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**Submitted by ADF&G/DWC
at the request of Board Member Sager Albaugh**

Region 4 Board of Game
"Small Game Update"
Staff Report Script

by
Rick Merizon (2/16/2018)

Slide1:

Mr. chairman, members of the board, my name is Rick Merizon and I am the statewide Small Game Program Coordinator

Slide2:

During this Board meeting you will have 7 small game related proposals before you. There are 4 ptarmigan proposals, 1 from Unit 9, and 3 from Unit 13 all addressing season dates and bag limits. You have 2 grouse proposals from Unit 11 addressing season dates and bag limits. Finally, you have 1 proposal from Unit 9 addressing Alaska hare abundance.

Slide 3:

As a quick overview, the small game program is a statewide program with 2 full-time and 3-4 seasonal staff. Since the inception of the current small game program in 2011 we have established a wide variety of population and harvest assessment projects including spring breeding and summer brood surveys for grouse and ptarmigan, statewide hunter surveys, and a statewide hunter harvested wing collection program. We also have completed several large ptarmigan research projects in Unit 13 addressing various management questions.

This staff report will focus on recent work by the Small Game Program specific to Region 4. Relative to ptarmigan, my hope is to inform you and the public on management options available under a wide array of hunting methods, means, and the public's desires.

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I would like to begin by addressing grouse. Unfortunately we do not have any breeding or brood survey data for grouse in Unit 11, of which you'll have two proposals at this meeting. We do however have spring breeding survey data for ruffed and sharp-tailed grouse in Units 12, 14, and 20. All indications are that those populations are strong and near or possibly slightly below the recent high observed for all of those populations.

We also have harvest composition data based on voluntary hunter harvested wings that provide insight into the timing of the harvest statewide as displayed in this figure. We believe in most heavily hunted locations of the state these data offer a strong index of hunter effort. As you see the overwhelming majority of the Unit 11 harvest likely occurs during the fall before December. Based on all indications we have, spruce grouse make up the majority of the harvest in this unit.

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Switching to ptarmigan, the small game program has spent considerably more time completing spring breeding and summer brood surveys, harvest composition examination, and research on this collection of species in Region 4. Although we do not have breeding or brood survey data for Unit 9 we have considerably more robust data for Unit 13 of which you'll have three proposals in front of you at this meeting.

In 2009 the Board adopted the season closure date of November 30 in Unit 13B for ptarmigan and maintained the March 31 season closure date throughout the remainder of Unit 13. The change in Unit 13B was initiated in large part because of concerns for low rock ptarmigan abundance. Beginning in 2013 the small game program initiated a four year, radio collaring study to evaluate rock ptarmigan movement, mortality, and nesting behavior in Unit 13B as this has historically been a very popular winter ptarmigan hunting location.

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We found that rock ptarmigan utilized a wide array of alpine habitats throughout the year. Breeding and brood rearing locations tended to be at higher elevation than those of overwintering birds. Much of Unit 13B offers productive habitat for at least one life history period and the existing road and trail system offers good access for hunters to those locations.

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As you also see on this map, the Federal Subsistence Hunt for ptarmigan continues through March 31 but we believe had little impact on the results of this rock ptarmigan study.

Slide 8:

Based on our mortality analysis, we documented a significantly higher risk of mortality within 3km of a roadway or trail (over 2 and a half times greater) than outside 3km; although a limitation of this study was to document cause-specific mortality. This is fairly intuitive and potentially somewhat expected. However, the belief that birds from distant "refugia" are partially or fully replacing harvested birds near roadways, the basis for current State of Alaska ptarmigan hunting regulations, is not well supported.

Male rock ptarmigan tend to stay within close proximity of their territory throughout the year making "roadside" males more vulnerable. This could help explain why we consistently document higher spring breeding abundance in areas distant from roadways versus our roadside survey locations.

Both adult and juvenile females tend to move much greater distance in the fall but generally return to the same area to breed as the previous spring. Distances can range between 10 and 95km and thus may potentially expose them to higher mortality if they move to areas near roads.

Some segments of the hunter population complain that ptarmigan abundance and harvest opportunities are reduced adjacent to roadways which is likely where the majority of ptarmigan hunting effort occurs. This research supports that there are localized effects in these areas and hunting is a likely contributor.

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Again, I'd like to briefly return to another examination of our hunter harvested wing collection program which enables us to estimate harvest composition for a number of hunted populations, specifically rock and willow ptarmigan in Unit 13. Hunter contributions from Unit 13 are very strong throughout the season. In Unit 13, the harvest is largely bi-modal with an overwhelming majority of the harvest occurring during the late-winter portion of the season (majority of which occurs in 13A and 13E). This

increased harvest effort begins around mid-February when day length is increasing and generally snow conditions are good. The majority of these hunters are utilizing snowmachines for access.

Remember, this figure depicts all unit 13 ptarmigan wing contributions through March 31.

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From our rock ptarmigan study in 13B, we were able to understand mortality as it relates to season. We defined the "fall season" as August 10 through November, and the "winter season" as December through March. What we found is that mortality for rock ptarmigan is relatively high through the fall, particularly within 3km of a roadway. This is somewhat expected and is very common for other studied ptarmigan populations throughout the Northern Hemisphere. However, rock ptarmigan mortality is quite low during the winter season in 13B.

During the same time period we were also completing a second and very similar radio collaring study on willow ptarmigan primarily in subunit 13E, where harvest is allowed through March 31. We documented that in that study area, overall mortality began to increase as the winter season progressed from January through March.

Additional research is needed to evaluate cause-specific mortality and effect...

Slide 11:

Grouse and ptarmigan research across the northern hemisphere have largely supported the belief that late winter harvest is additive. Assuming this is also occurring in Unit 13 it would be expected that birds that survive the fall have a higher likelihood of contributing to the spring breeding population provided they're not harvested in the winter season.

This does not inherently translate to higher fall populations of ptarmigan however.

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Climatological effects on ptarmigan can have large impacts both positively and negatively. In many locations of the state this is likely the single largest factor influencing abundance.

Weather patterns immediately post hatch can impact early chick survival which typically coincides with mid-June to early July. Young chicks (1-3 weeks old) can suffer very high mortality if they are exposed to cold, rainy, or snowy weather even for relatively short periods (18 hours-3 days). In certain locations we have documented high spring breeding abundance only to experience a 1-2 day snow event in very late June and see very poor chick production and subsequently low recruitment into the hunted population.

Also, the mismatch between plumage and surrounding landscape particularly in the fall and spring likely lead to high mortality. This likely is contributing to the potential decline in Unit 9 ptarmigan populations where overall hunting mortality is likely fairly low and recent fall and winter weather have been unusually warm and snow-free.

Slide 13:

We have completed 2 statewide small game HUNTER surveys. Through these efforts we have twice documented the phenomenon that very few ptarmigan hunters statewide typically harvest their daily bag limit. However the most effective hunters are those that use snowmachines in February and March.

As a result, on a statewide level, adjusting daily bag limits may not provide an effective means of managing a low or declining population as season duration would, unless that population is largely pursued by hunters using snowmachines as are often used by hunters in Unit 13.

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Assuming that winter harvest is additive, what we are learning about ptarmigan management is that there are a wide variety of management options to consider. There are factors relative to ptarmigan management that are within our control (season duration, bag limit) and factors that are not (climate). In VERY general terms, ptarmigan management comes down to this continuum:

With shorter hunting seasons (ending before mid-February) there is a much higher likelihood of increasing spring breeding populations because mortality is believed to generally be low after November.

Extending the hunting season through March / April, hunting mortality increases thus likely reducing the spring breeding population. However, as I mentioned, early summer weather is a considerable variable that is out of our control but on average 2-3 out of 10 years has a significant impact on the fall hunting population with high chick mortality.

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Through our surveys, monitoring, and research we do not have conservation concerns for ptarmigan throughout all of Unit 13. Current hunting patterns, access, effort, and hunter density likely will not risk viability of rock and willow ptarmigan throughout the unit. However, the vast majority of ptarmigan hunting effort is exerted within close proximity of roadways. Some hunters strongly complain about reduced ptarmigan populations adjacent to these roadways. Managing ptarmigan really comes down to this question: "What does the hunting public want?" Do they want ample opportunity (ie. long seasons) with the likelihood harvest may be diminished, OR do they want short seasons with the higher likelihood of more birds on the landscape?

That is a question I challenge the public to provide you, the board, their input.

Slide 16:

Finally, I'd like to briefly discuss the final small game species to be considered at this board meeting, Alaska hares. In Alaska, we are lucky to have two native species of hares, the ubiquitous and abundant snowshoe and the less well known and much larger Alaska hare. At this meeting you will have a proposal before you that addresses season duration and bag limits of Unit 9 Alaska hare.

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The Alaska hare is a large hare weighing between 8-15 pounds. Alaska hares tend to have slightly larger litters than other hares species. However, they only have 1 litter per year.

It resides exclusively in western and southwestern Alaska. Currently, we have very little data on this species throughout its range including abundance estimates, survival, demographic parameters, and have only limited annual harvest data from Household Surveys.

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As a result and in preparation for this meeting the Small Game Program in coordination with many other divisional staff throughout Region 4 and 5 have embarked on an aggressive campaign to learn more

about this species through Education, Outreach, and Research. We have distributed public service announcements in Nome, Bethel, and Dillingham. We've sent posters like these to a wide variety of large and small communities throughout the hares range. Both this poster and a web-portal have allowed residents to voluntarily provide feedback on the status of the species in their areas. We have also visited over 15 communities this fall and winter throughout western and southwestern Alaska to chat with locals and learn more directly from long-time hunters and residents.

In addition, we're developing capture techniques and evaluating the effectiveness of pellets as a means to estimate abundance. We've developed a large scale research project proposal that would study movement, mortality, and abundance estimation methods at several locations throughout the hares range.

Through these efforts we have learned that this is a highly valued species among residents in western Alaska. Most individuals we talked to and communities we visited voiced concerns about long-term declines since the 1970s and 80s. In locations where historically residents readily spotted hares, they have not been observed in over 2 decades. Generally, residents we spoke to face-to-face were very supportive of a large scale study in hopes of learning more about the parameters that influence the species and provide abundance estimation methods that could be employed range-wide.

Slide 19:

Again, here is a list of the 7 small game related proposals before you at this meeting. That concludes my staff report and I'll be more than happy to try and answer any question you might have.