

**MONTANA FISH, WILDLIFE AND PARKS  
HUNTING SEASON/QUOTA CHANGE SUPPORTING INFORMATION**

**Species:** Gray Wolf

**Region:** Statewide/all Regions

**Year:** 2013-14 Hunting Season

**1. Describe the proposed quota change and provide a summary of prior history.**

The 2013 season will mark Montana's fourth wolf hunt, and the third since the last delisting. Montana has perhaps the most complex predator-prey system in North America in terms of diversity of predator and prey species. With the close of the 2012-2013 season, Montana documented a slightly reduced minimum count. While FWP does not have an overall population objective for wolves, it is clear that a more aggressive wolf hunting season will not harm wolf populations or genetic diversity. It is the third year post-delisting of the five year monitoring period required by the USFWS. All recommendations within this proposal are consistent with the Montana Grey Wolf Management Plan as approved by the United States Fish and Wildlife Service. Montana has been generally well respected in its balanced approach to wolf management, despite fierce attacks from both sides of this controversial management issue.

FWP proposes a number of changes from the 2012-13 wolf season framework:

- FWP proposes opening the general rifle season in all HD's and WMU's on September 15 and extending the general rifle season close to March 31.
- The wolf archery season would open with the deer/elk archery season on September 7 and close on September 14, the day prior to the rifle opener.
- The proposed bag limit would be increased to 5 wolves per person in any combination of wolves taken by hunting or trapping.
- Hunters would be allowed to hunt and take wolves over bait placed to trap wolves, during the trapping season (12/15 – 2/28). The change is proposed to allow trappers to harvest wolves spotted on their trap line, without the concern regarding the presence of bait at some sets.
- WMU 316 will be expanded to include the portions of HD 313 that were closed to wolf harvest in December 2012. Otherwise, WMU's will remain unchanged.
- FWP proposes to maintain the general season without a statewide quota. Quotas would be retained in WMU 110 (quota = 2) and WMU 316 (quota = 7). Mandatory harvest reporting would remain.
- The Commission would authorize FWP to initiate emergency season closures at any time. Closures may be implemented if FWP deems monitored harvest levels excessive in any area. Reported harvest shall be assessed in light of species biology and objectives (see Measurable Objectives below). Any such closure would necessarily include an appropriate timeline and public notice and that may include press releases and posted signs.
- Trapping would be authorized again during the 2013-14 wolf season. The trapping season would run from December 15 to February 28. FWP proposes to require that trappers complete either the Montana or Idaho wolf trapper education course, prior to wolf trapping.

FWP will offer a course similar to the course taught in 2012.

- The requirement to immediately dispatch trapped wolves would be modified with the language that trappers must do so “unless the trapper is otherwise authorized not to do so by FWP prior to wolf trapping efforts”. This provision would allow the possibility of enlisting the help of trappers to capture and radio collar wolves in some circumstances.
- Trappers would be required to dispatch wolves via gunshot.
- Require a wolf trap pan tension of 10 pounds in Regions 1-5.

Otherwise, the 2013-14 season would remain similar to the 2012-13 framework.

### **MANAGEMENT INTENT:**

Experiences from the 2012-13 season revealed that harvest regulations could be further liberalized without any risk of over-harvest. It is also apparent that additional harvest will be required to reduce wolf abundance. At the same time, there is room for additional opportunity for wolf hunting and trapping. The proposal changes for 2013-14 were largely designed to increase the wolf harvest with the goal of reducing wolf abundance in Montana.

FWP proposes raising the bag limit to 5 wolves. Any person could take up to 5 wolves in any combination of wolves taken by hunting or trapping. Hunters could purchase up to 5 wolf licenses and trappers could take up to 5 wolves on a trapping license. No person could take more than 5 wolves in any combination.

The general rifle season is proposed to open earlier on a standard statewide date of September 15, which coincides with the black bear season opener. The closing date would be extended to March 31. The archery season would open on September 7 with the start of deer and elk archery, and would close on September 14.

WMU 316 will be expanded to include the portions of HD 313 that were closed to wolf harvest in December 2012. Otherwise, WMU's will remain unchanged. FWP proposes to maintain the general season without a statewide quota. WMU quotas would be retained in WMU 110 (quota = 2) and WMU 316 (quota = 7). Mandatory harvest reporting would remain.

FWP proposes to continue trapping during the 2012-13 season, with the same season dates (December 15 – February 28). Trappers would be required to complete either the Montana or Idaho wolf trapper education courses prior to trapping for wolves. The course, which was well received, will be similar to the course offered in 2012.

The requirement to immediately dispatch trapped wolves would be modified with the language that trappers must do so “unless the trapper is otherwise authorized not to do so by FWP prior to wolf trapping efforts”. This provision would allow the possibility of enlisting the help of trappers to capture and radio collar wolves in some circumstances. Trappers would be required to dispatch wolves via gunshot.

Wolf trappers would be required to set pan tensions on wolf traps to a minimum of 10 pounds, on any traps set in Regions 1, 2, 3, 4, and 5. This requirement will preclude the incidental capture of wolverines, which are restricted in distribution to Regions 1-5. Ten pounds is a recognized standard to preclude wolverine capture in foothold devices, and is recognized as such in the draft AFWA-USFWS pamphlet, "How to avoid incidental take of wolverine while trapping other furbearers". It will be appropriate to minimize incidental trapping of wolverines once they are listed. This standard will also preclude capture of lynx, which are currently federally listed.

These proposed changes are expected to increase wolf harvest levels with the intent to reduce the abundance of wolves across Montana. In addition, these changes would provide increased hunting and trapping opportunity. Added harvest should provide additional relief to livestock producers and in some instances, relief to big game populations that are performing poorly, due in part, to the effects of wolf predation. Other season proposals and adoptions for elk, deer, bear and lion have been/are part of a comprehensive pursuit of system balance represented by the measurable objectives below. This proposed wolf season is consistent with adjustments made or proposed for other ungulate and carnivore species.

The following management objectives were developed by FWP and adopted by the Commission:

**MEASURABLE OBJECTIVES:**

1. *Maintain a viable and connected wolf population in Montana.*
2. *Gain and maintain authority for State of Montana to manage wolves.*
3. *Maintain positive and effective working relationships with livestock producers, hunters, and other stakeholders.*
- 4a. *Reduce wolf impacts on livestock.*
- 4b. *Reduce wolf impacts on big game populations.*
- 4c. *Maintain sustainable hunter opportunity for wolves.*
- 4d. *Maintain sustainable hunter opportunity for ungulates.*
5. *Increase broad public acceptance of sustainable harvest and hunter opportunity as part of wolf conservation.*
6. *Enhance open and effective communication to better inform decisions*
7. *Learn and improve as we go.*

**Historical Perspective, Proposal Development and Biological Context**

**Historical Perspective and Proposal Development**

Wolf recovery in the northern Rocky Mountains (NRM) has been underway since the late 1980s. The biological recovery criteria were first achieved in 2002. The gray wolf was delisted during February 2008, relisted during 2008, delisted again in 2009, relisted during August 2010, and subsequently delisted by a congressional rider attached to the federal budget resolution signed into law on April 15, 2011. Unlike wolf delisting rules issued in the past, this congressional action excluded the rule from judicial review.

In the latter half of 2008, FWP also completed an administrative rulemaking process. The Commission approved final rules in September 2008. These administrative rules stand in effect upon delisting. The gray wolf was reclassified by the rule as a species in need of management; furthermore, Montana Administrative Rules and state laws replaced federal regulations.

For developing a proposed 2010 season structure and harvest quota, FWP completed the following process. In addition to maintaining a statewide population modeling effort as an important input to quota setting, FWP assigned regional staff the task of assembling regional inputs to season structure and quotas based upon regional circumstances to include wolf biology and relationships with livestock and prey. This was done to enhance the sensitivity to and opportunity for local inputs in a manner that best fosters ground-based conservation support for the wolf itself. In this light, regional inputs called for a general reduction in wolf numbers reasonably within the flexibility of the species biology and recovery requirements. These regional quotas were considered alongside population modeling outputs that relied on wolf population inputs from the previous year. Various harvest rates were applied to simulated populations. Development of subsequent proposals, including this proposal, was anchored to this 2010 process.

### **Biological**

At the statewide level, at least 15 breeding pairs and 150 wolves statewide are required to offer any public hunting and trapping opportunities (2003 Montana Gray Wolf Conservation and Management Plan Final EIS August 2003). Managing for higher wolf numbers affords a greater degree of flexibility when addressing wolf-livestock conflicts and other elements of wolf management. Harvest needs to be implemented in such a way that accounts for the dynamic aspects of conflict management and wolf population ecology. After any season framework adoption, FWP will continue to monitor wolf removals in response to livestock conflict. If those removals grow significantly beyond levels experienced in the past and consistent with species biology and management objectives and beyond those levels incorporated into population modeling, FWP could potentially close all or portions of any adopted wolf season.

The Montana wolf plan outlines an adaptive management framework, through which FWP will work to integrate gray wolves into the natural and human landscapes (Montana Fish, Wildlife & Parks 2003). Wolves will be conserved and managed in conjunction with Montana's other resident wildlife.

The typical and most influential mechanism to increase wolf numbers and distribution is dispersal and formation of new packs in new places. Based on data gathered from radio-collared wolves, the average dispersal distance is about 60 miles. Wolves have been documented to disperse twice that distance (120 miles) and even longer. The longest distance dispersers (>180 miles) had significantly lower survival and most did not breed.

To simulate dispersal in any direction from the geometric center of wolf pack territories from 1989 to 2008, FWP did some exploratory mapping. FWP buffered the geometric center by 10-mile increments and delineated a line where the Northwest Montana and the central Idaho wolf packs appear to be within 60 miles of wolf packs in the Greater Yellowstone area. The line is buffered and shaded on either side to display the average dispersal distances of 60 and 120 miles (Figure 1).

Dispersal has another important biological function – namely to maintain genetic diversity in a wolf population. The gray wolf has a very strong inherent tendency to “outbreed” and will thus seek to breed with unrelated individuals. Figure 2 shows the origin and end point of dispersing radio-collared wolves in the northern Rocky Mountains from 1995-2005. Formal scientific investigations reported in 2010 have “convincingly” confirmed genetic variation and “genetically effective dispersal” thus eliminating the concern that genetic connectivity has been absent across the three recovery areas (Hebblewhite et al. 2010; Vonholdt et al. 2010).

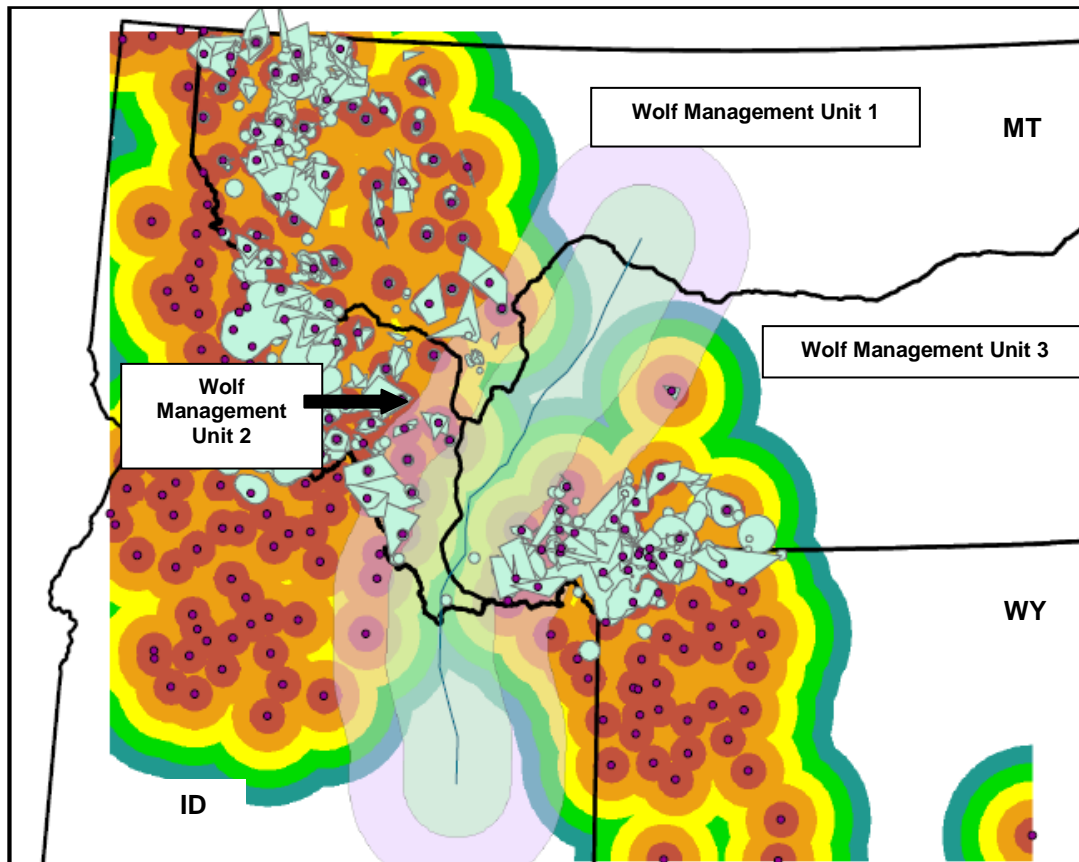


Figure 1. Map of wolf pack territories from 1989-2007 (teal colored shapes) and 2008 wolf pack territories (smallest dots) in Montana and near the state borders showing the geometric center buffered by 10-mile increments to simulate wolf dispersal in 360 degrees from the center. The line and shaded portion separating the Northwest Montana and central Idaho subpopulations from the Greater Yellowstone subpopulation depicts the average dispersal distance of 60 miles (30 miles on either side of the line) and two times the average or 120 miles (60 miles on either side of the line).

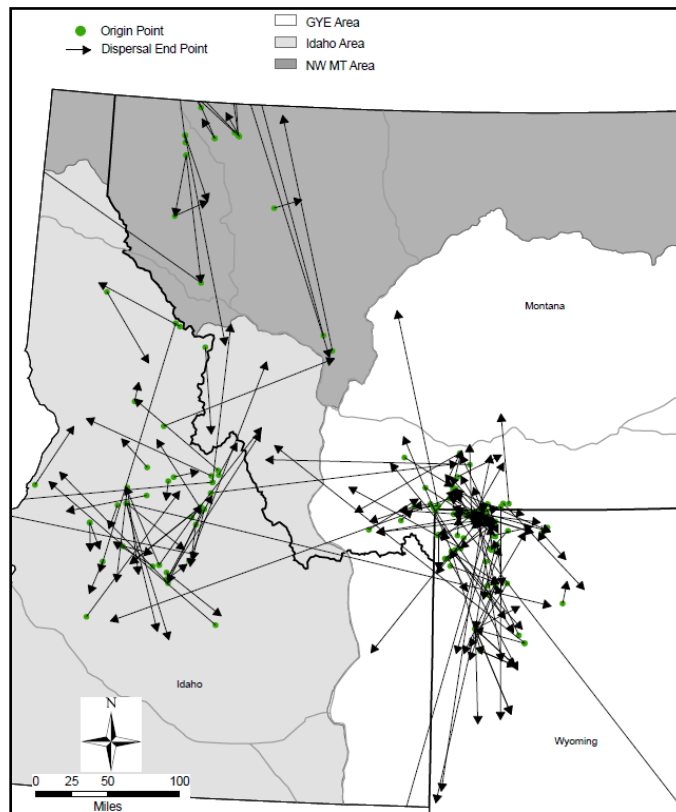


Figure 2. Map of the origin and end points of radio collared wolves dispersing in the northern Rocky Mountain federal recovery area, 1995-2005.

### **Review of Proposed Season Structure and Quotas**

Given previous experience with harvest rates and some judgments about harvest rates anticipated under this more liberal framework, FWP is modeling the wolf populations with a range of harvest rates up to a 60% harvest rate. Given the growing history of experience, the remaining model inputs are based on rates of natural mortality, illegal mortality, unknown mortality, immigration, emigration, and dispersal as observed and documented in the field over the past 3 years. This three year window allows a range of circumstances to be incorporated. The model effort includes two rates of depredation removal of wolves: a “low” rate equivalent to removals in 2011 and a “high” rate similar to the removal rate in 2010. The model then simulates harvest and assumes that harvest will be additive to all other forms of mortality to predict the year-end minimum number of wolves and breeding pairs. The wolf population is also simulated with a regression based approach that is less reliant on recent variation in population parameters. That model provides more defensible, and usually more optimistic predictions of outcomes.

The modeling effort is underway, and results will be presented at the May 9 Commission meeting. The modeling effort last year revealed that a 60% harvest rate corresponded to a harvest of 364 wolves, and in the “high” depredation simulation, predicted a minimum, year-end population of 485

wolves. FWP considered the harvest of 364 to be a threshold for harvest management. As long as harvest remained below that level, no adjustments would be considered. If harvest approached that level, FWP committed to reviewing the circumstances including distribution of harvest, anticipated harvest during the remainder of the season, along with other data, to consider the possibility of closure(s). By season end, the total harvest was 225 wolves, which was well below the threshold.

Similar consideration of model projections will be considered and applied for the 2013-14 season. FWP will consider the predictions of both models, along with the range of conditions that might be anticipated in the coming year. From that exercise, FWP will establish monitoring thresholds for the 2013-14 season.

As precautions against over-harvest with the addition of trapping, harvest would be closely tracked with a 24-hour reporting period. Depredation removals can also be tracked. The total take including harvest and depredation removals would be updated daily in the FWP database and website. FWP will update the Commission on reported wolf harvest. Harvest levels would be assessed among the WMU's and FWP would have authority to close season if excessive harvest levels were reached. Thus, monitoring capacity and regulatory mechanisms are in place to respond to any harvest circumstance that is contrary to species biology, management expectations and predictions and season objectives.

### **Summary**

To summarize, the proposed wolf season framework reflects efforts to meet objectives identified below.

These are:

*1. Maintain a viable and connected wolf population in Montana.*

The 2013-14 framework looks to maintain the current overall distribution of wolves and ecosystem functionality albeit at a reduced level.

*2. Gain and maintain authority for State of Montana to manage wolves.*

Staff will monitor harvest levels relative to population model outputs to insure that the Montana wolf population is secure and above thresholds for relisting. All elements of this proposal are consistent with the Montana Gray Wolf Management Plan.

*3. Maintain positive and effective working relationships with livestock producers, hunters, and other stakeholders.*

Current wolf levels are well above conservation minimums. Any anticipated population effects would maintain species distribution and viability while recognizing sentiment among some publics for a reduced wolf presence. The two quota areas address specific concerns voiced by the non-hunting public while still allowing a tightly managed harvest quota.

*4a. Reduce wolf impacts on livestock.*

While it is not clear exactly what relationship will evolve between hunter harvest and any reduction in livestock depredations, given the history of wolves and depredation events it is reasonable to assume that some population level reduction stands to potentially reduce livestock depredations. Additionally, hunter harvest has some unknown potential to literally and directly curtail or prevent livestock loss or agency response to that loss at a local scale.

*4b. Reduce wolf impacts on big game populations.*

FWP's commitment to wolves is no less than its commitment to other wildlife and FWP is adaptively pursuing a balance that accommodates all species' biology and ecosystem roles. Science recognizes that some gains to ungulate prey populations may be realized with managed carnivore reductions. Other species proposals and adoptions to include both ungulates and other carnivores reflect a comprehensive approach.

*4c. Maintain sustainable hunter opportunity for wolves.*

Consistent with all managed wildlife species, FWP wolf management is grounded in the statutory direction and agency intent to maintain state authority and to provide species viability, presence and associated public opportunities in perpetuity.

*4d. Maintain sustainable hunter opportunity for ungulates.*

This proposed wolf season framework represents a liberalization over the 2012-13 framework. The intent is to effect a reduction in wolf numbers which is in some areas, reflects a concern over wolf impacts to ungulate populations. However, this proposal does not dismiss the value of the wolf, its biological needs and it does not look to remove wolves from their ecological role. Again, other species proposals and adoptions to include both ungulates and other carnivores reflect a comprehensive approach to the balance inherent within the sum of these objectives.

*5. Increase broad public acceptance of sustainable harvest and hunter opportunity as part of wolf conservation.*

This proposal looks to keep hunters and livestock producers supportive of wolves in Montana and recognizes that without the elements of hunter harvest the wolf cannot be widely supported in the state. To all constituents including those less supportive of harvest, it also looks to demonstrate Montana's careful and diligent pursuit and consideration of wolf population data as the basis for proposing this season framework for the Commission to consider.

*6. Enhance open and effective communication to better inform decisions.*

This proposal and other supporting documents will be made available to decision makers and to others upon request prior to any final decision. Public comment will run through 5:00 PM Monday, June 24.



## *7. Learn and improve as we go.*

Given current uncertainties associated with a relatively short history of wolf management with hunting on the Montana landscape, the present dissatisfaction with the current wolf population level by some segments of the public and the specie's reproductive ability to grow and/or rebound, it is paramount that FWP move forward in decisive fashion that clearly connects with science, management experience and objectives and prescribes actions with predictions that can be recognized, measured and responded to. Season adoptions are scheduled to be annual rather than biennial to better adapt to evolving management understanding. Competing models will continue to be assessed for their relative and absolute fit. Careful assessment of other species' status and management prescriptions are included in this adaptive approach.

FWP has carefully considered the need to implement wolf harvest and management in light of uncertainty. There are many sources of uncertainty, including the fact that wolves do not have a long history (only two years) of being hunted in Montana and wolves have no recent history of being trapped on a broad scale. Further, Montana does not yet have long management history with harvest to draw upon to predict participation, hunter success, trapper success, wounding loss, spatial distribution of harvest, wolf vulnerability to harvest and wolf management as a piece of a larger whole. Mechanisms are in place through mandatory harvest reporting, pelt / skull inspection, the annual telephone harvest survey and other survey tools for wolves and other species to guard against over harvest and to gather new information about wolf hunting to further assess uncertainties. This effort includes considerable ongoing research efforts.

Some insight can be gleaned from the published literature, though the findings vary with the study area and management framework. A wolf population can generally withstand a range of about 30-50% total human-caused mortality and remain relatively stable, depending on a variety of variables and environmental conditions. The overall size of the population from which wolves are removed and the proximity to other populations appear to be particularly important considerations. Mortality levels exceeding 50% are generally required to initiate a population decline. To be clear, the current management intent at this time is to reduce the population. Other important factors highlighted in the literature include: overall wolf density and population size, pup survival, immigration / emigration rates at local and regional scales, the size and proximity of other wolf populations, the size and juxtaposition of core protected areas having low levels of human-caused mortality, road density, habitat condition, degree of habitat fragmentation, other non-harvest mortality (e.g. lethal control), prey populations, and livestock density (Fuller et al. 2003; Oakleaf et al. 2006; Person and Russell 2007; Brainerd et al. 2008; Adams et al. 2008).

FWP efforts are in place to refine and improve its model and develop mechanisms imbedded in the modeling process itself to learn more about wolf population dynamics in conjunction with public harvest and conflict management. Subsequent population monitoring efforts and better models within the adaptive management framework will allow FWP and others to improve knowledge and reduce the level of uncertainty as more experience is gained through time. Wolves are, and remain a valued species and this proposed season does not contradict that status.

## **2. Why is the proposed change necessary?**

In response to management experience from the past seasons, robust wolf numbers, impacts to livestock and prey populations (deer/elk/moose) and associated concern among some public constituents, FWP is proposing to liberalize the wolf season framework for 2013-14. This approach lies within the established intent to recognize and keep wolves a valued part of Montana's functioning ecosystems. With the potential for increased harvest there is the objective of decreasing wolf.

FWP further expects to expand understanding about the level of hunter interest in harvesting a wolf, the extent to which wolves on the Montana landscape vulnerable to harvest, how successful Montana hunters will continue to be, and how the population continues to respond. The adaptive management framework and the Commission season setting process will allow FWP to adjust seasons in the future for wolves and other species with full public process. FWP will develop and propose wolf seasons again in 2014 for the 2014-15 season. Public opportunity for review and comment exists throughout.

Regulated public hunting as a wildlife management tool helps to balance wildlife populations with ecological and social carrying capacities. Moreover, fair chase, regulated public hunting will enhance acceptance of wolves because the public will more fully participate in wolf management. Proposed season elements are in place for other valued species and do reflect fair chase and value assigned to wolves. This, in alignment with the public's conservation ethic and the state's hunting heritage and tradition, will ultimately develop an additional constituency through time much in same way as witnessed for mountain lions. Initiating a larger public harvest at this time gives FWP the opportunity to continue to build invaluable experience with a new and necessary management tool. It is FWP's expectation that public harvest will help fine tune wolf numbers and distribution, which may provide additional relief in areas prone to chronic wolf-livestock conflicts. It will also provide some relief to prey populations (deer / elk) in areas where predation by a variety of carnivores has contributed to low survival.

## **3. What is the current population's status in relation to management objectives?**

The Montana wolf population is securely recovered, though dynamic. As of December 31, 2012, the most recent *minimum* wolf population size determined for Montana was 625 wolves in 147 packs, 37 of which were confirmed breeding pairs (Bradley et al. 2013). The statewide population has trended upward since the mid-1980s and most noticeably since 2004, stabilizing last year. Initial efforts to estimate the state's wolf population based upon reported observations reveal a robust wolf population greater than the minimum count.

Recent population increases have occurred even with an estimated average total annual mortality rate of about 30% in Montana from 2005-2008 based on a radio-collared sample. The rate of wolf population growth in Montana appears to be slowing down as the highest quality habitats with the lowest potential for conflicts are occupied. Previous annual increases have been in the 20-35% range year to year, but the most recent increases from 2007 to 2008 was 18%, from 2008 to 2009

was 4%, from 2009 to 2010 was 8%, and from 2010 to 2011 was 15%. The minimum count decreased from 653 in 2011 to 625 in 2012. The current and predicted number of breeding pairs is above the 15 breeding pairs required to offer harvest opportunity.

While clear numerical objectives at local or larger scales and/or longer timelines can ultimately be an asset to management direction and efforts, FWP has not solidified such numerical objectives while in pursuit of better understanding of wolf response to various mortality rates, hunter effectiveness and wolf relationships to livestock and natural prey on the Montana-specific landscape. Such improved understanding stands to come from completed, ongoing and planned formal research and continued applied adaptive management, including harvest. The Montana Wolf Council did not support the concept of a statewide population number objective. Fifteen (15) breeding pairs (BPs) [and 150 wolves] is not a minimum or maximum but rather is used to transition between liberal and conservative management strategies. These wolf numbers are also expressed in Federal recovery criteria. The season structure and overall process were guided by the objectives identified in an intentional and facilitated structured decision making process.

FWP continues to responsibly and adaptively liberalize the wolf season framework with the objective of reducing wolf abundance as part of overall wildlife systems management. Managing for lower wolf numbers is prudent given the significant resistance to wolf numbers by some members of the public, livestock depredations and impacts to prey populations. While in other process places, this overall effort includes management adjustments for ungulates and other carnivores as well. As wolf numbers have increased, so has the level of confirmed wolf-caused livestock losses and the number of wolves killed to resolve conflicts (Hanuska-Brown et al. 2012). It appears that in some places, total predation to include wolf predation has been a factor in prey population dynamics (Hamlin and Cunningham 2009). Thus, harvest needs to be implemented in such a way that accounts for the dynamic aspects of conflict management, wolf population ecology, prey populations, other predator populations and all the social factors surrounding wolf management that include recognized or anticipated harvest rates by hunters and trappers.

#### **4. Provide information related to weather/habitat factors that have relevance to this change.**

Continuation of a statewide wolf hunting season and the addition of a trapping season reflects management experience gained to date and will help FWP manage more proactively at appropriate scales. Anecdotal evidence over the last several years seems to indicate that larger packs may have a greater tendency to injure or kill domestic livestock than when the same pack had fewer members. FWP believes that public hunting and trapping will help maintain smaller pack sizes for those packs which routinely encounter livestock and live on or near private lands. It may even remove packs that are chronic sources of conflict.

An additional consideration when adopting wolf season frameworks is Montana's "defense of property" law that allows a person to haze, harass, or kill a wolf seen actively attacking, killing, or threatening to kill or killing livestock. The defense of property statute (MCA 87-3-130) and new ARM rules took effect upon delisting when federal regulations expired. The flexibility afforded under state law is similar to the federal 10j experimental regulations that applied to southern

Montana since 2005. Thus, delisting and transitioning to the state legal framework does not create more liberal means for private citizens to kill wolves caught in the act attacking, killing, or threatening to kill livestock across southern Montana where most livestock conflicts occur. The current modeling effort already takes that mortality into account.

Transition to state law did provide new flexibility to livestock owners across northern Montana. Under the federal regulations in the endangered area, livestock owners did not have that flexibility. While some of Montana's highest livestock densities, thus most wolf-livestock conflicts occur in southern Montana, wolf packs across northern Montana can and do encounter livestock. FWP acknowledges that a small number of wolves could be killed when caught in the act of killing or threatening to kill livestock. The number is expected to be similar to southern Montana and FWP will learn over time what additional mortality will consistently appear in northwest Montana.

Prey declines due to the combination of weather, habitat, total predation, and human harvest led FWP to decrease prey hunting opportunity in some places in occupied wolf range. In conjunction with lower human harvest levels of deer, elk and moose, the proposed wolf season frame work may provide some relief to these prey populations in a manner that maintains species viability, ecological role and social stature for wolves in Montana.

##### **5. Briefly describe concerns with this proposal or contacts made.**

There has been significant public support to harvest more wolves given wolf biology and sincere concerns about the status of deer/elk populations. The rate of wolf population increase has been robust and the harvest simulation model predicts population resiliency under the more liberal framework. As with all such efforts, FWP does acknowledge limitations of the model despite its thoughtful development and an anchor in field-based data.

Conversely, there has been significant input advocating reduced wolf harvest. Management experience and population size confirms ample room for this proposed harvest opportunity while maintaining a viable and functioning wolf population in Montana.

There has been the public input that FWP should do more to address connectivity requirements for sustaining a northern Rockies metapopulation given Montana's unique geographic link with wolf populations in Canada / Alaska and the Greater Yellowstone Recovery area (which includes Yellowstone National Park and all of Wyoming). Strong reaction to wolf harvest north of Yellowstone National Park prompted a proposed subquota in deer/elk HD 316. Quotas were maintained in WMU's 316 and 110 during the 2012-13 season. For 2013-14, WMU 316 is expanded to include portions of HD 313.

FWP is aware that wolf populations in western and southwest Montana are strongly influenced by immigration and wolf dispersal from Idaho and Yellowstone National Park into Montana, respectively. Depending on how those populations perform under their respective management frameworks (in conjunction with natural fluctuations due to prey availability or disease etc.), dispersal rates may be either positively or negatively affected. Thus, connectivity may be affected. If so, FWP may need to adjust the season framework in the future and is prepared to do so, in conjunction with the Commission. At present, genetic diversity in the northern Rocky Mountain

wolf metapopulation is currently high and is not a problem (Hebblewhite et al. 2010; Vonholdt et al. 2010). The interagency genetic diversity MOU commits Montana, along with Idaho and the federal government to monitoring protocols that should enable detection of any emerging conservation issues.

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Proposal compiled by: Wildlife Bureau Staff, May 2013