October 13, 2025

Objection against the Draft Decision Notice (DDN), FON-SI, and Environmental Assessment for the Beaverhead-Deer-lodge National Forest Canada Lynx Habitat Forest Plan Amendment, Beaverhead-Deerlodge National Forest, All Ranger Districts.

Thank you for the opportunity to object.

Identification of Objectors:
Lead Objector: Michael Garrity, Director, Alliance for the Wild Rockies (Alliance)
PO Box 505
Helena, MT 59624;
Phone 406-410-3373.

And for
Sara Johnson
Native Ecosystems Council
PO Box125
Willow Creek, MT 59760.

And for

Steve Kelly

Council on Wildlife and Fish

P.O. Box 4641
Bozeman, MT 59772

And for

Kristine Akland
Center for Biological Diversity

P.O. Box 7274 Missoula, MT 59807

kakland@biologicaldiversity.org

Signed for Objectors this 13th day of October 2025

/s/ Michael Garrity
Michael Garrity

Name of the Responsible Official, Beaverhead-Deerlodge-National Forest and where it applies:
The Responsible Official for the project is Corey Lewellen, Acting Beaverhead-Deerlodge Forest Supervisor.
The amendment amends the Beaverhead-Deerlodge National Forest, (BDNF)Forest Plan effects the entire Beaverhead-Deerlodge National Forest.
The Draft Decision authorize Alternative 2, replacing the 2000 lynx habitat and LAU maps with the 2020 updated maps. This amendment does not propose any active management; all existing NRLMD objectives, standards and guidelines would remain unchanged.
Forest Plan Wildlife Standard 7 will apply to approximately 1,481,876 acres of modeled lynx habitat on Beaverhead-Deer-

lodge National Forest System lands in 77 LAUs under the 2020 mapping.

As a result of the Draft DN, individuals and members of the above mentioned groups would be directly and significantly affected by the removal of over one million acres of lynx analysis units. Appellants are conservation organizations working to ensure protection of biological diversity and ecosystem integrity in the Wild Rockies bioregion (including the BDNF). The individuals and members use the BDNF for recreation and other forest related activities. The selected alternative would also further degrade the water quality, wildlife and fish habitat. These activities, if implemented, would adversely impact and irreparably harm the natural qualities of the BDNF, the surrounding area, and would further degrade the watersheds and wildlife habitat.

1. Objectors names and addresses:

Lead Objector Mike Garrity, Executive Director, Alliance for the Wild Rockies
P.O. Box 505; Helena, MT 59624
Phone 406 459-5936

And for
Sara Johnson
Native Ecosystems CouncilP.O. Box 125
Willow Creek, MT 59760

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Steve Kelly

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P.O. Box 4641
Bozeman, MT 59772

And for

Kristine Akland
Center for Biological Diversity

P.O. Box 7274 Missoula, MT 59807

kakland@biologicaldiversity.org

2. Signature of Lead Objector:

Signed this 13th day of October 2025 by Lead Objector,
/s/ Michael Garrity

3. Lead Objector: Michael Garrity, Alliance for the Wild Rockies

4. Name of the Proposed Project, Responsible Official, National Forest where Project is: Beaverhead-Deerlodge National Forest Canada Lynx Habitat Forest Plan Amendment; The Re-

sponsible Official for the amendment is Corey Lewellen, Acting Beaverhead-Deerlodge Forest Supervisor.
The Beaverhead-Deerlodge National Forest Canada Lynx Habitat Forest Plan Amendment amends the Beaverhead-Deerlodge National Forest Forest Plan and effects the entire BDNF. Acting Supervisor Lewellen chose Alternative 2, replacing the 2000 lynx habitat and LAU maps with the 2020 updated maps in the Draft Decision Notice and FONSI.

NOTICE IS HEREBY GIVEN that Alliance objects pursuant to 36 CFR section 218 to the Responsible Official's adoption of the selected Alternative. As discussed below, the Greenhorn Vegetation Project as proposed violates the the National Environmental Policy Act (NEPA), the National Forest Management Act (NFMA), the Endangered Species Act (ESA), and the Administrative Procedure Act (APA).
Location
The **Beaverhead–Deerlodge National Forest** is the largest of the National Forests in Montana, United States. Covering 3.36 million acres (13,600 km$^2$), the forest is broken into nine separate sections and stretches across Beaverhead, Deer Lodge, Gallatin, Granite, Jefferson, Madison, Powell, and Silver Bow counties in the southwestern area of Montana.

5. Specific Issues Related to the Proposed Projects, including how Objectors believes the Environmental Analysis or Draft Record of Decision specifically violates Law, Regulation, or Policy: We included this under number 8 below.

Thank you for the opportunity to object on the Greenhorn

Vegetation Project. Please accept this objection from me on behalf of the Alliance for the Wild Rockies, Native Ecosystems Council, Council on Wildlife and Fish and Center for Biological Diversity, collectively (Alliance).

6. Suggested Remedies that would Resolve the Objection:
We recommend that the "No Action Alternative" be selected. We have also made specific recommendations after each problem.

7. Supporting Reasons for the Reviewing Office to Consider:
This landscape has very high wildlife values including for the threatened Canada lynx. The project area will be concentrated within some of the best wildlife habitat in this landscape which is an important travel corridor for lynx. The public interest is not being served by this proposed amendment.

Suggested Remedies to Resolve the Objection:
We recommend that the "No Action Alternative" be selected. We have also made specific recommendations after each problem.

8. Statements that Demonstrates Connection between Prior Specific Written Comments on the Particular Proposed Project and the Content of the Objection.

We wrote in our April 7, 2025 comments:

***Please explain why there is an absence of lynx in parts of the BDNF in relation to the massive deforestation occurring in BDNF in the last half of the past century and the explosion of motorized recreation.***

***Please also analyze what Forest Plan Standards must be established to identify, restore and maintain linkages and connecting habitats for lynx.***

***The BDNF states that the FWS and FS will jointly identify 'occupied lynx habitat' as a subset of mapped lynx habitat. The identification of occupied lynx habitat will include consideration, as appropriate, of the Science Report, the LCAS, FWS's final listing decision documents, any information used to designate critical habitat, and new scientific information regarding the ecology and distribution of lynx, and population data. (BA:85).***

***The Lynx Conservation Assessment and Strategy identities 17 lynx risk factors in 4 different categories - factors affecting lynx productivity, lynx mortality, lynx movements, and other large-scale risk factors. Risk factors identified activities or existing conditions that could adversely affect either individual or groups of lynx. (BA:85).***

***Factors identified include timber management; wildland fire management; recreation; forest/backcountry roads and trails; livestock grazing; other human developments; trapping; preda-***

*tor control; incidental or illegal shooting; competition and predation as influenced by human activities; highways (vehicular collisions); highway, railroad and utility corridors; land ownership pa?erns; ski areas and large resorts; fragmentation and degradation of lynx refugia; lynx movement and dispersal across shrub steppe habitats; and habitat degradation by non-native invasive plant species. (BA:85).*

*The Final Rule listing Canada lynx as threatened was enacted in 2000.[2] The National Lynx Survey took place in that same time frame.[3] Despite evidence that lynx persisted over historical times, the "unoccupied" status results from failing to find current evidence of lynx long after habitats have been fragmented by mines, high road density, an explosion in motorized recreation, timber and fuel reduction projects, and including habitat alteration by livestock grazing. (Where do the major areas of disturbance by invasive plants come from across the landscape except disturbance and removal of natives by livestock that lead to the invasive species?)*

*The problem with this concept of "occupied habitat" is that it makes optional the application of the Northern Rockies Lynx Management Direction in "unoccupied habitat". The direction only says it "should be 'considered". In our experience in such places as the Forest Service Region One and Region Four. in linkage and peripheral habitat, but habitat historically used by lynx, it is met with deflection and no analysis. Meanwhile the practices listed above as detrimental to lynx proceed apace.*

*As an example, after a huge amount of deforestation between about 1950 and today. A time when lynx observations were declining across much of the Rocky Mountains, and they were no longer being observed in some areas. But to recover lynx, the Forest Service needs to start protecting lynx habitat instead of continuing to destroy it and then after all of the lynx are gone claim it is not longer lynx habitat.*

*Kosterman finds that 50% of lynx habitat must be mature undisturbed forest for it to be optimal lynx habitat where lynx can have reproductive success and no more than 15% of lynx habitat should be young clearcuts, i.e. trees under 4 inched dbh. This contradicts the agency's assumption in the Lynx Amendment that 30% of lynx habitat can be clearcut, and that no specific amount of mature forest needs to be conserved. It is now the best available science out there that describes lynx habitat in the Northern Rockies related to lynx viability and recovery. Kosterman's attached study demonstrates that the Lynx Amendment standards are not adequate for lynx viability and recovery, as previously assumed by the Forest Service.*

*Kosterman's Thesis says that clearcutting more than 10-15% of a lynx home range results in declines in reproduction. Many National Forests allows more clearcut- ting than this. The Lynx Amendment allows up to 30% clearcutting in a home range, which means that habitat has declined and is declining from the levels nec- essary for reproduction and therefore survival and recovery.*

*Kosterman's Thesis recommends conserving mature/old growth forest and maintaining 50% mature/old growth in each*

***lynx home range. No National Forest is complying with that due to past and current logging, which means that habitat has declined and is declining from the levels necessary for reproduction and therefore survival and recovery.***

***Squires says that lynx avoid clearcuts. Please develop an alternative that prohibits clearcutting and also prohibits logging of mature and old growth forests in Lynx analysis units.***

***FWS has no idea what the population of lynx is because they don't do lynx population monitoring. In light of the government's failure to monitor lynx population trends, it would be disingenuous for FWS to argue that "there is no evidence of population decline" because the reason that "there is no evidence" is because the government refuses to conduct monitoring. In light of the government's failure to monitor and document populations and population trends, the Forest Service and the FWS must apply the precautionary principle and assume that the effects of al- lowing logging that does not comply with Kosterman, Holbrook, and Squires findings is resulting in population declines.***

***Since this is now the best available science we are hereby formally requesting that the Forest Service also write a supplemental EIS for the Northern Rockies Lynx Man- agement Direction and reinitiate consultation with the FWS for the Lynx Amendment to publicly disclose and address the findings of this study, and to allow for further public comment on this important issue of lynx recovery.***

*Page 227 of the Pintler Face EA states: "Linkage is defined as "Route that permits movement of individual plants (by dispersal) and animals from a Landscape Unit and/or habitat type to another similar Landscape Unit and/or habitat type". Linkage areas for Canada lynx were identified for the Northern Rockies Planning Area. Linkages mapped through the Anaconda Pintler mountains. These linkages are hypothetical and not substantiated by empirical data on lynx movement."*

*This is false. It is a violation of NEPA to put incorrect information in the EA.*

*Lynx are listed and threatened under the ESA. The duty of the federal government is to recover lynx and the ecosystems that they depend on. To recover lynx the BDNF cannot eleminate 1.1 million acres of lynx habitat while still ensuring that lynx will be able to connect with other lynx in the greater Yellowstone ecosystem and lynx in the Bitterroot and Northern Continental Divide Ecossytem.*

*Page 93 of the 2016 Fleecer EA states: "In July, 2013 the U.S. Fish and Wildlife Service updated the "Threatened, Endangered and Candidate Species for the Beaverhead-Deerlodge National Forest" and the Canada lynx was added to the BDNF list as "Transient; secondary/peripheral lynx habitat"; where it remains (USDI Fish and Wildlife Service 2016)."*

*The Forest straddles the mountains of the Continental Divide and contains nationally renowned trout streams, elk popula-*

*tions, and some of last wild refuges for many threatened, endangered, and sensitive fish and wildlife species.*

*In particular, the Forest and Project area provide habitat for grizzly bears, wolverines, Canada lynx, gray wolves, and westslope cutthoat trout.*

*Ruggiero et al (1999), the Forest Service's General Technical Report "Ecology and Conservation of Lynx in the United States," states that lynx are present in the For- est.*

*Ruediger et al (2000), the agencies' "Canada lynx conservation assessment and strategy," considers the Forest within the geographic extent of the lynx strategy.*

*The Montana Department of Fish, Wildlife, and Parks has compiled a database of lynx occurrences and distribution throughout Montana from 1977 -1998. This in- formation was mapped on pages 244 and 247 of Ruggiero et al (1999) and shows numerous lynx occurrences in the Forest.*

*In Squires (2003), the Forest Service documents: "Discussions with local trappers and biologists indicate that lynx were present in the Pioneer Mountains prior to the late 1990's, and had been detected during winter track surveys as recently as 2000 (Forkan 2000). This fact is substantiated by the number of trapped lynx from this area in the 1970s." Elsewhere, the report notes "[f]rom 1977 to 1994, 39 lynx occurrences were recorded in the Pioneer Mountains, including 13 harvested individ- uals (McKelvey et al. 2000). Snow-track surveys per-*

*formed as recently as 2000 indicated that lynx were present along the Scenic Byway (Forkan 2000)."*

*In the attached, "Combining resource selection and movement behavior to predict corridors for Canada lynx at their southern range periphery," Squires et al. 2013, the Forest Service documented the results of winter tracking surveys. The record indicates two (2) sets of lynx tracks were found in the BDNF within the Big Hole landscape area. The report concludes that "lynx were either absent or at very low densities during our study."*

*Did the BDNF follow the best avialble science when it surveyed for lynx Please find attached Squires et al. 2004 for the best available science on how to survey for lynx.*

*The U.S. Fish and Wildlife Service's final map (2003) for lynx shows that the BDNF is within the range of both resident and dispersing lynx.*

*Berger (2009) found one set of potential lynx tracks in the Forest during winter tracking surveys, as well as one set outside the Forest boundary that was heading towards the Forest boundary.*

*In Devineau (2010), the State of Colorado Division of Wildlife documented locations of radio-collared lynx released in Colorado. The record shows*

*multiple lynx traveling in the Forest (approximately four (4) individuals), including at least two individual lynx traveling in*

*the BDNF. One of the individuals inhabited the Madison Range for approximately two weeks.*

*In litigation over lynx critical habitat in 2010, the U.S. Fish and Wildlife Service admitted that the Forest is occupied for the purpose of designating lynx critical habitat. Alliance for Wild Rockies v. Lyder, 728 F.Supp.2d 1126, 1133 (D. Mont. 2010)("Plaintiffs take exception to the Service's failure to designate the Beaver- head-Deerlodge [and certain other National Forests] as lynx critical habitat. [FN4] . . . In response, the government acknowledges the record shows such forests to be occupied . . . .")*

*The Forest Service's Fleecer Mountains Watershed Assessment (2009) indicates that lynx are "potentially" "likely to be present" in the Project area. It also states "f]rom 1988 to 1999 there are 72 reports of lynx being trapped or observed in the Pioneers, Big Hole Mountains and Fleecer Range."*

*The Federal District Court of Montana ordered the USFWS to reconsult on lynx critical habitat because they did not base lynx critical habitat on where lynx were at the time of listing in 2000. Lynx were in the project area at the time of listing so the Forest Service needs to consult with the FWS to see if this project could effect lynx critical habitat.*

*The Forest Plan analysis and impacts on ESA-listed lynx violate ESA, NFMA, and NEPA.*

*Please take a hard look at lynx presence and the Forest Plan's potential impacts on lynx, using the best available science, in-*

*cluding the agency's failure to assess the Forest Plan's impacts on lynx travel/linkage corridors*

*Forest Service, --- F.3d ----, 2012 WL 336133 (9th Cir. 2012).*

*Please include binding legal standards aimed at conserving and recovering ESA-listed lynx on the Forest in the Forest Plan. To not do so is a violation of NFMA, NEPA, the APA and th ESA.*

*Please include in the amendment protections or standards for conservation of winter lynx habitat (old growth forests). To not do so would allow the logging of thousands of acres of old growth without any analysis of whether that forest is necessary for conservation as winter lynx habitat. Please take a hard look at this factor as required by NEPA. If the BDNF fails to include a provision to protect winter lynx habi- tat, the Lynx amendment would fails to apply the best available science and implement the measures necessary for lynx conservation, as required by the ESA.*

*Will the amendment remove LAUs that are in WUI lands?*

*The Lynx Amendment and its Biological Opinion/Incidental Take Statement allow unrestricted logging in the wildland urban interface, which the agencies estimate to compose approximately 6% of the lynx habitat on National Forests. Please explain where WUI lands are is in relation to requirement to recover lynx and the ecosystems upon which they depend.*

***Is the Forest Service using the definition of a WUI in the Healthy Forest Restoration Act? The failure to adequately address this issue with the Lynx Amendment violates NEPA.***

***The current science demonstrates that lynx must travel between areas of high hare densities and resist traveling through low cover areas in winter. Please identify the amount of non or low cover areas that will be designated as LAUs. The best available science is now Kosterman's masters Thesis, "Correlates of Canada Lynx Reproductive Success in Northwestern Montana" Please find Kosterman attached.***

***This study finds that 50% of lynx habitat must be mature undisturbed forest for it to be optimal lynx habitat where lynx can have reproductive success and no more than 15% of lynx habitat should be young clearcuts, i.e. trees under 4 inched dbh. This contradicts the agency's assumption in the Lynx Amendment that 30% of lynx habitat can be clearcut, and that no specific amount of mature forest needs to be conserved. It is now the best available science out there that describes lynx habitat in the Northern Rockies related to lynx viability and recovery. Kosterman's study demonstrates that the Lynx Amendment standards for LAUs are not adequate for lynx viability and recovery, as assumed by the Forest Service.***

***The current best science indicates that lynx winter foraging habitat is critical to lynx persistence (Squires et al. 2010) attached, and that this habitat should be "abundant and well-distributed across lynx habitat." (Squires et al. 2010; Squires 2009.) Existing openings such as clearcuts not yet recovered***

***are likely to be avoided by lynx in the winter. (Squires et al. 2010; Squires et al. 2006.)***

***Lynx winter habitat, provided only in older, multi-storied forests, is critical for lynx preservation. (Squires et al. 2010.) Winter is the most constraining season for lynx in terms of resource use; starvation mortality has been found to be the most common during winter and early spring. (Squires et al. 2010.) Prey availability for lynx is highest in the summer. (Squires et al. 2013.)***

***Squires et al. (2013) noted in their research report that some lynx avoided crossing highways; in their own report, they noted that only 12 of 44 radio- tagged lynx with home ranges including 2- lane highways crossed them. Openings, whether small in uneven-aged management, or large with clearcutting, remove lynx winter travel habitat on those affected acres, since lynx avoid openings in the winter. (Squires et al. 2010.)***

***Squires et al., 2010 reported that lynx winter habitat should be "abundant and spatially well-distributed across the landscape." Those authors also noted that in heavily managed landscapes, retention and recruitment of lynx habitat should be a priority. Please explain how getting rid of LAUs follows the best available science.***

***The Northern Rockies Lynx Management Direction is inadequate to ensure conservation and recovery of lynx. The amendments fail to use the best available science on necessary***

***lynx habitat elements, including but not limited to, failing to include standards that protect key winter habitat. Please include an alternative to increase the amount of LAUs in the BDNF.***

***The Endangered Species Act requires the FS to insure that the amendment is not likely to result in the destruction or adverse modification of critical habitat. 16 U.S.C. §1536(a)(2). Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably re- duces the conservation value of critical habitat for lynx. 74 Fed. Reg. 8644. Please analyze what LAUs should be designated as lynx critical habitat.***

***The Northern Rockies Lynx Management Direction (NRLMD) as applied by the BDNF violates the ESA by failing to use the best available science to insure no adverse modification of critical habitat. The NRLMD carves out exemptions from Veg Standards S1, S2, S5, and S6. In particular, fuel treatment projects may occur in the WUI even though they will not meet standards Veg S1, S2, S5, or S6, pro- vided they do not occur on more than 6% of lynx habitat on each National Forest. See NRLMD ROD, Attachment 1, pages 2-3. Allowing the agency to destroy or adversely modify any lynx critical habitat has the potential to appreciably reduce the conservation value of such habitat. The agency cannot simply set a cap at 6% forest- wide without looking at the individual characteristics of each LAU to determine whether the project has the potential to appreciably reduce the conservation value. The ESA requires the use of the best available science at the site- spe- cific level. It does not***

*allow the agencies to make a gross determination that allowing lynx critical habitat to be destroyed forest-wide while not appreciably reduce the conservation value.*

*Standard S2 prohibits projects that do regenerate more than 15% of lynx habitat on NFS lands within an LAU in a 10-year period. Please provide the number of acres with in the LAU that that the BDNF wants to eliminate have been harvested within the last 20-years.*

*The amendment will violates the NFMA and the ESA if it fails to insure the viability of lynx. How is the amendment insure the viability of lynx? Please show that lynx will be well-distributed in the BDNF. Please addressed how eliminating LAUs will impact lynx distribution. This is important because the agency readily admits that the LAUs currently contain a "relatively large percentage of un- suitable habitat." The NRLMD ROD at 40 states that: The national forests subject to this new direction will provide habitat to maintain a viable population of lynx in the northern Rockies by maintaining the current distribution of occupied lynx habitat, and maintaining or enhancing the quality of that habitat."*

*A big problem with the Forest Plan (including the NRLMD) is that it allows with few exceptions the same level of industrial forest management activities that oc- curred prior to Canada lynx ESA listing.*

*Please formally consult with the FWS and get a take permit from the USFWS. To not do so is in violation of the ESA, NFMA, the APA and NEPA. The ESA (Section 3) defines take*

*as "to harass, harm, pursue, hunt, shoot, wound, trap, capture, collect or attempt to engage in any such conduct". The US-FWS further defines "harm" as "significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering", and "ha- rass" as "actions that create the likelihood of injury to listed species to such an ex- tent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering". The project will harm lynx.*

*A big problem with the Forest Plan amendment and the NRLMD is that it allows with few exceptions the same level of industrial forest management activities that occurred prior to Canada lynx ESA listing. The FS approval and implementation of the NRLMD and the revised Beaverhead-Deerlodge National Forest Forest Plan is arbitrary and capricious, violates NEPA's hard look requirement and scientific integrity mandate and fails to apply the best available science necessary to conserve lynx. The NRLMD or the revised BDNF Forest Plan contain no protection or standard for conservation of winter lynx habitat (old growth forests).*

*Please disclose if and when the FS conducted lynx occurrence surveys of habitat in the LAUs.*

*Please disclose if surveys target snowshoe hare occurrence data in these stands newly considered unsuitable for lynx. Also, please indicate if the FS surveyed any areas thought to*

***not be lynx habitat based on mapping or stand data were surveyed to confirm unsuitable habitat conditions.***

***The current science demonstrates that lynx must travel between areas of high hare densities and resist traveling through low cover areas in winter. Please identify the amount of non-cover or low-cover areas that will be designated as LAUs.***

***It appears the FS doesn't have a coherent strategy for recovering lynx from their Threatened status, including linking currently populated areas with each other through important linkages such as project area LAUs.***

***Please analyze and disclose cumulative impacts of recreational activities on lynx, such as snowmobiles. As the KNF's Galton FEIS states, "The temporal occurrence of forest uses such ... winter (skiing and snowmobiling) ... may result in a temporary displacement of lynx use of that area..."***

***Please quantify and disclose the cumulative effects on Canada lynx due to trapping or from use of the road and trail networks in the project area.***

***Please analyze and disclose cumulative effects of eliminating LAUs.***

***Please demonstrate that there will be sufficient sync denning habitat occurs in the BDNF, and explain how it arrived at that conclusion.***

***The USFWS listed the Canada lynx as a threatened species under the Endangered Species Act in 2000 due to "lack of guidance for conservation of lynx and snowshoe hare***

***habitat...” and subsequent authorization of actions that may cumulatively adversely affect the lynx. Relatively little is known about lynx in the contiguous United States. Historically, lynx inhabited states spanning from Maine to Washington, but it is unknown how many lynx remain.***

***Lynx are highly mobile and generally move long distances [greater than 60 mi. (100 km.)]; they disperse primarily when snowshoe hare populations decline; subadult lynx disperse even when prey is abundant, presumably to establish new home ranges; and lynx also make exploratory movements outside their home ranges. 74 Peg. Reg. at 8617. The contiguous United States is at the southern edge of the boreal forest range, resulting in limited and patchy forests that can support snowshoe hare and lynx populations.***

***Lynx subsist primarily on a prey base of snowshoe hare, and survival is highly dependent upon snowshoe hare habitat, forest habitat where young trees and shrubs grow densely. In North America, the distribution and range of lynx is nearly “coincident” with that of snowshoe hares, and protection of snowshoe hares and their habitat is critical in lynx conservation strategies.***

***Since more often than not when the FS conducts logging projects in LAUs surveys of stands for lynx habitat result in less suitable habitat than previously assumed, the FS needs to take a few steps backward and consider that its range-wide Canada lynx suitable habitat estimations were too high.***

***Squires et al. (2013) noted that long-term population recovery of lynx, as well as other species as the grizzly bear, require***

***maintenance of short and long-distance connectivity. The importance of maintaining lynx linkage zones is also recognized by the FS's Lynx Conservation Assessment and Strategy (LCAS), as revised in 2013, which stresses that landscape connectivity should be maintained to allow for movement and dispersal of lynx.***

***Squires et al. (2013) noted in their research report that some lynx avoided crossing highways; in their own report, they noted that only 12 of 44 radio-tagged lynx with home ranges including 2- lane highways crossed them.***

***The current best science indicates that lynx winter foraging habitat is critical to lynx persistence (Squires et al. 2010), and that this habitat should be "abundant and well-distributed across lynx habitat." (Squires et al. 2010; Squires 2009.) Existing openings such as clearcuts not yet recovered are likely to be avoided by lynx in the winter. (Squires et al. 2010; Squires et al. 2006a.)***

***LAUs, provided only in older, multi-storied forests, is critical for lynx preservation. (Squires et al. 2010.) Winter is the most constraining season for lynx in terms of resource use; starvation mortality has been found to be the most common during winter and early spring. (Squires et al. 2010.) Prey availability for lynx is highest in the summer. (Squires et al. 2013.)***

***Openings, whether small in uneven-aged management, or large with clearcutting, remove lynx winter travel habitat on those affected acres, since lynx avoid openings in the winter. (Squires et al. 2010.)***

***Squires et al., 2010 reported that lynx winter habitat should be "abundant and spatially well- distributed across the landscape." Those authors also noted that in heavily managed landscapes, retention and recruitment of lynx habitat should be a priority.***

***The LCAS (Ruediger et al. 2000) recommends, until conclusive information is developed concerning lynx management, the agencies retain future options; that is, choose to err on the side of maintaining and restoring habitat for lynx and their prey. To err on the side of caution, the BDNF would retain all remaining stem exclusion forests for recruitment into lynx winter habitat, so that this key habitat would more closely resemble historic conditions.***

***As early as 2000, the LCAS noted that lynx seem to prefer to move through continuous forest (1- 4); lynx have been observed to avoid large openings, either natural or created (1-4); opening and open forest areas wider than 650 feet may restrict lynx movement (2-3); large patches with low stem densities may be functionally similar to openings, and therefore lynx movement may be disrupted (2-4). Squires et al. 2006a reported that lynx tend to avoid sparse, open forests and forest stands dominated by small-diameter trees during the winter. Squires et al. 2010 again reported that lynx avoid crossing clearcuts in the winter; they generally avoid forests composed of small diameter saplings in the winter; and forests that were thinned as a silvicultural treatment were generally avoided in the winter.***

***Squires et al. 2010 show that the average width of openings crossed by lynx in the winter was 383 feet, while the maximum width of crossed openings was 1240 feet.***

***Recent scientific findings undermine the Forest Plan/NRLMD direction for management of lynx habitat. This creates a scientific controversy the FS fails to resolve, and in fact it essentially ignores it.***

***For one, Kosterman, 2014 found that 50% of lynx habitat must be mature undisturbed forest for it to be optimal lynx habitat where lynx can have reproductive success and no more than 15% of lynx habitat should be young clearcuts, i.e. trees under 4 inched dbh. Young regenerating forest should occur only on 10-15% of a female lynx home range, i.e. 10-15% of an LAU. This renders inadequate the agency's assumption in the Forest Plan/NRLMD that 30% of lynx habitat can be open, and that no specific amount of mature forest needs to be conserved. Kosterman, 2014 demonstrates that Forest Plan/NRLMD standards are not adequate for lynx viability and recovery.***

***Also, the Forest Plan essentially assumes that persistent effects of vegetation manipulations other than regeneration logging and some intermediate treatments are essentially nil. However, Holbrook, et al., 2018 "used univariate analyses and hurdle regression models to evaluate the spatio-temporal factors influencing lynx use of treatments." Their analyses "indicated ...there was a consistent cost in that lynx use was low up to ~10 years after all silvicultural actions." (Emphasis added.) From their conclusions:***

***First, we demonstrated that lynx clearly use silviculture treatments, but there is a ~10 year cost of implementing any treatment (thinning, selection cut, or regeneration cut) in terms of resource use by Canada lynx. This temporal cost is associated with lynx preferring advanced regenerating and mature struc-***

***tural stages (Squires et al., 2010; Holbrook et al., 2017a) and is consistent with previous work demonstrating a negative effect of precommercial thinning on snowshoe hare densities for ~10 years (Homyack et al., 2007). Second, if a treatment is implemented, Canada lynx used thinnings at a faster rate post-treatment (e.g.,~20 years posttreatment to reach 50% lynx use) than either selection or regeneration cuts (e.g., ~34–40 years post-treatment to reach 50% lynx use). Lynx appear to use regeneration and selection cuts similarly over time suggesting the difference in vegetation impact between these treatments made little difference concerning the potential impacts to lynx (Fig. 4c). Third, Canada lynx tend to avoid silvicultural treatments when a preferred structural stage (e.g., mature, multistoried forest or advanced regeneration) is abundant in the surrounding landscape, which highlights the importance of considering landscape-level composition as well as recovery time. For instance, in an area with low amounts of mature forest in the neighborhood, lynx use of recovering silvicultural treatments would be higher versus treatments surrounded by an abundance of mature forest (e.g., Fig. 3b). This scenario captures the importance of post-treatment recovery for Canada lynx when the landscape context is generally composed of lower quality habitat. Overall, these three items emphasize that both the spatial arrangement and composition as well as recovery time are central to balancing silvicultural actions and Canada lynx conservation.***

***So Holbrook et al., 2017, 2018, 2019 fully contradict Forest Plan assumptions that clearcuts/regeneration can be considered useful lynx habitat as early as 20 years post-logging. Please find Holbrook attached.***

***Results of a study by Vanbianchi et al., 2017 also conflict with Forest Plan/NRLMD assumptions: "Lynx used burned areas as early as 1 year postfire, which is much earlier than the 2–4 decades postfire previously thought for this predator." The NRLMD erroneously assumes clearcutting/regeneration logging have basically the same temporal effects as stand-replacing fire as far as lynx re-occupancy.***

***Kosterman, 2014, Vanbianchi et al., 2017 and Holbrook, et al., 2018, Holbrook 2019 demonstrate that Forest Plan direction is not adequate for lynx viability and recovery, as the FS assumes. Holbrook 2019 such all lynx habitat must be surveyed. Have not done this?***

***Please describe the quantity and quality of habitat that is necessary to sustain the viability of the Canada lynx.***

***Please analyze how eliminating LAUs will effect climate change.The NEPA requires a "hard look" at climate issues, including cumulative effects of the "treatments" in the proposed project when added to the heat, drought, wind and other impacts associated with in- creased climate risk. Regeneration/ Restocking failure following wildfire, prescribed fire and/or mechanical tree-killing has not been analyzed or disclosed. There is a considerable body of science that suggests that regeneration following fire is increasingly problematic.***

***NEPA requires disclosure of impact on "the human environment." Climate risk presents important adverse impacts on cul-***

***tural, economic, environmental, and social aspects of the human environment. – people, jobs, and the economy – adjacent to and near the project area. Challenges in predicting responses of individual tree species to climate are a result of species competing under a never-before-seen climate regime – one forests may not have experienced before either.***

***In an uncertain future of rapid change and abrupt, unforeseen transitions, adjustments in management approaches will be necessary and some actions will fail. However, it is increasingly evident that the greatest risk is posed by continuing to implement strategies inconsistent with and not informed by current understanding of our novel future....***

***Please analyze or disclose the body of science that implicates logging activities as a contributor to reduced carbon stocks in forests and increases in greenhouse gas emissions. Please provide estimates of the total amount of carbon dioxide ($CO_2$) or other greenhouse gas emissions caused by FS management actions and policies—forest-wide, regionally, or nationally. Agency policymakers seem comfortable maintaining a position that they need not take any leadership on this issue, and obfuscate via this EA to justify their failures.***

***The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmos- pheric $CO_2$. Unsurprisingly the EA doesn't state that simple fact.***

***The BDNF has not yet accepted that the effects of climate risk represent a significant issue, and eminent loss of forest resilience already, and a significant and growing risk into the "foreseeable future?"***

***Global warming and its consequences may also be effectively irreversible which implicates certain legal consequences under NEPA and NFMA and ESA (e.g., 40 CFR § 1502.16; 16 USC §1604(g); 36 CFR §219.12; ESA Section 7; 50 CFR §§402.9, 402.14). All net car- bon emissions from logging represent "irretrievable and irreversible commitments of resources."***

***It is clear that the management of the planet's forests is a nexus for addressing this largest crisis ever facing humanity. Please provide a minimal quantitative analysis of agency-caused $CO_2$ emissions or consider the best available science on the topic. This is immensely unethical and immoral. Please include detailed scientific discussions in the EA or EISe concerning climate change is far more troubling than the document's failures on other topics, because the consequences of***

***unchecked climate change will be disastrous for food production, sea level rise, and water supplies, resulting in complete turmoil for all human societies. This is an issue as serious a nuclear annihilation (although at least with the latter we're not already pressing the button).***

***Please provide an analysis as to the veracity of the amendment's Purpose and Need, the project's objectives, goals, or desired conditions. The FS has the responsibility to inform the public that climate change is and will be bringing forest change.***

***Please consider that the effects of climate change on the lynx habitat, including that the "desired" vegetation conditions will likely not be achievable or sustainable. Please provide a credible analysis as to how realistic and achievable its desired con-di-tions are in the context of a rapidly changing climate, along an un- predictable but changing trajectory.***

***The Forest Plan does not provide meaningful direction on climate change. Please analyze or disclose the body of science that implicates logging activities as a contributor to reduced carbon stocks in forests and increases in greenhouse gas emissions. Please provide estimates of the total amount of carbon dioxide ($CO_2$) or other greenhouse gas emissions caused by***

*FS management actions and policies—forest-wide, regionally, or nationally. Agency policy-makers seem comfortable maintaining a position that they need not take any leadership on this issue, and obfuscate via this EA to justify their failures.*

*The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmospheric $CO_2$.*

*Please present any modeling of forest stands under different management scenarios. The FS should model the carbon flux over time for its proposed stand management scenarios and for the various types of vegetation cover found on the BDNF.*

*The Committee of Scientists, 1999 recognize the importance of forests for their contribution to global climate regulation. Also, the 2012 Planning Rule recognizes, in its definition of Ecosystem services, the "Benefits people obtain from ecosystems, including: (2) Regulating services, such as long term storage of carbon; climate regulation..."*

*We have no more time to prevaricate, and it's not a battle we can afford to lose. We each have a choice: submit to status quo for the profits of the greediest 1%, or empower ourselves to limit greenhouse gas emissions so not just a couple more generations might survive.*

*The District Court of Montana ruled in Case 4:17-cv-00030-BMM that the Federal government did have to evaluate the climate change impacts of the federal government coal program.*

*In March 2019, U.S. District Judge Rudolph Contreras in Washington, D.C., ruled that when the U.S. Bureau of Land Management (BLM) auctions public lands for oil and gas leasing, officials must consider emissions from past, present and foreseeable future oil and gas leases nationwide. The case was brought by WildEarth Guardians and Physicians for Social Responsibility.*

*In March of 2018 the Federal District Court of Montana found the Miles City (Montana) and Buffalo (Wyoming) Field Office's Resource Management Plans unlawfully overlooked climate impacts of coal mining and oil and gas drilling. The case was brought by Western Organization of Resource Councils, Mon-tana Environmental Information Center, Powder River Basin.*

*The Montana Federal District Court ruled that the Forest Service did not take a hard look at the effects of the Black Ram project in the KNF on climate change. Please find the order attached.*

***The amendment will be in violation of NEPA, NFMA, the APA, the ESA for not examining the impacts of the project on climate change. If the amendment eliminates LAUs it will eliminate the forest in the project area. Forests absorb carbon. The project will destroy soils in the project area. Soils are carbon sinks.***

***Please disclose the current level of old growth forest in each third order drainage in the Project area;***

***Please Disclose the method used to quantify old growth forest acreages and its rate of error based upon field review of its predictions;***

***Please Disclose the historic levels of mature and old growth forest in the Project area;***

***Please disclose the level of mature and old growth forest necessary to sustain viable populations of dependent wildlife species in the area.***

***Please disclose the amount of mature and old growth forest that will remain in an area after the LAUs is eliminated.***

***Please disclose the amount of current lynx habitat in the BDNF.***

***Please demonstrate the the amendment is in compliance with the old growth provisions of the Forest Plan as required by NEPA, NFMA, the APA, the ESA and the Forest Plan.***

John Carter submitted the following comments for the Alliance on April 5, 2025.

These comments and analysis are submitted on behalf of the Alliance for the Wild Rockies, Center for Biological Diversity, Bold Visions Conservation, Conservation Congress, Council on Wildlife and Fish, Gallatin Wildlife Association, Inland Empire Task Force, Native Ecosystems Council, Sage Steppe Wild, Swan View Coalition, Western Wildlife Conservancy, WildEarth Guardians, Wilderness Watch, and the Yellowstone to Uintas Connection. These organizations are public interest organizations that engage on public land issues affecting wildlife.

We have reviewed the Environmental Assessment and its supporting documents and find that our detailed analysis and comment during scoping has not been addressed. These were substantive comments and directly challenged the modeling and analysis provided in the Biological Assessment (BA) for Canada lynx Effects of the 2009 Revised Forest Plan and the Northern Rockies Lynx Management Direction. The mapping in the current EA reflects little change, if any.

The EA is insufficient for such a sweeping change because:

- The EA is Forest-wide, not an amendment for a small area such as a mine, or other project that needs a land exchange or some small change. It is clearly a Forest Plan Revision that applies to the entire BHDL, resulting in large areas being excluded from lynx habitat. The EA cites 36CFR219.9(b)(5) to limit the scope of the amendment, yet paragraph (b)(3) notes that *"Except for an amendment that applies only to one project or activity, a proposed amendment that may create a significant environmental effect and thus requires preparation of an environmental impact statement is considered a significant change in the plan for the purposes of the NFMA and therefore requires a 90-day comment period for the proposed plan and draft environmental impact statement (§ 219.16(a)(2)), in addition to meeting the requirements of this section."* Clearly, the scope of this amendment and its implications to Canada lynx habitat and survival needs an EIS. Therefore, the full Plan Revision requirements

need to be addressed, including additional standards and guidelines as outlined in 36CFR219.8 and as we describe herein. The Plan Amendment process must include an alternative to ensure restoration of functionality of lynx habitat and connections, not limit the choice to the 2020 Model and NRLMD.

- The EA defines lynx habitat in a procedure that minimizes that habitat, considers it as a static, not dynamic state as experienced by lynx.
- The EA does not identify or protect linkage areas to connect the habitat that it does claim exists.
- It omits inclusion of habitat that the Olson et al (2021) Model and the Montana Natural Heritage Program Inductive Model include. We analyzed these in our scoping comments. These are critical to fill in gaps from the BHDL 2020 Model and provide discrete linkage pathways on the Forest that connects more suitable habitat.
- The BHDL LAUs and habitat model eliminates a large swath of the landscape that contains historical lynx observations and omits habitat in the Dillon and Butte Ranger Districts that was included in the 2000 Model.

Figures A – G below show the BHDL 2020 modeled habitat, the Olson et al (2021) modeled habitat, and the Montana Natural Heritage Program modeled habitat. By overlaying these along with the linkages developed for the NRLMD, the areas within the BHDL can be identified where linkages need to be provided.[1] Figures A – E center on the Ranger Districts. Figures F and G overlay the BHDL model over the MNHP model showing additional modeled habitat that should be included and provide linkages not covered by the BHDL model. Figures H and I show aerial imagery for the Butte and Dillon Ranger Districts illustrating that higher elevation, mountainous areas excluded from the BHDL 2020 model, but included in the BHDL 2000 Model, can function as linkage and therefore should have standards for protection as linkage. From the EA Appendices:4 *"Note: Once identified as "lynx habitat," there is no longer a distinction between primary and secondary vegetation. Conservation measures of the Lynx Conservation Assessment and Strategy (LCAS) apply to lynx habitat."*

---

[1] USDA Forest Service - Northern Region. November 13, 2003. Canada Lynx Linkage Areas for Northern Rockies Lynx Amendment Area (USA). USDA Forest Service - Northern Region. http://www.fs.fed.us/r1/gis/thematic_-data/lynx_linkage_n_rockies_1m.zip

**Figure A. The higher probability habitat by Olson appears between and surrounding the BHDL 2020 modeled areas, indicating the need to expand the lynx habitat to include the Olson modeled areas. Inclusion of these areas provides linkage and reduces habitat fragmentation in the BHDL model.**

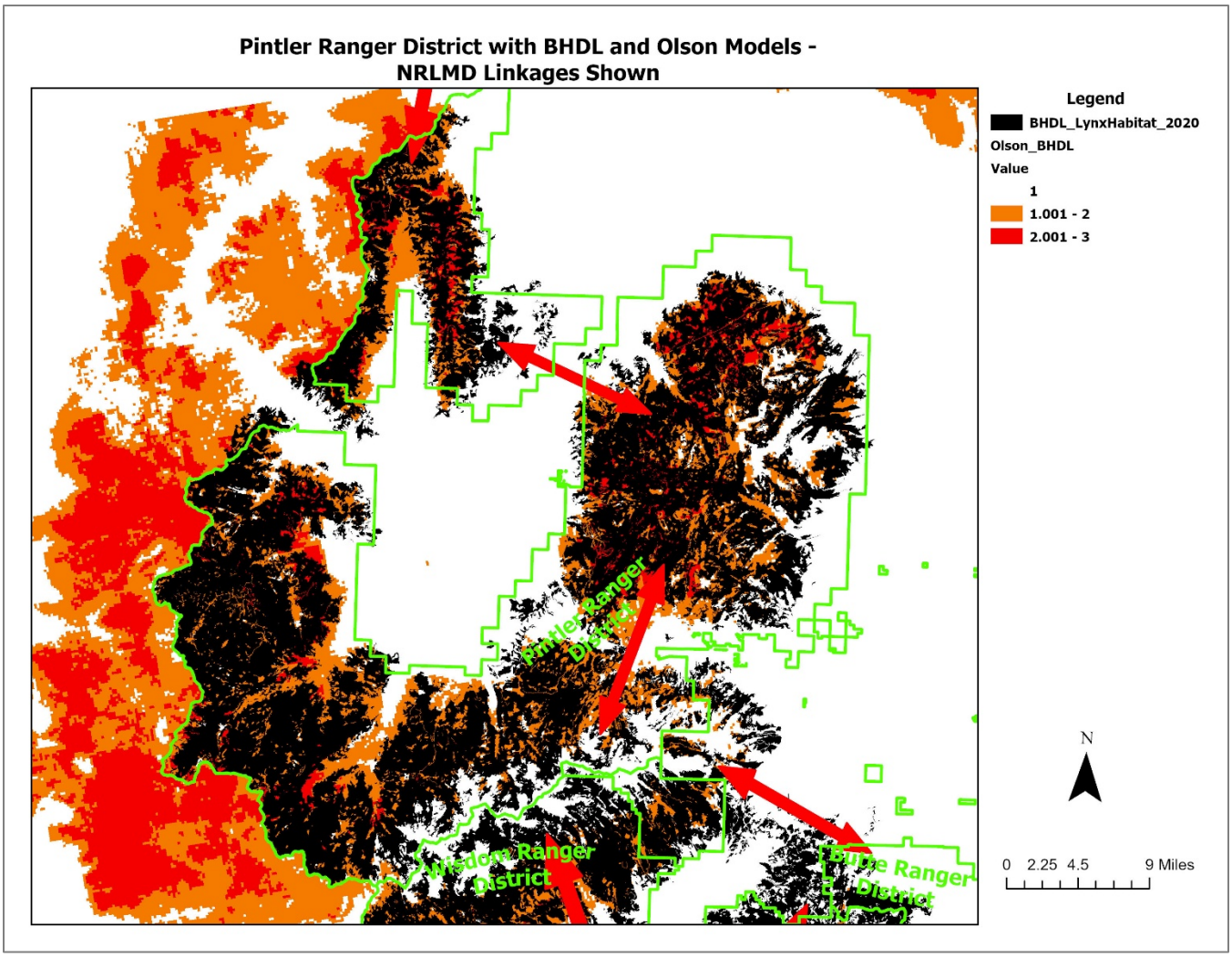
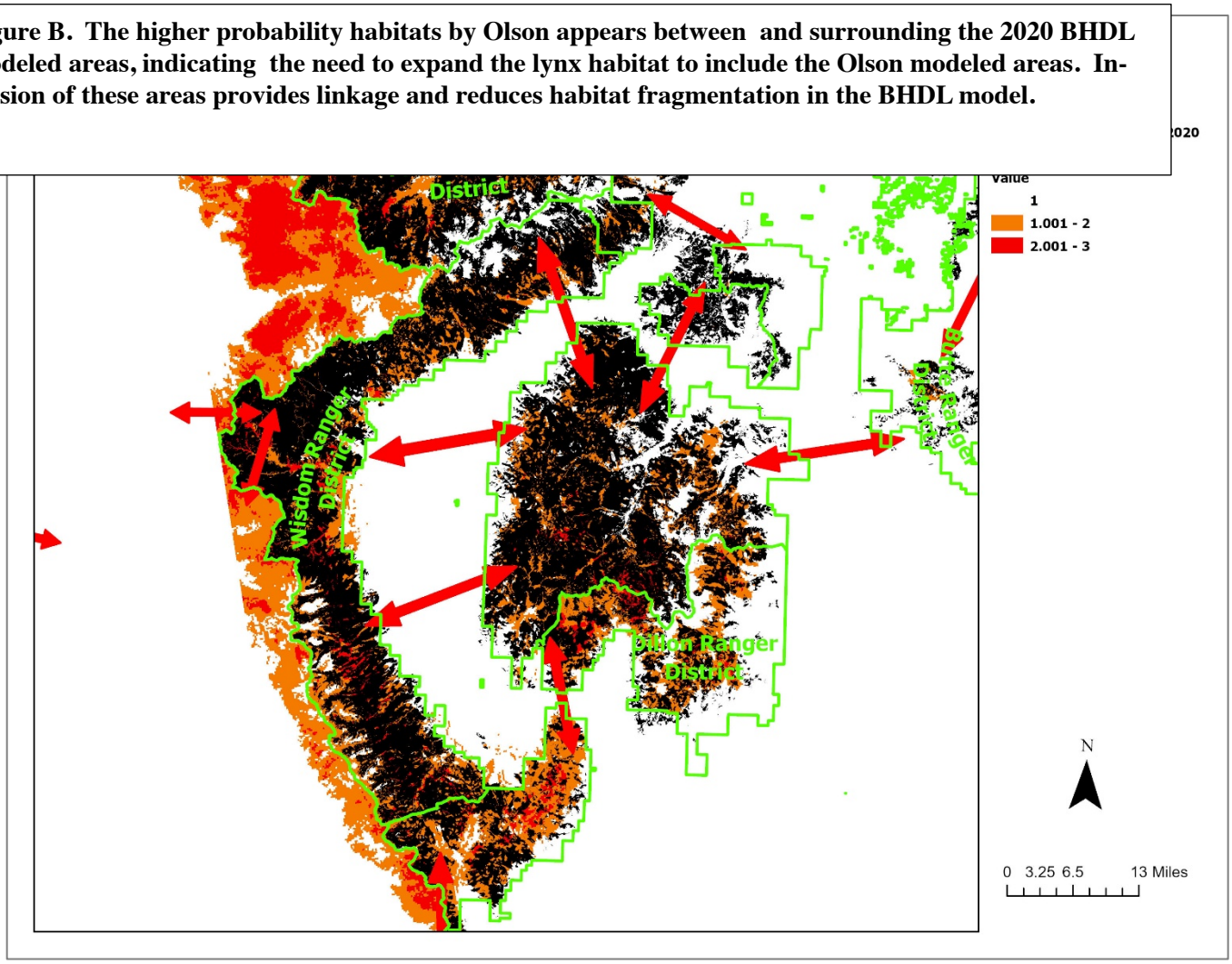

Pintler Ranger District with BHDL and Olson Models -
NRLMD Linkages Shown
Legend
BHDL_LynxHabitat_2020
Olson_BHDL
Value
1
1.001 - 2
2.001 - 3
Pintler Ranger District
Wisdom Ranger District
Butte Ranger District
N
0 2.25 4.5 9 Miles

**Figure B. The higher probability habitats by Olson appears between and surrounding the 2020 BHDL modeled areas, indicating the need to expand the lynx habitat to include the Olson modeled areas. Inclusion of these areas provides linkage and reduces habitat fragmentation in the BHDL model.**



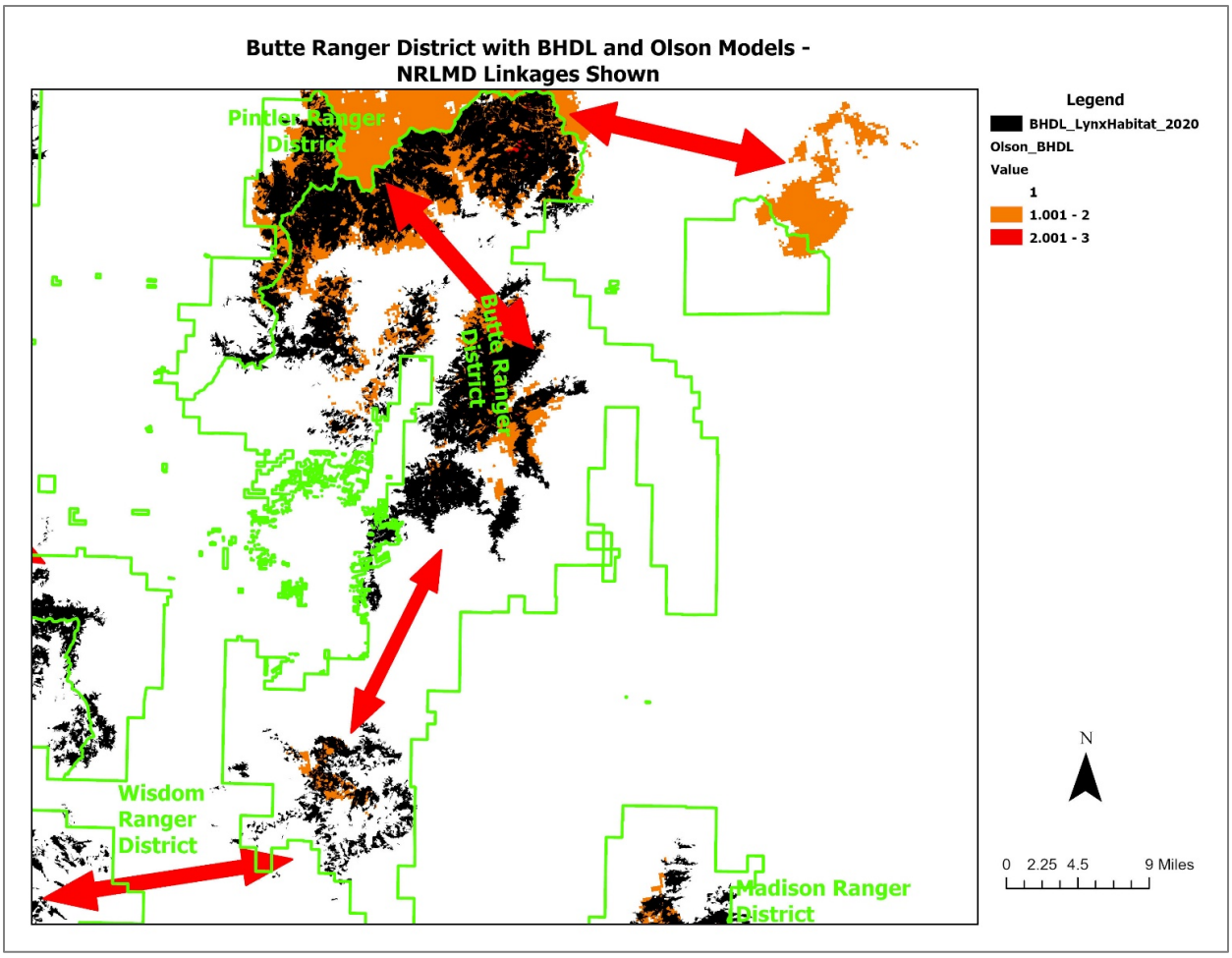



**Figure C. The higher probability habitats by Olson appears between and surrounding the BHDL 2020 modeled areas, indicating the need to expand the lynx habitat to include the Olson modeled areas. Inclusion of these areas provides linkage and reduces habitat fragmentation in the BHDL model. This area was included in the BHDL 2001 Model.**

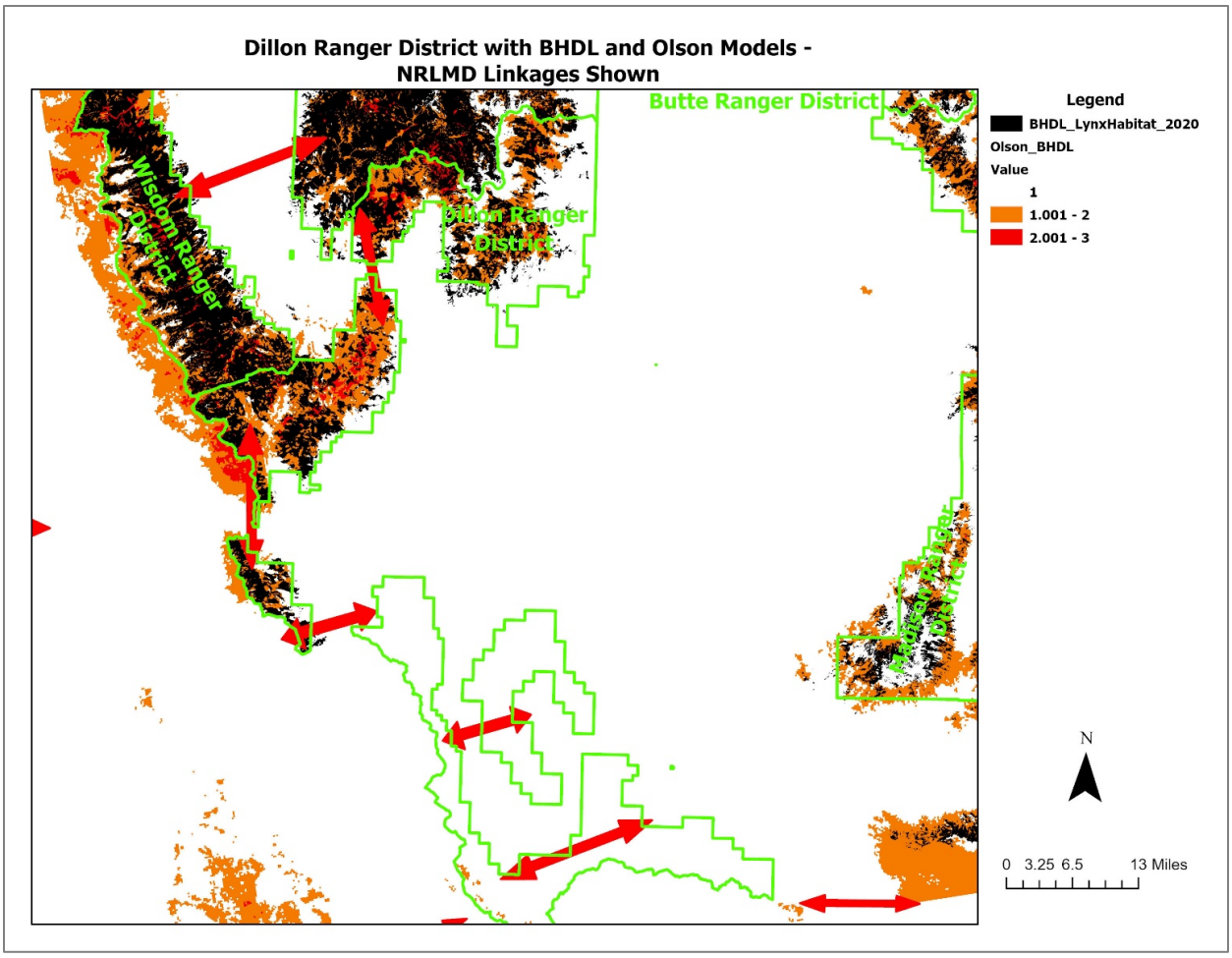



**Figure D. The higher probability habitats by Olson appears between and surrounding the BHDL 2020 modeled areas, indicating the need to expand the lynx habitat to include the Olson modeled areas. Inclusion of these areas provides linkage and reduces habitat fragmentation in the BHDL model. Note the southern area, which is excluded from the BHDL 2020 model is important for linkage. This area was included in the BHDL 2001 Model.**

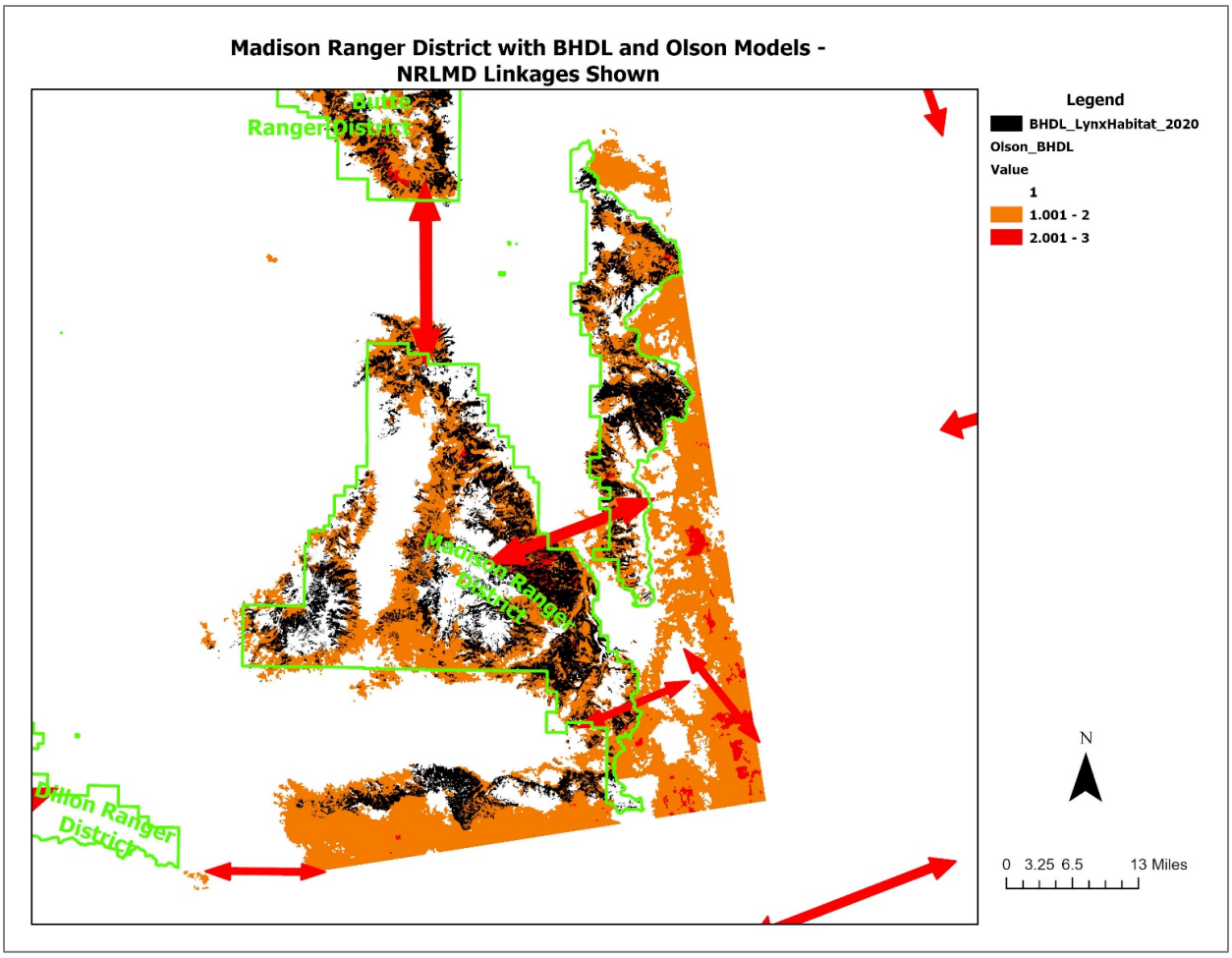



**Figure E. The higher probability habitats by Olson appears between and surrounding the BHDL 2020 modeled areas, indicating the need to expand the lynx habitat to include the Olson modeled areas. Inclusion of these areas provides linkage and reduces habitat fragmentation in the BHDL model. Much of the area was included in the BHDL 2001 Model.**

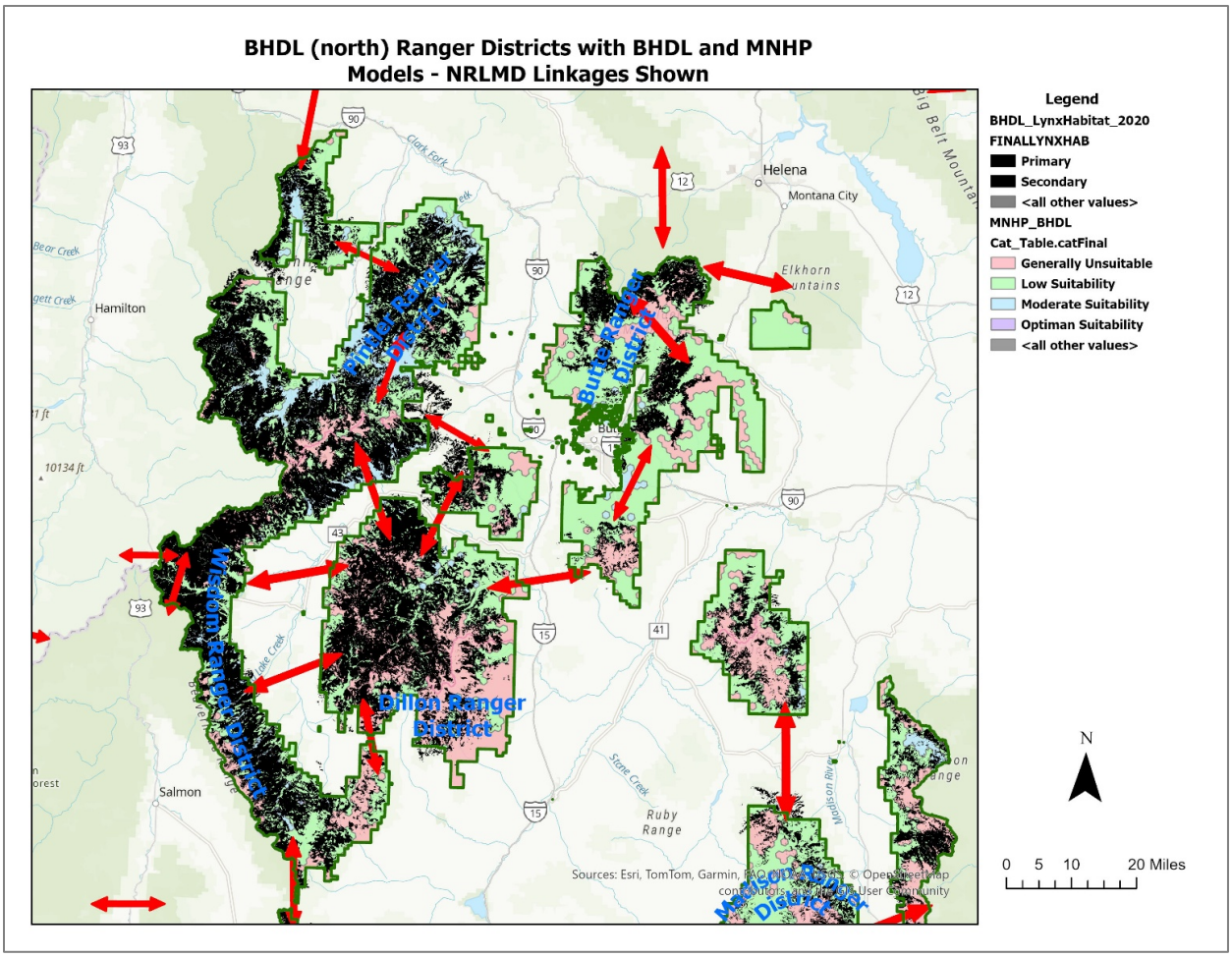



**Figure F. The MNHP low and moderate suitability habitat shown underlying the BHDL 2020 model fill in gaps needed for linkages. Inclusion of these also reduces fragmentation of lynx habitat in the BHDL model.**

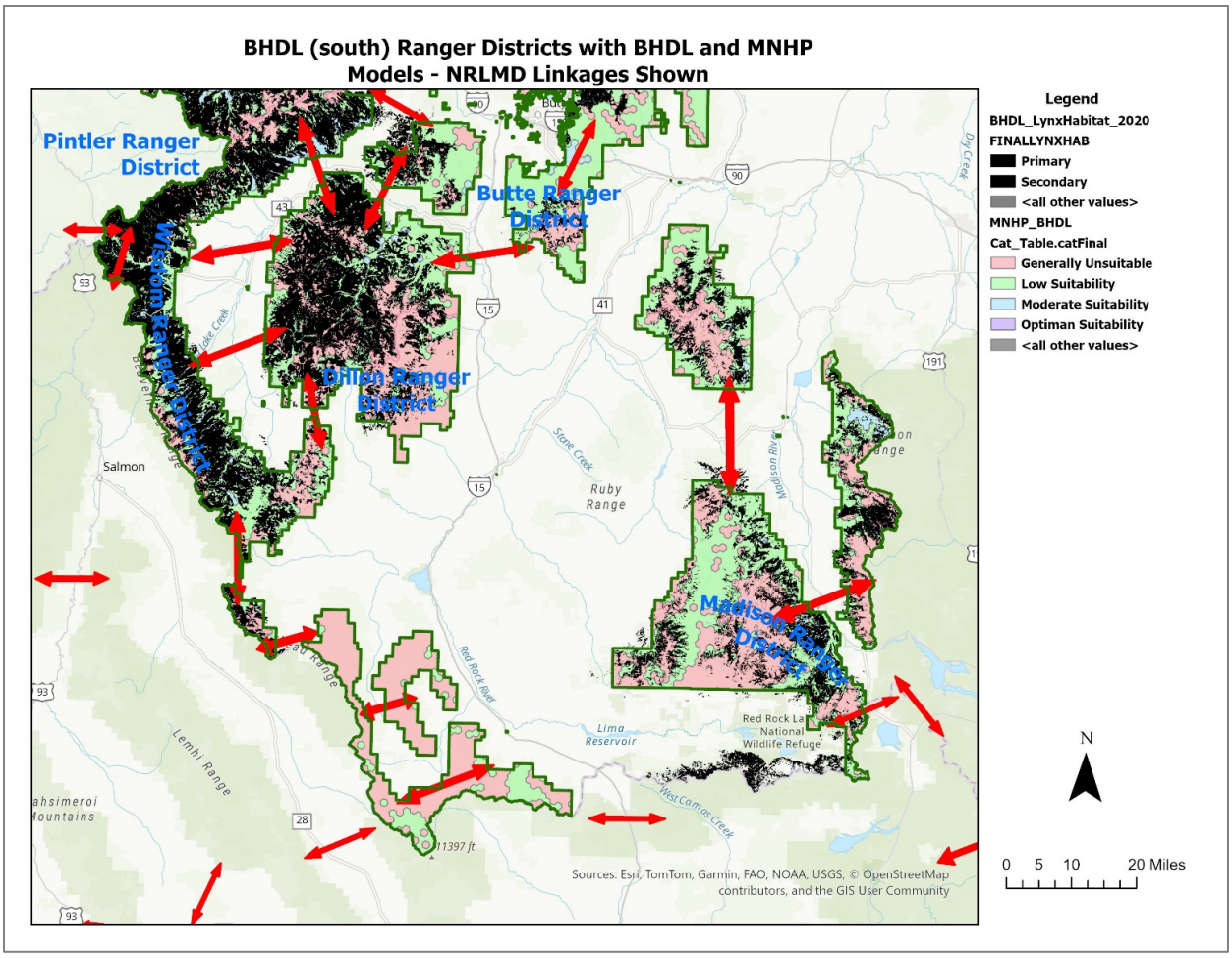



**Figure G. The MNHP low and moderate suitability habitat shown underlying the BHDL 2020 model fill in gaps needed for linkages. Inclusion of these also reduces fragmentation of lynx habitat in the BHDL model.**

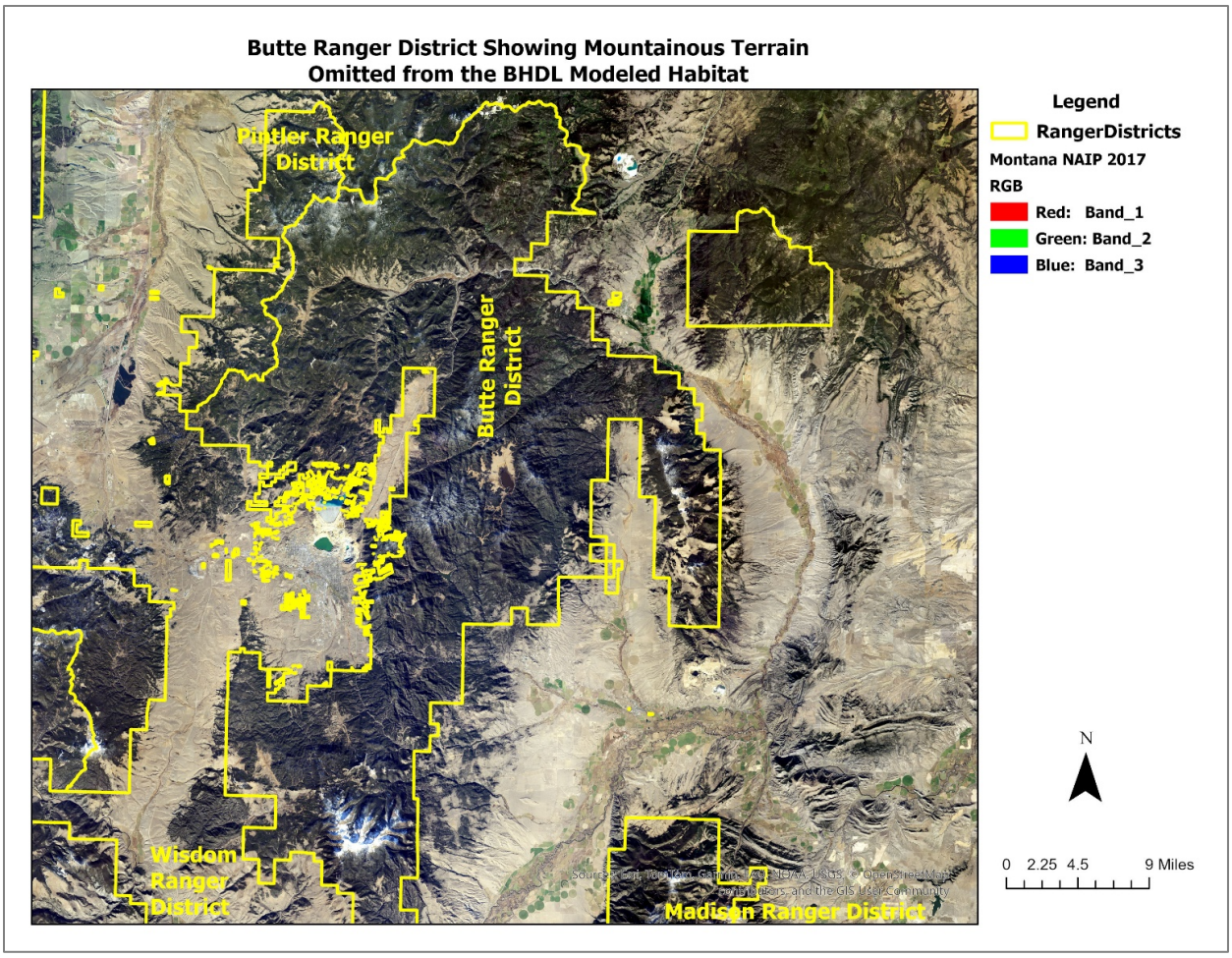



**Figure H. Here we see the entire Ranger District is mountainous terrain yet included minimal habitat in the BHDL 2020 model. It needs standards to protect it as linkage and expanded lynx habitat as depicted in the MNHP model. This was determined to be habitat in the BHDL 2001 Model.**

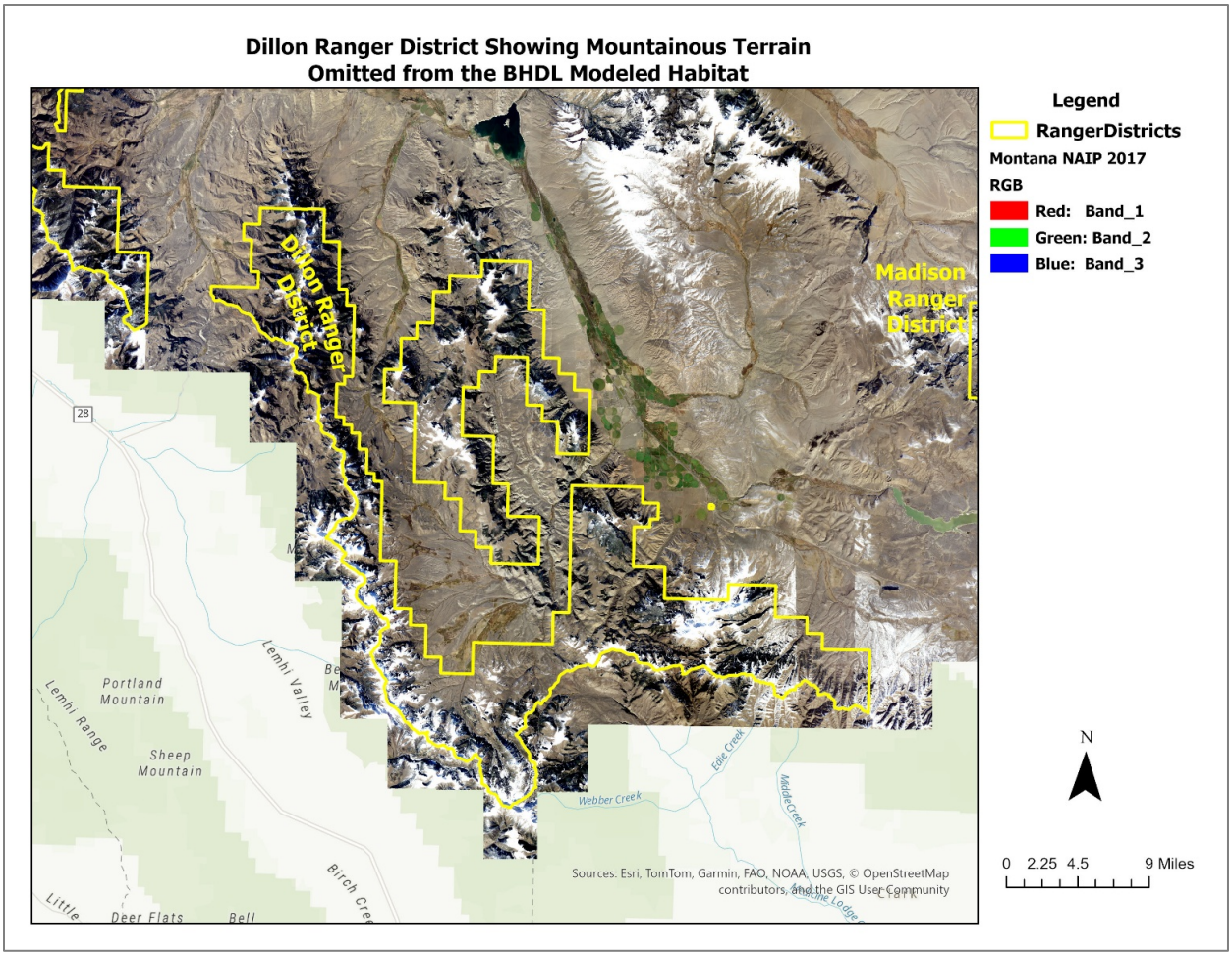



**Figure I. Here we see the high elevation mountain chains that could provide secure linkage habitat for lynx have been excluded as habitat in the three models. This area in the Dillon RD needs standards to protect it as linkage. It was included as lynx habitat in the BHDL 2001 Model.**

In Attachment 1 we have summarized points of rebuttal to the BHDL 2020 Model.

- The Modeling is arbitrary and a matter of convenience because it has omitted consideration of lynx mhabitat where historical observations revealed lynx presence.
- The absence of lynx from the BHDL following listing in 2000 has not been explained in relation to the massive deforestation occurring here in the last half of the past century and the explosion of motorized recreation.
- The BHDL analysis must address why, with its claimed 1,625,805 acres of lynx habitat and intensive surveys, there were no lynx found for nearly 20 years following its listing as threatened.
- A view of the regional national forests using the Olson et al (2021) model shows that the BHDL is an important connection between the GYA and Northern Rockies.

- Forest Plan Standards must be established to identify, restore and maintain linkages and connecting habitats.
- The 2020 BHDL BA Model
    - The Model is flawed in that it uses the current modified forest structure to define "surrogate" habitat as opposed to the historical habitats used by lynx.
    - The Model relied on modeled snow depths for an arbitrary period of December - May as criteria, and constrained habitat by aspect and elevation. Lynx denning occurs during late spring.[2] The use of this arbitrary period ignores the variability in seasonal snow patterns from year to year in a dynamic, not static system. The Model paints a black and white picture and does not reflect reality on the ground as experienced by Canada lynx.
    - Our analysis of 29 SNOTEL stations in and around the BHDL shows that snow depth is not a constraint for lynx in the BHDL.
    - Analysis of historical lynx observations in the BHDL show that slope, aspect and elevation are not constraints for lynx in the BHDL.
    - The Model used surrogates for habitat such as structural classes, e.g. stem exclusion rather than the actual habitat types where lynx were historically observed. It only focused on sub-alpine fir, spruce, and cool-moist Douglas-fir, yet both our analysis and the Montana Natural Heritage Program found that lodgepole pine forest was the dominant forest type.
    - The Model relied on VMAP and did a crosswalk with structural stages that includes major modifications from the historical forest vegetation types. This is an attempt to accept the modified forest as a baseline, rather than the habitats lynx have relied upon through the historical record. VMAP has a significant error rate which we illustrated using an aerial image showing the stem exclusion category is misrepresented.
    - The Model relies on the Wildland Urban Interface exemptions to NRLMD to request an exemption of 88,910 acres. Our analysis of WUI for the BHDL shows that instead of 1,644,663 acres of WUI, it should only be 34,663 acres. The Forest Plan amendment must correct this huge disparity with an analysis that accounts for building density.
- We compared the Montana Natural Heritage Program Inductive and Deductive models that relied on historical lynx observations, the Olson et al (2021) model that relied on tracking studies, and the 2020 BHDL Model. The BHDL Model was the only one that did not take into account historical observations or tracking data. Here, we repeat our Table 6 showing the differences.

**Table 6. Area (acres) of Modeled Lynx Habitat on the Beaverhead-Deerlodge NF**

| | | | |
|---|---|---|---|
| BHDL | | 116,806 Secondary vegetation | 1,509,146 Primary vegetation |
| MNHP | 1,287,428 Generally Unsuitable | 2,069,426 Low Suitability | 257,089 Moderate Suitability |
| Olson | 1,862,477 Low Probability | 1,507,773 Moderate Probability | 244,016 High Probability |
| **Comparing the Model Acreage** | | | |

[2] Olson, L.E., Squires, J.R., DeCesare, N.J., and Kolbe, J.A. 2011. Den use and activity patterns in female Canada lynx (Lynx Canadensis) in the Northern Rocky Mountains. Northwest Science, Vol. 85:3. https://www.fs.usda.gov/rm/pubs_other/rmrs_2011_olson_l001.pdf

| | |
|---|---|
| Beaverhead Deerlodge Models | 2,711,422 acres (2001)<br>1,625,952 acres (2020)<br>2,134,741 acres*<br>*Y2U 2001 BHDL model clipped to Forest Boundary |
| Montana Natural Heritage Program Inductive Model | 2,326,515 acres |
| Olson et al (2021) Model | 1,751,789 acres |

- To sum up, the BHDL 2020 model is too limited in its interpretation, leaving out much potential lynx habitat. It further did not consider historical observation locations and the historical vegetation types where those occurred. Instead, it used surrogates with cascading errors to eliminate major lynx habitats such as lodgepole pine and Douglas fir. The MNHP model used lynx observations combined with environmental variables to arrive at a habitat area of 2,326,515 acres, compared to the BHDL 2020 modeled 1,625,952 acres. This is less than the BHDL 2001 model, but that model would include the habitat in the Dillon Ranger District that was omitted from the 2020 model.

  The MNHP Deductive model shows that the BHDL model eliminates major categories of vegetation types in its mapping. In the end, the BHDL 2001 model with 2,134,741 acres within the BHDL seems to capture the habitat better than the 2020 model and does include that habitat in the Dillon Ranger District. However, that said, the determination of lynx habitat must go back to the historical vegetation types where observations were made and map the extent of those across the BHDL. Since we have determined that snow depth, slope, aspect and elevation are not significant barriers within the constraint of the BHDL, these should not be part of the determination.

- We reviewed 2012 Planning Rule sections cited in the Scoping Notice, the ESA, and Forest Service Manual provisions that should apply.
    - While the Scoping Notice invites public comment, by including the 2020 lynx habitat map, it presupposes this is the lynx habitat that will be the basis for the plan amendment, thus preempting public input.
    - The Planning Rule expects the restoration of ecological integrity, diversity of plant and animal communities and species viability, multiple use, and listed timber requirements. All the elements listed in those sections will need specific standards in the plan amendment.
    - The ESA makes biological assessments "discretionary". These should be required in the plan amendment for all future projects.
    - The FSM cites the ESA to maintain species viability, and conduct activities to assist in the recovery of T&E species.
    - The FSM defines "Essential Habitat" to include areas needed for recovery of T&E species.
- Reflecting these Planning Rule, ESA and FSM provisions, we conclude, "The BHDL must now designate lynx habitat as Essential for recovery of lynx and maintaining connections within the BHDL and to adjacent public lands. It must determine the potential occupancy extent and home ranges and set population goals for a viable population within the BHDL to be established by a combination of habitat protection and introducing lynx as done in Colorado."

We are not seeing National Forests conducting any analysis of linkages, or "suitable unoccupied habitat" or any effort to address its current vs historical condition. The Plan Amendment must correct this. The lack of adequate regulatory mechanisms to protect lynx habitat and connectivity has been implicated as a central issue for lynx being able to maintain populations. (FR p16052). The FSM described above makes the point that the Forest Service should establish through planning, objectives for habitat management and/or recovery of populations and prescribe measures to prevent adverse modification of habitat essential to the conservation of T&E species. This remains to be done with assurance that the BHDL land management plans are quantitatively addressing lynx habitat and connectivity needs with adequate standards.

- The Biological Assessment (BA) for Canada lynx Effects of the 2009 Revised Forest Plan and the Northern Rockies Lynx Management Direction, Appendix H, does a comprehensive review of NRLMD goals, objectives, standards, and guidelines and how existing Forest Plan provisions apply to each. We have seen no evaluation that the NRLMD has been effective, or for that matter, the 2009 BHDL RFP. Standards are missing for most of the NRLMD goals, objectives, and guidelines in the 2009 RFP. Goals, objectives and guidelines are without enforcement and need quantitative, not general, standards. The Forest Plan Amendment must now go through each of these NRLMD provisions and provide standards for each NRLMD Direction.

Sincerely,

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## Attachment 1

## EA Analysis of Models and Background for the Beaverhead Deerlodge Plan Amendment for Canada Lynx

## Y2U Et Al

The map of proposed lynx analysis units (LAUs) provided in the Scoping Letter (March 4, 2025) reflects the 2020 BHDL mapping analysis (BA).[3] That map remains identical in the EA. This work was undertaken because of the Western Lynx Biology Team conclusion that the number of lynx detections on the forest met provisions for changing the BHDL from unoccupied to occupied, thereby triggering the Northern Rockies Lynx Management Direction Standard S1 for changing LAU boundaries based on site-specific habitat information. A problem emerges in that in 2001 the BHDL modeled lynx habitat and found habitat of 2,711,422 acres. The 2020 model reduced that to 1,625,952 acres.

## The Occupied Habitat Problem

We have been analyzing lynx habitat for many years and are dismayed at the deflection around human impacts on lynx and lynx habitat. When one looks at the historical records there have been thousands of lynx observations in the Rocky Mountains from Montana, Idaho, Wyoming, Utah and Colorado. Those are being discounted as unverified because there is no DNA evidence under a protocol that has only been in existence in recent years. The BA:11 declares that "Detections prior to 2018 are considered 'unverified' as eDNA or photographs do not exist."

Occupied habitat is described in the BA Attachment 1 as:

> In order to implement this agreement, the FWS and FS will jointly identify 'occupied lynx habitat' as a subset of mapped lynx habitat. The identification of occupied lynx habitat will include consideration, as appropriate, of the Science Report, the LCAS, FWS's final listing decision documents, any information used to designate critical habitat, and new scientific information regarding the ecology and distribution of lynx, and population data. (BA:85).

> The Lynx Conservation Assessment and Strategy identities 17 lynx risk factors in 4 different categories - factors affecting lynx productivity, lynx mortality, lynx movements, and other large-scale risk factors. Risk factors identified activities or existing conditions that could adversely affect either individual or groups of lynx. (BA:85).

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[3] Gatlin, J. 2021. Biological Assessment for Canada lynx Effects of the 2009 Revised Forest Plan and the Northern Rockies Lynx Management Direction. Beaverhead-Deerlodge National Forest. January 4,2021.

> Factors identified include timber management; wildland fire management; recreation; forest/backcountry roads and trails; livestock grazing; other human developments; trapping; predator control; incidental or illegal shooting; competition and predation as influenced by human activities; highways (vehicular collisions); highway, railroad and utility corridors; land ownership patterns; ski areas and large resorts; fragmentation and degradation of lynx refugia; lynx movement and dispersal across shrub steppe habitats; and habitat degradation by non-native invasive plant species. (BA:85).

The Final Rule listing Canada lynx as threatened was enacted in 2000.[4] The National Lynx Survey took place in that same time frame.[5] Despite evidence that lynx persisted over historical times, the "unoccupied" status results from failing to find current evidence of lynx long after habitats have been fragmented by mines, high road density, an explosion in motorized recreation, timber and fuel reduction projects, and including habitat alteration by livestock grazing.

The problem with this concept of "occupied habitat" is that it makes optional the application of the Northern Rockies Lynx Management Direction in "unoccupied habitat". The direction only says it "should be 'considered''. In our experience in such places as the Caribou Targhee NF, the Uinta Wasatch Cache NF, the Ashley NF, in linkage and peripheral habitat, but habitat historically used by lynx, it is met with deflection and no analysis. Meanwhile the practices listed above as detrimental to lynx proceed apace.

We have prepared multiple sets of mapping and analysis comments for Canada lynx. These include comments on the 2017 Species Status Assessment, the Draft Recovery Plan, and the recent 2024 Revised Designation of Critical Habitat. In those comments we have addressed the deflection around human activities as the cause of lynx abandoning habitats and the resultant negative effects on habitat that result from both the "unoccupied" status and the weakness of the NRLMD which provides inadequate standards. For example, the explosion in motorized recreation, and deforestation by timber related projects in the latter half of the 1900s.

As an example, we provide Figure 1 which illustrates the history of timber harvest in the National Forest System and Region One. Note that it only came down to today's levels after a huge amount of deforestation between about 1950 and 2000. A time when lynx observations were declining across much of the Rocky Mountains, and they were no longer being observed in some areas. We are unsure as to whether the Region One harvest data includes fuel reductions, silviculture treatments, and other manipulations that may not fall under the umbrella of timber sales. These historically logged areas take decades to return to lynx and snowshoe hare habitat, which have affected large areas of historical lynx habitat. This is a cumulative impact.

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[4] DOI Fish and Wildlife Service. 2000. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Contiguous U.S. Distinct Population Segment of the Canada Lynx and Related Rule. Federal Register Vol. 65, No. 58:16052 – 16086.

[5] McElvey, K.S., Claar, J.J., McDaniel, G.W., and Hanvey, G. 1999. National Lynx Detection Protocol.

The BA, with its stand structure analysis reveals to some extent the scope of this altered forest ecosystem and relies on this altered structure to define a new baseline rather than address the actual habitat (vegetation) types where lynx were historically observed. We address this later in these comments showing these forest types where historical observations occurred. We used the Landfire database, where the Montana Natural Heritage Program used the Montana Land Use/ Land Cover Dataset.

In the recent FWS Revised Designation of Critical Habitat, we saw Colorado go from "unoccupied" to "occupied" habitat. We saw critical habitat in the northern Rockies diminished by 12%, and in the Greater Yellowstone Area by 88%.[6] Yet, these last two areas were widely inhabited by lynx when you look at historical observations. (Figure 2). In the comments we cited above we have looked back at historical accounts and obtained the McElvey (1998) data, Montana, and Wyoming data for historical observations. There are thousands of these, for example, the Montana Natural Heritage data contains 2,414 records up to the present. The McElvey data contained over 3,000 records, and the Wyoming database contained 315 records. Some are duplicates, and there are missing records we know of. But, overall, thousands of records exist across the Rockies.

With this as background, the BA:77 acknowledges that there were 109 observations on the BHDL "that McKelvey and others (Ibid) considered 'reliable', but unverifiable". This is the unfortunate consequence of inventing a criterion (DNA) that didn't exist at the time. If "reliable" is not reliable to be used, can we infer anything other than the abandonment of the precautionary principle is at work? Is it the need to accommodate logging, off-road vehicles, snowmobiles, trapping, and mining? This is a legitimate question. It also leads to the question as to why lynx were not observed in the BHDL until recently if these factors were not at play? In the meantime, did the BHDL modify its projects or recreational use to accommodate lynx? How much lynx habitat was lost due to human activities during the period before listing? After listing? These are all questions needing an analysis and answer in the plan amendment process.

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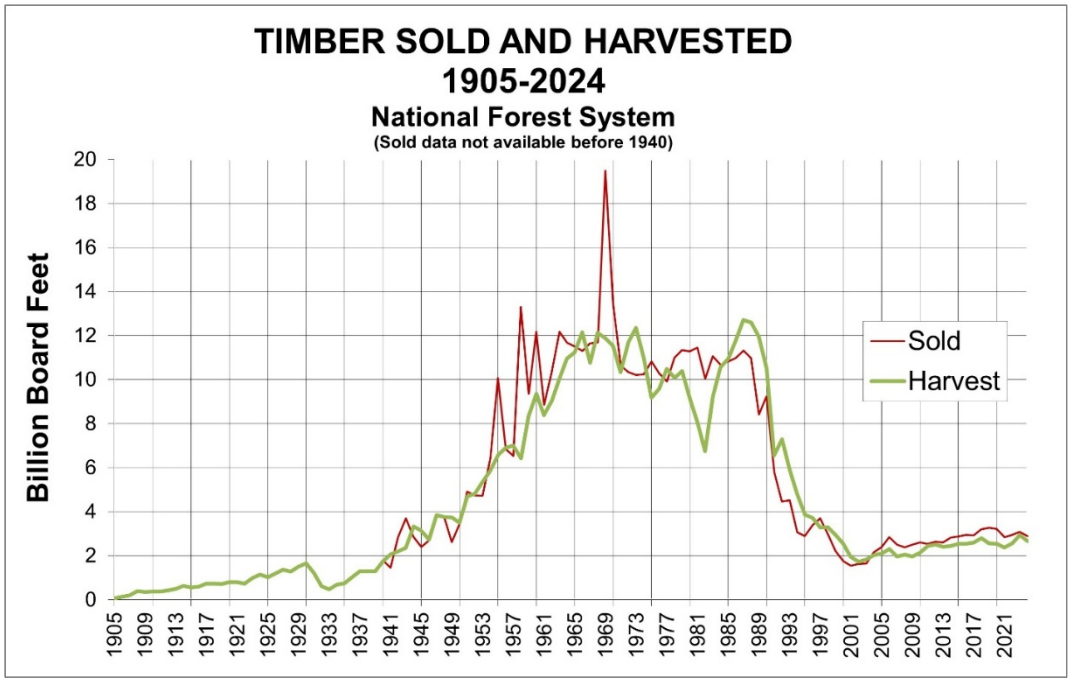
[6] Department of the Interior, Fish and Wildlife Service. 2024. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Contiguous U.S. Distinct Population Segment of the Canada Lynx. Federal Register 89 No. 230 (pp 94656 – 94680) dated November 29, 2024.

**Figure 1.**


TIMBER SOLD AND HARVESTED
1905-2024
National Forest System
(Sold data not available before 1940)
Billion Board Feet
0
2
4
6
8
10
12
14
16
18
20
1905
1909
1913
1917
1921
1925
1929
1933
1937
1941
1945
1949
1953
1957
1961
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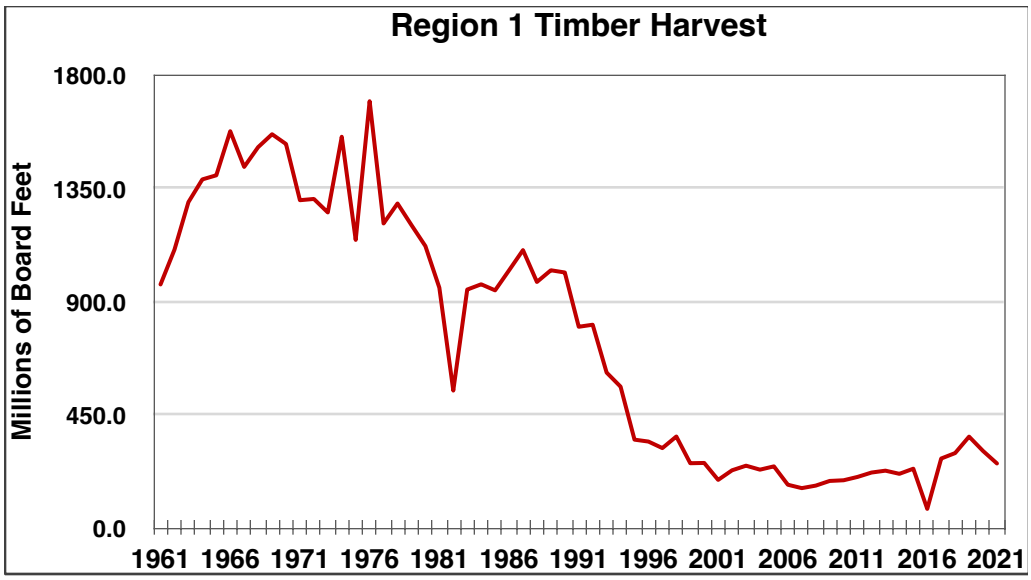
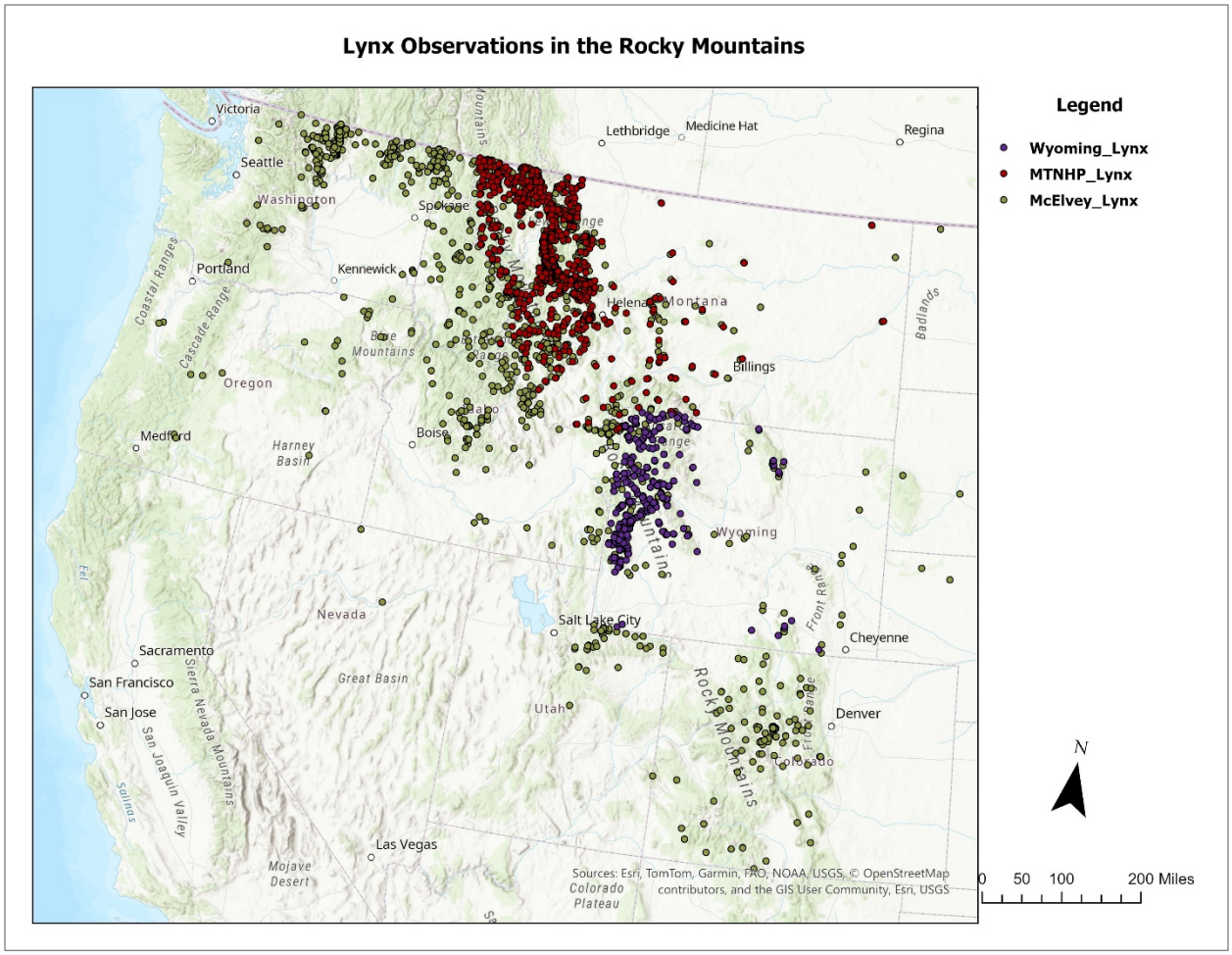
1993
1997
2001
2005
2009
2013
2017
2021
Sold
Harvest


Region 1 Timber Harvest
Millions of Board Feet
1800.0
1350.0
900.0
450.0
0.0
1961 1966 1971 1976 1981 1986 1991 1996 2001 2006 2011 2016 2021


Lynx Observations in the Rocky Mountains
Legend
Wyoming_Lynx
MTNHP_Lynx
McElvey_Lynx
Victoria
Seattle
Washington
Spokane
Lethbridge
Medicine Hat
Regina
Portland
Kennewick
Coastal Ranges
Cascade Range
Oregon
Medford
Harney Basin
Boise
Bare Mountains
Helena
Montana
Billings
Badlands
Wyoming
Nevada
Salt Lake City
Cheyenne
Sacramento
San Francisco
San Jose
Great Basin
Utah
Denver
Rocky Mountains
Front Range
Sierra Nevada Mountains
San Joaquin Valley
Las Vegas
Mojave Desert
Colorado Plateau
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, USGS
N
0 50 100 200 Miles

The Federal Register Notice to revise lynx critical habitat addressed the Colorado critical habitat being added, when in the 2014 critical habitat designation, that Federal Register Notice[7] did not designate critical habitat. The reasons for not designating included: "the last lynx verified record was from 1974 (no verified records from 1875 to 1999) despite large-scale snow tracking efforts… .". "We concluded at the time that there were 'few if any' native lynx in Colorado at the time of listing… .". The 2024 Federal Register Notice stated the rational for designating critical habitat as: "At the time of listing, this unit was occupied by lynx translocated from Canada and Alaska and it is currently occupied by the descendants of those released lynx. It is uncertain whether this unit historically supported a resident population or if lynx presence was naturally ephemeral and intermittent." But millions of acres of critical habitat were proposed for designation in Colorado.

Occupied habitat appears to be an arbitrary construct used as a matter of convenience to include or exclude areas with habitat that could support, or historically supported lynx, rather than addressing lynx habitat in a holistic manner across its historical range.

The BA:107 – 108 describes a very large effort in the BHDL that failed to detect lynx between 1999 and 2019. Passive, but "unverified" observations were made in 2016, 2018, and camera trap observations in 2017 and 2019 by MFWP were verified. "A single lynx was observed in the Thompson Park area in June of 2019 and a pair of lynx were observed in the same area again in August. The Thompson Park observations have not been verified but are considered to be reliable by Montana Fish, Wildlife, and Parks."

So, here "reliable" observations are okay while historical "reliable" observations are dismissed. Table 1 of the BA:110 summarizes these efforts, finding no verified observations between 1999 – 2017, with 5 verified observations between 2018 – 2020. The BA:11 Table 5 states there are 1,625,805 acres of lynx habitat on the BHDL. If this is the case, then why were lynx not detected during the nearly 20 years of intensive surveys from 1999 forward?

**The BHDL analysis must address why, with its claimed 1,625,805 acres of lynx habitat, there were no lynx found for nearly 20 years following its listing as threatened.**

## Comments Specific to the BA

**Connections.** We appreciate the effort of the BHDL and Gatlin to arrive at some approximation of lynx habitat. However, we find issues with the analysis and its seeming intent to eliminate potential or historical lynx habitat by setting a baseline of lynx habitat using forest structure modified by logging and other manipulations rather than the historical habitats where lynx were ob-

[7] Department of the Interior, Fish and Wildlife Service. 2014. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx and Revised Distinct Population Segment Boundary; Final Rule. Federal Register 79 No. 177 (pp 54782 - 54846) dated September 2, 2014.

served. It failed to include analysis of local and regional connectivity, or linkages. In our recent comments on the USFWS 2024 Proposed Critical Habitat, we mapped National Forests, Ranger Districts, Wilderness Areas, National Parks, and Inventoried Roadless Areas using the Olson et al (2021) model that the Fish and Wildlife Service uses.[8] These illustrate that management should be at the Forest and Ranger District level, not isolated modeled areas. They link together to provide a picture of connected habitat.

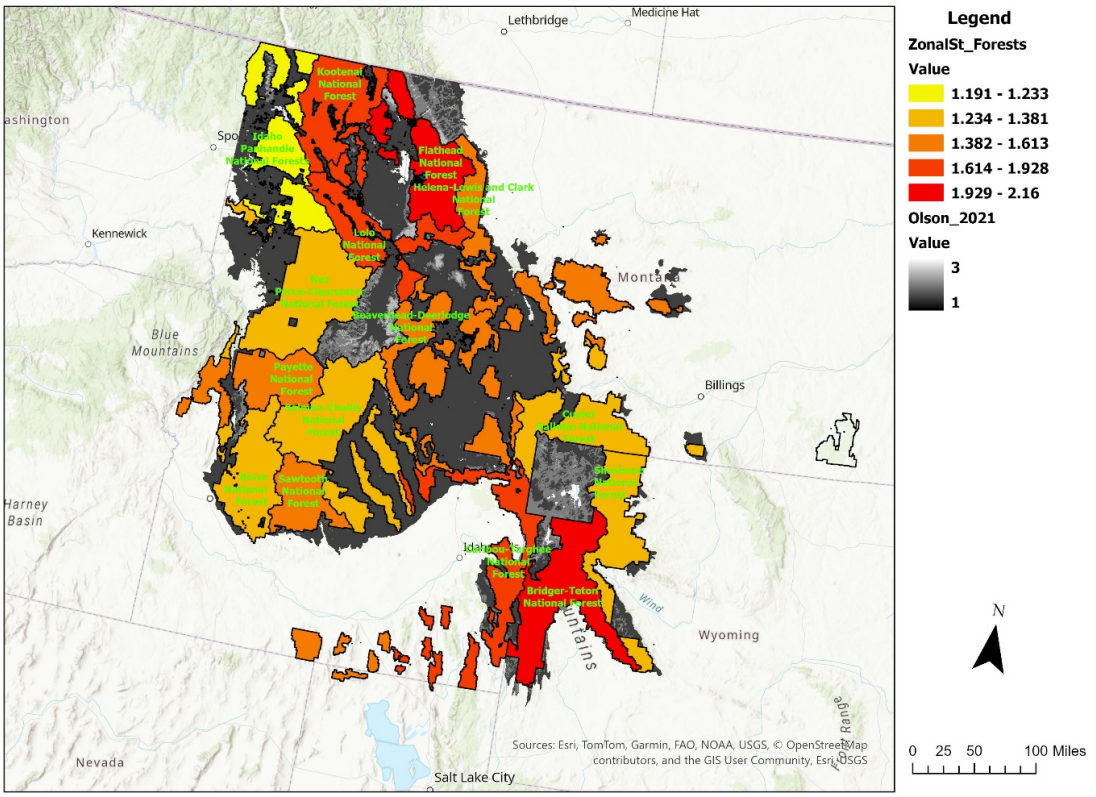
While we have issues with that model, it provides information we can use to relate or compare areas across the Rockies for lynx habitat and link those areas together to provide paths for connectivity. The color scheme goes from yellow (low probability habitat) to red (high probability habitat) (Figure 3). This shows the entire BHDL is in the middle range of habitat probability for these National Forests. It is accepted that lynx habitat becomes less suitable as you move south, but it still can support resident lynx, albeit at lower densities than more northern populations (overlooking human habitat alterations).

The analysis also shows the BHDL is extremely important to regional connectivity and emphasizes that the areas excluded as lynx habitat in the BA, such as the area in the Dillon Ranger District in (BA:30:Figure 2) are important for connectivity. This area is shown as linkage but eliminated as habitat south of Hwy 324 and Interstate 15 (BA:95). If linkages are not mapped with defined corridors as lynx habitat, and given standards, then they have no protection against fragmentation.

Connectivity and linkage must be identified locally within the BHDL and regionally in the Northern Rockies and Greater Yellowstone Area National Forests. Habitat, linkages and regional connections must be given strict Forest Plan standards to ensure lynx persistence and connectivity. In addition, highway crossings should be identified so that planning for crossing structures will be an element of the Plan Amendment.

[8] Olson, L.E., Squires, J.R., DeCesare, N.J., and Kolbe, J.A. 2011. Den Use and Activity Patterns in Female Canada Lynx (Lynx canadensis) in the Northern Rocky Mountains. Northwest Science, Vol. 85, No. 3, 2011. https://research.fs.usda.gov/treesearch/44989

**Figure 3.** National Forests Olson Probability Northern Rockies and Greater Yellowstone Area




**Snow Depth.** "In 2020, the BDNF updated the lynx habitat model and associated LAUs based on improved vegetation and snow-depth datasets (Appendix C)." (BA:11). "Denning habitat is generally abundant across the coniferous forest landscape of northwest Montana and is not likely to be limiting for lynx (Squires et al. 2008;2010)." (BA:10). "Preferred forests have a multistory structure with dense horizontal cover provided by the young trees in the understory and conifer boughs touching the snow surface, which could support snowshoe hare populations at varying snow depths throughout the winter." (BA:10).

A search of the BA did not turn up any definition of, or criteria for, denning habitat. Nor was it mapped to determine its extent or vulnerability. What does "generally abundant" mean? The logic of habitat with snow touching the lower boughs fails to recognize that hares are present before it snows, during snow cover, and after snowmelt. Other prey such as red squirrels, grouse, and small mammals are present. Squires et al (2010) also tracked habitat use by lynx in summer, noting they "broadened" their habitat use during summer.[9] So, if there is less snow as occurs in the transition to and from spring or summer, lynx are still using that habitat. It is not a black and white proposition of habitat vs no habitat, it's a gradation, like an ecotone. In fact, the paragraph

[9] Squires, John R.; DeCesare, Nicholas J.; Kolbe, Jay A.; Ruggiero, Leonard F. 2010. Seasonal resource selection of Canada lynx in managed forests of the northern Rocky Mountains. Journal of Wildlife Management. 74(8): 1648-1660. https://research.fs.usda.gov/treesearch/50160

above shows the BHDL knows that snow depth varies throughout the winter and snowshoe hares are supported.

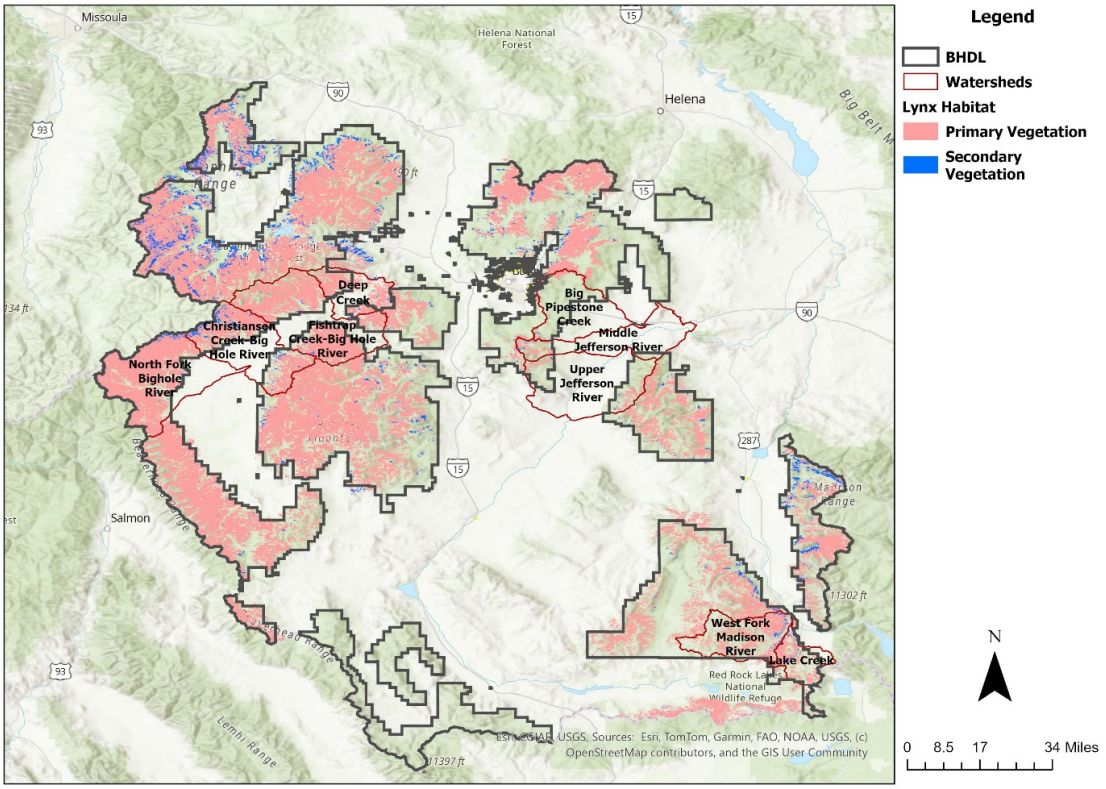
The BA:AppC:7 described the process for updating LAUs for the BHDL. Using Squires et al (2010) it was determined that lynx selected habitats with a minimum snow depth of 50 cm (20 inches) in winter. To determine the lower threshold elevation for habitat based on snow depth, the BA used model data from SNODAS to determine this threshold based on **average** snow depth greater than 50 cm for the December to May periods for the years 2009 – 2019. This reduced habitat in nine HUC10 watersheds. (Figure 4 ). SNODAS is a modeling and data assimilation system developed by NOHRSC to "provide the best possible estimates of snow cover and associated parameters to support hydrologic modeling and analysis." Note that the output data are estimates and the data is for hydrologic modeling, not defining lynx habitat. The selection of the December to May period of six months and average snow depth is arbitrary. The BA acknowledged above that snowshoe hares occupy their habitat as snow levels vary.

We analyzed actual, not estimated, snow depths at snow monitoring stations (SNOTEL) over a 21-year period ending in March 2024. (Table 1, Figure 5). There were 29 monitoring stations covering all elevations and areas within and adjacent to the BHDL. This analysis illustrates that in most years, at all elevations, sufficient snow depth is available to accommodate lynx if the Squires et al (2010) minimum snow depth is used. While the onset and end of the 20-inch depth varies, there are long time periods in nearly all cases where it is exceeded. Even at the lowest elevations, there is sufficient snow in nearly half to 100% of the years. Charts of these SNOTEL stations are provided in Appendix I. It must also be remembered that Squires et al (2010) tracked use during summer as well. What about snow depths then?

Olson et al (2011) identified three seasons of female reproduction.[10] Pre-denning occurred in February – April, denning occurs in May to July, and post-denning in August – October. The pre-denning period is the breeding period. Denning is during parturition/lactation period. Post-denning is when kittens can travel. We remain to be convinced that the December – May (6 months) period average snow depth is meaningful. How is this applicable when denning can last until July? These denning seasons or others don't line up with a static December - May period.

[10] Olson, L.E., Squires, J.R., DeCesare, N.J., and Kolbe, J.A. 2011. Den Use and Activity Patterns in Female Canada Lynx (Lynx canadensis) in the Northern Rocky Mountains. Northwest Science, Vol. 85, No. 3, 2011. https://research.fs.usda.gov/treesearch/44989

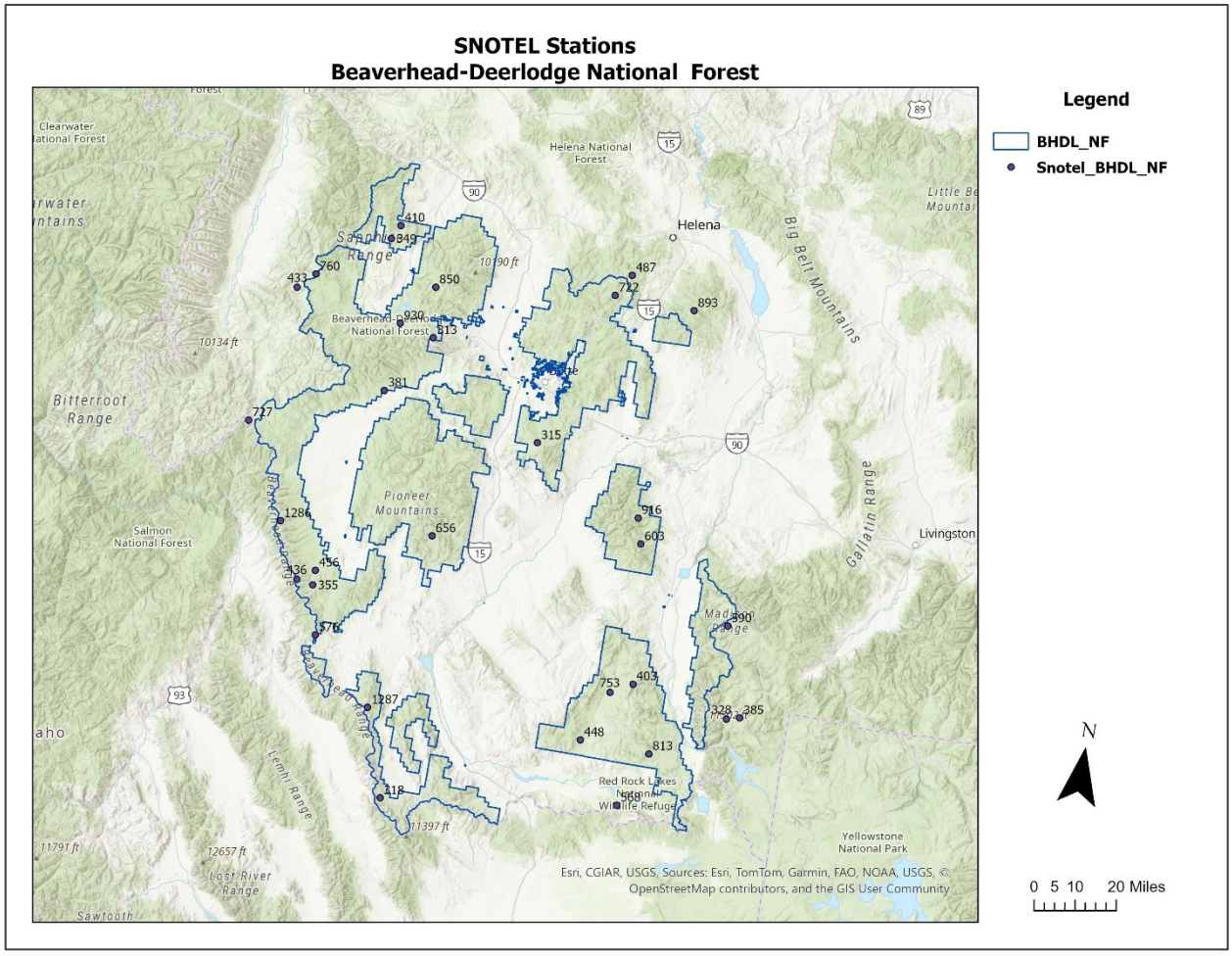
**Figure 4. Watersheds with Lower Elevations Omitted from Lynx Habitat**




Since hares and other prey are available year-round as snow levels rise, recede, and disappear at all elevations, the agencies are stuck on static habitat parameters, not dynamic conditions as experienced throughout the year. Snow levels should not be used to discount habitat in the BHDL.

**Table 1. Years at or Above Minimum Snow Depth of 20 Inches in or near the BHDL**

| Station | Elevation, ft | Count of Years/percent of 21-year record |
|---|---|---|
| Combination 410 | 5600 | 9/43% |
| Daly Creek 433 | 5780 | 21/100% |
| Calvert Creek 381 | 6430 | 18/85% |
| Frohner Meadow 487 | 6480 | 21/100% |
| Tizer Basin 893 | 6880 | 21/100% |
| 11 Stations | 7000 - 8000 | 21/100% |
| 13 Stations | 8000 – 9000 | 21/100% |




**Slope, Aspect, and Elevation:** The BA Appendix C: Updated Lynx Habitat Mapping Process Paper describes aspect being used for structural stage classification and the use of aspect and elevation being used in the "modeling process to classify lynx habitat". (AppC:5 – 6). The BA:8 describes lynx habitat elevations as, "In the northern Rockies, this habitat generally occurs between 3,500 and 8,000 feet in elevation (USDA 2007b)." "In winter, lynx forage primarily in mid- to high-elevation forests (4,134 – 7,726 feet)… and in summer they use slightly higher elevations composed of mature, large diameter (greater than 11 inches DBH) trees and select forests with relatively dense horizontal cover, more abundant hares, and deeper snow (Squires et al. 2010)." (BA:10). These elevation ranges argue against the snow depth limitations used for the BHDL. Note here the BA acknowledges use by lynx down to 4,134 feet.

The BA Appendix C (Table 3) describes model parameters for the disturbed and non-disturbed habitat stands for regeneration harvest. These were applied to the Early Stand Initiation and Stand Initiation stages and used more northerly aspects for the more recent time periods and more southerly aspects for the longer-term regeneration harvests. Appendix A:Table A -1 then

described the modified stand structure for Mature; Multi-Storied, and Other modified structures constrained by aspect. We are concerned that the BHDL is artificially reducing lynx habitat by placing these limiting criteria into an already uncertain modeling exercise. We will address the VMAP concerns in the following section.

We obtained McKelvey lynx observation data from the BHDL through FOIA (February 21, 2024). We also obtained historical lynx observation data from the Montana Natural Heritage Program in April 2024. There were 3,493 records of observations in the McKelvey database provided by the BHDL and 2,414 records of observations in the MNHP database. There were 158 occurrences of the McKelvey observations within the BHDL. There were 35 locations within the BHDL in the MNHP database. The MNHP data included 81 observations between 1977 and 2023. The MNHP data includes a location uncertainty value. The MNHP Predictable Suitable Habitat Modeling incorporated records with ≤1600 meters of locational uncertainty. [11]

We used the MNHP location uncertainty <100 meters and a digital elevation map to determine slope, aspect and elevation ranges and means for Montana and then for the BHDL. There were 1,817 records for Montana that met this criterion. (Table 2). The aspect included all directions with an average nearly at true South (192°). Elevations ranged from 1,876 to 7,716 feet with an average of 5,320 feet. Slopes averaged 19 degrees and ranged from flat to 74 degrees. The mean elevation value reflects numerous locations during tracking studies in and around the Seeley Lake area and may not represent the BHDL.

**Table 2 . MNHP Observation Locations (location uncertainty <100m)**

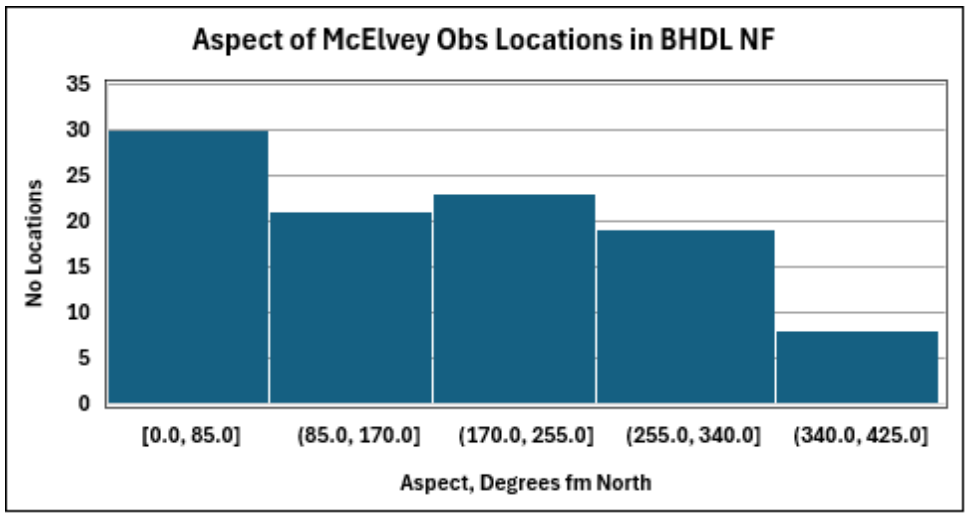
| | Mean | Minimum | Maximum |
|---|---|---|---|
| Elevation, ft. | 5,320 | 1,876 | 7,716 |
| Slope, % | 19.0 | 0 | 74 |
| Aspect, degrees | 192 | 0 | 360 |

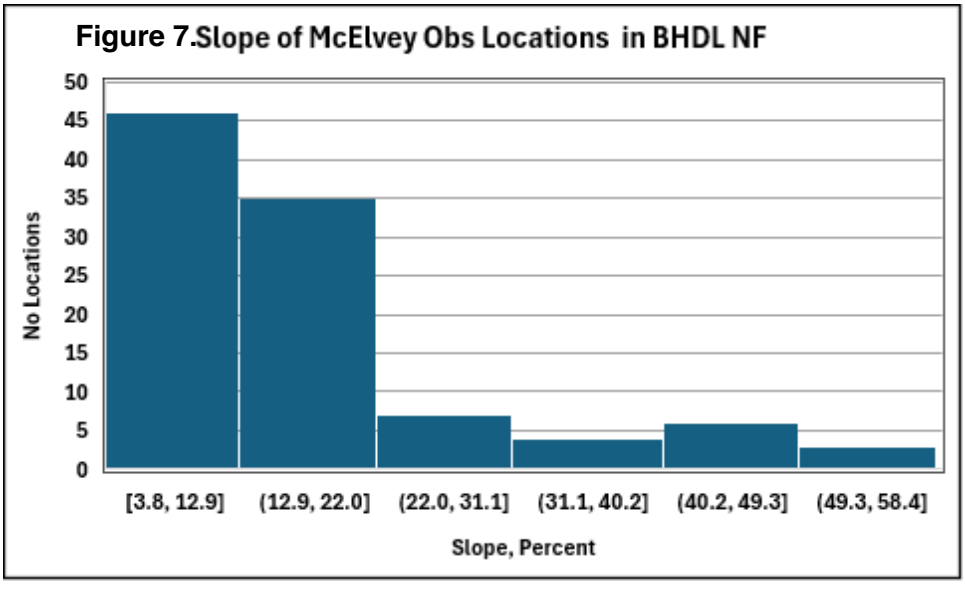
[11] Burkholder, B. 2022. Canada Lynx (Lynx Canadensis) Predicted Suitable Habitat Modeling. Montana Natural Heritage Program, Montana State Library. https://mtnhp.org/models/files/Canada_Lynx_AMAJH03010_20220519.pdf

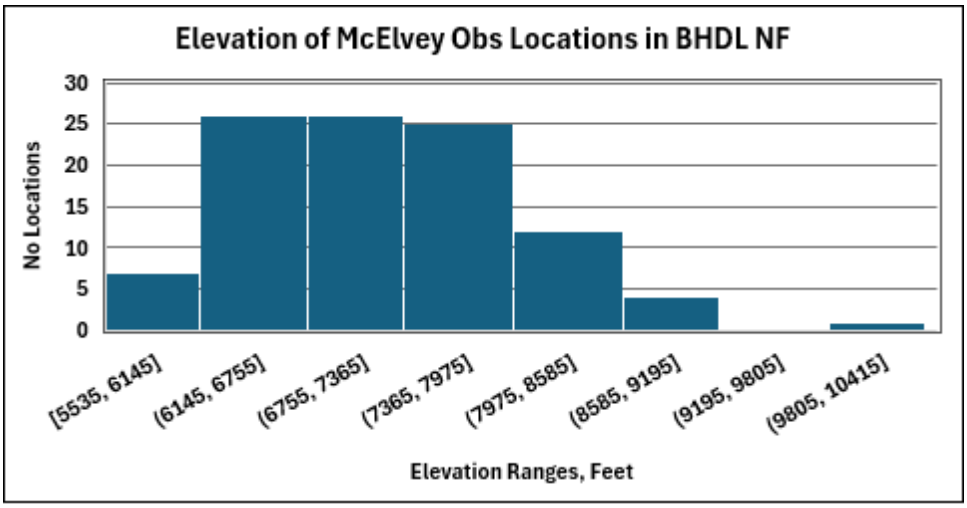
When we used the 35 MNHP locations within the BHDL we found a mean elevation of 7,304 feet, an aspect of 160 degrees, and a slope of 20 percent. (Table 3). Finally, we analyzed the McElvey observation locations within the BHDL. The distribution of aspect, slope and elevations are shown in Figures 6 – 8. Aspect is relatively evenly divided, slopes less than 22% are dominant, and elevations used are mostly in the 6,000 to 8,000 feet range.

**Table 3. MNHP Records for the Beaverhead Deerlodge NF**

| Records | Elevation, ft | Aspect, degrees | Slope, Percent |
|---|---|---|---|
| 35 | Mean 7304<br>Range 5672 – 10317 | Mean 160<br>Range 2 - 356 | Mean 20<br>Range 0 - 54 |
| 7 < 1000-meter uncertainty | Mean 7174<br>Range 6461 - | Mean 187<br>Range 54 - 323 | Mean 19<br>Range 9 - 47 |






What is being lost in the BHDL modeling process is any description of the habitats historically used by lynx. The BA analysis is divorced from historical observations. What is needed is to use locations where lynx have been observed and describe those vegetation or forest types. These should be used to map the habitat across the BHDL. Areas that have been logged or burned should not count in the mapping of habitat. Only potential or historical forest or vegetation types need to be included. Disturbance should only be included later when analyzing project proposals and compliance with the NRLMD and this Plan Amendment.

## The BHDL Mapping Process.

**Data Sources:** The BA summarizes the background of its mapping analysis:

> Although the LCAS recommended specific habitat types most preferred by lynx for mapping lynx habitat on National Forests in Montana, habitat type data sets where not available on the BDNF when the Forest initially mapped habitat in 2000; thus, biologists and silviculturists on the Forest utilized SILC-3 cover type and aspect combinations as a proxy for mapping lynx habitat, which resulted in a very conservative approach that included many acres of non-boreal forest habitat types that do not support lynx. The BDNF's 2020 mapping update utilized the same habitat mapping direction provided in the 2000 LCAS for mapping lynx habitat on the forest, but incorporated improved vegetation data sets and refined Geographic Information System (GIS) mapping tools to more accurately identify and spatially delineate the boreal forest habitat types (subalpine fir, Engelmann spruce, and other mesic habitat types) that are capable of supporting lynx on the BDNF. (BA:113).

> At that time, the BDNF did not have a consistent habitat mapping method but determined the best data source combined two existing geospatial products: remotely-sensed satellite imagery (SILC-3) and aspect from 30-meter digital elevation models (DEMs). Satellite imagery land classification, version 3 (SILC-3) delineates existing vegetation attributes (cover type) across the entire landscape, and, when combined with aspect from the DEMs, created a surrogate for habitat types that represented potentially suitable habitat for Canada lynx. Using this guidance, the Forest used attributes from existing vegetation datasets, namely subalpine fir, spruce, and cool-moist Douglas-fir habitat types, to identify lynx habitat. (Appendix C:1).

The assumption that lynx habitat is only boreal forest types continues a long-standing error that boreal forests like those occupied by lynx in Canada occur in the continental US. These should not be compared to our western forests. A recent paper has analyzed the extent of the North American boreal zone.[12] This is shown in Figure 9.[13] It occurs in Maine, Michigan, and Minnesota. It does not occur in the western US. There have been thousands of verified and reliable lynx observations in Colorado, Idaho, Montana, Utah, Washington, and Wyoming beginning in the mid-1800s. These did not occur in boreal forest, but in the Kuchler forest types that would include Douglas fir, Englemann spruce, lodgepole pine, mixed conifer, whitebark pine, limber pine, and other associated types that are intermixed therein. The characteristics of these forest types constitute what should be used for habitat evaluations for the BHDL.

The BA:95 (Attachment 2) limits primary habitat types to subalpine fir and spruce and excludes the broader suite of habitats described above that lynx historically used. Secondary habitat is considered Grand Fir types. This is a major flaw. We mapped the MNHP observations against the Landfire database (LANDFIRE 2022 Existing Vegetation Type (EVT) CONUS). (Table 4 and Figure 10).

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[12] Brandt, J.P. 2009. The extent of the North American boreal zone. Environ. Rev. 17: 101–161 (2009) doi:10.1139/A09-004 Published by Natural Resources Canada Research Press.

[13] Geography Realm. https://www.geographyrealm.com/boreal-forests-north-america-shrinking/ Accessed January 25, 2024.

**Table 4 . Landfire Cover Type for Montana Natural Heritage Program Lynx Locations**

| Cover Type | Locations | Percent |
|---|---|---|
| Lodgepole Pine Forest and Woodland | 712 | 29% |
| Douglas-fir-Ponderosa Pine-Lodgepole Pine Forest and Wood- | 499 | 21% |
| Spruce-Fir Forest and Woodland | 320 | 13% |
| Douglas-fir Forest and Woodland | 186 | 8% |
| Transitional Forest Vegetation - Conifer | 174 | 7% |
| Western Riparian Woodland and Shrubland | 133 | 6% |
| Deciduous Shrubland | 104 | 4% |
| Douglas-fir-Grand Fir-White Fir Forest and Woodland | 75 | 3% |
| Big Sagebrush Shrubland and Steppe | 31 | 1% |
| Other | 180 | 7% |
| Total | 2414 | |

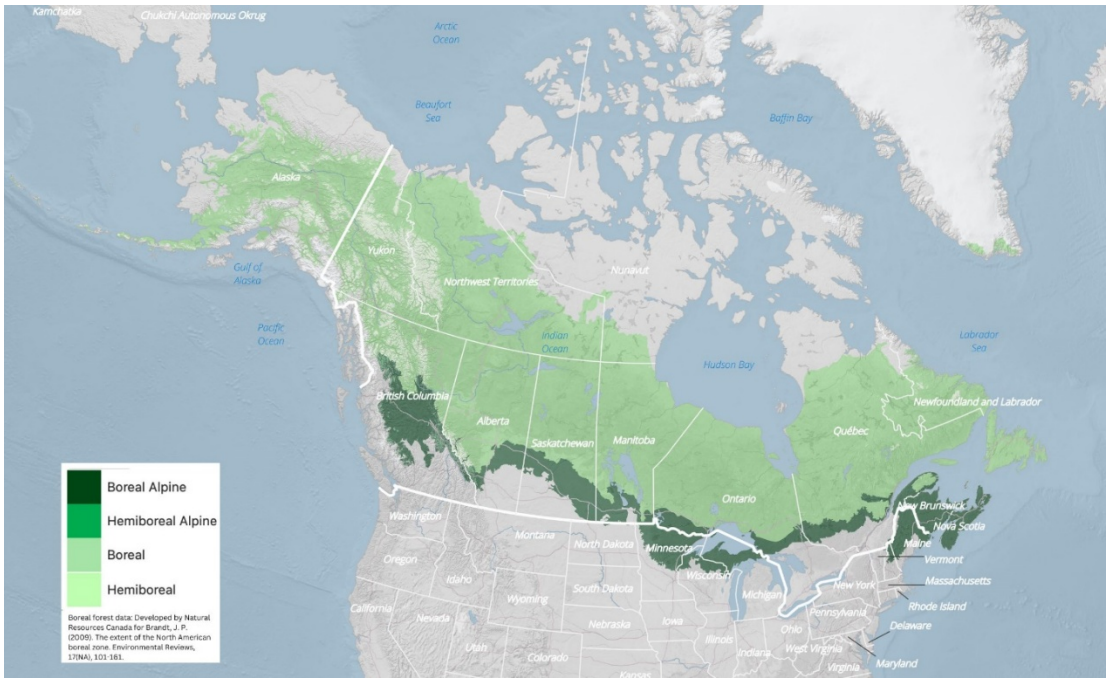



**Figure 9. Map of the North American boreal zone**

Figure 10.

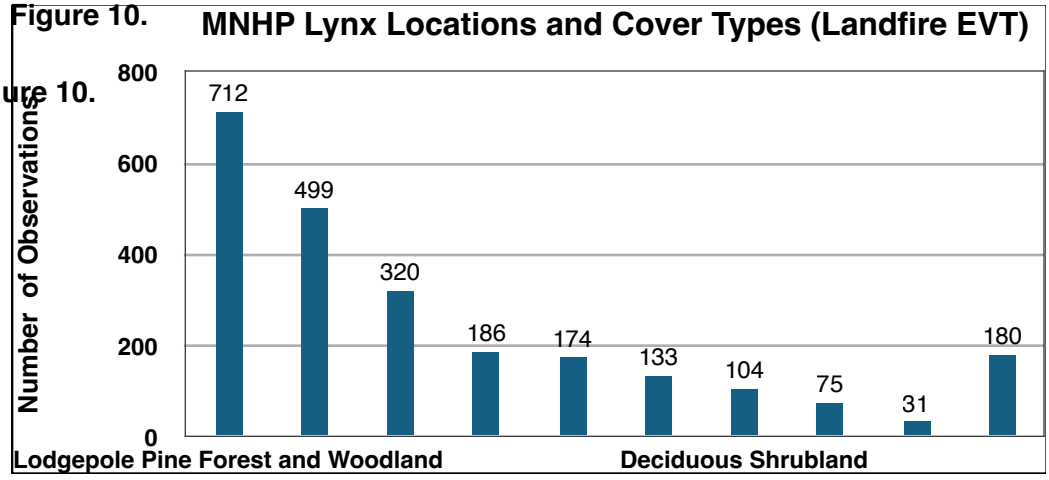



Figure 10.

This Landfire comparison reveals a much broader habitat use by lynx dominated by lodgepole pine and Douglas fir with less use in spruce-fir and grand fir. We looked at the publication Ecology and Conservation of Lynx in the United States for more description of lynx habitat. Ruediger et al (2000).[14]

The BA:91, also relying on the Ruediger et al (2000), provided this narrative. "Mapped lynx habitat consists primarily of mesic coniferous forests that have cold, snowy winters and provide a prey base of snowshoe hare. The vegetation types and elevations that provide lynx habitat vary somewhat across the U.S. The specific descriptions are listed on pages 4 and 5 of the Glossary in the LCAS, by geographic area (i.e. Northeastern U.S., Great Lakes states and Western U.S.)." In

[14] Ruggiero, Leonard F.; Aubry, Keith B.; Buskirk, Steven W.; Koehler, Gary M.; Krebs, Charles J.;McKelvey, Kevin S.; Squires, John R. 2000.. Ecology and conservation of lynx in the United States. General Technical Report RMRS-GTR-30WWW. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. https://www.fs.usda.gov/research/treesearch/50623 Accessed on January 21, 2023.

the Ecology and Conservation of Lynx in the United States (p380), lynx habitat associations in Montana were described.

> In Montana, Koehler et al. (1979) reported that 26 of 29 lynx locations for two radio-marked lynx were in densely stocked lodgepole pine stands where hares were abundant; the remainder were in Douglas-fir and western larch stands. Selection by lynx of dense lodgepole pine stands containing high numbers of snowshoe hares has also been demonstrated in north-central Washington (Koehler 1990). Lodgepole pine is a seral, fire-dependent species in boreal forests of the western mountains (Chapter 3) and appears to be preferred by lynx in northern portions of the Cascade Range and Rocky Mountains (Koehler et al. 1979; Koehler 1990; Chapter 10).

The LCAS describes lynx habitat for western forests.

> LCAS[15] Glossary pp4-5, "Western US: Most lynx occurrences (83%) were associated with Rocky Mountain Conifer Forest, and most (77%) were within the 1500 – 2000 m (4920 – 6,560 ft) elevation zone (McKelvey et al 2000b). There is a gradient in the elevational distribution of lynx habitat from the northern to the southern Rocky Mountains, with lynx habitat occurring at 2,330 – 3,500 m (8,000 – 11,500ft) in the southern Rockies. Primary vegetation that contributes to lynx habitat is lodgepole pine, subalpine fir, and Englemann spruce (Aubry et al. 2000).
>
> Primary vegetation is considered necessary to support lynx reproduction and survival. Secondary vegetation includes other vegetation types that, when intermingled with or immediately adjacent to primary habitat, may also contribute to lynx habitat. Mapping of lynx habitat and delineation of LAUs involves consideration of the amount and arrangement of primary vegetation and secondary vegetation, land ownership pattern, lynx occurrence records and snow depth information. After lynx habitat is mapped, there is no distinction between primary and secondary vegetation. Conservation measures generally apply only to lynx habitat on federal lands within LAUs.

Note that BA:95 provides a map showing the primary and secondary habitat derived from their modeling process. It does not include the historical vegetation types used. In addition, the BA fails by distinguishing primary and secondary vegetation. It should be designated lynx habitat and include the historically used types described above.

---

[15] Ruediger, Bill, Jim Claar, Steve Gniadek, Bryon Holt, Lyle Lewis, Steve Mighton, Bob Naney, Gary-Patton, Tony Rinaldi, Joel Trick, Anne Vandehey, Fred Wahl, Nancy Waren, Dick Wenger, and Al Williamson. 2000. Canada Lynx Conservation Assessment and Strategy. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Forest Service Publication #R1-00-53, Missoula, Mt. 142 pp.

The LCAS also states that "dry forest types (e.g., ponderosa pine, climax lodgepole pine) do not provide lynx habitat. We have no definition of these "dry forest types" nor any mapping information that delineates them. If the BHDL is eliminating climax lodgepole pine under this umbrella, it must show lynx observations never occurred in them.

The BHDL must analyze these forest types for all historic observations, how they have been altered by fire and management, rather than total reliance on modeling. While modeling can supplement these observations, it is not acceptable to avoid describing and using the actual forest or vegetation types where the observations were made.

**VMAP Crosswalk**: Gatlin et al (2020) provide a summary of the modeling process in the BA.[16] VMAP was used to derive the characterizations for lynx habitat as seen in Appendix A Table A-1 as BDNF modified structure. These categories include Stand Initiation, Early Stand Initiation, Other, Mature; Multi-storied, and Stem Exclusion. For the 2020 LAU modeling, these are shown in BA Figure B-4. This is flawed in that it includes disturbance in a baseline for mapping habitat. Disturbance should only be used to characterize impacts, whether historical, or later in the project evaluation stage. This is a planning effort. Perhaps this scheme could be used to explain the absence of lynx in the BHDL.

VMAP Region 1 Metadata describes the process of generating the map using satellite imagery to capture vegetation patterns and stand boundaries. "In 2018, an updated VMap database was produced for the Beaverhead-Deerlodge National Forest (B-D). The VMap database consists of four primary spatially explicit attributes that include descriptions of 1) lifeform, 2) tree canopy cover class, 3) tree size class, and 4) tree dominance type. These attributes can be mapped and used to support mid and base-level analysis and planning."

VMAP Accuracy was described in the metadata as, "After draft products were inspected and adjusted, an accuracy assessment was conducted to provide a quantitative validation of the database. Estimates of overall map accuracy and confidence measures of individual map classes can be inferred from the error matrix derived from the comparison of known reference sites to mapped data, for each attribute. The stated accuracy assessment results are applicable to the entire B-D, and ranged from 63-93%, depending on the attribute in question."

VMAP Use Limitations are described in the metadata as, "The USDA Forest Service manages resource information and derived data as a service to USDA Forest Service users of digital geographic data. The USDA Forest Service is in no way condoning or endorsing the application of these data for any given purpose. It is the sole responsibility of the user to determine whether or not the data are suitable for the intended purpose. It is also the obligation of the user to apply those data in an appropriate and conscientious manner. The USDA Forest Service provides no warranty, nor accepts any liability occurring from any incorrect, incomplete, or misleading data, or from any incorrect, incomplete, or misleading use of these data."

---

[16] Gatlin et al. 2020. Habitat Mapping Documentation for Canada Lynx (Lynx canadensis) on the Beaverhead-Deerlodge National Forest – 2020 Update.

From the BA Habitat Modeling Documentation section of the metadata as, "Habitat or Structural Stage Errors": "In some cases, ground-verification reveals inaccurate habitat mapping or structural stage determinations. This generally occurs when field specialists verify the existing conditions within a project area prior to analysis. If mapped habitat or structural stage in the updated geospatial layer differs from existing on-the-ground conditions, updates will be made to the lynx habitat polygon or structural stage attributes to reflect the current conditions. Per guidance in the NRLMD, maps of lynx habitat would be reviewed and updated based on local information during site-specific project analysis (USDA Forest Service 2007)."

We obtained the model output from the BHDL and did an analysis of the occurrence of lynx observations in the BHDL to these VMAP-derived modified stand structures. (Table 5). Only 17 of 35 past observations in the MNHP database for the BHDL fell within the BHDL 2020 model. There were observations within every category which compels reconsideration of eliminating habitat based on the stem exclusion or other stand structure category and instead, focusing on the vegetation type in its unmodified state. Figure 10 is an example showing the VMAP stem exclusion category superimposed on the Montana 2017 NAIP image. It shows areas of sparse canopy throughout and a few areas of closed canopy. The closed canopy areas are a small portion of the whole. There is apparent solar exposure and openings between the trees over most of the image that should allow an understory of tree seedlings, shrubs, and herbaceous vegetation to develop. This should support snowshoe hares and lynx.

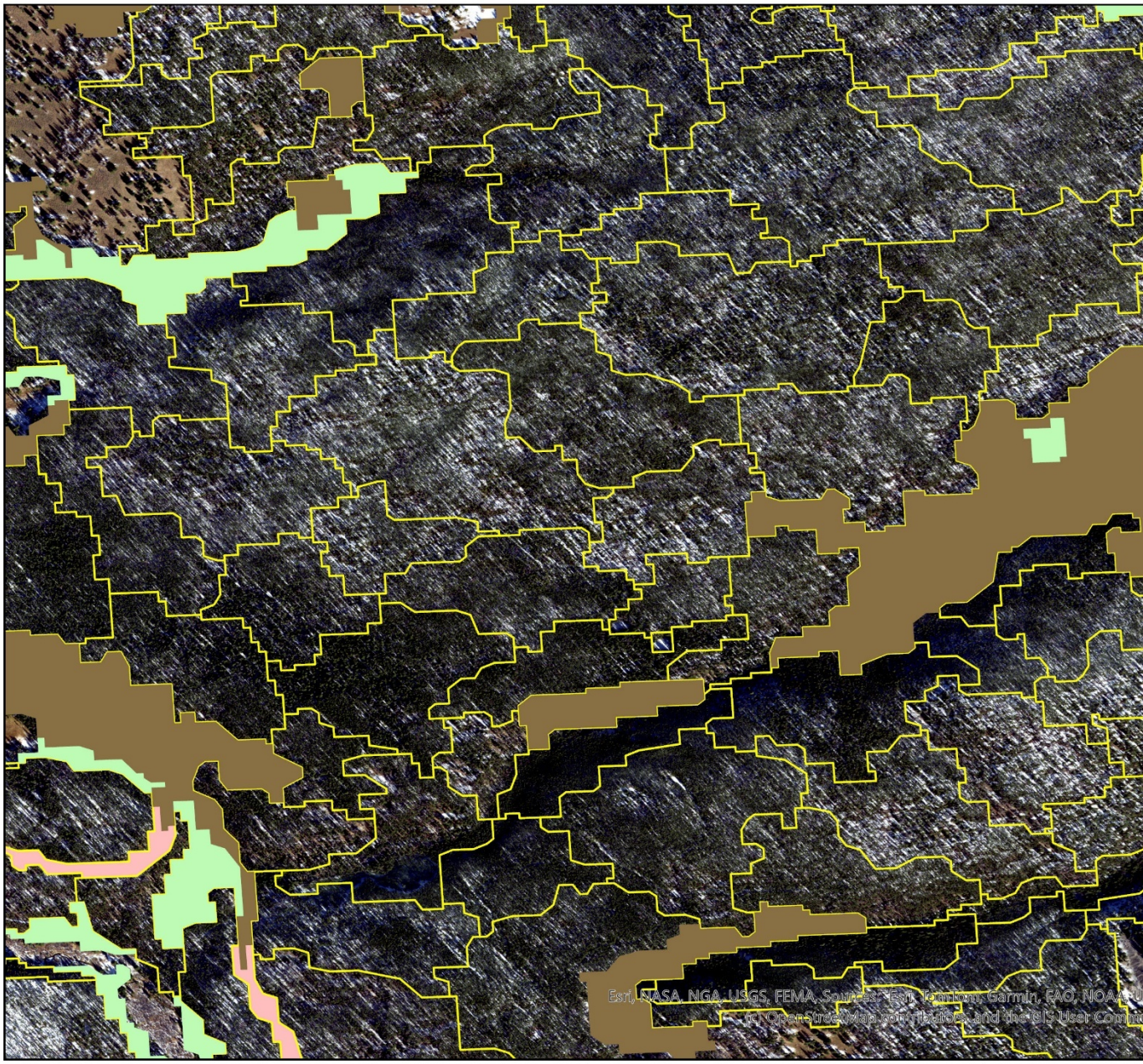
**Table 5. MNHP Observations within BHDL 2020 Model**

| Habitats | Observations |
|---|---|
| Primary Habitat | 17 |
| Secondary Habitat | 0 |
| Early Stand Initiation | 1 |
| Mature, multi-storied | 4 |
| Other | 9 |
| Stand Initiation | 1 |
| Stem Exclusion | 2 |

These qualifications to use of VMAP point out the risk of this modeling-only approach. The risk is of underestimating habitat by the cascading limitations included in the analysis. An overestimate of habitat would be protective, whereas an underestimate could lead to exclusion and loss of habitat that is critical to lynx. This is why reliance should be placed on the actual vegetation types historically used by lynx, not modified to different stand structures by logging, thinning, burning and so forth. Later field verification can take place at the project stage. It also precludes

omitting areas that should be habitat but would then not be required to meet standards under the NRLMD.

## Beaverhead Deerlodge NF with SNOTEL Sites



**Wildland Urban Interface Exemptions**. The BA:39 described NRLMD fuels treatment project exemptions. The NRLMD exempts fuels treatment projects from VEG S1, S2, S5,and S6 to no more than 6% of lynx habitat on a forest. There are 155,433 acres of foraging habitat and 417,638 acres of non-foraging habitat. "If all exemptions are used, 57% of foraging habitat within WUI in stand initiation and mature could be removed from the WUI area." Table 9 (BA:18) shows the area and percentage of modeled lynx habitat in WUI. Of 1,481,830 acres of modeled lynx habitat 573,071 acres (39%) are in the WUI. Table D-1 shows there are 154,400 identified exemption acres and the requested exemption is 88,910 acres. With this in mind, we used the BHDL WUI GIS data we received under our FOIA request to get a handle on the extent of WUI in the BHDL based on the actual criteria defining WUI.

Using ArcGIS Pro 3.4, we clipped the BHDL's WUI layer to the boundary of the BHDL and calculated the area, which was 1,644,663 acres of WUI in the 3,613,855 acres within the BHDL. This means that WUI designations cover 45.5% of the Forest. This is a striking amount, like this is an urban park, rather than a forest ecosystem with a full complement of fish, wildlife, and native vegetation attributes. A cynical person would interpret this as manipulating the meaning of WUI to ease restrictions on timber harvest and related forest manipulations. However, we have chosen to analyze the situation.

The Federal Register defines WUI thus[17]:

> Wildland Urban Interface, Intermix and Interface Communities as:
>
> The urban wildland interface community exists where humans and their development meet or intermix with wildland fuel.
>
> The **Intermix Community** exists where structures are scattered throughout a wildland area. There is no clear line of demarcation; wildland fuels are continuous outside of and within the developed area The development density in the intermix ranges from structures very close together to one structure per 40 acres. Fire protection districts funded by various taxing authorities normally provide life and property fire protection and may also have wildland fire protection responsibilities. An alternate definition of an intermix community emphasizes a population density of 28 - 250 people per square mile.
>
> The **Interface Community** exists where structures directly abut wildland fuels. There is a clear line of demarcation between residential, business, and public structures and wildland fuels. Wildland fuels do not general-

[17] Federal Register. 2001. Urban Wildland Interface Communities Within the Vicinity of Federal Lands That Are at High Risk from Wildfire. Fed. Register Vol 66(3):751-777.

> ly continue into the developed area. The development density for an interface community is usually 3 or more structures per acre, with shared municipal services. Fire protection is generally provided by a local government fire department with the responsibility to protect the structure from both an interior fire and an advancing wildland fire An alternative definition of the interface community emphasizes a population density of 250 or more people per square mile.

The Healthy Forest Restoration Act elucidates further in Section 101 by defining (1) At Risk Community as an area:

> (A) that is comprised of—
>
> (i) an interface community as defined in the notice entitled "Wildland Urban Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire" issued by the Secretary of Agriculture and the Secretary of the Interior in accordance with title IV of the Department of the Interior and Related Agencies Appropriations Act, 2001 (114 Stat.1009) (66 Fed. Reg. 753, January 4, 2001); or
>
> (ii) a group of homes and other structures with basic infrastructure and services (such as utilities and collectively maintained transportation routes) within or adjacent to Federal land;
>
> (B) in which conditions are conducive to a large-scale wildland fire disturbance event; and
>
> (C) for which a significant threat to human life or property exists as a result of a wildland fire disturbance event.

The key in the HFRA definition above is that the focus is on Interface Communities. It does not address Intermix Communities. Carlson et al (2022) translates this for modeling the WUI. [18]

> WUI is where building density exceeds 6.17 units/km$^2$ and where land cover is either (1) at least 50% wildland vegetation (intermix) or (2) under 50% wildland vegetation but within 2.4 km (1.5 miles) of a patch of wildland vegetation at least 5 km$^2$ in area that contains at least 75% vegetation (interface).

The Carlson et al (2022) source for building density was The Microsoft data set (available at https://github.com/microsoft/USBuildingFootprints. The vegetation information was the 2016 National Land Cover Dataset (NLCD), a 30-m resolution satellite image

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[18] Carlson, Amanda R., David P. Helmers, Todd J. Hawbaker, Miranda H. Mockrin, and Volker C. Radeloff. 2022. "The Wildland–Urban Interface in the United States Based on 125 Million Building Locations." Ecological Applications e2597. https://esajournals.onlinelibrary.wiley.com/doi/10.1002/eap.2597

classification (Yang, Jin, et al., 2018). [19] We took a closer look at building density relative to the WUI definition to analyze this on a site-specific basis for the BHDL.

We applied the Carlson et al (2022) model output to arrive at the WUI for these communities. (Figure 11). Carlson et al (2022) recommends using the 500-meter WUI output "because changes in WUI area and number of WUI buildings were minimal, and because smaller neighborhoods offer greater precision around building locations. The maps based on

the 500-m neighborhood therefore are most ideal for general purposes." The Value = 1 (green) areas are Intermix areas where structures are intermixed with forested areas. Figure 11 also shows these are not Interface communities.

We also mapped the USGS 500-meter building density. (Figure 12). This shows that the building density is concentrated outside the BHDL and that is where home hardening and defensible space should be the focus, not log and burn the forest. When we calculated the area of the Intermix and Interface communities, we found that there are 34,663 acres of intermix and 149 acres of interface within the BHDL. This exposes the WUI as a false proposition when the BHDL has imposed HFRA on 1,644,663 acres with no apparent justification based on actual building densities.

The Forest Plan amendment must correct this huge disparity in WUI acres with an analysis that accounts for these facts of building density.

---

[19] Yang, L., S. Jin, P. Danielson, C. Homer, L. Gass, S. M. Bender, A. Case, et al. 2018. "A New Generation of the United States National Land Cover Database: Requirements, Research Priorities, Design, and Implementation Strategies." ISPRS Journal of Photogrammetry and Remote Sensing 146: 108–23. https://pubs.usgs.gov/publication/70227947

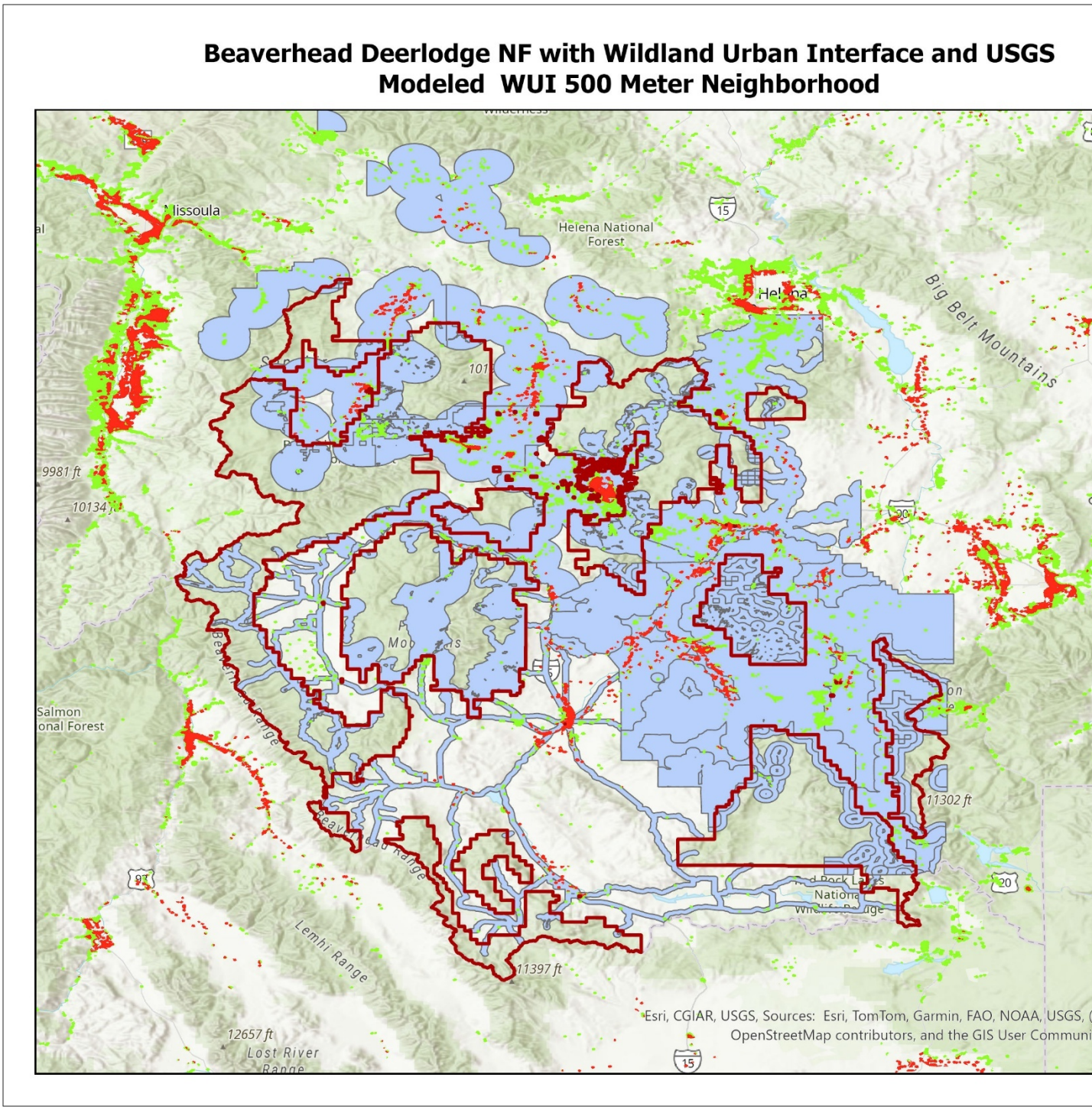
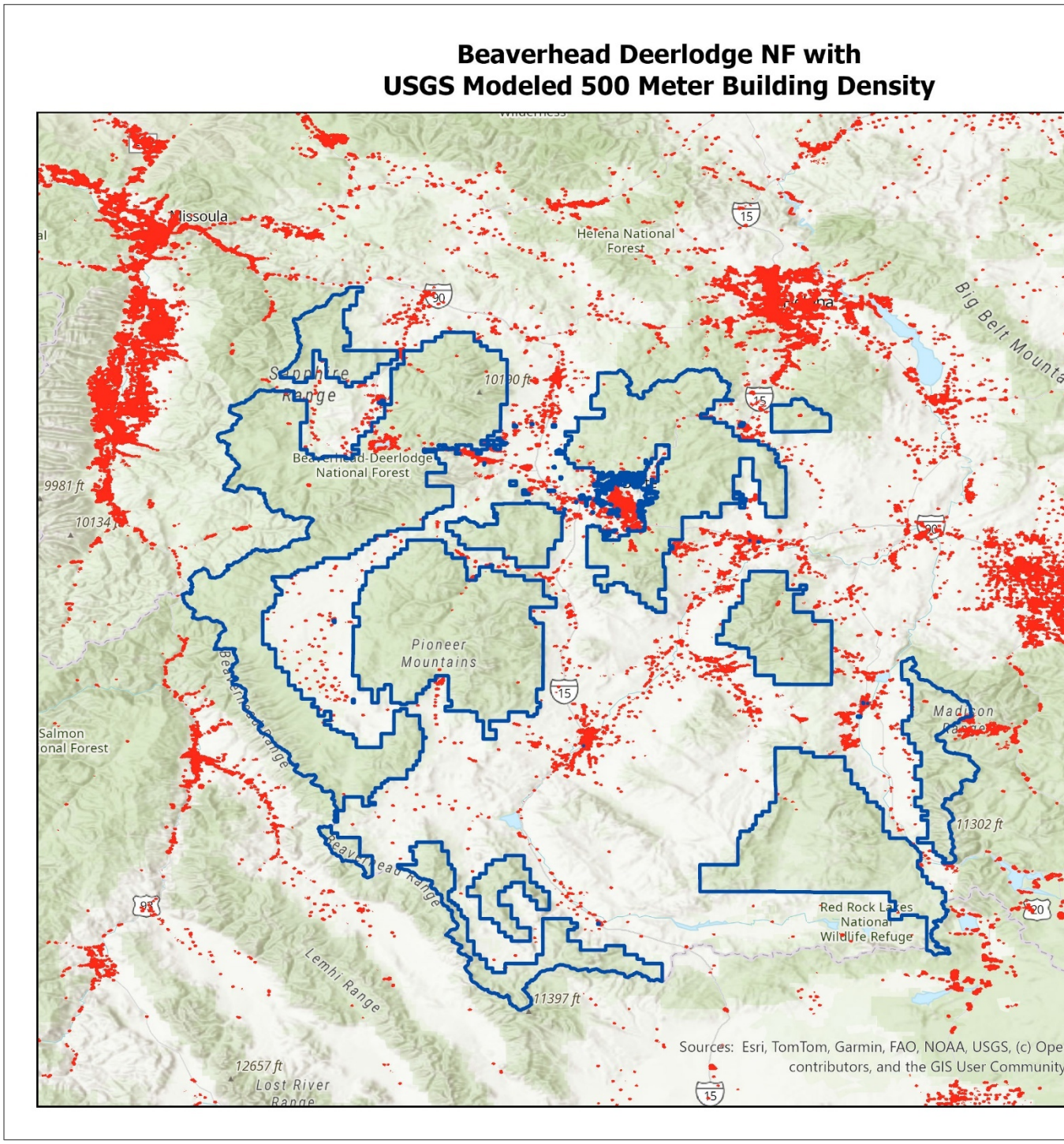

Beaverhead Deerlodge NF with Wildland Urban Interface and USGS
Modeled WUI 500 Meter Neighborhood
Missoula
Helena National
Forest
Big Belt Mountains
9981 ft
10134 ft
Salmon
onal Forest
11302 ft
Lemhi Range
11397 ft
12657 ft
Lost River
Range
Esri, CGIAR, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS,
OpenStreetMap contributors, and the GIS User Communi

**Figure 12.**




**Comparing Lynx Habitat Models for the BHDL**

**Montana Natural Heritage Program Models.** The Montana Natural Heritage Program provided both Inductive and Deductive models. The Inductive Model used a combination of lynx observations in Montana with a suite of 44 environmental factors with a goal "To predict the current distribution and relative suitability of general year-round habitat for Canada Lynx at large spatial scales across its presumed current range in Montana."[20] (Figure 13 ). Their report is provided as Attachment 1. When we clipped this model to the BHDL we found a total lynx habitat of 2,326,515 acres consisting of the Low and Moderate suitability categories.

We also looked at their Deductive Model which used statewide land cover classifications and Level 3 Ecological Systems and determined the number of lynx observations associated with each ecological system. Their table is copied below. Interestingly, this data shows categories of forest that are downplayed or completely omitted in the BHDL model analysis in the BA but are aligned with what we found when comparing lynx observations to Landfire data.

## Deductive Model Results

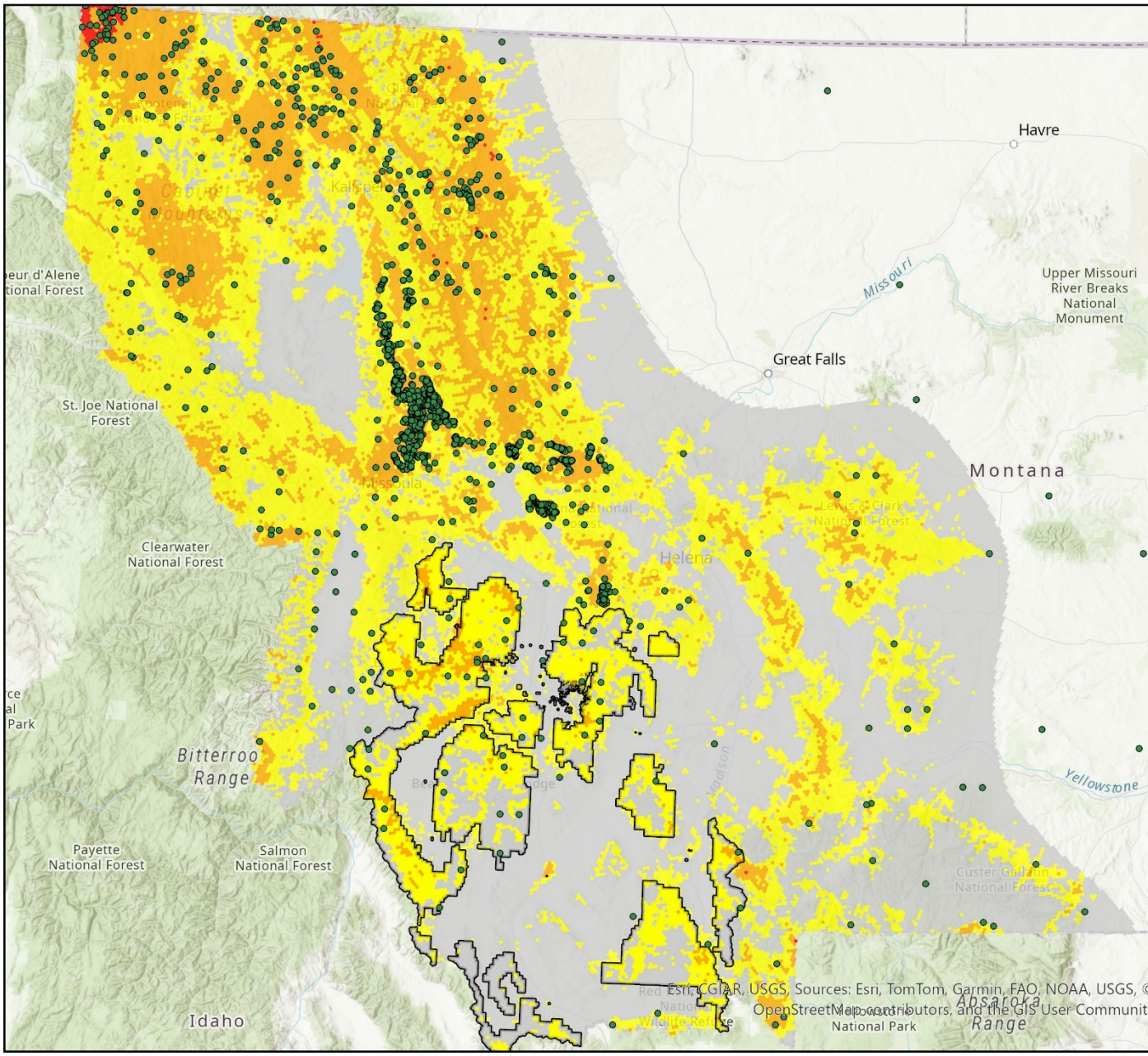
Table 6: Ecological Systems Associated with Canada Lynx

| Ecological System | Code | Association | Count[a] |
|---|---|---|---|
| Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest | 4232 | Common | 28 |
| Rocky Mountain Lodgepole Pine Forest | 4237 | Common | 28 |
| Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland | 4242 | Common | 24 |
| Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland | 4243 | Common | 21 |
| Rocky Mountain Mesic Montane Mixed Conifer Forest | 4234 | Common | 18 |
| Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland | 9155 | Common | 18 |
| Rocky Mountain Montane Douglas-fir Forest and Woodland | 4266 | Common | 9 |
| Rocky Mountain Subalpine Deciduous Shrubland | 5326 | Common | 7 |
| Insect-Killed Forest | 8700 | Common | 4 |
| Harvested forest-tree regeneration | 8601 | Common | 3 |
| Harvested forest-shrub regeneration | 8602 | Common | 3 |
| Rocky Mountain Poor Site Lodgepole Pine Forest | 4267 | Common | 0 |
| Rocky Mountain Subalpine-Montane Riparian Woodland | 9171 | Common | 0 |
| Rocky Mountain Subalpine-Montane Riparian Shrubland | 9187 | Common | 0 |
| Recently burned forest | 8501 | Occasional | 15 |
| Rocky Mountain Ponderosa Pine Woodland and Savanna | 4240 | Occasional | 5 |
| Post-Fire Recovery | 8505 | Occasional | 5 |
| Aspen Forest and Woodland | 4104 | Occasional | 3 |
| Rocky Mountain Montane-Foothill Deciduous Shrubland | 5312 | Occasional | 2 |
| Rocky Mountain Subalpine-Montane Mesic Meadow | 7118 | Occasional | 2 |
| Aspen and Mixed Conifer Forest | 4302 | Occasional | 1 |
| Rocky Mountain Subalpine Woodland and Parkland | 4233 | Occasional | 0 |
| Rocky Mountain Conifer Swamp | 9111 | Occasional | 0 |
| Rocky Mountain Wooded Vernal Pool | 9162 | Occasional | 0 |

[a] A count of the observation records intersecting each ecological system, based on the 272 observation records used in the inductive model (see Table 1). This may be zero if the number of observations is low or if the ecological system is patchily distributed.

[20] Montana Natural Heritage Program. 2022. Canada Lynx (Lynx canadensis) predicted suitable habitat models created on May 19, 2022. Montana Natural Heritage Program, Helena, MT. 20 pp.

# Montana Natural Heritage Program Canada Lynx Inductive Model Output



**The Olson et al (2021) Model**. We received this model output from the USDA Forest Service Rocky Mountain Research Station.[21] It is mapped for the Northern Rockies and GYA in Figure 14. Lighter colors are higher habitat probability. The paper is included here in Attachment 2.

The Olson paper described some of the limitations of species distribution modeling in terms of uncertainty, variations in geographically distinct populations in their responses to local conditions, complex models with "excessive environmental covariates" may be less generalized to novel areas and landscapes. The Olson model used 16 covariates, including climate, topographic, anthropogenic (road density), and vegetative covariates along with GPS collared lynx locations to define habitat suitability. The vegetative component used NDVI during the growing season to characterize vegetation presence. Thresholds applied to the Olson Model included 90% of GPS locations as high probability and 85% as medium probability lynx habitat. These are extremely restrictive criteria, eliminating consideration of anything but the most perfect habitat, at least by their model's apparent philosophy.

We clipped the Olson raster to the BHDL and determined the area of low, moderate, and high habitat probability. (Table 6) The area of moderate and high probability combined were 1,751,789 acres. Table 6 compares the three models and their total habitat acres. BA:Figure B-3 shows 1,509,146 acres of primary vegetation and 116,806 acres secondary vegetation for the 2020 BHDL model. This is a total of 1,625,952 acres of lynx habitat. Figure B-1 shows a total of 2,711,422 acres of lynx habitat for the 2001 BHDL model, however, some of that habitat is outside the BHDL. We clipped the modeled lynx habitat to the BHDL and found 2,134,741 acres within the BHDL.

**Table 6. Area (acres) of Modeled Lynx Habitat on the Beaverhead-Deerlodge NF**

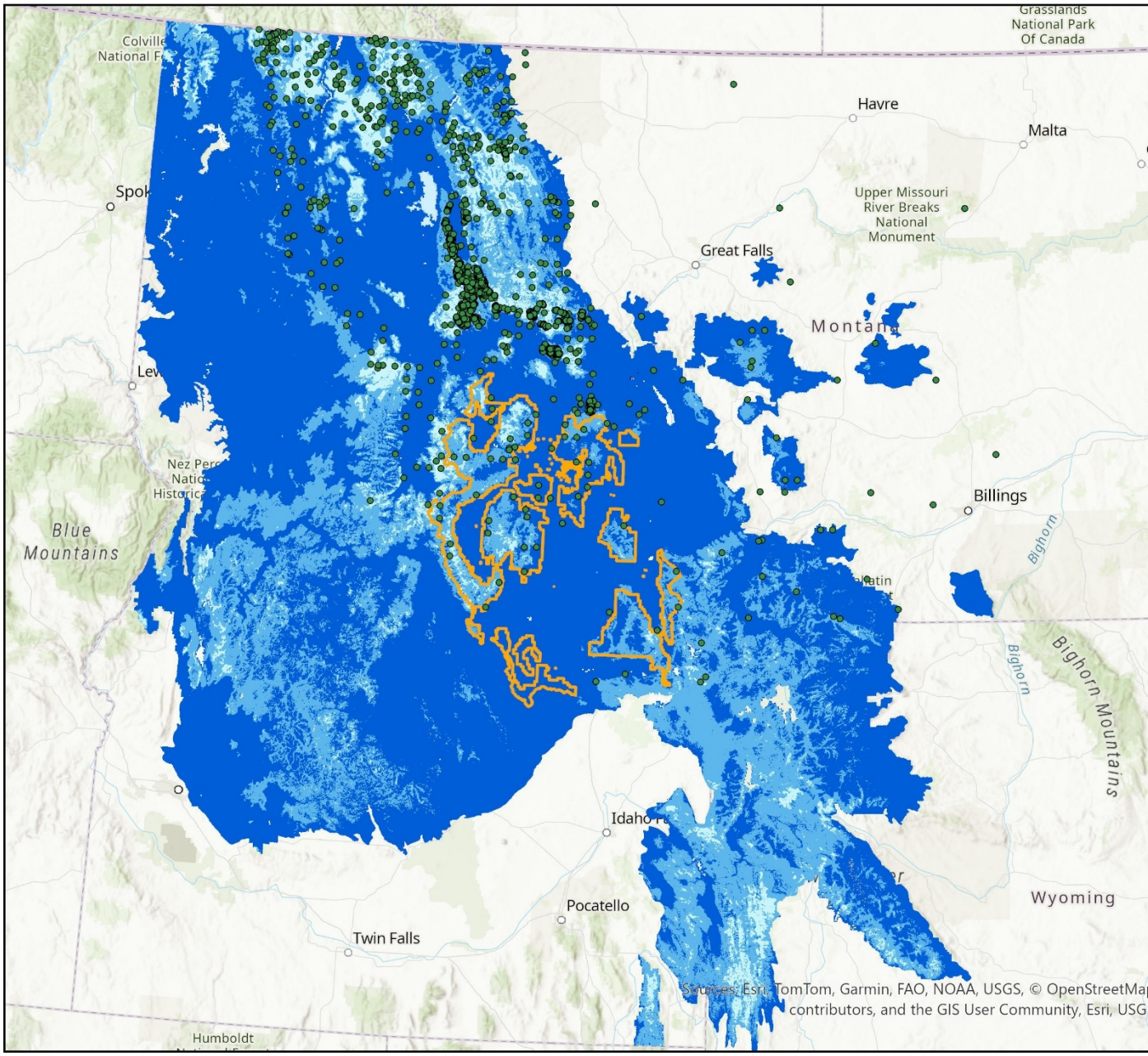
| | | | |
|---|---|---|---|
| BHDL | | 116,806 Secondary vegetation | 1,509,146 Primary vegetation |
| MNHP | 1,287,428 Generally Unsuitable | 2,069,426 Low Suitability | 257,089 Moderate Suitability |
| Olson | 1,862,477 Low Probabil- | 1,507,773 Moderate Prob- | 244,016 High Prob- |
| **Comparing the Model Acreage** | | | |
| Beaverhead Deerlodge Models | | 2,711,422 acres (2001)<br>1,625,952 acres (2020)<br>2,134,741 acres*<br>*Y2U 2001 BHDL model clipped to Forest | |

[21] Olson et al. 2021. Improved prediction of Canada lynx distribution through regional model transferability and data efficiency. Ecology and Evolution 11:1667 – 1690.

| | |
|---|---|
| Montana Natural Heritage Program Inductive Model | 2,326,515 acres |
| Olson et al (2021) Model | 1,751,789 acres |

**Figure 14.**

**Olson et al (2021) Categorical Lynx Habitat Probability**



From Table 6, we see that the BHDL 2020 version provides the least habitat of all the models. It was the only one that did not consider historical lynx observations or tracking data. A note on lynx observations is, however, in order. In our comments on the Federal Register Notice to revise lynx critical habitat, we analyzed the MNHP observations in Glacier National Park, and the Bob Marshall and Mission Mountain Wilderness in Montana relative to areas outside these special designations. To wit:

Squires et al (2010)[22] studied lynx in the Swan River drainage near Seeley Lake, Montana. The area was bordered by the Mission Mountain and Bob Marshall Wilderness areas. See Figure 15 for a map using MNHP observations to illustrate how studies or areas accessible to people, or used in tracking studies, can result in more observations compared to areas such as wilderness where human presence is low in winter and mechanized travel or trail cameras are not allowed. Does this mean, therefore, that the wilderness is not a suitable habitat?

We looked at MNHP observations in Glacier National Park (GNP). (Figure 15). Here we see scattered lynx observations that are lower in density than areas outside the park. Does this mean the park has little suitable lynx habitat? Note the observations are along valleys where people may have access in winter, but not across the wider area. A park-wide occupancy survey using motion activated cameras found a mean of 52 individual lynx and density of 1.28/100 km$^2$. Later, when we looked at the Olson et al (2021) Model and its mean habitat probabilities across management areas, we saw that Glacier NP is not rated high, yet it has a significant population. This argues for an expanded interpretation of Olson et al (2021) to include areas with lower modeled habitat probabilities or risk eliminating important lynx habitat from further consideration.

The Dillon Ranger District Issue: BA Figure B-3 shows an absence of lynx habitat in the Dillon Ranger District south of HWY 324. Yet, the 2001 modeled habitat area is significant there. When we clipped the 2001 BHDL model habitat to that area, we found 83,265 acres of lynx habitat south of HWY 324. The 2020 model omits this area in its entirety, yet Figure 16 shows it provides potential linkage to the western half of the BHDL without crossing Interstate 15. We have reproduced the map of 2001 modeled habitat as well for comparison. (Figure 17).

To sum up briefly, the BHDL 2020 model is too conservative in its interpretation, leaving out much potential or historical lynx habitat. It further did not consider historical observation locations and the actual vegetation types where those occurred. Instead, it used surrogates with cascading errors to eliminate major lynx habitats such as lodgepole

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[22] Squires, J.R., Decesare, N.J., Kolbe,J.A., and Ruggiero, L.F. 2010. Seasonal Resource Selection of Canada Lynx in Managed Forests of the Northern Rocky Mountains. Journal of Wildlife Management, 74(8):1648-1660. 2010. Published By: The Wildlife Society DOI: 10.2193/2009-184 URL: http://www.bioone.org/doi/full/10.2193/2009-184

pine and Douglas fir. The MNHP model used lynx observations combined with environmental variables to arrive at a habitat area of 2,326,515 acres, compared to the BHDL 2020 modeled 1,625,952 acres. This is less than the BHDL 2001 model, but that model would include the habitat in the Dillon Ranger District that was omitted from the 2020 model. The MNHP Deductive model shows that the BHDL model eliminates major categories of vegetation types in its mapping. In the end, the BHDL 2001 model with 2,134,741 acres within the BHDL seems to capture the habitat better than the 2020 model and does include that habitat in the Dillon Ranger District. However, that said, the determination of lynx habitat must go back to the actual forest or vegetation types where observations were made and map the extent of those across the BHDL. Since we have determined that snow depth, slope, aspect and elevation are not significant barriers within BHDL, these should not be part of the determination.

**Figure 15.**

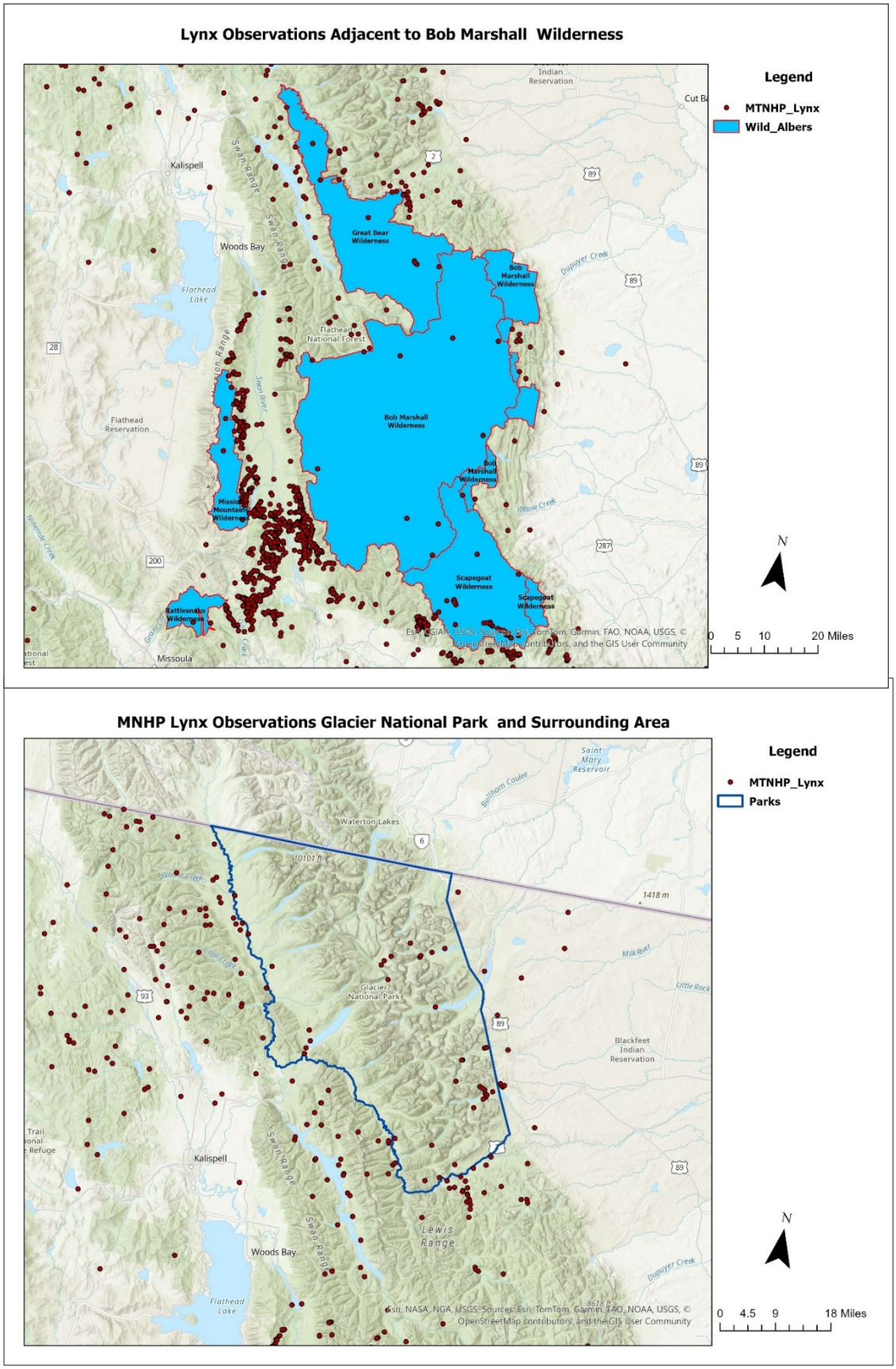
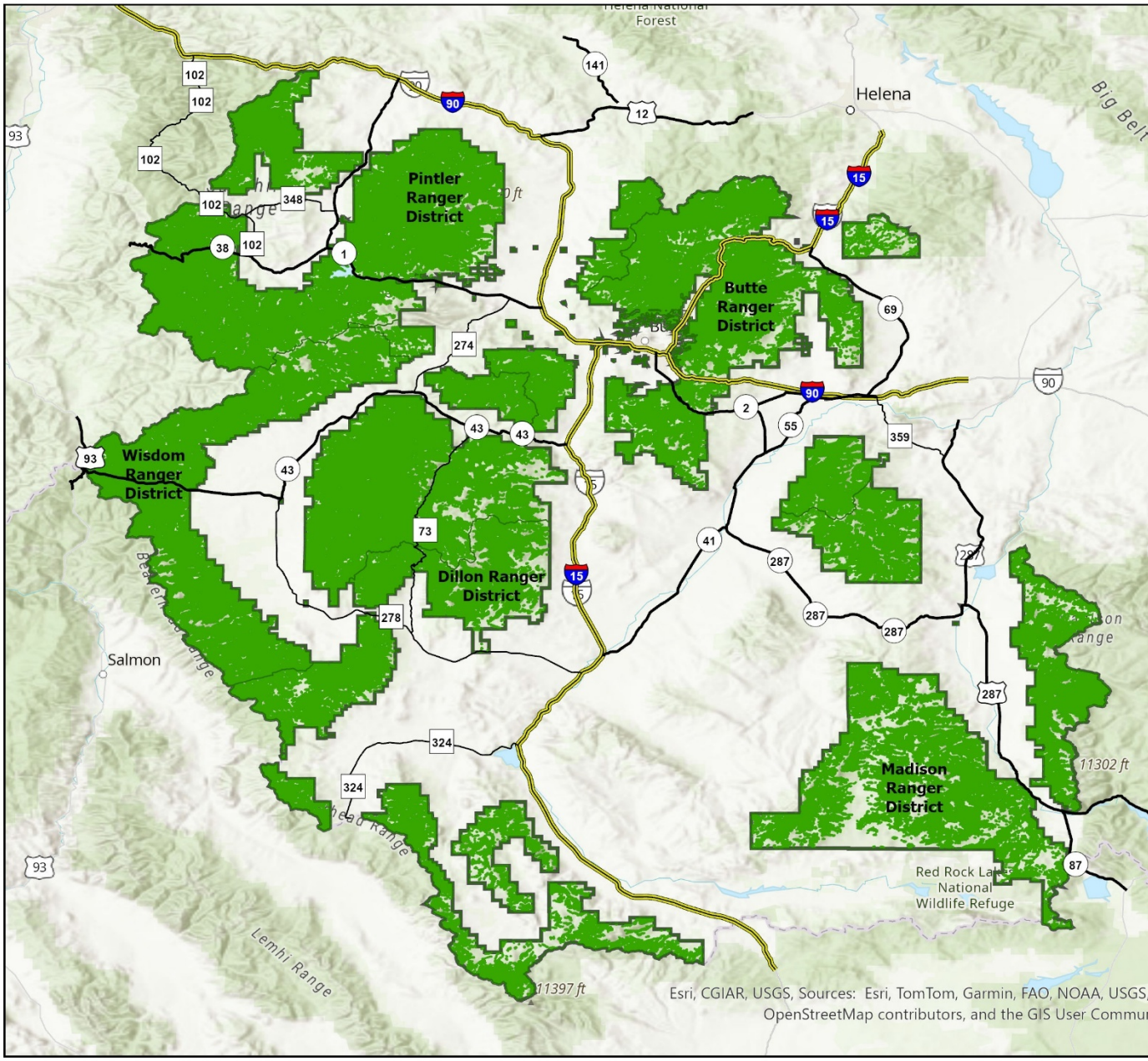
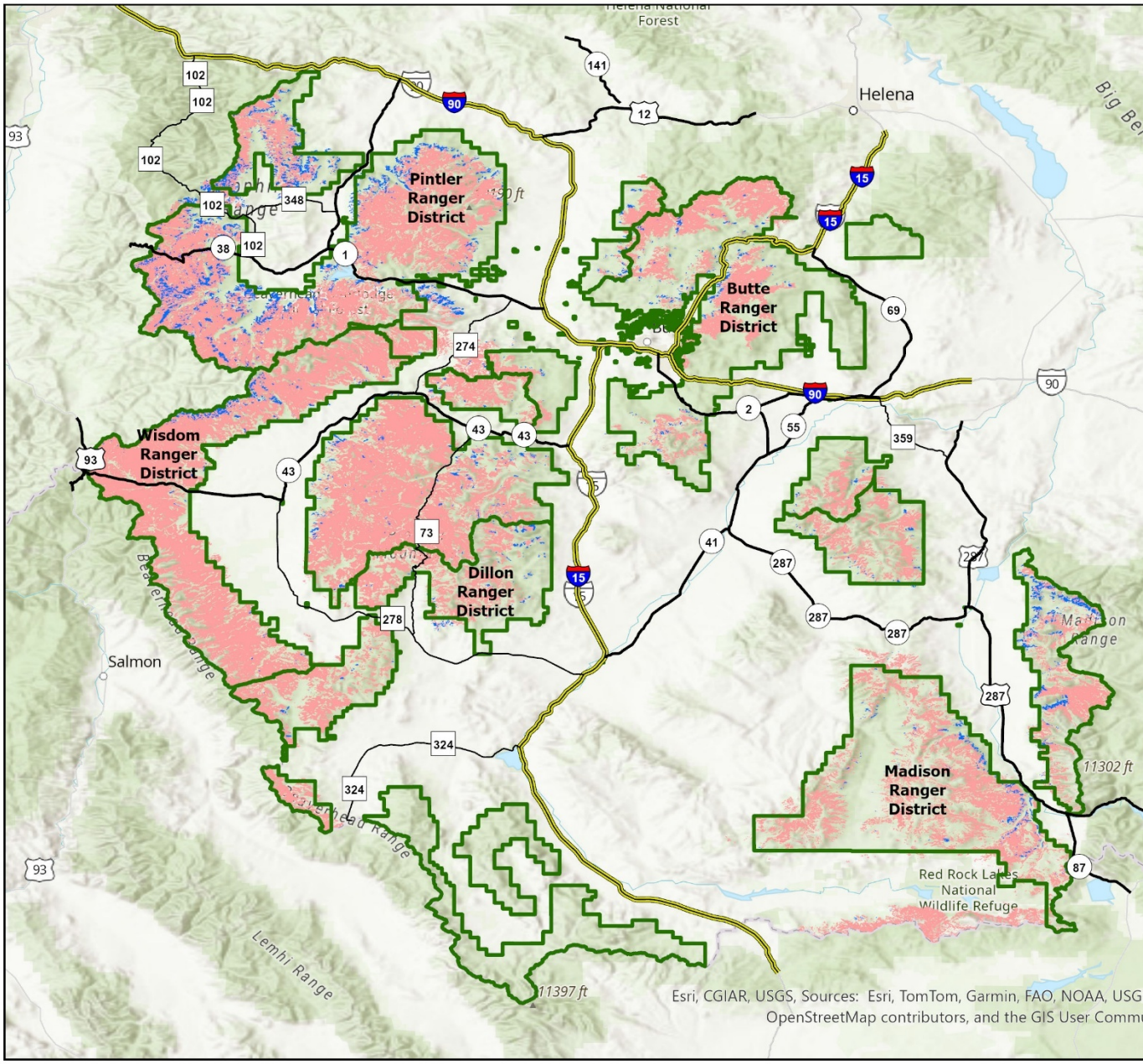

Lynx Observations Adjacent to Bob Marshall Wilderness
Legend
MTNHP_Lynx
Wild_Albers
Great Bear Wilderness
Bob Marshall Wilderness
Scapegoat Wilderness
Kalispell
Woods Bay
Flathead Lake
Flathead National Forest
Flathead Reservation
Missoula
Swan Range
Swan River
Dupuyer Creek
Indian Reservation
N
0 5 10 20 Miles
MNHP Lynx Observations Glacier National Park and Surrounding Area
Legend
MTNHP_Lynx
Parks
Saint Mary Reservoir
Waterton Lakes
Glacier National Park
Blackfeet Indian Reservation
Lewis Range
Kalispell
Woods Bay
Flathead Lake
Swan Range
Milk River
Dupuyer Creek
N
0 4.5 9 18 Miles

**Figure 14.** **BHDL 2001 Modeled Lynx Habitat and Ranger Districts**



# BHDL 2020 Modeled Lynx Habitat and Ranger Districts



## Forest Plan Standards

**Purpose**. The Scoping Notice states the Purpose for the proposed plan amendment is "to identify lands on the Forest that meet the criteria for Canada lynx habitat and to delineate where the Forest Plan standards will apply". It cites Figure 2 of the Scoping Notice. Inspection of that figure reveals that the BHDL has assumed the 2020 mapping of LAUs and lynx habitat constitute the lands that meet the criteria for Canada lynx habitat. The analysis we have provided above clearly shows that the 2020 BHDL model has many flaws and is not clearly identifying lynx habitat. A new analysis must be done that takes into account historical lynx observation locations and the vegetation types in which those occurred, not an altered forest baseline containing the outcomes of timber manipulations.

Rather than the BHDL claimed habitat of 1,625,952 acres stemming from that 2020 modeling exercise, the plan amendment must consider the 2,134,741 acres represented by the 2001 BHDL model that occur within the BHDL itself combined with the MNHP Inductive Model that found 2,326,515 acres of lynx habitat within the BHDL. The analysis must rely on the vegetation types represented in the MNHP Deductive Model in which lynx observations occurred. Taking this approach combines the strengths of these models and corrects the missing habitat in the Dillon Ranger District which is a critical linkage in the western half of the BHDL.

**Need for the Project**. The Scoping Notice expresses the need for a plan amendment to include new information on lynx habitat, the change in occupied status to identify where NRLMD standards and guidelines apply, and to respond to the public's desire for involvement in the habitat mapping effort. In these comments we have provided a detailed critique of the current (2020) habitat map. The Scoping Notice appears to preclude that involvement by using the flawed habitat map shown in the Notice Figure 2, an apparent decision already made.

**The 2012 Planning Rule**. The Scoping Notice references 36 CFR 219.8 through 36 CFR 219.11 as "directly related to the plan direction being added." These sections of the law address Sustainability (§ 219.8), Diversity of plan and animal communities (§ 219.9), Multiple Use (§ 219.10), and Timber Requirements based on NFMA (§ 219.11).

§ 219.8 Sustainability requires for ecosystem integrity, "The plan must include plan components, including standards or guidelines, to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area, including plan components to maintain or restore structure, function, composition, and connectivity…" It then describes the elements such as air, soil, water, and riparian areas that must be taken into account. Each of these elements must be fully addressed with analysis of monitoring data and other science that describes the current and potential conditions on the BHDL, and the factors driving those conditions. Along with timber manipulations,

recreation, roads and trails, we are concerned about the existing conditions of the riparian areas, meadows, and forested communities that have been altered by livestock grazing. The degradation of these habitats deprives snowshoe hares of their forage and cover, removes herbaceous vegetation and ground cover in aspen and conifer communities, subsequently altering forest structure and lynx habitat.

§ 219.9 Diversity of plant and animal communities has the same requirement for ecosystem integrity as § 219.8. In addition, it requires that ecosystem diversity be maintained or restored, a determination as to whether plan components, "provide the ecological conditions necessary to: contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern within the plan area." Species viability must be addressed in the plan amendment analysis by presenting the trend of the special status species on the BHDL, their habitat requirements and the current and potential condition of those habitats as supported by monitoring data.

§ 219.10 Multiple use requires, "The plan must include plan components, including standards or guidelines, for integrated resource management to provide for ecosystem services and multiple uses in the plan area." Ten elements are listed which must be addressed under "Integrated resource management for multiple use." These must be addressed by analyzing BHDL monitoring data and science.

In the section "(b) Requirements for plan components for a new plan or plan revision." Six elements are outlined. It outlines "designated" areas such as wilderness, wild and scenic rivers, areas of tribal importance, cultural and historic resources, and sustainable recreation. While designated areas are certainly important, it is critical that the entire BHDL have standards and guidelines for Canada lynx that recognize the impact of human uses, including recreation, on their habitat and use of that habitat. Road density, habitat security, connectivity within the BHDL and adjacent National Forests must be analyzed. Special concerns are high motorized road and trail density that must also include non-system, illegal, or user created roads. Groomed snowmobile trails and play areas are of major concern and the analysis must identify lynx habitat with protection and security from these winter uses. The effectiveness of BMPs, standards and guidelines must be specifically addressed for each element.

§ 219.11 Timber requirements based on the NFMA. In section "(a) Lands not suited for timber production." Six elements are described. One of these is restocking within 5 years of harvest, another is timber harvest not compatible with DFCs. The analysis should provide data showing the restocking success and whether these harvest areas have become thickets of conifers or have not regenerated that may preclude use by snowshoe hares and Canada lynx. It should also show how any harvest, or vegetation treatment it has authorized has met the DFCs for lynx habitat and special status species habitat.

Another provision is described, "(c) Timber harvest for purposes other than timber production." In this section "Examples of using timber harvest to protect other multiple use values may include improving wildlife or fish habitat, thinning to reduce fire risk, or restoring meadow or savanna ecosystems where trees have invaded." We have described the massive exaggeration of WUI above and that is the first thing to correct. The analysis should include monitoring data, reports and scientific studies demonstrating that these non-production values have been achieved on the BHDL by reviewing past projects and their outcomes. Maps, charts, and data all need to be presented to show whether project objectives were achieved or not.

(d) Limitations on timber harvest elements are described. This includes general requirements such as lands not suitable or with sensitive watershed conditions. We would add that timber harvest for any purpose should not be allowed in Canada lynx habitat until past harvests have regenerated and snowshoe hares have re-occupied disturbed areas. The current status of lynx habitat should be mapped by forest type (lodgepole, fir, spruce, aspen, riparian) and analyze departures from optimal or potential conditions. No exceptions to standards or guidelines should be allowed so the forest can complete its successional pathway. Lynx and snowshoe hare (and other species) have evolved to coexist with natural disturbance. Old growth forests should be protected and mature forests allowed to progress to old growth.

**Lynx, the ESA and Forest Service Manual.** The ESA promulgated regulations at 50 CFR § 402.12 delineate the purpose of a Biological Assessment (BA) as to *"evaluate the potential effects of the action on listed and proposed species and designated and proposed critical habitat…"*. It describes the contents as *"discretionary"* and depends on the nature of the federal action with consideration for including (1) results of on-site inspections; (2) views of recognized experts; (3) review of the literature; (4) analysis of the effects of the action on species and habitat, including cumulative effects and the results of related studies; and (5) analysis of alternate actions considered by the Federal agency. This Forest Plan Amendment should preclude making BA's "discretionary". They should be required of all future activities/projects affecting lynx habitat.

The Forest Service Manual[23] cites the ESA as *"the Act directs federal departments and agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitats."* (FSM 2670.11). The FSM (2679.12) cites Departmental Regulation 9500-4 as (1*) "Manage 'habitats for all existing native and desired nonnative plants, fish and wildlife species in order to maintain at least viable populations of such species.'"* (2*) "Conduct activities and programs 'to assist in the identification and recovery of threatened and endangered plant and animal species.'"* (3) *"Avoid actions 'which may cause a species to become threatened or endangered'"*. We have seen for Canada lynx, as we described above, that "occupied habitat" has been arbitrarily applied and led to the exclusion of peripheral habitat, con-

[23] USDA Forest Service. 2005. Forest Service Manual National Headquarters (WO) Washington DC. FSM 2600 – Wildlife, Fish, and Sensitive Plan Habitat Management Chapter 2670 – Threatened, Endangered and Sensitive Plants and Animals (September 23,2005).

nections and linkages remaining without regulatory protection and are seldom addressed in project analyses. These connections and linkages are part of lynx habitat and should be identified, mapped and then designated as protected with appropriate standards.

FSM 2670.31 provides additional guidance for T&E species.

> (1) *"Place top priority on conservation and recovery of endangered, threatened, and proposed species and their habitats."* (2) *"Establish, through the Forest planning process, objectives for habitat management and/or recovery of populations."* (4) *"Avoid all adverse impacts on threatened and endangered species and their habitats, except when it is possible to compensate adverse effects totally through alternatives identified in a biological opinion."* (6) *"Identify and prescribe measures to prevent adverse modification or destruction of critical habitat and other habitats essential for the conservation of endangered, threatened, and proposed species. Protect individual organisms or populations from harm or harassment as appropriate."*

The FSM 2670.5 provides definitions of terms that are useful in interpreting the efficacy of the agency analysis. An **adverse effect** includes *"Any action that directly alters, modifies, or destroys, critical or essential habitats or renders occupied habitat unsuitable for use by a listed species, or that otherwise affects its productivity, survival, or mortality."* **Essential habitat** is defined as *"Those areas designated by a regional forester as possessing the same characteristics as critical habitat without having been declared as critical habitat by the Secretary of the Interior or Commerce. The term includes habitats necessary to meet recovery objectives for endangered, threatened, and proposed species and those necessary to maintain viable populations of sensitive species."* A **viable population** is defined as *"A population that has the estimated numbers and distribution of reproductive individuals to ensure the continued existence of the species throughout its existing range (or range required to meet recovery for listed species) within the planning area."*

The BHDL must now designate lynx habitat as Essential for recovery of lynx and maintaining connections within the BHDL and to adjacent public lands. It must determine the potential occupancy extent and home ranges and set population goals and Plan standards for a viable population within the BHDL to be established by a combination of habitat protection and introducing lynx as done in Colorado.

FSM 2671.44 describes determination of the effects on listed species. Biological evaluations are to *"conduct and document the program and activities review necessary to ensure that any action … is not likely to jeopardize the continued existence of any listed or proposed species or to result in the destruction or adverse modification of critical or proposed critical habitat."* Internal *"biological expertise"* and *"informal consultation"* are to be used to reach *"supportable determinations of effect"*. Finally, *"Consider effects on suitable unoccupied habitat essential to recovery of the species when doing the biological evaluation."*

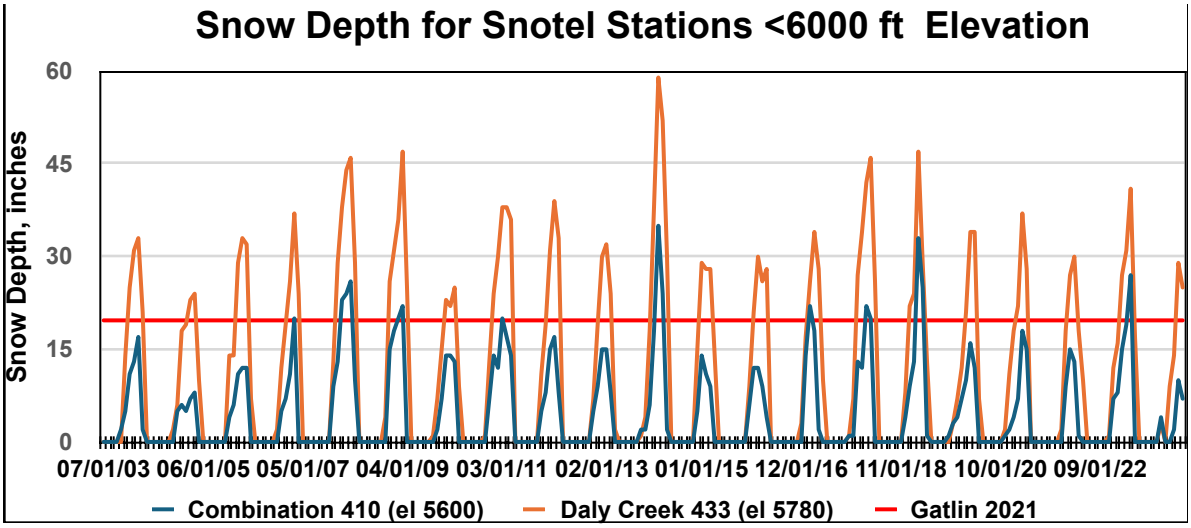
We are not seeing National Forests conducting any analysis of linkages, or "suitable unoccupied habitat" or any effort to address its current vs historical condition. The Plan Amendment must correct this. The lack of adequate regulatory mechanisms to protect lynx habitat and connectivity has been implicated as a central issue for lynx being able to maintain populations.[24] (FR p16052). The FSM described above makes the point that the Forest Service should establish through planning, objectives for habitat management and/or recovery of populations and prescribe measures to prevent adverse modification of habitat essential to the conservation of T&E species. This remains to be done with assurance that the BHDL land management plans are quantitatively addressing lynx habitat and connectivity needs.

The BA:Appendix H provides a comprehensive review of the NRLMD goals, objectives, standards and guidelines with a comparison to the BHDL 2009 RFP provisions. Standards are missing for most of the NRLMD goals, objectives, and guidelines in the 2009 RFP. Goals, objectives and guidelines are without enforcement and need quantitative, not general, standards. The Forest Plan Amendment must now go through each of these NRLMD provisions and provide standards for each NRLMD Direction. As we pointed out in our comments on the lynx SSA, and draft Recovery Plan cited above, the listing of lynx as threatened was driven by the need for adequate regulatory mechanisms. To date there has been no analysis of the effectiveness of the NRLMD or any forest plans we are aware of. Lynx have disappeared across much of its previously occupied landscape. The NRLMD has not provided adequate protections for lynx and much of its direction is general and lacks enforceable standards.

The BHDL must analyze its Forest Plan and the activities allowed therein and determine why no lynx were found following listing until nearly 20 years later. It has not determined that the handful of lynx found on the Forest the past few years are resident, have home ranges, denning habitat, or are reproducing and persisting. The process for the plan amendment must carry out this analysis. The BHDL must designate areas not included in critical habitat as Essential Habitat. This includes linkages, connections, and all lynx habitat. Existing and potential highway crossings must be analyzed and located with a goal of achieving their implementation.

[24]DOI USFWS. 2000. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Contiguous U.S. Distinct Population Segment of the Canada Lynx and Related Rule. Fed. Register Vol. 65, No. 58.

# Appendix I


Snow Depth for Snotel Stations <6000 ft Elevation
Snow Depth, inches
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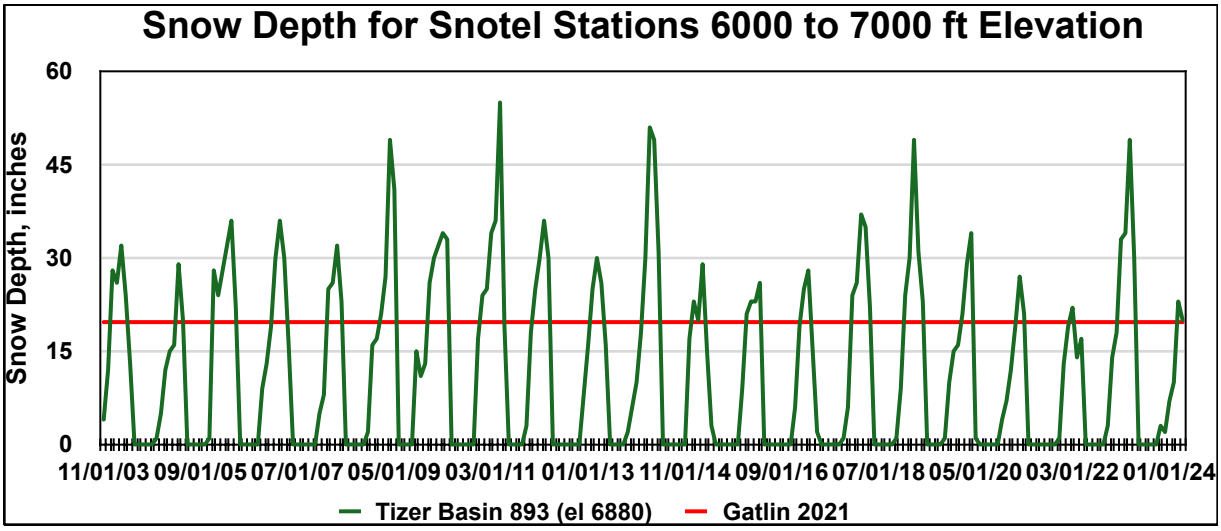
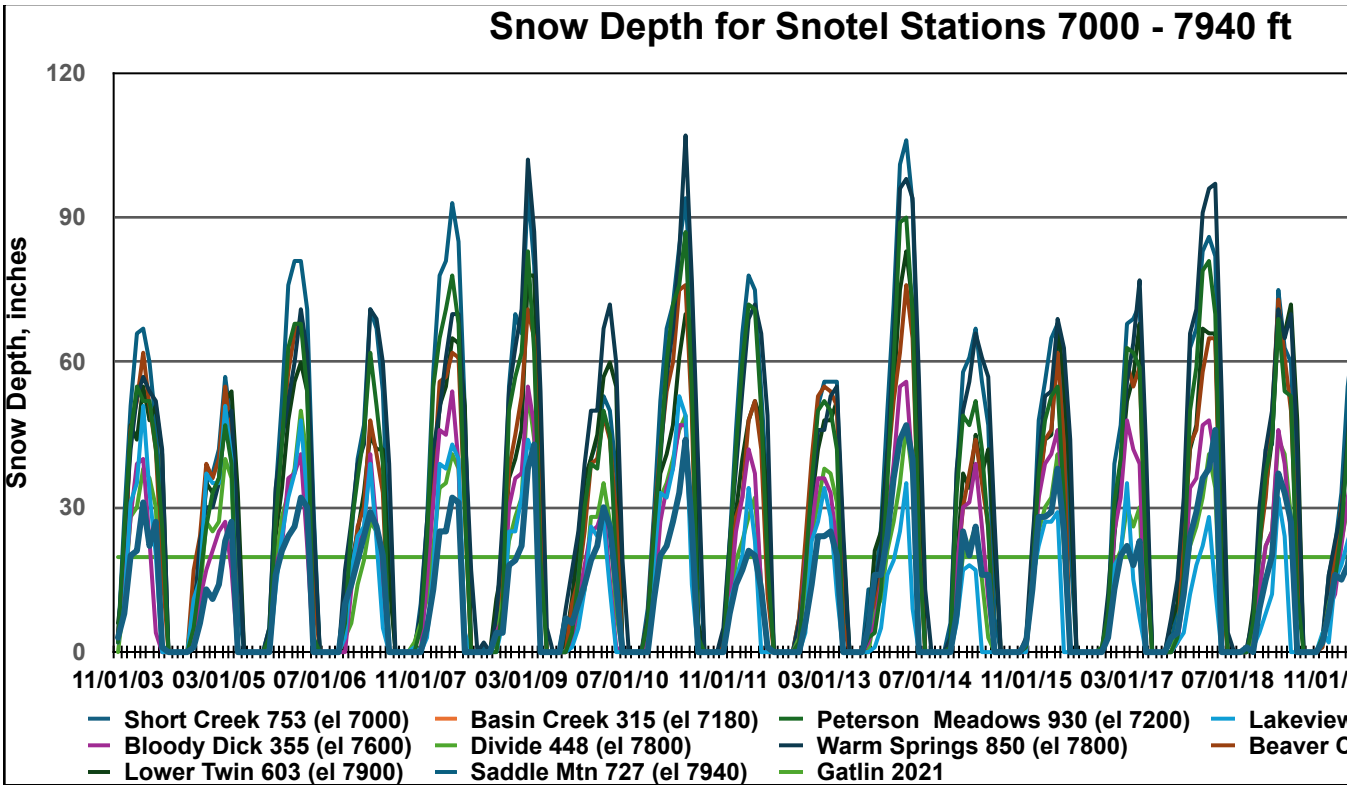
30
15
0
07/01/03 06/01/05 05/01/07 04/01/09 03/01/11 02/01/13 01/01/15 12/01/16 11/01/18 10/01/20 09/01/22
Combination 410 (el 5600)
Daly Creek 433 (el 5780)
Gatlin 2021


Snow Depth for Snotel Stations 6000 to 7000 ft Elevation
Snow Depth, inches
60
45
30
15
0
11/01/03 09/01/05 07/01/07 05/01/09 03/01/11 01/01/13 11/01/14 09/01/16 07/01/18 05/01/20 03/01/22 01/01/24
Tizer Basin 893 (el 6880)
Gatlin 2021


Snow Depth for Snotel Stations 7000 - 7940 ft
Snow Depth, inches
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90
60
30
0
11/01/03
03/01/05
07/01/06
11/01/07
03/01/09
07/01/10
11/01/11
03/01/13
07/01/14
11/01/15
03/01/17
07/01/18
Short Creek 753 (el 7000)
Basin Creek 315 (el 7180)
Peterson Meadows 930 (el 7200)
Lakeview
Bloody Dick 355 (el 7600)
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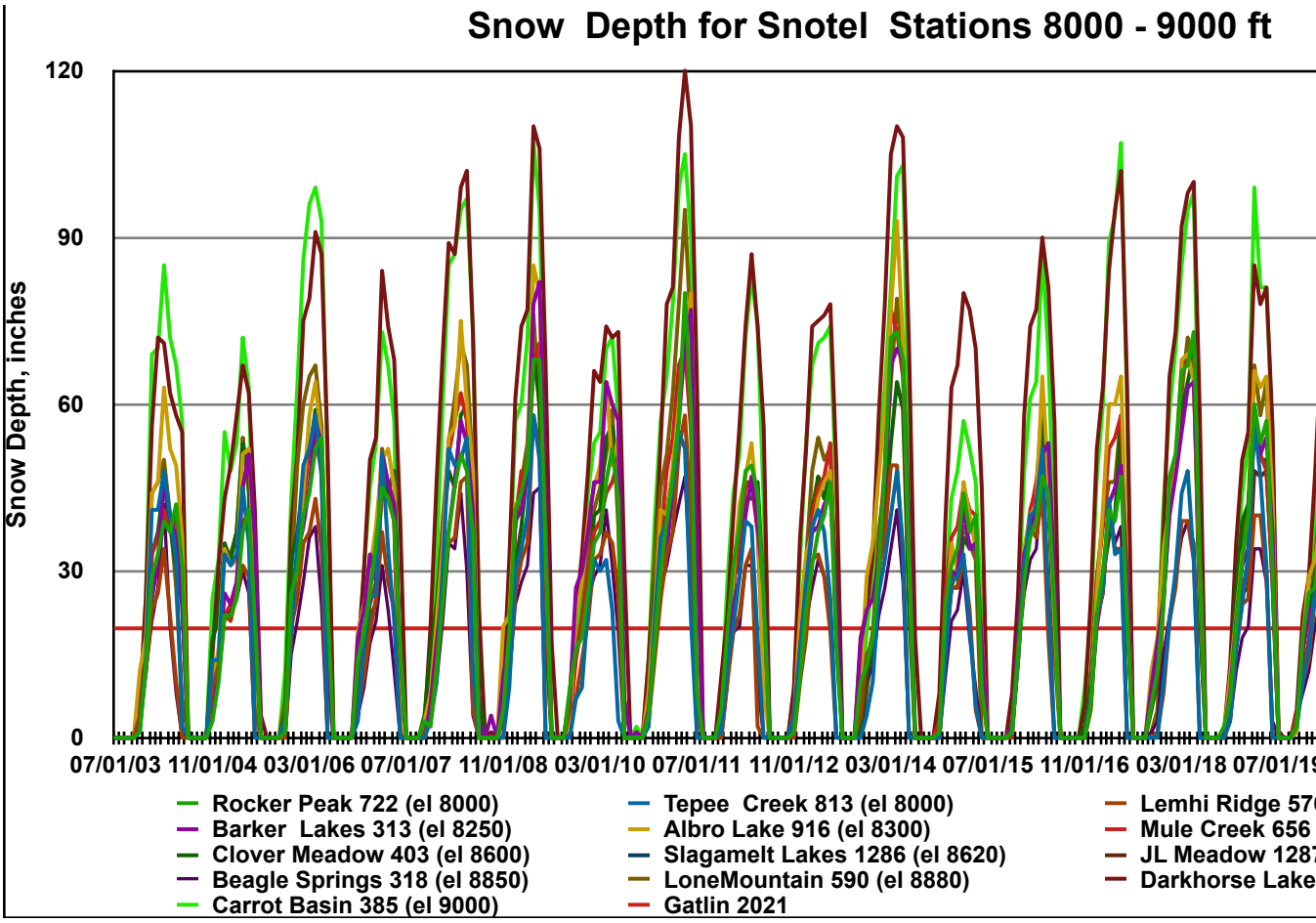
Lower Twin 603 (el 7900)
Saddle Mtn 727 (el 7940)
Gatlin 2021




**The BDNF did not respond to either of our comments in violation of NEPA.**

## Remedy

Choose the No Action Alternative or withdraw the DDN and FONSI and write an EIS that fully complies with the law.

The Canada Lynx Conservation Assessment and Strategy states on page 86 that

*Lynx Analysis Units (LAUs) are intended to facilitate analysis and monitoring of the effects of management actions on lynx habitat. LAU boundaries are not to be adjusted for individual projects, but must remain constant to be effective for their intended purposes of planning and monitoring.*

*LAUs are a tool to guide management that will support a reproductive population of lynx in core areas. It is not necessary to delineate LAUs in secondary/ peripheral areas.*

*LAUs do not depict actual lynx home ranges, but should approximate the size of a female's home range and contain year-round habitat components. Females have smaller home ranges than males and are more restricted in*

*Chapter 5– CONSERVATION STRATEGY*

*Approach to development of conservation measures their movements during the period of kitten dependency. Maintaining good quality and distribution of denning and foraging resources within a LAU will help to assure survival and reproduction by adult females, which is critical to sustain the overall lynx population.*

*Certain conservation measures are applied across a LAU to encourage well-distributed lynx habitat throughout the landscape. In some cases, project impacts will need to be assessed across 2 or more LAUs to fully address direct, indirect, and cumulative impacts of particular actions. Naturally-occurring events such as lightning-ignited stand-replacing*

*wildfires may create change across many adjoining LAUs.*

*Lynx habitat mapping and the delineation of LAUs should be completed using criteria specific to each geographic area. Primary vegetation will include those forest types necessary to support lynx survival and reproduction. Because lynx are highly mobile, it is recognized that other vegetation types when intermixed with the primary vegetation may also be used by lynx. However, these are only considered to contribute to lynx habitat where they are associated with the primary vegetation in that geographic area.*

*As stated above, the size of the LAU reflects female lynx home range size in the geographic unit. A sufficient amount of lynx habitat must be present within the LAU to support a female lynx. For example, in the western United States, it appears that at least 26 km2 (10 mi2) of primary vegetation (e.g., spruce/fir) must be present.*

*The arrangement of habitat within the LAU should take into consideration the daily movement distances of resident females. When delineating LAUs, small patches of primary vegetation located beyond daily movement distances could be discarded or incorporated into a neighboring LAU. Since the LAU represents a hypothetical female home range, and is the basis for analysis, it can be larger and contain more lynx habitat than an actual home range.*

*Lynx habitat was identified using criteria described in the 2000 LCAS. In some areas, better information*

***on identifying lynx habitat is currently available. Where new vegetation databases will improve identification of lynx habitat, we encourage updating maps. Where information in new maps suggests LAUs need adjusting, coordinate changes with FWS.***

The Executive Summary of the Draft Decision Notice for the BDNF Lynx amendment states:

***The purpose of this Forest Plan amendment is to apply the best available scientific information to more accurately identify Canada lynx habitat and LAUs. There is a need to update where Forest Plan Wildlife Standard 7 applies on National Forest System lands managed by the Beaverhead-Deerlodge National Forest. Wildlife Standard 7 incorporates the Northern Rockies Lynx Management Direction (NRLMD) Record of Decision3 (USFS 2007a) into the Beaverhead-Deerlodge Forest Plan. NRLMD objectives, standards, and guidelines apply to management projects in lynx habitat, in lynx analysis units, in occupied habitat, and in linkage areas. Identification of lynx habitat and delineation of LAUs determines where the NRLMD applies, in addition to the NRLMD objective, standard, and guidelines that apply to all projects within linkage areas in occupied habitat. While designed to conserve and promote recovery of Canada lynx, the NRLMD was also designed to complement the Forest Service's multiple-use directive. Therefore, it is also important to identi-***

***fy areas within the Forest that do not provide habitat for lynx so other Forest Plan goals can be achieved.***

***The need to update the lynx habitat map and LAU boundaries is based on the availability of improved mapping information as well as the change in occupancy status on the Forest. Additionally, public feedback was also considered regarding this update.***

The purpose of the BDNF lynx amendment is not to ***facilitate analysis and monitoring of the effects of management actions on lynx habitat to support a reproductive population of lynx in core areas as the*** Canada Lynx Conservation Assessment and Strategy requires. It is to "identify areas within the Forest that do not provide habitat for lynx so other Forest Plan goals can be achieve" as the Executive Summary states.

This is a violation of the ESA and NFMA. The purpose of the Endangered Species Act (ESA) is to conserve and recover threatened and endangered plants and animals and the ecosystems they depend on by preventing extinction not speed up extinction so that more logging can occur.

The Executive Summary of the Draft Decision Notice states: "The need to update the lynx habitat map and LAU boundaries is based on the availability of improved mapping information as well as the change in

occupancy status on the Forest." In other words, the BDNF wants to be rewarded for having less lynx on the BDNF so they can log more and destroy more lynx habitat with the goal of eventually extirpating lynx from the BNNF.

The Draft Decision Notice (DDN) also relays on the Northern Rockies Lynx management Direction (Lynx Amendment) for the criteria to remap lynx analysis units but this is not new information that would allow remapping as required by the Canada Lynx Conservation Assessment and Strategy. It is 25 years old and the lynx amendment clearly is not working as there are less lynx that they were 25 years ago. This is a violation of NEPA. New information such as Kosterman 2014 and Holbook 2017 demonstrate that the lynx amendment is not working. Other new information such as Holbrook, 2018 and Holbrook 2019 confirm this. Please find both papers attached.

Kosterman finds that 50% of lynx habitat must be mature undisturbed forest for it to be optimal lynx habitat where lynx can have reproductive success and no more than 15% of lynx habitat should be young clearcuts, i.e. trees under 4 inched dbh. This contradicts the agency's assumption in the Lynx Amendment that 30% of lynx habitat can be clearcut, and that no specific amount of mature forest needs to be conserved. It is now the best available science out there that describes lynx habitat in the Northern Rockies re-

lated to lynx viability and recovery. Kosterman's attached study demonstrates that the Lynx Amendment standards are not adequate for lynx viability and recovery, as previously assumed by the Forest Service.

Kosterman's Thesis says that clearcutting more than 10-15% of a lynx home range results in declines in reproduction. Many National Forests allows more clearcut- ting than this. The Lynx Amendment allows up to 30% clearcutting in a home range, which means that habitat has declined and is declining from the levels nec- essary for reproduction and therefore survival and recovery.

Kosterman's Thesis recommends conserving mature/old growth forest and maintaining 50% mature/old growth in each lynx home range. No National Forest is complying with that due to past and current logging, which means that habitat has declined and is declining from the levels necessary for reproduction and therefore survival and recovery.

Squires says that lynx avoid clearcuts. Please develop an alternative that prohibits clearcutting and also prohibits logging of mature and old growth forests in Lynx analysis units.

FWS has no idea what the population of lynx is because they don't do lynx population monitoring. In light of the government's failure to monitor lynx population trends, it would be disingenuous for FWS to ar-

gue that “there is no evidence of population decline” because the reason that "there is no evidence" is because the government refuses to conduct monitoring. In light of the government’s failure to monitor and document populations and population trends, the Forest Service and the FWS must apply the precautionary principle and assume that the effects of allowing logging that does not comply with Kosterman, Holbrook, and Squires findings is resulting in population declines.

Since this is now the best available science we are hereby formally requesting that the Forest Service also write a supplemental EIS for the Northern Rockies Lynx Management Direction and reinitiate consultation with the FWS for the Lynx Amendment to publicly disclose and address the findings of this study, and to allow for further public comment on this important issue of lynx recovery.

The DDN and EA also do not discuss connectivity other than to state on page 4 of the DDN, “There would be no adverse short- or long-term effects to connectivity because the identification of lynx habitat and delineation of LAUs does not affect the ability of a lynx to disperse.” This is not true starving to death because all of the good lynx habitat has been destroyed would affect the ability of lynx to disperse.

Lynx can not recover and be eventually removed from the ESAS if they do not have one connected population. Lynx were listed as one population. The BDNF lynx amendment must be rewritten with a goal of connecting lynx in the Northern Continental Divide ecosystem with the Greater Yellowstone ecosystem. Habitat, linkages and regional connections must be given strict Forest Plan standards that reflect the best available science. This was not done in violation of NEPA, NFMA, the ESA, and the APA.

The Canada Lynx Conservation Assessment and Strategy states, ***Maintaining good quality and distribution of denning and foraging resources within a LAU will help to assure survival and reproduction by adult females, which is critical to sustain the overall lynx population.***

The DDN and EA for the BDNF lynx amendment does not assure survival and reproduction by adult females in violation of the ESA, NFMA, NEPA and the APA.

The Northern Rockies Lynx Management Direction or lynx amendment to the Forest Plan has Standard ALL S1 which states the New or expanded development and vegetation management project must be maintain connectivity for lynx in linkage areas. When the BDNF is removing LAUs in linkage areas they are now calling these areas as unsuitable habitat, e.g. this

is what the BDNF did in the Whitetail-State Creek project. The BDNF is violating the lynx amendment to the revised Forest Plan by not maintaining connectivity for lynx in connectivity areas and therefore is also violating the Forest Plan, NFMA, NEPA, the APA and the ESA.

The BDNF lynx amendment also violated NEPA by not analyzing how eliminating LAUs will effect climate change.

The BDNF lynx amendment did not demonstrate that the amendment is in compliance with the old growth provisions of the Forest Plan as required by NEPA, NFMA, the APA, and the Forest Plan.

**Remedy**

Choose the No Action Alternative or withdraw the DDN and FONSI and write an EIS that fully complies with the law.

Thank you for considering our objection.

Lead Objector: Michael Garrity, Director, Alliance for the
Wild Rockies (Alliance)

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And for
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And for

Steve Kelly

Council on Wildlife and Fish

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Bozeman, MT 59772

And for

Kristine Akland
Center for Biological Diversity

P.O. Box 7274 Missoula, MT 59807

kakland@biologicaldiversity.org

Signed for Objectors this 13th day of October 2025

/s/ Michael Garrity

Michael Garrity

Standard ALL S1

New or expanded development and vegetation management project must be maintain connectivity for lynx in linkage areas. When the BDNF is removing LAUs in linkage areas they are now calling these areas as unsuitable habitat, e.g. this is what the BDNF did in the Whitetail-State Creek project. The BDNF is violating the lynx amendment to the revised Forest Plan by not maintaining connectivity for lynx in connectivity areas and therefore is also violating the Forest Plan, NFMA, NEPA, the APA and the ESA.