



# COLORADO

## Parks and Wildlife

Department of Natural Resources

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To: Members of the Colorado Parks and Wildlife Commission

From: Dan Prenzlow, Director

Subject: Limited license recommendations for deer, elk, pronghorn, moose, and black bear

This letter is a summary and explanation of the enclosed Colorado Parks and Wildlife (CPW) annual limited big game license recommendations for the 2020 big game hunting season. The sum of these recommendations is 277,300 limited licenses, for 2,800 individual hunt code quotas, that represent the majority of the hunting opportunity for over 800,000 big game animals.

Additional details are included in both regulation form and in a series of table summaries titled 2020 Big Game License Recommendation Summary by Region and Species. The summary tables were sent to the Parks and Wildlife Commissioners and posted to the CPW Commission webpage. They can be found at the following link:

<https://cpw.state.co.us/Documents/Commission/2020/May/2020.OBJECTIVES.draft.041620.PWC.mailing.pdf>. Information in these tables, hereafter referred to as Summary Tables, transitions from a high-level summary to increasingly species-specific. Page 4 of the tables is particularly informative with Regional and Statewide totals for all five species. After that, each species has a table with license totals and changes for every population as well as figures and data demonstrating factors important to license setting.

The 2020 license recommendations are based on evaluation of harvest, age and sex classification data, population estimates, hunter distribution, Big Game Season Structure (BGSS) dates and timing, and social considerations for each big game herd in Colorado.

The Colorado Parks and Wildlife Commission publicly approves each Herd Management Plan (HMP), Bear Management Plan, and all limited license recommendations. The HMP for each herd incorporates the capability of the habitat to support big game populations, other social and biological limiting factors, and input from the public, organizations, and other agencies about their issues and concerns regarding hunting management and herd objectives. Annual harvest objectives and the resulting license recommendations for all hunts are designed to achieve the management objectives approved in the HMP. Female license increases are recommended in herds that are performing well and are at or above population objective ranges and female license reductions are recommended in herds that are below population



objective ranges. CPW staff use 3-year averages of hunter success rates for setting annual license recommendations to achieve harvest objectives.

The new 2020 BGSS resulted in a number of changes that factored into these recommendations. For example, the longer breaks between the regular rifle seasons pushed the seasons later into the month of November, which should increase harvest success on both elk and deer. Longer breaks are intended to allow animals to redistribute between seasons, potentially moving to areas more accessible to hunters. Later season dates increase the likelihood of snow and give more time for animals to migrate out of the high country making animals more accessible and visible to hunters. Finally, the mule deer rut starts in early to mid-November, the rut makes mule deer bucks more vulnerable because they are more active and associated with does. Consequently, new BGSS dates were factored into license recommendations. In herds that are at HMP objectives, licenses may have been shifted to earlier seasons to maintain similar harvest with the same license number. Conversely, when herds are above HMP objectives, licenses were often left in the same seasons which should result in higher harvest with the same licensing.

A Data Analysis Unit (DAU) is the geographic area and identifying number of a relatively discrete big game population or herd. DAUs can contain multiple Game Management Units (GMUs), which are geographic areas delineated to distribute hunters.

## **Deer**

Approximately 212,000 hunters applied for Colorado deer licenses in 2020. The majority of deer hunting in Colorado is managed by limited licenses; the only exceptions are over-the-counter white-tailed deer licenses available in the Southeast Region.

CPW staff are recommending similar total deer licenses as last year; all changes result in an increase of 980 deer licenses (+1%) to 101,500 limited licenses. A recommended decrease of 1,700 licenses in the Northwest Region was balanced out by an increase of 2,600 deer licenses in the Northeast and Southeast Regions combined.

Statewide, rifle buck licenses remained nearly the same at 55,400. Buck license recommendations were increased in herds that are above HMP sex ratio objectives. In DAUs where CWD prevalence is greater than 5%, management actions were taken to reduce prevalence, including buck license increases for several herds. Buck license recommendations were reduced in herds that were below sex ratio objective ranges. HMP sex ratio objectives, observed sex ratios, and CWD prevalence estimates for each herd are available in the Deer Table, which is Summary Table page 5.

The statewide total rifle doe license recommendation is 16,400, up from 16,100 (+300, +2%). Antlerless license increases are recommended in herds that are performing well and are at or above population objective ranges and to address game damage. Alternatively, these recommendations keep regular season doe licenses at the minimum of 10 licenses per hunt

code for all deer DAUs west of I-25 that are below population objective. In these below-objective herds, the majority of doe licenses are private-land-only licenses to address game damage. Private-land-only licenses and licenses with special restriction to address deer conflicts near towns make up approximately 70% of the doe licenses in below-objective herds.

After large deer population declines in 2007, the total deer population has averaged 420,000 over the last 10 years. The statewide post-hunt 2019 deer population estimate is 418,000, down from 433,000 last year. Population estimates are still far below the sum of statewide population objective ranges of 494,000-558,000 for all 54 deer herds combined. In 2019, 25 of 54 (47%) deer DAUs are below their population objective ranges. Population objectives that are appreciably higher than population estimates reflect CPW's desire to stabilize, sustain, and increase deer populations.

Diverse habitat types and environmental conditions around the state create considerable geographic variability in population performance. Many deer herds on the plains and central mountains are performing well. There is still reason for concern about declines, particularly in many of the large westernmost herds in Colorado.

CPW annually monitors well over 1,000 radio-collared mule deer in five Intensive Mule Deer Monitoring Areas to estimate survival. CPW also conducts post-hunt herd inventories, primarily with helicopters, to estimate the sex ratios of males/100 females and the age ratios of young/100 females. In addition to survival rates, these ratios are needed to estimate population size using population models. The Summary Tables include of number of animals classified and sex ratios by DAU, Region, and statewide.

The average of HMP sex ratio objectives for deer herds statewide is approximately 30 bucks/100 does. During the post-hunt herd inventories in 2019, CPW staff classified 69,000 deer and observed an average sex ratio of 32 bucks/100 does, which is down from 35 bucks/100 does in 2018. Reproduction and fawn survival to December was similar this year compared with the previous year, the statewide average observed age ratio from helicopter inventory was 58 fawns/100 does compared with 59 fawns/100 does in 2018.

Buck/doe ratios have shown a response to our management actions, and Colorado remains a premier destination for deer hunters.

## **Elk**

In 2020, approximately 215,000 hunters applied for Colorado limited elk licenses. All rifle antlerless, muzzleloader, first, fourth, and late season elk licenses are limited. Archery licenses and second and third rifle bull seasons in many GMUs are also limited.

CPW is recommending 129,500 limited elk licenses, up 3,000 licenses from last year. However, the limitation of archery hunting in elk DAUs E-16 (Frying Pan), E-24 (Disappointment), E-30 (Hermosa), and E-31 (San Juan) complicates the explanation of total

limited license recommendations. Converting what were previously unlimited over-the-counter (OTC) licenses to limited licenses recommendations results in an increase of 9,100 limited licenses for 2020. Without these new licenses; however, the total would be down 6,000 licenses.

Continuing with a 17-year trend, rifle elk license recommendations are reduced from last year by 5,200 (-5%) to 102,000. Antlerless licenses make up the majority of this reduction, down 5,100 (-8%) from last year. Muzzleloader license recommendations are reduced concomitantly by 500 (-4%). Rifle and muzzleloader elk license reductions are the result of a combination of herds achieving population objectives through antlerless harvest and low calf/cow ratios reducing population productivity.

The statewide elk population is stable. The 2019 estimate of 293,000 is up slightly from the 287,000 in 2018. The sum of Colorado's post-hunt population objective ranges for elk statewide is 234,000-284,000 for all 42 elk herds combined. The sum of statewide objective ranges is partially based on historic HMPs. Plans written before 2001 were written with outdated population models that underestimated elk numbers; as we update plans, we expect population objectives to change. Because season and license setting is designed to use antlerless harvest to bring elk populations to herd objectives, further reductions in antlerless licenses are anticipated in the future as more elk populations reach objectives or population objectives increase.

As we've intentionally reduced elk populations to achieve population objectives, hunters and outfitters increasingly have expressed concern that elk populations are becoming too low in some herds, despite the fact that 24 of 42 (57%) elk herds are above their current population objective ranges. Nonetheless, public perception of the desired number of elk in Colorado varies. CPW gives serious consideration to changing population objectives in herds as HMPs are updated and tries to balance public interests of landowners, local communities, public land management agencies, and hunters. Long-term experience with balancing these interests has informed CPW on the upper and lower social thresholds for elk population size in many herds, which benefits us greatly in herd management planning efforts.

The average of post-hunt sex ratio objectives in totally limited elk DAUs and expected sex ratios in over-the-counter DAUs for elk herds statewide is approximately 24 bulls/100 cows. In 2019, during the post-hunt herd inventories, CPW staff used helicopter surveys to classify 84,000 elk and observed a statewide average sex ratio of 22 bulls/100 cows, compared to 24 bulls/100 cows in 2018.

During these surveys over the past decade CPW has observed declining calf/cow ratios in the southern half of the state. In 2019, we observed the lowest statewide average calf/cow ratio ever at 37 calves/100 cows. The Southwest Region was the lowest at 30 calves/100 cows with the Northwest Region having the highest average at 45 calves/100 cows. Northern Colorado historically has had higher calf ratios by about 10 calves/100 cows. Elk research and

continued management changes are necessary since calf production remains low in many herds. Low calf ratios reduce the number of elk licenses CPW can issue.

The 2019 reductions in antlerless licenses are consistent with licensing trends of the last 17 years because many herds are near the desired population size and have low calf ratios. Having a combination of units that are limited in all seasons and units with both limited and over-the-counter hunting seasons allows us to offer a very wide range of hunting opportunities on the nation's largest elk population.

### **Pronghorn**

In 2020, approximately 87,000 hunters applied for Colorado limited pronghorn licenses. Pronghorn applications have increased substantially for the last several years. The majority of pronghorn licenses are limited, with the notable exception of over-the-counter archery licenses available in 70% of GMUs.

CPW is recommending 25,300 limited pronghorn licenses, down 700 (-3%) licenses from last year. The majority of this reduction is in the Southeast Region where the license recommendation is 17,000, down 800 licenses (-5%) from last year. Reductions were made to manage to HMP objectives and to reduce hunter crowding on some public lands. The Northeast was the only Region to recommend pronghorn license increases.

The estimated statewide post-hunt pronghorn population is 82,000, up from 79,000 in 2018. The sum of statewide population objective ranges for hunted pronghorn herds is 69,000-79,000 combined. Nineteen of 29 (66%) pronghorn DAUs are above the HMP population objective range. Approximately half of the state's pronghorn reside in the Southeast Region, where the limited license numbers are largest. These recommendations maintain licenses as high as is practical without negatively affecting success rates, exceeding landowner tolerance for pronghorn hunters, and attempt to minimize crowding on public lands.

During pre-hunt herd surveys in 2019, conducted with helicopter and fixed-wing aircraft, CPW staff classified 25,700 pronghorn, which is the most ever. The average observed pre-hunt sex ratio was 49 bucks/100 does, which is the same as last year. The average observed pre-hunt fawn ratio was 50 fawns/100 does, up from 43 fawns/100 does in 2018, a result of wetter range conditions.

Pronghorn on the eastern plains are doing quite well while some herds in the western portion of the state have been struggling for about a decade. Colorado offers some excellent hunting for one of North America's most iconic animals.

## **Moose**

Demand far exceeds allocation; 45,000 individuals applied for moose in 2020.

For 2020, we are continuing to increase license recommendations with a total of 520 limited moose licenses, an increase of 12 (+2%) from last year. This recommendation includes 227 bull and either-sex licenses and 293 cow licenses.

Antlerless licenses are the same as last year. Cow moose licenses are designed to manage moose populations toward objectives, keep moose populations within the capability of their habitat, and address moose conflicts in some areas. Cow licenses have lower success rates than bull licenses.

The estimated statewide 2019 post-hunt moose population is 2,900, down from 3,200 in 2018.

We now have moose hunting in 66 GMUs, up from 39 GMUs in 2013. We are fortunate our moose populations continue to do well because many other states are experiencing declines in their moose populations. The growing number and distribution of moose in Colorado have resulted in greater hunting and viewing opportunities.

## **Black Bear**

In 2020, CPW is recommending 20,500 limited licenses for all seasons and methods of take for black bear. Although this recommendation appears as a reduction of over 10,000 licenses from 2019, half of the DAUs have been converted from limited licenses to OTC licenses as a result of the 2020 bear BGSS changes. Once unlimited OTC bear license sales are included, our total license sales in 2020 will likely meet or exceed levels seen in 2019. The statewide harvest objective is projected to be about 1,430 bears and the statewide total mortality objective is approximately 1,910 bears. The availability of unlimited OTC bear licenses in 9 of 17 DAUs is expected to contribute to an increase in harvest.

The 2020 season looks very different for bear hunters under the approved BGSS. Bear season structure changes were aimed at removing unnecessary barriers to bear hunting whenever possible to achieve DAU harvest objectives, while still managing bear hunter crowding during the early seasons or in quality deer and elk units.

Current management objectives are to reduce bear populations in 10 DAUs and stabilize populations at present levels in the remaining 7 DAUs. The DAU objectives are what guided managers' selection between one of the two bear licensing strategies that are available to structure hunting opportunity under the new BGSS.

The licensing strategy known as the "Unlimited Add-on Strategy" offers unlimited OTC licenses in every hunt, except September rifle, for DAUs with a management strategy of reducing bear numbers. Archery and muzzleloader bear licenses require a qualifying deer or elk license, but for each of these methods of take we also offer a limited license version with

no season participation requirements. This effectively means anyone wanting a bear license in these DAUs can get one. The other bear licensing strategy, called the “Limited Strategy”, is applied in DAUs that have a stable population management objective or are already reaching harvest objectives. In these DAUs, all seasons continue to have limited licenses with no season participation requirements, excepting private land only (PLOs) seasons. Under both strategies, September PLO and concurrent rifle PLO bear licenses are unlimited and sold OTC in all 14 DAUs where these seasons are in place.

In the 9 Unlimited Add-on Strategy DAUs, initial limited archery and muzzleloader license levels were set in nearly all DAUs at their historic 2019 OTC with caps license levels to populate these hunts in the first year. In the 8 Limited Strategy DAUs, nearly every limited license hunt code (excluding PLO hunts since those are now unlimited OTC) was kept at 2019 status quo numbers.

License recommendations for limited Sept rifle seasons are status quo in all 17 DAUs with respect to 2019 levels. Fourteen DAUs have PLO hunts and those are unlimited OTC in all cases.

The non-resident price reduction to \$100 in 2019 appears to be responsible for a 30% increase in bear license sales, resulting in the purchase of nearly 6,000 more licenses than in 2018. In 2020 we continue the pricing reduction for non-residents (\$100), further increase the price reduction for residents (\$38), as well as adding new youth bear licenses priced at \$15 for residents and \$50 for non-residents.

## **Conclusion**

The 2020 big game license recommendations provide for an economically significant and diverse amount of big game hunting throughout Colorado. These recommendations and the associated OTC licenses provide the opportunity for more than 300,000 hunters to enjoy the incredible big game resources of the State. They also represent thousands of hours of employees’ collective efforts to conduct herd inventories, obtain harvest estimates, incorporate this information into predictive models, and finally to set limited license recommendations. I am pleased to present these recommendations as a testament to the incredible wildlife resources CPW manages for the enjoyment of the people of Colorado and its visitors.

If you have any questions on this information, or anything else about limited license numbers, feel free to give me a call prior to the Commission meeting. Thank You.

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