Montana Fish, Wildlife & Parks
4600 Giant Springs Road
Great Falls, MT 59405

July 1, 2020

Dear Interested Party:

The enclosed draft Environmental Assessment (EA) has been prepared for public review regarding a proposal to reintroduce bighorn sheep to the Little Belt Mountains in central Montana. Bighorn sheep were historically common in the Little Belts but were extirpated by the early 20th century. Habitat models and biologists predict that there is extensive high-quality habitat in the mountain range. A small number of wild sheep have been documented successfully breeding in the Little Belts since 2015.

FWP proposes to reintroduce bighorn sheep into the Little Belts following guidelines described in the 2010 Montana Bighorn Sheep Conservation Strategy. The intent of the reintroduction is to establish a self-sustaining and genetically diverse population of bighorn sheep in the mountain range.

Additional copies of the draft EA are available at Montana Fish, Wildlife & Parks in Great Falls at (406) 454-5840. The draft EA is also available on FWP website at http://fwp.mt.gov/news/publicNotices/. A 30-day public review and comment period will be available July 2 – August 3, 2020. A public informational meeting is scheduled for July 22, 2020 in Stanford, MT. Written comment should be delivered to the following address:

Montana Fish, Wildlife & Parks
PO Box 527
White Sulphur Springs, MT 59645
*Or* email comments to: jkolbe@mt.gov

Thank you for your interest and involvement,

Sincerely,

Gary Bertellotti
Montana Fish, Wildlife & Parks
Region 4 Supervisor
Great Falls, MT 59405
gbertellotti@mt.gov
(406) 454-5840

FWP.MT.GOV

THE **OUTSIDE** IS IN US ALL.

# *DRAFT* Environmental Assessment

## For the Potential Reintroduction of Bighorn Sheep into the Little Belt Mountains, Central Montana

**July, 2020**

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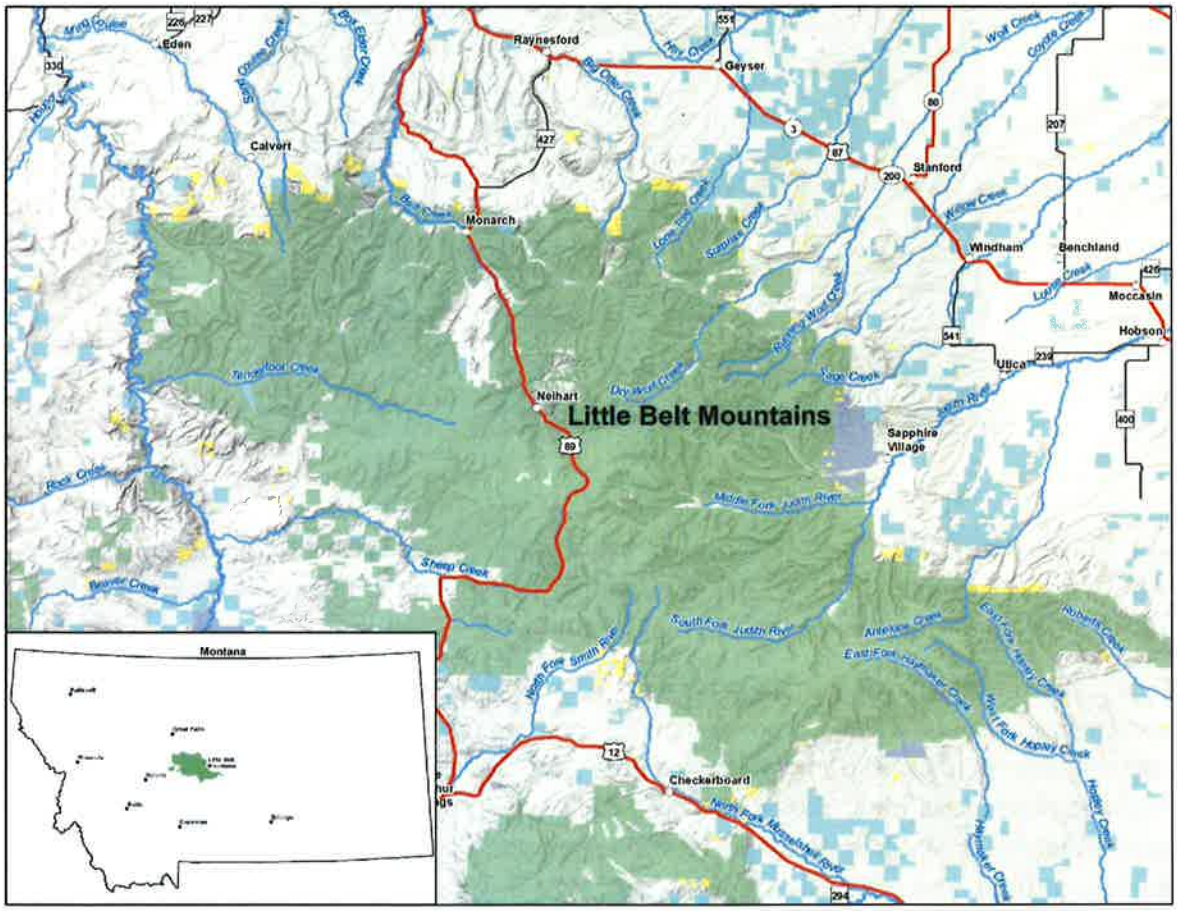
## Chapter 1: Project Proposal

## A. Proposed Action

This proposal is to restore one or more self-sustaining and genetically diverse herds of bighorn sheep to central Montana's Little Belt Mountains by translocating bighorn into the mountain range from elsewhere in Montana.

The Little Belt Mountains are an island range located 30 miles southeast of Great Falls. The range is approximately 1.2 million acres in size, 910,000 acres of which are managed by the U. S. Forest Service (Figure 1). Topography is generally rolling and timbered with significant areas of exposed cliffs and deeply incised canyons.

*Figure 1. Montana's Little Belt Mountains. Lands depicted in green are managed by the U. S. Forest Service.*



Bighorn sheep were historically common in the Little Belts (Figure 2). The author C. M. Russell wrote of his time living at Russell Flat from 1880 – 1882:

*"That afternoon we entered the South Fork of the Judith. At that time there was no wagon road into it. A few trees felled across the lower canyon made Jake's fence. Shut off from the outside world it was a hunter's paradise bounded by walls of mountains and containing miles of grassy open spaces more green and beautiful than any man-made parks. These parks and the mountains behind them swarmed with deer, elk,* ***mountain sheep*** *and bear, besides beaver and other small fur-bearing animals".* (Charlie Russell Roundup, ed. Brian Dippie, 1999, Montana Historical Society Press, p. 315).

*Figure 2. Native American petroglyphs depicting bighorn sheep are found along the Smith River and Judith River Drainages in the Little Belt Mountains*

Bighorns were extirpated from most of their historic Montana ranges, including the Little Belts, by the early 20th century. In 1962 FWP transplanted 18 bighorn sheep into Sheep Creek in the central Little Belts—this restoration attempt failed.

A few bighorn sheep have naturally returned to the Little Belts during the last 10 years. Two young bighorn rams were observed near the town of Monarch in 2014 and a ewe with a lamb was seen near Rhoda Lake during the summer of 2015. Although FWP has documented lamb production and recruitment in the Little Belts each year since 2015 (including spring 2020), staff has been unable to verify more than 6 total sheep at one time in range. This small group is generally located between Baldy Mountain (east of Neihart) and Dry Wolf Cr. in the northeast Little Belts. These sheep are most likely descended from the HD 482 herd, either dispersing directly from Missouri Breaks in Fergus Co. or from the Beartooth WMA herd that was founded by introduced HD 482 sheep.

Despite the presence of a small number of bighorn in the mountain range, this proposed translocation would be considered and analyzed as a reintroduction, rather than an augmentation.

The 2010 Montana Bighorn Sheep Conservation Strategy (MFWP 2010) directed the Dept. "*to establish five new viable and huntable populations over the course of the next 10 years and augment existing populations where appropriate*". No new herds have been established since the Strategy was adopted. The Little Belt Mountains were identified as a potential release site during the Strategy's public scoping process and FWP biologists have been assessing the suitability of bighorn sheep habitat there since the Strategy was developed.

Both the Maxent bighorn sheep habitat suitability model (described in the Conservation Strategy) and a new MT bighorn sheep resource selection function (RSF) model (Lowrey et al. in review) predict extensive and high-quality habitat in the Little Belts. Specifically, the Conservation Strategy's Transplant Site Assessment Analysis (Appendix A) suggests that the range's sheep habitat could support as many as 600 bighorn, though other biological and anthropogenic factors may reduce the range's actual carrying capacity.

If this EA is approved, bighorn sheep would be translocated to areas within the Little Belt Mountains that are likely to support discrete herds of at least 125 individual sheep. Over time, FWP expects some level of connectivity between established herds within the Little Belts but only limited connectivity with existing herds outside of the mountain range.

To assess specific translocation proposals, FWP would follow the 2010 MT Conservation Strategy recommendations: 1) transplant sites should have the potential to support at least 100 sheep, 2) potential transplant sites should be fully evaluated, including habitat, predator abundance, and the potential for livestock and other wildlife ungulate competition, 3) initial transplants should include at least 30 animals, 4) source herds should be tested for diseases, 5) sheep with recent histories of pneumonia should not be transplanted, and 6) transplanted sheep should be monitored for at least 1 year using mortality-sensing collars. Distance from and the likelihood of wild sheep comingling with domestic sheep will also be considered when evaluating candidate release locations.

Although this document is intended to analyze the restoration of bighorn sheep into the Little Belt Mountains generally, FWP has identified an initial potential source herd and a candidate Little Belt Mountains release location. This initial translocation proposal will be described in detail in Section D of this Chapter.

## B. Purpose, Need, and Benefits

Bighorn sheep were extirpated throughout much of the west around the turn of the century due to disease, over-hunting, and competition for forage from other grazers, often domestic

livestock. The dramatic increase in bighorn sheep numbers and distribution in Montana since the 1940s is largely the result of a very purposeful and successful bighorn sheep transplant program (MFWP 2010). Between 1942 and 2009, FWP captured and released 2,028 bighorn sheep in 55 different locations across Montana. Restoring bighorn sheep to suitable habitats was the number one issue identified by the public during the scoping process for the 2010 Montana Bighorn Sheep Conservation Strategy.

Recent die-offs within other statewide herds, and subsequent population declines, have increased the need for establishing and promoting healthy populations. From a conservation perspective, increasing the number and distribution of viable populations has a long-term survival benefit for the species. This may be especially true in the Little Belts as sheep there are not expected to readily interact with other established herds.

In addition to the conservation value of restoring a native species to historically occupied habitat, a self-sustaining bighorn sheep population in the Little Belts would provide important aesthetic and recreational benefits. Montanans highly value watching sheep where they occur in other areas. Bighorn sheep are also one of the most sought hunting opportunities in the United States. Hunting and wildlife viewing contribute to Montana's local and statewide economies. Specifically, bighorn sheep hunters generate more per capita revenue to businesses than any other hunter (Brooks and King 2012).

## C. Location, Size, and Scope of the Proposed Action

The Maxent (Figure 3) and the newer RSF (Figure 4) model both predict suitable bighorn sheep habitat throughout the Little Belts and both models highlight similar high-quality habitat patches including Deep Cr./Smith River, Monarch/Running Wolf, and the South Fk. Judith/Antelope Cr. areas.

Most predicted bighorn sheep habitat in the Little Belts is on public land, primarily that managed by the U. S. Forest Service. FWP will evaluate specific potential release sites individually using the criteria outlined in the Conservation Strategy. Once introduced, sheep are likely to disperse from initial release sites as they explore unoccupied habitat. Their distribution will be most restricted during the winter but we expect longer distance movements and wider distribution in the summer and fall. It may take several years for bighorn to adjust to their new habitat. Once the population becomes established, bighorn sheep, like most wild ungulates, show remarkable fidelity to specific seasonal habitats year after year.

It may be necessary to supplement individual herds with subsequent translocations if initial survival is low or if sheep become established in fragmented bands too small to become viable. FWP may also attempt to establish several distinct herds in the mountain range over time.

*Figure 3. 2010 FWP Maxent predictive bighorn sheep habitat model, Little Belt Mountains.*

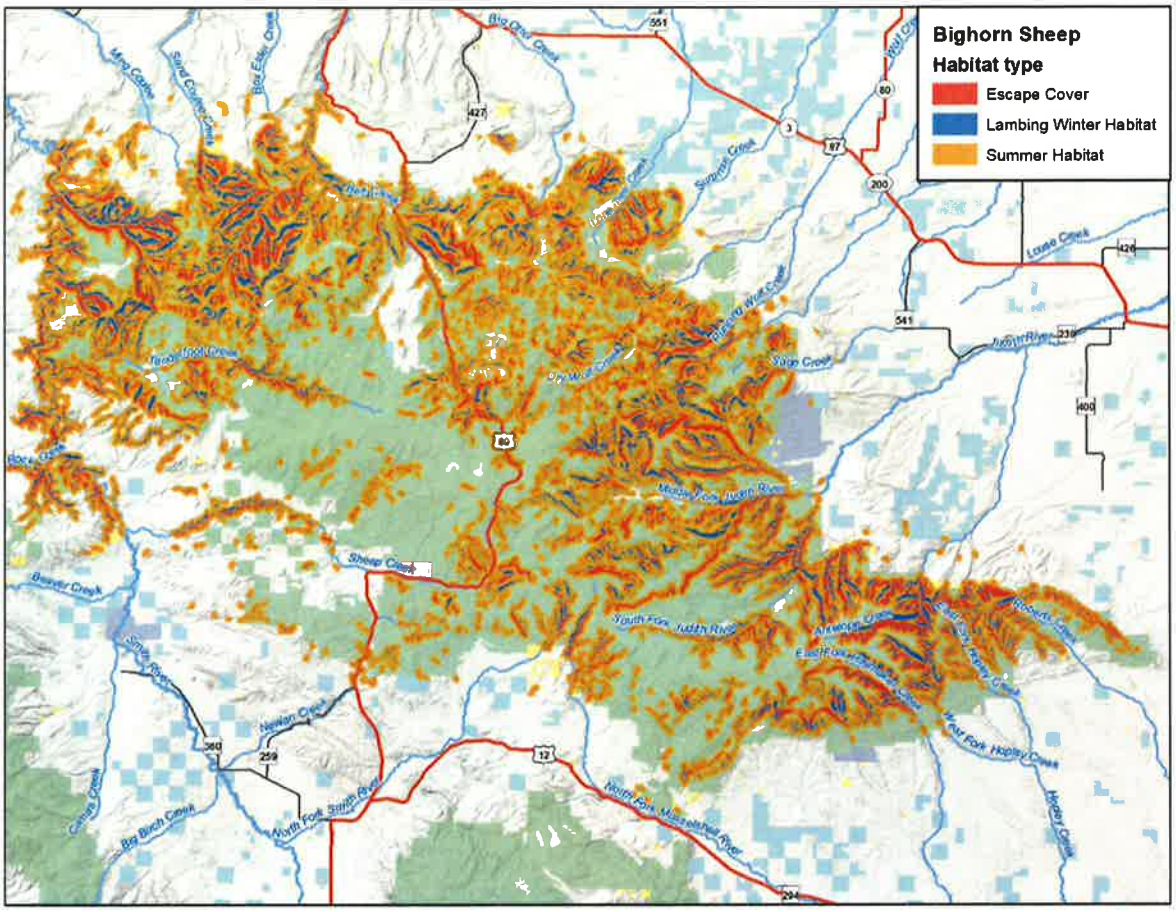
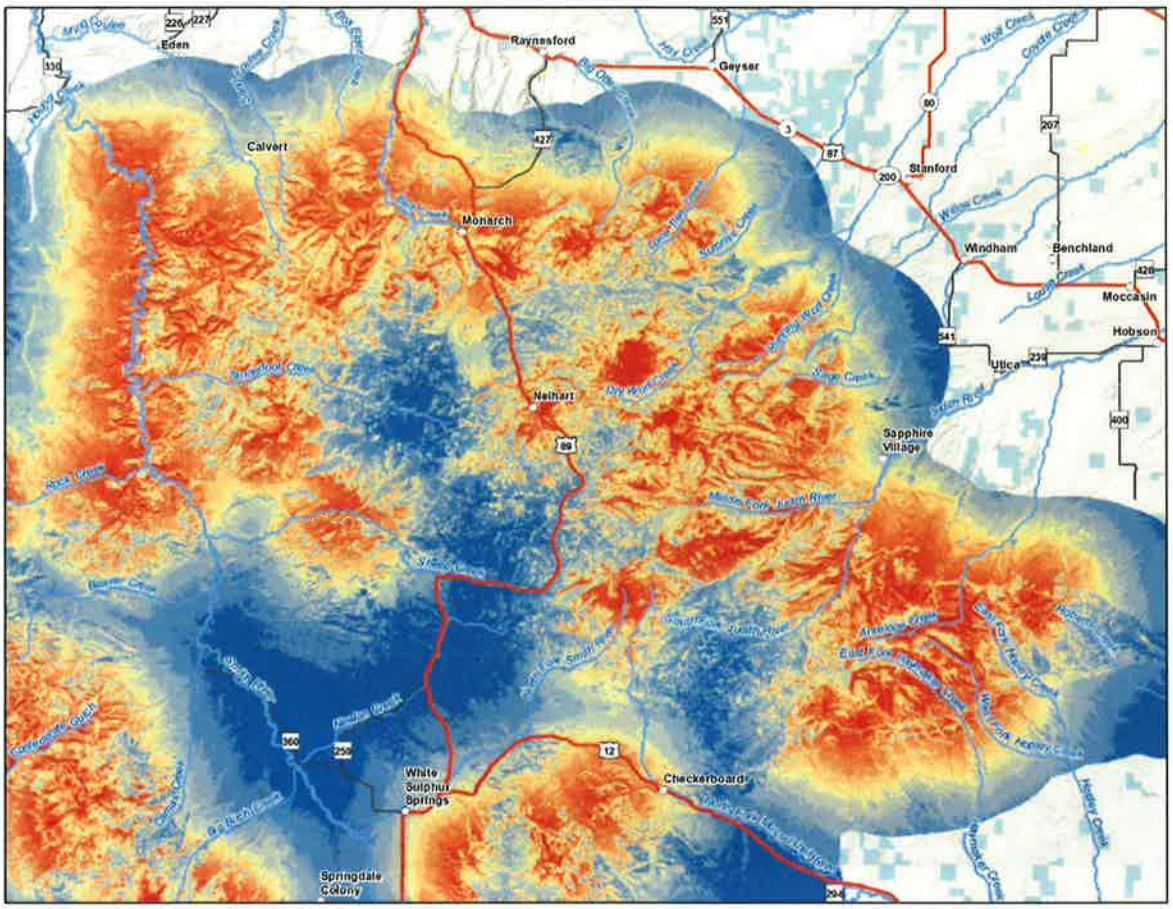


*Figure 4. Bighorn sheep summer migratory habitat resource selection model, Little Belt Mountains (Lowrey et al. in review).*




## D. Initial Translocation Proposal

FWP has identified both a potential source herd and a release location in the Little Belt Mountains that would be considered for implementation if this bighorn sheep restoration proposal is adopted by the Fish and Wildlife Commission.

FWP proposes to translocate 50 bighorn sheep (5 young rams, 45 ewes) from HD 482 during winter 2020/21 and to release them on public land near the South Fork of the Judith River in the southeast Little Belts. All released animals would be equipped with satellite-uplink GPS telemetry collars with an expected lifespan of up to 5 years to allow analysis of survival, habitat use, and to allow detection of individual movements near known domestic sheep.

**1. Source Herd.** The initial source of sheep that could be translocated into the Little Belts is Bighorn Sheep Hunting District 482 which includes portions of the Missouri Breaks in Fergus County north of Lewistown. The HD 482 BHS herd is one of the most demographically robust

herds in Montana which has high recruitment and annual survival. Although HD 482 sheep have not experienced a die off event due to respiratory disease, "keeping the population within or below carrying capacity to reduce the potential of die offs and habitat degradation" is a principal management concern for this herd (MFWP 2010). This herd is currently 20% over management objective and ewe hunting success is frustrated by difficult hunter access to ewes during the hunting season (Table 1). For this reason, over 220 sheep have been translocated from HD 482 to augment or establish other BHS herds since 2003 (Table 2). If future translocations into the Little Belts become necessary and HD 482 sheep aren't available, other source herds will be evaluated according to the protocols described in the Conservation Strategy.

*Table 1. HD 482 bighorn sheep survey data, 1992 - 2019*

| Date | Sheep Groups | Rams | | | | Total Rams | Ewe | Lamb | Total | Lambs: 100 Ewes | Rams: 100 Ewes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ≤¼ I | ¼-½ II | ½-¾ III | >¾ IV | | | | | | |
| 1992 | 13 | 6 | 17 | | 11 | 34 | 33 | 25 | 108 | | |
| 1994 | 21 | 17 | 2 | 21 | 27 | 50 | 34 | 34 | 174 | | |
| 1995 | 34 | 13 | 5 | 15 | 42 | 75 | 104 | 56 | 235 | 54 | 72 |
| 1997 | 33 | 32 | 18 | 20 | 31 | 83 | 86 | 44 | 267 | 51 | 97 |
| 1998 | 31 | 9 | 8 | 14 | 70 | 101 | 151 | 73 | 325 | 48 | 67 |
| 1999 | 39 | 15 | 9 | 20 | 42 | 86 | 120 | 47 | 253 | 39 | 72 |
| 2000 | 32 | 8 | 5 | 16 | 36 | 65 | 121 | 81 | 267 | 67 | 54 |
| 2001 | 52 | 24 | 10 | 27 | 56 | 117 | 146 | 64 | 327 | 44 | 80 |
| 2002 | 52 | 40 | 7 | 18 | 45 | 110 | 150 | 95 | 375 | 63 | 73 |
| 2003 | 54 | 15 | 2 | 24 | 47 | 88 | 117 | 80 | 285 | 68 | 75 |
| 2004 | 63 | 49 | 26 | 21 | 55 | 151 | 202 | 94 | 447 | 47 | 75 |
| 2005 | 78 | 27 | 14 | 34 | 80 | 155 | 141 | 95 | 391 | 67 | 110 |
| 2006 | 76 | 24 | 15 | 24 | 89 | 152 | 144 | 69 | 365 | 48 | 106 |
| 2007 | 78 | 17 | 2 | 29 | 60 | 108 | 130 | 83 | 321 | 64 | 83 |
| 2008 | 60 | 15 | 4 | 27 | 59 | 105 | 170 | 73 | 348 | 43 | 62 |
| 2009 | 65 | 21 | 8 | 54 | 90 | 173 | 138 | 68 | 379 | 49 | 125 |
| 2010 | 67 | 12 | 3 | 39 | 89 | 143 | 226 | 129 | 498 | 57 | 63 |
| 2012* | 70 | 20 | 16 | 24 | 40 | 100 | 157 | 72 | 329 | 46 | 64 |
| 2013 | 76 | 13 | 24 | 28 | 49 | 114 | 190 | 103 | 407 | 54 | 60 |
| 2014 | 58 | 8 | 22 | 27 | 76 | 133 | 212 | 91 | 436 | 43 | 63 |
| 2015 | 61 | 14 | 16 | 16 | 46 | 91 | 250 | 145 | 486 | 58 | 36 |
| 2016 | 66 | 22 | 21 | 13 | 47 | 103 | 209 | 110 | 422 | 53 | 49 |
| 2017 | 74 | 25 | 20 | 12 | 56 | 113 | 184 | 81 | 378 | 44 | 61 |
| 2018 | 70 | 12 | 19 | 42 | 48 | 121 | 159 | 105 | 385 | 66 | 76 |
| **2019** | **84** | **15** | **12** | **35** | **65** | **127** | **173** | **95** | **395** | **55** | **73** |

*Table 2. Recent Bighorn Sheep Transplants from HD482 (Fergus).*

| Date | Number Transplanted | | | | Transplant Location | Population size prior survey |
|---|---|---|---|---|---|---|
| | Rams | Ewes | Lambs | Total | | |
| 2/18-20/2003 | 3 | 23 | 4 | 30 | Region 3 | 285 |
| 1/10-11/2005 | 4 | 44 | 1 | 49 | Nebraska | 391 |
| Dec 2010 | 0 | 46? | 0 | 46 | Sheep Creek/Beartooth WMA | 498 |
| 12/7-8/2014 | 3 | 25 | 2 | 30 | Highlands/Sheep Creek | 436 |
| 12/13/2016 | 0 | 20 | 0 | 20 | Beartooth WMA | 422 |
| 2/21-23/2017 | 0 | 44 | 1 | 45 | Beartooth WMA | 422 |

**2. HD 482 (Fergus) Herd Disease Status**

The HD 482 BHS sheep herd has tested positive for most respiratory pathogens, including Mycoplasma ovipneumoniae, known to be implicated in bighorn sheep respiratory disease. However, FWP has not detected symptomatic animals or an all-age die off within this herd. Testing in 2016 indicated that the prevalence of Mycoplasma ovipneumoniae was low.

FWP has sampled and tested 119 live-captured bighorn sheep from HD 482 since 2010. During that time, we have detected evidence of infection with Mycoplasma ovipneumoniae (both on serology and using PCR), Mannheimia haemolytica, Pasteurella multocida, Bibersteinia trehalosi (non-hemolytic), the Leukotoxin A gene, and other hemolytic Mannheimia species. In 2016, the most recent health sampling period, we captured 60 animals and detected all of these pathogens by culture or PCR, *except* Mycoplasma ovipneumoniae and Pasteurella multocida. However, 3/56 animals tested serologically positive to Mycoplasma ovipneumoniae in 2016, indicating past exposure to the pathogen. In addition, the HD 482 herd is positive for contagious ecthyma, which under certain circumstances can cause debilitating sores on the lips, muzzle, udder, feet, or vulva of naive animals. While HD 482 has the full suite of respiratory pathogens, we have no documented cases of respiratory disease in this herd.

The primary risk of using sheep from HD 482 as source stock for a new population is that they host some of the co-infecting agents (e.g. hemolytic/Leukotoxin positive Pasteurellas) that might increase the likelihood and severity of any future respiratory disease event triggered by spillover of new strains of Mycoplasma ovipneumoniae from bighorns or domestics.

Given that the bighorn sheep resident in HD 680 and 482 are infected with high-risk respiratory pathogens, FWP's Wildlife Health Program recommends against using these herds as source populations for future augmentation of existing, established herds. However, the herds in HDs 482 and 680 remain among the most demographically robust herds in the state despite hosting some of the key respiratory pathogens, especially Mycoplasma ovipneumoniae. In situations where a reintroduced population will remain separate from neighboring bighorn sheep and mountain goat herds, HD 482 is a suitable source for reintroduction to an area like the Little Belts where there is no self-sustaining resident herd and where connectivity with other wild

sheep herds is low. The small number if bighorn currently present in the Little Belts are almost certainly descended from HD 482 sheep and likely already share this disease exposure history.

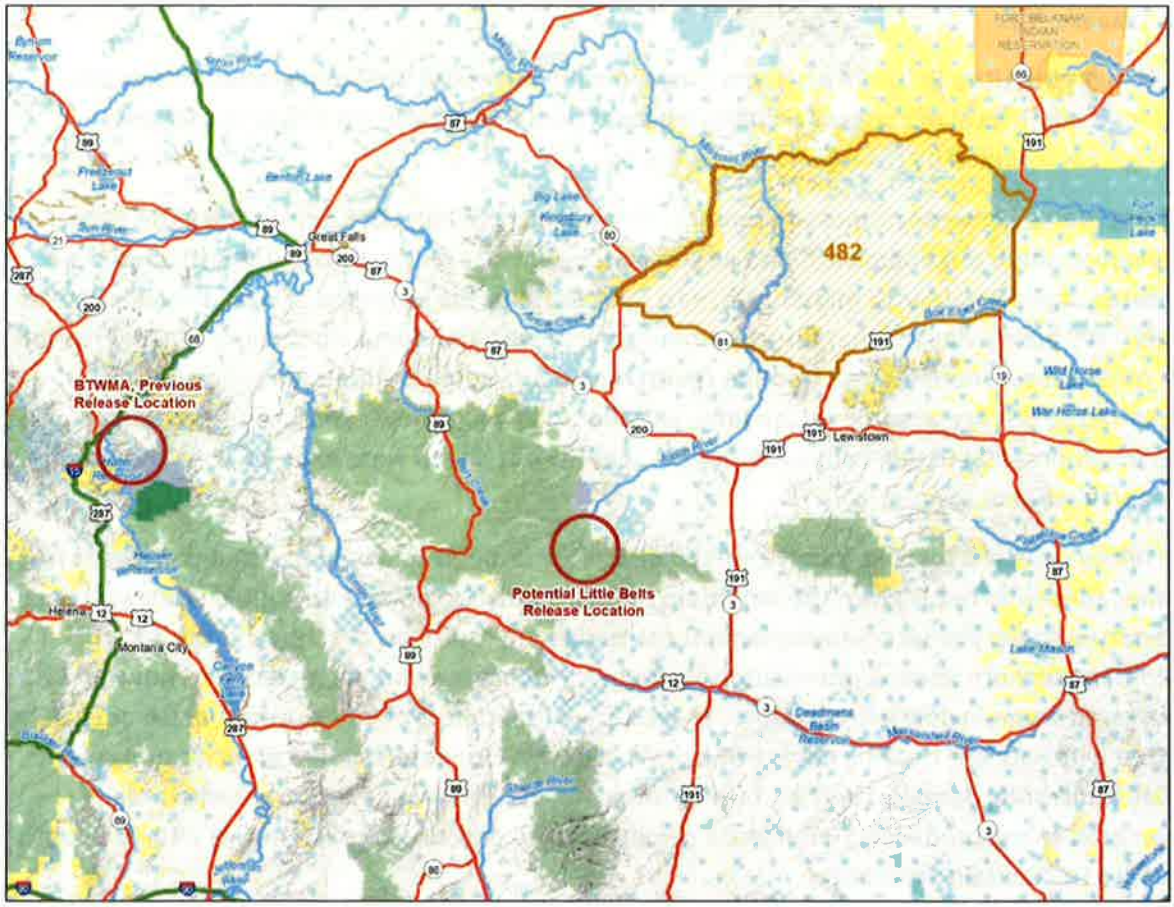
**3. Disease Risk**

Although the Little Belts are an island range, recent successful BHS immigration shows that there is some level of connection to an adjacent herd, most likely HD 482 or the BTWMA (originally founded by HD 482 sheep, Figure 5).

There are no active or proposed domestic sheep allotments on USFS land in the Little Belts. However, there are domestic herds on surrounding private lands. Known domestic herds are located approximately 12 miles north, east, and south of the proposed release site. Because of this, FWP acknowledges that future commingling of wild and domestic sheep is possible, as it is in other areas. There is a risk that the reintroduced BHS could become symptomatic with respiratory disease at some future time, whether following a new exposure to a pathogen or if an environmental trigger causes pathogens that HD 482 sheep were exposed to in the past to become virulent.

In either case, it is less likely that infected BHS in the Little Belts would transmit pathogens to other statewide herds given the mountain range's spatial isolation. FWP would work with area domestic sheep producers to implement risk mitigation protocols described in the 2010 Montana Bighorn Sheep Conservation Strategy, including the immediate lethal removal of BHS observed commingling with domestic sheep. The initial cohort of introduced sheep would all be fitted with satellite tracking collars which will allow FWP to detect and respond to movements that could bring domestic and wild sheep into contact. FWP would also work with area domestic sheep producers to minimize comingling and encourage collaborative efforts by both parties to maintain separation.

*Figure 5. Bighorn sheep HD 482, the proposed release site near the S. Fk. Judith River, and the nearest other BHS herd (also established using transplanted HD 482 sheep).*




## 4. Proposed Initial Release Site

FWP is proposing an initial release location in the southeast Little Belts on USFS land between the South Fork of the Judith River and Antelope Cr. Both the Maxent and new RSF habitat models predict that this area contains extensive and high-quality year-round habitat (Figures 6 and 7).

*Figure 6. RSF habitat model indicating relative summer migratory habitat quality around the middle South Fork Judith River (Lowerey et al. in review).*

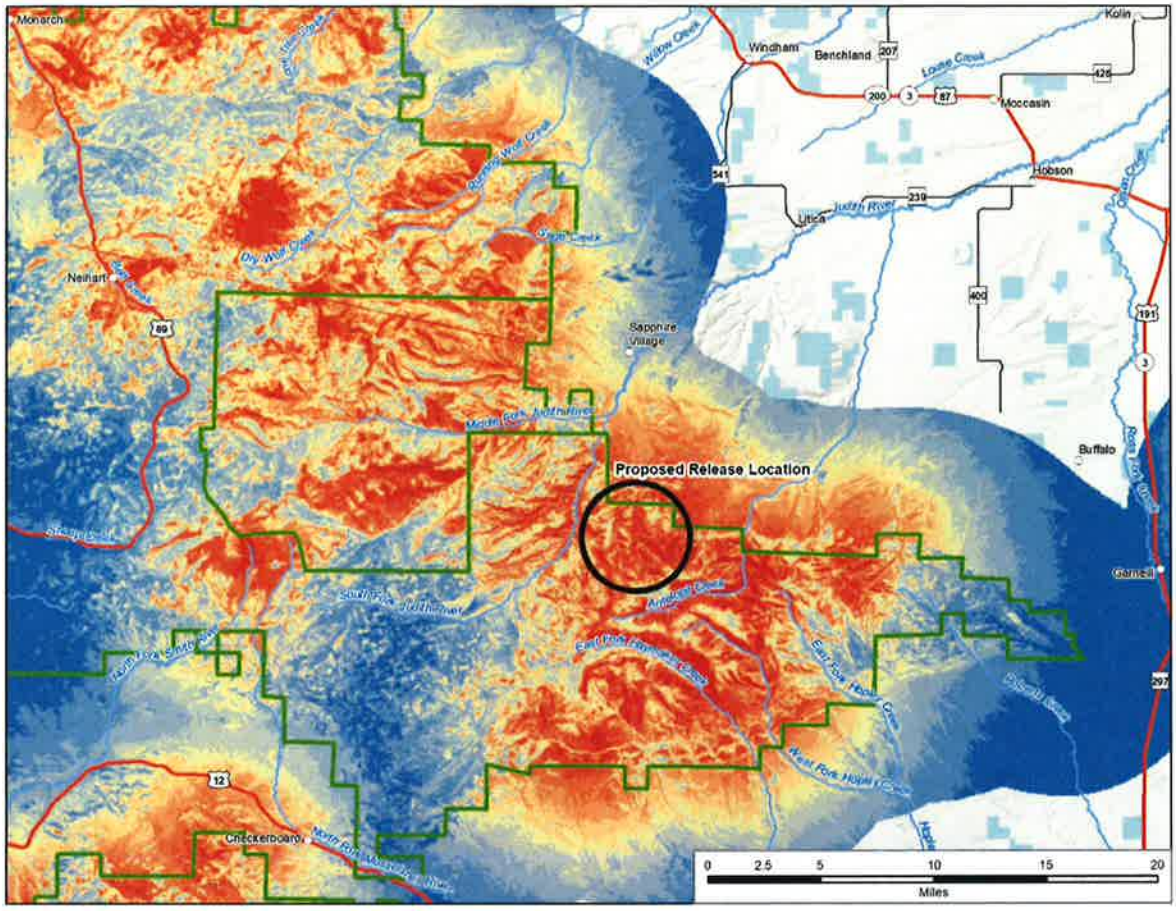
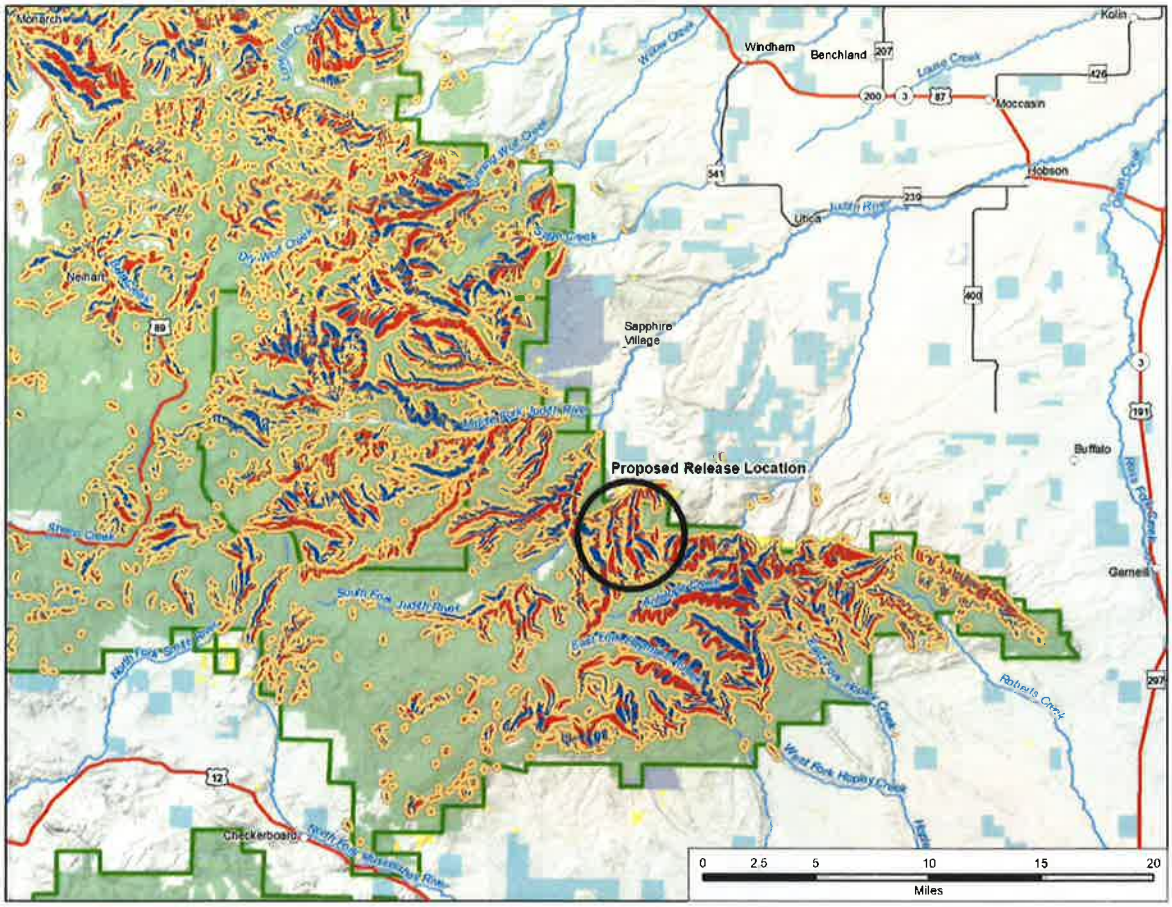


*Figure 7. FWP Maxent habitat model indicating relative summer migratory habitat quality around the middle South Fork Judith River.*




## 5. Funding and Timeline

The initial capture and translocation could occur as soon as the winter of 2020/21. Total project costs are estimated to be approximately $140,000. FWP expects significant financial contributions from private entities and NGOs to help fund the capture and satellite collars. The collars are refurbishable and can be re-deployed on this or other future statewide projects. FWP may also use matching funds from the annual bighorn sheep license auction fund. Should future reintroduction and/or augmentation efforts occur, FWP expects to use similar funding mechanisms to accomplish those efforts.

### 6. Public Outreach

FWP has discussed the proposal with the landowner adjacent to the proposed release site; he supports the reintroduction effort. We have discussed the potential reintroduction with the local USFS Ranger; the revised Forest Plan anticipates the possibility of BHS restoration in the Little Belts and he supports further analysis of the project. Finally, FWP met with local sheep producers and the leadership of the Montana Woolgrowers Assn.; they, too, support releasing the proposal for analysis and public review. Both the Montana Wild Sheep Foundation and the National Wild Sheep Foundation have expressed support for the project.

FWP will conduct extensive public outreach regarding this proposal during the EA process including landowners, County Commissions, sporting groups, Montana Woolgrowers Assn. membership, local wool producers, other public agencies, and the general public.

## E. Agency Authority for Proposed Action

FWP policies and guidelines are directed by state laws (MCA 87-5-701 to -721) which provide for the importation, introduction, and transplantation of wildlife. Specifically, Montana Code Ann. § 87-5-711(2) provides that transplantation or introduction of any wildlife is prohibited unless the FWP Commission "determines, based upon scientific investigation and after a public hearing, that a species of wildlife poses no threat of harm to native wildlife and plants or to agricultural production and that the transplantation or introduction of a species has significant benefits".

Transplantation is defined as the "release of or attempt to release, intentional or otherwise, wildlife from one place within the state into another part of the state" (MCA 87-5-702(11)).

## F. Potential Implications of Bighorn Sheep Reintroduction on Forest Service Management Activities

Bighorn sheep are currently well documented on and considered resident of the Judith Ranger District of the Helena-Lewis and Clark National Forest.

The Draft Record of Decision for the revised forest plan, governing management of the Helena-Lewis and Clark National Forest, identifies certain wildlife and wildlife habitat direction broadly at the forest scale and more specifically at the geographic area scale. A geographic area is an area generally encompassing a single mountain range, such as the Little Belt Mountains. At the geographic area, plan direction for habitat and wildlife issues are more specific and tailored to that area. Such will be the case with bighorn sheep and the Little Belts Mountains geographic area.

The 2020 Forest Plan will direct the Helena-Lewis and Clark National Forest to consider bighorn sheep in certain planning and land management decisions in the Little Belt Mountains, such as domestic sheep and goat activity on the forest and the potential for comingling of domestic sheep and goats with bighorn sheep. For example, the Little Belts will have a desired condition (LB-WL-DC-02) that states "The risk of disease transmission from domestic livestock to bighorn sheep is minimal". To achieve this, the plan will contain a standard for the Little Belts (LB-WL-STD-01), "The best available scientific information and the most current recommendations made through agency or interagency efforts shall be used to determine and establish the means with which to achieve effective separation between bighorn sheep and domestic sheep and goats on NFS lands". Domestic livestock grazing that may occur in or near bighorn sheep occupied habitat would be managed in part by forestwide plan standard FW-GRAZ-STD-03 "Stocking of vacant grazing allotments with domestic sheep or goats for livestock production shall only be permitted if a risk assessment using the best available science and agency or interagency recommendations indicates that effective separation can be achieved between livestock and bighorn sheep". In addition, forestwide plan standard FW-GRAZ-STD-04 states "Analysis for allotment management plan revisions or NEPA sufficiency reviews of active sheep allotments shall use the best available science and agency or interagency recommendations to identify and apply management tools by which effective separation can be achieved between domestic sheep and bighorn sheep", providing future direction to minimize or preclude the potential for contact between domestic sheep and bighorn sheep on the forest.

Use of domestic sheep or goats for noxious weeds treatments will be managed in part by plan standard FW-INV-STD-02 "Domestic sheep or goat grazing used as part of an integrated pest management weed control program shall maintain effective separation of bighorn sheep from domestic sheep or goats." Use of domestic livestock for weeds treatments could not proceed unless it can satisfy this standard. This standard would limit the risk of comingling of domestic sheep and goats and bighorn sheep that may result from noxious weeds management.

Together, these plan standards and management direction will provide the means with which to preclude the potential for comingling of domestic sheep and goats and bighorn sheep on National Forest lands in the Little Belt Mountains, providing for healthy wild sheep populations on the Forest.

The U. S. Forest Service is currently conducting vegetation management projects in the Little Belts that are specifically intended to improve bighorn sheep habitat. The agency will consider implementing similar projects in the future.

## G. Anticipated Schedule

FWP will accept public comment on this draft EA for 30 days beginning July 2. FWP will provide news releases to area newspapers, media outlets and mail information cards about the EA to

area landowners, County commissions, other agencies, NGOs and others. The EA will also be available on FWPs website. FWP will host a public meeting July 22 in Stanford, MT to discuss the project proposal and to gather public comment. August 3 the public comment period will conclude, the draft EA will be revised based on these comments, and the final EA will be written. Based on public input, a decision notice will be authored by the Region 4 FWP Supervisor. The final EA and the decision notice will be completed by submitted to Fish and Wildlife Commissioner for consideration and review. The Fish and Wildlife Commission will render a final decision to support or deny the proposal at their regularly scheduled August 20, 2020 meeting where public comment will also be accepted.

If the proposal is approved initial translocations (as described in Section D of this EA) could commence as soon as December of 2020. Additional translocations to the initial or other release sites could occur as necessary and as supported by the public and subsequent habitat analysis in future years.

## H. Purpose of the Draft EA

The purpose of this draft EA is to describe the proposed project, list and discuss in detail major issues and concerns that have been identified up to this point, stimulate further public input and discussion of the issues, and identify additional issues. The draft EA will be the focus of a public meeting and will be distributed to interested parties as well as being available upon request. At the end of a public comment period, any new public input will be summarized and incorporated into a Final EA. Both the Draft and Final EA are documents that will provide the Decision Maker with the best available information to assist in evaluating the project and deciding whether to approve, not approve, or modify the proposed action in a Final Decision Notice. In this case, the decision-making authority is the FWP Region 4 Supervisor.

## I. Environmental Impact Statement Determination

Based on the analysis completed in this EA, FWP has determined an EA is the appropriate level of analysis because the proposed action is anticipated to have few to no impacts to the existing environment such as soil, water, vegetation, wildlife and social resources. Anticipated impacts may be minor, manageable, or mitigable.

## Chapter 2: Alternatives

## A. Alternatives Analyzed

*Alternative A (No Action)*

Under the no action alternative, bighorn sheep would not be reintroduced to the Little Belt Mountains at this time. Alternative A represents the current baseline condition and responds to those who oppose the bighorn sheep reintroduction including respondents wishing to postpone any release of bighorns.

*Alternative B – Approve reintroduction of bighorn sheep to the Little Belt Mountains and proceed with an initial release of HD 482 sheep in the vicinity of the South Fork Judith River (preferred Alternative)*

Alternative B represents the preferred Alternative for restoring a sustainable population of bighorn sheep to the Little Belt Mountains. Under this Alternative, the Fish and Wildlife Commission would generally approve an active bighorn sheep restoration program for the Little Belts, beginning with a specific project to transplant 50 sheep from HD 482 to the South Fork Judith or adjacent drainages as soon as December 2020 (as described in Section D).

*Alternative C – Approve reintroduction of bighorn sheep to the Little Belt Mountains but advise FWP to identify an initial source of sheep or a release site other than the South Fork Judith River area.*

Under this Alternative the Commission would direct FWP to actively restore bighorn sheep to the Little Belt mountains using translocations but would direct the department to identify either a different source or destination than is described in Alternative B.

## B. Comparison of Alternatives' Effects

Under alternative A the small number of bighorn sheep presently in the Little Belts may or may not persist and it is unlikely that a self-sustaining and genetically diverse herd will become established in the foreseeable future. Alternatives B and C would both direct FWP to initiate active restoration of bighorns using translocations. Because Alternative B already identified both a source, destination, and funding for translocated sheep the initial project could proceed as soon as December 2020. Adopting Alternative C will require additional analysis, outreach, and fundraising which will likely delay restoration efforts.

## Chapter 3: The Affected Environment

The purpose of Chapter 3 is to briefly describe components of the environment that could be affected by implementation of the proposed action. The chapter contains a general description of basic natural resources found in the project area. Resources related to project issues identified earlier are also described.

The proposed reintroduction area is in Meagher, Judith Basin, Cascade, and Wheatland Counties and encompasses about 1.2 million acres of the Little Belt Mountain range in central Montana. Projected bighorn habitat is primarily on public lands. Habitat and population modeling efforts estimate this area could support as many as 600 bighorn sheep; a minimum viable population size is about 125 (Appendix A).

Brief descriptions of existing natural resources within the analysis area appear under the below headings: Soil, Water, Vegetation, Other Wildlife, Social Issues, and Cultural Resources.

### A. Soil

Soils across the 1.2-million-acre analysis area are diverse but are generally derived from sedimentary limestone or igneous rock. Predicted bighorn sheep summer ranges are dominated by rock, rubble, and scree with shallow soil development occurring in some areas. Detailed soil descriptions can also be found at: http://websoilsurvey.sc.egov.usda.gov.

### B. Water

Hydrologically, potential release sites in the Little Belt Mountains drain into the Smith, Musselshell, or Judith River drainages in addition to several other tributaries to the Missouri River. Surface water is not a likely limiting factor in the proposed reintroduction of bighorn sheep and water quality or quantity is not expected to be affected by any proposed alternative.

### C. Vegetation

The Little Belt Mountains are in the Rocky Mountain ecoregion where bighorn populations may have migratory movements between seasonal habitats. Summer precipitation, snowpack, vegetation, and overall habitat types will vary based on topography and elevation. Topography varies from rolling hills to sheer mountain canyons, and elevations range from 5,500 feet to over 9,000 feet. Along a low-to-high elevation gradient, the analysis area includes montane grasslands and agricultural use at low elevations, sagebrush steppe in the foothills and transition zones, dry (xeric) conifer forests on the hillsides transitioning to subalpine and alpine environments. Conifer species mainly include lodgepole pine, ponderosa pine, Douglas fir, subalpine fir, and whitebark pine. Much of the predicted summer range occurs in higher elevation forested areas with numerous small meadows and grassy parks.

## D. Other Wildlife Species

The predicted bighorn sheep summer and winter range will overlap with existing elk, mule deer, and moose habitat. These species are not expected to be affected by the introduction of bighorn sheep into their current ranges. FWP has documented as many as two (and recently only a single) mountain goat billies in the Little Belts since 2012, with summer fall observations around Neihart Baldy and winter observations near Dry Wolf/Spring Coulee. Although there is limited information indicating that mountain goats may be susceptible to respiratory diseases that also infect bighorn sheep, FWP does not believe there is sufficient mountain goat habitat in the Little Belts to support a self-sustaining population. Any risk of disease transmission from sheep to the resident goat(s) is minor.

## E. Social Issues

### *Motorized Travel*

FWP does not anticipate any effect on motorized use of federal, state, county, or USFS roads or trails as a result of this proposal. Bighorn sheep are tolerant of motorized travel and recreation and the initial release site (Described in Alternative B) is distant from highways or roads where animal/vehicle collisions are likely.

### *Recreational Activities*

Recreation in the project area includes hunting, hiking, fishing, camping, backpacking, snowmobiling, ATV riding, trailrunning, bird watching, horse riding, wildlife viewing, back country skiing, cross-country skiing. These activities are not expected to be affected by the proposal.

### *Livestock Grazing*

There are no active or proposed domestic sheep grazing allotments in the Little Belts. Because bighorn sheep already occur in the mountain range, the Forest Service will consider the potential effects of introducing domestic sheep to lands it manages in the mountain range (Chapter 1, Section F), whether or not additional wild sheep are introduced. The presence of bighorn sheep are unlikely to effect current or future cattle grazing allotments.

### *Cultural resources*

The action alternative does not involve any ground disturbing activities. This proposed project will have no effect on cultural resources.

## Chapter 4. Environmental Consequences

The purpose of Chapter 4 is to describe and compare the potential consequences of implementing each of the alternatives under consideration. Resource discussions are presented in the same order as they appear in Chapter 3.

Until bighorn sheep become established and use seasonal habitats in a traditional manner, some of the environmental effects can only be anticipated based on expected bighorn sheep behavior and habitat preferences.

### A. Soil

*Effects of implementing Alternative A:*

Because bighorn sheep would not be released under the no action alternative, soils would remain unaffected.

*Effects of implementing Alternative B or C:*

Bighorn sheep are expected to have little impact on soils. Minor isolated natural erosion may occur in areas of repeated hoofed traffic. Any impact on soils by reintroduced bighorns would be less than impacts of much larger populations of cattle, elk, mule deer, and mountain goats which at their current numbers are not creating any significant known soil-related problems. There are no known natural mineral or salt licks in the area.

### B. Water

*Effects of implementing Alternative* A:

Because bighorn sheep would not be released under the no action alternative, water resources would remain unaffected.

*Effects of implementing Alternative B or C:*

Water quality is not expected to be impacted by a population of 100-150 introduced bighorn. In northern latitudes, bighorns obtain most of their water from feeding on vegetation and snow. Bighorn do not spend a significant amount of time foraging in wet densely vegetated riparian areas but instead feed primarily on upland grasses and forbs in open more dry habitats. If minor isolated erosion were caused by bighorn sheep, it would likely be of too small a magnitude to impact water quality.

### C. Vegetation

*Effects of implementing Alternative A:*

Because bighorn sheep would not be released under the no action alternative, winter range habitat would remain unaffected.

*Effects of implementing Alternative B or C:*

There are no expected significant impacts on plant communities or range conditions. This area currently supports large healthy big game and livestock populations without long-term negative impacts to vegetation. The addition of a small population of bighorn sheep, which were once native to the area and that specialize in grazing in rugged steep and dry habitat, should have little impact on plant communities or habitat types. The existing habitat types have evolved and prospered while being grazed by a number of native and introduced ungulate species.

## D. Social Issues

**Recreational Activities**

*Effects of implementing Alternative A:*

Because bighorn sheep would not be released under the no action alternative, existing access and activity restrictions would remain the same.

*Effects of implementing Alternative B or C:*

FWP is not making any requests for changes to public access, use, or recreational activities on the Helena-Lewis and Clark National Forest. Recreation involving wildlife watching and hunting may benefit from this alternative as more opportunities would be provided. Any future changes regarding access and recreation on the National Forest would be subject to the established Forest Service public planning and comment process. FWP has concluded that current levels of public access and recreation are compatible with a successful bighorn sheep transplant.

**Livestock Grazing**

*Effects of implementing Alternative A:*

Because bighorn sheep would not be released under the no action alternative, there would be no possible forage competition with livestock.

*Effects of implementing Alternative B or C:*

The presence of bighorn sheep in the Little Belts is not expected to result in significant competition for livestock forage. Competition for forage between bighorns and domestic livestock is reduced due to differences in behavior, habitat preferences, seasonal movements, and the number of bighorns expected to occur. Bighorns are a native species which has evolved to graze rugged, steep, rocky landscapes which few other species can negotiate. Bighorn winter and summer ranges overlap with some public grazing allotments. Bighorn summer range is generally at higher elevation, outside of grazing allotments, or in more rugged portions of the allotment that are not easily accessible to cattle.

Given the much smaller body size of bighorn, the AUM comparison is 24-36 cattle AUMs per bighorn AUM. At relatively low bighorn sheep numbers compared to cattle, it is unlikely that much smaller bighorns would have a significant impact on available forage for cattle.

## E. Cumulative Effects

The addition of another self-sustaining bighorn sheep herd in Montana could improve the overall condition of the species in the state. Potential Forest Service land management activities, such as prescribed burns, timber harvest, and thinning, may improve bighorn sheep habitat and benefit the proposed sheep restoration effort. FWP accepts that the political and environmental landscape can change quickly, but notes that this is the case for any action we pursue. FWP will work to minimize the number and scale of potential issues through public outreach and agency coordination.

## List of EA Preparers

This EA was prepared by Jay Kolbe, Region 4 Area Wildlife Biologist, FWP, with contributions from Julie Cunningham (FWP) and David Kemp (USFS).

## Appendix A. Transplant Site Assessment Form

**Fill out the following list of items as the various aspects of the potential transplant site are quantified according to the Habitat Evaluation Procedure (HEP) in the Translocation Section. Attach a map showing the potential site, including the overall area, potential lambing habitat, summer range and winter range.**
**Site Name**: Little Belt Mountains
**Date**: 7/1/2020
**1. Is this potential transplant site to your knowledge historical bighorn sheep habitat?** Yes.
**2. Are there any existing bighorn sheep populations in the vicinity? If yes, what is the name of the population, distance to it, and the likelihood for interchange assuming the establishment of a new population?**
**a. Name of nearest bighorn sheep population:** HD 482 (Fergus); BTWMA
**b. Distance from core habitat:** i) 85 miles, ii) 75 miles
**c. Likelihood of interchange**: i) Low, ii) Low
**3. Are there any significant barriers to movement that need to be considered and if there are provide details and suggested mitigations if any? For example: prescribed burn to open up migration corridors where conifers are establishing on former grasslands**. No significant barriers.
**4. Based on your assessment of escape terrain in the entire potential area as described in the HEP (item 1 page 62 of Conservation Strategy) is there enough suitable habitat to support a MVP of 125 animals?** Yes.
**What is the total estimated size of potential habitat from this analysis?** 141,000 acres
**If the area can support more animals what would be the estimate of total number of bighorn sheep the area could support at the appropriate density (see Translocation Section for densities in relation to habitat type)?** 630 sheep
**a. Is there suitable habitat for MVP**: Yes.
**b. Size of potential habitat**: > 100,000 acres
**c. Total number of bighorns the area can support:** 630 bighorn at 1.47 sheep per $km^2$.
**5. Based on your assessment of potential winter range as described in the HEP (item 2) is there enough suitable habitat to support a MVP of 125 animals?** Yes
**What is the total estimated size of potential winter range habitat from this analysis?** 71,000 acres
**a. Is there suitable winter habitat for MVP**: Yes.
**b. Size of potential winter habitat**: 71,000 acres
**c. Total number of bighorns the area can support**: 630 sheep
**6. Based on your assessment of potential lambing habitat range as described above in the HEP (item 3) is there enough suitable habitat to support a MVP of 125 animals?** Yes
**What is the total estimated size of potential lambing habitat from this analysis?** 71,000 acres
**If the area can support more animals because of the size of potential lambing habitat what would be the estimate of total number of bighorn sheep the area could support at the suggested amount of habitat (6 ha) required for each lambing ewe?** 630 sheep
**a. Is there suitable lambing habitat for MVP**: Yes.
**b. Size of potential lambing habitat:** 71,000 acres
**c. Total number of bighorns the area can support**: 630 sheep
**7. Based on your assessment of potential summer range as described in the HEP (item 4) is there enough suitable habitat to support a MVP of 125 animals?** Yes
**What is the total estimated size of potential summer range habitat from this analysis?** 414,000 acres
**If the area can support more animals because of the size of potential summer range habitat what would be the estimate of total number of bighorn sheep the area could support?** 630 sheep
**a. Is there suitable summer habitat for MVP:** Yes.
**b. Size of potential summer habitat:** 141,000 acres
**c. Total number of bighorns the area can support:** Total at 1.47/$km^2$ = 630 sheep
**8. Are there domestic sheep or goats near this site?** Yes
**If so approximately how many and what would be their distance from the habitat to be potentially occupied by bighorn sheep?** 12 miles

**Are the domestic animals located on private or public lands?** Private
**Is there opportunity for spatial/temporal separation based on minimum suggested distance of 23 km, effective physical barriers or other mitigating factors?** Nearest known domestic sheep from the proposed initial release site are 20 km, however, wild sheep are expected to disperse from the release site and are likely to venture closer than 20 km from domestic sheep at some point.
**a. Number of domestic sheep and goats and distance to potential bighorn habitat:** Domestic sheep and goats are present on private lands surrounding the Little Belts. Although the release site in Alternative B is 20 km from known domestics, FWP expects that as wild sheep disperse and reoccupy historic habitats, commingling may occur.
**b. Located on Private or Public lands (describe)**: Private lands surrounding the Little Belts.
**c. Opportunity for separation:** Most domestic sheep herds lie at a significant distance, near or outside the recommended 23km separation distance. However, as wild sheep disperse and reoccupy historic habitat, commingling may occur.
**9. Assuming there is adequate habitat to support an MVP of bighorn sheep what is your qualitative assessment on the juxtaposition of seasonal ranges. If the area is not large enough based on the assessment of the various seasonal ranges, how many bighorn sheep would it support?**
The Little Belts include sufficient year-round habitat to support at least one herd of at least 125 individual bighorn sheep with a seasonally migratory habit and need. The total number of wild sheep the range can support is less based on habitat carrying capacity than risk tolerance/aversion related to proximity to domestic sheep on private land.

| Land Cover and Land Use Class | Analysis Area (not in other habitats) | Summer, near Escape | Summer Escape | Lambing/Winter | Total Escape |
|---|---|---|---|---|---|
| **Agricultural Vegetation** | 8,121 | 288 | 0 | 0 | 0 |
| **Barren** | | | | | 0 |
| **Developed** | 3,750 | 1,419 | 52 | 55 | 107 |
| **Forest and Woodland** | 338,095 | 337,212 | 65,751 | 46,608 | 112,359 |
| **Introduced Vegetation** | 520 | 0 | 0 | 0 | 0 |
| **Polar and High Montane** | 2,392 | 366 | 4 | 0 | 4 |
| **Semi-Desert** | 161,141 | 32,862 | 1,840 | 14,391 | 16,231 |
| **Shrubland and Grassland** | 198,636 | 36,239 | 1,231 | 10,086 | 11,317 |
| **Sparse Rock Vegetation** | 4 | 69 | 158 | 222 | 380 |
| **Transitional Vegetation** | 22,024 | 6,303 | 412 | 195 | 607 |
| **Water** | 116 | 20 | 2 | 0 | 2 |
| **Total Acres Habitat** | **734,799** | **414,778** | **69,450** | **71,557** | **141,007** |

| Population Supported Summary | Analysis Area (not in other habitats) | Summer | Escape | Lambing Winter | Total Summer, Escape, Lambing/Winter |
|---|---|---|---|---|---|
| **Total Sq Km ALL Habitat*** | 2,974 | 1,679 | 281 | 290 | 2,249 |
| **Population that can be Supported: (1.47 / sq km, Rocky Mountain)** | 4,371 | 2,467 | 413 | 426 | 3,306 |

* These estimates assume all habitat is utilized within the distribution delineated.

| | AnalysisArea (not in other habitats) | Summer | Escape | Lambing Winter | Total Summer, Escape, Lambing/Winter |
|---|---|---|---|---|---|
| **Total Sq Km NON-FORESTED Habitat*** | 1605 | 314 | 15 | 101 | 430 |
| **Population that can be Supported: (1.47 / sq km, Rocky Mountain)** | 2360 | 461 | 22 | 148 | 632 |

* These estimates assume all habitat is utilized within the distribution delineated.

## Literature Cited


Brooks, R. and Z. King. 2012. 2012 statewide and regional hunter & angler use and expenditures sheet. Montana Fish, Wildlife and Parks, Helena MT.

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MFWP. 2010. Montana Bighorn Sheep Conservation Strategy. Wildlife Division, Helena, MT.