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Public Comments Processing
Attn: FWS-R6-ES-2013-0101
Division of Policy and Directives Management
U.S. Fish and Wildlife Service
4401 N. Fairfax Drive, MS 2042-PDM
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Re: U.S. Fish and Wildlife Service's proposed rule revising the DPS boundary for the contiguous United States DPS of Canada lynx and revising the designation of critical habitat.

Thank you for providing this opportunity to comment on the U.S. Fish and Wildlife Service's (Service's) proposed rule to: (1) revise the distinct population segment (DPS) boundary for Canada lynx (lynx) in the contiguous United States; and (2) revise the designation of critical habitat for lynx.

These comments are submitted by the Western Environmental Law Center (WELC) on behalf of WildEarth Guardians, the Alliance for the Wild Rockies, Native Ecosystems Council, the Sierra Club, the Oregon Natural Resource Council, Oregon Wild, Cascadia Wildlands, George Wuerthner, and Hunters for Predators.

Each of these organizations is committed to ensuring the long-term survival and recovery of lynx in the contiguous United States. These comments, which supplement individual comments that may be submitted by each organization, are submitted in furtherance of that commitment and to ensure the Service bases its final decision on the best available science.

CONTENTS

1. The DPS boundary needs to be revised to provide protective ESA status to lynx in New Mexico and other areas where lynx are found within the contiguous United States.

The Service's proposed rule proposes to rescind the existing boundary of the lynx DPS, which is based on 14 state boundaries and replace it with a DPS definition that extends protections of the Endangered Species Act (ESA) to lynx wherever they occur in the contiguous United States. This revised boundary would provide protective ESA status to lynx that occur in northern New Mexico as a result of lynx reintroduction efforts in Colorado and in other states where they area found. We support this change for three reasons.

a. Revising the DPS boundary to include New Mexico and other states where lynx are found will bring the listing rule into compliance with the Service's DPS policy and the ESA.

Under the Service's current listing rule, lynx lose their ESA protective status as soon as they travel across the Colorado state line and into north-central New Mexico. This "14 state lynx DPS" rule needs to be changed because it is inconsistent with the Service's 1996 DPS Policy and the ESA.

When giving the Service authority to list distinct population segments (DPSs), "Congress did not define the term 'distinct population segment' and, as the [Service] has noted, the term is not commonly used in scientific discourse." *Maine v. Norton*, 257 F. Supp. 2d 357, 376 (D. Me. 2003). As such, after the ESA was amended to include the term DPS, the "question of how to treat populations in listing decisions and in other contexts arose and was the question of considerable discussion and internal debate within the [Service]." *Id.* at 377.

One major unresolved issue was the "extent to which political boundaries should be considered in identifying [DPSs]." *Id.* Some Service "regions advocated the use of political boundaries 'regardless of their significance to the biology of the species in question,' while others argued that 'such boundaries are usually very artificial and should only be used when they closely approximate natural boundaries separating adjacent populations." *Id.* at 378 n.9.

During the 1980s and first half of the 1990s, therefore, there was significant disagreement and inconsistency over the use of political boundaries in listing DPSs. Some Regional offices refused to recognize political boundaries in the listing process,

while others used state and even county lines to demarcate the limits of a DPS. Indeed, "prior to 1996, at least two dozen [DPSs] were defined solely upon political boundaries" *Maine*, 257 F.Supp.2d at 383; *see also U.S. v. McKittrick*, 142 F.3d 1170, 1173 (9th Cir. 1998) (describing pre-1996 wolf listing using State boundaries); *Wyoming Farm Bureau Federation v. Babbitt*, 199 F.3d 1224, 1236 n. 4 (10th Cir. 2000) (describing use of political boundaries for DPSs listed before 1996).

As recognized by the Tenth Circuit in discussing pre-1996 DPSs, the "line dividing protected and unprotected (or differently protected) [DPSs] is sometimes an international boundary . . . a state boundary. . . a county boundary . . .a measure of latitude. . .a point on the coast . . .a distance from a coastline . . . or even a point on a river." *Wyoming Farm Bureau*, 199 F. 3d at 1236 n. 4. If "an 'endangered wolf in Wisconsin crosses the [State] border into Minnesota it becomes 'threatened,' and therefore has fewer [ESA] protections." *Id.*

In response to the Service's inconsistent and at times arbitrary use of political boundaries in the DPS listing process, and at the urging of the National Academy of Sciences' National Research Council (NRC), the Service issued a national DPS Policy on February 7, 1996 to "clarify [the Agency's] interpretation of the phrase 'distinct population segment of any species' . . .for the purposes of listing, delisting, and reclassifying species under the [ESA]." 61 Fed. Reg. 4722. The Service's goal in developing the DPS Policy was simple: adopt a "clear and consistent" standard for listing DPSs . . .[and a] general policy framework governing the recognition of DPSs that can be disseminated and understood by the affected public." 61 Fed. Reg. 4723.[1]

Pursuant to the Service's DPS Policy, three factors must now be complied with when listing a DPS. *See* 61 Fed. Reg. 4725; 68 Fed. Reg. 40081 (DPS Policy "identifies criteria that must be met"); *National Assoc. of Home Builders v. Norton*, 340 F.3d 835, 852 (9th Cir. 2003) (Service must follow DPS Policy); *Defenders of Wildlife v. Secretary, U.S. Department of the Interior*, 354 F. Supp. 2d 1156 (D. Or. 2005) (same).

First, the DPS must be discrete from the other populations of the species. A DPS is only considered discrete if it is either: (1) markedly separate from other populations of the same species as a consequence of physical, physiological, ecological, or behavioral factors; or (2) separated from other populations by international governmental boundaries within which differences in control or exploitation, management of habitat, conservation status, or regulatory mechanisms exist. 61 Fed. Reg. 4725. On the use of international boundaries, the Service explained that, although the "use of international boundaries as a

[1] For a good overview of the administrative history of the Service's DPS Policy, see *Maine*, 257 F. Supp.2d at 377

measure of discreteness may introduce an artificial and non-biological element to the recognition of DPS's," it nevertheless "appears reasonable for national legislation, which has its principal effects on a national scale." *Id.* at 4723. Use of international boundaries also recognizes the "differences [between sovereign national governments] in the management, status, or exploitation of the species." *Id.*

Second, once deemed discrete, the DPS must also be "significant" to the species to which it belongs, i.e., it must live in a unique ecological setting or, if lost, result in a gap in the species' range. *Id.* This significance factor was included in the 1996 DPS Policy by the Service "in light of Congressional guidance, *see* Senate Report 151, 96th Congress, 1st Session, that the authority to list DPS's be used 'sparingly' while encouraging the conservation of genetic diversity." 61 Fed. Reg. 4725.

Third, the Service looks at the conservation status of the DPS in relation to the ESA's standards, i.e., does the population segment (as opposed to the species as a whole) qualify as a threatened or endangered species under the ESA. *See* 61 Fed. Reg. 4725. All three of these requirements must be satisfied before a DPS can be listed. *Id.; National Assoc. of Home Builders,* 340 F.3d at 842 (the Service's failure to follow DPS Policy in listing pygmy owl DPS was arbitrary and capricious).

Thus, following issuance of the 1996 DPS Policy, the Service is now prohibited from using, and no longer uses, political boundaries <u>below</u> the international level when listing DPSs. *See* 61 Fed. Reg. 4725 (discreteness factor).

In the Service's own words, use of "political boundaries other than those between Nations" are inappropriate in delimiting DPSs. *Id.* at 4724. The "recognition of other political boundaries such as state lines within the U.S. . . .[while an 'attractive possibility'] would . . .[be] inappropriate as a focus for a National program." 61 Fed. Reg. 4723, 4724. The ESA "provides no basis" for recognizing State boundaries in the DPS listing process. *Id.* at 4724.

For all post-1996 DPS listings, therefore, State or county boundaries cannot be used in the listing process, which is to say they cannot be used to divide a DPS or deprive a DPS of protections under the ESA. *Id.*; *see also* 68 Fed. Reg. 15804, 15821 ("cannot use boundary between States to subdivide a single biological population"); 63 Fed. Reg. 69008, 69015 ("DPS cannot be defined by State Boundaries"); 66 Fed. Reg. 22984 (DPS listing cannot be based on State boundaries); 68 Fed. Reg. 11574, 11577 (same); 62 Fed. Reg. 59605, 59613 ("boundary between States" not considered when listing DPS); *National Wildlife Federation v. Norton,* 386 F. Supp. 2d 553, 564 (D. Vt. 2005) (recognizing DPS Policy's prohibition on the use of "infra national boundaries").

Indeed, since adopting its 1996 DPS Policy, more than 39 DPSs have been listed by the Service. Not one of these DPS listings (except for the current lynx listing rule) uses State boundaries to divide a biological population, demarcate the legal boundaries of the DPS, and deprive a DPS of protection under the ESA. For DPSs listed before the 1996 DPS Policy took effect, the Service explains that it will "reevaluate [such DPSs] on a case by case basis" to bring them into compliance with the new DPS Policy, i.e., to do away with the use of State boundaries. 61 Fed. Reg. 4725.

By way of example, the Service reevaluated its 1978 gray wolf listing – the species at issue in the *Wyoming Farm Bureau* case – to bring it into compliance with the 1996 DPS Policy. *See* 68 Fed. Reg. 15804. In so doing, the Service stated that the "previous listing of the gray wolf, in which wolves in Minnesota were listed as threatened while wolves in adjacent States, including Wisconsin, are endangered, was done prior to our 1996 [DPS Policy], and that previous listing did not conform to the 1996 Policy." 68 Fed. Reg. 15804, 15818. The Service acknowledged that it can no longer "use a boundary between States to subdivide a single biological population in an effort to artificially create a discrete population." *Id*. at 15821.[2]

The problem with the current listing rule, therefore, is that is illegally uses the boundaries of the 14 individual states mentioned in the final rule – including Colorado – to demarcate the legal limits of the lynx DPS. In short, the Service listed a "14 State lynx DPS" as opposed to a contiguous United States lynx DPS. The boundary of the 14 states and not the international boundary with Canada is being used as the legal boundary of the lynx DPS.

As such, pursuant to the current listing rule, if a lynx travels across the Colorado State boundary into north-central New Mexico (as at least 81 lynx have done so thus far)

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[2] Use of state boundaries as a "boundary of convenience" or as an informational tool used to "facilitate law enforcement and promote public understanding of the [DPS] listing" is still appropriate. 68 Fed. Reg. 15825. Using "boundaries between States . . . that are located beyond the area currently occupied by [the DPS, enables the Service] to clearly identify the geographic extent of the DPS listing . . .while avoiding splitting the existing biological unit that [the Service] intend[s] to recover." 68 Fed. Reg. 15825. To avoid violating the DPS Policy, however, a State boundary of convenience: (1) cannot be used to split or divide one biological grouping of a population; and (2) can only be used if the "State boundary incidentally separates two DPSs that are judged to be discrete on other grounds." 68 Fed. Reg. 15821; *see e.g,* 62 Fed. Reg. 10730 (pygmy owl DPS); *National Assoc. of Home Builders*, 340 F. 3d 835 (9th Cir. 2003) (referring to the lowland central Arizona pygmy-owl DPS more broadly as the "Arizona" pygmy-owl DPS).

they travel "outside the lynx DPS" and lose their protective ESA status. This is a violation of the DPS Policy.[3]

As discussed above, in order for lynx entering New Mexico to be deprived of ESA protections they would have to be deemed outside the DPS and thus "discrete" from lynx in Colorado. This means lynx entering New Mexico would have to either be: (1) markedly separated from lynx in Colorado by some physical, physiological, ecological, or behavioral factors; or (2) separated by an international boundary. 61 Fed. Reg. 4725; *NAHB*, 340 F. 3d at 842 (discussing how DPS must be listed). Neither of these two factors apply.

Lynx entering New Mexico are not "markedly separated" from lynx in Colorado. On the contrary, they are part of the same biological grouping traveling along contiguous, suitable lynx habitat in the Southern Rockies' San Juan and Sangre de Cristo Mountains. *See* Exhibit (Ex.) 1 and Ex. 2 (habitat maps).[4] Nor do such lynx cross an international

[3] The general rule under the ESA is that all protections afforded to threatened and endangered species go with the individual animal of the species, wherever found. 16 U.S.C. § 1538 (prohibiting "take" of species wherever found, even on private land); 50 C.F.R. § 17.11 (e) (prohibitions of the ESA "apply to all individuals of the species, wherever found.'); *Babbitt v. Sweet Home*, 515 U.S. 687, 719 (1995) (same); *McKittrick*, 142 F.3d at 1173-74 (same). As recognized by the Tenth Circuit, the "protection of individual animals is one [of the] obvious means of achieving [the ESA's] goal[s]." *Wyoming Farm Bureau*, 199 F. 3d at 1237. There are, however, two instances in which a species will lose its ESA protective status "simply by moving about the landscape." *Id*. at 1235. First, a species will lose ESA protections if it travels into an "experimental population area" established pursuant to section 10(j) of the ESA. 16 U.S.C. § 1539 (j); 50 C.F.R. § 17.80; *Wyoming Farm Bureau*, 199 F.3d at 1233. This 10(j) exception does not apply to lynx. Lynx released into southwestern Colorado "are considered resident lynx [that] do not qualify as an experimental population . . .[as such, these] reintroduced lynx are included as part of the listed entity and placed on the list of threatened . . . species." *Id*. Second, a DPS will lose its protective status if it travels outside the boundaries of the DPS. *See e.g., Wyoming Farm Bureau*, 199 F. 3d at 1235 n. 4 (discussing boundaries for various DPSs). In order to determine whether or not a member of a DPS loses its protective ESA status under this exception, therefore, one must first determine the boundaries of the particular DPS.

[4] Exhibits 1-15 are included in WELC's August 1, 2007, "*Petition to Change the Listing Status of Canada Lynx (Lynx Canadensis) to Encompass the Mountainous Region of North-Central New Mexico.*" A copy of the *Petition* should already be included in the

boundary when entering New Mexico. As such, lynx entering New Mexico are not discrete from lynx in Colorado and are not traveling outside the protective lynx DPS. 61 Fed. Reg. 4725.

The Service's current listing rule is therefore arbitrary and needs to be changed. It creates an artificially discrete population of lynx in New Mexico in direct violation of its own DPS policy. *See e.g., NAHB*, 340 F. 3d at 852 (rejecting agency interpretation because it was inconsistent with DPS Policy); *National Wildlife Federation*, 386 F. Supp. 2d at 564-68 (same); *Defenders of Wildlife v. Secretary, U.S. Depart. of Interior*, 354 F. Supp. 2d 1156, 1170-71 (D. Or. 2005) (same).

The Service's current listing rule is also inconsistent with the ESA. The ESA is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tennessee Valley Authority (TVA) v. Hill*, 437 U.S. 153, 179 (1978). The "plain intent of Congress in enacting [the ESA] was to halt and reverse the trend towards species extinction, whatever the cost. This is reflected not only in the stated policies of the Act, but literally every section of the statute." 437 U.S. at 184; *see also Wyoming Farm Bureau*, 199 F. 3d at 1231 (Congress "enacted the [ESA] in 1973 to "provide for the conservation, protection, and restoration, and propagation of species . . .facing extinction."). The ESA's essential purpose is the "conservation of species." *McKittrick*, 142 F.3d at 1174.

Pursuant to the ESA, the Service can only authorize the listing of an entire species, subspecies, or DPS. 16 U.S.C. § 1532 (16). Distinctions below the DPS level "are not allowed under the ESA." *Alsea Valley Alliance v. Evans*, 161 F. Supp. 2d 1154, 1162 (D. Or. 2001) (citing *Southwest Center for Biological Diversity v. Babbitt*, 980 F. Supp. 1080, 1085 (D. Ariz. 1997)). The Service "must include or exclude all members of a distinct population segment, as opposed to only some members of a distinct population segment." *Id*. at 1161. "Once a DPS is formed, it [must be] treated uniformly throughout the DPS." *National Wildlife Federation*, 386 F. Supp. 2d at 564 n. 9.

With respect to lynx, once the Service unequivocally determined "threatened status for the contiguous U.S. distinct population segment of the Canada Lynx" based on the international boundary with Canada in the March, 2000, listing rule, technically no further distinctions between members of this contiguous U.S. lynx DPS can legally be made. *See* 65 Fed. Reg. 16059-61 (DPS section of the final listing rule). All lynx within the lower 48 must be treated uniformly because they are all part of a single DPS. *Alsea Valley Alliance*, 161 F. Supp. 2d at 1163.

Service's administrative record for this proposed rule. An additional courtesy copy of the Petition and Exhibits is being provided herein.

The Service's current rule which makes precisely this type of distinction is therefore plainly erroneous and needs to be immediately updated and amended as proposed. *See National Wildlife Federation*, 386 F. Supp. 2d at 563 (rejecting Agency's interpretation because it was inconsistent with the regulations and the ESA); *Alsea Valley Alliance*, 161 F. Supp. 2d at 1163 (same).

b. Revising the DPS boundary to include New Mexico and other states where lynx are found is supported by the best scientific and commercial data available.

In the Southern Rockies – a high elevation, mountainous area that extends from south-central Wyoming, through Colorado, and into north-central New Mexico – lynx habitat typically occurs in the subalpine and upper montane forest zones, typically between 8,000 and 11,000 feet in elevation. *See* Ex. 4 at 4-13, 4-15; Ex. 1, Ex. 2 (maps). These forest zones exist throughout the Southern Rockies' San Juan and Sangre de Cristo mountain ranges and into north-central New Mexico. Ex. 2 (habitat map).

At the time of the lynx's listing, however, the Service did not carefully review the forest zones or suitable habitat in northern New Mexico. Instead, the Service focused on historic occurrence records and website lists and, in the end, conceded that very little was known about lynx habitat types and range in the Southern Rockies: The "complexities of lynx life-history and population dynamics, combined with a general lack of reliable historic or current lynx data . . . makes it difficult for [the Service] to ascertain the past and present population status of lynx." 65 Fed. Reg. 16054. Many "[s]tates did not differentiate between bobcats and lynx in trapping records, referring to both as 'lynxcats.'" *Id.* Additionally, surveys "designed specifically for lynx were rarely conducted, and many reports (e.g., visual observations, snow tracks) of lynx were collected incidental to other activities . . .[making] the reliability of many of these records unknown." *Id.* These factors "hamper [the Service's] understanding of lynx population dynamics and status in the United States and preclude [the Service] from drawing definitive conclusions about lynx population trends." *Id.*

Based on the lack of "reliable" data and surveys, at the time of listing (March, 2000) the Service refused to recognize north-central New Mexico's San Juan and Sangre de Cristo Mountains as part of the lynx's historic range. *See* 65 Fed. Reg. 16059. The Service described the lynx's historic range as abruptly ending at the Colorado State line: "Colorado represents the extreme southern edge of the range of lynx." 65 Fed. Reg. 16059. And, in a subsequent clarification to the listing rule, the Service explicitly excludes north-central New Mexico from the lynx's Southern Rocky mountain range:

> We do not include New Mexico within the range of lynx because we have no reliable records of native lynx occurring in New Mexico." 68 Fed. Reg. 40083. "Lynx are not included on the list of Mammals of New Mexico (American Society of Mammologists (ASM) Web site). We do not consider lynx recently released into Colorado that strayed into New Mexico as sufficient reason to include New Mexico within the range of native lynx because there is no evidence habitat in New Mexico historically supported lynx."

68 Fed. Reg. 40083.

As outlined below, the exclusion of north-central New Mexico from the lynx's range is no longer considered accurate and has since been corrected by the "best scientific and commercial data" on lynx in the Southern Rockies.[5]

1. The Lynx Conservation Assessment and Strategy (LCAS).

The Interagency Lynx Biology Team's (hereinafter "Lynx Biology Team's") Lynx Conservation Assessment and Strategy (LCAS) was developed "to provide a consistent and effective approach to conserve Canada lynx on federal lands in the conterminous United States." Ex. 4 at 1. The conservation measures presented in the LCAS are "to be used as tools for conferencing and consultation, as a basis for evaluating the adequacy of current programmatic plans, and for analyzing effects of planned and on-going projects on lynx and lynx habitat." *Id.*

[5] The ASM website list, relied upon in part by the Service at the time of the lynx's listing to exclude New Mexico, was intended for "Kindergarten-12 teachers and students; the lists are not peer-reviewed documents and are not intended to be used for research or decision making." Ex. 6 at ¶ 9. According to one of the contributors to the list – Dr. Jennifer Frey – the ASM list "was never intended to be a list upon which to base a decision not to include New Mexico within the historic range of Canada lynx. The version of the New Mexico mammal list that the [Service] used to reach their decision was put together by a beginning graduate student (Ms. Amy Ditto) at the University of New Mexico who had little knowledge or experience with the mammalian fauna of New Mexico. Although two professional mammalogists (myself and Dr. David Hafner) provided advice on certain aspects of the list, the list never received a formal peer review. This lack of peer review is evident by the numerous errors and omissions in the list. In addition to the errors, the list is now seriously incomplete and out of date. *Id.* Dr. Jennifer Frey goes on to note that the updated ASM list will include Canada lynx on the list of New Mexico mammals." Attach No. 6 at ¶ 9.

A guiding principle of the LCAS is to use "the best scientific information available about lynx." *Id.* Towards this end, in compiling the LCAS the Lynx Biology Team "relied on information from research throughout the range of the species, recognizing that behavior and habitat use may be different in the southern portion of its range." *Id*. The Lynx Biology Team also "incorporated information about the ecology of the primary lynx prey species, snowshoe hare, and an important secondary prey species, red squirrel. Where no information exists, [the Team] made assumptions or inferences, based on the collective experience and professional judgment of team members and other scientists." *Id*.

Information contained in the LCAS reveals the Service's original findings regarding the lynx's range in north-central New Mexico were incorrect and illogical (lynx habitat does not abruptly end at the Colorado State line). *See* Ex. 4 at 4-14; Ex. 1, No. 2 (maps). It is now well understood that the lynx's "Southern Rocky Mountain Geographic Area encompasses the mountainous regions of Colorado, south-central Wyoming, and north-central New Mexico." Ex. 4 at 4-14. Although "no records exist from New Mexico, suitable habitat extends into north-central New Mexico along the Sangre de Cristo mountain range and, especially, in the San Juan Mountains." *Id.* (emphasis added).

According to the Lynx Biology Team, "[u]ntil recently, it was generally assumed that the lynx was an indigenous but uncommon species in the Southern Rockies Mountain Geographic Area" which includes the mountainous region of north-central New Mexico. Ex. 4 at 4-13. "However, records are coming to light that paint a different picture. Both Allen et al. (1874) and Cary et al. (1911) indicate that lynx may have been relatively common in Colorado, at least near or prior to the turn of the century. Recently discovered are cumulative records of predatory animals . . . [u]nlike many trapping records, numbers for bobcat and lynx are separated." *Id.* Based on these findings, and due to the reintroduction efforts launched by the Colorado Division of Wildlife (now Colorado Parks and Wildlife (CPW)), the Lynx Biology Team states that eventually, "it is assumed and hoped that lynx will reestablish in all portions of the Southern Rockies, consistent with historical distribution patterns." *Id.* at 4-15 (emphasis added).

2. Peer reviewed paper on lynx in north-central New Mexico.

On January 25, 2006, a new, peer-reviewed paper in Biological Conservation was published: Inferring species distributions in the absence of occurrence records: An example considering wolverine (*Gulo gulo*) and Canada lynx (*Lynx canadensis*) in New Mexico. *See* Ex. 5.

Notably, the paper concludes that the "mountains of north-central New Mexico should be considered with the natural range of . . .Canada lynx." *Id.* This conclusion was

based on consideration of three factors: (1) plausible reasons for the paucity of historic occurrence records; (2) the existence of continuous suitable habitat between the area of interest (i.e., north-central New Mexico) and the localities of reliable occurrence (i.e., southern Colorado); and (3) the absence of biogeographic breaks in the distribution of other organisms with similar evolutionary histories.

First, are the plausible reasons for the paucity of occurrence records in the region. According to the peer-reviewed paper, there are numerous compelling reasons for the paucity of lynx occurrence records in New Mexico. These include that fact that: (1) northern New Mexico is a relatively small area at the periphery of the lynx's range; (2) the biology of lynx is such that occurrence records are sparse (they are associated with remote high elevation habitats, are difficult to capture, are naturally rare, exhibit solitary behavior, and extensive movements); and (3) there was heavy exploitation of lynx by hunters and trappers prior to any significant biological exploration of the region (often, these trappers did not differentiate between bobcats and lynx, referring to both generally as "lynx cats"). Ex. 5 at 20.

Lynx were highly valued for their fur and northern New Mexico was a focal point of European activity for more than 450 years. The Taos region became the nucleus for the fur trade in the first decades of the 19th century. Indeed, by the mid-1840's the trapping era ended due to resource depletion. The first comprehensive study of the mammals of New Mexico, however, did not occur until 1889 to 1924 by Vernon Bailey and colleagues. *Id.*

Second, is habitat connectivity. As mentioned earlier, habitats associated with occurrence records of lynx in the San Juan and Sangre de Cristo Mountains of Colorado are contiguous with the higher elevations of the New Mexico portion of these ranges. *See* Ex. 5 at 20-21; Ex. 1, 2 (maps).

There are a number of verified occurrence records of lynx just north of the New Mexico border in contiguous habitat. In total, there are 196 historic occurrence records of lynx in Colorado before the recent reintroduction of Canada lynx into that state. These records include multiple records from the San Juan range including a specimen near Cumbres Pass, Conejos, Colorado, which is approximately 3 km of the New Mexico border in the San Juan Mountains. Multiple occurrence records for lynx are also available for the Sangre de Cristo range including a skin taken in either the Sangre de Cristo or adjacent Greenhorn Mountains. Given this habitat connectivity, the paper concludes that it is not surprising that lynx being reintroduced into southwestern Colorado's San Juan Mountains are traveling into north-central New Mexico's San Juan Mountains.

The third reason outlined in the paper for including New Mexico's San Juan and Sangre de Cristo Mountain ranges within the historic range of lynx are biogeographic patterns. *See* Ex. 5 at 21. To properly assess a species distribution, one must assess the biogeopraphic patterns of other organisms that have similar environmental requirements as the focal species in question.

For example, there are 20 species of mammals in the Southern Rocky Mountains that primarily are associated with conifer forests and tundra zones and that have boreal-cordilleran or cordilleran distribution patterns. Two of these are limited to areas north of the Gunnison Basin in west-central Colorado. However, these range limits are not relevant to the occurrence of lynx in New Mexico because the species has occurrence records on either side of this biogeographic break. *See id.* Further, all species that occur in the San Juan Mountains also occur in the Sangre de Cristo Mountains except for *Microtus montanus*. *See id.* Also, with the exception of the lynx and wolverine, all species documented from the Colorado portion of the San Juan and Sangre de Cristo ranges also have been verified from the New Mexico portion of those ranges. Thus, there does not appear to be a biogeographic break between New Mexico and Colorado habitats in these mountain ranges.

3. Inventory of prey-base communities in northern New Mexico.

On December 31, 2003, a "Baseline Inventory of Small Mammal Prey-base Communities on the Carson National Forest, New Mexico" was completed for the U.S. Forest Service. *See* Ex. 12. The purpose of the inventory was to obtain baseline data about small mammal prey-base communities on the Carson National Forest in north-central New Mexico. The inventory documented an abundant and diverse community (21 species) of prey species including, but not limited to, deer mice, meadow voles, least chipmunks, woodrats, western jumping mice, shrews, Colorado chipmunks, western harvest mice, montane voles, and golden-mantled ground squirrels. *Id.*

Relevant here, the survey also includes a "preliminary checklist of the Mammals of the Carson National Forest." *See id.* at Appendix 2 (p.45). Both snowshoe hare and lynx are included on the list as a "verified" species "by specimen record or published record to occur on [the Carson National Forest]." *Id.*

4. Distribution, habitat characteristics, and population demographics of snowshoe hare and mountain cottontail in northern New Mexico.

On November 24, 2003, a thesis on the distribution, habitat characteristics, and population demographics of snowshoe hare (the lynx's primary prey species) in northern New Mexico was completed. *See* Ex. 10. The first goal of the study was to "better determine the distribution and habitat associations of snowshoe hare in New Mexico and

assess the degree of ecological segregation between snowshoe hare and mountain cottontail . . .at the southern edge of their zone of sympatry. The second goal was to test between the primary productivity and habitat quality hypotheses, which may account for latitudinal gradients in demographic features in snowshoe hare." *Id.* at iv.

Based "on museum records, literature records, and surveys" the study revealed that "snowshoe hare were verified as occurring in both the San Juan and Sangre de Cristo mountains." *See* Ex. 10 at 15. The surveys provided 29 new records of snowshoe hare in the mountains of north-central New Mexico and "verified the persistence of several populations." *Id.* Records of mountain cottontail were also "obtained in the Sangre de Cristo, San Juan, and Jemez mountains. [The] 62 new records [of mountain cottontail] verify the persistence and wide geographic range of this species" in north-central New Mexico." *Id.; see also id.* at 16-17 (maps depicting locations where snowshoe hare and mountain cottontail were documented by spotlight and trapping transect surveys).

5. Paper on summer habitat use by snowshoe hare and mountain cottontail in northern New Mexico.

On April 11, 2005, a paper (based, in part, on the results of the thesis mentioned above) was published in the Journal of Wildlife Management entitled: *Summer Habitat Use by Snowshoe Hare and Mountain Cottontail at their Southern Zone of Sympatry*. *See* Ex. 11.

In addition to documenting the presence of snowshoe hare and mountain cottontail populations throughout northern New Mexico's San Juan and Sangre de Cristo Mountains, the paper notes that "[m]ountain cottontail occupied a broad range of habitats within the subalpine conifer forest zone, which resulted in considerable habitat overlap and syntopy with snowshoe hare." Ex. 11 at 10-11. The paper notes, however, that "snowshoe hare nearly exclusively used high elevation, closed canopy spruce-fir forests with high horizontal foliage cover." *Id*.

6. List of mammals of New Mexico.

After the March 24, 2000, listing, a new list of New Mexico Mammals was published. *See* Ex. 9 (A Checklist of New Mexico Mammals (November 11, 2003) and Taxonomy and Distribution of the Mammals of New Mexico: An Annotated Checklist). This new list includes lynx within the list of mammals of New Mexico. "Although no specimens are available of the species in New Mexico, it undoubtedly was a member of the fauna . . . It occurred in adjacent areas of Colorado and animals recently reintroduced into the San Juan Mountains in Colorado occasionally enter New Mexico. Its range undoubtedly included the San Juan and Sangre de Cristo Mountains based on its

occurrence in contiguous habitat in these ranges in adjacent areas of Colorado (Armstrong 1972)." *Id.*

7. Biota Information System of New Mexico (BISON).

The New Mexico Game and Fish Department's "Biota Information System of New Mexico" or "BISON" was developed for wildlife biologists and contains "accounts for all vertebrate and many invertebrate species of wildlife occurring in New Mexico." Ex. 8. With respect to lynx, BISON states that the species "almost certainly occurred in New Mexico in [the] San Juan and Sangre de Cristo Mountains but there are no specimens and no verified reports." *Id.* The lynx "was extirpated [in New Mexico] before it could be verified." *Id.*

8. CPW's lynx reintroduction program.

The mountainous regions of north-central New Mexico are now part of the lynx's current range in the Southern Rockies thanks to the CPW's reintroduction efforts. In an effort to establish and restore a viable population of lynx to the Southern Rockies, the CPW began releasing lynx into a "core recovery area" in southwestern Colorado's San Juan Mountains in 1999 (just before the March 24, 2000 listing).[6] Ex. 7 at 1. CPW picked this area because of its outstanding lynx habitat. The San Juan Mountains include relatively large populations of snowshoe hare (the lynx's primary prey), low road densities, and large forested areas of public land. Evidence also indicates that the San Juan Mountains were also historically occupied by lynx. See CPW's February 1, 2005 Lynx Update (hereinafter "Lynx Update").

The recovery efforts began with the release of 41 lynx in the winter and spring of 1999 and 55 lynx in April and May of 2000. CPW released an additional 33 lynx (17 females and 16 males) into the San Juan Mountains in April, 2003 and 37 lynx (17 females and 20 males) in April 2004. *Id.* The lynx were released with dual VHF/satellite radio collars that allow CPW to monitor their movement and mortality. From 1999-2005, 204 lynx were released into southwestern Colorado' San Juan Mountains. Fourteen additional animals (8 males and 6 females) were released last spring resulting in a total of 218 lynx reintroduced into the wild. *See* Ex. 13 (November 8, 2006 Update and press release).

[6] The core lynx recovery area is "the area of the San Juan and Rio Grande National Forests and associated lands above 9,000 feet extending from Del Norte west to Dolores and north to include the Uncompahgre and Gunnison National Forests in the Gunnison basin (as far north as Taylor Park east to the Collegiate Range)."

In the spring of 2003, CPW discovered – for the first time – that the released lynx were reproducing in the wild. Six lynx dens and a total of 16 kittens were discovered in southwestern Colorado's San Juan Mountains. *Id.* During May-June 2004, CPW found an additional "11 dens and a total of 30 kittens." *Id.* In 2005, CPW reported the discovery of 46 more lynx kittens – the largest lynx reproduction numbers to date. Field researchers "found 16 litters spread throughout the central and southern mountains." *Id.* (CPW's July 12, 2005 press release). The new discovery gives CPW "strong indication that lynx are adopting well to Colorado's mountains and are again thriving in their historical range." *Id*. A total of 37 lynx dens have been found from 2003-2006. Ex. 13.

Today, CPW estimates that there are likely more than 100 lynx now living in the Southern Rockies, some of which are likely inhabiting portions of northern New Mexico. In earlier reports, CPW states that the majority of lynx released remained in the San Juan Mountains – from north-central New Mexico north to Gunnison, west as far as Taylor Mesa and east to Monarch Pass. *Id.* The CPW also reported that lynx released into the core recovery area continue to migrate south along the San Juan Mountains into northern New Mexico. "Telemetry data reveals that at least 28 individual lynx were located at 184 locations in 8 New Mexico counties." Ex. 6 at ¶ 15. Most "telemetry locations were during the summer with a concentration in the San Juan Mountains, although at least one lynx spent the summer of 2003 in the New Mexico portion of the Sangre de Cristos."*Id.* Data from the CPW (2005) states that approximately 81 individual lynx have been located in north-central New Mexico. *See* Ex. 14 (Summarizing Number of Lynx Located South of Highway 160); *see also* Ex. 15 (General Locations of Lynx Reintroduced to Southwestern Colorado from February 4, 1999 through February 1, 2005).

Notably, CPW identified a number of travel corridors used repeatedly by more than one lynx, possibly suggesting route selection based on olfactory cues. Ex. 7 at 14. For southernly movements into New Mexico, this corridor is "down the east side of Wolf Creek Pass to the southeast to the Conejos River Valley." *Id*. Over the last few years, we also know that <u>at least</u> 6 lynx have been killed in New Mexico (two were shot near Chama, New Mexico, one was hit by a car, and a cut radio collar was found in a dump near Taos, New Mexico).

CPW recognized that lynx mortalities occurred throughout the recovery area. However, CPW determined that "mortalities occurred in New Mexico in higher proportion to all lynx locations in that area than elsewhere." Ex. 7 at 14. According to Service, lynx mortality in areas where lynx densities are low, as in the Southern Rockies region, is particularly disruptive. Evidence indicates that when lynx densities are low

"incidental or illegal killing can significantly affect lynx population dynamics under some circumstances." Science Report at 453 (emphasis added).[7]

c. Revising the DPS boundary to include New Mexico and other states where lynx are found is necessary to ensure the survival and recovery of lynx in the Southern Rockies.

Finally, as a matter of policy, the Service's current 14 state lynx DPS rule needs to be changed because it makes no sense. Under the current listing rule, a lynx that wakes up in Colorado's San Juan Mountains, goes hunting, and chases a snowshoe hare across the Colorado/New Mexico border would be unprotected for the few hours it chases the hare in New Mexico. Radio-collared lynx that have been reintroduced into southwestern Colorado's San Juan Mountains could be shot and hunted upon crossing the State boundary into New Mexico. A federally protected species traveling on federal land, i.e., from Colorado's San Juan and Rio Grande National Forests into New Mexico's Carson and Santa Fe National Forests, would lose protective "ESA status" simply by crossing the invisible state boundary. This absurd result is contrary to the very purpose and goals of the ESA.

The purpose of the ESA is to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species." 16 U.S.C. § 1531 (b). It is "further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered and threatened species and shall utilize their authorities in furtherance of the purposes of [the ESA]." 16 U.S.C. § 1531(c) (emphasis added). The term "conserve" means to "use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to [the ESA] are no longer necessary.

Without question, the only way to "conserve" lynx in the Southern Rockies to ensure that lynx are protected throughout their range and given room to roam in suitable lynx habitat throughout the Southern Rockies.

As explained by Dr. Jennifer Frey, "legal protections for lynx in New Mexico is especially important because lynx originating from releases in Colorado frequently cross

[7] A copy of the "Science Report," officially titled "Ecology and Conservation of Lynx in the United States," Ruggiero, L. F. et. al., 2000, is included in the administrative record and available online at: http://www.fs.fed.us/rm/pubs/rmrs_gtr030.pdf.

the state border into New Mexico where there are no clear regulations affording the species protection." Ex. 5 at 21. The Service' current rule allows these reintroduced, radio collared lynx to be killed and even hunted in north-central New Mexico simply because the Service failed to include north-central New Mexico within the "historic range" of lynx in the final listing rule. This needs to change.

2. The Service must carefully consider and properly apply the ESA's criteria for designating critical habitat for lynx.

Under the ESA, there are two categories of areas that qualify for designation as critical habitat: (1) areas that were occupied at the time of listing, include the physical and biological features (commonly known as the Primary Constituent Elements or "PCEs") essential to the conservation of the species, and may require special management; and (2) areas that were unoccupied at the time of listing but are nonetheless deemed essential to the conservation of the species. 16 U.S.C. § 1532(5)(A).

When designating critical habitat for lynx, therefore, is important for the Service to carefully and clearly define what the terms used in the ESA's definition of critical habitat mean.

"Conservation," for instance, means to use any and all methods necessary to bring a listed species to the point at which the measures provided by the ESA are no longer required. 16 U.S.C. § 1532 (3). Use of the term conservation therefore includes a recovery requirement which means more acreage than is required for mere survival. *Gifford Pinchot Task Force v. USFWS*, 378 F.3d 1059, 1069 (9th Cir. 2004). As explained in *Gifford Pinchot*, the purpose "of establishing 'critical habitat' is for the government to carve out territory that is not only necessary for the species' survival but also essential for the species' recovery." *Id*. at 1070. As outlined in these comments, the Service's proposed rule falls short of carving out the territory – including unoccupied territory—necessary for the recovery of lynx in the lower 48, especially in the face of climate change.

The Service must also explain how it defines "occupied" and provide a valid justification for that definition. In the proposed rule, the Service states that the definition of "occupied" took into account two variables: (1) whether the area was within the lynx's known historic range based on McKelvey et al. (2000a) and Hoving et al. (2003); and (2) verified occurrence records of lynx since 1995. To be considered a "verified" lynx record, the Service requires an animal (live or dead) in hand or observed closely by a person knowledgeable in lynx identification, genetic (DNA) confirmation, snow tracks

but only when confirmed by genetic analysis, or location data from a radio or GPS-collared lynx.

Under the Service's definition both variables must be met in order for an area to be deemed "occupied" by lynx at the time of listing. We believe this definition is too restrictive for a rare and difficult to detect species like lynx.

As written, the Service's definition of "occupied" excludes large areas of western Montana that contain suitable lynx habitat where lynx have been trapped (and where lynx tracks have been documented and observed by local residents and MFWP) for decades. *See* Exs. 17, 18; Science Report at p. 247 (Figure 8.19, 8.20). Some of these observations occurred before 1995, but if the area contains suitable habitat for lynx and if lynx have been historically trapped in (or observed) in the area and no subsequent, meaningful surveys of the area have been undertaken to clearly demonstrate it is not occupied, then shouldn't the Service presume the area is "occupied" lynx habitat? The Service's approach assumes such areas are unoccupied unless proven otherwise. This is a backwards approach.

Also, why is the definition of "occupied" for purposes of critical habitat designation different from the definition used by the Forest Service in the Northern Rockies Lynx Management Direction (Lynx Direction) and agreed to among the two agencies in the 2006 lynx Conservation Agreement?

The definition of critical habitat in the ESA also uses the term "essential to the conservation of the species." How does the Service define the term "essential to the conservation of the species" and how does this definition differ, if at all, from the "physical and biological features" or PCEs?

Does the Service make a distinction between areas that include PCEs and areas deemed "essential to the conservation" of the species? Defining these terms is important because the plain language of Section 3(5)(A) of the ESA suggests an area may not have been occupied at the time of listing and may not possess the PCEs but nonetheless still qualify for critical habitat designation because it is deemed essential to the conservation of the species (say, for instance, because it provides important habitat connectivity for the meta-population of lynx in the lower 48 or between the contiguous U.S. lynx DPS and lynx in Canada). *See* 16 U.S.C. § 1532(5)(A); 50 C.F.R. § 424.10(d). Northern Idaho and large parts of Montana (Beaverhead-Deerlodge National Forest), for instance, may be "unoccupied" at the time of listing but nonetheless be essential to the conservation of lynx because they provide important corridors or linkage zones for travel in the lower 48 or between lynx in the lower 48 and lynx in Canada.

The Service must ensure that any final decision to exclude certain areas from critical habitat designation takes this important distinction into account. Review of the proposed rule suggests the Service failed to do so and instead viewed the areas with PCEs and areas deemed "essential to the conservation" of the species as one in the same. *See* 78 Fed. Reg. at 59436 (PCEs are essential to conservation of species), at 59439 (areas that have the PCEs are essential to conservation of species).

Indeed, in the proposed rule, the Service's approach to designating critical habitat for lynx appears to be as follows: (1) eliminate all areas deemed "unoccupied" at the time of listing because, according to the Service, the occupied areas are "sufficient for the conservation of the species"; (2) evaluate the areas deemed occupied at the time of listing to determine if they possess the physical and biological features (commonly known as the Primary Constituent Elements or "PCEs") essential to the conservation of lynx; and (3) ensure that such areas have the PCEs essential to the conservation of lynx in adequate quantities and/or spatial arrangements. 78 Fed. Reg. at 59446.

In order to identify occupied areas with PCEs in sufficient quantity and spatial arrangement to qualify for designation as critical habitat, the Service uses a wave analogy. According to the Service, the lynx population in the lower 48 is "replenished" by a wave of lynx from Canada that washes over many of the northern tier States in the lower 48 about every ten years (pursuant to hare cycles).

Over time, the wave recedes, leaving remnant lynx populations or "puddles" of lynx in a variety of habitats. According to the Service, the "lasting puddles" are the ones that have the PCEs in sufficient quantity and spatial arrangement and, thus, qualify for designation as critical habitat. The Service considers these source populations. The "shrinking puddles," by contrast, are areas with lynx but, according to the Service, without the PCEs in sufficient quantity or spatial arrangement to be deemed essential to lynx conservation. These shrinking puddles are considered "sink" populations that do not contribute to the health and stability of the metapopulation.

As mentioned above, in adopting this approach, the Service never considered whether unoccupied areas at the time of listing (no puddle) that may not possess all the PCEs (perhaps just some or all but in insufficient quantities or spatial arrangement) should be designated critical habitat because they are essential to the conservation of the species.

Under the ESA, for instance, important linkage zones or travel corridors used by lynx in the lower 48 or between lynx in the lower 48 and lynx in Canada should have been considered for critical habitat designation even though they were "unoccupied" at the time of listing (no puddle) and even though they do not possess the requisite PCEs.

Review of the proposed rule reveals the Service failed to take these areas into account when designating critical habitat and excluding larger areas like the Southern Rockies, Montana's Beaverhead-Deerlodge National Forest, northern Idaho, and areas in Washington (Kettle Range and Wedge) and Oregon from the propose rule.

Moreover, the Service fails to explain or otherwise discuss human influences over the various "puddles" of lynx in the lower 48 and how and if such influences impacted whether a remnant population of lynx is considered a source population (lasting puddle) or a sink population (shrinking puddle).

For example, in the Southern Rockies, the best available science reveals that human caused mortality was a significant threat to lynx in the region and "has been at least partially implicated in their decline or extirpation in various regions." Ex. 5 at 20. Northern New Mexico, for instance, was a focal point for European activity for more than 450 years and the region became a nucleus for the fur trade in the first decades of the 19th Century and continuing thru the mid-1840s until the resources were depleted. *Id*. The first systematic inventory and study of mammals in the region did not occur until 50 years later.

How does the Service's wave analogy account for such influences on local lynx populations in the lower 48? Do such influences remove the puddles (unoccupied) or create shrinking puddles? Indeed, but for the CPW's reintroduction program, there would be no puddle in the Southern Rockies even though the region was historically occupied by lynx and even though suitable habitat exists. Are there areas in the lower 48 where a once robust lynx population existed (lasting puddle) but has yet to recover fully from periods of heavy trapping pressure and is now considered a shrinking puddle?

According to the Montana Department of Fish, Wildlife, and Parks (MFWP) and MFWP's trapping records, lynx once occupied all of western Montana. *See* Science Report at 244; Exs. 17, 18 (MFWP report and data on lynx occurrences and distribution in Montana). Up until 1998, lynx were considered "common throughout the western part of the state." Ex. 18 at 5-6. Lynx "occurrence data for the state . . . indicate distribution is widespread and occurs throughout the majority of predicted lynx habitat in Montana." *Id*. at 5. If this is true, perhaps western Montana was part of the larger source population in Canada (part of the ocean), one large puddle, or a series of smaller, lasting puddles? Areas currently deemed unoccupied in Montana or "shrinking puddles" may be that way not because of the lack of PCEs at the appropriate quantity or spatial arrangement but because of historic trapping pressure. The Service must take such influences into account.

During a four-year period, from 1972-1976, MFWP reports that 973 lynx were trapped and killed in Montana alone. Ex. 17 at 2. A number of these incidents occurred in areas of Montana, i.e., parts of the Helena National Forest, the Beaverhead-Deerlodge National Forest, Lewis & Clark National Forest, Bitteroot National Forest, and Gallatin National Forest now considered unoccupied (no puddle at all). Even after the early fur-trapping days and before records were kept, the trapping pressure in Montana remained intense and may have influenced the species' ability to persist and/or grow in certain areas. In small, isolated ranges, the loss of a few individual lynx – especially pregnant females – can likely be the difference between a source (lasting puddle) or sink (shrinking puddle) population.

Finally, as the Service concedes, there is a lack of scientific literature on what quantities and spatial arrangements of the PCEs are needed to conserve lynx throughout the range of the DPS.

In the Service's own words: "We lack range-wide site-specific information or tools that would allow us to analyze boreal forests across much of the range of the DPS and determine which specific areas contain the spatial and temporal mosaic of habitats and hare densities that lynx populations need to persist." 78 Fed. Reg. at 59446. In other words, the Service is not entirely sure how to classify the puddles and distinguish between lasting and shrinking sub-populations.

If this is true, how can the Service make having PCES at "adequate quantities and spatial arrangements" a prerequisite for critical habitat designation? How can the Service rationally disqualify large areas from critical habitat designation based on the lack of PCEs at a sufficient quantity or spatial arrangement (shrinking puddle) when it is unsure how to document and measure those variables?

3. <u>The Service needs to clarify the PCEs for lynx and when "adverse modification" occurs.</u>

Pursuant to the ESA, the Service must identify the physical or biological features essential to the conservation of lynx in areas occupied at the time of listing. These features are commonly referred to as the primary constituent elements (PCEs).

The PCEs specific to lynx in the proposed rule include boreal forest landscapes supporting a mosaic of differing successional forest stages and containing: (a) the presence of snowshoe hares and their preferred habitat conditions, which include dense understories of young trees, shrubs or overhanging boughs that protrude above the snow, and mature multistoried stands with conifer boughs touching the snow surface; (b) winter

conditions that provide and maintain deep fluffy snow for extended periods of time; (c) sites for denning that have abundant coarse woody debris, such as downed trees and root wads; and (d) matrix habitat (e.g., hardwood forest, dry forest, non-forest, or other habitat types that do not support snowshoe hares) that occurs between patches of boreal forest in close juxtaposition (at the scale of a lynx home range) such that lynx are likely to travel through such habitat while accessing patches of boreal forest within a home range.

Before adopting a final rule, the Service needs to clarify what it means by "boreal" forest landscapes. Does the Service mean coniferous forest landscapes comprised mainly of spruce, fir, pines, and larches and only at certain elevations? What types of forest stands would not qualify as "boreal" stands and what is considered a "dry forest" such that it would be considered non-lynx or matrix habitat? Does the presence of some ponderosa pine disqualify an area from becoming lynx habitat?

Also, the Service mentions a boreal forest landscape supporting a "mosaic of successional forest stages." Based on this language it appears that such forest stands – regardless of their successional stage of development – are protected lynx critical habitat. A forest stand in the stem exclusion stage of development, for instance, may not provide good winter hare habitat but is moving towards becoming an older, multi-storied mature stand that will someday provide good lynx winter habitat. A plain reading of the current and proposed rule suggests that distinctions among boreal forest stands are various stages of development should be made, i.e., all boreal forest stands are to be protected as critical habitat regardless of their successional stage of development. Is this accurate?

Related, does the Service consider boreal forest stands at certain successional stages of development – say, the stem exclusion stage – to be "matrix" habitat?

This is how the Forest Service interprets the current lynx critical habitat rule. According to the Forest Service's interpretation, coniferous forest stands in designated critical habitat deemed to be in the "stem exclusion" stage of development can be aggressively logged via regeneration harvest methods (seedtree, shelterwood, or clear cut) without any adverse modification to critical habitat because such stands are "matrix" or non-lynx habitat. As a result, there is no recruitment. Forest stands in designated lynx critical habitat are never given the chance to become good lynx winter habitat which, as Squires et al. (2010) states, is important for long-term survival and recovery in the lower 48. More clarification on what the Service means by "matrix" habitat is therefore required.

Are coniferous forest stands at certain successional stages of development properly considered "matrix" and, if so, aren't the impacts to lynx more severe than those outlined in the current and proposed rule? The impacts extend beyond impediments to

lynx "movement" but would include the loss of eventual lynx winter habitat for a period of 50 plus years. The Service needs to address this issue and close the "loophole" that allows the Service to continue industrial logging in designated critical habitat.

If the Service considers coniferous forest stands as certain successional stages of development to be "matrix" – as the Forest Service does – that can be logged without impact to lynx, then the Service needs to carefully analyze the impacts of that decision (and other aspects of this proposed rule) pursuant to NEPA.

Also, in the current and proposed rule, the Service states that "actions that would reduce or remove understory vegetation within boreal forest stands on a scale proportionate to the large landscape used by lynx" would likely qualify as adverse modification. What does the Service mean by "large landscape?" What scale should be used to evaluate adverse modification and impacts (direct, indirect, and cumulative) to lynx critical habitat? The critical habitat unit, sub-populations within the unit, home ranges, LAUs, a single LAU, project areas, or some other analysis area?

Regarding foraging habitat, the PCE states that the presence of snowshoe hares and their preferred habitat conditions is required. How does the Service make a determination regarding the presence of snowshoe hares and the existence of their preferred habitat conditions? Are habitat conditions for hares measured via stem density and age structure, amount of hares per acre, using the amount of horizontal cover, and/or a combination of various methods? Does the Service conduct surveys for hares?

Region 1 of the Forest Service has developed an internal guidance document to determine whether or not forest stands are subject to standard VEG S6 in the Lynx Direction. In order to be deemed "hare habitat" a mature forest stand must have equal to or greater than 35% horizontal cover as measured by the Agency (using measuring boards). Does the Service use a similar approach when designating critical habitat? If not, explain why and what methods the Service uses to identify hare habitat for lynx? If so, then the Service must make this clear and ensure that it takes hard look at the impacts of that decision pursuant to NEPA.

(4) Lynx winter habitat (as opposed to winter hare habitat) needs to be discussed, included in the PCEs, and conserved.

The Service needs to ensure that lynx winter habitat is adequately protected in the final critical habitat rule. Squires et al. (2010) found that, in contrast to populations in Canada and lynx in other areas in the contiguous U.S., lynx in the Northern Rockies selected mature, multistoried forests composed of large-diameter trees with high

horizontal cover during winter, which is the most constraining season for lynx in terms of resource use. For this reason, Squires recommends that land management agencies like the Forest Service prioritize retention and recruitment of abundant and spatially well distributed patches of mature, multi-storied forest stands.

As mentioned earlier, however, land management agencies like the BLM and Forest Service are not managing and conserving lynx winter habitat or managing forest stands in a manner that would allow younger stands to eventually become good lynx winter habitat, even in designated critical habitat. There is no retention or recruitment of lynx winter habitat.

As such, the designation of lynx critical habitat (under the current rule) is not providing the protective measures needed to ensure the long-term survival and recovery of the species in the lower 48. As long as land management agencies like the Forest Service – which control the vast majority of lynx habitat in the western United States – think they are properly managing critical habitat by authorizing clearcuts, seedtree cuts, shelterwood cuts, or even thinning that removes the important understory for lynx and hares because they are creating young regenerating stands (that may be good hare (not lynx) habitat in 20-30 years) then lynx will never recover in the lower 48.

Before adopting a final rule, therefore, the Service should take steps to ensure lynx winter habitat in designated critical habitat is properly managed and conserved. The Service should also take steps to ensure that coniferous forest stands in critical habitat are given a chance to become good lynx winter habitat in the coming years and decades.

Such steps may include, but are not limited to, making adjustments to the PCEs, providing additional clarification regarding when "adverse modification" to critical habitat occurs in the preamble to the final rule, and/or closing the "matrix" loophole discussed earlier and making it clear that all boreal forest stands – regardless of successional stage of development – are not matrix lands that can be logged without impacts to lynx, including recruitment of lynx winter habitat.

(5) <u>Areas deemed important for habitat connectivity between the contiguous United States lynx DPS and lynx in Canada should be designated critical habitat.</u>

Squires et al. (2013), *see* Ex. 19, states that "lynx conservation in the contiguous United States hinges in part on maintaining population connectivity between Canada and the United States." Maintaining such connectivity, however, is becoming increasingly difficult due to climate and anthropogenic change, as evidenced by reduced connectivity of other boreal species. Ex. 19 at 1. It is therefore critical to ensure that the

last remaining areas that still provide habitat connectivity for lynx (and other boreal species) are preserved regardless of whether or not they were "occupied" at the time of isting. "Long-term population recovery of these species requires maintenance of short and long distance connectivity." *Id*.

In designating critical habitat for lynx, therefore, the Service should review the best available science – including Squires et al. (2013) – and identify and protect corridors, habitat linkage zones, and "least cost paths" that help connect the local carnivore populations in the lower 48 with lynx populations in Canada.

These areas include but are not limited to the following: (1) the two north-south corridors identified in Squires et al. (2013), one that extends from the Canadian border and proceeds south from the Whitefish Range in the north, along the western front of the Swan Range and ends near Seeley Lake, Montana, and the other which extends along the east side of Glacier Park to the Bob Marshall Wilderness Complex (*see* Ex. 19); (2) the Kettle Range Wedge, Little Pend Oreillie, and Salmon Priest areas in northeastern Washington (*see* Ex. 20 at figure 1 (map)); and (3) ranges on National Forest land in northern Idaho. Protecting such areas by designating them critical habitat is important, regardless of whether or not such areas have PCEs in sufficient quantity or spatial arrangement or even whether they are currently occupied by lynx (they are) or were "unoccupied" at the time of listing.

(6) <u>Areas deemed important for habitat connectivity between sub-populations of lynx in the contiguous United States should be designated critical habitat.</u>

Lynx in the lower 48 are a meta-population. As explained by the Service, a meta-population is a network of semi-isolated populations, each occupying a suitable patch of habitat in a landscape of otherwise unsuitable habitat. Meta-populations require some level of regular or intermittent migration and gene flow among subpopulations, in which individual populations support one another by providing genetic and demographic enrichment through mutual exchange of individuals. Individual subpopulations may go extinct or lose genetic viability, but are then "rescued" by immigration from other subpopulations, thus ensuring the persistence of the metapopulation as a whole.

Some of the subpopulations within the lynx metapopulation in the lower 48 are extremely small and vulnerable. According to the best science, if the metapopulation dynamics break down, either due to changes within the subpopulation or due to the loss of connectivity (from climate change or development) then "the entire metapopulation may be jeopardized due to subpopulations becoming unable to persist in the face of inbreeding or demographic and environmental stochasticity." 78 Fed. Reg. at 7867.

As such, it is extremely important for the Service, in concert with other federal (BLM, Forest Service, National Park Service) and state land management agencies to take any and all available steps to maintain, protect, and restore connectivity between isolated subpopulations of lynx in the lower 48.

Existing corridors and/or "linkage zones" between subpopulations of lynx should be identified and designated critical habitat, especially when those areas overlap with public lands (federal or state). Taking steps to protect connectivity among sub-populations is especially important along the Cascade Range and between the Cascades and the Rockies. Singleton et al. (2002) and the Washington Wildlife Habitat Connectivity Working Group (2010) identify habitat linkages within the Cascades and between the Cascades and Rockies that are vital to the long term recovery and persistence of lynx in that region. *See* Ex. 21.

Maintaining connectivity for lynx is also important in places like the Northern Rockies' central insular mountains ranges—often referred to as the "Central Linkage Ecosystem (CLE)". The CLE includes important habitat on public land in between three large core areas in the Northern Rockies: the Crown of the Continent in northwest Montana, the Salmon-Selway area in Idaho, and the Greater Yellowstone Ecosystem. The CLE area is comprised of smaller ranges in the Beaverhead-Deerlodge National Forest that the Service largely considers "unoccupied" by lynx, though this finding does not square with MFWP's data. *See* Ex. 17 and 18.

Because of these smaller ranges' geographic position, they are extremely important from a habitat connectivity standpoint and should be considered for critical habitat designation (even if one assumes, *arguendo*, that such ranges are "unoccupied"). McKelvey et al. (2011) at 2891-92, demonstrates that this area will remain critical for connectivity purposes for many species as reductions of habitat worsen with the advance of climate change. Other areas important for maintaining connectivity in the face of clime change include the Uinta-Wasatch-Cache National Forest between Colorado and the Greater Yellowstone Area.

In sum, important connectivity areas (in addition to core areas) like those mentioned above would benefit from the added regulatory protections provided by critical habitat designation. Designating parts of Washington, the CLE in the Northern Rockies, and other areas identified by the best available science as important for connectivity would give the Service an important tool to protect important linkage zones for lynx. *See* Schwartz et al. (2009), Singleton et al. (2002), Washington Wildlife Habitat Connectivity Working Group (2010) (showing least cost linkage routes); McKelvey et al. (2010) (showing how linkage routes would change in response to climate warming).

(7) The Service cannot determine which areas and what actions are essential for recovery without putting together a recovery team and preparing and finalizing a lynx recovery plan.

Pursuant to Section 4(f) of the ESA, the Service is to prepare recovery plans for listed species. The Service's *Endangered and Threatened Species Recovery Planning Guidance* (updated June, 2010) explains that the recovery planning process includes three phases.

First, is the pre-planning phase whereby the Service prepares a recovery outline. The outline is designed to provide interim strategies and goals for recovering the species and lays out how and by whom a recovery plan is to be developed. The recovery outline is designed to "get the ball rolling" for the development of a recovery plan and, as such, is to be completed within 60 days from the date of listing. *Guidance* at 1.5.1.

Second, is the planning phase which involves the actual writing of the recovery plan, including solicitation and incorporation of comments via peer review and public comment and formation of a recovery team or committee. Final recovery plans "should be completed within 2.5 years of listing." *Guidance* at 1.5.1.

Under the ESA, each recovery plan shall include: (1) a description of site specific management actions necessary to achieve the recovery goal; (2) measurable criteria (which, when met, would result in a determination that the species be de-listed); and (3) an estimate of the time and costs required to carry out the measures needed to achieve the recovery goal and intermediate steps towards that goal. *Id*. at § 1533(f)(1)(B).

The third phase is implementation of the recovery actions called for in the recovery plan, monitoring of implementation and the effectiveness of the actions, and adaptation of the plan, if necessary.

The Service explains that, without "a [recovery] plan to organize, coordinate and prioritize the many possible recovery actions, the effort may be inefficient or even ineffective." *Guidance* at 1.1. The prompt development and implementation of recovery plans "ensures that recovery efforts target limited resources effectively and efficiently into the future." *Id*. Recovery plans are a "road map for species recovery – [they] lay[] out where [the Service] needs to go and how best to get there." *Id*. As such, recovery plans are "one of the most important tools" to ensure sound decision making throughout the recovery process. *Id.* (emphasis added).

To date, the Service has yet to develop and implement a recovery plan for lynx as required by Section 4(f) of the ESA, 16 U.S.C. § 1533(f). Nearly thirteen years after

listing, the Service has yet to put together a recovery team and prepare and implement a recovery plan for lynx in the lower 48. This presents a problem for designating critical habitat because, as mentioned above, the salient inquiry for the purpose of designating critical habitat is whether such areas are essential to the recovery of the lynx DPS.

How can the Service make this critical determination without a recovery plan? In other words, if a recovery plan is one of the most important tools required by the ESA because it is a "road map" for recovery, how can the Service reasonably determine which specific areas are essential to the recovery of lynx in the lower 48 – including occupied or unoccupied areas – without the road map in hand? Isn't the Service putting the proverbial cart before the horse by designating critical habitat (or revising critical habitat) prior to completion of a recovery plan?

(8) <u>The Service should designate critical habitat for in all areas deemed "occupied" in the Northern Rockies.</u>

There are a number of areas in the Northern Rockies including, but not limited to, parts of the Helena National Forest south of Highway 12 (parts of the Beaverhead-National Forest in this same area should also be considered "occupied" because lynx do not recognized artificial National Forest boundaries), the Cabinet Mountains in the Kootenai National Forest and other areas south of Highway 2, portions of the Clearwater and Idaho Panhandle National Forests in Idaho, the Colville National Forest in Washington, and portions of the Beaverhead-Deerlodge, Gallatin, and Bitterroot National Forest in Montana, that should be designated lynx critical habitat.

In the proposed rule, the Service excludes such areas but without any rational reason as to why theses "occupied" areas differ from other areas included in the critical habitat rule. For example, the Continental Divide runs north-south in the Helena National Forest. Along the Divide, the areas immediately north of Highway 12, on MacDonald Pass, in the Helena National Forest is designated lynx critical habitat. But the area immediately south of Highway 12 along the Divide and also on MacDonald Pass (which also includes suitable habitat, has all the PCEs, and is occupied) was not.

On what grounds does the Service exclude the area south of Highway 12 on MacDonald Pass from the lynx critical habitat? What relevant distinctions, if any, exist between to the two areas? Is the Service simply using the Highway to demarcate the boundaries of the critical habitat designation and, if so, is this scientifically valid?

The best available science also reveals the Cabinet Mountains in the Kootenai National Forest, just south of Highway 2 is also important for lynx. It is occupied by lynx (both historically and currently) and contains boreal forest stands with a mosaic of differing successional stages with sufficient hares, snowy winter conditions, sites for

denning, and matrix lands. *See* Science Report at p. 247 (Figure 8.19, 8.20). The same is true for the Idaho-Pandhandle National Forest and Clearwater National Forest in Idaho, the Colville National Forest in Washington. Why were these "occupied" areas excluded from critical habitat designation? And, what data was relied on to exclude such areas? Did the Service conduct hare or habitat surveys in these areas?

(9) Some areas deemed "unoccupied" should be designated critical habitat.

In the proposed rule, the Service recognizes that for some species, critical habitat can and should be designated in unoccupied areas if deemed necessary to recovery the species. For other species, critical habitat may only be a subset of occupied areas. The Service's proposed rule takes the latter approach with respect to lynx. The Service believes lynx recovery in the lower 48 can be accomplished by only conserving high quality habitat occupied by persistent lynx populations (i.e., the lasting puddles) across the range of the DPS and only addressing threats in those areas.

As described earlier, this approach fails to account for the historic and often intense pressure early trapping and fur-trading put on local lynx populations. Some populations that are considered "shrinking puddles" by the Service or where no puddles exist at all (unoccupied) may be that way not because of on-the-ground-conditions, i.e., any lack of suitable lynx habitat and lack of PCEs in available quantity and spatial arrangement, but rather because of early trapping pressure, *see* Frey et al. (2006) (Ex. 5). Over a thousand lynx were killed in western Montana alone in the early 1970s (Ex. 17 at 2), many in the Beaverhead-Deerlodge National Forest which the Service now considers to be "unoccupied." The same is true for the Southern Rockies. Hundreds of lynx were trapped and killed in western Colorado and this is only accounts for the relatively recent period when the state was keeping track.

In addition, as described earlier, the Service's approach to "unoccupied" habitat also fails to account for the importance of protecting key corridors or linkage zones for lynx which is essential to the conservation of the DPS even though such areas are not occupied or may not even contain the requisite PCEs. *See* 16 U.S.C. § 1532 (5)(A)(ii). (directing the Service to take unoccupied areas into account when designating critical habitat based solely on whether such areas are essential to conservation of species).

(10) Montana DNRC's HCP lands should not be excluded from the final critical habitat rule.

The Service does not provide the public with sufficient information on the reasons why Montana's DNRC habitat conservation plan (HCP) lands should be excluded from the final critical habitat rule. The Service is required to analyze the benefits of inclusion versus exclusion of these lands from a critical habitat designation and has admittedly

failed to so. *See* 78 Fed. Reg. 59430, 59464 (September 26, 2013). The public deserves an opportunity to review, comment, and provide additional information on this analysis and should have been included in the proposed rule. Additionally, the Service must analyze whether or not the HCP actually preserves and protects lynx winter habitat before making a final determination that the lands can be excluded from a critical habitat designation.

Further, there is no guarantee that HCP governing the Montana DNRC lands at issue will meet the requirements for a management plan that provides for the conservation of lynx. There is active litigation regarding this habitat conservation plan and it is very possible that the HCP could be invalidated. *See Friends of the Wild Swan v. U.S. Fish & Wildlife Serv.*, Case No. 13-cv-00061-DWM (D. MT. March 18, 2013). At a minimum, the litigation surrounding the HCP illustrates the doubt and uncertainty surrounding the protection afforded by the HCP, and whether or not it will actually remain in effect. It is therefore crucial that the Montana DNRC HCP lands be designated as critical habitat to ensure that those lands are afforded protection under the federal Endangered Species Act regardless of the ultimate result of the HCP litigation.

Additionally, but its very terms, an HCP is only valid for a limited amount of time. At the end of the HCP term, the Montana DNRC HCP lands would lose whatever federal protection afforded to them under the terms of the HCP. Designating those lands as critical habitat for lynx would ensure continuity in protection for those lands, regardless of whether the HCP is invalidated by a court, or by the passage of time.

(11) Additional critical habitat needs to be designated in Washington.

The best available science reveals northeast Washington's Kettle Range and Wedge should be designated lynx critical habitat. *See* Exs. 20, 21. There is a long and continuous record of lynx presence in the Kettle Range and northeast Washington. In fact, the vast majority of lynx documented in Washington between 1961 and 1984 occurred in northeast Washington, mostly in the Kettle Range. When lynx were federally listed, one-third of the Kettle's lynx management areas contained lynx. State biologists and others have documented 26 lynx records between 1990 and 2007 including a juvenile. Other lynx have been documented as recently as January 2013.

Northeast Washington contains quality habitat essential to lynx conservation. State lynx biologists have identified 765,000 acres of lynx habitat in northeast Washington. More than 310,000 acres occur in the Kettle Range, Wedge and adjacent areas in Canada. High hare densities (0.6-3.6 hares/ha) have also been recorded across the Kettle Range. For this reason, scientists estimate the Kettle Range can support as many as two dozen lynx – a quarter of the State's total lynx population.

As mentioned earlier, the location of the Kettle Range and Wedge are also important. Situated between the North Cascades and Rocky Mountains, the Kettle Range is a key linkage in a string of lynx populations across western North America. *See* Ex. 21 (connectivity maps). Squires et al. (2013) and other lynx biologists suggest the long-term lynx conservation of lynx in the lower 48 depends on an inter-connected network of lynx populations between the contiguous U.S. and Canada and among subpopulations in the lower 48. *See* Ex. 19. If this is accurate, then the Kettle Range and Wedge (just like parts of Idaho and Montana) are integral to conserving the North Cascades population and the broader lynx population across the west, especially in a world subject to changing climate.

(12) Critical habitat should be designated in Oregon.

The Service considers Oregon to be within the range of the Canada lynx. *See* 68 Fed. Reg. 40076, 40080 (July 3, 2003). Despite this, the proposed rule fails to consider any critical habitat designation in the State of Oregon. In fact, the proposed revised critical habitat designation does not even mention Oregon once. We respectfully request the Service take a closer look at the best available science related to lynx habitat for Oregon (now, before issuing a final rule and during the upcoming NEPA process), including hare population studies, lynx population studies, and habitat suitability studies, and designate critical habitat for lynx in Oregon. This is particularly important with the onset of climate change and the resiliency of Oregon forests to provide habitat for lynx in an increasingly changing West.

Although the extent of Oregon's lynx population is unknown, there are extensive lynx records supporting some level of lynx presence within the state. *See* Ex. 26 (lynx records map), 27 (USFS/BLM Lynx Biological Assessment). Further, Oregon supports an adequate population of snowshoe hares. *See* Ex. 32 (hare study).

Because portions of Oregon have been historically occupied by lynx, and an adequate population of snowshoe hares sufficient to support a population of lynx, the Service must analyze what habitat within Oregon should be designated as critical habitat for lynx. Areas along the spine of the Cascades, and in Northeastern Oregon (including the Blue Mountains and the Wallowa Mountains) should be designated as critical habitat for lynx. In fact, in a Biological Assessment prepared by the Forest Service and BLM, numerous areas throughout Oregon were labeled as potential lynx habitat, areas of primary occurrence of lynx, areas of moderate to higher likelihood for supporting lynx conservation, areas of moderate likelihood for supporting lynx conservation, and areas of lower likelihood for supporting lynx conservation. *See* Ex. 28 (map of lynx potential habitat and primary areas of occurrence), 29 map of lynx habitat distribution and likelihood of supporting lynx conservation). The Forest Service and BLM concluded: "In summary, Plan direction continues to support lynx conservation in much of the Cascades

and provides a foundation for a connected network of primary habitat along the length of the Cascades." Ex. 27 at 59. The Service itself has recognized that habitat in Oregon is very important and deserves increased scrutiny:

> Current and historical sighting records, historical documents, and anecdotal evidence suggest that lynx occurred on both sides of the Cascade Mountains in Oregon and Washington. These records show that lynx may have been more wide-spread and abundant than was previously considered and indicate that it is likely that both resident as well as transient animals occurred in both states. While there is insufficient data to ascertain population size or trends in Oregon or Washington, this is also true of all of the other geographic regions where lynx occur. It is important to recognize that the Endangered Species Act (ESA) does not differentiate between resident and transient individuals nor does it require "resident, reproductive populations" as the threshold for consideration during consultation. Thus the obligation to minimize effects and the potential for incidental take applies where the species is documented or suspected to occur. This is particularly important in areas where the vegetation types, prey availability, and climatic conditions resemble those conditions found in areas where lynx are known to occur.
>
> Ex. 34 at 14.

Habitat in Oregon also provides crucial movement corridors for connecting lynx populations in the West. *See* Ex. 30. In discussing important areas in Oregon for increased study, the Service has awcknowledged Oregon's importance for movement and connectivity of lynx populations:

> In Oregon, areas that warrant management as "Evaluation Areas" include: 1) the high elevation flats starting just west of the Mount Jefferson Wilderness area and extending south to the Sky Lakes Wilderness Area. This zone contains a number of reliable recent lynx reports and trapping records, as well as the topography, vegetation, prey, and climatic conditions favorable for lynx; 2) the habitat and connectivity corridor joining the Cascades and Blue Mountains on the Deschutes, Ochoco and Malheur National Forests. Because the I-84 corridor and dams on the Columbia are considered to be a movement barrier, this is the only way for genetic exchange to occur to the southern Cascades; 3) the area around Mt. Hood and Bennett Pass due to a cluster of 14 lynx sightings in the area and proposed ski area developments; and 4) previously mapped habitat on the Winema and Fremont National Forests due to clusters of recent reliable sightings, confirmed specimens in/or south of these clusters, and past records indicating a presence.

Ex. 34 at 13-14.

Finally, the Service must consider the effect of Oregon's increasing Gray wolf population on lynx habitat, lynx prey, and lynx populations in Oregon. Dr. William Ripple of Oregon State University has suggested that a trophic cascade effect could be present that benefits lynx when wolves are on the landscape. *See* Ex. 31. The effect of wolves on coyote populations, and the resultant decrease in snowshoe hare predation, is important and should be analyzed by the service as it relates to a lynx critical habitat designation in Oregon.

The ESA directs the Service to designate critical habitat based whether the area was occupied at the time of listing (March, 2000) and on habitat conditions (PCEs) that exist now, not at some future or uncertain date. Oregon was occupied, to some extent, at the time of listing and presently contains the necessary PCEs essential to the conservation of the species. Even if "unoccupied" at the time of listing, the area presently contains habitat that is both beneficial and essential to the species thus qualifying the region for designation. Failing to consider lynx habitat in Oregon to exclude this region from critical habitat designation is arbitrary.

The Service should conduct a thorough study of Oregon habitat, snowshoe hare population, and other factors that support the fact that Oregon is home lynx habitat that meets the definition for a critical habitat designation. If the Service determines that such habitat does not exist in Oregon, it must disclose the reasons why with adequate scientific support for those conclusions. However, given the available evidence, we believe that designating critical habitat in Oregon is not only warranted, but vital for the recovery and survival of lynx.

(13) <u>The Service should designate critical habitat in the Southern Rockies.</u>

CPW considers the lynx reintroduction effort in the Southern Rockies a success based on attainment of several benchmarks, including high post-release survival, low adult mortality rates, successful reproduction, and recruitment equal to or greater than mortality over time. There are likely 120 lynx currently inhabiting the Southern Rockies (the precise figure is unknown). These lynx have established home ranges in area, produced kittens, and are now persisting throughout the forested areas of the Southern Rockies, from south-central Wyoming, throughout western Colorado, and into north-central New Mexico.

Even though the Service recognizes: (1) the success of CPW's reintroduction effort (at least at this point in time); (2) the benefit of having lynx in the region (as the Service concedes, having lynx in the Southern Rockies, at the very least, contributes to

recovery by providing an additional buffer against threats to the DPS); and (3) the Southern Rockies contain "perhaps all" of the necessary PCEs for lynx, the Service nonetheless states that the region does not qualify for critical habitat designation.

According to the Service, the Southern Rockies do not contain the PCEs "in sufficient quantities, quality, and spatial arrangement to sustain lynx populations over time." Specifically, the Service states hare densities are well below those thought to be necessary to support a self-sustaining lynx population over time. The Service also raises concerns about distance and isolation of the Southern Rockies from other lynx populations in the DPS and, purportedly, a lack of immigration that is likely necessary to maintain the population over time.

We have a number of concerns and problems with the Service's findings with respect to the Southern Rockies and respectfully request the Agency take a closer look at the best available science (now, before issuing a final rule and during the upcoming NEPA process) and designate critical habitat for lynx in the region.

First, as mentioned earlier, there is a lack of scientific literature on what quantities and spatial arrangements of the PCEs are needed to conserve lynx throughout the range of the DPS. In the Service's own words: "We lack range-wide site-specific information or tools that would allow us to analyze boreal forests across much of the range of the DPS and determine which specific areas contain the spatial and temporal mosaic of habitats and hare densities that lynx populations need to persist." 78 Fed. Reg. at 59446.

If this is true, how can the Service make having PCES at "adequate quantities and spatial arrangements" a prerequisite for critical habitat designation and, more importantly, how can the Service rationally disqualify the Southern Rockies from critical habitat designation based on the lack of PCEs at a sufficient quantity or spatial arrangement when it is unsure how to document and measure those variables?

Second, the Service's Southern Rockies finding repeatedly uses the term "over time" when discussing the region as a means of injecting uncertainty in the sub-populations' long-term viability. What does "over time" mean and why is this term used in the Southern Rockies discussion but not with respect to designating critical habitat in other regions? Given the climate change projections there will likely be changes to all lynx habitat in the DPS "over time" in all regions currently occupied by the species but this does not disqualify and area from qualifying for critical habitat designation now.

The ESA directs the Service to designate critical habitat based whether the area was occupied at the time of listing (March, 2000) and on habitat conditions (PCEs) that exist now, not at some future or uncertain date. The Southern Rockies was occupied at the time of listing and presently contains the necessary PCEs essential to the conservation of the species. Even if "unoccupied" at the time of listing, the area presently contains

habitat that is both beneficial and essential to the species thus qualifying the region for designation. Using uncertainty, therefore, to exclude this region from critical habitat designation is arbitrary.

As explained by John Squires, the leading lynx biologists: "[u]sing uncertainty of sustainability as a criterion for excluding Colorado from critical habitat seems arbitrary, especially relative to lynx in Minnesota and Maine. Lynx were present in Minnesota in 1962-63 then subsided with a few years before increasing against in 1973. Lynx detections then returned to very low throughout the 1980-mid 90s, and now have increased from 2000 to the present as confirmed by radio telemetry. Lynx in Maine have a limited distribution in habitat that requires active management to be maintained. Thus, the long-term fate of any lynx population is unknown regardless if populations are in Colorado, Minnesota, or Maine." Ex. 23 at 3.

Based on the most current information, CPW states that the lynx reintroduction effort in Colorado has been a success. Lynx are reproducing in the wild and recruitment now exceeds mortality for lynx in Colorado. CPW, therefore, believes that the Southern Rockies subpopulaton will persist into the future. They may not know for sure, at least for another 20 years or so, but this is true for all isolated populations of lynx in the lower 48. Under the ESA, the Service should not and cannot wait another 20 years for more definitive data. The best available science – at this point in time – suggests lynx are and will continue to persist in the Southern Rockies over the long-term.

Third, the Service states lynx in the Southern Rockies are too isolated and disconnected from other lynx populations in the DPS and, as such, the "immigration necessary to maintain the local lynx population is, therefore, naturally precluded." But the Southern Rockies was historically occupied by lynx (native species in the region) so what has changed from then to now? Is the lynx population in the Southern Rockies more isolated now than it was a 100 or 200 years ago? Further explanation is required.

Data on post-release locations of lynx in the Southern Rockies shows that individual lynx are traveling from the Southern Rockies, through Wyoming, and into Montana suggesting that immigration between the subpopulations does occur. *See* Devineau et. al. (2010) at 526d (Fig. 1). A number of lynx reintroduced into Colorado's San Juan National Forest, for instance, ended up in the Greater Yellowstone Area. *Id*. It is therefore possible that lynx travel in both directions between the Southern and Northern Rockies.

Also, lack of connectivity is technically unrelated to the PCEs and whether or not sufficient boreal forest stands with hares, winter habitat conditions, sites for denning, and matrix habitat exist in the region. These are the factors (not distance from subpopulations) that must be taken into account when designating critical habitat for the lynx DPS in the lower 48.

Notably, the Service's repeated reference to CPW's "introduction" effort or the "establishment" of lynx in the Southern Rockies (as opposed to "reintroduction" or "reestablishment") reveals the Agency's bias against designating critical habitat in the region and failure to recognize the region as ever supporting a viable population. Throughout the proposed rule, the Service makes a number of statements regarding the history of lynx in the Southern Rockies and achievements (or lack thereof) regarding the reintroduction effort but never supports those statements with any data, reports or facts.

Lynx are a native species in the Southern Rockies. Ex. 22 at 1. According to the Lynx Biology Team, "[u]ntil recently, it was generally assumed that the lynx was an indigenous but uncommon species in the Southern Rockies Mountain Geographic Area." Ex. 4 at 4-13. "However, records are coming to light that paint a different picture. Both Allen et al. (1874) and Cary et al. (1911) indicate that lynx may have been relatively common in Colorado, at least near or prior to the turn of the century. Recently discovered are cumulative records of predatory animals taken on the Routt National Forest in northern Colorado between the years of 1914 and 1922. Unlike many trapping records, numbers for bobcat and lynx are separated. Numbers of lynx taken on the Routt National Forest were 83 in 1914 and 1915, and 210 in 1916. Articles from the Jackson County Star (January 24 and February 21, 1924) reported predators taken at trap and poison stations in Colorado by the Federal Bureau of Biological Survey during 1923 and January 1924. Among the take were 309 bobcats and 103 lynx." *Id.* In fact, records "of lynx occurrence are distributed throughout the mountainous areas of Colorado." *Id*. at 4-14; *see also* Ex. 22 (Draft Conservation Strategy for the Conservation and Reestablishment of Lynx and Wolverine in the Southern Rocky Mountains); Devineau et al. (2010); 65 Fed. Reg. 16052, 16059 (March 24, 2000, listing rule) (recognizing Colorado was the southern edge of the lynx's range).

Based on these findings, and due to CPW's reintroduction effort, the Lynx Biology Team states that eventually, "it is assumed and hoped that lynx will reestablish in all portions of the Southern Rockies, consistent with historical distribution patterns." *Id.* at 4-15.

Fourth, the Service maintains the Southern Rockies do not have the hare densities necessary to support a self-sustaining lynx population over time. But in the proposed rule, the Service expressly states that due to "intrinsic, rapid fluctuations often seen in snowshoe hare populations, density estimates [for hares] cannot be considered definitive for any particular area." 78 Fed. Reg. at 59441. In other words, the Service is discounting the Southern Rockies based on a metric (hare densities) that they admit they do not know enough about. This is arbitrary.

Moreover, the using hare densities as a proxy or surrogate to predict whether lynx will persist in the Southern Rockies over time is inappropriate in these circumstances,

i.e., when the state wildlife agency in charge of the lynx reintroduction effort (CPW) has already determined – based on the best available science including population numbers, distribution, reproduction, and morality rates – that the species is actually persisting in the Southern Rockies. In other words, there is no need to use proxies or surrogates to predict success when the reality already shows success. Lynx are persisting in the Southern Rockies and CPW considers the reintroduction program a success. This reality (and not hare density metrics) is the best measure of whether the population of hares is sufficient.

Some evidence in Colorado also reveals that the hare density metrics used by the Service to predict if lynx will persist in the region may actually be met. Ivan et al. (2011) found up to .27 hares per acres in stands of small lodgepole pine in Colorado. *See also* 78 Fed. Reg. at 5449 (citing additional hare studies from Colorado showing figures of .3 hares per acre in Summit County and another finding showing up to .5 hares per acres); Ex. 10 (distribution of hares in Southern Rockies); Ex. 11 (hares and mountain cottontail in Southern zone); and Ex. 12 (inventory of small-mammal prey base). As such, the Southern Rockies does not necessarily flunk the Service's hare test, as asserted in the proposed rule.

The bottom line: if the Service insists on using the amount of hares per acre to predict lynx persistence in a particular region, then more data for specific areas – including the Southern Rockies – needs to be obtained in order for the Service to accurately calculated average density (with margins of error included). When and where were the last hare surveys done in the Southern Rockies?

In Montana, for instance, the Forest Service uses the amount of horizontal cover, not hares per acre, as a proxy for "hare habitat." If the amount of horizontal cover exceeds a particular threshold (35% in winter) as measured by the agency, then a forest stand is considered to be good "hare habitat." Why isn't this method or other habitat proxies being used in the Southern Rockies?

Notably, surveys for hare habitat and an overall assessment of the quality of lynx habitat in Colorado was previously conducted prior to the reintroduction of lynx in the region and have since been deemed to be adequate. *See* Ex. 22; Attach No. 24; Ex. 25 (Ivan et al. (2011)). The current hare densities in the Southern Rockies – whatever those may be -- have proved to be sufficient to support the reintroduced lynx population which has shown both successful reproduction and recruitment equate to or greater than mortality. A 2010 analysis of habitat use by reintroduced lynx in Colorado from 1999-2010 (Ex. 24) confirms CPW's earlier findings that lynx in Colorado are primarily using high-elevation spruce-fir and aspen vegetation types as habitat and that such habitat exists in sufficient quantities to support a viable population. See also Ex. 25 (Ivan et al. (2011)).

John Squires, the leading lynx biologist in the Northern Rockies, stated in comments on the previous critical habitat rule (Ex. 23) that while habitats supporting abundant snowshoe hares must be present in a large proportion of the landscape to support viable populations of lynx, little is known about how lynx persist in dry forest types like those found in parts of Wyoming, southwestern and central Montana, and parts of the Southern Rockies. "Based on track detections and telemetry, individuals from these populations persist in large home ranges that included pockets of habitat that support an adequate number of snowshoe hares. Apparently they are able to move from pocket to pocket to secure food . . . this emphasizes the importance of understanding dispersal and habitat connectivity." Ex. 23. In short, the Service should not define suitable lynx habitat only as large, contiguous blocks of boreal forest stands. Pockets of hare habitat within a larger landscape like those found in the Southern Rockies might suffice.

Also, the best available science suggest that the lynx diet in the extreme southern periphery of the species' range – including the Southern Rockies -- may be broader than that of lynx in Canada. "Southern populations of lynx may prey on a wider diversity of species than northern populations because of lower average hare densities and differences in small mammal communities. In areas characterized by patchy distribution of lynx habitat, lynx may prey opportunistically on other species that occur in adjacent habitats, potentially including white-tailed jackrabbit, black-tailed jackrabbit, sage grouse, and Columbian sharp-tailed grouse." Ex. 4 at 1-1. Red squirrels and mountain cottontails may also provide alternative prey sources in the Southern Rockies. In fact, a paper published in the Journal of Wildlife Management in 2005 recognized considerable habitat overlap and syntopy between snowshoe hare and mountain cottontail. Ex. 11 at 10-11.

On a related note, how are the habitat conditions in the Southern Rockies and the sub-population of lynx in the Southern Rockies different from the habitat conditions and sub-population of lynx in the Greater Yellowstone area? The Service states that much like the Southern Rockies, the Greater Yellowstone area is isolated from lynx in the Northern Rockies and contains marginal, fragmented habitat. Yet, the Greater Yellowstone area was designated critical habitat and the Southern Rockies is not. "Basic principals of conservation biology would suggest a small population of lynx . . . that persist in a patchy habitat may be most vulnerable to habitat alterations and arguably could require the greatest management attention." Attach. 23 at 2 (Squires' February 26, 2008 comments).

Fifth, the Service fails to (but needs to) recognize that designating critical habitat for lynx in the Southern Rockies would be important for maintain a lynx population in the region as whole. Most of the regions in the contiguous United States currently occupied by lynx are isolated from one another. Lynx in Washington's North Cascades likely are not connected to lynx in Montana and Maine's population certainly does not interact with Minnesota's. In the proposed rule, these other sub-populations are described as "essential" to the conservation of the species because they are important to

lynx in a particular region, i.e., they support a persistent breeding population and likely act as a source for lynx in a particular area. Parts of western Colorado are no different for lynx in the Southern Rockies.

Sixth, the Service now recognizes that climate change is likely to be a significant issue of concern for the future conservation of the lynx DPS, resulting in reduced habitat and population numbers. According to the Service, the best available science and models indicates that potential lynx habitat could decrease by as much as two-thirds in the contiguous United States by the end of this century.

Given these projections, and the likely unknown impacts of climate change, the species likely needs more protected winter habitat, not less, in order survive and recover in the lower 48. The Southern Rockies is a good candidate for critical habitat designation because it contains a lot of good, winter habitat for lynx at higher elevations. Indeed, the Southern Rockies has the highest average elevation of any of the regions currently proposed for critical habitat designation.

Lynx in Colorado generally occupy fir-spruce forest stands between 9,900 and 11,620 feet elevation in the Southern Rockies which is much higher that the species' range in Montana (approximately 4,000 to 8,000 feet elevation). *See* Ex. 24, 25. Most of the predicted loss in snowpack over the next 50 years will occur below 8,200 feet. Colorado – as one of the last remaining refuges in the lower 48 -- may become extremely important to lynx as the snowpack is lost in other regions occupied by the species.

In the proposed 10(j) rule for wolverine, the Service notes the importance of the Southern Rockies for conserving wolverine in the lower 48 due to the area's abundance of high-elevation terrain with ample snow that may "provide some protection from warming trends caused by climate change." The region provides a "high-elevation refugia" in response to climate change. The Service also notes that having wolverines in Colorado would contribute to the overall conservation of the species in the lower 48 and also help contribute to eventual de-listing (i.e., recovery).

If lynx are also a winter/snow dependent species affected by climate change, then would not the same reasoning apply? The Southern Rockies are likely just as important to lynx as they are to wolverine and, as such, the Service should take a closer, hard look at the benefits of designating part of the region critical habitat. With climate change becoming the primary threat to lynx conservation in the lower 48, protecting high-elevation terrain where winter conditions are likely to persist well beyond lower-elevation habitat in other regions, the Southern Rockies are essential to the long-term survival and recovery of the species.

Finally, the Service's suggestion that forgoing critical habitat designation in the

Southern Rockies is no big deal because lynx will remain listed in the region and subject to Section 7 of the ESA's consultation requirements and the protective "no jeopardy" standard is misleading and inaccurate.

In the proposed rule, the Service refuses to designate critical habitat in the Southern Rockies on the grounds that the region is not essential to conservation of lynx, i.e., not essential to the recovery of the lower 48 lynx DPS. If lynx in the Southern Rockies are not essential to the recovery of the lynx DPS, then no federal actions – regardless of how large or harmful -- are going to be deemed to "jeopardize the continued existence" of the DPS pursuant to Section 7 of the ESA.

(14) Critical habitat should be designated in Idaho.

The Service's determination that National Forests in Idaho do not contain the elements (PCEs) in adequate quantities, quality, and spatial arrangements to support lynx populations over time is wrong and should be revisited for the same reasons articulated above for the Southern Rockies.

The Service cannot logically disqualify northern Idaho's National Forest lands – an area historically occupied by lynx and, in some areas, still occupied by lynx (two lynx were incidentally captured in traps set for bobcats in Idaho last year alone) – based on a metric that it concedes it does not know how to measure. The best available science, including the LCAS and Science Report, confirm that large portions of northern Idaho were historically occupied by lynx and contain the habitat features essential to the species conservation. And, as mentioned, above, the location of lynx habitat in northern Idaho makes it extremely important in terms of maintaining habitat connectivity for lynx in the lower 48 (between subpopulations in northeastern Washington and Montana) and in terms of maintaining habitat connectivity between lynx in the lower 48 and Canada. Additionally, maps showing historic lynx records (Ex. 26), lynx potential habitat and primary areas of occurrence (Ex. 28), and lynx habitat distribution and likelihood of supporting lynx conservation (Ex. 29) all support a critical habitat designation in Idaho.

(15) The Service's finding that northern New Mexico was not historically occupied by lynx is contradicted by the best available science.

The Service's finding that it does not consider northern New Mexico's San Juan and Sangre de Cristo Mountains to be historically occupied by lynx and that the area is "incapable of supporting a self-sustaining lynx population" is contradicted by the best available science, including but not limited to the LCAS, peer-reviewed papers, the State of New Mexico's native wildlife reports, and the results of CPW's reintroduction program. *See supra* Section (1).B. Suitable lynx habitat in the Southern Rockies's San

Juan and Sangre de Cristo Mountains does abruptly end at the artificial state line or a National Forest boundary. *See* Ex. 1, 2 (maps).

(16) The revised critical habitat rule must account for climate change.

In the latest iteration of the Lynx Conservation Assessment and Strategy (LCAS)(draft, June 2013) the Interagency Lynx Biology team states that climate change has to potential to strongly affect the lynx DPS: "Several possible effects of climate change on lynx can reasonably be anticipated. These include: (1) potential upward shifts in elevation or latitudinal distribution of lynx and their prey; (2) changes in the periodicity or loss of snowshoe hare cycles in the north; (3) reductions in the amount of lynx habitat and associated lynx population size due to changes in precipitation, particularly snow suitability and persistence, and changes in frequency and pattern of disturbance events (e.g., fire, hurricanes, insect outbreaks); and (4) changes in demographic rates, such as survival and reproduction; and (5) changes in predator-prey relationships. In addition, it is possible that interactions between these variables may intensify their effects." LCAS at 60.

As mentioned above, these new findings suggest the need to re-evaluate what areas (both occupied and unoccupied at the time of listing) are essential to the survival and recovery of lynx in the lower 48 and ensure habitat connectivity for lynx in maintained, wherever possible. In response to a warming planet, we need more lynx and lynx habitat protected in more places in the lower 48, not less. This is perhaps the strongest and most compelling argument for designating the high-elevation Southern Rockies lynx critical habitat. As for wolverine, the Southern Rockies provide a "high-elevation refugia" in the event climate change begins to negatively impact lynx populations using lower elevation habitat.

(17) Designating critical habitat for lynx is both "determinable" and "prudent."

In the proposed rule, the Service states that designating critical habitat for lynx is both "prudent,"i.e. it will not increase the degree of threat to the species and may provide some measure of benefit, and "determinable." 78 Fed. Reg. at 59437. We agree and support these findings. Designating critical habitat for lynx in the lower 48 is both prudent and determinable.

(18) The upcoming NEPA analysis.

The Service states that it will undertake a NEPA analysis for the revised critical habitat rule because it is proposed to designate critical habitat in the Tenth Circuit. The

Service says it will update and revise the earlier analysis done for the 2009 designation and notify the public of the availability of a draft EA for this propose when it is finished.

The Service should prepare a draft NEPA analysis (whether an EA or EIS) for public review and comment before issuing a final rule revising critical habitat for lynx. The Service, for instance, should keep all options open with respect to designating additional critical habitat in the Northern Rockies and Washington and designating critical habitat in Oregon, Idaho, and the Southern Rockies.

The Service's NEPA analysis also must take a hard look at the direct, indirect, and cumulative effects of the decision and evaluate a reasonable range of alternatives (including an alternative that designates some "unoccupied" areas critical habitat and designates some critical habitat in the Southern Rockies). Such a "hard look" is required for any decision not to designate critical habitat for lynx in important areas or regions like the Southern Rockies, Kettle Range and Wedge in Washington, northern Idaho (including Idaho Panhandle and Clearwater National Forest), occupied areas in Montana (Cabinet Mountains and other areas south of Highway 2, parts of the Bitterroot National Forest, Continental Divide area south of Highway 12) and Oregon. Also, when conducting an economic analysis, the Service must not only analyze the economic costs of designating critical habitat but also the economic benefits of doing so.

Thank you in advance for taking the time to carefully review and consider the issues, concerns, and best available science outlined in these comments.

If you have any questions or wish to discuss the issues raised in greater detail, please do not hesitate to contact me.

Sincerely,

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