . . heavy destruction of browse plants is the result."[2]

The role of the cougar in protecting vegetation and fauna is particularly critical in this era of accelerating climate change and its harmful impacts on Oregon's ecological systems. Climate change is without a doubt the greatest threat to species survival and ecological systems. The science supporting this proposition is undisputable.[3] "The effects of climate change on biodiversity are increasingly well

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[1] *See, e.g.,* Beschta R.L., Ripple W.J.. 2009. Large predators and trophic cascades in terrestrial ecosystems of the western United States. Biological Conservation. 142:2401-2414; Beschta R.L., Ripple W.J.. 2019. Can large carnivores change streams via a trophic cascade? Ecohydrology. 12(1):e2048; Ripple,W. J.,& Beschta, R. L. (2006). Linking a cougar decline, trophic cascade, and catastrophic regime shift in Zion National Park. Biological Conservation, 133, 397–408. https://doi.org/10.1016/j.biocon.2006.07.002; *see also* Kunkel, K. E., Atwood, T. C., Ruth, T. K., Pletscher, D. H. and Hornocker, M. G. (2013), Assessing conservation surrogates. Anim Conserv, 16: 32-40. doi:10.1111/j.1469-1795.2012.00568.

[2] Beschta 2009 at Table 2.

[3] *See, e.g.,* https://climate.nasa.gov/scientific-consensus/ ("Multiple studies published in peer-reviewed scientific journals show that 97 percent or more of actively publishing climate scientists agree: Climate-warming trends over the past century are extremely likely due to human activities. In addition, most of the leading scientific organizations worldwide have issued public statements endorsing this position," collecting a selection of the official

documented, and many methods have been developed to assess species' vulnerability to climatic changes, both ongoing and projected in the coming decades."[4] This is particularly so given that climate change itself poses a significant threat to the viability of species—particularly ones like the cougar that are subject to high levels of human-caused mortality—which the excessive proposed quotas will only exacerbate.[5]

The impact of climate change will be further compounded if cougars are excessively hunted because of the important role predators like cougars play in helping buffer ecosystems from climate change impacts.[6] The proposed trophy hunting quotas fail to account for these impacts and risk exacerbating down-stream domino impacts that could potentially cause irreparable harm to Oregon's ecosystems.

* * * * *

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organizational statements); https://climate.nasa.gov/effects/ (discussing many of the devastating impacts that climate change will cause to wildlife and ecosystems in the United States); United States Global Change Research Program, Fourth National Climate Assessment Report (2018) ("This assessment concludes, based on extensive evidence, that it is extremely likely that human activities, especially emissions of greenhouse gases, are the dominant cause of the observed warming since the mid-20th century," and "Temperature and precipitation extremes can affect water quality and availability. . . iconic ecosystems and species, and the likelihood of disasters.").

[4] *See Michela Pacifici et al.*, Assessing species vulnerability to climate change, Nature Climate Change, 2015/02/25/online.

[5] *Mark C. Urban*, Accelerating extinction risk from climate change, Science 01 May 2015:Vol. 348, Issue 6234, pp. 571-573 ("Extinction risks from climate change are expected not only to increase but to accelerate for every degree rise in global temperatures. The signal of climate change–induced extinctions will become increasingly apparent if we do not act now to limit future climate change.")

[6] Sala, Enric, *Top predators provide insurance against climate change*, Trends in Ecology & Evolution, 21(9): 479-480, 2006 (collecting scientific studies and data demonstrating that "[r]estoring top predators to their natural environment could provide insurance against undesired effects of climate change on ecological communities"); *see also* Wilmers CC, Getz WM (2005) Gray Wolves as Climate Change Buffers in Yellowstone. PLoS Biol 3(4): e92. https://doi.org/10.1371/journal.pbio.0030092; Stahler, D. R., D. W. Smith, and D. S. Guernsey, *Foraging and feeding ecology of the gray wolf (Canis lupus): Lessons from Yellowstone National Park, Wyoming, USA*, Journal of Nutrition 136:1923S-1926S, 2006, July; Constible, J. M., et al., *Carrion - It's what's for dinner: Wolves reduce the impact of climate change*, American Biology Teacher 70: 95-102, 2008.

CONCLUSION

For all the above reasons and those submitted by the Humane Society of the United States, Animal Legal Defense Fund and is more than 200,000 members and supporters urge you to reject the proposed 2020 cougar trophy hunting regulations and demand the Oregon Department of Fish and Wildlife reevaluate the best available science to substantially lower—or eliminate entirely—such trophy hunting quotas for 2020 and beyond.

We greatly appreciate your consideration of our comments.

Very truly yours,

ANIMAL LEGAL DEFENSE FUND

By:

Anthony T. Eliseuson
Senior Staff Attorney
aeliseuson@aldf.org
(707) 795-2533 ext. 1043

Roxann B Borisch

From: ODFW Commission
Subject: FW: To crowded

-----Original Message-----
From: Travis Middleton <tmiddletontts@gmail.com>
Sent: Wednesday, September 11, 2019 11:14 AM
To: ODFW.WildlifeInfo@state.or.us
Subject: To crowded

To whom it may concern,

I am a new hunter (archery) and I just wanted to say that the experience I have had the last 3 years has discouraged me from even wanting to participate anymore. I am not a person who's going to complain about animal #'s because there are plenty if you know where to look. I am here to tell you guys that the level of competition is so extreme that as a new hunter it makes me not even want to participate anymore. Archery elk hunting in this state is a absolute circus, there are so many people it's difficult to even get to hunt, every single bull that I have gotten on in the last 2.5 weeks I have had other hunters ruin the hunt because there are so many people around. You guys have let archery hunting get out of control with the # of people. The degree of competition has brought out the worst in people in the field to where everyone is rude and I am not going to risk confrontation over a elk. I am sure I am not the only one that feels this way and you guys will struggle to recruit new hunters if the experience is going to be the zoo you have allowed it to become. All I ask is that you think about what I'm saying and consider making archery hunting draw or controlled in some fashion. When I can't get away from people even on a mountain bike in travel management areas there are to many people.

Sincerely,
Travis

Sent from my iPhone

Roxann B Borisch

From:	conservation@mountainlion.org
Sent:	Wednesday, September 11, 2019 8:13 PM
To:	odfw.commission@state.or.us; ODFW Commission; curt.melcher@state.or.us
Cc:	'Lynn Cullens'
Subject:	2020 Cougar Hunting Regulations
Attachments:	2019-09-11 OR Oregon Comment Letter - Commission.pdf

Dear Chairman Finley, Director Melcher and Members of the Commission,

Please see the Mountain Lion Foundation's comment letter (attached) regarding the 2020 Cougar Hunting Regulations.

I have CCed our Executive Director, Lynn Cullens, to this email if you have any questions.

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

Korinna

Korinna Domingo, Conservation Specialist
MOUNTAIN LION FOUNDATION

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Saving America's Lion

September 11, 2019

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Mike Finley, Chair
Oregon Fish and Wildlife Commission
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Salem, OR 97302

Curt Melcher, Director
Oregon Fish and Wildlife Commission
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Salem, OR 97302

RE: 2020 Cougar Hunting Regulations

Dear Chairman Finley, Director Melcher, and Members of the Wildlife Commission,

The Mountain Lion Foundation respectfully requests that you reduce cougar hunting quotas as part of the 2020 Cougar Hunting Regulations that is currently being considered.

The concerns expressed below are the official position of the Mountain Lion Foundation as we represent our 7000 supporters nationwide.

The 2020 Cougar Hunting Regulations are based on invalid assumptions that mountain lion populations in Oregon require human intervention in order to mitigate conflict.

Except in rare instance, mountain lion populations do not require management to control growth, because their populations are self-regulating based on the abundance of prey and the carrying capacity of the land to support prey populations.

Mountain lions occur at low densities relative to their primary prey (Stoner et al. 2006). In order to survive, mountain lions must increase or decrease the sizes of their territories relative to prey populations (Wallach et al. 2015). Lions kill other lions to defend territorial boundaries, or starve without a territory sufficient to meet their needs.

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.

And recreational hunting is the wrong tool for addressing conflicts, because hunting targets the wrong lions.

Trophy hunting targets large adult lions with established territories and habitats. Those lions are not only the least likely to come into repeated conflicts with humans, but their stable presence reduces the number of young dispersing lions most likely to enter human-occupied areas and to attack domestic animals.

Recent science has demonstrated that because hunting results in a younger overall age structure, hunting pressure can predictably increase the number of conflicts with humans and domestic animals (Creel and Rotella 2010, Ausband et al. 2015, Darimont et al. 2015, Cooley et al. 2009).

A study in Washington State showed that, as wildlife officials increased quotas and lengthened hunting seasons, 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 (Tiechman et al. 2016). Contrary to popular belief, hunting mountain lions results in an increase in complaints and livestock depredation due to disruption of their social structure, and increased immigration of young dispersing lions (Tiechman et al. 2016, Peeble et al. 2013).

Conflicts with mountain lions are exceedingly rare, and coexistence is possible.

Throughout the West, people have learned to live alongside lion populations with little conflict. The same could be true in Oregon if the state were to make a more concerted effort to bring valid biological and behavioral information about mountain lions to the attention of the public. With such additional understanding, the public will recognize that conflicts with mountain lions are exceedingly rare, easily resolved, and that the value of mountain lions is significant.

When conflict does occur, intervention can occur at the level of a specific lion, rather than at the population level, for more cost-effective and biologically sustainable conflict resolution. It makes much more sense to assess what might be done to limit the behavior of particular lions when and where a conflict happens, rather than to try to control entire populations in the vain hope that the unwanted behaviors of specific lions will be limited.

Recreational hunting of mountain lions results in additive and unsustainable mortality for mountain lions of Oregon.

Even though it is an ineffective tool, trophy hunting is unfortunately the greatest source of mortality for mountain lions throughout the majority of their range in the United States (WildFutures 2005). Hunting mountain lions results in additive mortality – rates that far exceed what would happen in nature – and can lead to population instability and decline (Vucetich et al. 2005, Eberhardt et al. 2007, Darimont et al. 2015).

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 (Beausoleil et al. 2013).

The intrinsic growth rate for mountain lion populations is established by researchers to be between 15-17% (Robinson and DeSimone 2011). Assuring that human-caused mortality is limited to well below this threshold facilitates the maintenance of home ranges and social stability, reducing the likelihood of increased conflict with humans and population decline (Maletzke et al. 2014).

Additionally, trophy hunting of mountain lions leads to an increase in kitten mortality in heavily hunted populations (Stoner et al. 2006, Wielgus et al. 2013). 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 (Stoner et al. 2006). 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, both human-caused and natural (Anderson and Lindzey 2005).

The hunting quota of 970 cougars far exceeds the sustainable threshold of 12-14% for total anthropogenic (human-caused) loss within a population that is widely accepted by western state agencies and the majority of mountain lion researchers (Beausoleil et al. 2013).

ODFW currently estimates that there approximately 3,300 adult cougars in Oregon. A quota which allows 970 cougars to be taken represents a 29% loss to the population, exceeding the 12-14% threshold set by experts by more than 27%.

The agency has also failed to consider other forms of anthropogenic mortality, including vehicle strikes, incidental snaring or trapping, poisoning, poaching, and public safety removal which all must be included in order to effectively stay below the extirpation threshold.

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 (Lindzey et al. 1992, Logan and Sweanor 2001, Elbroch et al. 2013). Hounds also disturb or kill non-target wildlife and trespass onto private lands (Hristienko and McDonald 2007). This practice is not fair chase and is highly controversial, even among hunters (Posewitz 1994, Teel et al. 2002, WildFutures 2005).

Fair chase hunting is based upon the premise of giving the animal an equal opportunity to escape from the hunter (Posewitz 1994). 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.

We recognize that there is pressure to reduce mountain lion populations in order to satisfy deer hunters that they will not be competing with mountain lions for deer, and note that reduction of mountain lion populations will not increase ungulate populations unless lion populations are decreased unsustainably.

Hunting mountain lions has long been thought to bolster populations of game species like mule deer, while reducing competition for this shared resource.

On the East Coast of the United States, it has become clear that when mountain lions are extirpated entirely, deer populations do increase. However, it is not true that simply decreasing the number of mountain lions relative to deer populations will cause deer populations to increase or remain healthy over the long term. Mountain lions and deer have co-evolved to create a natural balance. Suitable available habitat will continue to determine deer numbers (even given limited long-term impacts from mountain lions), and lion numbers will fluctuate in response, unless mountain lions are nearly extirpated.

In other words, an agency cannot adjust prey numbers by reducing predators without risking extirpation of the predator population.

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 (Elbroch and Quigley 2019). 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.

Killing mountain lion kittens dependent upon nursing mothers is not acceptable to most Oregonians. However, current hunting rules make orphaning very common.

While it is not permitted in Oregon 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.

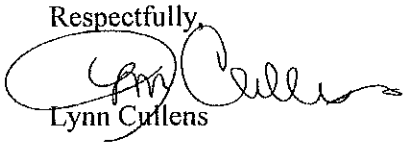
A recent study has shown that delaying the start of hunting seasons until December 1 would protect about 91 percent of kittens from perishing as a result of being orphaned by hunters (O'Malley et al. 2018). By better aligning hunting seasons with denning periods, hunters will have the best opportunity 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.

Based on the information above, the Mountain Lion Foundation respectfully requests that:

- **Oregon suspend mountain lion hunting and trapping entirely, given the high anthropogenic mortality, and the value of mountain lions to Oregonians.**
- **Restrict killing of mountain lions in all parts of the state to department issued permits or actions targeting individual lions in specific situations where it will demonstrably and effectively resolve a serious conflict.**
- **If suspension of hunting is rejected, we ask that at a bare minimum the Department and Commission reconsider quotas annually and reduce quotas to below the 12% sustainable limit.**
- **Eliminate the use of neck snares in target zones.**
- **Delay the start of all mountain lion hunting seasons until December 1 to protect dependent kittens from being orphaned by hunters.**
- **Eliminate the use of hounds to pursue mountain lions as a socially disruptive, inhumane and unethical practice.**
- **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.**

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

Respectfully,



Lynn Cullens
EXECUTIVE DIRECTOR
(916) 606-1610
LCullens@MountainLion.org

Questions or requests regarding this comment letter may be directed to:
Korinna Domingo
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(818) 415-0920
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Roxann B Borisch

From: Kelly Peterson <kpeterson@humanesociety.org>
Sent: Wednesday, September 11, 2019 11:10 AM
To: curt.melcher@state.or.us; odfw.commission@state.or.us
Cc: Haley Stewart; Kelly Peterson
Subject: 2020 Cougar Hunting Regulations Comments
Attachments: HSUS_2020 ODFW Cougar Regulations.pdf

Categories: Forwarded to Wildlife, printed

Dear Chairman Finley, Director Melcher and Members of the Commission,

On behalf of the Humane Society of the United States and our supporters in Oregon, we submit the following comments regarding the Oregon Department of Fish and Wildlife's ("ODFW") cougar (*trophy-hunting*) quotas for the 2020 hunting season.

The 2020 cougar regulations continue to permit excessive trophy hunting and target zone killing of this species while operating with a likely over-estimated population count, threatening the sustainability of Oregon's cougar population.

Therefore, we ask the Oregon Fish and Wildlife Commission to reject the proposed regulations, and to reduce Oregon's trophy hunting quotas for cougars to levels supported by the best available science, using reliable population estimates, especially in regions such as Zone A where conflicts may be the result of heavy killing. Additionally, we call on ODFW to end the use of target zones which are ineffective, deeply unpopular, and likely increase conflicts with cougars.

Please see our detailed comments attached.

Thank you for your consideration.

Respectfully,
Kelly

Kelly Peterson
Oregon Senior State Director

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The Humane Society of the United States is the nation's most effective animal protection organization, fighting for all animals for more than 60 years. To support our work, please make a monthly donation, give in another way or volunteer.

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September 11, 2019

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Re: 2020 Cougar Hunting Regulations

Dear Chairman Finley, Director Melcher and Members of the Commission,

On behalf of the Humane Society of the United States and our supporters in Oregon, we submit the following comments regarding the Oregon Department of Fish and Wildlife's ("ODFW") cougar (*Puma concolor*) *trophy-hunting*[1] quotas for the 2020 hunting season. ODFW permits high levels of trophy hunting for cougars while operating with a likely over-estimated population count, threatening the sustainability of Oregon's cougar population. We request that the Commission substantially reduce quotas for cougars, most immediately in Zone A where cougar mortalities from trophy hunting and other causes are likely more than double sustainable rates. Such killing is counter to science-based large carnivore management and research shows that such high rates of killing may result in increased conflicts with humans, pets and livestock. We also call on the Commission to end ODFW's cougar target zone program as it is inhumane, unnecessary, and likely results in greater conflicts instead of reducing them.

Oregon law requires that ODFW and the Commission use sound science to manage Oregon's wildlife for all Oregonians -including non-consumptive users- present and future. O.R.S 496.012. ODFW's statutory mandates include "mak[ing] decisions that affect wildlife resources...for the benefit of the wildlife resources," considering the "utilization of wildlife resources by *all* user groups," and "prevent[ing] serious depletion of any indigenous species." *Id.* In keeping with these obligations, ODFW's 2017 Cougar Management Plan commits to "manag[ing] the state's cougar population at a level well above that required for long term sustainability," in part by using "empirical data and numerous indices" to "assess population status" before establishing quotas and other seasonal regulations. ODFW, 2017 Cougar Management Plan, at i.

The proposed trophy hunting regulations run afoul of these statutory directives and are therefore beyond ODFW's authority to promulgate and contrary to state law. ORS 183.400. As explained in the comments that follow:

1) ODFW's cougar quotas authorize hunting levels that exceed what experts consider a sustainable offtake rate, threatening the stability of the species' population. While we do not support a trophy hunt of cougars, if ODFW is determined to permit a hunt it must ensure that its quotas do not exceed 14% of the mature-aged population.

2) Oregon's target zone killing and trophy hunting of cougars likely increases conflicts with the species. Studies show that killing cougars, either for trophy hunting or predator-control, increases conflicts with humans and livestock and is not a long-term solution for reducing conflicts. The use of target zones as a pretext for thwarting Measure 18 and allowing houndsmen to enjoy their favorite pastime is an affront to the broad majority of Oregonians who voted to ban hounding of cougars, and generates broad public resentment toward ODFW and its policy of promoting unethical hunting and ignoring the popular will.
3) Research shows that killing cougars to protect prey species, such as mule deer and bighorn sheep, is ineffective and may actually exacerbate the decline of rare game animals.
4) Trophy hunting cougars harms their family groups, especially dependent kittens and their mothers. Research now shows that cougars are far more social than previously believed.
5) Killing cougars also hinders the ecological benefits they provide. For example, cougars provide the carrion used by beetles, bald eagles, black bears and dozens of other species, increasing biological diversity and ecosystem function.
6) With the loss of their predators, herd animals are more prone to disease exposure. Cougars help maintain the health and viability of ungulate populations by preying on sick individuals, reducing the spread of disease.
7) Hound hunting of cougars, a continued practice in target zones, harms both the wild cats and hounds. Cougar kittens can be attacked and killed by hounds, and hounds harm non-target wildlife. Hounds may also be injured or killed by cougars.

I. ODFW authorizes excessively high cougar trophy hunting quotas without a reliable population estimate

As the Humane Society of the United States has stated in previous years, we are concerned that ODFW's cougar population is likely over-estimated. We urge ODFW to conduct alternative population modeling in order to verify cougar density estimates. Beausoleil et al. (2013) suggest that wildlife managers use a density of 1.7 (2) adult cougars/100 km^2 if managers cannot afford to conduct a mark, recapture study.

However, if ODFW is to continue using the current population model, the agency must only rely on the adult cougar population estimate to set quotas that are more in line with sustainable cougar management. ODFW states that more than 6,400 cougars reside in Oregon. However, this estimate includes kittens who have extremely low survival rates and are not legally trophy hunted. ODFW's Cougar Management Plan states that, in fact, the adult cougar population estimate is approximately 3,300 cats.[ii] In other words, the statewide cougar quota of 970 cats amounts to nearly 30% of the purported statewide adult cougar population. This quota is extremely high and not in line with the best available science on cougar management. Washington Department of Fish and Wildlife biologists conclude a harvest of no more than 14% of adults and subadults to avoid overkill of cougars.[iii]

In 2018, trophy hunters killed 270 cougars, with the majority of these kills in Zone A. In this region alone, hunters filled the quota of 180 cougars which likely amounts to the killing of 30% or more of Zone A's adult cougars.[iv] Additional causes of death place total cougar mortalities in Zone A for 2018 at a level that is not sustainable for the long-term stability of the population. Furthermore, as we detail below, such killing can lead to increased cougar conflicts with humans, pets and livestock. We find it noteworthy that Zone A is the only region of the state that has seen increased conflicts, according to ODFW's Cougar Management Plan.[v]

Trophy hunting is the greatest source of mortality for cougars throughout the majority of their range across the western and midwestern United States.[vi] At a minimum, ODFW must adopt rational, sound science and establish a reliable population estimate for cougars in the state. The agency must use this estimate as a baseline to prevent trophy hunting quotas from exceeding sustainable levels discussed above. Such action will support the sustainability of Oregon's cougar population if trophy hunting of the species is to continue in our state.

II. ODFW authorizes excessive killing of cougars through the use of "target zones"

Target zones, with essentially unlimited killing, benefit a small minority of houndsmen at the expense of the majority of Oregonians, who have shown twice that they value wildlife with the passage of Measure 18, and want to see them protected. Moreover, the Humane Society of the United States has joined with the vast majority of Oregonians who consistently and vehemently opposed the use of target zones as unscientific, unjustified, cruel, and an extraordinary waste of life and taxpayer's precious resources. In 2015 alone, ODFW targeted large numbers of cougars in select target zones on 6,236 square miles of Oregon's lands and permitted the indiscriminate killing of cougars using packs of hounds and/or neck snares. These state-administered practices amount to no more than large-scale culling of one of Oregon's native carnivores, costing up to several thousand dollars per cougar. No other cougar-occupied state in the U.S. allows for so much cougar culling using professional USDA Wildlife Services predator control agents and volunteer "agents" who enjoy the spectacle of watching dogs chase and fight with cougars.

According to Appendix L of the Draft Cougar Management Plan, between 2006 and 2014, 349 cougars were killed in target zones at a total cost of $517,332. This amounts to an average cost of $1,482, with ranges of $461 to $3,796 per cougar.[vii] ODFW must end the use of target zone killing for the following reasons:

1) Hound hunting and trapping cougars are cruel management practices that should immediately cease. The Oregon public does not support these methods for recreational trophy hunting and they should not be used for culling practices under ODFW management. Using radio-collared trailing hounds to chase cougars and bay them into trees or rock ledges so a trophy hunter can shoot these cats at close range is unsporting, unethical and inhumane.[viii] Hounds kill kittens, and cougars often injure or kill hounds.[ix] The practice is exceedingly stressful and energetically taxing to cougars.[x]
2) The use of wire neck snares by USDA Wildlife Services agents in target zones causes a horrific death, and is indiscriminate, inevitably leading to the deaths of non-target animals, which are often either under-reported by WS agents or disposed of with the "shoot, shovel, and shut up" practices that are prevalent within the WS culture.
3) Trophy hunting cougars increases complaints and livestock losses; killing cougars does not make people or livestock safer. Both Oregon's dramatic sport hunting mortality and the indiscriminate predator-control target area programs are very likely destabilizing the cougar population, and leading to increased conflicts with humans and livestock.[xi] Recent reviews of predator-removal studies found that the practice is "typically an ineffective and costly approach to conflicts between humans and predators" and, as a long-term strategy, will result in failure.[xii] Instead, the authors concluded, non-lethal alternatives to predator removal, coupled with coexistence (husbandry techniques) may resolve conflicts.[xiii]
4) The best available science demonstrates that killing native carnivores to increase ungulate populations is unlikely to produce positive results. Numerous recent studies demonstrate that predator removal actions "generally had no effect" in the long term on ungulate populations.[xiv]

For these reasons, ODFW must eliminate target zone management, where the most cruel and extreme methods of hunting and trapping are allowed. These actions are not in the best interest of Oregon's cougars nor the majority of Oregonians who have voted against these methods. Target zones are not a useful management strategy and do more harm than good by disrupting the social structure of Oregon's cougar population.

III. Trophy hunting and predator control increases human-cougar conflict and livestock depredation

ODFW also justifies target zone killing based on the false premise that the practice is necessary to reduce conflicts. Unfortunately, this killing is likely causing greater conflicts and, thus, should immediately cease. Research shows that cougar-human conflict is higher in areas with cougar trophy hunting.[xv]

Trophy hunting and predator control of cougars results in increased conflicts because cougars' social structure are destabilized.[xvi] A recent review of predator-removal studies found that the practice is "typically an ineffective and costly approach to conflicts between humans and predators" and, as a long-term strategy, will result in failure.[xvii] Instead, the authors concluded, non-lethal alternatives to predator removal, coupled with coexistence (husbandry techniques) may resolve conflicts.[xviii]

A Washington state study shows that as cougar complaints increased, wildlife officials lengthened seasons and increased bag limits to respond to what they believed was a rapidly growing cougar population. However, the public's perception of an increasing population and greater numbers of livestock depredations was actually a result of a declining female and increasing male population.[xix] Heavy hunting of cougars skewed the ratio of young males in the population by causing compensatory immigration and emigration by young male cougars, even though it resulted in no net change in the population.[xx]

Study authors found that the sport hunting of cougars to reduce complaints and livestock depredations had the opposite effect. Killing cougars disrupts their social structure and increases both complaints and livestock depredations.[xxi] 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%.[xxii]

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

In March 2019, the Humane Society of the United States published a report on livestock losses from cougars using the U.S. Department of Agriculture's data.[xxiv] For Oregon's sheep and cattle ranchers, 2014 and 2015 data show that most losses came from maladies (illnesses, birthing problems, weather and theft) with far fewer losses coming from native carnivores and domestic dogs together.[xxv]

In 2015, only 1.48 percent of unwanted cattle losses were from cougars, compared to nearly 88 percent from maladies, according to the USDA.[xxvi] Even with these low predation numbers, the USDA reports are likely

exaggerated because of their faulty methodology; we compared U.S. Fish and Wildlife Service and states' data to the USDA and found the latter to be excessive in their attribution of livestock deaths to native carnivores and domestic dogs.[xxvii]

IV. Trophy hunting cougars does not boost prey populations but it could exacerbate ungulate diseases

ODFW justifies the implementation of high trophy hunting quotas and multiple target zones on the basis that killing cougars will boost deer and bighorn sheep populations.[xxviii] Yet, the best available science demonstrates that killing native carnivores to increase ungulate populations is unlikely to produce positive results. Numerous recent studies demonstrate that predator removal actions "generally had no effect" in the long term on ungulate populations.[xxix] Because ecological systems are complex, heavily persecuting cougars will fail to address the underlying malnutrition problems that deer face. If Oregon wants to grow its ungulate population, then ODFW must foster survival of adult female deer to stem declines; and it must increase nutritional conditions for deer as these factors are the most important for deer survival.[xxx]

Furthermore, Oregon's ungulates would benefit from further research on the effects of human development, including from oil and gas, housing and road construction on habitat use and migration patterns. Residential and energy development has reduced all ungulates across the West, particularly on winter ranges.[xxxi] Although the precise connections between human development and population-level effects are still imperfectly understood, research has shown that development affects ungulate habitat use and migration patterns by causing location avoidance[xxxii] and creating "semi-permeable" barriers to migration routes.[xxxiii] ODFW should be focusing its efforts on research to evaluate the effects of human development on prey populations and ways to mitigate those effects rather than allowing increased trophy hunting of cougars that will have little long-term benefit for increasing prey populations.

Additionally, cougars help maintain the health and viability of ungulate populations by preying on sick individuals, reducing the spread of disease such as chronic wasting disease (CWD) and brucellosis. Cougars also reduce vehicle collisions with deer, saving drivers $1.1 million in collision costs annually in South Dakota.[xxxiv]

Persecuting cougars will not help bighorn sheep recruitment, either. It is clear from the literature that bighorn sheep populations are in decline in the U.S. because of unregulated market hunting, trophy hunting, disease from domestic sheep,[xxxv] resource competition by livestock, and loss of habitat.[xxxvi] The Payette National Forest's Update to the Draft Supplemental Environmental Impact Statement (January 2010), provides an excellent literature review on sheep die offs attributed to domestic livestock and recommend that wild and domestic sheep and goats be separated.[xxxvii]

Sawyer and Lindzey (2002) surveyed over 60 peer-reviewed articles concerning predator-prey relationships involving bighorn sheep and cougars, concluding that while predator control is often politically expedient, it often does not address underlying environmental issues including habitat loss, loss of migration corridors, and inadequate nutrition. [xxxviii] In total, the best available science suggests that persecuting cougar populations is not a solution toward enhancing bighorn sheep numbers. That is because cougar predation upon bighorn sheep is a learned behavior conducted by only a few individuals who may not repeat their behavior.[xxxix]

ODFW can better plan for bighorn sheep management by selecting relocation sites for bighorn sheep that have little stalking cover.[xl] Escape terrain that contains cliffs, rocks, and foliage makes excellent ambush cover for a cougar[xli] and should be avoided. Also, the amount of cougar predation is generally greater on small-sized bighorn sheep populations (those that are under 100 individuals) than on other larger bighorn sheep populations.[xlii] A host of authors reviewed by McKinney et al. (2006) and Ruth and Murphy (2010) recommend only limited cougar removals to benefit bighorn sheep populations.[xliii]

V. ODFW must no longer authorize a trophy hunting season on cougars as the practice is unsustainable and harmful to family groups

Trophy hunting is the greatest source of mortality for cougars throughout the majority of their range across the western and midwestern United States.[xliv] 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.[xlv] For these reasons, ODFW must not allow trophy hunting of cougars in our state:

1.) *Trophy hunting is unsustainable and cruel:* Large-bodied carnivores 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.[xlvi] Human persecution affects their social structure,[xlvii] and harms their persistence.[xlviii]

   Research shows that trophy hunting results in *additive mortality*—trophy hunters increase the total mortality to levels that far exceed what would occur in nature.[xlix] 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.[l] When trophy hunters remove the stable adult cougars from a population, it encourages subadult males to immigrate, leading to greater aggression between cats and mortalities to adult females and subsequent infanticide.[li]

2.) *Trophy hunting is particularly harmful to kittens and their mothers:* In heavily hunted populations, female cougars experience higher levels of intraspecific aggression (fights with other cats) resulting in predation on themselves and their kittens.[lii] Over-hunting harms a population's ability to recruit new members if too many adult females are removed.[liii] A Utah study shows that trophy hunting adult females orphans their kittens, leaving them to die by dehydration, malnutrition, and/or exposure.[liv] Kittens are reliant upon their mothers beyond 12 months of age.[lv]

3.) *Trophy hunting harms entire cougar communities:* A recent study on cougars in the Teton region of Wyoming shows that cougars are quite social animals and live in "communities," with females sharing kills with other females, their kittens and even with the territorial males. In return for these meals, the adult males protect the females and their kittens from incoming, competing males.[lvi] Disrupting these communities leads to deadly intraspecific strife, including infanticide on the kittens, and social chaos within the family groups.[lvii] Trophy hunting destabilizes cougar populations, which may cause increased conflicts with humans, pets and livestock.[lviii]

4.) *Trophy hunting is unnecessary, as cougars are a self-regulating species*: Cougars occur at low densities relative to their primary prey, making them sensitive to bottom-up (prey declines) and top-down (human persecution) influences.[lix] Their populations must stay at a smaller size relative to their prey's biomass or risk starvation.[lx] They do this by regulating their own numbers.[lxi] When prey populations decline, so do cougar populations.[lxii] Cougar populations also require expansive habitat, with individual cats maintaining large home ranges that overlap with one another.[lxiii]

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

VI. Killing cougars is not economically sound or supported by the majority of Americans who want to see wildlife protected

Killing cougars deprives citizens of their ability to view or photograph wild cougars.[lxviii] Nonconsumptive users are a rapidly growing stakeholder group who provide immense economic contributions to the communities in which they visit.[lxix] The U.S. Fish and Wildlife Service's 2016 wildlife-recreation report indicates that wildlife watchers nationwide have increased 20% from 2011, numbering 86 million and spending $75.9 billion, while all hunters declined by 16%, with the biggest decline in big game hunter numbers, from 11.6 million in 2011 to 9.2 million in 2016.[lxx] Altogether, hunters spent $25.6 billion in 2016, about one-third that spent by wildlife watchers (Fig. 2).[lxxi]

Fig. 2: Wildlife Recreation Participation & Expenditures, U.S. Fish and Wildlife Service, 2011 vs. 2016 data

	2011	2016	Percent Change
Wildlife Watcher Numbers	71.8M	86.0M	20
Wildlife Watcher Expenditures	$59.1B	$75.9B	28
All Hunter Numbers	13.7M	11.5M	-16
Big Game Hunter Numbers	11.6M	9.2M	-21
Hunter Expenditures	$36.3B	$25.6B	-29
Hunters by type	**2011**	**2016**	**No. Change**
Big Game	11.6M	9.2M	-2.4M
Small Game	4.5M	3.5M	-1M
Migratory Birds	2.6M	2.4M	-0.2M
Other animals	2.2M	1.3M	-0.9M

The public values cougars and views them as an indicator of healthy environments while posing little risk to people living near them.[lxxii] A new study indicates that Americans highly value wildlife, including top carnivores such as cougars, and are concerned about their welfare and conservation.[lxxiii] Surveys also show

that the majority of Americans do not support trophy hunting.[lxxiv] Authorizing a trophy hunting season is not in the best interest of Oregonians, who prefer that these large cats remain on the landscape, without threat of persecution.

VII. Conclusion

The 2020 cougar regulations continue to permit excessive trophy hunting and target zone killing of this species. Therefore, we ask the Oregon Fish and Wildlife Commission to reject the proposed regulations, and to reduce Oregon's trophy hunting quotas for cougars to levels supported by the best available science, using reliable population estimates, especially in regions such as Zone A where conflicts may be the result of heavy killing. Additionally, we call on ODFW to end the use of target zones which are ineffective, deeply unpopular, and likely increase conflicts with cougars. Thank you for your consideration.

Sincerely,

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[i] The hunting of cougars is done primarily for trophy purposes and is therefore considered "trophy hunting." The Humane Society of the United States defines trophy hunting as the practice of killing—or pursuing with the intent to kill—wild animals to display their body parts, not primarily for food or subsistence (The Humane Society of the United States 2017).

[ii] Oregon Department of Fish and Wildlife, "Oregon Cougar Management Plan," ed. Oregon Department of Fish and Wildlife (Salem, OR 2017). P. 51.

[iii] R. A. Beausoleil et al., "Research to Regulation: Cougar Social Behavior as a Guide for Management," *Wildlife Society Bulletin* 37, no. 3 (2013).

[iv] According to the ODFW Cougar Management Plan, the total cougar population estimate for Zone A was 989 cats of all ages in 989. Assuming the population has grown, as ODFW claims it has, the current total population is likely around 1,200 cougars, or approximately 600 adult cougars. Oregon Department of Fish and Wildlife, "Oregon Cougar Management Plan."

[v] Ibid.

[vi] See e.g., The Humane Society of the United States, "State of the Mountain Lion: A Call to End Trophy Hunting of America's Lion," (Washington, DC2017); Cougar Management Guidelines, *Cougar Management Guidelines* (Bainbridge Island, WA: WildFutures, 2005).

[vii] Oregon Department of Fish and Wildlife, "Oregon Cougar Management Plan."

[viii] T. L. Teel, R. S. Krannich, and R. H. Schmidt, "Utah Stakeholders' Attitudes toward Selected Cougar and Black Bear Management Practices," *Wildlife Society Bulletin* 30, no. 1 (2002).

[ix] F. G. Lindzey et al., "Cougar Population Response to Manipulation in Southern Utah," ibid.20, no. 2 (1992); Kenneth A. Logan and Linda L. Sweanor, *Desert Puma: Evolutionary Ecology and Conservation of an Enduring Carnivore* (Washington, DC: Island Press, 2001); L. M. Elbroch et al., "Trailing Hounds Vs Foot Snares: Comparing Injuries to Pumas Puma Concolor Captured in Chilean Patagonia," *Wildlife Biology* 19, no. 2 (2013).

[x] H. J. Harlow et al., "Stress Response of Cougars to Nonlethal Pursuit by Hunters," *Canadian Journal of Zoology* 70, no. 1 (1992); C. M. Bryce, C. C. Wilmers, and T. M. Williams, "Energetics and Evasion Dynamics of Large Predators and Prey: Pumas Vs. Hounds," *PeerJ* e3701 (2017); F. Bonier, H. Quigley, and S. N. Austad, "A Technique for Non-Invasively Detecting Stress Response in Cougars," *Wildlife Society Bulletin* 32, no. 3 (2004).

[xi] C. M. S. Lambert et al., "Cougar Population Dynamics and Viability in the Pacific Northwest," *Journal of Wildlife Management* 70 (2006); Kaylie A. Peebles et al., "Effects of Remedial Sport Hunting on Cougar Complaints and Livestock Depredations," *Plos One* 8, no. 11 (2013).

[xii] R. J. Lennox et al., "Evaluating the Efficacy of Predator Removal in a Conflict-Prone World," *Biological Conservation* 224 (2018).

[xiii] Ibid.

[xiv] T. D. Forrester and H. U. Wittmer, "A Review of the Population Dynamics of Mule Deer and Black-Tailed Deer Odocoileus Hemionus in North America," *Mammal Review* 43, no. 4 (2013)., p. 300, Lennox et al., "Evaluating the Efficacy of Predator Removal in a Conflict-Prone World."

[xv] Kristine J. Teichman, Bogdan Cristescu, and Chris T. Darimont, "Hunting as a Management Tool? Cougar-Human Conflict Is Positively Related to Trophy Hunting," *BMC Ecology* 16, no. 1 (2016); Lennox et al., "Evaluating the Efficacy of Predator Removal in a Conflict-Prone World."

[xvi] Peebles et al., "Effects of Remedial Sport Hunting on Cougar Complaints and Livestock Depredations."; Teichman, Cristescu, and Darimont, "Hunting as a Management Tool? Cougar-Human Conflict Is Positively Related to Trophy Hunting."; L. Mark Elbroch and Howard Quigley, "Social Interactions in a Solitary Carnivore," *Current Zoology* 63, no. 4 (2017).

[xvii] Lennox et al., "Evaluating the Efficacy of Predator Removal in a Conflict-Prone World."

[xviii] Lennox et al.

[xix] Peebles et al., "Effects of Remedial Sport Hunting on Cougar Complaints and Livestock Depredations.", citing Lambert et al. 2006 and Robinson et al. 2008

[xx] Teichman, Cristescu, and Darimont, "Hunting as a Management Tool? Cougar-Human Conflict Is Positively Related to Trophy Hunting."

[xxi] Peebles et al., "Effects of Remedial Sport Hunting on Cougar Complaints and Livestock Depredations."

[xxii] Peebles et al., p.6

[xxiii] Peebles et al.

[xxiv] The Humane Society of the United States, "Government Data Confirm That Cougars Have a Negligible Effect on U.S. Cattle & Sheep Industries," (2019).

[xxv] The Humane Society of the United States (2019)

[xxvi] The Humane Society of the United States (2019)

[xxvii] The Humane Society of the United States (2019)

[xxviii] Oregon Department of Fish and Wildlife, "Oregon Cougar Management Plan."

[xxix] Forrester and Wittmer, "A Review of the Population Dynamics of Mule Deer and Black-Tailed Deer Odocoileus Hemionus in North America.", p. 300, Lennox et al., "Evaluating the Efficacy of Predator Removal in a Conflict-Prone World."

[xxx] e.g. K. L. Monteith et al., "Life-History Characteristics of Mule Deer: Effects of Nutrition in a Variable Environment," *Wildlife Monographs* 186, no. 1 (2014); Forrester and Wittmer, "A Review of the Population Dynamics of Mule Deer and Black-Tailed Deer Odocoileus Hemionus in North America."; K. F. Robinson et al., "Can Managers Compensate for Coyote Predation of White-Tailed Deer?," *Journal of Wildlife Management* 78, no. 4 (2014).

[xxxi] Heather E. Johnson et al., "Increases in Residential and Energy Development Are Associated with Reductions in Recruitment for a Large Ungulate," *Global Change Biology* (2016).

[xxxii] P.E. Lendrum et al., "Habitat Selection by Mule Deer During Migration: Effects of Landscape Structure and Natural-Gas Development," *Ecosphere* 3, no. 9 (2012).

[xxxiii] Hall Sawyer et al., "Mule Deer and Energy Development—Long-Term Trends of Habituation and Abundance," *Global Change Biology* (2017); H. Sawyer et al., "A Framework for Understanding Semi-Permeable Barrier Effects on Migratory Ungulates," *Journal of Applied Ecology* 2013 (2013).

[xxxiv] Sophie L. Gilbert et al., "Socioeconomic Benefits of Large Carnivore Recolonization through Reduced Wildlife-Vehicle Collisions," *Conservation Letters* (2016).

[xxxv] "Severe pneumonia outbreak kills bighorn sheep: Lamb survival to be closely monitored for several years" http://www.avma.org/onlnews/javma/may10/100501c.asp

[xxxvi] Kerry Murphy and Toni Ruth, "Diet and Prey Selection of a Perfect Predator," in *Cougar: Ecology and Conservation*, ed. Maurice Hornocker and Sharon Negri (Chicago and London: University of Chicago Press, 2010); Logan and Sweanor, *Desert Puma: Evolutionary Ecology and Conservation of an Enduring Carnivore*; K. L. Monteith et al., "Effects of Harvest, Culture, and Climate on Trends in Size of Horn-Like Structures in Trophy Ungulates," *Wildlife Monographs* 183, no. 1 (2013); Becky Lomax, "Tracking the Bighorns," *Smithsonian* 38, no. 12 (2008); Luis S. Warren, *The Hunter's Game: Poachers and Conservationists in Twentieth-Century America* (New Haven: Yale University Press, 1997).

[xxxvii] http://www.fs.fed.us/r4/payette/publications/big_horn/index.shtml. It states: Bighorn sheep are a New World species and are closely related to domestic sheep, which are an Old World species. Domestication and intense artificial selection have probably helped domestic sheep develop a resistance to important diseases (Jessup 1985). However, bighorn sheep can be highly susceptible to diseases carried by domestic sheep. A long history of large-scale, sudden, all-age die-offs in bighorn sheep exists across Canada and the United States, many associated with domestic animal contact (Shackleton 1999). Although limited knowledge of transmission dynamics exists (Garde et al. 2005), extensive scientific literature supports the relationship between disease in bighorn sheep populations and contact with domestic sheep, including both circumstantial evidence linking bighorn die- offs in the wild to contact with domestic animals and controlled experiments where healthy bighorn sheep exposed to domestic sheep displayed subsequently high mortality rates (Foreyt 1989, 1990, 1992; Foreyt et al. 1994; Onderka et al. 1988; Onderka and Wishart 1988; Garde et al. 2005). In a summary of risk to wild sheep from Pasteurella and Mannheimia spp., Garde et al. (2005) makes the

following conclusions:

1. These bacteria can cause pneumonia in bighorn sheep, but there are benign commensal strains in the upper respiratory tract
2. Domestic sheep, goats, and llamas have been reported with these bacteria species
3. Wild sheep and mountain goats have been reported with these bacteria species
4. Transmission is by direct contact and aerosolization
5. These bacteria species do not persist in the environment
6. Acute-to-chronic die-offs in bighorn sheep can result in low to 100% mortality, although they can be present in healthy sheep
7. These bacteria are considered opportunistic and can result in pneumonia outbreaks
8. These bacteria can cause clinical disease in domestic sheep and goats, but are rarely primary pathogens.

Management Recommendations: The separation, either spatially, temporally, or both of bighorn sheep from domestic sheep has been recommended by leading bighorn sheep disease experts (Schommer and Woolever 2001, Garde 2005, Singer 2001). Experts also recommend developing site-specific solutions for each bighorn sheep population and domestic sheep allotment, and to develop a management strategy appropriate for the complexity of the management situation (Schommer and Woolever 2001).

[xxxviii] Hall Sawyer and Frederick Lindzey, "Review of Predation on Bighorn Sheep (Ovis Canadensis)," *Prepared for Wyoming Animal Damage Management Board, Wyoming Domestic Sheep and Bighorn Sheep Interaction Working Group, Wyoming Game and Fish Department.* (2002).

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[xli] Ted McKinney et al., "Mountain Lion Predation of Translocated Desert Bighorn Sheep in Arizona," *Wildlife Society Bulletin* 34, no. 5 (2006).

[xlii] Sawyer and Lindzey, "Review of Predation on Bighorn Sheep (Ovis Canadensis)."; McKinney, Smith, and deVOS, "Evaluation of Factors Potentially Influencing a Desert Bighorn Sheep Population."; Ruth and Murphy, "Cougar-Prey Relationships."

[xliii] "Cougar-Prey Relationships.", McKinney, Smith, and deVOS, "Evaluation of Factors Potentially Influencing a Desert Bighorn Sheep Population."; McKinney et al., "Mountain Lion Predation of Translocated Desert Bighorn Sheep in Arizona."

[xliv] See e.g., The Humane Society of the United States, "State of the Mountain Lion: A Call to End Trophy Hunting of America's Lion."; Cougar Management Guidelines, *Cougar Management Guidelines.*

[xlv] 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."

[xlvi] e.g., A. D. Wallach et al., "What Is an Apex Predator?," *Oikos* 124, no. 11 (2015); R. B. Wielgus et al., "Effects of Male Trophy Hunting on Female Carnivore Population Growth and Persistence," *Biological Conservation* 167 (2013); D. Stoner, M. , M.L. Wolfe, and D. Choate, "Cougar Exploitation Levels in Utah: Implications for Demographic Structure, Population Recovery, and Metapopulation Dynamics," *Journal of Wildlife Management* 70 (2006); S. Creel et al., "Questionable Policy for Large Carnivore Hunting," *Science* 350, no. 6267 (2015); J. L. Weaver, P. C. Paquet, and L. F. Ruggiero, "Resilience and Conservation of Large Carnivores in the Rocky Mountains," *Conservation Biology* 10, no. 4 (1996).

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

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[i] 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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[iii] D. C. Stoner et al., "Dispersal Behaviour of a Polygynous Carnivore: Do Cougars Puma Concolor Follow Source-Sink Predictions?," *Wildlife Biology* 19, no. 3 (2013); Wielgus et al., "Effects of Male Trophy Hunting on Female Carnivore Population Growth and Persistence."; Stoner et al., "Dispersal Behaviour of a Polygynous Carnivore: Do Cougars Puma Concolor Follow Source-Sink Predictions?."

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[iv] Stoner, Wolfe, and Choate, "Cougar Exploitation Levels in Utah: Implications for Demographic Structure, Population Recovery, and Metapopulation Dynamics."

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[ix] Stoner, Wolfe, and Choate, "Cougar Exploitation Levels in Utah: Implications for Demographic Structure, Population Recovery, and Metapopulation Dynamics."

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[xvi] Ripple and Beschta, "Linking a Cougar Decline, Trophic Cascade, and Catastrophic Regime Shift in Zion National Park."; Elbroch and Wittmer, "Table Scraps: Inter-Trophic Food Provisioning by Pumas."

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[xviii] While rarely seen in the wild by the general public, wildlife photographers have brought cougars closer to us than ever before. Photographers such as Steve Winter (https://www.stevewinterphoto.com/) and Tom Mangelsen (http://mangelsen.com/) are helping people understand just how magnificent these iconic wild cats truly are.

[lxix] M. L. Elbroch et al., "Contrasting Bobcat Values," *Biodiversity and Conservation* (2017); U.S. Fish and Wildlife Service, "2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation: National Overview," ed. U.S. Fish and Wildlife Service (2017).

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Roxann B Borisch

From: Kelly Peterson <kpeterson@humanesociety.org>
Sent: Wednesday, September 11, 2019 4:30 PM
To: odfw.commission@state.or.us; curt.melcher@state.or.us
Cc: Wendy Keefover; Haley Stewart
Subject: Comments submitted: 2020 black bear regulations
Attachments: HSUS-2020-ODFW-BB-Regulations-Final.pdf

Dear Chairman Finley, Director Melcher and Members of the Commission:

On behalf of the Humane Society of the United States and our supporters in Oregon, we submit the following comments strongly opposed to Oregon Department of Fish and Wildlife's ("ODFW") proposals to again expand black bear hunting—this time for 2020.

We ask the Commission to reject the quota increase and instead reduce the state's entire quota to a number between six and ten percent of the State's population of bears. We ask that springtime hunts cease because of biologists' concerns about the persistence of bears in the wake of climate change, but also because of the enormous welfare concerns involved in springtime hunts.

We affirmatively include all of the studies cited herein as part of this administrative record. If you need access to any, please let us know.

Thank you in advance for your consideration.

Respectfully,
Kelly Peterson

Kelly Peterson
Oregon Senior State Director

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Re: 2020 black bear regulations

Dear Chairman Finley, Director Melcher and Members of the Commission:

On behalf of the Humane Society of the United States and our supporters in Oregon, we submit the following comments strongly opposed to Oregon Department of Fish and Wildlife's ("ODFW") proposals to again expand black bear (*Ursus americanus*) hunting—this time for 2020. This year's proposal would:

- Increase the length of the springtime bear hunt in eastern from April 15-May 31 to April 1-May 31 for the stated purpose of consistency with the season for western Oregon. ODFW proposes to increase spring bear tags in eastern Oregon from 9,386 to 9,495.

- For the general fall bear hunt, the season in eastern Oregon will be extended from August 1 to November 30 to August 1 to December 31 to be consistent with the season in western Oregon.

- ODFW also proposes to allow anyone to purchase a second general fall bear tag if they fill their first tag to maximize bear killing in Oregon.

- Currently, the general fall bear season dates are August 1 to December 31 in Western Oregon and August 1 to November 30 in eastern Oregon. ODFW proposes make the general fall bear season from August 1 to December 31 statewide.

ODFW continues to liberalize bear hunting in Oregon and claim "no impact" on bears even as the overall bear mortality in the last decade has reached the greatest height likely in recorded history. Most Oregon black bears die by trophy hunters. Fig. 1. Particularly, ODFW's proposed spring hunt expansions will endanger even greater numbers of mothers and their newborn or yearling cubs.

Fig. 1. Black bear mortality in Oregon, 2005-2018 (Data from ODFW)						
	Spring hunt	Fall hunt	Total trophy hunt	Total Mortality	Percent total mortality from spring hunt	Percent mortality - trophy hunters
2005	371	716	1,087	1,399	27	78
2006	307	989	1,296	1,528	20	85
2007	477	748	1,225	1,460	33	84
2008	363	911	1,274	1,564	23	81
2009	461	698	1,159	1,534	30	76
2010	448	1,235	1,683	2,157	21	78
2011	488	931	1,419	1,793	27	79
2012	464	1,155	1,619	1,656	28	98
2013	460	1,081	1,541	1,609	29	96
2014	553	1,088	1,641	1,734	32	95
2015	577	1,028	1,605	1,674	34	96
2016	580	1,003	1,583	1,719	34	92
2017	607	1,134	1,741	1,838	33	95
2018	627	1,103	1,730	1,762	36	98

A new Washington-based study shows that human density negatively correlates with bear density; bear densities range widely by region and managers had over-estimated the population of bears in western Washington—including cubs—by 50 percent.[1] The implications for Oregon should be similarly applied—but they are not. ODFW's black bear proposals offer neither population nor trend analysis, measurable objectives, evidence, transparency or sign of an independent review, the hallmarks of sound science.[2] Instead, we are left with a flimsy and entirely unaccountable approach, emblematic of ODFW's unscientific black bear management policy and protocols.[3] Therefore, ODFW is running afoul of Oregon law.

Oregon law requires ODFW and the Commission to use sound science to manage Oregon's wildlife for all Oregonians—including non-consumptive users—present and future. ORS 496.012. ODFW's statutory mandates include "mak[ing] decisions that affect wildlife resources...for the benefit of the wildlife resources," considering the "utilization of wildlife resources by *all* user groups," and "prevent[ing] serious depletion of any indigenous species." *Id.* In keeping with these obligations, ODFW regulations recognize that "the black bear [is] an important part of Oregon's fauna, valued by many Oregonians" and commit ODFW to "conduct[ing] a management program that maintains healthy populations of black bear" while respecting "the desires of the public and the statutory obligations of the department." Or. Admin. R. 635-170-0005. ODFW's stated regulatory objectives are "maintain[ing] healthy and optimum bear populations," "develop[ing], refin[ing], and evaluat[ing] population abundance estimation through modeling techniques," and "improv[ing] basic understanding of black bear management...through applied research." Or. Admin. R. 635-170-0000.

ODFW's proposed black bear regulations run afoul of these statutory and regulatory directives and are therefore beyond ODFW's authority to promulgate and contrary to state law. ORS 183.400. In fact, ODFW provides no scientifically valid purpose or justification for their proposed drastic quota increases, and does not provide a full

[1] Lindsay Welfelt, Richard Beausoleil, and Robert Wielgus, "Factors Associated with black bear density and implications for management," *The Journal of Wildlife Management* (08/25 2019), https://doi.org/10.1002/jwmg.21744.
[2] Garshelis and Hristienko, "State and provincial estimates of American black bear numbers versus assessments of population trend."; Kyle A. Artelle et al., "Hallmarks of science missing from North American wildlife management," *Science Advances* 4, no. 3 (2018), https://doi.org/10.1126/sciadv.aao0167, http://advances.sciencemag.org/content/advances/4/3/eaao0167.full.pdf.
[3] Artelle et al., "Hallmarks of science missing from North American wildlife management."; Garshelis and Hristienko, "State and provincial estimates of American black bear numbers versus assessments of population trend."

opportunity for public comment on the "documents, reports, or studies prepared by or relied upon by the agency in considering the need for and in preparing the rule." ORS 183.335. Because black bears can only sustain light hunting amounts (between six and ten percent of their population),[4] we ask that the Commission reduce Oregon's statewide bear-hunting quotas in conformance with the best and newly available science. The proposed increases are not "incremental increases,"[5] the mark of prudent wildlife management; instead they are dangerous and extreme. Our request is supported by the discussion that follows.

1. ODFW's quotas are too drastic and will result in the overkill of Oregon's beloved black bears

A safe offtake amount for black bears is between six and ten percent of the population; more than that is simply additive mortality because of harms to the female component of the population.[6] In a Washington study, where biologists used methods of capture-recapture and also collected hair samples to test bears' DNA (to discover emigrating and immigrating animals), authors compared the two areas in order to evaluate black bear survival. In both areas, despite agency predictions that the bear population was growing, it was not. Authors found that the "maximum sustainable hunter harvest" was indicated by the "intrinsic growth rate of 6-10% [which] was exceeded in both areas."[7] To emphasize, a safe offtake amount for black bears is likely only six to ten percent of the population because the female component of the population was not growing.[8] This study is directly applicable to Oregon.

Empirical study is needed in Oregon. If none is conducted, then managers must apply precautionary principles to avoid exploitation and destruction of natural systems, including on highly sentient black bears, a carnivore with the largest brain size and who spend prolonged periods raising and nurturing young and who are very slow to reproduce.[9]

Despite having a little sense of its population,[10] each year in Oregon hundreds of bears die at the hands of trophy hunters, including 1,730 individuals who were legally hunted in 2018. Fig. 1. Despite the alarming cull, the ODFW again

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[4] Lindsay Suzanne Welfelt, "Black bear population dynamics in the North Cascades" (Doctor of Philosophy Dissertation, Washington State University, 2018), https://search.proquest.com/openview/ec18d4337882347c86cd2eeb2a69ebd0/1.pdf?pq-origsite=gscholar&cbl=18750&diss=y.

[5] Ibid.

[6] Welfelt, "Black bear population dynamics in the North Cascades."

[7] Welfelt, "Black bear population dynamics in the North Cascades," 38.

[8] Welfelt, "Black bear population dynamics in the North Cascades."

[9] Black bears are highly sentient. *See e.g.,* John L. Gittleman, "Carnivore Life History Patterns: Allometric, Phylogenetic, and Ecological Associations," 127, no. 6 (1986), https://doi.org/10.1086/284523, https://www.journals.uchicago.edu/doi/abs/10.1086/284523; T. E. Reimchen and M. A. Spoljaric, "Right paw foraging bias in wild black bear (Ursus americanus kermodei)," *Laterality: Asymmetries of Body, Brain and Cognition* 16, no. 4 (2011/07/01 2011), https://doi.org/10.1080/1357650X.2010.485202, https://doi.org/10.1080/1357650X.2010.485202; Jennifer Vonk, Stephanie E. Jett, and Kelly W. Mosteller, "Concept formation in American black bears, Ursus americanus," *Animal Behaviour* 84, no. 4 (2012/10/01/ 2012), https://doi.org/https://doi.org/10.1016/j.anbehav.2012.07.020, http://www.sciencedirect.com/science/article/pii/S0003347212003284; Jennifer Vonk and Michael J. Beran, "Bears 'count' too: quantity estimation and comparison in black bears, Ursus americanus," *Animal Behaviour* 84, no. 1 (2012/07/01/ 2012), https://doi.org/https://doi.org/10.1016/j.anbehav.2012.05.001, http://www.sciencedirect.com/science/article/pii/S0003347212002126; Silvana Mattiello et al., "Effect of the change of social environment on the behavior of a captive brown bear (Ursus arctos)," *Journal of Veterinary Behavior: Clinical Applications and Research* 9, no. 3 (2014/05/01/ 2014), https://doi.org/https://doi.org/10.1016/j.jveb.2014.01.002, http://www.sciencedirect.com/science/article/pii/S1558787814000082; Rachel Mazur and Victoria Seher, "Socially learned foraging behaviour in wild black bears, Ursus americanus," *Animal Behaviour* 75, no. 4 (2008/04/01/ 2008), https://doi.org/https://doi.org/10.1016/j.anbehav.2007.10.027, http://www.sciencedirect.com/science/article/pii/S0003347208000213; M. Cattet et al., "An evaluation of long-term capture effects in ursids: Implications for wildlife welfare and research," Article, *Journal of Mammalogy* 89, no. 4 (Aug 2008), https://doi.org/10.1644/08-mamm-a-095.1, <Go to ISI>://WOS:000258765000019; V. B. Deecke, "Tool-use in the brown bear (Ursus arctos)," *Animal Cognition* 15, no. 4 (Jul 2012), https://doi.org/10.1007/s10071-012-0475-0, <Go to ISI>://WOS:000305395700028.

[10] D. L. Garshelis and H. Hristienko, "State and provincial estimates of American black bear numbers versus assessments of population trend," *Ursus* 17, no. 1 (2006), <Go to ISI>://WOS:000237130100001. Rather than a population or trend study (Garshelis and Hristienko (2006).

proposes more drastic quota increases, which fails to account for all sources of bear mortality including from wounding loss, poaching and control actions.[11]

ODFW's current proposal is also certainly not in the public's interest in wildlife management.[12] Therefore, we are forced to surmise ODFW is proposing to reduce the bear population to alleviate human-bear conflicts and to provide opportunity to *trophy hunters* to kill sentient black bears for photo opportunities for purposes of social media and to obtain and display bear parts, including, heads, hides, claws and capes.[13]

2. Springtime bear hunts needlessly orphan dependent cubs, making them unethical

Springtime black bear (*Ursus americanus*) hunts are problem plagued. Despite the agency's best intentions, hunters will kill nursing mothers, which orphans cubs leaving them to suffer from starvation, predation, or exposure.[14] Springtime bear hunts occur when bears are physically stressed from months of not eating. In springtime, bears are in "declining physical condition" and are especially vulnerable to hunter "harassment."[15] Springtime hunting may cause damage to roads, including causing siltation in streams, or harm to vulnerable ungulate and other wildlife populations.[16] Most Americans do not want wildlife cruelly treated, and most want black bears protected—even if they have attacked someone.[17] Yet, Oregon promotes and expands these most cruel hunts. Fig. 2.

ODFW's entire basis for its bears population is derived from trophy hunters' kills. See: ODFW Black Bear Management Plan (2012). Those data are inevitably flawed. Dead bears cannot give one accurate demographic or density data. This is made more acute by the fact that large numbers of trophy bear hunters fail, despite state regulation, to turn in bear skulls for analysis. In 2017, only ~85% of hunters turned in their bear skulls. (Bear skull shirkers revealed in ODFW, Exhibit E, Attachment 3, Staff Proposals.)

[11] In a Washington study, 20 percent of hunters, failed to report their bear kills. G. M. Koehler and D. J. Pierce, "Survival, cause-specific mortality, sex, and ages of American black bears in Washington state, USA," *Ursus* 16, no. 2 (2005), https://doi.org/10.2192/1537-6176(2005)016[0157:scmsaa]2.0.co;2, <Go to ISI>://WOS:000233680300002.

[12] Michael P. Nelson et al., "An Inadequate Construct? North American Model: What's Missing, What's Needed," *The Wildlife Professional*, no. Summer 2011 (2011); George et al., "Changes in attitudes toward animals in the United States from 1978 to 2014."

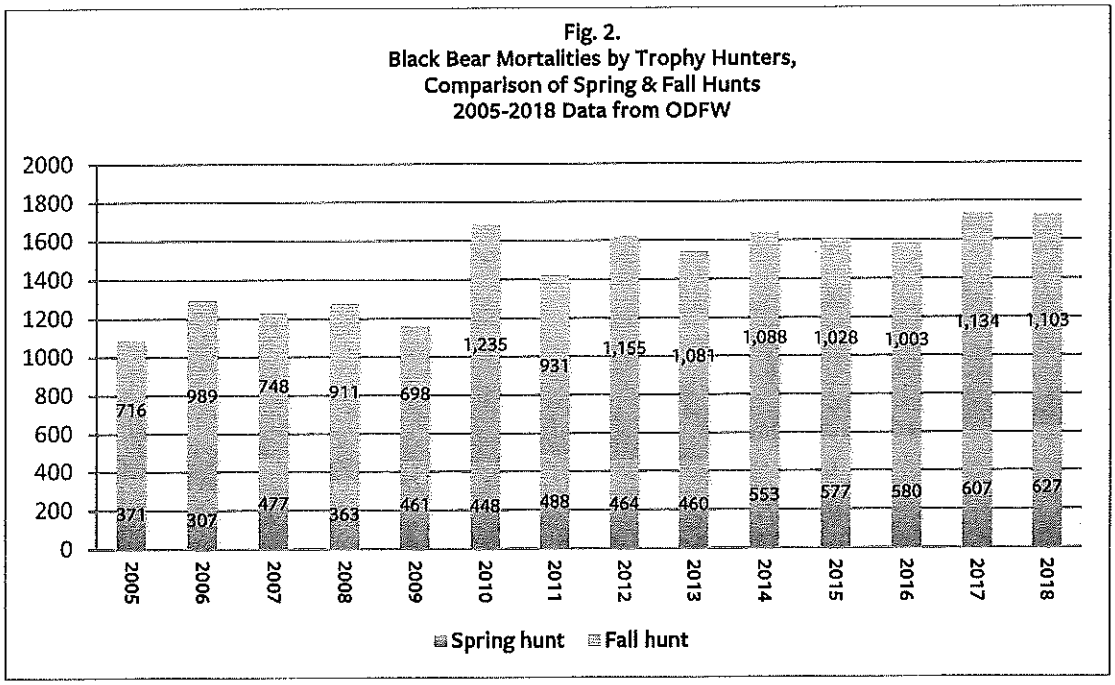
[13] No one kill bears just to eat them. Hunters kill so they can engage in "show off" behaviors (Darimont et al. 2017). We define a "*trophy hunt*" as a hunt where a hunter's *primary motivation* is to kill an animal to display its parts (that is, their heads, hides or claws and even the whole stuffed animal); and for bragging rights (trophy hunters pose over the dead animal with their weapons for a portrait often for social media). Their primary motivation is not subsistence. Chris T. Darimont, Brian F. Codding, and Kristen Hawkes, "Why men trophy hunt," *Biology Letters* 13, no. 3 (2017), https://doi.org/10.1098/rsbl.2016.0909, http://rsbl.royalsocietypublishing.org/content/roybiolett/13/3/20160909.full.pdf. Chelsea Batavia et al., "The elephant (head) in the room: A critical look at trophy hunting," *Conservation Letters* 0, no. 0 (2018), https://doi.org/doi:10.1111/conl.12565, https://onlinelibrary.wiley.com/doi/abs/10.1111/conl.12565.

[14] Personal communication. April 28, 2014. Gary M. Koehler, retired bear biologist with Washington Department of Fish and Wildlife and Keefover.Thomas D. Beck et al., "Sociological and ethical considerations of black bear hunting," *Proceedings of the Western Black Bear Workshop* 5 (1995).

[15] Beck et al., "Sociological and ethical considerations of black bear hunting.", p. 123

[16] Beck et al., "Sociological and ethical considerations of black bear hunting."

[17] George et al., "Changes in attitudes toward animals in the United States from 1978 to 2014." See Map 18 in Manfredo; M. J. Manfredo et al., America's Wildlife Values: The Social Context of Wildlife Management in the U.S., (Fort Collins, Colorado: Colorado State University, Department of Natural Resources, 2018).



a. Springtime-bear trophy hunts needlessly orphan dependent cubs, making these hunts unethical

In two studies cited by Hristienko and McDonald (2007), who studied the effects of spring hunting on bears, only 40% of orphaned cubs survived until hibernation—that means that the other 60% died.[18] Cubs depend upon their mothers for survival for up to two years.

Black bear cubs, usually born during the months between December and February, generally emerge from hibernation with their mothers in the months of April and May depending upon latitude and food availability.[19] Bears enter and leave the den because of several variabilities including their reproductive status (in a Colorado study, bears with cubs denned 10 days longer while mothers with yearlings denned 10 day less), age (older bears denned longer because they are efficient foragers), the amount of natural food availability and winter temperatures (with increases in air temperature, bears denned several days less).[20] All of this adds up to utter confusion about when it is safe to hunt black bears in the springtime.

Springtime bear hunting occurs when cubs are a handful of months old and still nursing, or yearling cubs living as part of a family group that consists of siblings and their mother.[21] Cubs are weaned approximately seven months after their birth, usually between July and September[22]--but not always.

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[18] "Ursus americanus," *USDA-Forest Service Rocky Mountain Research Station-Fire Sciences Laboratory* http://www.fs.fed.us/database/feis/animals/mammal/uram/all.html (2007).

[19] Ulev, "Ursus americanus."; Julie A. Miller et al., "The late-denning activities of the American black bear in Utah," *Ursus* 27, no. 2 (2017), https://doi.org/10.2192/URSU-D-15-00035.1.

[20] H. E. Johnson et al., "Human development and climate affect hibernation in a large carnivore with implications for human-carnivore conflicts," Article, *Journal of Applied Ecology* 55, no. 2 (Mar 2018), https://doi.org/10.1111/1365-2664.13021, <Go to ISI>://WOS:000424881800020.

[21] Hank Hristienko and Jr. McDonald, John E., "Going in the 21st century: a perspective on trends and controversies in the management of the black bear," *Ursus* 18, no. 1 (2007).

[22] Ulev, "Ursus americanus." citing Gill and Beck 1990, Jonkel and Cowan 1971

Mother bears provision for and protect their cubs until they are 16 to 17 months old,[23] or even longer if they have not had sufficient food. Family break-up typically occurs between May and July after the cubs' second winter when females begin to come into estrus.[24]

Some researchers assert that mothers with cubs of the year can be spared from the hunt because nursing mothers are the last demographic of the black bear population to emerge in springtime, after all the other sex and age classes of bears.[25] Colorado Division of Wildlife Tom Beck bear researcher (now retired), along with a cohort of five other Western states wildlife managers warned, however, that even as most studies indicate that males emerge earlier than females from dens, that the time differential is nominal.[26] Beck et al. (1995) write:

> Data from Colorado clearly demonstrate that most bears are killed in the last two weeks of the spring season, regardless of the ending date . . . The [spring bear hunt] regulation looks good on paper but is very difficult to implement in the field because of bear behavior.[27]

Miller et al. (2017) found no distinction between time of den emergence between cohorts of bears (lone females; females with cubs of the year, females with yearlings and yearling cubs).[28] ODFW's spring-bear hunt to start April 1 protects neither nursing females nor mothers of yearlings. Any assertion that a spring season will close early enough to protect nursing females is confounded by research:

- Johnson et al. (2018) found that black bears birthing cubs entered the den earlier and exited later *as did older age bears*, while females with yearling cubs exited earlier to maximize foraging opportunities.[29]
- In a 2017 study of Utah black bears at different study sites found that bears at the same elevations had different den departure dates because in one area, the land was more productive, and females were in better body condition.[30]
- In a Washington study, Gaines (2003) found that the time when males and females emerged from the den largely overlapped. Males emerged between **April 4** and May 7 and females emerged between **April 9** and May

[23] D. J. Lee and M. R. Vaughan, "Black bear family breakup in Western Virginia," *Northeastern Naturalist* 11, no. 2 (2004), https://doi.org/10.1656/1092-6194(2004)011[0111:bbfbiw]2.0.co;2, <Go to ISI>://WOS:000223086100001; Lynn L. Rogers, "Effects of food supply and kinship on social behavior, movements, and population growth of black bears in northeastern Minnesota," *Wildlife Monographs, The Wildlife Society* 51, no. 97 (1987); R. L. Mazur, "Does aversive conditioning reduce human-black bear conflict?," *Journal of Wildlife Management* 74, no. 1 (Jan 2010), https://doi.org/10.2193/2008-163, <Go to ISI>://WOS:000273218700007.

[24] Lee and Vaughan, "Black bear family breakup in Western Virginia."; Rogers, "Effects of food supply and kinship on social behavior, movements, and population growth of black bears in northeastern Minnesota."; M. Elfstrom et al., "Ultimate and proximate mechanisms underlying the occurrence of bears close to human settlements: review and management implications," *Mammal Review* 44, no. 1 (Jan 2014), https://doi.org/10.1111/j.1365-2907.2012.00223.x, <Go to ISI>://WOS:000327796800002.

[25] e.g., H. Hristienko et al., "Using reproductive data to model American black bear cub orphaning in Manitoba due to spring harvest of females," *Ursus* 15, no. 1 (2004), https://doi.org/10.2192/1537-6176(2004)015<0023:urdtma>2.0.co;2, <Go to ISI>://WOS:000227982300003; G.B. Kolenosky and S.M. Strathearn, "Winter denning of black bears in east-central Ontario," *International Conference on Bear Research and Management* 7 (1987); Hristienko and McDonald, "Going in the 21st century: a perspective on trends and controversies in the management of the black bear."; Miller et al., "The late-denning activities of the American black bear in Utah."

[26] Beck et al., "Sociological and ethical considerations of black bear hunting."

[27] "Sociological and ethical considerations of black bear hunting.", p. 122

[28] Miller et al., "The late-denning activities of the American black bear in Utah."

[29] Johnson et al., "Human development and climate affect hibernation in a large carnivore with implications for human-carnivore conflicts."

[30] Miller et al., "The late-denning activities of the American black bear in Utah."

22.[31]

- In an Alaskan study, Schwartz et al. (1987) found that "no significant difference" between the average den-emergence dates for their study bears.[32]

- Beckmann and Berger (2003) found that while adult males exited dens before other sex and age classes in March to early April, adult females with cubs exited last, also starting in early April, and on into May. But as this study indicates, and as is probably the norm: the chronology of den emergence time overlaps between sex and age classes of bears.[33]

- Bears in northern New Mexico entered and left their dens at different times depending on their sex, but not so for bears in the southern part of the state, whose denning chronology was the same for both sexes.[34]

- Baldwin and Bender (2010), in their study of bears Rocky Mountain National Park, stated that males "typically" emerged before females.[35]

For all of these reasons, new cubs cannot be protected by states' seasonal-hunting closures that purport to end when females with cubs of the year emerge from the den.

b. Springtime bear hunting is unethical and damaging to the environment

Killing nursing mother black bears is an enormous social and ethical issue. Beck et al. (1995) write: "This is no way to prevent this [the killing of nursing females] from happening in a spring season, either through hunter education or timing of [the] season."[36] They add that is because females forage "at great distances from their cubs."[37] Even when states prohibit the take of nursing females, hunters still kill them unintentionally.[38] Bear researchers themselves have difficulties sexing bears, even at short distances.[39] Selectivity is less important to some hunters than shooting a bear, regardless of their sex or age.[40] Only a handful of Western states permit spring-bear hunting because of the ethical concerns associated with it.

In springtime, bears experience "significant physiological stress" because the available food supply is neither sufficient for bears to maintain body weight, nor for replacing the loss of nutrients following months of hibernation.[41] Bears are lethargic for the first few weeks after they emerge from the den, and because vegetation is sparse in springtime, bears

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[31] William L. Gaines, "Black bear, *Ursus americanus*, denning chronology and den site selection in the northeastern Cascades of Washington," *Canadian Field-Natur.* 117 (2003).
[32] "Denning ecology of three black bear populations in Alaska," *International Conference on Bear Research and Management* 7 (1987).
[33] "Rapid ecological and behavioural changes in carnivores: the responses of black bears (*Ursus americanus*) to altered food," *Journal of Zoology* 261 (Oct 2003), https://doi.org/10.1017/s0952836903004126, <Go to ISI>://WOS:000186327700010.
[34] R. M. Inman et al., "Denning chronology and design of effective bear management units," *Journal of Wildlife Management* 71, no. 5 (Jul 2007), https://doi.org/10.2193/2006-252, <Go to ISI>://WOS:000248027800012.
[35] R. A. Baldwin and L. C. Bender, "Denning chronology of black bears in eastern Rocky Mountain National Park, Colorado," *Western North American Naturalist* 70, no. 1 (Apr 2010), https://doi.org/10.3398/064.070.0106, <Go to ISI>://WOS:000277604500006.
[36] "Sociological and ethical considerations of black bear hunting.", p. 123
[37] Beck et al., "Sociological and ethical considerations of black bear hunting.", p. 123
[38] Beck et al., "Sociological and ethical considerations of black bear hunting."
[39] Beck et al., "Sociological and ethical considerations of black bear hunting."
[40] JA Litvaitis and DM Kane, "Relationship of hunting technique and hunter selectivity to composition of black bear harvest," *Wildlife Society Bulletin* 22 (1994); Beck et al., "Sociological and ethical considerations of black bear hunting."
[41] Beck et al., "Sociological and ethical considerations of black bear hunting.", p. 124

make easy targets for hunters.[42] A springtime hunt would subject bears to the stress of a being chased and harassed while they are in poor physical shape—a hunt that would be unthinkable for other big game species such as ungulates.[43]

Killing nursing bears taints hunters and hunting itself.[44] The springtime-bear hunt calls into question the ethics of "fair chase," which hunters often profess to be the cornerstone of hunting ethics.[45]

Finally, spring hunts occur during the time of the year when roads are muddy from snowmelt. Travel on the roads by bear hunters contributes to road damage and siltation in streams, which can harm fish and amphibian habitats. Bear hunters' presence also stress other species of wildlife who are in poor physical shape after months of scarce food from the winter season.[46]

3. ODFW's proposals fail to consider poaching, wounding and other human-caused mortalities to bears

State bear biologists in Washington reported that *approximately 20 percent* of their study bears were poached, and even more of their bears died from wounding losses.[47] Oregon must factor poaching and wounding loss metrics and total known mortalities into any reasonable quota. Allowing a cull of a species invariably induces and increases the numbers of animals killed by poachers.[48]

Human persecution of bears such as through trophy hunting and or predator control, is "super-additive," meaning that kill rates exceed naturally-occurring mortalities.[49] This is because predator control agents and trophy hunters kill adult breeding animals, which disrupts animals' social structure and leads to indirect effects such as increased infanticide by incoming subadult male bears, resulting in decreased recruitment of young.[50] ODFW's proposed quota fails to consider these added human-caused losses as part of its extreme bear quotas.

4. Haphazardly killing bears neither conforms to sound science nor Americans' values

As Stringham (2013) suggests, agencies' policies for black bears and other wildlife are often too rigid and simplistic to conform with modern societal values that privilege humaneness and conservation over wanton killing.[51] For instance, he suggests that agencies should not kill bears unless they are a true public safety hazard—and not because someone felt frightened when they saw one.[52]

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[42] Hristienko and McDonald, "Going in the 21st century: a perspective on trends and controversies in the management of the black bear."; Rogers, "Effects of food supply and kinship on social behavior, movements, and population growth of black bears in northeastern Minnesota."

[43] Beck et al., "Sociological and ethical considerations of black bear hunting."

[44] Beck et al., "Sociological and ethical considerations of black bear hunting."

[45] J. Posewitz, *Beyond Fair Chase: The Ethic and Tradition of Hunting* (Helena, Montana: Falcon Press, 1994); Loker and Decker, "Colorado black bear hunting referendum: What was behind the vote?."; George et al., "Changes in attitudes toward animals in the United States from 1978 to 2014."; Manfredo et al., Short America's Wildlife Values: The Social Context of Wildlife Management in the U.S.

[46] Beck et al., "Sociological and ethical considerations of black bear hunting."

[47] Koehler and Pierce, "Survival, cause-specific mortality, sex, and ages of American black bears in Washington state, USA."

[48] Guillaume Chapron and Adrian Treves, "Blood does not buy goodwill: allowing culling increases poaching of a large carnivore," *Proceedings of the Royal Society of London B: Biological Sciences* 283, no. 1830 (2016-05-11 00:00:00 2016), https://doi.org/10.1098/rspb.2015.2939, http://rspb.royalsocietypublishing.org/content/royprsb/283/1830/20152939.full.pdf.

[49] Vucetich et al. 2005, Creel and Rotella 2010, Creel et al. 2015, Darimont et al. 2015.

[50] Wielgus and Bunnell 1995, Creel and Rotella 2010, Wielgus et al. 2013, Ausband et al. 2015, Darimont et al. 2015, Elbroch et al. 2017a, Leclerc et al. 2017.

[51] Stephen R. Stringham, "Managing Risk from Bears and Other Potentially Lethal Wildlife: Predictability, Accountability, and Liability," *Human-Wildlife Interactions* 7, no. 1 (2013).

[52] Ibid.

5. The climate crisis necessitates a new look at privileging non-lethal approaches over killing

Wildlife management agencies often wrongly presume that an increase in human conflicts is a result of a growing bear population, but bears modify their behaviors in response to inconstant environmental circumstances.[53] Unless intensively studying a bear population, agencies poorly assess the total mortality that bears sustain, and may increase quotas when they should be decreasing them.[54] Despite available habitat, bears may not be in them because of human presence, or they are unevenly distributed across that state's particular black bear habitat.[55]

As Johnson et al. (2018) and others suggest, because North American habitats are altered by human development and changed by the climate crisis, wildlife managers must adapt and work to reduce human-bear conflicts, rather than rely upon lethal removals.[56] The problems associated with a warming climate and bears coming into contact with an expanding human population is problematic. When bears must live alongside humans, their chances for survival decrease dramatically because of vehicle collisions and agency actions.[57] Because of erratic weather events from the climate crisis including late season frosts or droughts, natural foods may be unavailable to bears, and in one study area of a heavily monitored bear population in Colorado, 57 percent of females declined because of human-caused mortalities from vehicle collisions, trophy hunting and predator control.[58] Expanded human development into bear habitats during the climate crisis exacerbates bear mortalities, and then agencies react by increasing trophy hunting quotas, when they should be reducing overall black bear mortalities.[59]

The time bears spend in the den is tied to air temperature and food availability (both natural and anthropogenic subsidies).[60] Study authors found that the warmer the temperatures and the more food is available, the longer the time bears will spend active as they maximize their opportunities to forage.[61] With a warming climate, black bears reduce their hibernation times and increase their active times, and in coming years, human-bear conflicts will likely become more pronounced resulting in greater black bear mortalities, including from hunters and agency removals, resulting in greater black bear population declines.[62]

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[53] H. E. Johnson et al., "Human Development and Climate Affect Hibernation in a Large Carnivore with Implications for Human-Carnivore Conflicts," *Journal of Applied Ecology* 55, no. 2 (Mar 2018), http://dx.doi.org/10.1111/1365-2664.13021; H. E. Johnson et al., "Shifting Perceptions of Risk and Reward: Dynamic Selection for Human Development by Black Bears in the Western United States," *Biological Conservation* 187 (Jul 2015), http://dx.doi.org/10.1016/j.biocon.2015.04.014; M. E. Obbard et al., "Relationships among Food Availability, Harvest, and Human-Bear Conflict at Landscape Scales in Ontario, Canada," *Ursus* 25, no. 2 (2014), http://dx.doi.org/10.2192/ursus-d-13-00018.1.

[54] Jared S. Laufenberg et al., "Compounding Effects of Human Development and a Natural Food Shortage on a Black Bear Population Along a Human Development-Wildland Interface," *Biological Conservation* 224 (2018/08/01/ 2018), http://dx.doi.org/https://doi.org/10.1016/j.biocon.2018.05.004; Lindsay Welfelt, Richard Beausoleil, and Robert Wielgus, "Factors Associated with Black Bear Density and Implications for Management," *The Journal of Wildlife Management* (08/25 2019), http://dx.doi.org/10.1002/jwmg.21744.

[55] Welfelt, Beausoleil, and Wielgus.

[56] Johnson et al; D. L. Lewis et al., "Modeling Black Bear Population Dynamics in a Human-Dominated Stochastic Environment," *Ecological Modelling* 294 (Dec 2014), http://dx.doi.org/10.1016/j.ecolmodel.2014.08.021.

[57] Johnson et al; Johnson et al; J. P. Beckmann and J. Berger, "Rapid Ecological and Behavioural Changes in Carnivores: The Responses of Black Bears (*Ursus Americanus*) to Altered Food," *Journal of Zoology* 261 (Oct 2003), http://dx.doi.org/10.1017/s0952836903004126.

[58] Laufenberg et al.

[59] Ibid.

[60] Johnson et al., "Human development and climate affect hibernation in a large carnivore with implications for human-carnivore conflicts."

[61] Johnson et al., "Human development and climate affect hibernation in a large carnivore with implications for human-carnivore conflicts."

[62] Johnson et al; Johnson et al; Lewis et al.

Black bear biologists warn that managers must limit recreational black bear killing to reduce total mortality, and especially during years of poor natural food production, which is readily predicted by weather events.[63]

Again, the total annual mortality that a black bear population can sustain is only between six and ten percent of the population; more than that is simply additive mortality.[64] Female bears rarely migrate—they prefer to live near their natal areas—this compounds the harms from trophy hunting and other sources of mortality that affect black bear populations.[65] The loss of females in the population reduces a bear population's ability to bounce back as they are the key to sustaining the population.[66]

6. Food availability plays a large role in the presence of bears in urban areas; human food sources are the root cause of human-bear conflicts

In their study of Aspen, Colorado bears, Baruch-Mordo et al. (2014) found that black bears who came to Aspen to prevent their starvation because of a native food failure subsequently reversed their behaviors and returned to the wilds when their native foods were again available.[67] Johnson et al. (2015), in their study of bears in three cities, Tahoe, Durango and Aspen, found that bears consistently changed their food-foraging behaviors, based upon food availability. In these cities, **bears used human foods as a subsidy rather than a staple.** They argue that bears who are labeled "nuisance", might not be "problem" bears all of the time. They also suggest that people need to make human foods less available to bears, especially in poor food years.[68] In short, despite claims that once bears have eaten food in urban areas that they are forever tainted, **studies show that bears will leave these areas once natural foods are again available.**[69] Bears weigh energy budgets and their safety when making decisions about where to forage.[70]

While some indicate that urban areas serve as a refuge for bears when there are food failures, Aspen, Colorado was not a refuge but an "ecological and evolutionary trap" because adult females were removed by agency personnel in Aspen, it became a black bear population sink.[71] In their synthesis article, Elfstrom et al. (2014) suggest that some bears, particularly females with cubs and subadults, use urban areas as a calculated trade-off to avoid death from despotic larger bears.[72] Urban areas are, because of agency removals, an unsustainable bear sink because so many breeding females are removed in food-poor years.[73]

7. ODFW cannot successfully hunt its way out of human-bear conflicts

In Oregon in 2017, 80 percent of bear complaints were centered around garbage. Yet, nine separate studies demonstrate that hunting bears will not resolve human-bear conflicts (referred to as "HBC" in the quote below) unless a bear population is reduced to an unsustainable level. While policymakers claim that opening or extending bear trophy

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[63] Johnson et al.
[64] Lindsay Suzanne Welfelt, "Black Bear Population Dynamics in the North Cascades" (Dissertation, Washington State University, 2018), https://search.proquest.com/openview/ec18d4337882347c86cd2eeb2a69ebd0/1.pdf?pq-origsite=gscholar&cbl=18750&diss=y.
[65] Laufenberg et al.
[66] Ibid.
[67] Baruch-Mordo et al.
[68] Johnson et al.
[69] J. S. Lewis et al., "Interspecific Interactions between Wild Felids Vary across Scales and Levels of Urbanization," *Ecology and Evolution* 5, no. 24 (Dec 2015), http://dx.doi.org/10.1002/ece3.1812; Baruch-Mordo et al.
[70] Lewis et al; Baruch-Mordo et al.
[71] Baruch-Mordo et al., 8.
[72] M. Elfstrom et al., "Ultimate and Proximate Mechanisms Underlying the Occurrence of Bears Close to Human Settlements: Review and Management Implications," *Mammal Review* 44, no. 1 (Jan 2014), http://dx.doi.org/10.1111/j.1365-2907.2012.00223.x; Marcus Elfström et al., "Does Despotic Behavior or Food Search Explain the Occurrence of Problem Brown Bears in Europe?," *The Journal of Wildlife Management* 78, no. 5 (2014), http://dx.doi.org/10.1002/jwmg.727.
[73] Baruch-Mordo et al.

hunts will result in fewer bears expanding into urban areas where they may cause problems,[74] studies show that bear hunting will only reduce conflicts in cases where the bear population is reduced below sustainable levels.[75] Obbard et al. (2014) write:

> We found no significant correlations between harvest and subsequent HBC human-bear conflicts. Although it may be intuitive to assume that harvesting more bears should reduce HBC, empirical support for this assumption is lacking despite considerable research (Garshelis 1989, Treves and Karanth 2003, Huygens et al. 2004, Tavss 2005, Treves 2009, Howe et al. 2010, Treves et al. 2010).[76]

Research clearly demonstrates that black bear hunting simply does not reduce human-bear conflicts. Pienaar et al. (2015) write:

> Members of the public are likely to believe that bear management and alteration of bear behavior are the solution to human-bear conflicts. They tend to favor trapping and relocating bears, opening a bear hunting season, and improving habitat . . . . In contrast, wildlife management agencies recognize that both lethal and non-lethal management of bears tend to be costly, time consuming, and difficult to implement in urban locations. Agencies also understand that these measures are ineffective in addressing root causes of human-bear conflicts, such as increased development of habitat, diverse public attitudes about bear management, and human food conditioning of bears (Peine 2001, Gore et al. 2006, Agree and Miller 2009, Don Carlos et al. 2009, Lowery et al. 2012).[77]

Bear hunts do not reduce conflicts because trophy hunters generally remove non-problem bears from the population; that is, the individuals not involved in nuisance behaviors.[78] Instead, hunters attempt to target large, male bears to acquire an impressive trophy,[79] but those bears are not the ones near humans.[80]

8. Solutions to alleviate human-bear conflicts must be multi-faceted for success

A. Bear Aware education campaigns must focus on bears' benefits to society to achieve success

Florida state biologists Barrett et al. (2014) emphasized that in working with homeowners and others, an **"all-or-none approach"** in neighborhoods was necessary to prevent negative human-bear encounters. That is, everyone needed to properly use bear-resistant trashcans and prevent attracting bears with other food sources. Barrett et al. (2014) write:

Proactive measures (e.g. securing trash, electrical fencing, education) dealing with human behavior are much more efficient than reactive methods (e.g., aversive conditioning, relocation, euthanasia) in reducing human-bear incidents

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[74] Hank Hristienko and Jr. McDonald, John E., "Going in the 21st Century: A Perspective on Trends and Controversies in the Management of the Black Bear" *Ursus* 18, no. 1 (2007); A. Treves, K. J. Kapp, and D. M. MacFarland, "American Black Bear Nuisance Complaints and Hunter Take," *Ursus* 21, no. 1 (2010).

[75] M. E. Obbard et al., "Relationships among Food Availability, Harvest, and Human-Bear Conflict at Landscape Scales in Ontario, Canada," *Ursus* 25, no. 2 (2014); E. J. Howe et al., "Do Public Complaints Reflect Trends in Human-Bear Conflict?" *Ursus* 21, no. 2 (2010).

[76] Obbard et al., Relationships among Food Availability, Harvest, and Human-Bear Conflict at Landscape Scales in Ontario, Canada."

[77] Elizabeth F. Pienaar, David Telesco, and Sarah Barrett, "Understanding People's Willingness to Implement Measures to Manage Human-Bear Conflict in Florida," *Journal of Wildlife Management* 79, no. 5 (2015)., p. 798.

[78] A. Treves, K. J. Kapp, and D. M. MacFarland, "American black bear nuisance complaints and hunter take," *Ursus* 21, no. 1 (2010), https://doi.org/10.2192/09gr012.1, <Go to ISI>://WOS:000277602700004; M. Elfström et al., "Ultimate and proximate mechanisms underlying the occurrence of bears close to human settlements: review and management implications," *Mamm Rev.* 44 (2014), https://doi.org/10.1111/j.1365-2907.2012.00223.x, http://dx.doi.org/10.1111/j.1365-2907.2012.00223.x.

[79] Darimont, Codding, and Hawkes, "Why men trophy hunt."; Chris T. Darimont et al., "The unique ecology of human predators," *Science* 349, no. 6250 (2015).

[80] Elfstrom et al., "Ultimate and proximate mechanisms underlying the occurrence of bears close to human settlements: review and management implications."

because changing or managing human behavior is more likely to provide longer-term solutions than managing a wildlife species alone (Baruch-Mordo et al. 2009).[81]

Oregon cannot kill its way out of human-bear conflicts for the reasons provided here. As Stringham (2013) suggests, agencies' policies for black bears and other wildlife such as mountain lions are often too rigid and simplistic to conform with modern societal values that prioritize humaneness and conservation over wanton killing.[82] For instance, he suggests that agencies should not kill bears unless they are a true public safety hazard—and not because someone felt frightened when they saw one.[83]

While food is the root cause of most negative human-bear interactions, Herrero et al. (2011) write: "Each year, millions of interactions between people and black bears occur without any injury to a person, although by 2 years of age most black bears have the physical capacity to kill a person."[84]

Many study authors have said that education campaigns solely designed to change people's behaviors, such as not attracting black bears will fail.[85] Even when augmented with enforcement, long-term, public-education campaigns such as preventing smoking, drunk driving or even wearing a seatbelt have not worked across populations.[86] Compliance with educational campaigns are only achieved by a motivated few individuals, and the same is true for bear aware-type campaigns, say the experts.

Worse, educational materials that elicit fear from people may even prevent them from taking the right actions. Dietsch et al. (2018) write: "Increased risk perception has been correlated with negative attitudes toward or lower tolerance of black bears, which are both strongly associated with support for lethal control of bears (Don Carlos et al 2009)"[87]

A host of biologists and social scientists suggest that bear aware campaigns must focus on the benefits to society as a result of maintaining healthy bear populations, along with co-existence education.[88] Tolerance for bears increases when residents learn the benefits of bears and have positive interactions with them, whereas intolerance stems from elevated risk perceptions, negative interactions and a greater trust in wildlife managers, dominionistic values and age.[89]

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[81] M. A. Barrett et al., "Testing Bear-Resistant Trash Cans in Residential Areas of Florida," Article, *Southeastern Naturalist* 13, no. 1 (Mar 2014), https://doi.org/10.1656/058.013.0102, <Go to ISI>://WOS:000333891100005., p. 36.

[82] Stephen R. Stringham, "Managing risk from bears and other potentially lethal wildlife: predictability, accountability, and liability," *Human-Wildlife Interactions* 7, no. 1 (2013).

[83] Stringham, "Managing risk from bears and other potentially lethal wildlife: predictability, accountability, and liability."

[84] S. Herrero et al., "Fatal Attacks by American Black Bear on People: 1900-2009," *Journal of Wildlife Management* 75, no. 3 (Apr 2011): 599, http://dx.doi.org/10.1002/jwmg.72.

[85] A. M. Dietsch et al., "Education Is Not a Panacea for Reducing Human-Black Bear Conflicts," *Ecological Modelling* 367 (Jan 2018), http://dx.doi.org/10.1016/j.ecolmodel.2017.11.005; M. L. Gore and B. A. Knuth, "Mass Media Effect on the Operating Environment of a Wildlife-Related Risk-Communication Campaign," *Journal of Wildlife Management* 73, no. 8 (Nov 2009), http://dx.doi.org/10.2193/2008-343; K. Slagle et al., "Building Tolerance for Bears: A Communications Experiment," *Journal of Wildlife Management* 77, no. 4 (May 2013), http://dx.doi.org/10.1002/jwmg.515.

[86] Dietsch et al; M. A. Barrett et al., "Testing Bear-Resistant Trash Cans in Residential Areas of Florida," *Southeastern Naturalist* 13, no. 1 (Mar 2014), http://dx.doi.org/10.1656/058.013.0102.

[87] Dietsch et al., 11.

[88] Slagle et al; Bruskotter Jeremy T. and Wilson Robyn S., "Determining Where the Wild Things Will Be: Using Psychological Theory to Find Tolerance for Large Carnivores," *Conservation Letters* 7, no. 3 (2014), http://dx.doi.org/doi:10.1111/conl.12072; Stacy A. Lischka et al., "Understanding and Managing Human Tolerance for a Large Carnivore in a Residential System," *Biological Conservation* 238 (2019/10/01/ 2019), http://dx.doi.org/https://doi.org/10.1016/j.biocon.2019.07.034.

[89] Lischka et al.

Bears are also valued for their considerable ecological and aesthetic purposes.[90] They are one of the most photographed and watched animals in Yellowstone National Park.[91]

9. Oregon black bears are rare on the landscape and deserve to be conserved for future generations

The staff's proposal offers more of the same myopic thinking without thoughts about the emerging extinction crises that looms before us because of human folly, or about the growing desire of the wildlife-watching majority to abandon trophy hunting in favor of humane, conservation-oriented policies. Large-bodied carnivores are sparsely populated across vast areas, invest in few offspring, provide extended parental care to their young, have a tendency towards infanticide, and limit reproduction, and in light of these biological factors, they rely on social stability to maintain resiliency.[92]

Late to mature, females do not reach breeding age until they are between 4 and 6 years old.[93] Bears have a slow reproductive potential.[94] An average female produces two cubs in her first litter, and she will give birth to an average of three cubs in successive litters. However, bears have extended intervals between litters, averaging two to three years between litters.[95] In short, bears, a slow producing and long-lived species, are susceptible to overkill.[96] The numbers of native carnivores killed by states and individuals is likely 2.5 million animals annually.[97] Yet, these figures fail to include the likely massive but unknown numbers of human-induced mortalities as a result of vehicle collisions or by poachers.[98]

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[90] L. E. F. Harrer and T. Levi, "The Primacy of Bears as Seed Dispersers in Salmon-Bearing Ecosystems," *Ecosphere* 9, no. 1 (Jan 2018), http://dx.doi.org/10.1002/ecs2.2076; M. S. Enders and S. B. Vander Wall, "Black Bears Ursus Americanus Are Effective Seed Dispersers, with a Little Help from Their Friends," *Oikos* 121, no. 4 (Apr 2012), http://dx.doi.org/10.1111/j.1600-0706.2011.19710.x; K. Takahashi and K. Takahashi, "Spatial Distribution and Size of Small Canopy Gaps Created by Japanese Black Bears: Estimating Gap Size Using Dropped Branch Measurements," *Bmc Ecology* 13 (Jun 2013), http://dx.doi.org/10.1186/1472-6785-13-23.

[91] Slagle et al.

[92] J. L. Weaver, P. C. Paquet, and L. F. Ruggiero, "Resilience and conservation of large carnivores in the Rocky Mountains," *Conservation Biology* 10, no. 4 (Aug 1996), <Go to ISI>://A1996VC10300014; A. D. Wallach et al., "What is an apex predator?," *Oikos* 124, no. 11 (Nov 2015), https://doi.org/10.1111/oik.01977, <Go to ISI>://WOS:000363866900005.

[93] Garshelis and Hristienko, "State and provincial estimates of American black bear numbers versus assessments of population trend."

[94] S. Dobey et al., "Ecology of Florida black bears in the Okefenokee-Osceola ecosystem," *Wildlife Monographs*, no. 158 (Jan 2005), <Go to ISI>://WOS:000228658000001.

[95] Craig McLaughlin, "Black bear assessment and strategic plan," *Maine Department of Inland Fisheries and Wildlife* (1999); Dobey et al., "Ecology of Florida black bears in the Okefenokee-Osceola ecosystem." Garshelis and Hristienko, "State and provincial estimates of American black bear numbers versus assessments of population trend."

[96] Garshelis and Hristienko, "State and provincial estimates of American black bear numbers versus assessments of population trend."

[97] B. J. Bergstrom, "Carnivore conservation: shifting the paradigm from control to coexistence," *Journal of Mammalogy* 98, no. 1 (Feb 2017): 1, https://doi.org/10.1093/jmammal/gyw185, <Go to ISI>://WOS:000397232500001.

[98] Bergstrom, "Carnivore conservation: shifting the paradigm from control to coexistence." Chapron and Treves, "Blood does not buy goodwill: allowing culling increases poaching of a large carnivore."; D. E. Unger et al., "History and Current Status of the Black Bear in Kentucky," *Northeastern Naturalist* 20, no. 2 (Jun 2013), https://doi.org/10.1656/045.020.0206, <Go to ISI>://WOS:000321563700006; Koehler and Pierce, "Survival, cause-specific mortality, sex, and ages of American black bears in Washington state, USA." B. N. McLellan et al., "Rates and causes of grizzly bear mortality in the interior mountains of British Columbia, Alberta, Montana, Washington, and Idaho," *Journal of Wildlife Management* 63, no. 3 (Jul 1999), https://doi.org/10.2307/3802805, <Go to ISI>://WOS:000081441500017; Caitlin M. Glymph, "Spatially explicit model of areas between suitable black bear habitat in east Texas and black bear populations in Louisiana, Arkansas, and Oklahoma" (Masters M.A., Stephen F. Austin State University, 2017), https://scholarworks.sfasu.edu/etds/128/; B. J. Wear, R. Eastridge, and J. D. Clark, "Factors affecting settling, survival, and viability of black bears reintroduced to Felsenthal National Wildlife Refuge, Arkansas," *Wildlife Society Bulletin* 33, no. 4 (2005), https://doi.org/10.2193/0091-7648(2005)33[1363:FASSAV]2.0.CO;2, http://pubs.er.usgs.gov/publication/70027414.

ODFW has not accurately counted its bears or determined its population trend. Not having good quality population and trend data is a concern, if this is the foundation upon which hunting objectives are set. A study of states' trend and population data showed about half of the states miscalculated population trends. Garshelis and Hristienko (2006) write that many state wildlife managers fail to adequately investigation population sizes and trends, but rather rely on guesses.[99]

10. Black bears are an important umbrella species and ecological actors who increase biodiversity

Black bears are important in maintaining the ecological systems in their forests. They disperse seeds across vast distances, open up canopies, and amend soils through their various behaviors. Black bears eat fruits and deposit them across long distances (and mice assist by removing the seeds from bear feces, where they would otherwise mildew, and cache them in soil where some will grow).[100] Bears cause small-scale ecological disturbance to the canopy that allows sun to filter to the forest floor, which creates greater biological diversity.[101] Bears break logs while grubbing, which helps the decomposition process and facilitates the return of nutrients to the soil. In one study, researchers found that black bears were the dominant species moving salmon from streams into riparian zones. Bears ate about half of the salmon, leaving remnants which contributed to greater tree ring growth. They also found higher plant growth along the riparian areas where bear trails existed and where bears' urine deposit was high.[102]

11. Conclusion

Rather than considering the incredible sentience of black bears, the benefits to the biological diversity that bears bring to Oregon's forests and the harms of hunting bears during springtime and fall, we're disappointed to see yet another proposed increase in the cull of Oregon's black bears by trophy hunters. We ask the Commission to reject the quota increase and instead reduce the state's entire quota to a number between six and ten percent of the State's population of bears. We ask that springtime hunts cease because of biologists' concerns about the persistence of bears in the wake of climate change, but also because of the enormous welfare concerns involved in springtime hunts. We affirmatively include all of the studies cited herein as part of this administrative record. If you need access to any, please let us know.

Sincerely,

Kelly Peterson
Oregon Senior State Director
The Humane Society of the United States
kpeterson@humanesociety.org

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[99] Garshelis and Hristienko, "State and provincial estimates of American black bear numbers versus assessments of population trend.", p. 6

[100] M. S. Enders and S. B. Vander Wall, "Black bears Ursus americanus are effective seed dispersers, with a little help from their friends," *Oikos* 121, no. 4 (Apr 2012), https://doi.org/10.1111/j.1600-0706.2011.19710.x, <Go to ISI>://WOS:000301537200013.

[101] K. Takahashi and K. Takahashi, "Spatial distribution and size of small canopy gaps created by Japanese black bears: estimating gap size using dropped branch measurements," *Bmc Ecology* 13 (Jun 2013), 23, https://doi.org/10.1186/1472-6785-13-23, <Go to ISI>://WOS:000322126400001.

[102] T. E. Reimchen and C. H. Fox, "Fine-scale spatiotemporal influences of salmon on growth and nitrogen signatures of Sitka spruce tree rings," *Bmc Ecology* 13 (Oct 2013), 38, https://doi.org/10.1186/1472-6785-13-38, <Go to ISI>://WOS:000325284000001.

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