Via Email

October 25, 2023

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Re: Petition to amend the Washington Administrative Code to reverse unscientific 2019-21 rule changes jeopardizing state bear and cougar populations

Dear Commissioners and WDFW Rules Coordinator:

In accordance with RCW 34.05.330, please accept this petition asking the Washington Fish & Wildlife Commission (Commission) to undertake rulemaking to amend WACs 220-415-100, 220-400-050, and 220-415-090, to reverse the arbitrary and capricious rules the Commission enacted in 2019-2021 to change hunting seasons for bear and cougar. These changes disregarded science and were contrary to the Commission's responsibilities to protect, preserve, and perpetuate cougar and bear populations; minimize human-wildlife conflicts; and manage wildlife in the public trust.

In 2019, the Washington Department of Fish and Wildlife (Department or WDFW). increased bear hunting (2019 Bear Hunt Rule) even though it had just learned that bear densities were much lower in many areas than previously believed, and that the statewide population was about 30% smaller than long assumed. In 2020, WDFW increased cougar hunting (2020 Cougar Hunt Rule) even though the number of cougars being killed in many GMUs already exceeded the population's growth rate. And it took the unprecedented step of making both rules *permanent*, so they would not be revisited during the three-year season-setting process—along with the rules for *every other* game species.

The state's bear and cougar populations may have already sustained severe damage. They cannot continue to wait for long-promised plans and policies to be in place before the Commission provides them with relief from the current, unsustainable levels of hunting. The undersigned petitioners (Petitioners) urge members of the Commission (Commissioners) to take action before the 2024-25 hunting season to reverse these rules and follow the longstanding recommendations of Department staff. Such immediate action is necessary to be consistent with WDFW's 25-Year Strategic Plan and the 2015-2021 Game Management Plan, and most importantly, to fulfill the Department's mandate and meet its responsibilities as a public trustee.

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I. INTRODUCTION

WDFW asserts that "[s]cience is the core of wildlife management," and that "[s]cience and the professional judgment of biologists is the foundation for all objectives and strategies."[1]

In 2019 and 2020, however, the Commission approved rule changes to expand bear and cougar hunting that were based on politics, not science, disregarding the professional judgment of its own experts to respond to "social political stress" from a small group of Washington residents.[2] These decisions allowed for cougars to continue to be killed far above the level that scientists have determined is sustainable and led to a nearly 50% increase in the number of bears Washington hunters kill each year, even as the Department discovered that the bear population was approximately 30% lower than it had long assumed.

In proposing these rules, management ignored the Department's own extensive field research on Washington's bear and cougar populations, on which the taxpayers had spent millions of dollars, to manufacture "political populations" of cougars and bears—"populations with ecological attributes constructed to serve political interests."[3] In both cases, management failed to provide the Commission critical information, including the risks of increasing hunting and the warning signs of overexploitation, even though that information was in WDFW's own reports and the published work of its own biologists. WDFW thus confirmed the accuracy of the 2018 culture survey for the America's Wildlife Values report, in which 70% of Department employees said that if forced to choose, WDFW management would elevate politics over science.[4]

Table 1: Employee views on WDFW's management priorities.[5]

If forced to choose, my agency would place greater priority on…			
Protecting wildlife habitat	57.6%	Providing recreational opportunities	42.4%
Meeting the needs of the resources we manage	49.7%	Meeting the needs of the public	50.3%
Protecting endangered species	62.8%	Protecting game species	37.2%
Long-term planning	34.4%	Day-to-day management	65.6%
Efficiency	35.1%	Legitimacy	64.9%
Carnivores	42.0%	Ungulates	58.0%
Hunter recruitment and retention	45.1%	Reaching a diversity of interests	54.9%
Process	52.8%	Outcome	47.2%
Doing what is best	46.3%	Doing what is fair	53.7%
Tradition	71.9%	Innovation	28.1%
The present	68.6%	The future	31.4%
Science	29.9%	Politics	70.1%
Remaining true to our roots	46.0%	Adapting to changing social conditions	54.0%
Educating the public on what is right	35.2%	Listening to public concern	64.8%
Traditional stakeholders	67.7%	All members of the public	32.3%
Being Proactive	23.3%	Being Reactive	76.7%

The Department's omission of crucial information and the purely political motivations behind these rule changes led to "policy that appears uninformed by or contrary to the weight of the evidence," posing not only a danger to Washington's cougar and bear populations, but also further eroding public trust and confidence in both the Department and the Commission.[6]

Making matters even worse, Department management surreptitiously removed the sunset date from the expanded cougar hunting rule when it was approved in 2020, and then made the same change to the bear hunting rule in 2021, These changes violated the 2015-2021 Game Management Plan (GMP), which provides these rules are to be reviewed every three years, and rendered the unsustainable level of killing a permanent change that does not come up for automatic review every three years. Now, WDFW management is resisting calls to reopen the bear and cougar hunting rules for the upcoming 2024 three-year season-setting process, during which it will examine the hunting rules for *every other game species*. Instead of being open to consider adjustments to these rules, management insists on continuing to defer consideration of bear and cougar hunting seasons until it completes the new Game Management Plan, which is already three years behind schedule, and which the Department continues to delay.

The state's cougars and bears cannot afford to wait any longer for the Commission to change these unscientific, destructive, and dangerous rules. The 2019 and 2020 rule changes have already significantly harmed Washington's bears and cougars and increased the risk of human-cougar "public safety" conflicts.[7] The longer the Commission waits to reverse these rules, the more damage will be done, and the more difficult it will be to reverse.

Petitioners thus ask the Commission to accept this rulemaking petition and direct the Department to propose rules during the upcoming 2024 three-year season-setting process that will do the following:

(1) reverse the decisions made in 2019 and 2020 to increase bear and cougar hunting to unsustainable levels;

(2) compensate for the dramatic increase in the "management" kills of cougars by ensuring that all sources of human-caused mortality are considered when calculating cougar hunting guidelines;

(3) provide for the immediate closure of cougar hunting once total mortality has reached the maximum hunting guideline in each PMU;

(4) standardize bear hunting seasons statewide to run from September 1 through November 15, and institute a statewide "bag limit" of one bear per hunter;

(5) provide for better compliance with mandatory reporting rules; and

(6) specify that the new rules will sunset at the conclusion of the 2026-27 hunting season, to ensure that cougar and bear hunting levels will be reexamined during the next three-year season-setting process.

II. COMMISSION SHOULD REVERSE 2020 COUGAR HUNT RULE

A. Background

1. Cougars are critical to healthy Washington ecosystems

A 2021 study concluded that are only about 2,065 "independent-age" cougars in Washington,[8] a category that includes both adult cougars and "sub-adult" cougars between 18 months and 2 years old. But this iconic species has an ecological impact far beyond its numbers.

Cougars are a keystone species critical to healthy ecosystems. As apex carnivores, cougars' predation behaviors create trophic cascades throughout their ecosystems that facilitate greater biological diversity.[9] Studies have documented that cougars interact with 485 other species, including mammals, birds, amphibians, reptiles, fish, invertebrates, and plants, which may be the most diverse set of biotic relationships for any carnivore in the world.[10] Like beavers, cougars are "ecosystem engineers," because they increase biodiversity and help hold ecosystems together.[11] Cougar kills provide nutrients to the soil, habitat for invertebrates, and food for diverse species, including insects, birds, and other mammals.[12] They help maintain the health of prey populations by removing ungulates sickened by chronic wasting disease[13] and modulating the ungulate population. They also improve riparian health by reducing the time ungulates spend browsing near waterways, and even protect the safety of motor vehicle drivers, by helping to keep deer off roadways.[14]

***Figure 1: Ecological Benefits of Cougar Presence*[15]**

In 2011, an international team of 24 scientists published a paper describing the global threat stemming from the disappearance of apex predators, calling it perhaps "humankind's most pervasive influence on nature."[16] The study pointed to recent research that revealed the "extensive cascading effects of [the disappearance of apex predators] in marine, terrestrial and freshwater ecosystems worldwide," disrupting ecological processes including disease transmission, invasive species spread, wildfires, and carbon sequestration.[17] It concluded that the loss of apex carnivores such as cougars had been responsible for "pandemics, population collapses of species we value and eruptions of those we do not, major shifts in ecosystem states, and losses of diverse ecosystem services."[18]

2. Cougar social structure creates population stability

Adult male cougars establish, patrol, and defend large territories, which overlap with the ranges of several female cougars and their young.[19] Cougar kittens may stay with their mothers until they are 18 months old, so sexually mature female cougars typically birth a litter only every other year.[20]

Adult male cougars will fight to the death (called "intra-specific strife") to defend their territories against other males, and this is one of the leading causes of natural death in the population.[21] This territorial structure reduces encounters between cougars, making conflicts less likely and promoting a spatial distribution that helps prevent overexploitation of prey in local areas.[22] On the other hand, when a mature male cougar who controls a territory is killed, it opens up a vacant area where multiple sub-adult males can move in. Because cougars do not develop strong territorial instincts until they are about four, these younger cougars may occupy overlapping ranges for years, which may increase local cougar density.[23]

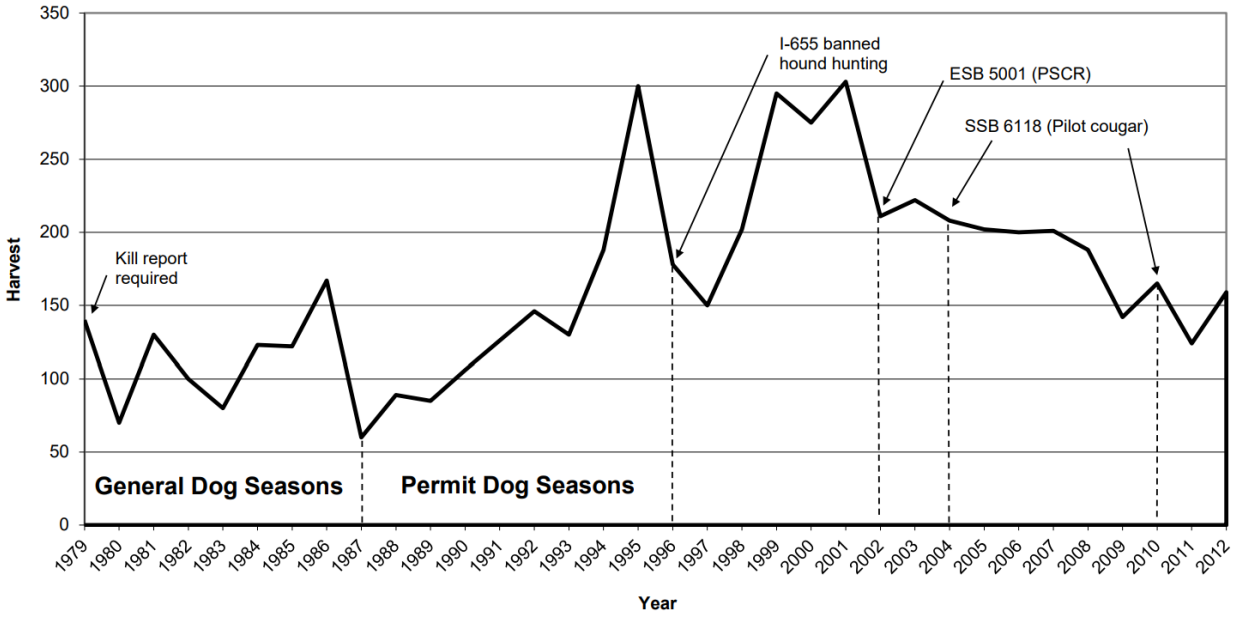
Because of their territoriality, stable cougar populations regulate themselves in accordance with available habitat, and do not require hunting to be controlled.[24] Cougar numbers are also controlled by so-called "bottom-up" forces, that is, the amount of prey available.[25] Where hunting is allowed, it is by far the greatest source of cougar mortality, but a lack of hunting does not result in cougar-population irruption.[26] For example, cougar hunting has been illegal in California since Governor Ronald Reagan put a moratorium on cougar trophy hunting in 1972, which was then made permanent by a voter proposition passed in 1990.[27] But there was no cougar irruption as a result. In fact, California cougar density is similar to the density in 10 states where cougars are hunted.[28]

3. Washington cougar management has historically dictated by politics

Washington and its counties paid a bounty on cougars from 1905 to 1960, after which there were no longer enough cougars to sustain the program.[29] Cougars were classified as a "game" animal in 1966.[30] Recreational hunters tracked, treed, and shot cougars with the assistance of hounds until 1996, when the people of Washington approved Initiative 655, which banned the use of hounds to hunt cougars, bobcats, and bears.[31] The state legislature approved a limited pilot project that allowed some use of hounds for recreational cougar hunting between 2004 and 2010, but dogs have not been used in sport hunting since that time.[32]

WDFW immediately engineered a backlash to I-655 by taking steps to increase cougar mortality, including changing cougar hunting from a permit-only season into a general over-the-counter season, increasing the length of the season from 60 days (on average) to 7½ months, and lowering the cost of cougar hunting licenses.[33] Although many claimed at the March 2019 meeting that I-655 decreased the number of cougars killed by hunters, the opposite is true, as WDFW's aggressive measures significantly boosted the number of cougars killed each year (Figure 2). Ten-year averages before and after I- 655 show that reported kills increased by 67% following the hound hunting ban, from an average of 134 cougars a year to 224.[34]

Figure 2. Recorded Washington cougar mortality, 1979 to 2012.[35]



Beginning in the 2012-2013 season, WDFW implemented a new system based on decades of cougar density research (described *supra* at Section II (C)(1)), which imposed hunting guidelines of 12-16% of the estimated independent-aged cougar population[36] in 45 of 50 Population Management Units (PMUs), which comprise one or more Game Management Units (GMUs).[37] This management approach was memorialized in the 2015-2021 Game Management Plan as the Department's cougar policy.[38]

However, the new 2012 rules also implemented a split-season structure, with an early hunting season from September 1 to December 31, during which the guidelines did not apply, and a late hunting season from January 1 to March 31, which could be closed if the guidelines were met.[39] This new season structure significantly extended the general cougar hunting season for most areas of the state.[40]

In April 2015, the Commission extended the late cougar hunting season from March 31 to April 30, so that it overlapped WDFW's "season year," which runs from April 1 to March 31.[41] In addition, based on a last-minute amendment offered by Commission Chair Miranda Wecker, the Commission voted to change the guidelines to allow hunters to kill 17 to 21% of the cougar population each season in all GMUs in the northeast that "overlap known wolf packs."[42] Several wildlife advocacy organizations sought reversal of that change in a rulemaking petition[43] that the Commission denied on August 27, 2015, but which Governor Jay Inslee granted on appeal because WDFW had not allowed public review and comment on the change.[44]

In 2018, WDFW proposed a rule to reverse to extend the hunting season and restore an end date of March 31.[45] WDFW provided a rationale for this change:

> [The proposed amendments will] assist in minimizing disturbance to ungulates that are already stressed from winter and birthing; minimize confusion and burden on hunters to buy two licenses; allow hunters who are deer and elk hunting to take a cougar through December 15 without having to call the toll free line to determine

if the area is open or not; provide the department an earlier timeframe to manage the harvest guidelines; and attempt to minimize potential of exceeding the harvest guidelines.[46]

However, WDFW reversed itself and withdrew the proposed change, after 97 hunters indicated they opposed it, with most indicating they wanted extended cougar hunting.[47] Management did not suggest that it had changed its mind about any of the compelling reasons for seeking this change but indicated that the reversal was due to the 97 people who opposed the proposal.[48]

B. Commission Approves Unscientific, Reactionary Rule to Increase Cougar Mortality

1. March 2019 Commission Meeting spurs reactionary hunting increases

The Commission's 2019 and 2020 expansion of bear and cougar hunting stemmed directly from public testimony during the March 1-2, 2019, Commission meeting in Spokane. During this meeting, an organized group of roughly 40 citizens from northeast Washington voiced a wide range of complaints about carnivores, including wolves, bears, and cougars.[49]

Many members of this group testified about their personal belief that carnivores had harmed ungulate populations, while others spoke about their pets or livestock, and some discussed public safety concerns.[50] Many contended that WDFW's science-based cougar densities were too low, based on anecdotal stories about the number of cougars and bears they had seen or killed. On the other hand, they argued that WDFW's estimates of ungulate populations were too high, because they had not been seeing or killing as many ungulates as in prior years. Speakers attacked the Department, denigrated its science, insulted its staff, and even accused WDFW staff of lying to them. They contended that WDFW's main job was to be a "predator management unit," that bears and cougars were "out of control," and that WDFW needed to allow people to start "eliminating" carnivores. Claimed one speaker: "We've got wolves that come in. We can't shoot those. So you got to get rid of the bears and cougars and the coyotes."[51]

The speakers demanded that WDFW take various actions: start a wolf-hunting season; bring hound hunting back; allow year-round cougar hunting with no limits; increase or lift cougar-hunting guidelines; adjust cougar-hunting limits to accommodate the number of cougars killed each year; allow everyone the opportunity to hunt bears in the spring; lengthen the hunting season for bears to include August; and allow hunters statewide to kill two bears every year.[52]

Some Commissioners voiced immediate agreement. Said former Commission Jay Holtzmiller: "Predator management isn't seeing how damn many predators we can raise and …we've been in that mode."[53]

In turn, WDFW management immediately began to take action based on this anecdotal testimony—without performing a critical evaluation of its accuracy, based on peer-reviewed, published journal articles and the expert opinions of its staff, which had spent decades studying the state's cougar and bear populations. Nor did management attempt to educate the public about what the science and data told them, including that: native carnivore populations were not "out of control;" there is little correlation between reported sightings of bears and cougars and population numbers; the best way to reduce conflicts with bears is to remove sources of food such as garbage, fruit trees, and bird seed; the best way to reduce conflicts with cougars it to

avoid feeding ungulates and to secure chickens, goats and sheep in enclosed structures; hunting bears and cougars does not reduce livestock predations or improve safety, but may actually do the opposite. Most importantly, management did not tell the public that overhunting and recent increases in management kills may have already created more conflicts, *perhaps leading to the very problems people had complained about at the Spokane meeting.*

Instead of assuming a leadership role by educating the public and pursuing effective management strategies grounded in science, WDFW abandoned its ethics and its management responsibility, to acquiesce to the demands of a small but vocal minority. Indeed, within *three days* of the meeting, on March 5, 2019, the Department issued a CR-101, notifying the public that it was "considering rule changes related to black bear seasons and regulations and cougar seasons and regulations."[54]

2. Management gives Commission options for increasing cougar mortality

On April 5, 2019, WDFW Director Kelly Susewind updated the Commission on the process of responding to the public's request that "we be more aggressive about cougar removal, cougar management and public safety."[55] He indicated that a proposal to kill more bears would be immediately forthcoming, but that a new cougar rule would take longer because "this is an incredibly contentious issue [and] not everybody wants cougars removed." [56]

In the meantime, Susewind said he planned to issue a memo to wildlife and enforcement staff to direct them to kill more cougars in response to citizen complaints:

> We will provide very clear direction for them that we have their back [and] that our priority is on safety and timely response. And if there's going to be an error in judgment, err on the side of removal of those animals, we just can't…have this public safety concern and have a genuine discussion around this. So, I want to make sure…that if we do make a mistake, it's a mistake on the side of public safety and removal.[57]

The memo Susewind ultimately issued directed enforcement and conflict staff to "make every reasonable effort to remove the offending animal(s)" when there is a public safety concern or when livestock have been killed.[58]

On October 19, 2019, WDFW law enforcement gave a public safety presentation, which noted that WDFW staff were killing more cougars than ever before. While WDFW had killed an average of only 28 cougars a year statewide from 2015 to 2017, it killed 80 cougars in 2018, and 107 in 2019 (through September). Law enforcement reported that most of the cougars WDFW was killing were in Region 1, with 62 kills in that region so far in 2019.[59] Management acknowledged that WDFW does not count these kills toward the maximum hunting limits or assess them as part of its population management decisions.

On February 5, 2020, WDFW published a CR-102 proposing potential rule changes "intended to extend seasons in areas where harvest has been historically high, and where cougar human conflict is also high," so as to "shift a proportion of the cougar removal, currently carried out by agency personnel, to hunters."[60] During a Commission briefing on March 13, 2020, Director Susewind indicated he was not satisfied with the number of cougars that could be killed

through this proposal, but that it was all that was possible "while staying within our existing game management plan."[61]

However, Susewind admitted that expanding cougar hunting would not address the core concerns raised in the March 2019 meeting, telling the Commission in April 2019 that "[r]ecreational hunting is really not an effective tool to manage the depredation and public safety side."

The options WDFW proposed were thus aimed at manipulating the standards in the Game Management Plan to increase the number of cougars hunters could kill, while still allowing the Department to technically claim it was only allowing hunters to kill 12-16% of the local population each year, as mandated by the Plan. WDFW management presented these options to the Commission for a vote on April 10, 2020.

Table 2: Options presented to Commission in April 2020 to increase cougar mortalities.[62]

Option comparison

	Option 1 median density			Option 2 Median density adult only			Option 3 extend season			Option 4 extend season adult only		
Hunt Area	Harvest Guideline		Change from 2019	Harvest Guideline		Change from 2019	Harvest Guideline		Change from 2019	Harvest Guideline		Change from 2019
Total Guideline	220	293	**+32**	178	242	**-19**	273	346	**+85**	229	295	**+34**
Estimated Harvest	194	**259**	**+15**	225	**306**	**+62**	241	**306**	**+62**	289	**373**	**+129**
Statewide % harvest based on statewide median density	9.1	12.1		10.5	14.3		11.3	14.3		13.6	17.5	

Option 1. The Department described Option 1 as the "status quo," but it would have increased cougar hunting guidelines by 12.3%, or 32 cougars statewide, by using the median to estimate statewide density rather than the mean.[63] The Department asserted the median was a better metric because it eliminated outliers in the data but did not explain how outliers had skewed the data, or why the median would be more accurate.[64]

Option 2. Under Option 2, the Department would use the median density described in Option 1 and exclude sub-adult cougars from both the estimated densities and the cougars counted toward the maximum "harvest" guidelines that prompt PMU closure.[65] The guidelines already excluded cougars under 18 months old (who are not yet "independent aged"), but this change would also arbitrarily exclude all "sub-adult" cougars under 24 months and abandon the GMP goal of managing at the growth rate.

By excluding sub-adult cougars, this option gives the impression of lower densities and lower hunting guidelines in each PMU. However, in reality, it would increase the number of

cougars that could be killed, because cougars between 18 and 24 months old are a disproportionate percentage of the hunted population. The Department indicated that about 30% of the cougars whom hunters kill each year fall within this age class,[66] and estimated that this change would allow hunters to kill 47 more cougars each year than Option 1. This option would increase the number of cougars likely to be killed each year by 25%, or 62 cougars statewide, over the rule in place in 2019.[67]

Option 3. Under Option 3, Department management proposed to artificially inflate its estimates of cougar densities in certain PMUs, so it could allow hunters to kill more cougars in those areas and still claim it was following the GMP by capping hunter kills at 16% of the population. Specifically, Option 3 would inflate the purported densities in 19 PMUs where hunters had regularly exceeded the maximum guideline, setting new guidelines that would reflect the highest "harvest" level in the past 5 years. The impact would be to increase the hunting guidelines by 32.6%, or 85 cougars statewide. [68]

Option 4. Option 4 combined the first three options, to (1) raise the estimated densities by using the state median rather than the mean; (2) count only adult cougars over two years old toward the hunting guidelines; and (3) inflate the density estimates in the PMUs where hunters had exceeded the guidelines in the last five years to levels necessary to prevent the season from closing early.[69] Option 4 maximized the number of cougars that could be killed each year, raising it by 129 cougars per year over the 2019 guidelines—***an increase of more than 50%.***[70]

Although there was no explanation or discussion of this change, all management's rule proposals removed the years "2018-2019 and 2019-2020" from the old rule, without replacing them with a new span of years.[71] This differed from the proposed adjustments to all other hunting seasons that were part of the same CR-102, which merely updated outdated years, so that the new rules would be reconsidered as part of the next years' three-year season setting process.[72] The impact of this change was to make the new cougar rule a permanent rule that would no longer come up for regular review along with all other hunting rules.

3. Commissioners choose most extreme option

On April 10, 2020, the Commission voted to approve Option 4, the most extreme option.[73] Prior to the vote, management summarized public comment on the proposed rule, which came through an online hunter survey and through emails from the public. Of respondents to the hunter survey, 52% generally supported the proposed options and 34% opposed, with 34 providing written comments in support and 55 people providing written comments against.[74] WDFW also received 638 emails about the Department's proposal, although it dismissed 532 of the emails opposing the proposed change as merely a "form letter."[75] Of the 638 emails, 632 of them either supported Option 1 or urged WDFW to make no change.[76] Although WDFW received many formal letters from several organizations including significant scientific references, its Concise Explanatory Statement acknowledges only a single letter sent by the Humane Society of the United States (HSUS), which included an independent March 2020 poll indicating that 65% of Washingtonians oppose trophy hunting of cougars.[77]

Although the opposition of 97 hunters was enough to cause WDFW to withdraw its proposal the prior year to *reduce* cougar hunting, the fact that 632 of the 638 emails it received

(or 99%) were from people who opposed an *increase* in cougar hunting did not give it a moment's pause.

Before the final vote, some of the Commissioners expressed puzzlement about the progression from the public safety and predation concerns raised in March 2019 to the final rule expanding hunting, which both staff and the Commissioners who spoke in favor of the rule agreed would not improve public safety or lessen conflict.[78]

Commissioner Barbara Baker was the lone skeptic on the wildlife committee:

> It's been stated clearly today that harvest within the game management plan won't have any effect on public safety. I think that almost all the heartfelt and emotional testimony that we have received…both from Spokane and then most recently, Kennewick, has been on that subject. My question has repeatedly been, how we can quantify what results our actions will have on the behavior of the cougars, and harvesting more cougars? It's not going to have a positive effect. All the science that I've read said that there's a possibility it will have a detrimental effect. And for that reason, I can't support it. What I'd like to see us do instead is really take on this public safety issue hard.[79]

Commissioners David Graybill and Bradley Smith agreed with Baker and joined her in voting against the proposal. Said Graybill: "In my opinion, I think we are trying to appease the residents of [the northeast] region and deviating from the available science to do that.…And although I appreciate the concern and all the testimony that we've received from that region, I think it's critical that we abide by the best available science and not deviate just for the sake of trying to respond[.]"[80]

There is no evidence in any of the recorded committee or full commission meetings that the Commission discussed the removal of dates from the title of all the proposed options, or that it realized that doing so would render the rule permanent and prevent it from being automatically considered in the three-year season-setting process.

After about an hour of discussion, the Commission voted 6-3 on April 10, 2020, to approve Option 4 and make it a permanent rule. Following the vote, Commissioner Thorburn told the Spokane *Spokesman-Review*: "I've been wanting to fix the population estimate for a long time and this was the opportunity to do it."[81] She added that "[w]e were really clear that what we were looking at today had to do with hunter opportunity and harvest management, and really was not directly dealing with the concerns that have been brought to us by the community."[82]

C. The 2020 Cougar Hunt Rule was a Political Decision that Disregarded Science

The 2020 Cougar Hunt Rule ignored the best available science in a rush to answer the demands of a small group of citizens, whose testimony was anecdotal and not informed by science. It disrespected and discarded decades of WDFW's own scientific research on cougar densities and sustainable rates of hunting; ratified the continuation of high cougar mortality levels that staff had repeatedly warned were damaging the state cougar population; opted to increase the *appearance* of safety at the price of *actual* safety; and broke the standards set by its legislative mandate, 25-Year Strategic Plan, and Game Management Plan.

1. Decades of Department research went into pre-2020 hunting guidelines

Over the past 25 years, WDFW has spent several million dollars on long-term research projects on cougar dynamics, which have resulted in nearly 35 peer-reviewed manuscripts published in top-tier research journals.[83] This research led to a new approach to cougar management that was first implemented in the 2012-2013 hunting season, and which is described in the 2015-2021 Game Management Plan as a means to assure "long-term sustainability, while at the same time maximizing recreational opportunities, and minimizing conflict with people."[84]

This approach is described in more detail in a 2013 paper by one former and three current Department scientists, which advocates for a "science-based approach to regulated harvest management founded on cougar behavior and social organization, in which harvest is regulated to maintain an older age structure to promote population and social stability." [85] In a 2011 presentation, two of these biologists advocated for this new approach as a means to move beyond the concept of "controlling" cougar populations to focus on "preserving territoriality, social stability, and an ecosystem management approach."[86]

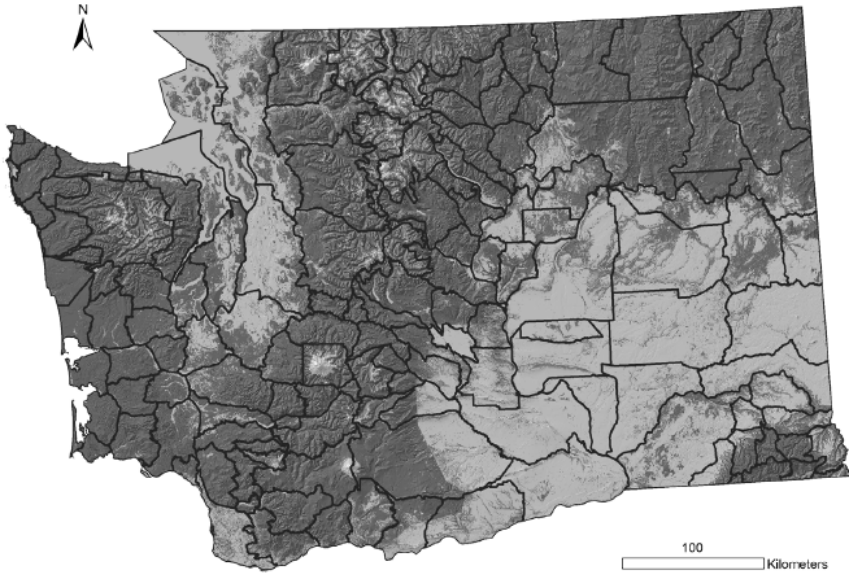
This approach seeks to eliminate the "source-sink" dynamic[87] by implementing hunting limits in GMU's around the state to keep hunter mortality consistently below the intrinsic growth rate for a non-hunted cougar population.[88] Four steps were key to the approach taken in the GMP: (1) establishing an average statewide cougar density; (2) identifying cougar habitat in each PMU and applying the density estimate to arrive at estimated cougar populations for each PMU; (3) determining the cougar population's intrinsic growth rate; and (4) setting maximum hunter guidelines in each PMU, based on the estimated cougar population and the population growth rate, and accounting for other sources of mortality.

Density. The most difficult step in this process is the calculation of cougar densities because the process of making accurate estimates of cougar density is time-consuming and expensive. It is very difficult to take a census of cougar populations, because they are highly secretive, use large areas (one home range can cover over 100 square miles), and live in low population densities. Although individually calculating the population for each PMU would thus be prohibitive, WDFW conducted research between 1998 and 2021,[89] including a 16-year field effort, which has resulted in density calculations for five different areas within the state and an average statewide density.[90] The results of this research were summarized in multiple studies, including a 2013 paper co-authored by three current Department scientists.[91]

The conclusions from the 2013 paper were refined in a 2021 publication by five current Department scientists, who analyzed average densities derived from five long-term studies conducted in different regions of Washington, including the Blue Mountains region and Stevens, Okanogan, King, and Kittitas counties.[92] These five studies yielded a range of average densities between 1.55 to 2.79 independent-aged cougars/100km^2, from which scientists calculated an average statewide density of 2.2 cougars/100km^2.[93] That finding is similar to the density posited in the 2013 paper. Confidence in these density ranges and was further bolstered by a 2022 study, which calculated a mean density for cougars across their U.S. range of between 1.62 and 2.02 independent-age cougars/100km^2, once various published density estimates were corrected for sources of bias, study flaws, and the use of inconsistent methods.[94]

Habitat. WDFW staff used its research to identify habitat used by cougars, and then used a habitat map created by the U.S. Fish and Wildlife Service and the U.S. Geological Survey to calculate the amount of cougar habitat in each PMU.[95]

Figure 3. Map showing distribution of cougar habitat (shaded dark) and GMU boundaries.[96]



Growth Rate. Wild cougar populations have an intrinsic growth rate, and the population will decline if overall mortality exceeds that growth rate over time. In the early 2010s, Washington scientists conducted a series of studies that showed that the intrinsic growth rate for Washington's cougars was 14%, with a margin of error of +/- 2%.[97] The 12-16% range for the cougar growth rate has been validated by several studies in Washington and other western states, including a study that documented a 12% growth rate in Montana's cougar population,[98] a Colorado study that demonstrated a slight population decline at a 15.5% hunting rate,[99] and a 10-year research project that showed that an average hunting rate of 14% over 10 years resulted in a population decline in northeast Washington.[100]

The authors of the 2013 paper emphasized that the maximum "rate of growth for an unhunted population should not be the goal for harvest but rather a maximum not to exceed if a stable population is to be achieved."[101] They also emphasized the importance of taking into account *all* sources of mortality when setting hunting guidelines:

> Although knowledge of population abundance and density is critical for sound management of cougars, it is also important that managers be aware that harvest mortality can be additive to natural mortality (Robinson *et al.* 2008; Cooley *et al.* 2009b; Robinson and DeSimone 2011). Failing to account for and include all mortality sources may obscure estimates of population trajectory and underestimate the impact of harvest on demographics and cougar social structure (Cooley *et al.* 2009b; Morrison 2010; Robinson and DeSimone 2011).[102]

To illustrate the importance of considering non-hunter mortality, the paper listed the sources of mortality for 79 radiomarked cougars during 4 concurrent state research efforts: 51%

were killed by hunters, but at least another 27% died of causes related to humans, including 14% in agency control actions; 6% due to motor-vehicle collisions, 4% from tribal predator control actions, and 3% due to poaching.[103]

Guidelines. The Game Management Plan estimated the cougar population in each PMU by applying the average statewide density to the amount of cougar habitat, resulting in population estimates ranging from 15 to 91 cougars per PMU.[104] It then calculated the maximum hunting rate for each PMU at 12-16% of the estimated cougar population, which represents the margin of error around the 14% growth rate.[105] These calculations produced the guidelines for each PMU that are detailed in the Game Management Plan, specifying maximum hunting limits for individual PMUs that range from 2 to 15 cougars per year.[106]

Impact. Prior to the 2020 Cougar Hunt Rule, Washington's cougar management approach thus followed many of the recommendations from the best available science. However, the pre-2020 approach did not provide a means to close cougar hunting in the early season, or to quickly close cougar hunting in the late season to prevent specific PMUs from exceeding maximum guidelines.

As a result, some PMUs consistently exceeded the maximum guidelines first put in place for the 2012-13 hunting season. WDFW staff began to regularly highlight this problem in annual status reports starting in 2017.[107] These reports showed that 19 of the 45 PMUs with hunting guidelines had regularly exceeded those guidelines since 2012, often killing two or three times the maximum number of cougars allowed.[108] For example, all the PMUs in Stevens County regularly exceeded the maximum hunting guidelines, with hunters sometimes killing more than 40% of the total estimated cougar population in a single year.[109] Hunters in PMU 5 (GMU 117) exceeded the maximum guideline every hunting season but one from 2012-2020, with hunters killing up to 30% of the cougars in that area in a given year,[110] while hunters in PMU 2 (GMU 105) and PMU 6 (GMU 121) killed 40% of the estimated cougar populations in those GMUs during the 2016-2017 hunting season.[111]

Table 3: PMUs closed (shaded) and exceeding guidelines (boxed) during 2012-2019 seasons.[112]

Region	PMU	Harvest Objective	Actual Harvest							
			2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
1	101	7-9	1	5	10	2	8	9	13	5
	105	2	2	2	4	2	5	2	2	2
	108, 111	5-6	6	6	7	8	11	12	10	5
	113	4-6	3	5	6	3	4	6	5	5
	117	6-8	9	12	12	10	11	12	14	7
	121	5-6	7	5	8	4	17	9	6	9
	124, 127, 130	7-9	8	5	8	4	11	11	9	6
	145, 166, 175, 178	3-4	7	6	7	3	6	6	7	5
	149, 154, 157, 162, 163	4-6	10	10	4	6	12	15	18	6
	169, 172, 181, 186	3-4	4	4	1	2	7	3	5	1
2	203	4-6	0	0	0	0	0	0	0	0
	204	6-8	4	5	1	7	2	6	10	4
	209, 215	4-5	4	2	4	3	3	5	5	3
	218, 231	4-6	2	3	2	1	5	0	3	1
	224	2-3	1	2	1	0	3	2	3	0
	233, 239	3-4	2	0	1	1	6	1	4	3
	242, 243	4-6	4	4	3	1	3	2	7	5
	244, 246, 247	5-6	3	3	0	2	5	7	5	5
	245, 250	5-6	2	0	4	1	6	3	3	4
	249, 251	5-6	6	6	2	1	6	1	6	0
3	328, 329, 335	6-8	10	9	7	8	11	8	8	7
	336, 340, 342, 346	5-7	8	5	6	8	6	12	7	3
	352, 356, 360, 364, 368	5-7	6	5	6	5	10	7	7	6
	382, 388	3-4	4	10	1	3	3	3	4	4
4	407	none	2	1	2	1	1	3	1	5
	418, 426, 437	11-15	1	2	0	8	3	4	4	2
	448, 450	9-13	0	0	0	0	0	3	1	2
	454	none	0	2	3	0	0	1	0	0
	460	5-7	2	1	0	2	0	2	3	1
	466, 485, 490	2-3	0	2	0	1	0	0	0	1
5	501, 504, 506, 530	7-10	1	1	2	1	1	1	4	0
	503, 505, 520, 550	6-8	0	2	7	0	2	1	3	3
	510, 513	3-4	0	1	2	3	1	2	0	3
	516	3-5	1	3	3	0	3	2	4	1
	522, 524, 554, 556	3-4	1	0	0	1	1	2	0	1
	560	5-6	1	4	1	3	1	3	5	1
	564	1	0	0	0	0	0	0	0	0
	568	2	2	3	0	4	1	4	4	3
	572	3-4	1	2	1	3	0	1	1	0
	574, 578	3-5	3	5	4	5	3	5	7	2
6	601, 602, 603, 612	5-7	1	3	2	1	1	0	2	1
	607, 615	4-5	0	1	0	1	2	2	2	1
	618, 636, 638	4-5	2	4	4	0	1	4	1	0
	621, 624, 627, 633	none	2	5	1	2	8	2	7	3
	642, 648, 651	6-8	10	6	6	3	5	10	10	4
	652, 666	none	2	1	1	0	1	0	1	0
	653, 654	4-6	1	1	1	2	3	1	4	2
	658, 660, 663, 672, 673, 681, 684, 699	9-12	1	1	1	0	3	7	3	3
	667	3-4	1	3	7	3	5	3	1	0

WDFW's status reports have consistently explained that about half of the PMUs that exceeded the maximum guideline did so during the early hunting season, when managers do not have the ability to close hunting.[113] The other half exceeded the guideline during the late hunting season, when managers could close the season, but were unable to do so in a timely way because the Department allows cougar hunters 72 hours to report their kills.[114] For years, WDFW's yearly status reports have contained the same recommendations: (1) create a single season that gives managers the ability to close hunting whenever hunters have killed 16% of the cougar

population; and (2) require hunters to report their kills within 24 hours, as most wildlife agencies in the western U.S. do, so managers can act immediately to close hunting before the guidelines are exceeded.[115]

Instead of following this advice to *prevent* PMUs from exceeding the hunting guidelines, thus allowing the new management framework to operate as intended, the 2020 Cougar Rule dismantled the new framework and sanctioned the overexploitation of cougars in the PMUs that had consistently exceeded guidelines.

2. Department discarded and discredited trailblazing work of its scientists

Throughout the discussion of the 2020 Cougar Hunt Rule, WDFW management and the Commission openly denigrated and questioned the existing framework for cougar management, without any scientific basis for doing so, and without allowing the WDFW scientists who had developed the new framework to explain and defend their work. Many Commissioners did not seem to understand the current approach, and they were clearly unaware that it was the product of years of groundbreaking research. Far from correcting these misconceptions, management encouraged them, repeatedly suggesting that high hunting and conflict rates implied a large cougar population—again, without any mention of science.

For example, Commissioner McIsaac said his vote in favor on the rule was based on his "uncertainty" about the validity of density research:

> Do we think our density estimates for Cougar are too low? Are they right? Are they wrong? And we heard from previous commission meetings that the number of lethal removals over the last few years has really gone from 20 to 30 to 60 or 80 to over 100 and the trend on the take of cougars is in an upward direction, and the number of calls for enforcement folks has doubled recently and there's all of these indicators that maybe our statewide density business is not right….And so that's the part that is swaying me on this matter of should the hunting season be liberalized or not, [it] gets down to the scientific uncertainty about our previous way of setting seasons.[116]

Commissioner Thorburn went further, claiming that Option 4 "correct[ed]" WDFW's density estimates and hunting limits:

> We recognize that this recommendation is about hunting opportunity and not about the public safety issues. Those are two prongs to cougar management that are very separate in our current approach to cougar management, and we discussed that at great length. Nonetheless, as I tried to make clear, we feel like Option 4 actually best represents what is current policy in the cougar chapter of the game management plan, because it improves on the density estimate that is used for calculating the guideline. And for that reason, since we do have cougar hunting in the state, we saw it as an opportunity to correct opportunity.[117]

Not only did managers stand silent while the accumulated work of two decades was denigrated; they also went so far as to contend that a significant step *backward* might actually represent progress. As the Commission searched for a way to "fix" the density estimate, Commissioner Bob Kehoe asked whether WDFW might be able to improve its population

estimates by relying on harvest data[118]—the very method that WDFW had used for decades prior to 2011, but which the Game Management Plan disclaimed as unreliable.[119] Incredibly, Game Division Manager Anis Aoude replied that the idea had "potential," but that using harvest data to estimate populations was "still kind of an emerging science, at least when it comes to cougars."[120]

3. 2020 Cougar Hunt Rule dismantled science-based management framework

WDFW management insisted that the 2020 Cougar Hunt Rule followed the standards set forth in the Game Management Plan. In reality, the rule contorted the GMP's density estimates and hunting guidelines beyond recognition.

First, the 2020 Cougar Hunt Rule used fabricated density "estimates" to sanction the continued overexploitation of cougars in certain PMUs. The rules sought to satisfy the demands of dissatisfied cougar hunters by raising hunting limits in the PMUs that had regularly exceeded them, to match the highest number of cougars hunters had killed in each PMU over the prior five years. In a YouTube video explaining the differences between the four options, Aoude conceded that management had suggested these changes expressly to allow continued hunting in PMUs that had previously been closed for exceeding hunting guidelines:

> So [we were] basically looking at those units that have traditionally closed January 1, and looking at what level of guideline would be needed to keep them open at least four out of five years. So what we did is we looked back five years into the data and saw what the highest harvest was when the unit closed and set the guideline at that level. So it would assure or it would make it more likely that those units will remain open at least four out of five years.[121]

Nevertheless, management was determined to maintain the illusion that its proposal followed the Game Management Plan's directive that hunting limits should be set at 12 to 16% of the estimated cougar population in each PMU.[122] As a result, it speculated that these PMUs might support a greater density of cougars, such that the estimated population was high enough to keep the inflated hunting guidelines to below 16% of the population. Department presentations asserted that these new population estimates were based on the *"assumption*" that density is higher in these areas (emphasis added).[123] But WDFW provided no scientific support for such an assumption, which seemed supported merely by circular reasoning, i.e.: Hunters have killed up to [X] cougars a year in this PMU; hunting is limited to no more than 16% of the cougar population; therefore, [X] cougars must represent 16% of this PMU's cougar population.

Indeed, management disclaimed any responsibility for the accuracy of these fabricated density rates: "We're not saying density is higher in those areas, but the assumption is that it is based on past harvest and based on some of the other conflict and other things we hear from the public."[124] This "assumption" ignored the fact that the Game Management Plan explicitly abandoned the use of cougar "harvest" data to set hunting guidelines, because it is an unreliable indicator of population status.[125] In fact, research has shown that a heavily hunted cougar population near Kettle Falls in northeastern Washington has a similar density as a lightly hunted population near Cle Elum, with both ranging from 1.5 to 1.7 adult cougars/100 km^2.[126]

WDFW management failed to apprise either the Commission or the public of this contrary science. Instead, it equivocated that its assumption that there are higher cougar densities

in high hunting/high conflict areas "may be true or it may not be true," and found it sufficient that the inflated densities were "within a range that's *possible* for cougar densities in the West" (emphasis added).[127] Discarding WDFW's science-based density estimates, management instead "looked at all the literature" to conclude that the assumed densities were "possible" if they were below roughly 4 cougars per 100km^2.[128] Even with this generous assumption, management was forced to make downward adjustments in two PMUs, where the highest hunting levels in the past five years would have implied densities in excess of what management deemed "possible."[129]

What management did not tell the Commission was that the new "assumed" density limit of 4.15 cougars per 100km^2 was more than twice the statewide average of 1.7 adult cougars/100km^2 calculated by its staff. In fact, in some cases, the Department had actual density estimates for areas in which they created inflated "assumed" densities. For example, a five-year study of cougars in GMU 105 in Stevens County revealed an average density range of 1.72 to 2.28 adult cougars/100km^2 but instead of using these actual density ranges, the 2020 Cougar Hunt Rule doubled the number of cougars hunters could kill in that GMU, based on an "assumed" density of 3.72 adult cougars/100km^2.[130]

Second, the 2020 Cougar Hunt Rule arbitrarily excluded roughly 30% of the cougars killed each season from its statistics, to allow cougars between 18 and 24 months old to be killed without limit, and without counting toward hunting limits. WDFW management did not even pretend to have any scientific rationale for this adjustment, which contradicted the recommendation from WDFW scientists that "[b]ecause sub-adult age classes are dynamic and difficult to estimate, and difficult to identify in the field, we recommend that harvest of this age class be counted against the allocated harvest so that recruitment is not affected in the future."[131]

Indeed, from the time this option was conceived in 2019, the *only* rationale the Department articulated for excluding independent, sub-adult cougars from its guidelines was to "provide additional recreational opportunity…and later PMU closures in areas where harvest is currently skewed toward sub-adult animals."[132] In other words, because hunters in some areas kill a disproportionate number of "sub-adult" cougars between 18 and 24 months, management recommended excluding those cougars from the hunting guidelines, so sub-adult cougars could be killed in unlimited numbers without causing a season closure.

When these increases are combined, the 2020 Cougar Hunt Rule allows hunters to kill more than 16% of the cougar population in *all* 45 PMUs that include hunting limits, when calculated according to the densities in the GMP.[133] Most egregiously, the rule allows hunters to kill *between 22% and 42% of the cougar populations* in the 19 PMUs for which the 2020 Cougar Hunt Rule created new "assumed" densities (Table 4).

Table 4: 2020 Guidelines for 19 PMUs with inflated densities, as percentage of GMP population.[134]

PMU	GMU(s)	County	Est. Cougar Pop. (>18 mo's) from GMP	Pre-2020 12-16% Guideline	2020 Max Guideline (> 2 years)	2020 Max. Guideline + Sub-Adults	2020 Max. Guideline + Sub-Adults as % of Est. Population
1	**GMU 101**	Ferry	57	7-9	11	16	**28.1%**
2	**GMU 105**	Stevens	15	2	4	6	**38.1%**
3	**GMUs 108, 111**	Stevens/Pend Oreille	38	5-6	11	16	**41.4%**
5	**GMU 117**	Stevens/Pend Oreille	48	6-8	13	19	**38.7%**
6	**GMU 121**	Stevens	38	5-6	11	16	**41.4%**
7	**GMUs 124, 127, 130**	Spokane/Stevens/Pend Oreille/Whitman	57	7-9	9	13	**22.6%**
9	**GMUs 149, 154, 162, 163**	Columbia/Garfield/Walla Walla (Blue Mountains)	35	4-5	9	13	**36.7%**
10	**GMUs 145, 166, 175, 178**	Garfield/Columbia/Asotin (Blue Mountains)	27	3-4	7	10	**37.0%**
11	**GMUs 169, 172, 181, 186**	Asotin (Blue Mountains)	24	3	6	9	**35.7%**
13	**GMU 204**	Okanogan	50	6-8	8	11	**22.9%**
17	**GMUs 233, 239**	Okanogan	26	4	5	7	**27.5%**
18	**GMUs 242, 243**	Okanogan/Chelan	35	5-6	6	9	**24.5%**
22	**GMUs 328, 329, 335**	Kittitas	50	6-7	10	14	**28.6%**
23	**GMUs 336, 340, 342, 346**	Kittitas/Yakima	43	5-7	11	16	**36.5%**
24	**GMUs 352, 356, 360, 364, 368**	Yakima	44	5-6	9	13	**29.2%**
39	**GMU 568**	Clark/Skamania	15*	2	3	4	**28.6%**
41	**GMUs 574, 578**	Klickitat/Skamania	29	4	6	9	**29.6%**
46	**GMUs 642, 648, 651**	Mason/Gray's Harbor	51	6-8	8	11	**22.4%**
50	**GMU 667**	Thurston/Lewis	26	3-4	7	10	**38.5%**

Statewide, the result was to raise the number of cougars hunters could kill each year by more than 50%, from 244 to roughly 373.[135] This change thus allowed hunters to kill 18% of the statewide cougar population each year—well over the 16% set by the Game Management Plan as the *maximum* mortality rate, even before other sources of mortality are counted.[136]

D. High Levels of Mortality are Harming Washington's Cougar Population

1. Cougars killed in management actions rose dramatically prior to 2020 Rule

Known human-caused cougar mortality in Washington has doubled since 2011, reaching record levels beginning in 2018. In addition to increased hunting in PMUs that chronically exceeded management guidelines, this precipitous increase in mortality was caused by a spike in the number of cougars that WDFW and local law enforcement killed each year due to predations on livestock and "public safety" concerns.

WDFW has emphasized the importance of counting all sources of mortality to estimate the impact of hunting on cougar demographics,[137] cautioning that "[f]ailing to account for and

include all mortality sources may obscure estimates of population trajectory and underestimate the impact of harvest on demographics and cougar social structure."[138]

Although the rule in place prior to 2020 did not count all human-caused cougar mortality toward hunting limits, it did provide flexibility for managers to close the season when a PMU hit the lower 12% threshold.[139] This solution may have been adequate when framework was implemented in 2012, because the year before there were only 32 recorded cougar mortalities statewide in addition to those killed legally by hunters.[140]

However, that number rose dramatically in the two years before the Commission approved the 2020 Cougar Hunt Rule, from 42 non-hunting mortalities in the 2017-18 season to 132 in 2018-19 season and 145 in 2019-20—a 240% increase between 2017 and 2020.[141] Complaints also rose sharply during this time period, going from 681 statewide in 2018-2019, to 964 in 2018-19, and 1,204 in 2019-2020. However, this 77% increase in complaints was less dramatic that the 240% increase in cougars killed as a result of those calls, because both WDFW and local officials had become far more likely to kill cougars in response to complaints.[142]

Members of the public who testified at the March 2019 meeting insisted that the increase in reported human-cougar conflicts and management actions to kill cougars meant the cougar population was so large that it was "out of control," denigrating WDFW staff for "need[ing] this explained to them."[143]However, research has shown that contrary to common public perception, an increase in reported conflicts with cougars is not necessarily tied to an increasing population, but can be influenced by many other factors.[144] In fact, increasing complaints may be directly tied to a *declining* overall population.[145] In 2018, many factors were in play that likely contributed to the increase in complaints, including:

(1) very high levels of cougars killed in certain PMUs in prior years, leading to increased immigration of young male cougars more likely to generate complaints, *supra* at Section II (E);

(2) the April 2019 memo from Director Susewind, instructing WDFW enforcement officers that they should "make every effort" to kill any cougar involved in a livestock predation or reported as a public safety concern;[146]

(3) billboards that began to appear in northeastern Washington in 2018-2019, raising fear about wolves and cougars (Figure 4);

(4) the hiring of a "wildlife specialist" to work with the Stevens and Ferry County Sheriff departments in April 2018, whose primary responsibility was investigating and responding to reports of conflicts with predators;[147] and

(5) Klickitat County Sheriff Bob Songer's establishment of a "posse" of hound hunters on August 20, 2019, to respond to citizen complaints by pursuing and killing cougars.[148]

Figure 4. Billboard appearing in northeastern Washington in 2018-19.[149]

An examination of how the situation evolved in different parts of the state suggests a cause and effect. Hunters exceeded the maximum hunting guidelines in all five PMUs that include Stevens County in 2016-2017, killing a new high of 55 cougars, or 28% percent of the population (Table 3). This high hunting level continued in 2017-2018, when four of the five PMUs exceeded the maximum hunting guidelines, with hunters killing 46 cougars or 23% of the population. As recent science would predict, this overhunting led to an increase in cougar complaints in the following years, as cougar-related complaints from Stevens County rose from 50 in the 2017-2018 to 92 in 2018-2019 and 133 in 2019-2020.[150]

In turn, this increase in complaints led Stevens County and WDFW to kill more cougars in management actions—that number rose from 4 cougars killed in the 2017-2018 hunting season to 16 in 2018-2019 and 24 in 2019-2020.[151] A review of officer reports shows that WDFW and the Stevens County wildlife specialist were quick to kill cougars in response to these complaints, including under the following circumstances:

- Repeatedly killing cougars at the same locations after livestock owners refused to take any steps to protect their livestock;[152]
- Killing cougars attracted by dead animals left out as bait; and[153]
- Using hound hunters to kill all cougars in certain areas in response to complaints, including reports of livestock losses.[154]

In another area of the state, Klickitat County Sheriff Bob Songer's 155-person posse has used hounds to track and pursue cougars more than 120 times, killing at least 32 cougars, including kittens, between August 2019 and March 2023.[155] WDFW has estimated that the Klickitat County cougar population is about 50 independent-aged cougars.[156] Including the kills by Songer's "posse", there was a combined mortality of 21 cougars (42% of the estimated cougar population) in 2018-2019 and 29 cougars (58% of the estimated population) in 2019-20.[157] This includes many cougars the posse pursued and killed after they were merely sighted,[158] or reported to have killed deer.[159]

Despite these dramatic increases in cougars killed through management actions, the 2020 Cougar Hunt Rule ratified and normalized overhunting of cougars without regard for this additional mortality. For example, in PMU #6 (GMU 121), total cougar mortality equaled 36.8% of the population in 2020-21, 42.1% in 2021-22, and 52.6% in 2022-23 (Table 5).[160] Looking at the impact of the 2020 Cougar Hunt Rule over all 19 PMUs where WDFW artificially inflated the density/population estimates, the total mortality was 25.5% in 2020-21, 21.9% in 2021-22, and 23.3% in 2022-23.

Table 5. Total cougar mortality in 19 PMUs with inflated densities, 2020-22).[161]

PMU	GMUs	Est. Independent-Aged Pop. (from 2015 GMP)	2020-21 Hunt Mortality	Total 2020-21 Mortality	2020-21 Mortality as % of Pop.	2021-22 Hunt Mortality	Total 2021-22 Mortality	2021-22 Mortality as % of Pop.	2022-23 Hunt Mortality	Total 2022-23 Mortality	2022-23 Mortality as % of Pop.
1	GMU 101	57	10	12	21.1%	10	12	21.1%	11	12	21.1%
2	GMU 105	15	1	4	26.7%	4	4	26.7%	2	3	20.0%
3	GMUs 108, 111	38	8	19	50.0%	7	12	31.6%	6	12	31.6%
5	GMU 117	48	15	21	43.8%	11	18	37.5%	9	13	27.1%
6	GMU 121	38	8	14	36.8%	10	16	42.1%	14	20	• 0.0%
7	GMUs 124, 127, 130	57	11	32	56.1%	7	18	31.6%	8	16	28.1%
9	GMUs 145, 166, 175, 178	27	11	12	44.4%	7	8	29.6%	12	12	44.4%
10	GMUs 149, 154, 162, (163)	35	5	5	14.3%	11	13	37.1%	10	12	34.3%
11	GMUs 169, 172, 181, 186	24	3	3	12.5%	4	4	16.7%	1	3	12.5%
13	GMU 204	50	6	6	12.0%	4	4	8.0%	3	6	12.0%
17	GMUs 233, 239	26	2	2	7.7%	0	0	0.0%	3	3	11.5%
18	GMUs 242, 243	35	4	9	25.7%	1	4	11.4%	3	3	8.6%
22	GMUs 328, 329, 335	50	13	14	28.0%	7	7	14.0%	9	9	18.0%
23	GMUs 336, 340, 342, 346	43	4	6	14.0%	4	4	9.3%	4	4	9.3%
24	GMUs 352, 356, 360, 364, 368	44	2	3	6.8%	3	4	9.1%	1	2	4.5%
39	GMU 568	16	6	6	37.5%	1	1	6.3%	1	1	6.3%
41	GMUs 574, 578	29	2	5	17.2%	5	8	27.6%	9	13	44.8%
46	GMUs 642, 648, 651	51	5	7	13.7%	8	16	31.4%	8	12	23.5%
50	GMU 667	26	1	1	3.8%	2	2	7.7%	6	9	34.6%
Total		709	117	181	25.5%	106	155	21.9%	120	165	23.3%

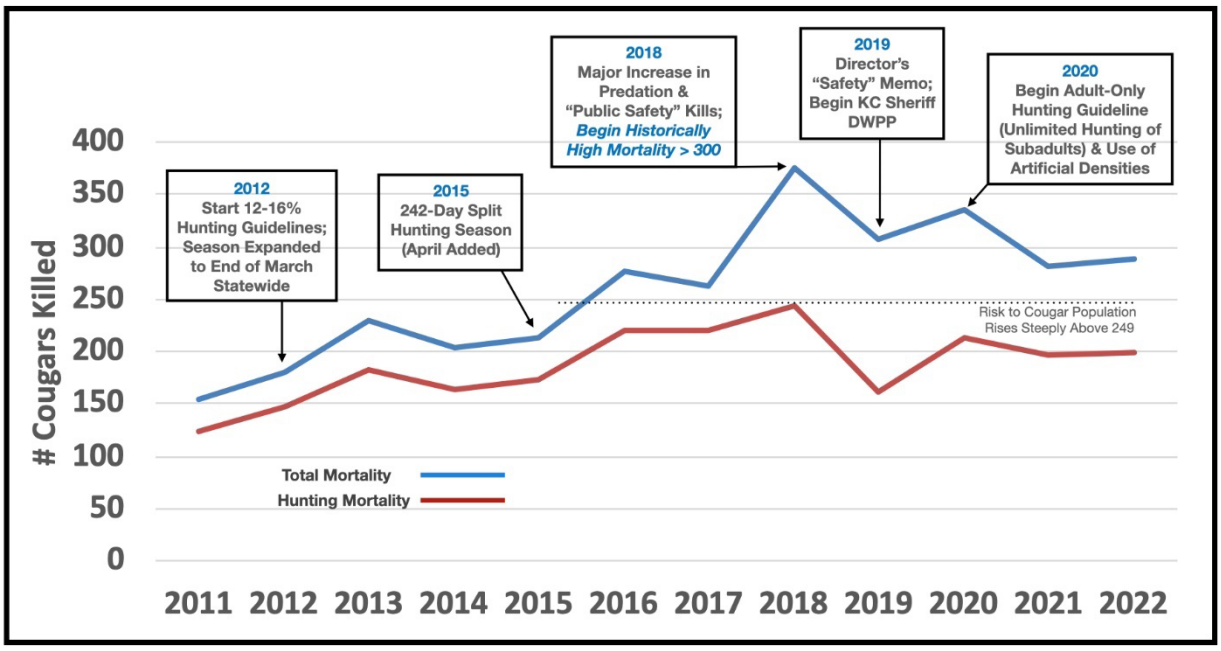
2. High mortality levels depress and destabilize the cougar population

The Commission did not consider whether historically high levels of mortality were already jeopardizing the cougar population before it voted to ratify this unsustainable level of killing through the 2020 Cougar Hunt Rule. As a result, the state cougar population has continued to suffer levels of mortality that have likely been catastrophic in some areas.

In a 2021 paper, Department researchers developed a risk management framework to analyze the relative risks of certain hunting levels—evaluating on one side, the danger of harming the cougar population through overhunting, and on the other, the risk of unnecessarily restricting hunter "opportunity" below the maximum amount that a stable cougar population could sustain. [162] This analysis concluded that a hunting rate of about 12% of the median statewide abundance level results in a 15.5% risk of "overharvest" that could damage the structure and sustainability of the cougar population, and a 47.5% risk of not allowing hunters to kill as many cougars as possible before destabilizing the population.[163] The risk of overhunting rises exponentially above that level, quickly outpacing the risk of "underharvest."[164]

Based on this risk analysis model, the study indicates that the risks to the state cougar population increase sharply once mortality of independent-aged cougars rises above 249 cougars per year, or about 12% of an estimated independent-aged cougar population of 2,065.[165] Known cougar mortality has been above that level *every year since 2016*, and overall mortality is likely much higher, after taking into account mortality from poaching and undisclosed rates of tribal hunting.

Figure 5: State cougar mortality has doubled since 2011 and exceeded risk threshold of 249 cougars since 2016.[166]

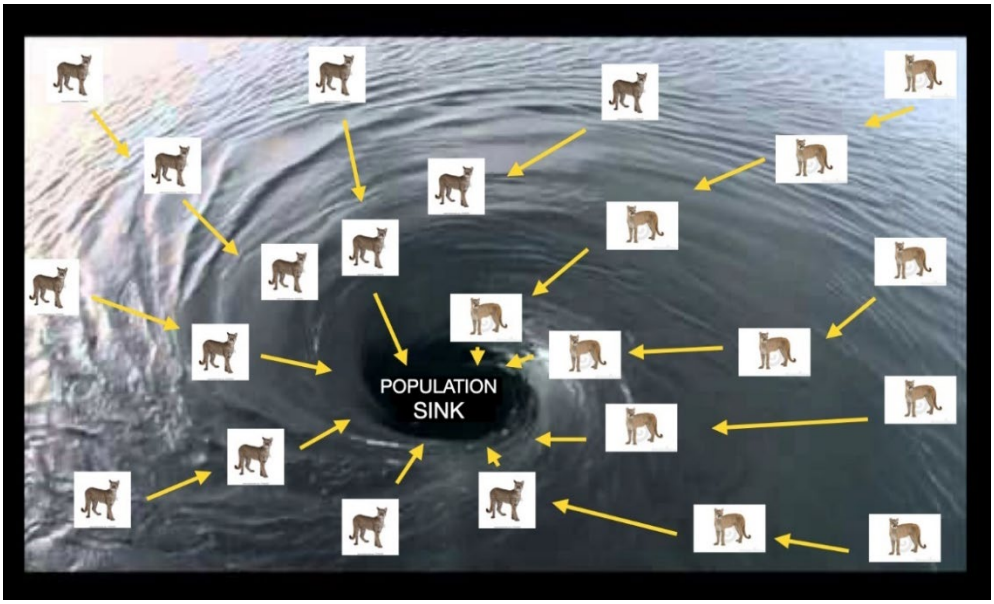


Such high levels of mortality, which are especially pronounced in several GMUs, threaten Washington's cougar populations with potential localized extirpation of stable family groups—leaving vacant territories to attract migratory sub-adult cougars.

Overall population decline. The 2020 Cougar Hunt Rule replaces a carefully constructed science-based framework with what scientists describe as the "sledgehammer approach."[167] This approach was standard in most Western states before managers started to follow Washington's lead in science-based cougar management. Under this approach, cougar hunting is progressively liberalized to satisfy the demands of hunters and is only constrained once "crude population indices" based on harvest data suggest that hunting has "hammered" the population into decline.[168] However, because hunting data is a poor proxy for population status, cougars may have already suffered a significant setback by that time.[169]

When the sledgehammer approach is concentrated in particular areas of the state, it creates the "source/sink" dynamic that WDFW's pre-2020 management approach was designed to avoid. This fails to reduce local cougar populations in "sink" areas, because when hunters kill older male cougars who have claimed large territories, it creates territorial vacancies.[170] These vacancies are filled by young male cougars who have reached independent age, as they are forced out of territories that have already been claimed by older male cougars.[171]

Figure 6: Young cougars pouring into a population sink.



This means overhunting one area is unlikely to reduce cougar density in that area. One study examined the impact of heavy hunting in GMU 105 from 2001-2006 and determined that high mortality levels did not decrease the cougar density in that area, although they did significantly decrease the average age of independent male cougars.[172] This phenomenon will continue as long as there are source populations and the habitat in the sink area is of high quality.[173] In fact, heavy hunting may have the counterintuitive impact of *inflating* the local cougar population. Because younger cougars do not have strong territorial instincts, they may establish overlapping ranges in the new territory, which will actually *increase* local cougar density.[174] In fact, the overlap of male cougar territories has been found to be two to three times greater in heavily hunted areas.[175]

As a result, the public's perception of cougar populations may run exactly counter to reality.[176] High recruitment from "source" areas may lead the public to believe there is regional

population growth, leading to public demand to increase hunting levels.[177] At the same time, however, an increase in male cougars may be masking a decline in the female cougar population.[178] More female cougars are also killed when overall mortality levels are high, but because male cougars are the primary dispersers, the female population is not rapidly replaced by immigration.[179] As a result, the female population may drop sharply even as the male cougar population rises.[180] This decreasing number of females can have devastating effects on the overall cougar population.[181] Meanwhile, high levels of mortality of male cougars can create overall drops in the wider region.[182] Overhunting in prime cougar habitat may create "attractive sinks" that may significantly damage the greater population, which may take a sudden and sharp dive above a certain threshold.[183]

Basic principles of population biology specify that wildlife population dynamics are driven by per capita rates of mortality (the proportion of a population that dies per unit of time), not the number of individuals killed.[184] These basic principles suggest that a *declining number* of kills can actually be evidence of devastating *increases in the rate of mortality*, when overall abundance is declining. This concern is compounded by a closely related principle of population biology known as "catch per unit effort"—briefly, when a population declines significantly, the effort required to maintain the same number of kills increases greatly.[185]

Given the time and expense required to estimate cougar populations, it will be difficult for WDFW to detect a decline in Washington's cougars before it reaches a critical stage. However, to the extent that it tells us anything at all, the hunting data from last season suggests a potential decline. During the 2021-2022 hunting season, WDFW sold a record 69,632 cougar-hunting licenses, 23,241 more than the prior season, and 12,211 more than during the 2019-2020 season.[186] Even though the number of cougar hunters in 2022-23 thus rose by 50% over the prior season, the number of cougars that hunters killed remained relatively flat, rising only 5 cougars, from 197 cougars during the 2021-22 season to 202 in 2022-23.[187] And the number of cougars killed in 2022-23 actually declined when compared to 2020-21, from 214 cougars to 202, even though 20% more licenses were sold in 2022-23 than during 2020-21.[188] More hunters killing fewer cougars suggested a drop in the overall population.

Disruption of social structure. The 19 PMUs for which the 2020 Cougar Hunt Rule created artificial density estimates have frequently had levels of mortality over 16% during the last 10 years (Table 3). Such persistently high mortality in targeted areas results in "continuous male turnover and prolonged spatial instability," [189] which may lead to further negative impacts, including decreased kitten survival and an increase in human-cougar conflicts.

Male cougars are known to kill unrelated kittens to induce estrous in female cougars and increase their breeding opportunities.[190] A constant turnover of the male cougar population thus leads to increased levels of infanticide.[191] It may also result in decreased survival of adult female cougars, as they are killed defending their young.[192] When hunters or control agents remove adult-breeding animals, kittens can either be killed (because of sexually selected infanticide) or orphaned, compounding overall mortalities.[193] Even though it is illegal to kill kittens in Washington, kittens are often directly killed in areas of high mortality, especially because hunters have difficulty judging the age of cougars in the field—particularly kittens and sub-adults.[194] Cougar hunting also inevitably orphans kittens. Cougar kittens remain with their mothers until they are at least 13-17 months old,[195] but often do not travel with their mothers, and thus cannot be seen by hunters.[196] Kittens under a year old have difficulty surviving if orphaned.[197]

Orphaned kittens are likely to die by dehydration, malnutrition, and/or exposure[198]—or create conflicts with humans in their desperate fight to stay alive.[199]

As discussed *supra* at Section II(E), the continual immigration of young male cougars that results from high hunting levels also results in increased human-cougar conflicts, which in turn lead to even more mortality as those cougars are killed in management actions.

Loss of genetic diversity. Continuous high mortality in local areas also decreases emigration from the broader region to other areas, as young cougars continually immigrate into the "attractive sink" and are killed by hunters or through management actions. [200] This decreases the genetic exchange with other cougar populations, causing a loss of genetic diversity.[201]Low genetic diversity can interfere with reproduction in a cougar population, reduce its fitness and susceptibility to disease, and limit its ability to adapt to changes.[202] A study released earlier this year found that the cougar population on the Olympic Peninsula had the lowest genetic diversity and highest inbreeding among populations studied in other areas of the state, with low levels of immigration.[203] The same study found that there were low emigration rates from the northern Cascade and northern Rocky Mountains, including the Selkirk and Kettle Range, and suggested further study into how human-caused mortality may be affecting these populations.[204]

Frustration of research efforts. High cougar mortality harms other subpopulations of cougars across the state, and these losses frustrate ongoing scientific research, creating additional societal costs.[205]

The Olympic Cougar Project is a joint study by Panthera, the Lower Elwha Klallam Tribe, and five other tribal partners, which is attempting to study cougars as an "umbrella species" to gauge the health of the ecosystem. However, a recent article reported that the project is in jeopardy because the state is killing too many of the cougars tagged for the study.[206] Last year alone, the study lost 11 cougars to Department management actions.[207] Mark Elbroch, Ph.D., a prominent cougar researcher who co-directs the project on behalf of Panthera, said the state killed these cougars because of threats or actual livestock losses in prime cougar habitat where non-lethal mitigation measures had not been implemented—including some locations where WDFW has responded to cougar predations as many as six times. "There is just constant death," Dr. Elbroch told a reporter.[208] A tribal scientist working on the project recalled an instance where WDFW summoned hound hunters to kill a cougar that had preyed on an unprotected llama—and then given the cougar to a person with a cougar -hunting permit: "It literally was a state-assisted cougar hunt," she said. "At what point are people responsible for placing these animals in cougar territory? They're essentially baiting in these cougars with livestock."[209]

Washington's livestock producers realize miniscule losses from cougars when compared to non-wildlife related deaths such as from weather, disease, birthing problems and theft.[210] And livestock producers can take multiple steps to reduce these already rare losses.[211] Yet, as discussed throughout this petition, the retribution meted out to cougars for these few livestock losses is massively disproportionate, unnecessary, and counterproductive.

E. Killing More Cougars Does Not Address Public Concerns

Members of the public who testified during the March 2019 meeting expressed three primary reasons for demanding increased hunting of cougars, contending that it was necessary to (1) protect declining ungulate populations in northeast Washington; (2) decrease the number of cougar predations on pets and livestock; and (3) increase human safety. The Department acquiesced to these demands, even though it did not know at the time whether cougars were harming prey populations, and it was aware that continuing high levels of cougar mortality might *increase* the number of cougar predations and *decrease* public safety.

1. Increased cougar mortality will not boost ungulate populations

Public testimony on March 1-2, 2019 emphasized personal beliefs that the cougar population was endangering ungulate populations in the northeast, and thus making it more difficult for hunters to find deer and elk to kill. However, the information WDFW had at the time the Commission approved the 2020 Cougar Hunt Rule indicated that this was not true—and more evidence has accumulated since then. The Department's 2020 Game Status and Trend Report indicated the following about the northeast ungulate populations:

- Mule deer numbers in the Northern Rocky Mountains are low due to restricted habitat, but the population is not considered to be at risk, and the estimated "harvest" in 2019 was the third highest in the last 10 years.[212]

- White-tailed deer in the Selkirk Management Zone had declined in recent years due to a wide-spread blue-tongue outbreak and drought in 2015, and back-to back harsh winters in 2016-17 and 2017-18. Nevertheless, the population remained within "management objectives."[213]

- The Selkirk elk herd seemed to be either stable or slightly increasing in the Pend Oreille sub-herd area and increasing in the Spokane sub-herd area. Hunters had killed more elk in the Selkirk herd in 2019 than the prior year, and the initial findings of the Predator-Prey Project indicated that humans were the leading cause of mortality for cow elk in the Pend Oreille sub-herd.[214]

- Moose have done well in Washington over the past few decades, but "[h]unter demand continues to far exceed supply." Moose abundance in northeastern Washington has declined, perhaps as their populations had exceeded the capacity of forage and as predators and parasites responded to their abundance. Moose are highly susceptible to climate change, and their habitat continues to be degraded.[215]

These perceptions conveyed in the 2020 Status Report seem to have been confirmed by the multi-year "Washington Predator-Prey Project," a joint project between WDFW and the University of Washington designed to assess dynamics between predators and prey, including for wolves, cougars and bears, in northeast Washington (GMUs 121 and 117) and Okanagan County (GMUs 203, 218, 224, 231, 233 and 239).[216] The field work for the project ran from 2016 to 2021, and researchers have released a steady stream of papers since that time.

On December 9, 2021, some of the researchers from the project presented their findings to the Commission. They told the Commission that killing more predators would not necessarily benefit ungulate populations, because it might just increase "bottom up" pressure on those populations due to lack of forage. One researcher, Dr. Taylor Ganz, told the Commission that the team did not see "anything concerning about [ungulate] population growth." She added:

> It's unclear if changing predator numbers would actually impact deer survival. So, in some systems, where they've experimentally tried to reduce predator numbers, it's only led to very short-term impacts on the deer population and then also, it's not necessarily clear if predator harvest removal would necessarily change predator density or abundance. [217]

Ganz's comments to the Commission are reinforced by other studies on the interaction between ungulates and carnivores. That research indicates that forage is critical to ungulate population dynamics, and in habitats like northeastern Washington where populations are limited by both forage and predation, predator-reduction efforts will not produce any long-term increase in ungulate populations.[218] To the contrary, a decrease in predators would likely lead to greater harm to forage supply and increase the role of forage in limiting ungulate populations.[219]

Indeed, the best-available science indicates that predator control is unlikely to boost prey populations.[220] For example, although California does not allow cougar hunting, it has similar deer densities as 10 other states that do allow cougar hunting.[221] Numerous recent studies demonstrate that predator removal actions "generally had no effect" in the long term on ungulate populations.[222] Because ecological systems are complex, heavily persecuting cougars and other native carnivores will fail to address other issues limiting populations of deer, elk and moose.[223]

2. Killing more cougars will not decrease livestock losses or other conflict, and may increase human-cougar conflict

During the March 2019 Commission meeting, members of the public insisted that increased cougar hunting was necessary to protect their livestock, their pets, and even their children.[224] Commissioners referenced these concerns as support for asking management to take swift action to increase cougar hunting and predator control actions.[225] However, by the time the 2020 Cougar Hunt Rule came to a vote, both management and the Commissioners who voted in favor of the rule admitted it would do nothing to improve public safety, *see infra*.

Indeed, study after study has shown that killing more cougars does not decrease livestock losses or human-cougar conflicts. As one recent paper concluded: "While wildlife managers sometimes kill carnivores to mitigate the social consequences of carnivore-livestock conflict, the assumption that killing carnivores reduces livestock predation is no longer tenable in general terms."[226]

For example, California has 2.5 times the number of cougars as Washington and 5.5 times the number of people, but cougar hunting is banned in California and management actions consistently kill about 100 cougars a year—resulting in significantly lower cougar mortality than in Washington and other western states.[227] A recent study examined 40-years of data from 11 western states, using California as a control to determine whether sport hunting reduced cougar

densities, increased ungulate populations, reduced livestock predations or conflicts with humans.[228] The answer to all questions was a resounding "no." Concluded the authors:

> It is becoming evident that under the guidelines of adaptive management, in the absence of evidence of its efficacy, state agencies should refrain from prescribing sport hunting as a management tool.
>
> Though sport hunting may not have any management application, the 5th reason often given for such hunting is it provides hunters with an additional hunting opportunity. Whether sport hunting of pumas should be continued as a hunting opportunity to hunters is, however, a decision that should be made through the democratic process and involve all the citizens within each state. …
>
> [G]ame agencies will have to justify to the public that maintaining a sport hunt on pumas to solely provide trophy hunting opportunities to a small percent (<0.4%) of the public is a legitimate reason for killing pumas. They should not, however, use the four proposed outcomes analyzed here as a justification for the continuation of sport hunting of puma. Their own management data does not support it.[229]

In fact, even targeted removal of "problem" cougars through management actions has been found to have little impact, likely because the real "problem" is not the cougars. [230] Such is the case in Washington, where the Department database shows that enforcement officers have visited the same residences up to five times, killing a cougar each time, but that the problem has continued because property owners refuse to secure their pets and livestock and/or eliminate cougar attractants.[231]

Not only does increased killing of cougars fail to decrease livestock losses and human conflicts, but the opposite may be true: A growing body of scientific research indicates that killing more cougars will actually increase predations on pets and livestock and may make dangerous encounters between cougars and humans more likely.[232]

When cougar mortality is higher than the population's intrinsic growth rate, the population become increasingly unstable.[233] Continuous levels of high mortality in a particular area throw the cougar population into a constant state of chaos, young dependent cougars are orphaned, older male cougars are eliminated from the population, and there is a revolving door of young male cougars moving into their vacated territories. Not only does this lead to an *increase* in the local cougar population, but the increase is composed of the types of cougar most likely to create conflict. Research shows male cougars are more likely to attack livestock than female cougars;[234] orphaned kittens and sub-adult cougars with unrefined hunting skills are more likely to attack livestock;[235] cougars under stress are more likely to risk foraging in suburban neighborhoods;[236] sub-adult male cougars are more likely to frequent human-occupied areas;[237] younger cougar have more conflicts with humans;[238]and sub-adult males are responsible for the majority of conflicts with humans.[239]

This effect has been confirmed in Washington through both scientific research and experience.[240] After Washington switched to the new science-based model of cougar management in 2012, it saw a 26% decrease in cougar complaints over the next six years when compared to the six years prior to the change.[241] And a study looked at cougar complaints,

predations, hunter kills, cougar populations, human populations and livestock populations in Washington from 2005 to 2010, and concluded that increases in complaints and livestock predations were most strongly associated with the number of cougars killed the prior year.[242] In fact, while each additional cougar on the landscape increased the odds of a complaint or predation by 5%, each additional cougar that was *killed* increased the odds of complaints and predations by 50%, and very heavy hunting increased the odds of complaints and predations the next year by between 150% and 340%.[243]

Indeed, this may be exactly what we have seen happen in recent years.[244] In 2018-19, overall cougar mortality increased by 44%, hitting historic high of 376 cougars statewide. (Figure 5). The following year, reports of public safety concerns and livestock predations related to cougars jumped by 36%, from 241 in 2018-19 to 327 in 2019-20.[245] Evidence from specific incidents also indicates a potentially direct link between cougar mortality and cougar-human conflict. Although the Department did not disclose this fact to the public, the cougar involved in the 2022 conflict in Fruitland that injured a 9-year-old girl was a 10-month-old kitten who had apparently lost its mother and was drawn into closer contact with humans because it was having difficulty hunting on its own.[246]

WDFW was aware of the risks posed by a rule that ensured the continuation of very high levels of cougar mortality. But instead of focusing on the best way to ensure *actual* safety, it chose to kill more cougars to appease a crowd and foster the *appearance* of safety.

III. COMMISSION SHOULD REVERSE 2019 BEAR HUNT RULE

A. Background

1. Black bears are important "ecosystem engineers"

Black bears are native to Washington and live in forested areas throughout the state, in every region but the northern island areas of the Puget Sound and the shrub-steppe habitat of the Columbia Basin. Although WDFW has long claimed that there are 25,000 to 30,000 bears in Washington,[247] Department research over the past several years has revealed that Washington's bear population is likely closer to 18,000 to 21,000.[248]

Black bears are generalist omnivores, scavengers and occasional predators. Washington's black bears primarily consume vegetation such as fruits and nuts and plant matter, but they also eat insects, fish, and mammals.[249] Like cougars, bears are "ecosystem engineers," who pay a vital role in ecosystems by dispersing seeds across large areas, scavenging dead animals, distributing marine-derived nitrogen around salmon streams, contributing to the regulation of prey species, and helping to aerate soil by digging for roots and rodents.[250]

2. Black bears live in families and complex social communities

Black bears can live up to 30 years, but they reproduce slowly.[251] Female bears do not reach sexual maturity until 3-6 years old, and in the western U.S., they usually do not begin to breed until they are 4-5 years old, although they can continue reproducing until they are in their 20s.[252] Female bears give birth to one to three cubs at a time during the middle of their winter denning period, usually between mid-January and early February.[253] Bear cubs stay with their mothers until they are about 18 months old, so mother bears only give birth, at most, every other

year, depending on food availability.[254] One Colorado study found that only about 55% of cubs survive.[255] When food is scarce, there is a greater interval between litters, and cubs are less likely to survive.[256] Bear populations are thus self-regulating in accordance with habitat and food availability.[257]

Although bears are often thought of as solitary, a recent study revealed that bears function in a complex matriarchal society with clear rules and hierarchies.[258] Over the course of 11 years, researchers documented 1,210 social interactions between both family units and unrelated bears, showing dominant female bears establishing a hierarchy for food, control of space, and control of younger bears, with older females conditioning subordinates and teaching them the "rules."[259] Researchers documented cooperative social relationships between extended bear families, such as the adoption of a bear cub by a grandmother when its mother was unable to feed it, as well as between unrelated bears, including sharing of food and cooperation between male and female bears.[260]The study highlighted the importance of these social relationships in increasing the overall fitness of a bear community, and illustrated how that community was constantly altered as hunters killed senior members of the hierarchy.[261] It also suggested a greater understanding of these complex social interactions would help to eliminate human-bear conflict, for example: "Since bears share food sources with other bears, they assume people are inviting them to share their food as well when they place food around their houses and barns…Remove the food and the bear goes away."[262]

3. Black bears face growing threats

Humans are responsible for nearly all black bear deaths.[263] Hunting is the top cause of death, but WDFW's research over the past two decades has shown that other human-related mortality is an important factor in overall survival rates.[264] WDFW has been researching the North Cascades black bear population since 2013, and as of 2022 had collared 270 individual bears.[265] Nearly all the mortality they have documented has been human related, broken down as indicated in Table 6.

Table 6: Causes of death for bears in the North Cascades, 2013-22.[266]

	West Slope	East Slope
Hunter Kills	52%	64%
Conflict Removals	19%	7%
Poaching	9%	2%
Wounding Loss	7%	8%
Roadkill	4%	4%
Natural Causes	7%	15%

In both samples, intentionally inflicted human mortality accounted for more than 80% of black bear deaths. Since humans are the main cause of mortality and bears reproduce so slowly, bear populations are especially sensitive to overexploitation, and may be seriously impaired before managers detect a decline.[267]

Changing climate conditions are expected to have a significant impact on black bear populations, in a variety of ways:

- Climate warming will change trophic effects that include the profusion of parasites and disease.[268]

- With warmer winters and extended fall and spring seasons, climate change will drive the expansion of ticks and tick-borne diseases to more northern latitudes and to higher altitudes.[269] Increases in temperature also facilitate the proliferation of parasitic organisms, including the potential for the spread of sarcoptic mange in black bears from the eastern U.S.[270]

- More stochastic weather events are occurring, and snow cover is increasingly lost, which reduces the insulating properties associated with some bears' dens.[271]

- Rising temperatures have resulted in changed plant phenology, which is the timing of flowering, germination and leaving.[272] For bears, this means that some of their natural foods such as acorns (hard mast crops) or raspberries (soft mast crops) will be unavailable in some years because of drought, fires, or late spring frosts.

- Declining species' diversity could exacerbate phenological changes associated with warming.[273] Climate change affects temperatures and moisture, affecting precipitation amounts and thus plant growth, which could further degrade black bears' food supplies.[274]

- An important study on brown bears is applicable to black bears, because they too cannot withstand much movement in warm weather because of their inability to sweat (while wearing a thick fur coat and building fat layers for hibernation).[275] It found that a warming climate limits bears' foraging abilities because they are subject to hyperthermia, that is, the inability to dissipate heat from their bodies to stay sufficiently cool.[276] Bears adjust to the heat by foraging in habitats that have sufficient shade to stay cool. But these adjustments could affect their abilities to forage as efficiently[277] as canopy cover is consumed by increasingly severe wildfires that remove mature trees that black bears rely upon for shade cover during the day and—especially bear cubs—use as escape routes from predators.

- And in the Western United States, drought has intensified to extremes not seen in the past 20 years.[278] Drought begets wildfire, and more severe droughts alter historic fire regimes.[279] As discussed below, wildfires pose grave threats to black bears.

- With a warming climate, bears will reduce their hibernation durations, so bears emerge earlier in the spring before natural food resources are available.[280]

- Climate-induced natural food shortages may also harm the long-term viability of bear populations and cause bears to come into more contact with humans, resulting in more being killed in management actions.[281]

- The variations in intensity and occurrence of wild fires can reduce food and shelter, and reduce wildlife's ability to "recolonize regenerating habitats," and in the case of severe fires, lead to mortality.[282]

- Fire suppression, climate change and logging have changed the forests in the West over the past century.[283]

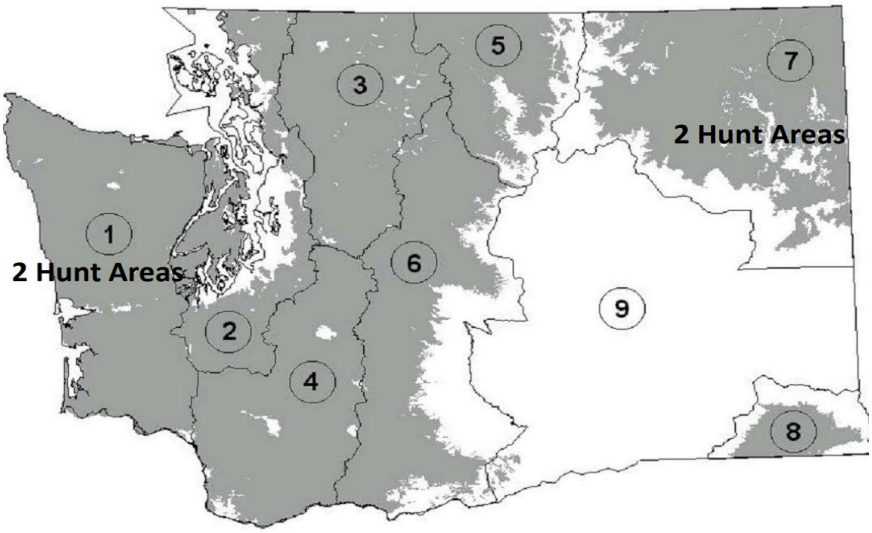
- Invasive and pervasive cheat grass (*Bromus tectorum*) has increased fuel loads in the West.[284] Recent wildfires are hotter and kill mature trees because of fuel-load buildup.[285] Western fire-adapted forests generally had experienced frequent fires on a 10 to 20-year time scale, but now burn at fire intervals between 70-90 years.[286] The result is that forests are now characterized by denser stands of trees with few trees older than 250 years and with diameters greater than 60 cm.[287] These smaller diameter trees grow in dense forests that are apt to experience stand-replacing fires.[288] Large fires leave a mosaic or burn patches of different levels of burn severity.[289]

- For black bears, who prefer larger diameter trees for denning, resting and canopy cover for foraging, catastrophic fires can have negative, near-term consequences.[290] Females with and without cubs choose nocturnal and diurnal bed sites during their active season near "refuge" trees; that is, trees with coarse bark so the bears could readily climb up the tree if disturbed, and those bed sites were in high canopy cover.[291]

4. Washington's black bear management is a shot in the dark

Washington has taken the same approach to managing black bear populations since the 1970s, setting hunting seasons without a reliable estimate of the size of the population or a dependable way to detect population trends.[292] WDFW divides the state into nine Bear Management Units (BMUs), measuring the number of bears killed in each unit without setting caps or quotas. Until 2019, WDFW applied different rules to each BMU, with "fall" hunting seasons starting on August 1, August 15, or September 1, and a "bag limit" of either one or two bears per hunter.[293]

Figure 7. Map of Washington's Black Bear Management Units.[294]



In addition to the fall hunting season, WDFW operated a permit-only spring black bear hunting season until 2022. Following lengthy and ongoing debates, the Commission refused to approve a 2022 spring bear season in November 2021, and then voted in 2022 to formally end recreational spring bear hunting[295] For decades, WDFW also issued permits allowing hunters to use traps, bait and hounds to kill bear on private timberlands every spring, until that practice was halted by a court injunction on June 15, 2018, after a judicial challenge by the Center for Biological Diversity.[296] After resuming for one season in 2020, the spring bear timber hunts were ended on October 27, 2020, after the Washington Court of Appeals ruled that the hunts were a violation of Initiative 655, which outlawed the use of hounds and bait to hunt bear and cougar.[297] A proposal to revive the hunts is now pending before the Commission.

WDFW claims to protect the state's black bear population from overexploitation by monitoring the age and sex of bears killed by hunters each year.[298] Even though these parameters are routinely exceeded, however, the Department has never used them as a basis for recommending the closure or restriction of hunting.[299]

Through the annual status reports, WDFW staff have been sounding the alarm for several years about the inadequacy of using "harvest" metrics to monitor the bear population. In part, this inadequacy stems from chronically low hunter compliance with the online surveys and tooth submissions required by law—with only about 65% of hunters completing surveys and 25% submitting tooth packets each year.[300] As a result, WDFW makes estimates of the age and sex of bears killed each year by extrapolating from the relatively small amount of data provided. [301] However, as WDFW has explained in the Game Management Plan and several yearly status reports, this method of monitoring bear populations would be inadequate even if based on better data.[302]

Indeed, scientists have long been warning about reliance on "harvest" metrics to monitor the health of bear populations, because the sex and ages of bears killed in hunts may look the same for populations in decline as well as for those that are thriving, and there may be a significant time lag before any trends are evident.[303] For example, back in 1999, a researcher warned managers attending the 15th Eastern Bear Workshop about reading too much into age structure information, explaining that the average age of bears killed will be younger with a population that is experiencing rapid growth and has high reproductive rates, but there would also be the same pattern in a population that had been devastated by hunting and was in decline, since hunters would have killed most of the older bears.[304] As the Game Management Plan explains:

> Managers often use sex and age structure data of harvested bears as an index to population growth (Pelton 2000). However, examining just sex and age structure may provide misleading interpretations (Caughley 1974, Bunnell and Tait 1981,Garshelis 1991, Clark 1999). That is, the age structure of a declining bear population can be the same as the age structure in an increasing population. In addition to this shortcoming, there is often a time lag between when a population begins to decline and when that decline is evident in sex and age structure data (Harris 1984). In some cases, by the time a decline is detected, bear numbers may have been reduced to a point where it could take as long as 15years to recover the population.[305]

The Game Management Plan thus stresses that one of WDFW's top priorities is to advance its knowledge of the state bear population, so it can better monitor population trends, and "[d]evelop harvest criteria that incorporate survey and monitoring data."[306] Beginning in 2019, WDFW worked with Washington State University on a project to measure bear density in two areas each in eastern and western Washington.[307] The results of this work were published in 2019, in an article that came to two important conclusions: (1) black bear density varies widely in different areas depending on a variety of factors, including human development, habitat productivity, and hunting levels, and thus a few samples cannot be used to extrapolate density statewide; and (2) bear densities in some areas are much lower than previously thought, meaning WDFW has long been overestimating the size of the state black bear population by about 30%.[308]

Building from these results, WDFW established a sampling design and protocol that could be applied at a broad scale to obtain black bear density estimates from varied habitats across the state.[309] As of the 2022 Status and Trend Report, the Department had completed field work for monitoring projects in 11 of the 15 state management districts that contain black bears.[310] When the 2022 report was published, WDFW had already derived density estimates for nine of those districts, and was waiting for lab analysis of DNA samples taken from two more.[311] In addition, WDFW collaborated with the Stillaguamish Tribe to estimate black bear density in two additional areas of northwestern Washington in 2021 and 2022, and the Muckleshoot Tribe has conducted additional density work using WDFW guidelines.[312] In the 2022 Status and Trend Report, WDFW indicates it had empirical data from 14 research areas to inform black bear density estimates.[313]

This research is ready to be implemented into policy. The 2022 Status and Trend Report indicates that:

> Updating and improving the criteria used for population estimation and evaluating harvest objectives would improve agency management considerably. Many wildlife management agencies have moved away from using median ages and percent females in the harvest and use specific harvest rates based on density estimates as their management objective, as it is well documented that black bear densities can vary considerably. Using density estimates from ongoing research conducted throughout the state to derive abundance will allow staff to establish and evaluate harvest rates at a more localized scale. Density estimates are the most notable addition available to managers in Washington, which will be useful and relevant in developing updated management issues, objectives, and strategies. Therefore, the current priority for advancing and improving black bear management in Washington is to incorporate 2013-2022 density estimates into the management plan currently under revision and to continue monitoring densities statewide and refining densities, other demographic information, and creating a habitat-based density model in the foreseeable future.[314]

WDFW promised to implement many of these changes under the *last* Game Management Plan, but management has continually postponed making them on the pretext that it needed to wait for a *new* Game Management Plan to be completed first. That new Plan is now three years overdue and has been continually postponed. Despite promises throughout the year that it would be ready soon, management has still not released a draft for Commission and public review, or for evaluation under the State Environmental Policy Act.

B. WDFW Approves 2019 Rule Change in Response to March Meeting

The Commission's first action in response to the testimony at the March 2019 meeting was to approve a rule to increase the number of bears hunters could kill each year in 77 of the state's GMUs and lengthen the bear hunting season in 96 GMUs.

Bears were not the target of most public comments during the March 2019 meeting, but a few commentors did address them in passing, indicating generally that they felt there were "way too many bears," and emphasizing that they should be allowed to kill more bears because they are not allowed to kill wolves.[315]

The very next week, WDFW issued a CR-101, notifying the public that it was "considering rule changes related to black bear seasons and regulations and cougar seasons and regulations."[316] After that, it took very little time for WDFW to draft a rule to kill more bears. On April 23, 2019, it issued a CR-102 proposing rule changes to "provide more recreational hunting opportunity in Eastern Washington by increasing the bag limit to 2 bears per license year," and to "increase recreational opportunity in the south Cascades, Okanogan, Northeastern A, Northeastern B, Blue Mountains and Long Island by opening the season August 1 statewide."[317]

Carnivore Section Manager Stephanie Simek presented the proposed rule to the Commission on June 14, 2019. First, she explained the Game Management Plan's framework, which provided, in part, that it would "liberalize" bear hunting if fewer than 35% of the bears killed by hunters are female and restrict hunting if more than 39% were female (Table 11).[318] Simek showed a slide that indicated that these parameters had been exceeded in the past, but not in 2017, the last year of data depicted on her slide (Table 7). However, the data also showed that only 2 of the 9 BBMUs were currently in the zone under which the GMP indicated the Department should "liberalize" killing.[319] And it did not include data for the 2018-19 season that had ended two months prior, when hunters exceeded the acceptable parameters for female bear mortality in three BMUs (Table 8).

Table 7. June 2019 slide showing female black bear mortality as percentage of hunter kills, 2007-17.[320]

Percent female black bear mortality, by year and Black Bear Management Unit, 2007-2017.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-yr Avg	5-yr Avg
BBMU 1	34	36	39	36	N/A	30	32	28	27	29	35	29	30
BBMU 2	36	39	38	**44**	N/A	36	**42**	39	34	**43**	36	35	39
BBMU 3	26	**40**	27	35	N/A	36	32	38	31	**42**	26	30	34
BBMU 4	31	33	32	39	N/A	31	31	**44**	24	37	35	31	34
BBMU 5	26	24	35	31	N/A	33	27	32	27	32	36	27	31
BBMU 6	28	34	37	36	N/A	27	30	34	34	35	31	30	33
BBMU 7	36	33	33	35	N/A	33	31	33	34	32	37	30	33
BBMU 8	32	33	38	39	N/A	35	29	29	38	37	39	30	32
BBMU 9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A

Table 8. Female black bear mortality as a percentage hunter kills 2009-18.[321]

Percent Female Mortality												
YEAR	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	10-yr Avg	5-yr Avg
BBMU 1	39	36	N/A	30	32	28	27	29	35	36	33	31
BBMU 2	38	44	N/A	36	42	39	34	43	35	33	38	37
BBMU 3	27	35	N/A	36	32	38	31	42	26	40	34	35
BBMU 4	32	39	N/A	31	31	44	24	37	35	40	35	37
BBMU 5	35	31	N/A	33	27	32	27	32	36	38	32	33
BBMU 6	37	36	N/A	27	30	34	34	35	31	34	33	33
BBMU 7	33	35	N/A	33	31	33	34	32	37	33	34	34
BBMU 8	38	39	N/A	35	29	29	38	37	29	43	35	36
BBMU 9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Simek was forthright that the rule was being proposed in response to political pressure. She said management had been considering a change to black bear seasons but did not plan to bring anything forward right away. Then it heard the testimony at the March 2019 meeting and decided to roll out an immediate proposal to increase bear hunting to satisfy "political social pressures."[322] Simek said that with this rule change, management was hoping to recruit more hunters to "work with bears."[323]

The proposed rule came before the Commission for a vote on June 18, 2019. Commissioners discussed the proposal for just a few minutes prior to voting.

Commissioner Thorburn expressed her opinion that it was "kind of neat" that WDFW was going to allow hunters to kill more bears.[324] She asked Game Division Manager Aoude why the seasons in different parts of the state had previously different durations, and he replied vaguely that the difference has been driven by concerns about local bear populations, but that now it "really makes sense for simplification to have it all start at the same time that way hunters are not having to guess."[325] The only concern voiced was by Commissioner Baker, who said she thought the move was premature given the "holes in the data" about the bear population, and the fact that Department scientists were about to publish an article about WDFW's initial research into state bear density.[326]

The Commission approved the rule on June 28, 2019, with only Commissioner Baker opposing. The final rule increased the "bag limit" for bears from one to two in eastern Washington and standardized the season length across the state by starting the "fall" bear hunting season on August 1 throughout the state.[327] The impact of this change, however, was much more far-reaching that management implied in its presentations. The new rule (1) allowed hunters to kill an additional bear each year in 77 GMUs; (2) extended the season by two weeks in 37 GMUs; (3) extended the season by one month in 21 GMUs.[328] Overall, the rule increased either the season length, the "bag limit," or both, in 5 of the state's 9 BBMUs, including 96 GMUs.

In the Concise Explanatory Statement in support of the rule, WDFW indicated the rule "provides more recreational hunting opportunities in Eastern Washington by increasing the bag limit to two bears per license year," and that it "also simplifies the fall bear hunting seasons by standardizing the season open date and bag limit statewide."[329] The CES did not discuss the fact that "standardizing" the season open dates would have the impact of *lengthening* the bear hunting season in most of the state's BMUs. The Concise Explanatory Statement referenced the ongoing bear density research but indicated the Department "chose to bring these two changes forward because they will simplify the regulations and have little impact on our goal of maintaining sustainable black bear populations in Washington."[330] It provided no support, scientific or otherwise, for its conclusion about how the rule would affect Washington's bear.

Management was so anxious to deal an immediate blow to the state's bear population that it filed 2019 Bear Hunt Rule as an *emergency rule*, so that it could take effect in time for the August 1 start of the new bear-hunting season.[331] An emergency rule requires an agency to find that immediate adoption is "necessary for the preservation of the public health, safety, or general welfare."[332] However, WDFW's only explanation of its "emergency" was that the "season date opens August 1 statewide."[333]

C. Commission Makes Increases Permanent in 2021 Bear Hunting Rule

Making a bad decision worse, on April 9, 2021, the Commission voted to erase the applicable years from the black bear hunting rule, thus converting the 2019 increases into permanent changes. The text of the 2019 amendment to WAC 220-415-090 strikes the years "2019-2020," but—unlike all other hunting season changes approved that year—it does not replace those years with a new two- or three-year date range. The result is that it turns WAC 220-

415-090 into a standing establishing a permanent bear hunting season that will continue in perpetuity without the need for further review.

There was no public transparency in the process of making this change. On November 18, 2020, WDFW issued a CR-101 announcing that it was considering rulemaking for the "upcoming 3-year season setting," including changes for "Bighorn sheep, boundaries, deer, elk, equipment, mountain goat, waterfowl, licensing, small game, and other related rule changes as needed."[334] The notice did not mention any contemplated rule changes for bears.

On February 10, 2021, WDFW filed a CR-102 proposing 36 new rules or rule amendments in a 168-page document.[335] Regarding black bear hunting, the CR-102 describes the proposed amendment to WAC 220-415-090 as follows: "2019-2020 Fall black bear hunting seasons and regulations," to "replace the season date table with a single sentence which identifies a standard time period each year for black bear hunting across all game units."[336] The CR-102 indicates that the reason for the change is to "adjust the dates and simplify the rule," and that it "will provide greater understanding of the fall season dates, methods of harvest, and restrictions."[337] It did not disclose that the change would create a permanent bear hunting season.

Similarly, management presentations about the proposal did not disclose the impact of this change. Commissioner Lorna Smith raised the issue for the first time immediately before the Commission voted on the full three-year hunting package.[338] She noted that the proposed bear hunting rule "appears to establish a fall black bear hunting season and bag limit in perpetuity, because there are no years mentioned," and raised concern that it "adopts the current bag limit that was raised . . . prior to us having the benefit of the bear density research results that we now have."[339] In response, Aoude said: "I mean, yeah, we did remove the date from it, so ultimately, it could be perpetual, but that's not the intent." [340]

Commissioner Smith proposed unsuccessful amendments to limit the bear hunting rule to first a one-year, then a three-year, time span, with only Commissioner Fred Koontz joining her in voting for the three-year limitation so that the rule would come back up for consideration along with the 2024 season setting process.[341] Following the failure of this proposed amendment, the Commission voted unanimously in favor of approving the full season setting rule package.[342]

D. Increase May Already Have Caused Substantial Damage to Bear Population

1. 2019 Bear Hunt Rule substantially increased bear mortality

Although management downplayed it as a minor change, the 2019 Bear Hunt Rule increased bear hunting in six of the nine BBMUs, and most of the state's GMUs.[343] The impact was immediate and significant. The state saw a nearly 50% increase in the number of bears that hunters reported killing in 2019, 2020, and 2022—with 2022 representing the highest level of hunter killing in the past decade.[344] Although hunting levels were somewhat lower in 2021, the four-year average is still 38% higher than the four-year average before the 2019 changes.[345] In addition, up until 2021, these hunting deaths included bears killed during the spring bear hunt, meaning that the 2,211 bears killed during the 2022 fall hunting season were nearly *double* the 1,148 bears killed a decade earlier.[346]

Figure 8. Number of black bears killed by hunters, 2013-23.[347]

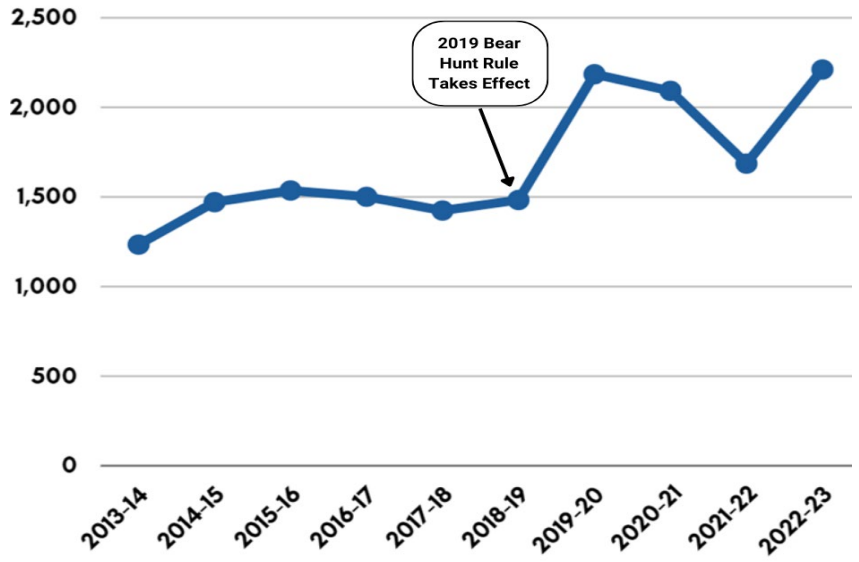


Table 9: 2019 changes in each BBMU, and difference in hunter kill rate, 2018-19 and 2022-23[348]

BBMU#	Region	Change from 2019 Bear Hunt Rule	2018-19 Hunter Kills	2022-23 Hunter Kills	% Increase 2018 to 2023
BBMU1	Coastal	None	268	377	**40.7%**
BBMU2	Puget Sound	None	94	126	**34.0%**
BBMU3	North Cascades	None	181	271	**49.7%**
BBMU4	South Cascades	Season extended by 2 weeks	131	254	**93.9%**
BBMU5	Okanogan	Season extended by 2 weeks/ Bag limit increased	136	213	**56.6%**
BBMU6	East Cascades	Bag limit increased	277	389	**40.4%**
BBMU7	Northeastern A	Season extended by 1 month/Bag limit increased	263	375	**42.6%**
	Northeastern B	Season extended by 2 weeks/Bag limit increased			
BBMU8	Blue Mountains	Season extended by 1 month/Bag limit increased	104	187	**79.8%**
BBMU9	Columbia Basin	Bag limit increased	14	19	**35.7%**
Total			**1,483**	**2,211**	**49%**

This increase has been seen in all the statewide BBMUs, including the six BMUs where WDFW increased hunting under the 2019 Bear Hunt Rule (Table 9). Based on the latest estimate of the state bear population size of 18,000 to 21,000 bears, the number of bears hunters killed during the 2022-23 hunt season represented between 10.5% and 12.3% of the total population. Notably, this number does not include other sources of mortality, including poaching, wounding loss, bears killed due to conflicts, or timber hunts.

For the 11 areas for which WDFW has specific data on bear populations at that time, it calculated that the average "harvest" rate in 2019-2021 was between 7% and 51% of the total bear population in each area—indicating that the current bear hunting rules may be creating significant population "sinks" (Table 10).[349] In particular, hunters killed 25% of the bear population in GMU 654 and 13% in GMUs 550 and 556, areas where the 2019 Bear Hunt Rule lengthened the season. They also killed 13% of the bears in GMU 117, where the new rule both lengthened the season and raised the "bag limit."[350]

Table 10. Estimates of hunting rates in GMUs with calculated density rates, 2019-21.[351]

Study Area GMU	Bear Habitat (km^2)	Average Total Density (bears/100km^2)	Estimated Abundance >1-year old[a]	2019-2021 Average Annual Harvest[b]	Estimated 2019-2021 Average Harvest Rate
117	2450	31.1	610	77 (13S:64F)	13%
162/166/169	1306	40.5	423	47 (15S:32F)	11%
218	1173	21.6	203	19	9%
245	1504	19.2	231	24	10%
418	2139	28.3	483	85 (8S:77F)	18%
437/448[c]	5197	25.7	1071	91	8%
454	1091	18.7	163	15	9%
460	2401	25.4	487	34	7%
550/556	1468	7.6	89	12	13%
654	842	16.9	114	29 (1S:28F)[d]	25%
672	662	7.7	41	21	51%

[a] Total abundance reduced by 20% to remove cubs of the year
[b] Tribal harvests not included. Spring (S) special permit and fall general season (F) hunts included where appropriate.
[c] Stillaguamish Tribe project
[d] Special permit hunts did not occur in 2020 or 2021

2. Current levels of bear mortality may have already damaged the population

No scientific rationale was provided for the changes made by the 2019 Bear Hunt Rule, other than a desire to address "political social pressures,"[352] and the fact that WDFW managers expressed a general feeling that it probably would not impair the state bear population. Before the vote, Aoude said management "felt" it could offer the increased opportunity and "not have a major concern for the resource overall," while two weeks beforehand, Simek had said that she "feel(s) very comfortable with our recommendation that it's not going to be a conservation issue."[353]

In reality, the true extent of the damage of the 2019 Bear Hunt Rule is impossible to assess. As WDFW has repeatedly warned in its annual status reports, it does not have an accurate way of detecting trends in the state bear population.[354] But it is alarming that hunting mortality alone now exceeds 10% of the bear population statewide, climbing as high as 51% in some areas.

Black bear scientists warn that managers must limit recreational black bear killing to reduce total mortality—especially during years of poor natural food production.[355] As WDFW noted in its 2022 Status and Trend Report, "a berry crop failure can increase human-caused mortality as bears move closer to people in search of food and decrease reproduction rates for adult females through lower body condition."[356] In Colorado bear studies, the female cohort of the population declined by 57% because of human-caused mortalities from vehicle collisions, hunting, and predator control, which coincided with widespread unavailability of natural foods.[357] Wildlife managers would not have detected this change had they not had rigorous, multi-year population monitoring in place.[358]

Studies show that black bear population growth is variable, and highly influenced by factors such as available forage the prior year.[359] In its study of Washington's black bears, WDFW found that bear densities range widely by region.[360] Bear biologists have suggested that a black bear population can withstand a human-caused mortality level of 4% to 10% of the population; more than that is super-additive mortality.[361] Additive mortality can increase the total death rate of a population,[362] whereas "super-additive mortality" describes a population decline larger than expected from documented mortality. This can occur through the killing of some individuals (by humans), which then indirectly increases the risk of death for others (e.g., infanticide in bears) or through failures of immigration and births to compensate.[363]

Since the passage of the 2019 Bear Hunt Rule, hunters have regularly surpassed sustainable black bear mortality levels even *before* additional sources of mortality are included. Based on the latest estimate of the state bear population size of 18,000 to 21,000 bears, hunters killed between 10.5% and 12.3% of the total state bear population during the 2022-23 hunt season.[364] They also killed between 10% and 51% of the population in 7 of the 11 areas for which WDFW had calculated densities as of the 2022 Status Report (Table 10).

To these alarming numbers, the Commission must add other sources of mortality to estimate the full toll on the bear population. According to WDFW's research in the east Cascades, non-hunting sources of human-caused mortality could account for between 21% and 39% of total bear mortality.[365] Averaging the numbers for the west slope and east slope of the Cascades to assume that hunting constitutes 58% of bear mortality and other human-caused mortality adds another 30%, the total human-caused bear mortality in 2022-23 would equal roughly 16.8% of a statewide bear population of 20,000—well above levels that a bear population can withstand.

Such levels "super-additive mortality" destabilize bears' social structure, resulting in increased natural mortality. When hunters kill a resident adult male bear, sub-adult males compete for his mates and home range, and these newcomers are likely to kill the cubs sired by the former resident bear to spur the mother bear back into breeding.[366] This additional pressure mortality could have a significant impact on the growth rate of the bear population, impeding its ability to bounce back from high levels of human-caused mortality.[367]

Prior to the vote on the 2019 Bear Hunt Rule, both Simek and Aoude assured the Commission that there was no reason to be concerned about the health of the bear population, based on the age and sex data collected from hunters.[368] Simek assured the Commission that this method of monitoring the bear population was "what most of the western states are using at this time,"[369] but that claim conflicts with what WDFW reported in its Status and Trend Report that

same year, which indicated that "most agencies have moved away from using median ages and have implemented specific harvest rates based on density estimates and management objectives."[370] Just a year prior, the 2018 Status and Trend Report provided a lengthy explanation about why this data could not be relied upon:

> Collecting teeth from harvested black bears is one of the least expensive and time efficient tools managers have available and it facilitates a working relationship with the hunting public. However, the response rate is low and therefore much of the information Washington uses for black bear management, such as median age (Table 3), percent females in the harvest (Table 4), and population reconstruction, is limited and provides minimal information for long-term management. Harvest data can demonstrate both increasing and decreasing population trajectories as each can exhibit the same age structure (Clark 1999) and/or sex ratio (Garshelis 1991) and trends may not be consistent with the true population trajectory (Noyce and Garshelis 1997, Beston and Mace 2012, McLellan *et al.* 2017). Black bear managers agree that median age is not a reliable technique for management or population estimation. A low median age could be because many of the adults have died or because cub production is high, as both situations can demonstrate a similar age structure. A higher median age may be because hunters are more willing to provide a tooth from older-aged animals and less likely to submit for younger animals, since they already know the age. Generally, median ages can be a reflection of hunting pressure and tend to be lower in areas with greater access (Table 3), but when higher harvest situations are monitored, median age tends to decrease and then remain constant, so it is not sensitive to changes in harvest and likely not useful to managers.
>
> Historically, Washington used population reconstruction (Bender 1997) from tooth submissions and extrapolations of density to habitat availability, but currently does not have statewide science-based field estimates of black bear abundance and density, thus making an estimate of a true harvest rate difficult. Reconstruction does not account for non-harvest mortality and the age structure of harvest may not be representative of the larger population (Williams *et al.* 2002), and if small changes in harvest rates occur, population estimates can become considerably biased over time (Davis *et al.* 2007).[371]

Table 11. WDFW black bear "harvest" guidelines. [372]

	Harvest		
Parameter	**Liberalize**	**Acceptable**	**Restrict**
% Female in the harvest	< 35%	35-39%	> 39%
Median age of harvested females	>6 years	5-6 years	< 5 years
Median ages of harvested males	>4 years	2-4 years	<2 years

Setting aside that WDFW has acknowledged that its method of monitoring the bear population through "harvest" data is both based on insufficient data and inherently unreliable, management's assurances in 2021 that "the current information we have does not indicate that overharvest is occurring" is still not accurate. [373] For the hunting season before the adoption of

the 2019 Bear Hunt Rule, hunters exceeded the "acceptable" threshold of female mortality of 39% in 3 of the 8 BBMUs where WDFW keeps those statistics. During the 2022-23 hunting season, hunters exceeded that threshold in 2 BBMUs, with 2 more at the top end of the "acceptable" range (Table 12).

Table 12: Female bears killed as percentage of overall hunter kills, 2012-22. Dark green indicates an exceedance of "acceptable" levels; light green indicate a rate at the top of the acceptable range.[374]

Percent Female Mortality											
BBMU	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
1	30	32	28	27	29	35	36	31	36	28	26
2	36	42	39	34	43	35	33	26	24	23	44
3	36	32	38	31	42	26	40	27	29	30	29
4	31	31	44	24	37	35	40	27	33	28	30
5	33	27	32	27	32	36	38	31	36	32	44
6	27	30	34	34	35	31	34	27	34	26	39
7	33	31	33	34	32	37	33	27	31	34	31
8	35	29	29	38	37	29	43	42	29	38	39
9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Prior to the vote on the 2019 Bear Hunt Rule, Simek told the Commission that it was important for the agency to get "good reporting" so it could track the impact of the hunting change.[375] But since that time, WDFW has not taken any action to increase the paltry compliance rate with tooth submission requirements—which has remained at about 25%.[376]

Even given the dearth of data to make these calculations, the 2022 Status and Trend Report also shows reason to be concerned about the median ages of the bears killed.[377] A table included in that report indicates that in 2021-22 (the last year shown), the median age of female bears killed fell below the "acceptable" level of 5 years in half of the BBMUs where that data is kept (Table 13). Even more concerning, three of those four BBMUs have fallen below acceptable levels in two of the three years following the 2019 Bear Hunt Rule.

Table 13: Median ages of black bear mortalities, 2012-21. Gray areas show where "acceptable" management parameters were exceeded.[378]

BBMU	2012		2013		2014		2015		2016		2017		2018		2019		2020		2021	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1	4	5	3	7	4	4	4	5	4	5	4	6	3.5	5	4	5	4	4	4	6
2	3	5	3	6	2.5	2	2	4	2	4	3	4	3	2	3	6.5	3	5	3	6
3	5	6	5	6	4	8	5	9	4	6.5	3	5	3	4	3	4	4.5	6	4	3
4	3	5	3	3	3	5	3	7	4	5.5	3	4	4	4	4	4	4	4	3	7.5
5	6	6	3	2.5	3	3	1	4	3	1	3	6	2.5	2.5	4	2.5	3.5	4	5	2
6	4	4	4	4	2	7	3	5	4	4	4	4.5	3	5	3	5	4	5	4	3.5
7	5	5	4	4	2	3.5	3	5.5	4	7	3	5	3	6.5	3	5	3	5	4	6
8	3.5	4.5	5.5	3	5	7	3	3.5	2.5	4	5	3	3	3.5	3	4	4	5	3	3.5
9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	N/A	N/A	N/A	N/A	N/A
Statewide	4	5	4	5	3	4.5	3	5	4	5	3	5	3	5	3	5	4	5	4	5

All told, the Commission should be extremely concerned that the record levels of hunting mortality in the wake of the 2019 Bear Hunt Rule have already put Washington's bear population in serious jeopardy, considering that:

- WDFW is unable to determine the impact that a 50% increase in hunting mortality has had on either the bear population statewide, or in localized areas;
- The number of bears killed during the 2022-23 hunting season may have exceeded 12% of the statewide population, based on the most recent estimate of 18,000 to 21,000 bears;
- This increased hunting mortality does not include additional human-caused mortality from conflict actions, bear timber management kills, poaching, tribal hunts, wounding loss, vehicle collisions, or increased rates of infanticide resulting from high hunting mortality;
- Rather than *decreasing* human-bear conflicts, studies indicates that increased rates of hunting may actually exacerbate conflicts, potentially leading to additional bear mortality as a result of management actions to kill conflict bears;[379]
- The current metrics WDFW uses may make it impossible for managers to detect a downward trend in the bear population, but even so, they indicate reason for concern;
- Four BBMUs showed an increase in the percentage of female bears killed in 2022-23, relative to the overall population, with two *significantly* exceeding the ceiling after which WDFW indicates it should restrict hunting;
- In the *same four* BBMUs, the median age of female bears killed fell below the age of 5 years in 2021-22, the point at which WDFW indicates it should restrict hunting;
- If the current metrics do detect a decline in the population, by the time they do, "bear numbers may have been reduced to a point where it could take as long as 15 years to recover the population.;[380]

- Bear hunting license sales increased by 35.9% between the 2020-21and 2022-22 hunting seasons,[381] even as the number of bears killed dropped by 20% in the same time period,[382] indicating that hunters were having greater difficulty finding bears to kill; and

- As the Game Management Plan warns, bear populations are "especially sensitive to over-exploitation" due to their low birth and recruitment rates.[383]

In addition to the current unsustainable levels of mortality, the Commission must consider the impact of other threats facing the state's bear population, including habitat loss and climate change, which may simultaneously causing food shortages that have been linked with significant population declines[384] and increasing nutritional needs by reducing hibernation.[385] Not only might these impacts result in additional mortality, but they may prevent the black bear population from recovering from current hunting levels.

IV. PROPOSED AMENDMENTS TO BEAR AND COUGAR HUNTING RULES

A. Commission Should Take Immediate Action to Comply with Mandate, Strategic Plan, and Game Management Plan

The current bear and cougar management rules must be amended for WDFW to comply with the fundamental responsibilities described in its legislative mandate, the long-range planning goals of its 25-Year Strategic Plan, and the guiding provisions of the 2015-2021 Game Management Plan, under which the Department claims it continues to operate.

For the reasons described above, the Commission must take immediate action to prevent further damage to the state's bear and cougar populations if it is to fulfill the Department's mandate to: (1) "preserve, protect [and] perpetuate" wildlife; (2) "conserve" wildlife "in a manner that does not impair the resource"; and (3) "authorize the taking of wildlife…only at times or places, or in manners or quantities, as in the judgment of the commission does not impair the supply of these resources." [386]

Commission action is also necessary to return bear and cougar management to the principles in the Game Management Plan, to which the 2019 Bear Hunt Rule and the 2020 Cougar Hunt Rule played only lip service. Current bear and cougar rules violate the Game Management Plan's directives to:

- To maintain stable populations, modify hunting levels for cougar and bear on a "three-year rotation";[387]

- Base "hunting seasons and regulation recommendations" on "good science," and when "biological information is lacking or insufficient," make management decisions that are "sufficiently conservative to ensure protection of wildlife resources";[388]

- "Preserve, protect, perpetuate, and manage black bear and their habitats to ensure healthy, productive populations";[389]

- "Preserve, protect, perpetuate, and manage cougar and their habitats to ensure healthy, productive populations";[390]

- "Develop [bear] harvest criteria that incorporate survey and monitoring data";[391] and

- "Minimize human/cougar conflict."[392]

WDFW's 25-Year Strategic Plan also mandates action if the Commission is to deliver on the strategies to:

- **"Proactively address conservation challenges."**[393] In order to ensure Washington residents enjoy "connected, healthy, and resilient habitats that support robust fish and wildlife,"[394] the Commission must recognize the important role that cougars and bears play in building and maintaining healthy ecosystems and take measures to protect those species from their current overexploitation.

- **"Engage communities through recreation and stewardship."**[395] The strategic plan recognizes that the "interests and values" of Washingtonians are shifting, and that it needs to "adjust and learn more from the public regarding their needs and motivations."[396] The Department adopted the 2019 Cougar Hunt Rule and the 2020 Bear Hunt Rule directly in response to the demands of tiny but vocal group, ignoring the polls that consistently show that Washingtonians as a whole place great value on protecting and preserving cougar and bear populations. For example, a 2020 poll showed that 65% of Washingtonians oppose the trophy hunting of cougars,[397] while a 2022 poll revealed that 80% of Washingtonians support maintaining sustainable predator populations in the ecosystem—an increase of 10% over just eight years earlier.[398] If it is truly interested in serving the broader public and "model[ing] values that embrace conservation of biologic diversity and healthy ecosystems,"[399] the Commission must reverse the regressive cougar and bear rules that were explicitly passed only to cater to the demands of a tiny portion of Washingtonians.

- **"Deliver science that informs Washington's most pressing fish and wildlife questions."**[400] WDFW's scientists have been delivering on this strategy, leading the nation in finding better ways to ensure healthy and sustainable populations of cougar and bear. As discussed above, in adopting the 2019 Bear Hunt Rule and the 2020 Cougar Hunt Rule, management and the Commission both ignored and disrespected this work. By reversing those rules, the Commission would be taking steps to reverse those errors. Respecting internal scientific experts also serves the interests and values of Washingtonians, as 90% of Washington residents believe scientific information is important to making game management decisions, and 90% rate the professional judgment of WDFW biologists as important to those decisions.[401]

- **"Model operational and environmental excellence."**[402] In order to "live" its "agency values" of "accountability to actions, and transparency," and support staff through "empowered decision making," management and the Commission must recognize, accurately convey, and take into consideration the scientific judgment of its biologists. Unfortunately, in the 2018 America's Wildlife Values poll, two-thirds of the staff said that if it was forced to choose, the agency would prioritize politics over science.[403] The accuracy of this prediction is confirmed by internal surveys: in a 2018 survey of WDFW staff who are members of the Washington Association of Fish & Wildlife Professionals (WAFWP), only 23% said upper management uses the best available science in decision making, with 47% indicating that management does not use the best available science.[404]

The WAFWP executive board commented that the survey results showed the "perception that politics permeate all levels of management, leading to underutilization of science and expert opinion, is pervasive – as it has been for at least the last five years."[405] The history of the 2019 Bear Hunt Rule and the 2020 Cougar Hunt Rule show the accuracy of this perception.

B. Proposed Amendments Would Address Most Alarming and Egregious Issues

Petitioners are petitioning for the Commission to open rulemaking to amend WACs 220-415-100, 220-400-050, and 220-415-090 as indicated in Attachments I-III. Petitioners are seeking the rollback of the unsound, unscientific, and unsustainable changes made to the bear and cougar hunting seasons in 2019, 2020, and 2021, in addition to other modest changes based on WDFW's recommendations in its annual status reports, its prior rulemaking proposals, and decades of scientific research.

1. Amendments to cougar hunting rules: WAC 220-415-100 and 220-400-050

Petitioners' proposed amendments to WAC 220-415-100 (Attachment 1) reverse the changes made by the 2020 Cougar Hunt Rule,[406] by (1) restoring the hunting guidelines from the pre-2020 rule, which are derived from science-based cougar population estimates and growth rates; (2) reverting to counting all independent-aged cougars under the hunting guidelines, as Department scientists recommend in published research; and (3) restoring date limitations to the rule, to ensure that cougar hunting levels will be reconsidered at least every three years.[407]

The proposed amendments also respond to the dramatic increase in cougars that WDFW and local authorities kill in management actions and recommendations from WDFW scientists that managers count all cougar mortality toward the maximum hunting guidelines.

In addition, the proposed amendments would respond to WDFW's recommendations in the last several cougar status reports, by (1) combining the split cougar season into one season to allow managers to close hunting in a particular PMU whenever reported hunter kills hit the maximum hunting guideline; and (2) through an amendment to WAC 220-400-050 (Attachment II), requiring hunters to report their kills within 24 hours, to allow managers to take quick action to close hunting in a PMU before the maximum guideline is exceeded.

Finally, the proposed amendments would implement the rulemaking proposal that WDFW abandoned in 2018 due to the opposition of 97 hunters, by ending the cougar hunting season on March 31 so as to:

> minimize[e] disturbance to ungulates that are already stressed from winter and birthing; minimize confusion and burden on hunters to buy two licenses… provide the department an earlier timeframe to manage the harvest guidelines; and attempt to minimize potential of exceeding the harvest guidelines.[408]

2. Amendments to bear hunting rules: WACs 220-415-090

Petitioners propose an amendment to WAC 220-415-090 (Attachment III) to reverse the 2019 Bear Hunt Rule, by rolling back WDFW's increase to the number of bears hunters could kill each year in 77 of the state's GMUs and its extension of the bear hunting season in 96

GMUs. Petitioners also ask the Commission to undo the 2021 rule change, by restoring date limitations to the bear hunting rule, to ensure that bear hunting levels will be reconsidered at least every three years

Petitioners also recognize that the state's bear population needs help that goes beyond just reversing the 2019 Bear Hunt Rule. Meaningful relief may need to wait until WDFW eventually finalizes the long-promised Game Management Plan and implements a new management structure based on its research into bear densities. In the meantime, to provide the bear population some relief from years of overhunting, petitioners are asking the Commission to establish a statewide bear hunting season from September 1 to November 15, and a statewide "bag limit" of one bear. This modest change would also satisfy management's purported desire to "standardize" season lengths and "bag limits" to eliminate hunter confusion.[409]

In addition, through an amendment WAC 220-400-050 (Attachment III), Petitioners ask the Commission to WDFW's longstanding request for better enforcement of current hunter reporting requirements. Although failure to comply is currently punishable as a misdemeanor, hunters do not take this penalty seriously because it is never enforced. Petitioners thus ask the Commission to approve a reasonable penalty that is likely to serve as a significant incentive to compliance, by stipulating that any hunters who do not abide by the reporting guidelines will not be eligible for a bear hunting license the following year.

V. CONCLUSION

As this Petition explains, the proposed rule amendments necessary to protect the state's bear and cougar populations from additional significant damage from the 2019, 2020 and 2021 rules, to protect the people of Washington from increasing predations on pets and livestock and more human-wildlife conflicts; to adhere to the directives of the Department's mandate, the 2015-21 Game Management Plan, and the 25-Year Strategic Plan; and to fulfill is duty as a trustee of the state's fish and wildlife.

But these changes will not be sufficient for WDFW to fulfill its responsibilities to both the people and the wildlife of the state. Our proposal falls short of what is necessary to remedy the harm done to the state's bear and cougars and address the issues and challenges discussed above and it does not fully implement the best available science. Petitioners thus urge the Commission to insist that management provide drafts of the long-delayed bear and cougar sections of the Game Management Plan before the end of the year, and to ensure that the new Plan sets forth guidelines to better manage Washington's cougars and bears in accordance with the best available science.

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[105] GMP, pp. 111-12.

[106] *Id*.

[107] WDFW. 2017 Game Status and Trend Report (2017 Status and Trend), pp. 234-35; 2018 Game Status and Trend Report (2018 Status and Trend), pp. 274-76; 2019 Game Status and Trend Report (2019 Status and Trend), pp. 277-79; 2020 Game Status and Trend Report (2020 Status and Trend), pp. 275-76; 2021 Game Status and Trend Report (2021 Status and Trend), pp. 275-76; 2022 Status and Trend, p. 294.

[108] 2020 Status and Trend, pp. 275 & 276 Table 3.

[109] 2020 Status and Trend, p. 276, Table 3.

[110] Table 3 of the 2020 Status and Trend Report shows actual number cougars hunters killed each year. Percentages were calculated using the estimated population size listed on page 111 of the 2015-2021 Game Management Plan.

[111] 2017 Status and Trend, p. 234.

[112] 2020 Status and Trend, p. 276, Table 3.

[113] 2017 Status and Trend, p. 233; 2018 Status and Trend, p. 274; 2019 Status and Trend, p. 277; 2020 Status and Trend, p. 275; 2021 Status and Trend, p. 275.

[114] 2017 Status and Trend, p. 233; 2018 Status and Trend, p. 274; 2019 Status and Trend, p. 277; 2020 Status and Trend, p. 275; 2021 Status and Trend, p. 275.

[115]2018 Status and Trend, p. 274; 2019 Status and Trend, p. 277; 2020 Status and Trend, p. 275; 2021 Status and Trend, p. 276.

[116] McIssac, Don, oral remarks. April 2020 Meeting.

[117] Thorburn, Kim, oral remarks. April 2020 Meeting.

[118] Kehoe, Bob, oral remarks. April 2020 Meeting.

[119] GMP, p. 108.

[120] Aoude, Anis, oral remarks. Meeting of the Washington Fish and Wildlife Commission, 9 April 2021, https://sapublicsitedata01.blob.core.windows.net/dfwpublicdata/meetings/2021/04/20210409_d.mp3 (April 2021 Meeting).

[121] Aoude, Anise. "WDFW proposed recommendations to cougar harvest guidelines." *YouTube.* 6 Feb. 2020, https://www.youtube.com/watch?v=8G_naHin_ys. Accessed 28 Sept. 2023.

[122] 2020 Cougar CES, p. 5 ("We are currently managing cougars under objectives outlined in the Statewide Game Management Plan. Any opportunity that is greater than what was presented in these options falls outside of this plan and would require a Game Management Plan Revision.").

[123] *Id.*

[124] Aoude, Anis, oral remarks. "Cougar Rules – Briefing and Public Hearing," Agenda Item 13 for Fish and Wildlife Commission Meeting. 13 March 2020, audio available at https://wdfw.wa.gov/about/commission/meetings/2020/march-11-14-2020-meeting-agenda (March 2020 Meeting).

[125] *Id.*

[126] Beausoleil *et al.* 2013.

[127] Aoude 2020 (emphasis added).

[128] *Id.*

[129] 2020 Cougar CES, p. 2.

[130] Cougar CR-102, WSR 20-04-091, pp. 1-2.

[131] Beausoleil *et al.* 2013, p. 686.

[132] 2019 Cougar Options, p. 9.

[133] Calculations are based on the Department's estimate that 30% of the cougars killed each hunting season fall within this category. April 2020 Presentation, p. 6.

[134] Estimated population size from GMP, p. 111, except for GMU 568, which is calculated based on pre-2020 hunting limit. Pre-2020 guidelines and guidelines for 2020 rule taken from WDFW, "Cougar Rules-Decision," 10 Apr. 2020, pages 4-7 (proposal for amendment to WAC 220-415-100), https://wdfw.wa.gov/sites/default/files/2020-04/6_cougar_rules_ss_.pdf. Accessed 28 Sept. 2023. The number of sub-adult cougars killed each year is based on the Department's calculations that sub-adult cougars are roughly 30% of the cougars killed by hunters each year. April 2020 Presentation, page 9.

[135] This number is calculated against the populations of 2,065 cougars estimated in Beausoleil*, et al.* 2021. The actual number may be higher or lower each year, depending on the number of sub-adult cougars killed outside the new guidelines. April 2020 Presentation, p. 9.

[136] *Id.*; GMP, p. 111.

[137] GMP, p. 112.

[138] Beausoleil *et al.* 2013, p. 682.

[139] 2017 Status and Trend, p. 230.

[140] 2017 Status and Trend, p. 231.

[141] WDFW. 2017 Statewide cougar harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest#2017-harvest; 2018 Statewide cougar harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest#2018-harvest; 2019 Statewide cougar harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest#2019-harvest.

[142] Statistics pulled from the Department's public database incidents involving "predatory wildlife," which includes incidents involving cougars, wolves, and grizzly bears, and reports on actions taken in response to these incidents (Public Incident Database). Available at https://pd20.communitydashboard.info:8000/DFW/Mapping. Accessed 29 Sept. 2023.WDFW has not made public its tally of complaints lodged during these years, which may differ from the numbers reported because of inconsistencies within the Public Incident Database.

[143] Open Public Comment, Fish and Wildlife Commission meeting, 1-2 March 2019. Audio recording, https://wdfw.wa.gov/about/commission/meetings/2019/march-1-2019-meeting-transcript. Accessed 9 Sept. 2023.

[144] Lambert 2006.

[145] *Id.*

[146] Susewind 2019.

[147] Stevens County Board of County Commissioners, Memo to Payroll Department and Finance/HR Director re Wildlife Specialist Hired, 12 April 2018. Obtained through public disclosure request.

[148] Klickitat County Sheriff Department, Dangerous Wildlife Policy and Procedures, 20 Aug. 2019.

[149] Photograph in Petitioners' files.

[150] Public Incident Database.

[151] *Id.*

[152] *Id.* For example, on June 23, 2018, the Department responded to the reported death of a goat, which they did not confirm was due to a cougar. Nevertheless, the Department called in a hound hunter who found and killed a cougar "nearby." The Department had already killed two cougars on the same property in the prior four months, and the report notes that "Advice and recommendations were provided again."

[153] *Id.* For example, on June 24, 2020, WDFW received the report of a dead goat and "a cougar spotted running across the road." The landowner left the dead goat out and killed one cougar that came to feed on it. WDFW responded and left the dead goat out as bait, killing one more cougar and wounding another that was attracted by the bait. A fourth cougar "was shot at" and apparently killed, then houndsmen came to the scene to track the injured cougar, chase it up a tree, and kill it.

[154] *Id.* For example, on April 27, 2021, a caller reported that a cougar was in their livestock enclosure, and that they had lost 3-4 sheet and some goats recently. WDFW called houndsmen, who tracked, treed, and killed one adult female cougar and two sub-adult cougars that were "in the area."

[155] Stover, Dawn, "Locals upset by latest 'removal' but sheriff's office policy of hunting cougars with dogs remains intact," *Columbia Insight*, 2 March 2023, https://www.invw.org/2023/03/03/cougar-killings-continue-in-klickitat-county-this-time-its-a-kitten/. Accessed 20 Sept. 2023.

[156] Stover, Dawn, "With WDFW's blessing, Klickitat County's sheriff has amassed a hound-hunter posse to kill cougars. Is it really all about public safety?" *Columbia Insight*, 24 Sept. 2020, https://columbiainsight.org/with-wdfws-blessing-klickitat-countys-sheriff-has-amassed-a-hound-hunter-posse-to-kill-cougars-is-it-really-all-about-public-safety/.

[157] Cougar Mortality Database.

[158] For example, on January 25, 2020, a member of the "posse" reported that he had seen a cougar on his property. He used his hounds to track it for two days through land owned by the Department of Natural Resources, finally cornering the cougar and shooting it. Klickitat County Sheriff's Office, Call Detail Report and Deputy Report for Incident 20-000278, 22 Aug. 2019 (obtained through public disclosure request).

[159] For example, on August 22, 2019, a complainant reported that a cougar had killed a deer in a brushy area at the edge of town. The sheriff's office responded and shot at it four times in residential areas before killing it. On January 25, 2020, two cougar kittens were killed when they were spotted feeding on a deer their mother had killed. Klickitat County Sheriff's Office, Call Detail Report and Deputy Report for Incident 20-000278, 25 Jan. 2020 (obtained through public disclosure request).

[160] These percentages assume that cougar populations rebounded to the same densities following prior years of excess killing, which has not been determined. If not, the percentage of the total cougar population killed in these years would be far higher.

[161] Annual mortality from 2020-2022 cougar harvest reports; estimated population from GMP, pp. 111-12 (Table 1).

[162] Beausoleil *et al.*, 2021.

[163] *Id.*, pp. 6 and 9, Table 2.

[164] *Id.*

[165] *Id.*, p. 6.

[166] The chart displays 12-month hunting years beginning on April 1 and ending March 31 of the following year, which is how the Department tracks its data. KC stands for Klickitat County and DWPP is the county's 2019 Dangerous Wildlife Policies and Procedures. Mortality data was derived from 2017 and 2018 Status and Trend Reports, 2016-2021 game harvest reports (https://wdfw.wa.gov/hunting/management/game-harvest), and for 2022, the Department's Cougar Mortality Database, obtained by a public records request. Total cougar mortality counts represent human-caused mortality but does not include unreported poaching or tribal kills.

[167] Logan, Kenneth. A., and Sweanor, Linda. Desert Puma: Evolutionary Ecology and Conservation of an Enduring Carnivore. Island Press, 2001, p. 370.

[168] *Id.*

[169] *Id.*

[170] Beausoleil *et al.* 2013.

[171] Because mature male cougars have such strong territorial instincts and will fight to the death to defend their territories, young male cougars are described as "obligate" dispersers. Sweanor, Linda L. "Cougar dispersal patterns, metapopulation dynamics and conservation." *Conservation Biology*, vol. 14 (2000), pp. 798-808.

[172] Robinson, Hugh S., *et al.* "Sink Populations in Carnivore Management: Cougar Demography and Immigration in a Hunted Population." *Ecological Applications*, vol. 184, no. 4, 2008, pp. 1028-37.

[173] *Id.*

[174] Maletzke, *et al.* 2014.

[175] *Id.*

[176] Robinson, *et al.* 2008.

[177] *Id.*

[178] *Id.*

[179] Wielgus, *et al.* 2013, pp. 69-75.

[180] *Id.*

[181] A 2020 study of a Colorado cougar population found that a hunting rate of 22% of adult cougars over 4 years old with more than 20% female cougars represented in greatly reduced population abundance. Logan, Kenneth & Runge, Jonathan, "Effects of Hunting on a Puma Population in Colorado." *Wildlife Monographs*, vol. 209 (2020), pp. 1-35, doi: 10.1002/wmon.1061.

[182] Robinson, *et al.* 2008.

[183] *Id.*

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[186] 2022 Status and Trend.

[187] WDFW. 2021 Statewide cougar harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest/2021/cougar; 2022 Statewide cougar harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest/2022/cougar.

[188] *Id.*

[189] Maletzke *et al.* 2014.

[190] Wielgus *et al.* 2013; Cooley, *et al.* "Does hunting regulate cougar populations? A test of the compensatory mortality hypothesis." *Ecology*, vol. 90, no. 10 (2009), pp. 2913-21.

[191] *Id.*; Ruth, Toni K., *et al. "*Cougar survival and source-sink structure on Greater Yellowstone's Northern Range." *The Journal of Wildlife Management*, vol. 75, 2011, pp. 1381-98, https://doi.org/10.1002/jwmg.190.

[192] Logan and Sweanor 2001; Cooley 2009; Ruth 2011.

[193] Robinson, Hugh and DeSimone, Richard, "The Garnet Range Mountain Lion Study: Characteristics of a Hunted Population in West-Central Montana," Montana Fish, Wildlife and Parks, Fed. Aid Project W-154-R, 2011, https://fwp.mt.gov/binaries/content/assets/fwp/conservation/wildlife-reports/mountain-lion/mtlionfinalreportwithcovers2011lowresolution1o.pdf.

[194]2021 Status and Trend, p. 276.

[195] Logan and Sweanor 2001; Ruth *et al.* 2011.

[196] Ruth *et al.* 2011.

[197] Elbroch and Quigley 2002.

[198] Choate, *et al.*, 2006.

[199] Peebles, *et al.*, 2013; Elbroch and Quigley 2002.

[200] Wultsch, Claudia, *et. al.* "Genetic diversity, gene flow, and source-sink dynamics of cougars in the Pacific Northwest." *Conservation Genetics* (published online 13 June 2023), https://www.fs.usda.gov/rm/pubs_journals /2023/rmrs_2023_wultsch_c001.pdf. Accessed 16 Oct. 2023.

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[209] *Id.*

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[211] *Id.*

[212] 2020 Status and Trend, pp. 29-31.

[213] *Id.*, pp. 54, 56.

[214] *Id.*, pp. 54-56.

[215] 2020 Status and Trend, pages 281-85.

[216] "Washington Predator-Prey Project: Studying the potential ecological impact of recolonizing wolves on sympatric carnivore and ungulate populations to inform wildlife conservation and management." Website: https://predatorpreyproject.weebly.com/.

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[244] There is evidence WDFW's expert staff agrees. In a February 16, 2018 document obtained through a public disclosure request, a staff member notes that "The areas where harvest thresholds are constantly being exceeded are the same areas we get the most complaints from (Regions 1 & 3). I don't think it's because there are more cougars there….I think it's because harvest is too intensive and a sink has been created (not just from exceeding guidelines, but tribal take is large in these 2 areas[.]"

[245] Calculations from Public Incident Database.

[246] Notes from "Fruitland Debrief," 4 Aug. 2022, internal WDFW meeting. Obtained through public disclosure request. The notes indicate that the dead cougar was a 10-month-old kitten and ask, "Why was the age never disclosed to the public?"; Cougar Mortality Database.

[247] This claim can still be found on some locations of WDFW's website, including the page about bear identification (https: //wdfw.wa.gov/hunting/requirements/bear-identification-testing) and its Living with Wildlife publication (https://wdfw.wa.gov/sites/default/files/publications/00606/wdfw00606.pdf).

[248] WDFW. "Report to Commission," 10 Nov. 2021, p. 5.

[249] https://wdfw.wa.gov/species-habitats/species/ursus-americanus; 2022 Bear Status and Trend.

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[266] 2022 Status and Trend, p. 303.

[267] GMP, p. 103.

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Mountains, edited by Jessica E. Halofsky, *et al.* (Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain, 2018).

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[296] Petition for Judicial Review and Declaratory and Injunctive Relief, *Center for Biological Diversity v. WDFW, et al.*, No. 18-2-02766-34, 31 May 2018, Thurston County Superior Court.

[297] *Ctr. for Biological Diversity v. Dep't of Fish & Wildlife*, 14 Wn. App. 2d 945, 474 P.3d 1107 (Oct. 27, 2020).

[298] 2022 Bear Status and Trend, pp. 299, 303, 305.

[299] 2020 Bear Status and Trend, p. 280.

[300] *Id.*

[301] 2018 Status and Trend, p. 286.

[302] GMP pp. 103-104; 2020 Bear Status and Trend, p. 280; 2021 Status and Trend, pp. 285-86; 2022 Status and Trend, pp. 298-99, 305.

[303] 2022 Status and Trend; Beston, Julie A., and Mace, Richard D. "What can harvest data tell us about Montana's black bears?" *Ursus ,* vol. 23, pp. 30–41, 2012; McLellan, Bruce N., *et al*. "Sustainability of the grizzly bear hunt in British Columbia, Canada," J*ournal of Wildlife Management, vol.* 81, pp. 218–29, 2017.

[304] Clark, Joseph D. "Black Bear Population Dynamics in the Southeast: Some New Perspectives on Some Old Problems." Proceedings of the 15th Eastern Black Bear Workshop, 28 March 1999, pages 97-115. Available at: https://www.bearbiology.org/fileadmin/tpl/Downloads/EBBW/15th_EBBW/15th_Eastern_Black_Bear_Workshop_Proceedings_Low.pdf.

[305] GMP, p. 103.

[306] GMP, pp. 103-04.

[307] 2022 Status and Trend, p. 299.

[308] Welfelt, Lindsay S., *et al.* "Factors Associated with Black Bear Density and Implications for Management." *Journal of Wildlife Management*, vol. 83, no. 7, 2019, pp. 1527-39.

[309] 2022 Status and Trend, p. 299.

[310] *Id.*

[311] *Id.*

[312] *Id*.

[313] *Id.*

[314] 2022 Status and Trend, p. 305.

[315] Open Public Comment, Agenda Items 3 and 19. March 2019 Meeting.

[316] WDFW. CR-101, Preproposal Statement of Inquiry, WSR 19-06-080, 5 March 2019, https://wdfw.wa.gov/sites/default/files/about/regulations/2019/wsr_19-06-080.pdf.

[317] *Id.*

[318] June 2019 Presentation.

[319] GMP, p. 104 (Table 2, setting forth same standards).

[320] June 2019 Presentation, p. 9.

[321] 2019 Status and Trend.

[322] *Id.*

[323] *Id.*

[324] Thorburn, Kim, oral remarks. June 14, 2019 Meeting.

[325] Aoude, Anis, oral remarks. June 14, 2019 Meeting.

[326] Baker, Barbara, oral remarks. June 14, 2019 Meeting.

[327] *Id.*

[328] *Id.*; Simek, Stephanie, WAC 220-415-090, June 2019 Presentation, p. 10 (listing the bag limit and season dates for each GMU prior to the rule change). For a list of all the GMUs, including the GMUs included in Region 1 (Eastern Washington), please see WDFW. "Special Meeting of the Fish and Wildlife Commission, Agenda Item B," 28 June 2019, at at: https://wdfw.wa.gov/about/commission/meetings/2019/june-28-2019-meeting-transcript.

[329] WDFW. "Concise Explanatory Statement, 2019-2020 Fall black bear hunting seasons and regulations," WAC 220-415-090.

[330] *Id.*

[331] WDFW, CR-103E, WSR 19-16-90, 1 August 2019.

[332] RCW 34.05.350.

[333] WDFW, CR-103E, WSR 19-16-090. 1 Aug. 2019, https://wdfw.wa.gov/sites/default/files/2019-08/WSR%2019-16-090.pdf.

[334] WDFW, CR-101, Preproposal Statement of Inquiry, WSR 20-23-122, 18 Nov. 2020, https://wdfw.wa.gov/sites/default/files/about/regulations/filings/2020/wsr_20-23-122.pdf. Accessed 15 Oct. 2023.

[335] WDFW, CR-102, Proposed Rule Making, WSR 21-05-032, 10 Feb. 2021, https://wdfw.wa.gov/sites/default/files/about/regulations/filings/2021/combined.pdf. Accessed 15 Oct. 2023.

[336] *Id.* at 5.

[337] *Id.* at 12.

[338] Smith, Lorna, oral remarks. April 2021 Meeting.

[339] *Id.*

[340] Aoude, Anis, oral remarks. April 2021 Meeting.

[341] WDFW, Minutes of the Washington Fish & Wildlife Commission Web Conference, 9 April 2021, available at: https://wdfw.wa.gov/sites/default/files/2021-04/2021049finalwebconferenceminutes.pdf.

[342] *Id.*

[343] *Id.*; June 2019 Presentation, p. 10 (listing the bag limit and season dates for each GMU prior to the rule change). For a list of all the GMUs, including the GMUs included in Region 1 (Eastern Washington), please see https://wdfw.wa.gov/hunting/locations/gmu#region1gmu.

[344] WDFW, Statewide black bear harvest statistics (2013-2022), https://wdfw.wa.gov/hunting/management/game-harvest.

[345] *Id.* The 4-year-average from 2019 to 2022 was 2,044 bears killed by hunters each year, while the 4-year-average from 2015 to 2018 was 1,486 bears a year.

[346] *Id.*

[347] WDFW. 2013 Statewide black bear harvest statistics." https://wdfw.wa.gov/hunting/management/game-harvest/2013/black-bear-statewide; 2014 Statewide black bear harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest/2014/black-bear-statewide; 2015 Statewide black bear harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest/2015/black-bear-statewide; 2016 Statewide black bear harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest/2016/black-bear-statewide; 2017 Statewide black bear harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest/2017/black-bear-statewide; 2018 Statewide black bear harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest#2018-harvest; 2019 Statewide black bear harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest/2019/black-bear-statewide; 2020 Statewide black bear harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest/2020/black-bear-statewide; 2021 Statewide black bear harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest/2021/black-bear-statewide; 2022 Statewide black bear harvest statistics, https://wdfw.wa.gov/hunting/management/game-harvest/2022/black-bear-statewide.

[348] Information on changes made to each BBMU by 2019 Bear Hunt Rule is taken from 2019 Presentation, p. 10 (chart showing where bag limit was increased) and WDFW, CR-103P, WSR 19-15-028, 10 July 2019 (showing changes to season dates). Data on number of bears killed each year is from WDFW's statewide bear harvest statistics. In these annual reports, the number of bears reported killed in each BBBMU does not always equal the number killed statewide, perhaps due to bears killed in GMU 699 (Long Island), which is not included in any of the BBBMUs.

[349] 2022 Status and Trend, p. 301.

[350] *Id.*

[351] This is a replica of Table 5 from the 2022 Status and Trend, p. 201.

[352] Simek, Stephanie , oral remarks. June 2019 Meeting.

[353] *Id.*; Aoude, Anis, oral remarks. June 2019 Meeting.

[354] *E.g.* 1998 Status and Trend, pp. 122-23; 2013 Status and Trend, p. 212; 2017 Status and Trend, p. 238; 2018 Status and Trend, p. 282; 2019 Status and Trend, p. 282.

[355] Johnson, *et al.* 2018.

[356] 2022 Status and Trend, p. 304.

[357] Laufenberg*, et al.* 2018.

[358] *Id.*

[359] Beston 2011.

[360] Welfelt, *et al.* 2019.

[361] *Id.*; Beston 2011.

[362] Creel, Scott and Rotella, Jay. "Meta-Analysis of Relationships between Human Offtake, Total Mortality and Population Dynamics of Gray Wolves (*Canis lupus*)." *PLoS ONE,* vol. 5, no. 9, 2010.

[363] *Id*.

[364] 2022 Statewide black bear harvest statistics.

[365] 2022 Status and Trend, p. 303.

[366] Gosselin, Jacinthe *et al.* "The Relative importance of Direct and Indirect Effects of Hunting Mortality on the Population Dynamics of Brown Bears." *Proceedings of the Royal Society B*, vol. 282, 2015; Swenson, Jon E. *et al.* "Infanticide Caused by Hunting of Male Bears" *Nature*, vol. 386, 1997, pp. 450-451.

[367] *Id.*

[368]June 14, 2019 Meeting.

[369] June 14, 2019 Meeting.

[370] 2019 Status and Trend, p. 286.

[371] 2018 Status and Trend, p. 266.

[372] 2022 Status and Trend, p. 305.

[373] Aoude, Anis, oral remarks. June 14, 2019 Meeting.

[374] Data for 2015-2021 taken from annual harvest reports; data for 2012 to 2015 taken from 2018 Status and Trend, p. 287.

[375] Simek, Stephanie, oral remarks, June 14, 2019 Meeting.

[376] 2022 Status and Trend, p. 305.

[377] Petitioners do not yet have access to median age data from the 2022-23 hunting season.

[378] Chart copied from 2022 Status and Trend, p. 298.

[379] Northrup, Joseph M., *et al.* "Experimental test of the efficacy of hunting for controlling human–wildlife conflict." *The Journal of Wildlife Management*, vol. 87, no. 3, 2023; Obbard,

Martyn E., *et al.* "Relationships among food availability, harvest, and human-bear conflict at landscape scales in Ontario, Canada." *Ursus,* vol. 25, no. 2, 2014.

[380] GMP, p. 103.

[381] 2022 Status and Trend, p. 301.

[382] Statewide black bear harvest statistics, 2013-2022.

[383] GMP, p. 103.

[384] Laufenberg*, et al.* 2018.

[385] Johnson *et al.*, 2018.

[386] RCW 77.65.150.

[387] GMP, pp. 101 (bear), 111 (cougar),

[388] GMP, p. 4.

[389] GMP, p. 102.

[390] GMP, p. 108.

[391] *Id.*, p. 104.

[392] *Id.*, p. 108.

[393] WDFW, "25-Year Strategic Plan: A Path to an Improved Era for Fish, Wildlife, and People." https://wdfw.wa.gov/publications/02149, (Strategic Plan), pp. 10-13.

[394] *Id.*

[395] *Id.* at 14.

[396] *Id.*

[397] Remington Research Poll 2020.

[398] Responsive Management. "Washington Residents' Attitudes Toward Wildlife Management, Study Conducted for the Washington Department of Fish and Wildlife, 2022.

[399] Strategic Plan, p. 15.

[400] *Id.*, pp. 18-19.

[401] Responsive Management. "Washington Residents' Opinions on and Attitudes Toward Hunting and Game Species Management," vol. 1. Study conducted for the Washington Department of Fish and Wildlife, Feb. 2002.

[402] *Id.* at 20.

[403] "WA Agency Culture Memo," America's Wildlife Values. Colorado State University, 27 Sept. 2018, https://content.warnercnr.colostate.edu/AWV/WA-AgencyCultureMemo.pdf.

[404]Washington Association of Fish & Wildlife Professionals. " 2018 WAFWP Member Survey," August 2018, p. 6.

[405] *Id.*, p. 24.

[406] Our proposal also rolls back the 2022 increase to the cougar "bag limits" in the Blue Mountains, which were not supported by the science and have proven to be neither effective nor necessary.

[407] Consistent with the desire to return to the science-based cougar management framework in place before 2020, the proposed amendments would also reverse amendments made in 2022 to increase the "bag limit" for cougars in the Blue Mountains, another change that lacked a basis in science, and which has proven both ineffective and unnecessary.

[408] *Id.*, p. 6.

[409] 2019 Status and Trend, p. 288; 2020 Status and Trend, p. 281; 2021 Status and Trend, p. 282; 2022 Status and Trend, p. 301.