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https://cara.ecosystem-management.org/Public//CommentInput?Project=53847

Re: Pandora Project Development and Summit Snowmaking Project Notice of Proposed Action

June 15, 2018

Dear Mr. Fitzwilliams and Mr. Broom,

The following are the comments of Wilderness Workshop (WW) and Rocky Smith on the proposed Pandora Project Development and Summit Snowmaking Project as described in the Scoping Letter (SL) dated May 16th, 2018, the Notice of Proposed Action (NOPA), Project Design Features and project maps.

Wilderness Workshop (WW) is a 501(c)(3) dedicated to preservation and conservation of the wilderness and natural resources of the White River National Forest and adjacent public lands. WW engages in research, education, legal advocacy and grassroots organizing to protect the ecological integrity of local landscapes and public lands. WW focuses on the monitoring and conservation of air and water quality, wildlife species and habitat, natural communities and lands of wilderness quality. WW is the oldest environmental nonprofit in the Roaring Fork Valley, dating back to 1967 with a membership base of over 800. Many of our members live, work, recreate and otherwise use and enjoy lands managed by the WRNF including the Aspen Mountain and Pandora areas.

Prior to approving any new terrain development in Pandora and summit snowmaking projects, the U.S. Forest Service (USFS) must consider the potential impacts development will have on important resources in the area, including wildlife, water quality and quantity, air quality, noise, and climate.

These comments highlight the concern that the Proposed Action does not meet the purpose and need expressed by Aspen Mountain's Master Development Plan. It also suggests reasonable alternatives the USFS must consider and the statutory requirements of a Forest Plan Amendment. The comments address the necessity of implementing active protection standards and guidelines

for Canada lynx, snowshoe hare, protected raptor species, sensitive amphibians, elk, and black bear. Additionally, the comments outline USFS requirements to analyze and disclose potential impacts to water, scenery and sensitive plant species and impacts from the spread of noxious weeds, road expansion, timber cutting and changes in recreational use of the surrounding landscape. Finally, the comments ask Aspen Ski Company (ASC) to consider the aggregate impact of new snowmaking pursuant to NEPA, air quality and climate impacts from the proposed pump station, the effects of noise pollution, and future impacts from increased recreation.

1. The purpose and need described in the Proposed Action is not supported by the findings of the Aspen Mountain Master Development Plan (MDP).

The Notice of Proposed Action (NOPA) for the Pandora Project Development and Summit Snowmaking identifies three potential purposes and needs. First, the need to enhance the variety of existing terrain. However, the MPD contradicts the first need stating, "[Aspen] skis much bigger than it is."[1] This statement alone suggests Aspen's terrain is extensive and sufficient to satisfy guests demands. Additionally, ASC owns and operates three other resorts which offer a diverse selection of terrain. Aspen Highlands, Buttermilk, and Snowmass are included on the ASC pass and are easily accessible for same-day skiing via free and frequent skier shuttles.

The NOPA states a need for "traditionally cleared terrain that provides a more natural and secluded setting."[2] Traditionally cleared areas are generally not "secluded," as they are part of the terrain served by lifts and other facilities.

The second purpose and need set forth in the NOPA is to improve skier circulation in underutilized areas and remedy uphill or flat terrain that diminishes guest experience. However, the proposed development will add intermediate trails and gladded terrain. According to the MDP, intermediate trails see 6-15 skiers per acre and gladded terrain see .5 skiers per acre.[3] These low numbers do not support the proposed need to construct trails for skier circulation nor do they remedy the problem of flat terrain.[4] ASC may want to consider alternatives to remedy the problem of flat and uphill terrain such as a building a rope tow between the top of Gents Ridge lift and the top station of the Gondola.

Finally, the NOPA states a need for reliable and consistent snow coverage. However, neither climate change nor its threat to the ski industry is mentioned in the NOPA. Importantly, an ASC guiding principle is to act as a steward of and advocate for the environment.[5] Drafting a Proposed Action that embodies this value is another way ASC can prove their dedication to preservation of the environment, a stable climate and the longevity of the ski industry. The EA should acknowledge the increasing seasonal problems created by climate change and incorporate

[1] *2018 Aspen Mountain Master Development Plan*, at 2 (prepared by SE Group, Jan. 2018).
[2] *Notice of Proposed Action for Scoping and Comment Period, Aspen Mountain Pandora Development and Summit Snowmaking Projects*, Mar. 16, 2018, at 3.
[3] *Id.* at 15.
[4] North American ski resorts desirable trail density is 6-20 skiers per acre on intermediate terrain and 2-10 skiers per acre on expert terrain. *Vail Resorts Master Development Plan Update*, at 9 (prepared by SE Group, Aug. 2007).
[5] *Aspen Ski Company, Guiding Principles*, https://www.aspensnowmass.com/we-are-different/guiding-principles (last visited June 4, 2018).

strategies to reduce its effects. An additional way to achieve the ASC principal of being a steward of the environment would be a commitment to impose the same standards to privately-owned land as ASC must follow on the national forest land where the SUP applies. This commitment to consistency will help ensure the ecological integrity of entire landscape is maintained to the greatest degree possible.

2. The NOPA fails to consider a full range of reasonable alternatives.

The USFS has an obligation to consider all reasonable alternatives.[6] Here the agency failed to do so. Potential alternatives the USFS must consider include but are not limited to:

- An alternative that only authorizes new snowmaking and does not include a terrain expansion.
- An alternative reducing the overall size of the Pandora expansion that does not include a new ski lift.
- An alternative that instead of converting the 21 acres of existing 8.25 lands to 7.1 converts them, and additional existing 7.1 acreage to management type 5.41 (Deer and Elk Winter Range. (*see* Section 3 *infra*).
- Examine an alternative that includes mandatory seasonal closures in the new terrain to protect wildlife. These mandatory closures should be non-waivable, and any access in and out of the area on roads or trails should be blocked with infrastructure (*see* Section 4(e)–(f) *infra*). Specifically, ASC should implement wildlife seasonal closures including:
    - May 15–June 15 for elk production.
    - August–September to allow black bear to prepare for hibernation.
- An alternative eliminating all disturbance to wetlands[7] (*see* Section 5 *infra*).
- An alternative that powers the pump station and new ski lift along with any other associated energy use with renewable energy sources either on or off site resulting in reduced pollution and carbon emissions. (*see* Section 11 *infra*).
- An alternative that results in no change to visual environment and scenic qualities at the Northstar Nature Preserve. (*see* Section 17 *infra*).

3. The agency must consider the cumulative environmental consequences of amending the Forest Plan

The USFS must comply with 36 C.F.R. § 219.13 plan amendment and administrative changes when considering approving a Forest Plan Amendment. A plan may be amended at any time depending on the need for change.[8] For every plan amendment, a responsible official must 1) "base an assessment of a preliminary identification of the need to change the plan….based on a new assessment; a monitoring report; or other documentation of new information," 2) notify the public and provide opportunity for public participation, and 3) amend the plan consistent with the appropriate NEPA procedures including an EIS, EA, or categorical exclusion.[9] "The responsible official's determination must be based on the purpose for the amendment and the effects (beneficial or adverse) of the amendment, and informed by the best available scientific

[6] 40 C.F.R. 1502.14(a) ("agencies shall…[r]igorously explore and objectively evaluate all reasonable alternatives").
[7] *See NOPA*, at 14-15.
[8] 36 C.F.R. § 219.13(a) (2018).
[9] *Id.* at § 219.13(b)(1)–(3).

information, scoping, effects analysis, monitoring data or other rationale."[10]

Although the USFS can amend a forest plan in any way they see fit, the agency must first articulate a "rational connections between the facts found and the choice made."[11] This statement must analyze and disclose all the valuable facts needed to support or undermine an amendment. An EIS would satisfy the NEPA hard look requirement and comply with 36 C.F.R. § 219.13.

The NOPA requests a SUP area boundary adjustment that would swap 21 acres of lands under management area 7.1–Intermix with lands categorized as 8.25–Ski Areas (Existing and Potential).[12] Although ASC is proposing an equal swap of 21 acres of lands within their SUP, it is mandatory that the Forest Service first conclude the amendment is not significant and will not have long-lasting repercussions in the area. To mitigate any potential ecological impacts from a Forest Plan Amendment, ASC should consider moving more lands out of the 8.25 management type than get moved into it. Additionally, ASC should consider changing those 8.25 lands to 5.41 as opposed to 7.1 and moving some of the existing 7.1 lands in the area to 5.41. There is a large block of 5.41 lands immediately downslope of the proposed Pandora expansion area. As climate change forces species and ecotypes uphill to higher elevations, the current high elevation 7.1 lands in the area are likely to be more appropriately designated as 5.41 (Deer and Elk Winter Range). This addition to the project would exemplify ASC's commitment to climate change and create an additional conservation benefit.

Further, the NOPA indicates ASC is planning to request an amendment to the Aspen Powder Tour SUP. However, it fails to give any details about this proposal. ASC must disclose if they plan to expand the Powder Tour SUP area, change its location, or obtain a new permit. In general, the Proposed Action must clarify any changes to the current off- piste powder tours.

4. The USFS must consider best management practices to protect local wildlife species habitats.

The agency has an obligation to provide a meaningful discussion of the potential impacts to wildlife of this new development. The Proposed Action area is home to a variety of wildlife including the threatened species, Canada lynx. It is vital that the agency ensures the proposed project minimally impacts lynx habitat. As a result, the USFS should make decisions in this project as directed by the Sothern Rockies Lynx Amendment (SLRA)[13] and the Land and Resource Management Plan 2002 Revision for the White River National Forest to "concentrate uses on a developed site so the surrounding areas are not impacted."[14] Any EA or EIS must analyze the direct, indirect, and cumulative effects on wildlife. Direct habitat loss for lynx, elk, mule deer, boreal toad, raptors, bear, and other wildlife due to ski area expansion and snowmaking should be minimized wherever possible by reducing or changing the location of

[10] *Id*. at § 219.13(b)(5)(i).
[11] *League of Wilderness Defs.*, at *13 (citing *Lands Council v. Martin*, 529 F.3d 1219, 1228 (9th Cr. 2008)).
[12] *NOPA*, at 2
[13] *Southern Rockies Lynx Mgmt. Direction, Record of Decision, Attachment 1: The Selected Alternative*, at Attachment 1-1 (Oct. 2008) www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5357379.pdf.
[14] USFS, LAND AND RESOURCE MANAGEMENT PLAN 2002 REVISION FOR THE WHITE RIVER NATIONAL FOREST 8 (U.S.D.A. 2002).

trails and glading. Most of the direct habitat loss will come from vegetation and timber clearing. Indirect habitat loss will likely occur from noise and increased human activity in a previously low impact area. The EA must address all effects the ski area expansion and snowmaking will have on local wildlife populations and habitat.

a. The Forest Service must actively protect lynx habitat and disclose potential impacts.

Of particular concern is the impact an expansion could have on Canada lynx. Because the Canada lynx is listed as threatened pursuant to the Federal Endangered Species Act, and is an endangered species under Colorado State law, the USFS must adequately consider the effects of the project on lynx and its habitat by using the best available science. Compliance with the ESA may require updated consultation under Section 7 of the Act. Additional consultation on lynx critical habitat under Section 7 of the Act may also be required, depending on the outcome of the remand issued in *WildEarth Guardians v. U.S. Department of the Interior*.[15]

The agency must do more than simply rely on the Southern Rockies Lynx Amendment (SRLA) Biological Opinion (BO) for an analysis of the effects this project will have on Canada lynx and Canada lynx habitat. While it is true that the SRLA does contemplate effects of recreational development generally on lynx and lynx habitat, it cannot contemplate, disclose, or analyze the site-specific impacts that this project will have on lynx. Indeed, the SRLA BO recognizes that "[e]ffects would be based on site specific conditions and would require subsequent project level . . . consultation with the [U.S. Fish and Wildlife] Service."[16] Further, the USFS should post all consultation documents on the project website so the public is fully informed about the determinations made and the analysis relied upon to make those determinations.

Ski area development can have negative effects on lynx denning, foraging, and diurnal security habitat; and long-term effects on movement within and between home ranges. Ski area expansions that involve substantial new snow compaction may also have significant impacts on lynx because it eliminates their competitive advantages over other animals in unconsolidated snow.

The NOPA fails to discuss conservation standards and guidelines for the protection of federally listed Canada lynx.[17] The SRLA states objectives, standards and guidelines to satisfy the overall goal of conserving the Canada lynx.[18] The Proposed Action would remove approximately 106 acres of overstory vegetation, 31 of which are on primary lynx habitat[19] (*See* EXHIBIT 1). The NOPA claims the extensive tree removal and vegetation clearing will not affect the suitability and connectivity of lynx habitat. [20] The Forest Service cannot prematurely reach these conclusions without a thorough, site specific, environmental assessment of a project that would

[15] *WildEarth Guardians v. U.S. Department of the Interior*, 14-cv-00270-DLC (D. Mont. September 7, 2016) (requiring the USFWS to reconsider Canada lynx critical habitat in the Southern Rockies).
[16] USFWS, *Southern Rockies Lynx Amendment*, *Biological Opinion*, at 69 (July 25, 2008).
[17] *NOPA*, Table 5, at 15.
[18] *Southern Rockies Lynx Mgmt. Direction, Record of Decision, Attachment 1: The Selected Alternative*, at Attachment 1-1 (Oct. 2008) www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5357379.pdf.
[19] *NOPA*, Table 5, at 15.
[20] *Id.*

follow the SRLA lynx standards and guidelines.

The following objectives, standards, and guidelines must be considered in any analysis and complied with in any decision the agency issues on the Proposed Action:

- **ALL O1.** Maintain or restore lynx habitat connectivity in and between LAUs [lynx analysis units], and in linkage area;
- **ALL S1.** New or expanded permanent developments and vegetation management *projects* must maintain habitat connectivity in a LAU and/or linkage area. [21]

The following objectives and guidelines apply to human use projects such as ski area expansions and recreation management. Again, the USFS must adhere to the following objectives and guidelines during this proposed development. Based on our review of the NOPA, it is not clear that the Proposed Action would adequately comply with the following standards:

- **HU O1.** Maintain the lynx's natural competitive advantage over other predators in deep-snow by discouraging the expansion of snow compacting activities in lynx habitat;
- **HU O2.** Manage recreational activities to maintain lynx habitat and connectivity;
- **HU O3.** Concentrate activities in existing developed areas, rather than developing new areas in lynx habitat;
- **HU O4.** Provide for lynx habitat needs and connectivity when developing new or expanding existing developed recreation sites or ski areas;
- **HU G1.** When developing or expanding ski areas, provisions should be made for adequately sized inter-trail islands that include coarse woody debris, so winter snowshoe hare habitat is maintained;
- **HU G2.** When developing or expanding ski areas, lynx foraging habitat should be provided consistent with the ski area's operational needs, especially where lynx habitat occurs as narrow bands of coniferous forest across mountain slopes;
- **HU G3.** Recreational development and recreational operational uses should be planned to provide for lynx movement and to maintain effectiveness of lynx habitat.[22]

The Proposed Action would require the construction of 3,600 feet of new access road to build and maintain the new Pandora lift.[23] The following guidelines must be considered and incorporated into any decision to approve new road construction for this project:

- **HU G9** If project level analysis determines that new roads adversely affect lynx, then public motorized use should be restricted. Upon project completion, these roads should be reclaimed or decommissioned, if not needed for other management objectives;

- **HU G11** When developing or expanding ski areas and trails, consider locating access roads and lift termini to maintain and provide lynx security habitat.[24]

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[21] *Southern Rockies Lynx Mgmt. Direction*, at Attachment 1-1.
[22] *Id.* at 1-6–1-7.
[23] *NOPA*, at 5.
[24] *Southern Rockies Lynx Mgmt.* Direction, at 1-8.

The USFS must adequately comply with the above SRLA guidelines and standards in the Pandora development plan and snowmaking projects. Compliance with lynx standards must be incorporated in the plan prior to construction. Additionally, the agency should post all lynx analysis documents on the project website to ensure the public is informed as to what determinations are being made. It is imperative that the USFS design a robust lynx protection strategy that will be incorporated into the Pandora development and snowmaking projects.

b. The Forest Service must ascertain and disclose the snowshoe hare population in the project area and analyze potential impacts.

The USFS must ascertain and disclose the existence and extent of snowshoe hare populations in the project area. The lynx is a highly specialized predator adapted to prey on snowshoe hares in coniferous forests that experience cold, snowy winters at elevations that overlap with the project area at issue in this case. If snowshoe hares are present in the area, then the Forest Service must consider any potential impacts the Proposed Action may have on those animals. The Lynx Conservation Assessment and Strategy confirms that recreational uses, like ski area development, may alter snowshoe hare populations and thus indirectly harm lynx habitat[25] (*see* lynx conservation standard HU G1 *supra*).

c. The Forest Service must assess which species of raptors will be impacted and comply with their protection standards.

The NOPA indicates that "surveys for active migratory bird nests should be conducted by a qualified biologist prior to tree cutting."[26]. Any USFS analysis must disclose the specific species, analyze any potential impacts, and ensure that those birds are protected as required by the Forest Plan and any other applicable laws (e.g., the Endangered Species Act, 16 U.S.C. §§ 1531 et seq., The Migratory Bird Treaty Act, 16 U.S.C. §§ 703–712, etc.). If there are ESA-listed raptor species that utilize the area or if the area overlaps any critical habitat, USFS must consult with USFWS on potential impacts to these resources.

d. The USFS must inventory the area for sensitive amphibians, consider potential impacts to any that exist, and ensure that existing populations are adequately protected in any decision.

The first goal of the LRMP protection of wetlands is to "[p]romote ecosystem health and conservation using a collaborative approach to sustain the nation's forest, grasslands, and watersheds."[27] Objective 1c of the plan directs the agency to "[h]elp ensure viability of species of concern for the White River National Forest through implementation of the Forest Plan…"[28] These numerous wetlands provide potential habitat for sensitive amphibians including boreal toads.

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[25] *Lynx Conservation Assessment and Strategy,* 2nd Ed., at 2-2 – 2-15 (Aug. 2000) https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5193264.pdf.
[26] *NOPA*, Table 4, at 14.
[27] LRMP, at 1-3.
[28] *Id.* at 1-4.

According to the 2002 LRMP, boreal toads and leopard frogs are species of viability concern.[29] There are known breeding populations of boreal toads in watersheds adjacent to Pandora along the Roaring Fork River (*See* EXHIBIT 2). Prior to approval of the project, the proposed area must be surveyed and inventoried for boreal toads and other sensitive amphibians.

The LRMP promulgates two strategies aimed at achieving this objective: "*1c.14* [m]aintain corridors for interaction between adjacent populations of boreal toads and between adjacent populations of leopard frogs;" and "*1c.15* [i]dentify suitable habitat for reintroduction of boreal toads and leopard frogs and coordinate potential reintroductions with the State of Colorado."[30] In this case, the USFS must ensure that the Proposed Action will not adversely affect any of the interaction corridors for sensitive amphibians. If the Pandora development area is a suitable place for reintroduction, the USFS should think about asking ASC to partner in such an effort; and make reintroduction part of their plan.

Further, the LRMP indicates forest-wide standards that must be followed for the protection of boreal toads and leopard frogs including:

1. Allow no loss or reduction in habitat quality of occupied or known historic boreal toad or leopard frog habitat;
2. Maintain adequate vegetation cover around occupied boreal toad or leopard frog breeding ponds when implementing management activities to minimize avian predation on newly metamorphosed frogs and toads.
3. Use only chemical herbicides shown to have no effect on boreal toads or leopard frogs, or use other vegetation management techniques, within 300 feet of occupied or known historic boreal toad sites;
4. Do not use fish toxins with the potential to harm boreal toads or leopard frogs in occupied boreal toad and leopard frog habitats.[31]

The LRMP also indicates forest-wide guidelines for the protection of boreal toads and leopard frogs including:

1. To prevent direct mortality to boreal toads, restrict the following activities to periods when toads are inactive (generally late fall to early spring):
    a. Management-ignited fire treatments within 3 miles of occupied boreal toad breeding sites.
    b. Vegetation management using heavy, ground-based equipment within 1.5 miles of occupied boreal toad breeding sites.
2. Restrict construction of new roads and trails within 300 feet of occupied or known historic boreal toad and leopard frog breeding sites to prevent direct mortality and disturbance of adjacent vegetation during construction and trail use.
3. Where impacts to occupied or known historical boreal toad or leopard frog breeding sites associated with livestock grazing are identified, consider actions to reduce or remove impacts such as, but not limited to:

[29] *Id*. at 2-25–2-26.
[30] *Id.* at 1-5.
[31] *Id.* at 2-25–2-26.

a. Fencing,
b. Modification of season of use, or
c. Provision of alternate water sources at a sufficient distance.[32]

4. Where roads or trails are located within 300 feet of occupied or historical boreal toad or leopard frog breeding sites, consider reclaiming, redirecting, or redesigning trails and user traffic to minimize direct mortality and disturbance of adjacent vegetation.[33]

The NOPA makes no reference to these standards and guidelines nor to the existence of sensitive amphibian habitat within the project area. NEPA requires the agency take a hard look at all potential impacts to sensitive species before approving a new development, and the National Forest Management Act demands the USFS to comply with the Forest Plan.

e. The USFS must analyze potential impacts to elk habitat.

The Pandora project area is within elk summer range, and adjacent to severe winter range, winter concentration areas and production area. It also is within close proximity to the North Star Preserve transition range (*See* EXHIBIT 3). Elk summer range represents the area where 90 percent of the population is located between spring green-up and the first heavy snowfall, severe winter range is where 90 percent of individuals were located in the two worst winters out of ten.[34] Elk production areas are the "part of the overall range occupied by females from May 15 to June 15 for calving.[35]

Due to the close proximity of severe winter range, winter concentration areas and production areas to the Pandora expansion are and lift the FS should consider an alternative that results in a lower impact to this area including a smaller expansion area with no lift. Additionally, the F.S. should consult with Colorado Parks and Wildlife (CPW) to refine these boundaries to determine whether they may actually overlap with the proposed expansion area. Two factors in particular make the proposed expansion likely to have impacts to important elk habitat. First the area is in close proximity to the North Star nature preserve. The F.S. must analyze whether the Pandora expansion would negatively impact wildlife and specifically elk use of the Northstar Nature Preserve. Secondly, the F.S. must analyze whether climate change will result in an upward shift in the severe winter range winter concentration area for elk in the area.

The ASC is actively being affected by climate change and is taking steps to adapt by expanding snowmaking and increasing higher elevation terrain on Aspen Mountain. Wildlife populations will also be impacted by climate change and specifically by increasing temperatures shifting populations and habitats up in elevation. The F.S. must disclose whether this project will negatively impact both current wildlife habitat as well as predicted future wildlife habitat which has shifted as a result of climate change.

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[32] *Id.* at 2-26.
[33] *Id.*
[34] Conservation Biology Institute, Elk Summer Range, Colorado, https://databasin.org/datasets/c857b4ca860a4dffbc9658cdaf20cb37 (last updated Oct. 5, 2011); *Id.* at https://databasin.org/datasets/21f4a12752d740f2807a581db1002a7d.
[35] *Id.* at https://databasin.org/datasets/08f30bdde16042ce89f03d8c5fa84764

The NOPA underplays the significance of the area to elk livelihood. While it acknowledges a need for protection strategies, it fails to provide specific closure dates.[36] The LRMP standard requires "[s]easonal restrictions will be applied to reduce disturbance in key wildlife habitats."[37] Therefore, the final development plan must specify seasonal restrictions. The F.S should include specific provisions closing the area during both the construction and operation phases of the project to people if impacts to wildlife are significant. This could include closures during calving season while the trails and glades are being cut and the lift is being constructed as well as closing the area to recreational use in certain winters when it is especially important to elk or other wildlife.

Further, the USFS must consider the potential impacts that new roads and infrastructure in the area will have on elk at critical times of the year. For example, will the new roads provide a conduit for other recreationists to begin utilizing this area during elk migration and production seasons? If so, seasonal closures should be considered. ASC should work with CPW to determine the appropriate closure dates during migration and production months.

The Proposed Action could impact elk use of the area. For example, snowmaking and snow compaction associated with the project will alter the timing and duration of snowmelt. Delayed snowmelt will result in delayed green-up, and potentially create permanent changes to the area's vegetation. These changes could impact elk that use the area as an important transition range. These and any other impacts must be acknowledged and analyzed in the context of all of the other development that has and continues to impact and change important elk habitat.

f. The USFS must consider the influence development will have on the local black bear population

The Colorado General Assembly charged CPW with looking at the state of the Colorado black bear population (*see* HB 15-1304 signed May 8, 2015). In CPW's 2015 findings report, the agency found human impacts were causing problems for the bear. The report provides management strategies to reduce conflicts and preserve natural bear habitat.[38] However, CPW cannot manage the bear population alone, and the report calls on the federal government, local governments, and citizens to assist with managing human-bear conflicts.[39] Therefore, the USFS must take CPW's bear management strategies into consideration.

Human-bear conflicts have grown exponentially with approximately a 4% annual growth in reported interactions.[40] Humans are encroaching on bear habitat, thereby driving them into towns where they scavenge for trash and cause danger to humans.[41] Further analysis must assess whether altering bear habitat on Aspen Mountain will increase human-bear conflict in the downtown core (*See* EXHIBIT 4).

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[36] *See NOPA*, Table 5, at 15.
[37] LRMP, at 2-16.
[38] Colo. Parks & Wildlife, *Human-Bear Conflicts*, at 5 (Dec. 31, 2015).
[39] *Id.*
[40] *Id.* at 8.
[41] *Id.* at 5.

Black bears prefer forest or shrub habitat and primarily eat vegetation. However, when their wild food sources are depleted, they will seek food from human sources.[42] The Proposed Action should consider the impact of vegetation removal on the local black bear population. ASC must ensure vegetation removal will not harm any black bear food sources. An alternative the plan must consider is implementing a revegetation plan with bear preferred foods including: gasses, forbs, berries, acorns, and seeds. Additionally, the ski company should consider seasonal closures from August through September, the months when bears are preparing for winter hibernation.[43] Closures and increased natural food supplies will help mitigate human-bear conflicts in Aspen. This consideration is not only important to the success of wildlife but also Aspen residents and visitors.

5. The agency is obligated to comply with the applicable standards and guidelines to protect wetlands.

Wetland health is a vital goal of the LRMP; therefore, in the agency's analysis of the Proposed Action the USFS must disclose how they will achieve these goals, objectives, standards, and guidelines. The NOPA mentions potential construction that could impact wetlands including creating a stream culvert at the bottom of the Pandora lift.[44] A complete analysis of the wetlands area should be included in ASC's Pandora expansion and snowmaking EA. During the analysis the USFS should consider the following forest-wide guidelines for the protection water and riparian resources, including:

> **Guideline 2.** Keep vehicles and equipment out of streams, lakes, and wetlands except to cross at designated points, build crossings, do restoration work, or where protected by one foot of snowpack or frozen soil;
> **Guideline 3.** Maintain existing federal water rights. Take appropriate action to use and protect water rights, including but not limited to changing uses to meet federal needs for water. If the water rights are not needed to meet national forest purposes, sell, lease, or exchange these federal water rights;
> **Guideline 5.** Manage public uses to minimize resource damage in alpine ecosystems. [45]

6. The Forest Service must actively protect stream health.

The NOPA states ASC will conduct post-construction stream channel stability surveys for three consecutive years.[46] The plan states "should surveys reveal stream health is not being maintained… a restoration plan will be developed and implemented."[47] Rather than wait for unsatisfactory survey results, the development proposal should include an emergency restoration strategy in the event of stream health deterioration. Without a backup plan, delayed restoration could cause increased harm to the stream and watershed.

Given that increased run-off from the expanded snowmaking could destabilize stream banks,

[42] *Id.* at 6.
[43] *Id.* at 19.
[44] *NOPA*, at 15
[45] LRMP, at 2-6.
[46] *NOPA*, at 14.
[47] *Id.*

increasing sediment loading, the surveys should cover all aspects of stream health, not just channel stability. These surveys should analyze connected disturbed areas (CDAs), and seek ways to reduce their size.[48] The additional road and clearcut ski runs may create additional CDAs.

7. The USFS must ensure that the Proposed Action does not contribute to the spread of noxious weeds on public lands.

The Chief of the Forest Service has identified invasive species as one of the four substantial threats to NFS lands. The Forest Service National Strategy is based on four components: 1) prevention, 2) early detection and rapid response, 3) control and management, and 4) rehabilitation and restoration. On February 3, 1999, President Clinton signed Executive Order 13112, Safeguarding the National Forest from the Impacts of Invasive Species.[49] The Order requires agencies to utilize programs and authorities to take steps to prevent the introduction and spread of invasive species, and to support efforts to eradicate and control invasive species that are established.[50] The Colorado Noxious Weed Act directs the Department of Agriculture to develop and implement management plans for all List A and List B noxious weed species.[51] The weed management plans are regularly reviewed, updated and detailed in the Rules Pertaining to the Administration and Enforcement of the Colorado Noxious Weed Act, also known as the Noxious Weed Rule (8 CCR 1206-2).[52] The Proposed Action must apply these rules to their construction development plan.

SE Group's project website lists noxious weed management under the project implementation requirements.[53] However, Project Implementation Requirements and best management practices (BMPs) have long accompanied ski area expansion proposals and yet ski areas are among the weediest areas on the National Forest due to the consistent failure of BMPs and Implementation requirements to eliminate and address the problem. The USFS has an affirmative obligation to prevent the spread of invasive weeds in the proposed ski area.

Any USFS analysis must discuss in detail how effective each already-utilized BMP has proven to be, and how effective any new BMPs are likely to be. The agency cannot continue to permit activities that exacerbate weed infestations in violation of its own Forest Plan and relevant

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[48] *See* WATERSHED CONSERVATION PRACTICES HANDBOOK, FSH 2509.25, at section 11.1.
[49] *See*, *e.g.*, USDA, *National Invasive Species Information Center Federal Laws and Regulations* (Apr. 10, 2018), https://www.invasivespeciesinfo.gov/laws/execorder.shtml#eo13751.
[50] *See* Exec. Order No. 13751, 81 FR 88609, 88610 (Dec. 5, 2016) (summarizing E.O. 13112).
[51] Other authorities related to noxious weed management include the Federal Noxious Weeds Act (7 U.S.C. § 2801), Forest Service Manual (FSM) Section 2080, Forest Service Handbook (FSH) 2209.23, Section 330, the Forest Plan as amended, and the Colorado Weed Management Act.
[52] *See*, *e.g.*, USDA, White River National Forest, Vail Mountain Resort Golden Peak Improvements Project, Draft Environmental Impact Statement, at 77 (Mar. 2018), https://www.fs.usda.gov/nfs/11558/www/nepa/102713_FSPLT3_4280305.pdf.

[53] SE GROUP, *Pandora Development and Summit Snowmaking Projects*, https://segroup.maps.arcgis.com/apps/Cascade/index.html?appid=e6269e1f4560422ca76351db92196b2e (last visited June 8, 2018) (multimedia summary of the Aspen Mountain Pandora Development and Summit Snowmaking Projects Notice of Proposed Action).

orders, laws, and regulations requiring it to combat this substantial threat.

A project design feature must require surveys for noxious weeds. These should occur before any ground disturbance occurs and for at least three full growing seasons after construction is completed. Any weed populations found should be eradicated to the greatest degree possible. The initial survey for weeds can also be used to detect rare plant populations (*see* Section 10 *infra*).

8. The proposed access road does not comply with the LRMP standards.

The Proposed Action includes constructing a 3,600-foot-long access road with a gabion retaining wall. The road has the potential to cause additional erosion and increase summer recreation access into the area. 8.25 infrastructure guidelines of the LRMP state, "[roads] are constructed to maintain good alignment and grades that minimize erosion."[54] The ASC should include an erosion control plan with the road that includes re-vegetation of any cut banks or other exposed ground. Additionally, the Proposed Action close the road outside of the ski season except for administrative uses.

9. The agency must follow the LRMP timber cutting standards and guidelines

If the USFS approves the Proposed Action, tree cutting must follow the standards and guidelines promulgated in the 2002 LRMP. The Proposed Action must "base priorities for conserving potential or existing late-successional stands on values for maintaining biotic diversity, and evaluate factors of size, adjacency between late-successional stands, and degree of habitat variation between such late successional stands and intervening vegetation."[55] The action must also consider conserving older stands and stands with limited human access, and "provide potential for reintroduction of plant and animal species that have become locally eliminated."[56]

10. The EA must survey the proposed area for plant species of viability concern.

The NOPA states prior to construction ASC will survey the project area for sensitive plant species. Before development, the LRMP requires the USFS to survey for sensitive plant species in suitable alpine areas including: 1) Leadville milk-vetch 2) sea pink 3) rockcress draba, 4) tundra buttercup, and 5) Colorado tansy aster. In wetland areas, they must survey for: altai cottongrass, kotzebue grass-of-parnassus, and porter feathergrass. Additionally, the project must "avoid disturbances that would significantly affect species viability or trend the species towards federal listing."[57] It is important that the EA include an extensive survey for sensitive plant species. The project area is small enough that USFS staff and/or professional biologists ought to be able to inventory the entire area for sensitive plants prior to construction.

Any plant species found must be protected by prohibiting any activities that could harm the plants or prevent their populations from expanding. The latter will require a buffer of at least 100

[54] LRMP, at 3-81.
[55] LRMP, at 2-8.
[56] *Id.*
[57] LRMP, at 2-27.

feet around each population.

11. The Proposed Action must consider the effects a new pump station will have on the watershed and vegetation.

Approximately 10 million gallons of water storage would be needed to operate the new system.[58] The Proposed Action claims the water will be replenished by surface runoff. However, the NOPA does not consider the effects of collecting snow runoff that has traditionally flowed further downhill. It also fails to address where ASC will acquire the initial 10 million gallons they need to fill the storage facility. An EA should analyze the impact of decreased runoff at lower elevations due to its collection for snowmaking and disclose the original water source. Additionally, the EA should analyze any impacts associated with constructing a system of water bars and ditches to direct surface run-off to the snowmaking ponds.

The digging required to build the 1,800 ft snowmaking pipeline will displace mountain vegetation. The EA should consider an alternative that includes erosion and revegetation over the pipeline construction zone. According to the NOPA, ASC will develop a Construction Implementation Plan to be reviewed by the USFS prior to construction. The proposed plan will include erosion control and drainage management. When designing the plan, ASC must follow the standards and guidelines pursuant to LRMP 8.25 including: cross-drain placement, minimum spacing requirements, and a groundcover combination of revegetation and mulch applications.[59]

12. The Proposed Action must consider the effects on climate change and air quality from a new pump station, ski lift and other associated infrastructure.

A new pump station, ski lift and any additional associated infrastructure will require a significant amount of energy resources. However, the NOPA claims the new station will reduce the energy required to pump water for snowmaking. The Forest Service and ASC should confirm the reduction in energy from a new pond and pump station, and disclose this in the EA. A new lift, however will certainly increase the amount of energy used by ASC on Aspen Mountain and the FS must analyze those impacts to the climate as well as nearby Class 1 air sheds, most notably the Maroon Bells Snowmass Wilderness which is only 3.6 miles away.[60]

ASC should consider an alternative of powering the pumping station, ski lift and any additional associated infrastructure requiring power with renewable energy. In 2015, the City of Aspen utilities claimed to reach 100 percent renewable energy power. However, the ski resort still relies on utilities from fossil fuels.[61] ASC should evaluate their reliance on fossil fuels and consider mitigating the environmental impacts of this project by installing renewable power on the resort to power the proposed pump station, snowmaking equipment, ski lift and any additional associated infrastructure.

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[58] *NOPA*, at 8.
[59] LRMP, at 3-82
[60] *NOPA*, at 17.
[61] Grace Hood, *It's Not Easy, But Aspen Moves to 100 Percent Renewable Energy*, NPR: Morning Edition (July 5, 2017, 5:05 AM), https://www.npr.org/2017/07/05/535578438/aspen-moves-toward-its-goal-of-supporting-100-percent-renewable-energy.

13. The Forest Service must evaluate the aggregate impact of new snowmaking pursuant to NEPA in a programmatic analysis.

A programmatic NEPA analysis is appropriate for an agency to prepare when reviewing a repetitive activity that requires a broad picture analysis of consequences.[62] A programmatic analysis of existing and new snowmaking operations on the White River National Forest would provide for an analysis of direct, indirect, and cumulative impacts from snowmaking expansions on ski resorts within the forest.

Numerous ski resorts in the White River National Forest, Colorado River Basin, and within USFS's Region 2 have plans to increase snowmaking. Ski resorts are proposing to expand snowmaking for similar reasons and to fulfill similar needs (most notably to enhance the reliability of snow coverage). These proposals share geography and result in shared impacts (e.g., water depletions, alterations in flow regimes, and impacts to threatened and endangered species). As discussed below, some of these impacts, taken together, may be significant. But, to date, the USFS has not examined snowmaking proposals and the impacts of increased snowmaking altogether. A programmatic analysis would combine all existing and proposed snowmaking in a logical geography and look at the direct, indirect, and cumulative effects on the environment.

The Aspen Mountain snowmaking proposal is geographically connected, largely through increased stream depletions and greater run-off and sedimentation to concurrent snowmaking operations and expansions, and it promises to have similar direct, indirect, and cumulative impacts to other snowmaking proposals in the area. Therefore, a programmatic analysis of the environmental effects of snowmaking in the WRNF and the Colorado River Basin is appropriate. Failure to undertake such an analysis will require substantial and repetitive analysis of each project and may result in improper segmentation under NEPA.

Studies also predict a decrease in annual streamflow in rivers due to increasing temperatures and changes in precipitation. Science also confirms that more frequent dust-on-snow events in coming years will result in earlier peak snowmelt, runoff and return to base flows will occur earlier, and late summer streamflows (base flows) will be lower.[63] All of this information is relevant to the effects of additional snowmaking, but recent USFS decisions related to new snowmaking proposals fail to consider most of this information.

Instead, the USFS continues to rely on an old and narrow Biological Opinion (BO) from the USFWS dating back to 2009.[64] This BO predates and fails to address new climate-related studies that are relevant to snowmaking and water depletions. For example, recent studies that weren't considered in the BO show evidence that temperatures are on the rise, timing of snowmelt and

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[62] Council on Envtl. Quality, *Memorandum for Heads of Federal Departments and Agencies on Effective Use of Programmatic NEPA Reviews*, at 10 (Dec. 18, 2014), https://obamawhitehouse.archives.gov/sites/default/files/docs/effective_use_of_programmatic_nepa_reviews_final_dec2014_searchable.pdf.

[63] *See Id.*; Jerry M. Melillo, *Climate Change Impacts in the United States: The Third National Climate Assessment* at 148 (US Global Change Research Program, May 2014).

[64] *See*, e.g., *Vail Mountain Resort Golden Peak Improvements Project*, DEIS Table 2-3 at 26, 92.

peak runoff have changed, and soil moisture drought is more frequent.[65] A recent example highlighting the existing gap in analysis and the need for an updated programmatic analysis is the snowmaking expansion at Golden Peak on Vail Mountain. The USFS has just released Golden Peak's Draft EIS analyzing potential impacts of expanded snowmaking based on the outdated BO data.

The BO that the USFS relies upon considers water withdrawals occurring on one specific ski mountain. The BO does not consider impacts of snowmaking related withdrawals throughout the basin more broadly. It ignores the cumulative impacts that snowmaking is having on the environment. An updated programmatic analysis and BO may tell a different story, especially given the increasing number of new snowmaking proposals.[66] We will not know what the potential impacts are until the USFS undertakes an updated programmatic analysis of snowmaking more broadly, or until the USFWS prepares an updated BO that address all of the stream depletions together.

Without a programmatic analysis the F.S. will be unable to consider impacts like delayed melt-off and green-up that result when snowmaking operations are approved. These consequences have meaningful impacts on native plants and wildlife that must be considered on a scale that is broader than just within the project area.

Further, cumulative effects from increased snowmaking threaten boreal toad habitat. The USFS's Final Environmental Impact Statement for the WRNF 2002 LRMP states "water withdrawal for snowmaking… can eliminate or reduce the quality of boreal toad habitat."[67] Changing runoff times from snowmaking keeps the water temperatures cooler for longer and may change the hydrology of the breeding ponds.[68] Boreal toads are a sensitive species which must be protected by the USFS.

As mentioned above, changes in the timing of runoff, peak flow, and water yield are a likely result of this Proposed Action. New snowmaking and additional snow compaction will delay and increase runoff. It would also impact vegetation, soil productivity, aquatic and riparian health, wildlife, and other resource values. Over time these changes are likely to completely alter the character of the area. NEPA requires that the USFS disclose and consider the potential water impacts in its analysis. Absent a new programmatic analysis, the USFS will continue not to meet its obligations under NEPA to take a hard look at the potential direct, indirect, and cumulative effects of snowmaking on the environment[69].

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[65] JEFF LUKAS ET AL., *Climate Change in Colorado, a Synthesis to Support Water Resources Management and Adaptation* 2 (2nd ed. Aug. 2014).
[66] *See*, *e.g.*, Beaver Creek Resort – McCoy Park Terrain Development (see project website here: https://www.fs.usda.gov/project/?project=52650); Keystone Resort – 2018 Improvements Project (see project website here: https://www.fs.usda.gov/project/?project=53800); and the Steamboat Ski Area FY18 Projects (see project website here: https://www.fs.usda.gov/project/?project=52845).
[67] USFS, LAND AND RESOURCE MANAGEMENT PLAN 2002 FINAL ENVIRONMENTAL IMPACT STATEMENT, 3-184 (U.S.D.A. 2002).
[68] *Id.*
[69] Council on Envtl. Quality, Memorandum for Heads of Fed. Dep't and Agencies on Effective Use of Pgrm. NEPA Reviews at 10, 32; 40 C.F.R. § 1502.4(a)-(b) (requiring a single EIS for proposals which are closely related to each

14. The agency's EA must consider the direct, indirect, and cumulative effects of the Proposed Action on air quality.

The WRNF has some of the best air quality in the country; however, the USFS identified the area around the city of Aspen as the only non-attainment area within the forest in 2002.[70] The majority of direct and indirect impacts to air quality from developed recreation are a result of high vehicle traffic and increased population associated with ski areas.[71] The ASC Energy Plan acknowledges the increased need and proposed strategies to reduce Aspen Mountain's negative impact on air quality (*see* Aspen Mountain's 2008 Energy Plan). However, the ASC 2017 Sustainability Report shows an increase in CO2 output from fossil fuels.[72] Therefore, ASC should take the city's non-attainment classification into consideration and allocate resources to minimize their emissions.

The NOPA does not to address the issue of air quality impacts during and after construction.[73] However, the proposed timber cutting, road construction, the pump station, snowcats, and snowmaking will create direct, indirect, and cumulative effects from increased air pollution. Under the LRMP objective 2c.17, Proposed Action plans must minimize the impact of air pollutants.[74] To achieve this objective, the agency must comply with local, state, and federal air quality regulations and requirements.[75] Implementation of forestwide standards will allow the USFS and "to protect its ecosystems and resources from unacceptable air pollution impacts and, where appropriate, improve degraded conditions."[76]

Additionally, the Proposed Action does not adequately address the air quality impacts of timber burning.[77] Regardless of the scale of burning, the project must follow the Colorado Air Quality Control Commissions open burning regulations. First, the developers must apply and obtain a permit consistent with the General Open Burning Permit Criteria.[78] The permit application must include the specified burning area, time period, and the relevant vegetation, habitat and fuel management of forest land. It must also include discussions of alternatives[79]. Second, if a permit is granted, ASC must comply with the following guidelines, including:

1. To the degree practical, all burning shall be conducted during periods conducive to smoke dispersal;
2. The authority granting the permit may impose conditions on wind speed and wind direction at the time of the burn to minimize smoke impacts on smoke-sensitive areas;

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other and preparing statements on broad actions which coincide with "meaningful points in agency planning and decision making").

[70] *Id.* at 3-53.
[71] LRMP, at 3-59.
[72] ASPEN SKI COMPANY, *2017 Sustainability Report*, at 14 (11th ed.).
[73] *NOPA*, at 17.
[74] LRMP, at 1-12.
[75] *Id.* at 2-3.
[76] FEIS, at 3-53.
[77] *NOPA*, at 17.
[78] Dep't. of Pub. Health and the Envir. Air Quality Control Comm'n, Reg. #9, at 5 (2015).
[79] *Id.* at 13.

3. Supervision by a responsible person who shall have available the means to suppress the burn if the fire does not comply with the terms and conditions of the permit;
4. Precautions shall be taken to ensure that the burning is restricted to the items and location identified in the permit and to avoid all fire hazards to persons or property within or adjacent to the area in which the permit allows an open burn.[80]

15. The USFS must take a hard look at potential noise impacts from the expansion and snowmaking.

ASC describes potential noise impacts associated with the Proposed Action by stating: "The Proposed Action Alternative would introduce noise both during the construction phase…as well as during the operation phase…These conditions would be similar to surrounding areas within the Aspen Mountain SUP area."[81] The currently undeveloped Pandora area is quiet, and therefore the Proposed Action will result in a substantial increase in noise from ski lifts, snowmobiles, snowcats, skiers, and the operation of other infrastructure. Any environmental analysis should disclose current noise levels in the area and compare those with what could be expected after development. In addition to providing those metrics, the agency should discuss and analyze impacts that increased noise would have on wildlife and other important public land values. The USFS must evaluate the impacts noise from construction, helicopters, and skiers, will have on the local wildlife. An alternative ASC must consider is seasonal closures to protect wildlife during the times of the year when they are most vulnerable.

16. The F.S. must analyze the impacts of the expansion to existing and future recreation outside the ski area operational boundary and outside the winter season.

The Richmond Ridge area is used by winter recreationists not using the ski area. The NOPA states that the proposed ski area expansion "would alter the recreation experience for users currently utilizing portions of Richmond Ridge outside of the existing operational boundary". Id. at Table 6, p. 16. The F.S. must analyze how the expansion would change the recreational experience for those users outside the operational boundary. Currently skiers are utilizing the Pandora area both from the existing ski resort for "side-country" skiing, returning to the ski area and utilizing the lifts and by accessing the area from roads on the West side of Richmond Ridge. Construction of the Pandora area is likely to displace this use further south along the East side of Richmond Ridge to the Harris's, Loushin's and McFarlane's areas. Increased wintertime use of these areas is likely to negatively impact wildlife use of the area by increasing the amount of skier compaction and disturbance in those areas. ASC must disclose these likely impacts and consider an alternative the reduces the size of the Pandora's expansion allowing side-county use to continue in the "powerline" area minimizing the amount of skier displacement further south. Further, Further, the USFS should quantify the change in recreational visits to both the Pandora area and the terrain outside the SUP further south between the no action alternative (current condition) and the Proposed Action.

The EA should disclose any impacts or likely increases in use of the Pandora area outside the ski season. IF the ASC anticipates any future development of summer recreational amenities these

[80] *Id.* at 7-8.
[81] *NOPA*, at 17.

must be disclosed and analyzed at this time. Because a number of the impacts to wildlife and the physical and biotic environment are likely to be greater in the summer time (e.g. greater overlap with elk habitat, increased erosion, impacts to songbirds, bears and small mammals who don't utilize the area in the winter), the F.S. should restrict road and trail access to winter use only and administratively close any roads in the area.

17. The F.S. must more fully analyze impacts to scenery.

As currently written, the preliminary findings of impacts to scenery are inadequate. The NOPA finds that there would be minimal impacts to scenery during the winter but does not consider impacts to scenery during the summer. The NOPA concludes that impacts would be minimal since Highway 82 is closed during the winter. [82] However, the visual impacts of the project would be visible from portions of Highway 82 that are open year round and the impacts would be just as visible during the summer as they are in the winter. In addition, the NOPA fails to mention other important landscapes that would have their visual environments impacted from this project. In particular the scenic impacts would be visible from the Northstar Nature Preserve an area with extremely high scenic qualities and where the impacts of development are largely unnoticeable. Cutting 148 acres of trees immediately above the Preserve would have a significant impact to the scenic qualities of the east side of Richmond Ridge which forms a significant part of the view-shed of the Northstar Nature Preserve. The F.S. must analyze ways to reduce the visual impacts of this project especially when seen from the Northstar Nature Preserve and consider an alternative that results in no change to the visual environment and scenic qualities at the Northstar Nature Preserve.

Thank you for considering these comments. Please keep us updated as this proposed project proceeds.

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[82] *NOPA*, at 16.

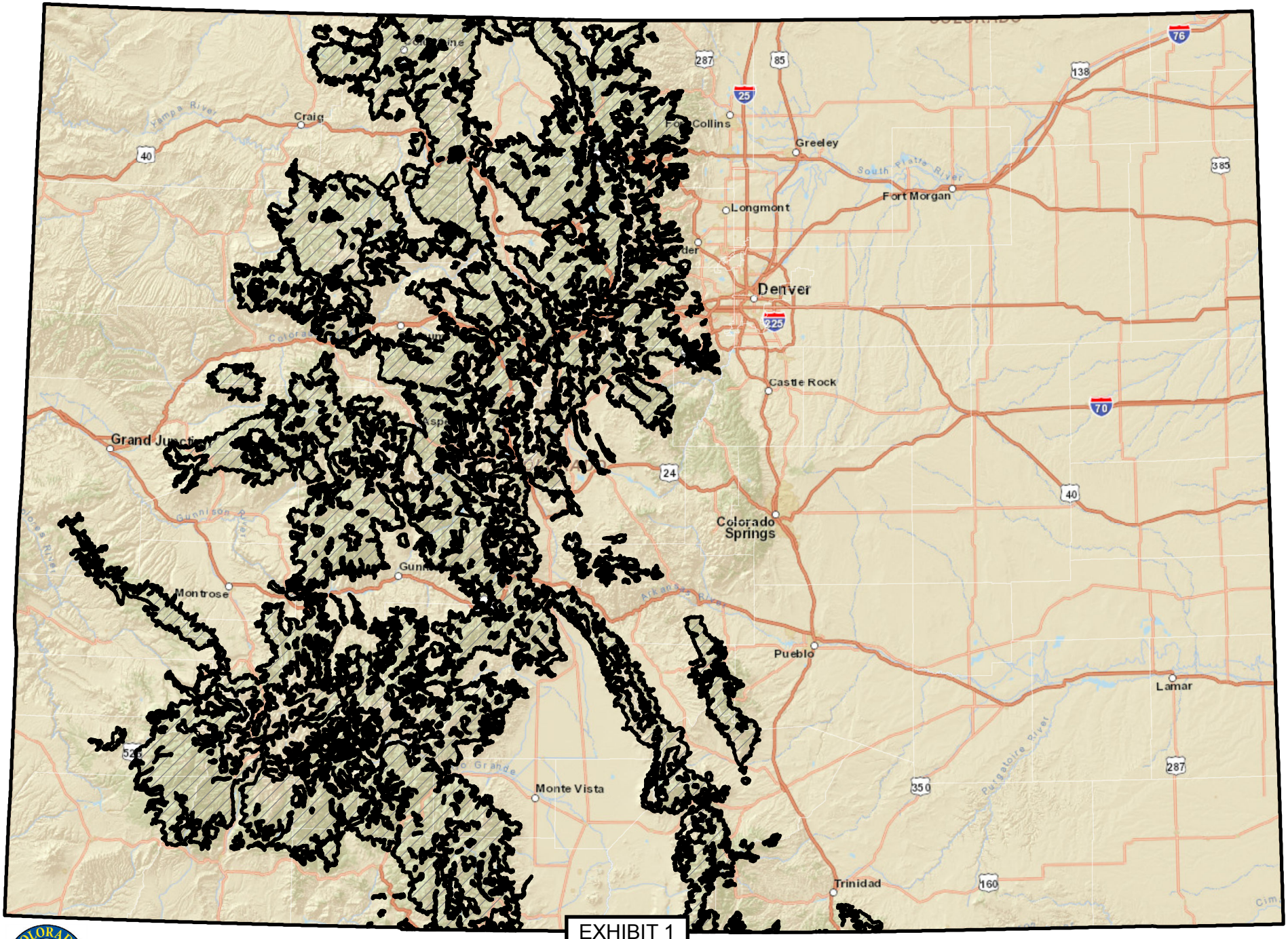
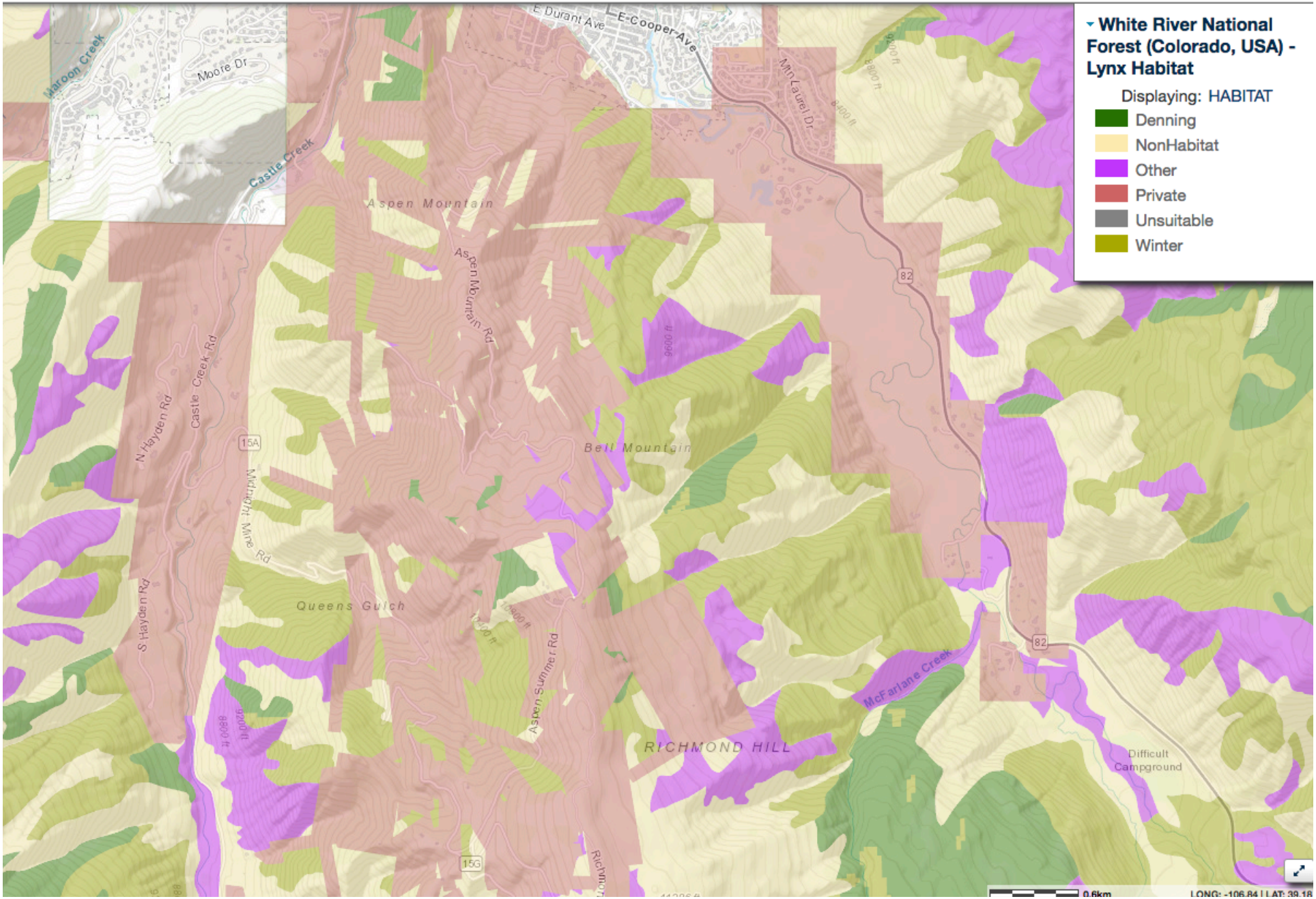


EXHIBIT 1

Lynx Potential Habitat

January 1st, 2015

GIS Unit


White River National Forest (Colorado, USA) - Lynx Habitat
Displaying: HABITAT
Denning
NonHabitat
Other
Private
Unsuitable
Winter
Maroon Creek
Moore Dr
Castle Creek
E Durant Ave
E Cooper Ave
Min Laurel Dr
Aspen Mountain
Aspen Mountain Rd
82
Castle Creek Rd
N Hayden Rd
15A
Bell Mountain
Midnight Mine Rd
S Hayden Rd
Queens Gulch
Aspen Summer Rd
McFarlane Creek
RICHMOND HILL
Difficult Campground
15G
0.6km
LONG: -106.84 | LAT: 39.18

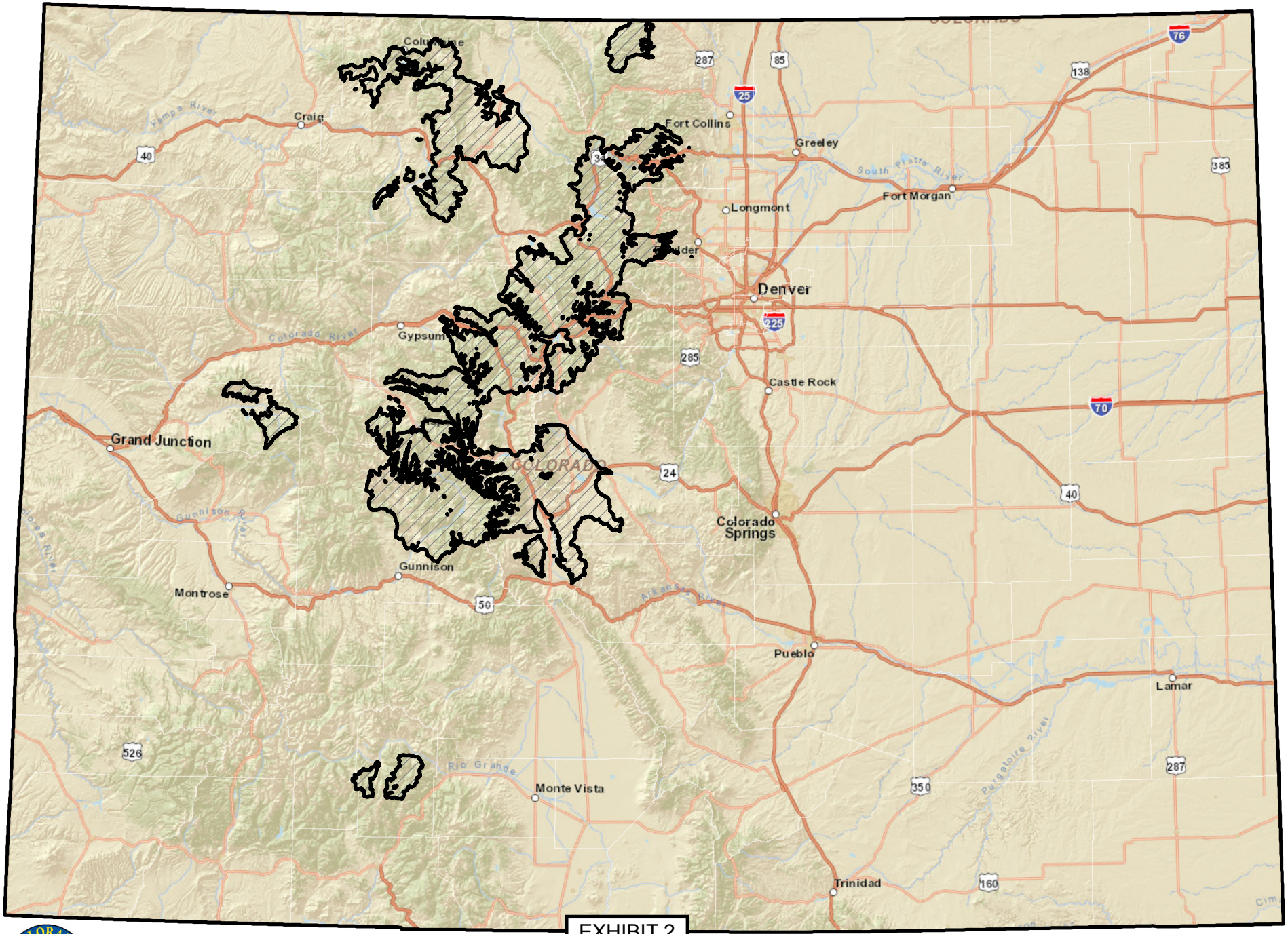


EXHIBIT 2

Boreal Toad Overall Range

January 1st, 2015

GIS Unit

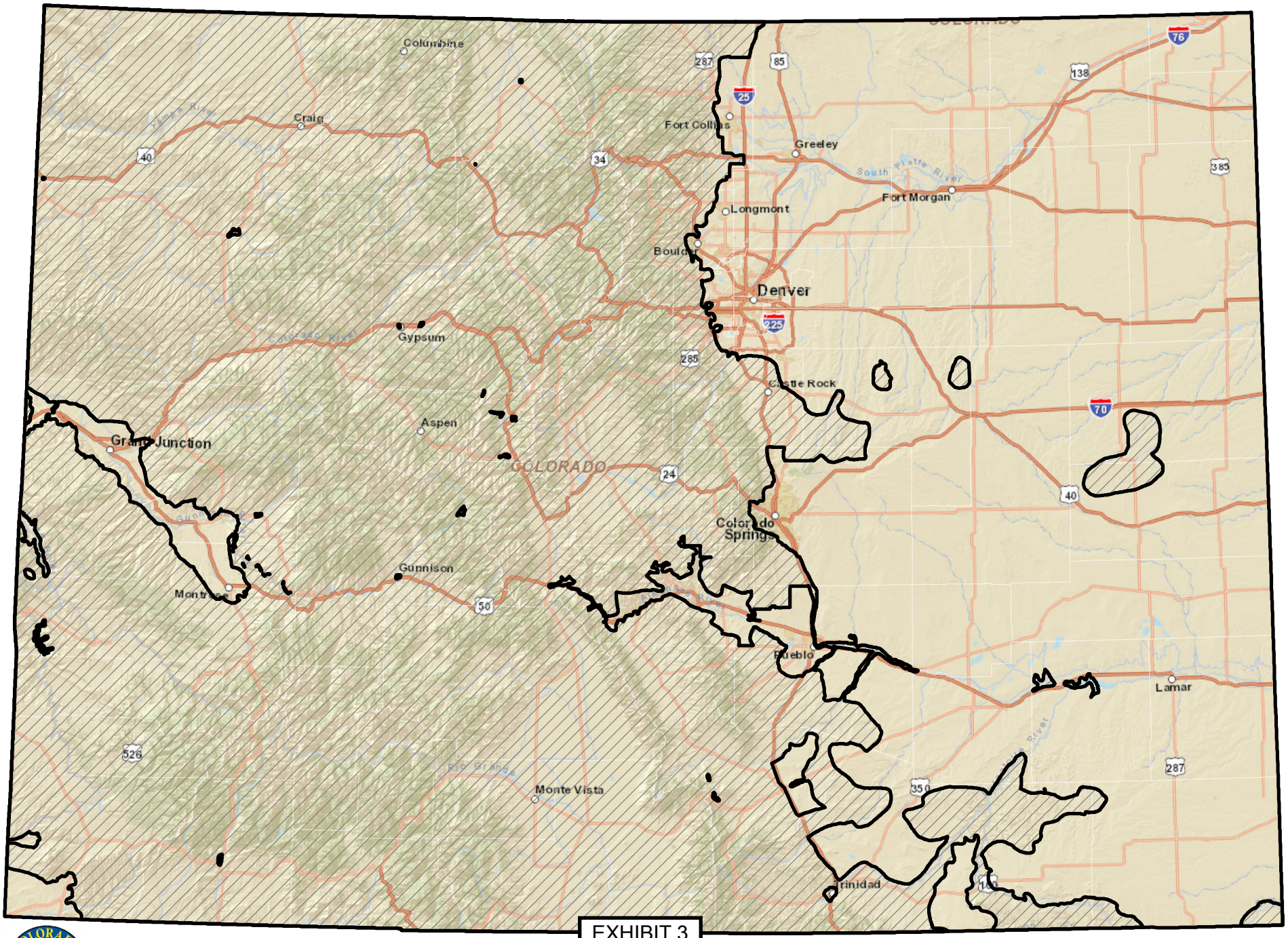
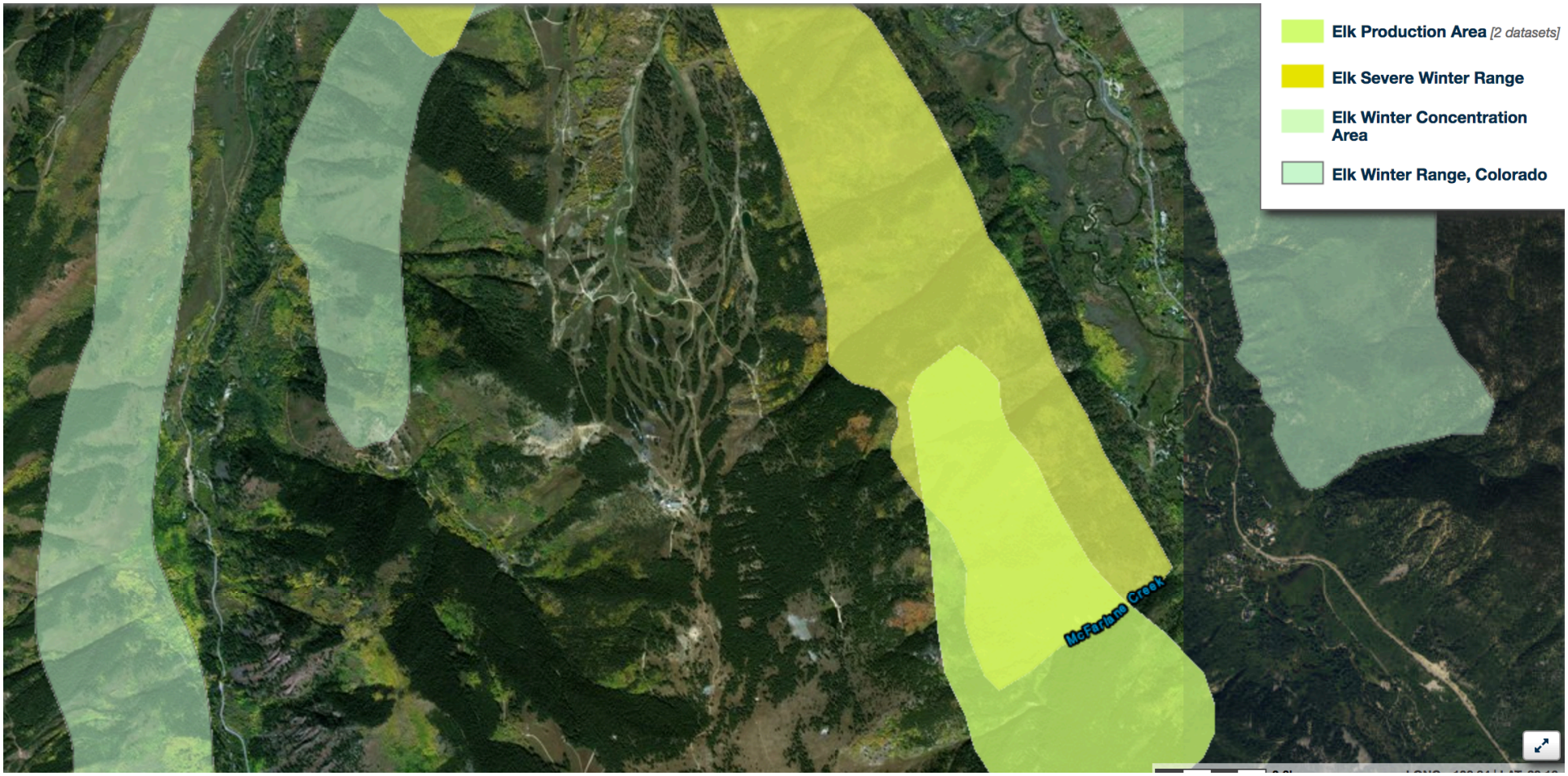


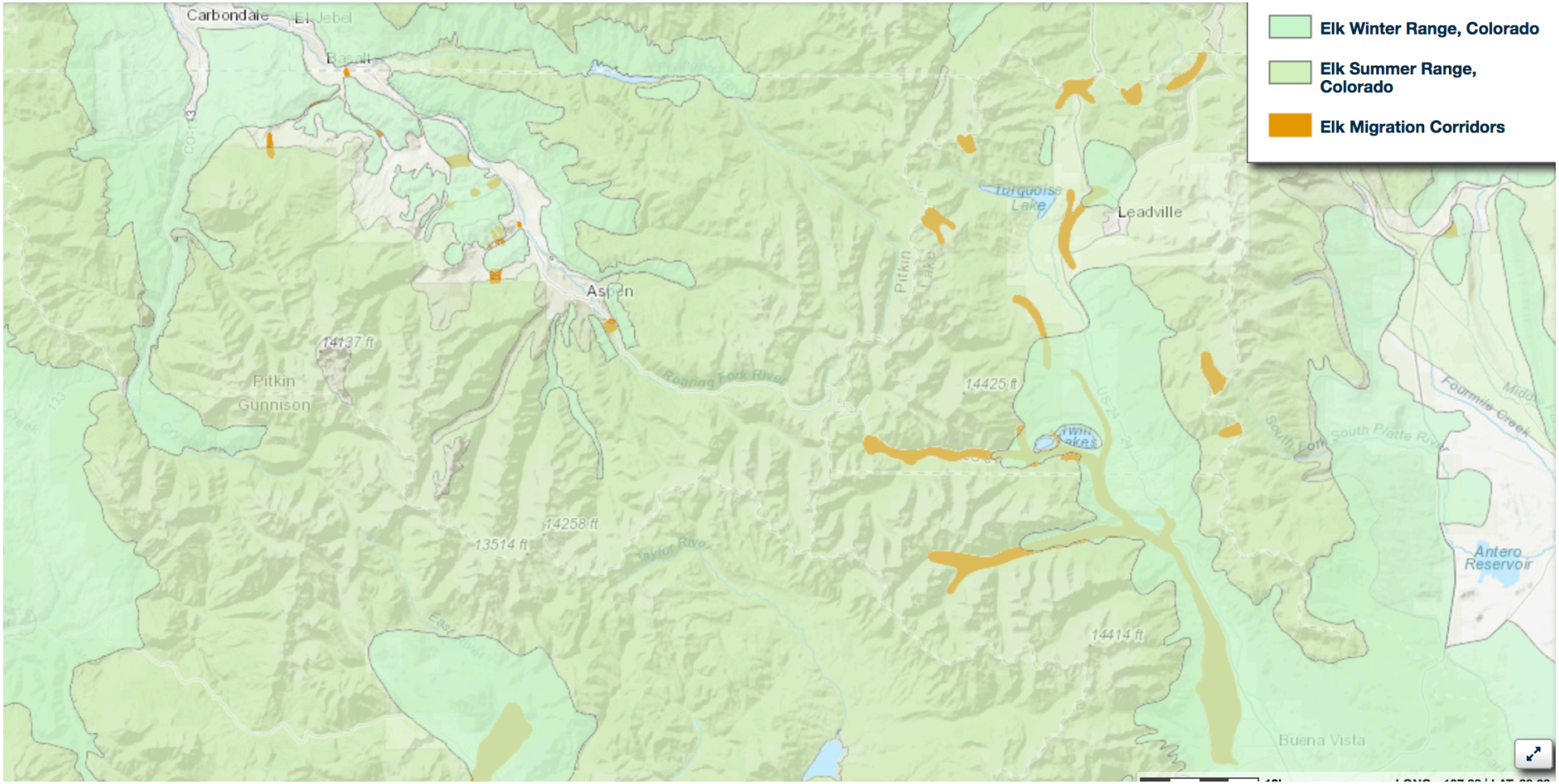
EXHIBIT 3

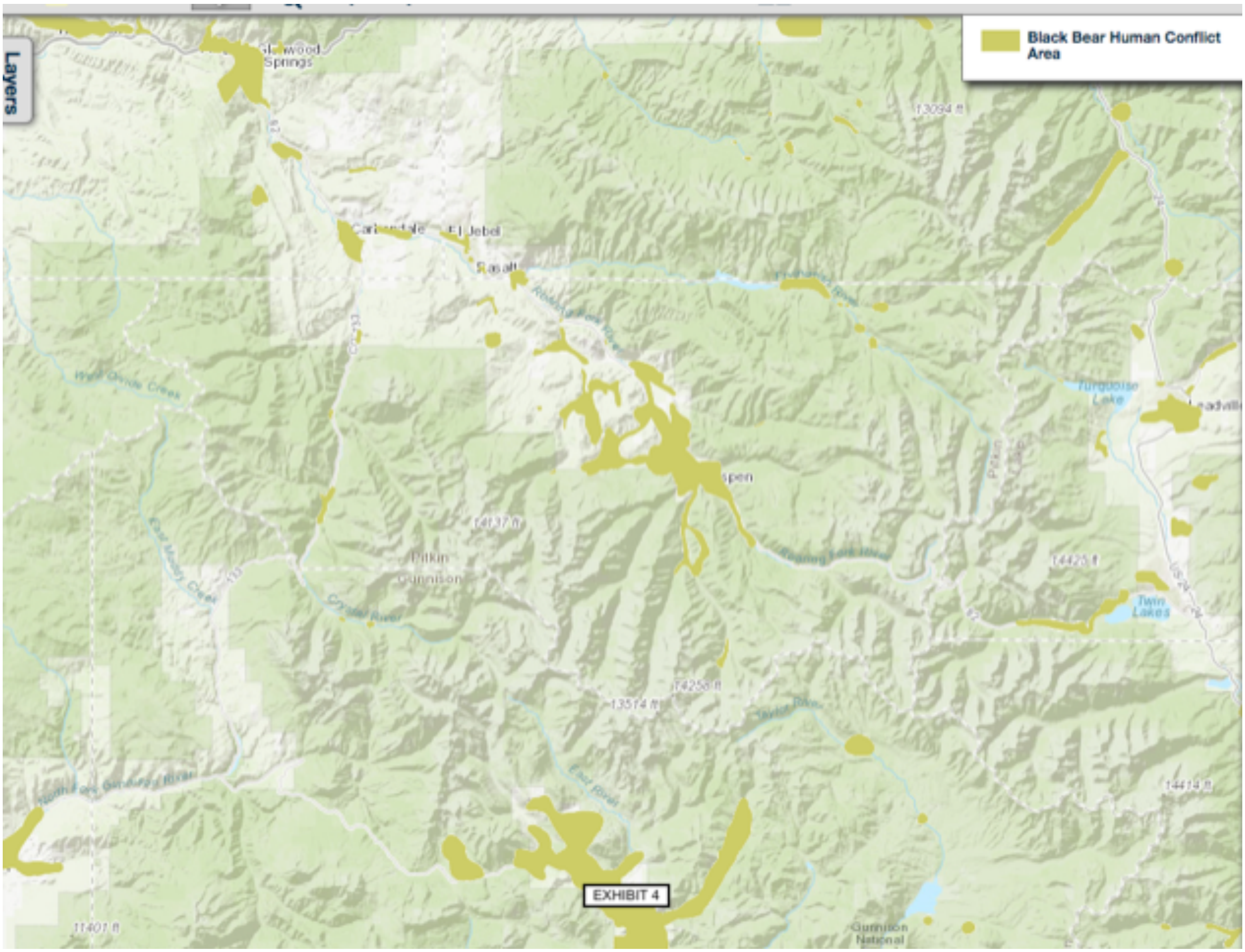
Elk Overall Range

January 1st, 2015

GIS Unit


Elk Production Area [2 datasets]
Elk Severe Winter Range
Elk Winter Concentration Area
Elk Winter Range, Colorado
McFarlane Creek


Elk Winter Range, Colorado
Elk Summer Range, Colorado
Elk Migration Corridors
Carbondale
El Jebel
Basalt
Aspen
Leadville
Turquoise Lake
Pitkin Lake
Roaring Fork River
14137 ft
Pitkin
Gunnison
14425 ft
Twin Lakes
Fourmile Creek
South Fork South Platte River
14258 ft
13514 ft
Taylor River
Antero Reservoir
14414 ft
Buena Vista


Layers
Black Bear Human Conflict Area
Springs
El Jebel
13094 ft
Turquoise Lake
14137 ft
Pitkin
Gunnison
Crystal River
Roaring Fork River
14425 ft
Twin Lakes
14256 ft
13514 ft
Taylor River
East River
14414 ft
11401 ft
Gunnison National
EXHIBIT 4