

SPECIES: Scientific [common]	<i>Brachylagus idahoensis</i> [Pygmy Rabbit]
Forest:	Bridger-Teton National Forest
Forest Reviewer:	Randall Griebel
Date of Review:	09/7/2018
Forest concurrence (or recommendation if new) for inclusion of species on list of potential SCC: (Enter Yes or No)	NO

FOREST REVIEW RESULTS:

1. The Forest concurs or recommends the species for inclusion on the list of potential SCC:
Yes ___ No X ___
2. Rationale for not concurring is based on (check all that apply):
Species is not native to the plan area _____
Species is not known to occur in the plan area _____
Species persistence in the plan area is not of substantial concern X ___

FOREST REVIEW INFORMATION:

1. Is the Species Native to the Plan Area? Yes X ___ No ___

If no, provide explanation and stop assessment.
2. Is the Species Known to Occur within the Planning Area? Yes X ___ No ___

If no, stop assessment.

Table 1. All Known Occurrences, Years, and Frequency within the Planning Area

Year Observed	Number of Individuals	Location of Observations	Source of Information
2006	4	Bondurant Area; Big Piney Ranger District	Wyoming Natural Diversity Database (August 2018)
2009	1	Big Springs Road; Kemmerer Ranger District	Wyoming Natural Diversity Database (August 2018)

**ID made by recording of echolocation, which is not reliably diagnostic for this species.*

- a. Are all Species Occurrences Only Accidental or Transient?

Yes ___ No X ___

If yes, document source for determination and stop assessment.

- b. For species with known occurrences on the Forest since 1990, based on the number of observations and/or year of last observation, can the species be presumed to be established or becoming established in the plan area?

Yes___ No___ UNK__X__

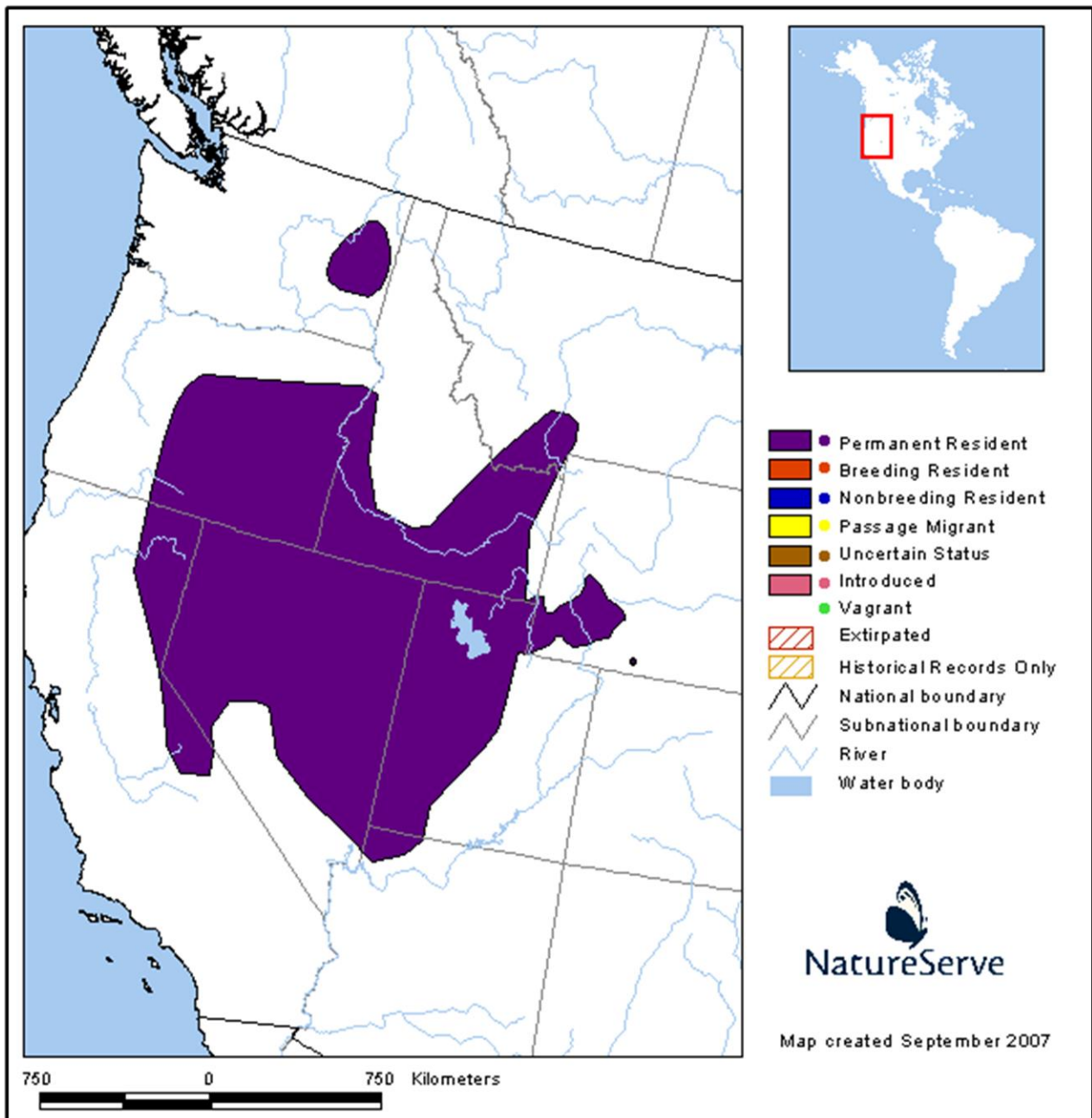
If determination is no, stop assessment and provide explanation for determination.

- c. For species with known occurrences on the Forest predating 1990, does the weight of evidence suggest the species still occurs in the plan area?

Yes_X_ No___

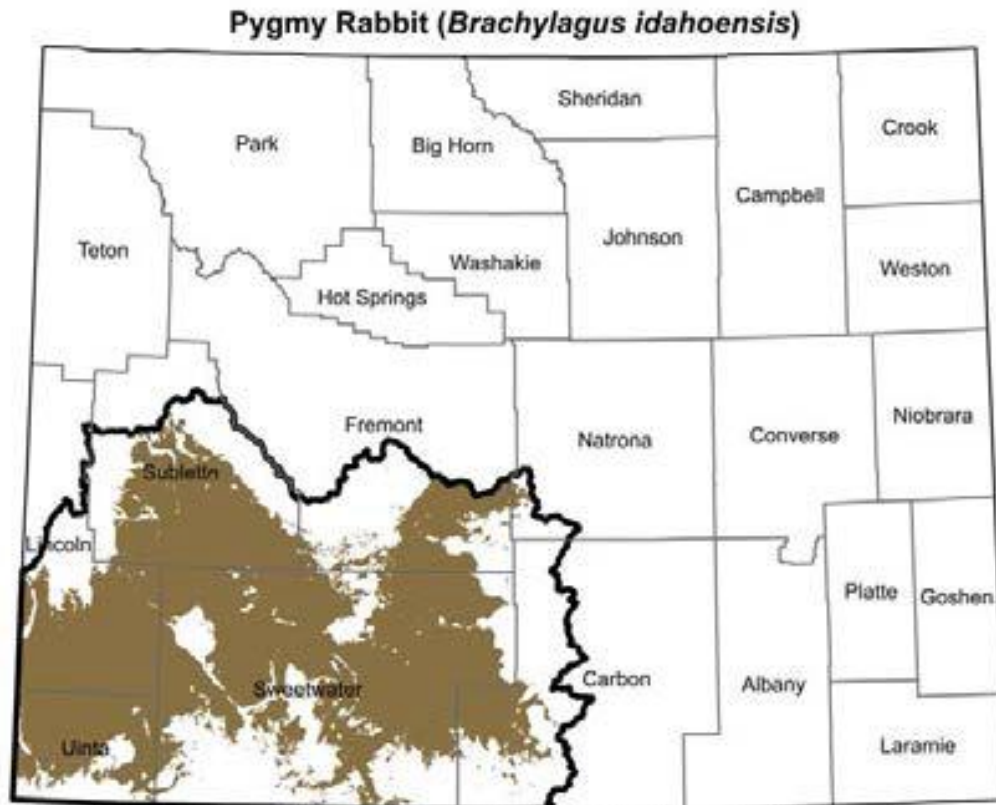
If determination is no, stop assessment and provide explanation for determination.

d. **Map 1**, North American range of the pygmy rabbit.



Map from: Patterson, B. D., et al. (2007) Digital Distribution Maps of the Mammals of the Western Hemisphere, version 3.0, NatureServe, Arlington, Virginia).

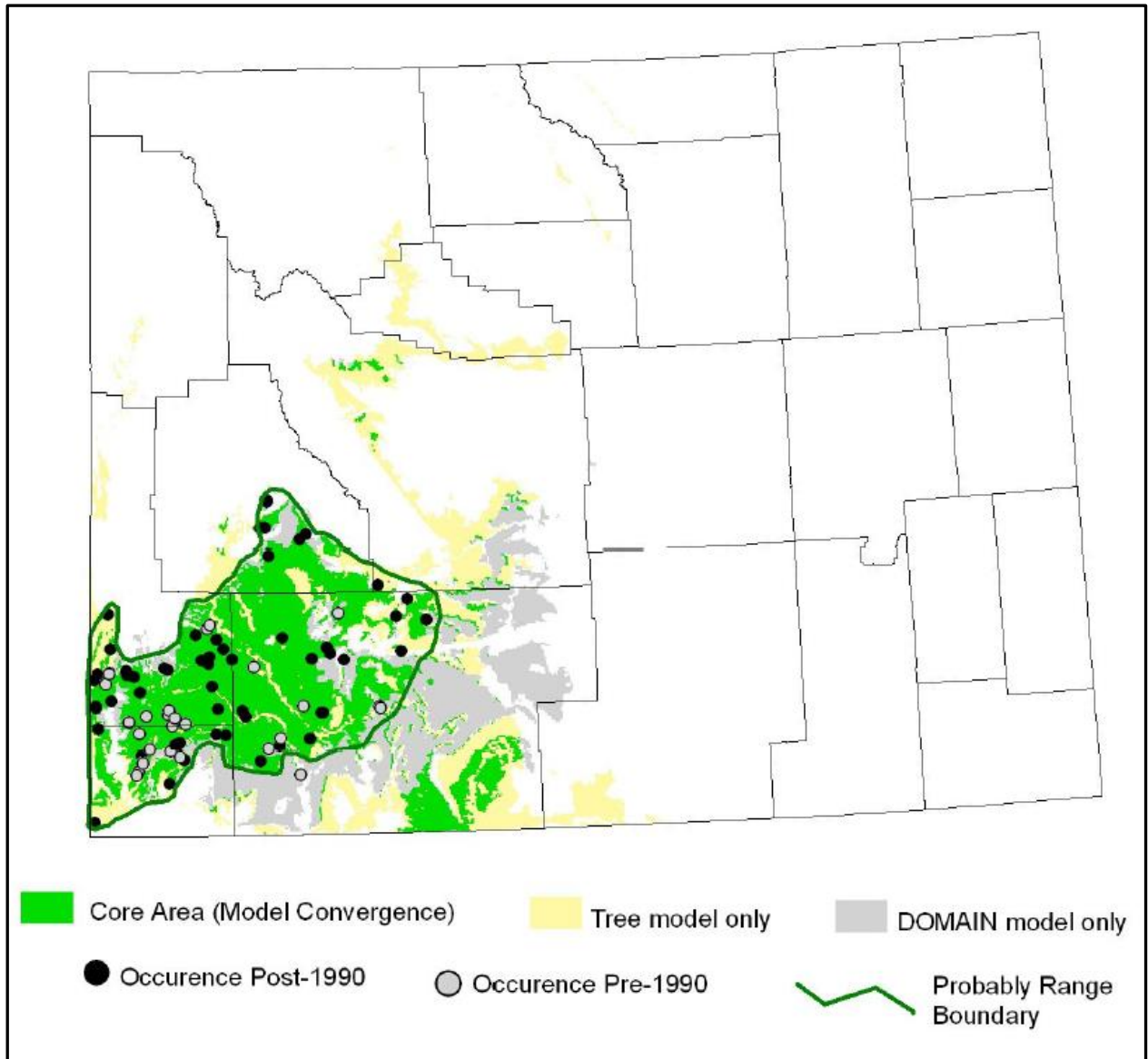
e. **Map 2**, Range and predicted distribution of the pygmy rabbit in Wyoming.



SOURCE: Digital maps of ranges for Wyoming Species of Greatest Conservation Need: Sept. 2016. Wyoming Game and Fish Department and Wyoming Natural Diversity Database, University of Wyoming, Laramie, Wyoming. Note that brown indicates the predicted distribution of the species; heavy black lines indicate outermost boundaries of possible occurrence.

Wyoming Game and Fish Department. 2017. State Wildlife Action Plan. Pygmy Rabbit (*Brachylagus idahoensis*).

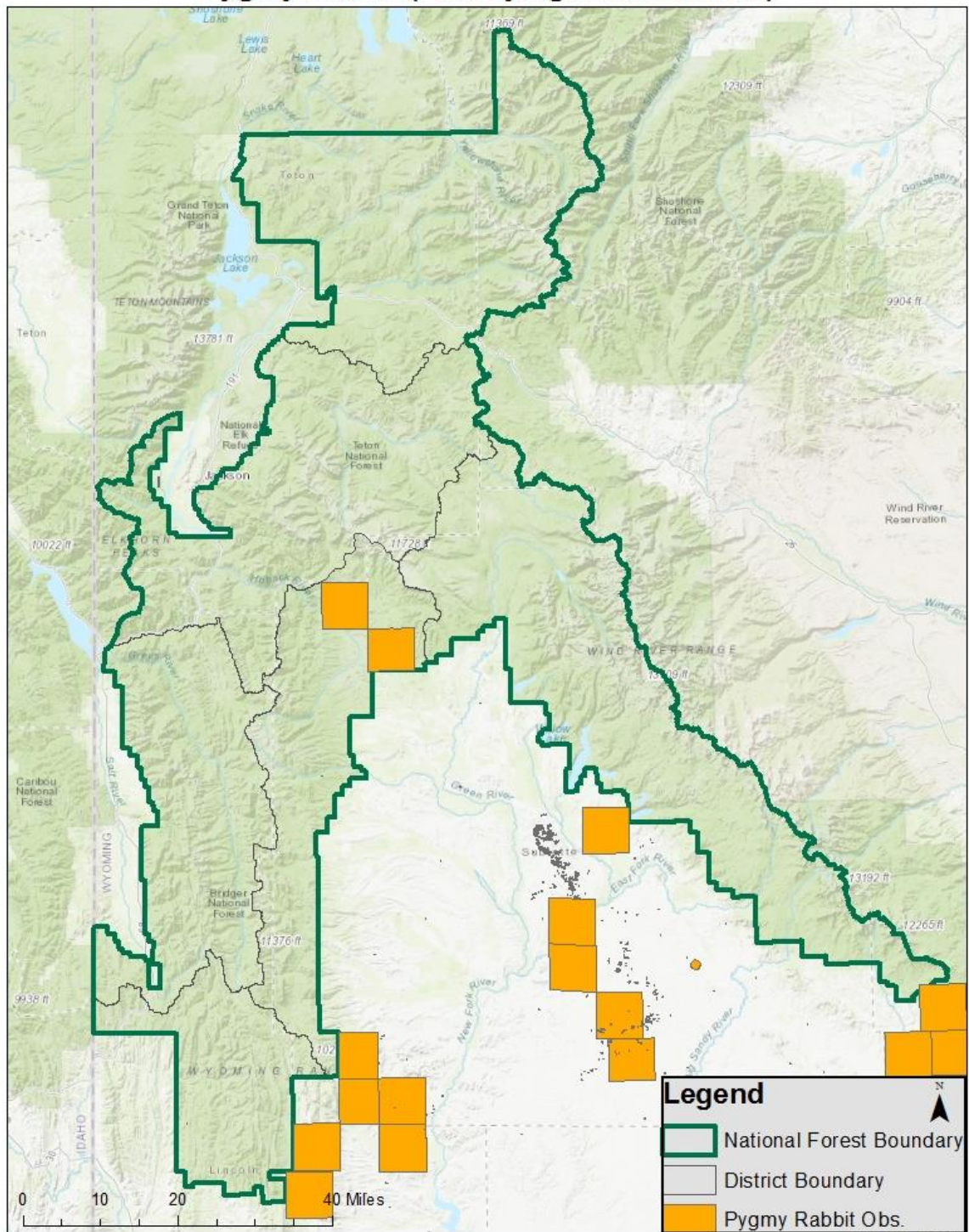
- f. **Map 3**, Probable Wyoming distribution map, based on known occurrence points in the Wyoming Natural Diversity Database and predictive habitat descriptors.



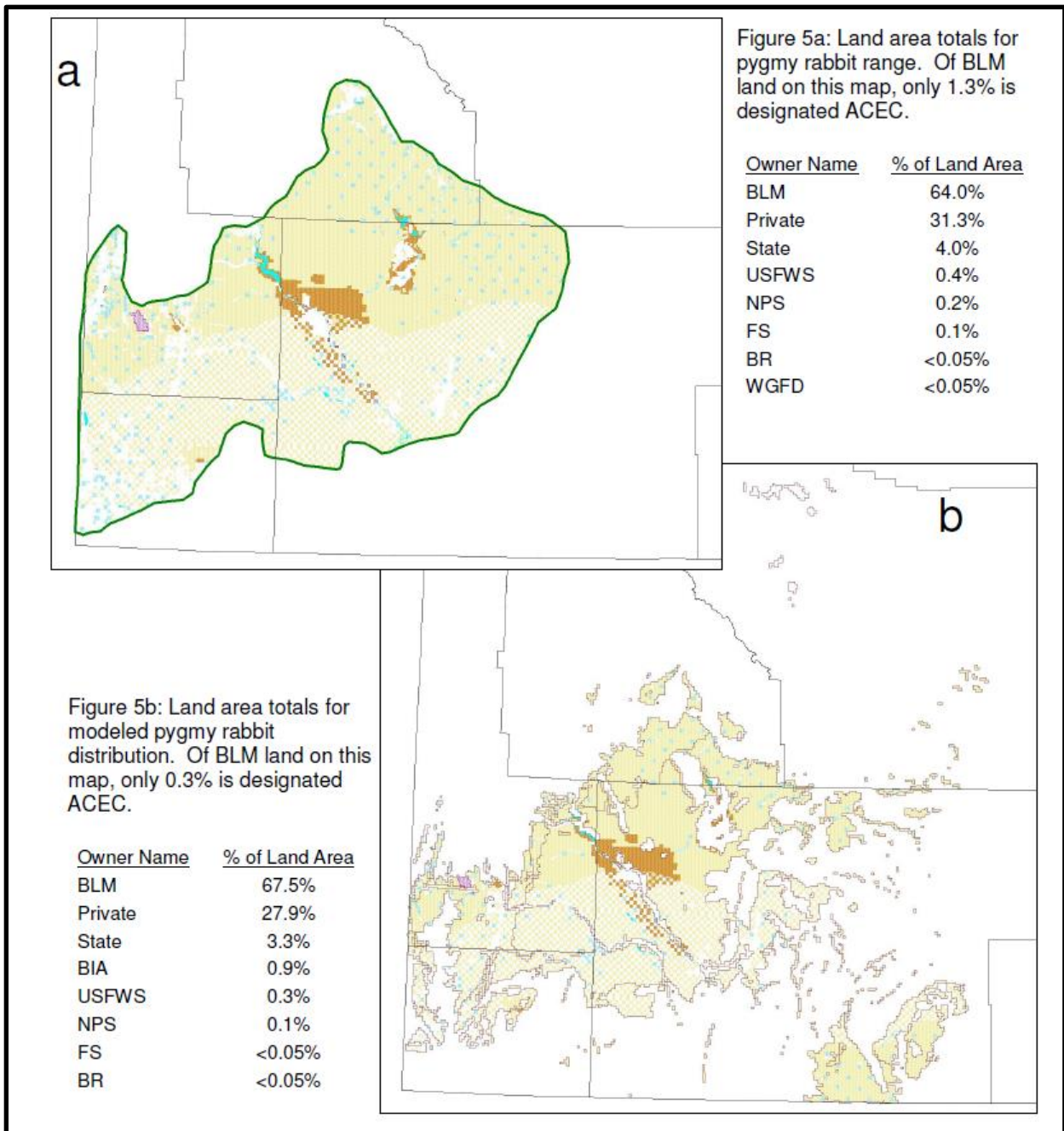
Keinath, D. A., and McGee, M. 2004 Species assessment for Pygmy Rabbit (*Brachylagus idahoensis*) in Wyoming, p 42, Wyoming Natural Diversity Database and USDI Bureau of Land Management, University of Wyoming, Laramie, WY.

- g. **Map 4**, Map of pygmy rabbit occurrences on the Bridger-Teton National Forest (Wyoming Natural Diversity Database [August 2018]).

Pygmy Rabbit (*Brachylagus idahoensis*)



- h. **Map 5**, Maps of surface ownership of potential pygmy habitat in Wyoming based on (a) probable range and (b) predicted distribution from habitat models generated by WYNDD. These areas represent potential pygmy rabbit habitat and are not an estimate of land area actually occupied; much of the highlighted land may be unsuitable or suitable but unoccupied.



Keinath, D. A., and McGee, M. 2004 Species assessment for Pygmy Rabbit (*Brachylagus idahoensis*) in Wyoming, p 46, Wyoming Natural Diversity Database and USDI Bureau of Land Management, University of Wyoming, Laramie, WY.

3. Is There Substantial Concern for the Species' Capability to persist Over the Long-term in the Plan Area Based on Best Available Scientific Information?

Table 2. Status summary based on existing conservation assessments.

Entity	Status/Rank (include definition if Other)
<p>NatureServe Global Status</p>	<p>G4— Apparently Secure</p> <p><i>Although still globally widespread, the Atlantic population may be reaching critically low levels and the Pacific population has experienced substantial declines. Harlequins may exhibit high breeding and wintering site fidelity and small local breeding populations, and are thus subject to local extirpations. Declining overall populations may provide little chance of recolonization.</i></p>
<p>NatureServe State Status</p>	<p>S2— Imperiled</p> <p><i>At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.</i></p>
<p>WGFD</p>	<p>NSS3 (Bb), Tier II</p> <p><i><u>Population Status:</u> Vulnerable - Population size or distribution is restricted or declining but extirpation is not imminent</i> <i><u>Limiting Factors:</u> Severe - Limiting factors are severe and are not increasing significantly</i> <i><u>Tier II:</u> Moderate priority</i></p> <p><i>[The WGFD's Species of Greater Conservation Need (SGCN) designation process is based upon its Native Species Status (NSS) classification system that compares population and limiting factor variables using a 16 cell matrix. As a species moves from a placement closest to the upper left corner of the matrix (Aa/NSS1) toward the lower right corner (Dd/NSS7) the species' population status in Wyoming is considered more secure. Numerical scores were assigned to each of these variables and summed to provide a total score (i.e. NSS3). SGCN were placed into one of three tiers based on their total score: Tier I – highest priority, Tier II – moderate priority, and Tier III – lowest priority.]</i> (WGFD - Wyoming Species of Greatest Conservation Need)</p>
<p>WYNDD</p>	<p>Species of Concern</p> <p><i>Species vulnerable to extirpation at the global or state level due to:</i></p> <ul style="list-style-type: none"> <i>a. their rarity (e.g., restricted distribution, small population size, low population density)</i> <i>b. inherent vulnerability (e.g., specialized habitat requirements, restrictive life history)</i>

	<p><i>c. threats (e.g., significant loss of habitat, sensitivity to disturbances)</i> (Wyoming Natural Diversity Database - Species of Concern)</p>
USDA Forest Service	<p>Region 4: Sensitive Species</p> <p><i>Those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by</i></p> <ul style="list-style-type: none"> <i>a. Significant current or predicted downward trends in population numbers or density.</i> <i>b. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.</i> <p>(FSM 2670.5 – Threatened, Endangered & Sensitive Species)</p>
UDI FWS	No Special Status
WY BLM	<p>Sensitive</p> <p><i>1. Sensitive species must be native species found on BLM-administrated lands for which BLM has the capability to significantly affect the conservation status of the species through management, and either:</i></p> <ul style="list-style-type: none"> <i>a. There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range, or</i> <i>b. The species depends on ecological refugia or specialized or unique habitats on BLM-administrated lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.</i> <p><i>2. All federally designated candidate species, proposed species, and delisted species in the 5 years following their delisting shall be conserved as Bureau sensitive species</i></p> <p>(BLM Wyoming Sensitive Species Policy and List; March 31, 2010)</p>
IUCN	<p>LC – Least Concern</p> <p><i>A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.</i></p> <p>(IUCN – Red List Categories and Criteria)</p>

Table 3. Status summary based on best available scientific information.

Species (Scientific and Common Name): <i>Brachylagus idahoensis</i> [Pygmy Rabbit]	
Criteria	Rationale
Distribution on Bridger-Teton National Forest	The pygmy rabbit can be confused with cottontail rabbits and is very rare on the Bridger-Teton National Forest (BTNF), with only 5 total observations of the species in 2 of the 6 Ranger Districts (Table 1; Map 4). However, these observations are outside the predicted distribution model for the species (WYNDD 2018). Wyoming represents the eastern-most extent of the range, and the species is patchily distributed throughout the southwest portion of the state (WGFD 2017). The pygmy rabbit is restricted to areas with tall, dense sagebrush and deep soils. Although pygmy rabbits can disperse up to 12 km, average natal dispersal is just 1–3 km. It is likely that dispersal throughout the forest is problematic since they are reluctant to cross open spaces (WGFD 2017) and much of the sagebrush habitat on the BTNF is patchily distributed within forested stands of aspen and conifer.
Abundance on the Bridger-Teton National Forest	Pygmy rabbits are patchily distributed, and abundance can vary with the size and quality of habitat patches (Keinath and McGee 2004). The species can be locally abundant in parts of southwestern Wyoming but likely decreases in abundance near the periphery of its range (Cudworth et al. 2014; Estes-Zumpf et al. 2009 <i>in</i> WGFD 2017). Estimates of abundance are not available for the state or the BTNF. Most occurrences, as well as modeled habitat are found outside the forest (Maps 3 and 5).
Population Trend on the Bridger-Teton National Forest	Historic population declines were likely the result of sagebrush degradation, loss and fragmentation (Keinath and McGee 2004). Assessing trends is difficult because pygmy rabbit populations may shift across the landscape over time (WGFD 2017). Trends in pygmy rabbit occupancy have been studied in only one area in Wyoming and suggest that occupancy has been slowly increasing from 2011–2014 in the study area; however, the rate of increase in occupancy appears to be decreasing (Hayden-Wing Associates 2014 <i>in</i> WGFD 2017). There are no population trends for the BTNF.
Habitat Trend on the Bridger-Teton National Forest	The pygmy rabbit is a sagebrush obligate that occurs in areas with tall, dense sagebrush and deep soils capable of supporting burrows (WGFD 2017). The species typically is found in big sagebrush (<i>Artemisia tridentata</i>) with a high density of shrub cover, but will use landscapes containing multiple small patches of tall, dense sagebrush in a matrix of shorter shrubs (Ulmschneider 2008 <i>in</i> WGFD 2017). Sagebrush is important and provides both food and cover; additionally, most burrow entrances are located at the base of sagebrush shrubs (WGFD 2017).

Species (Scientific and Common Name): <i>Brachylagus idahoensis</i> [Pygmy Rabbit]	
Criteria	Rationale
	<p>The Inter-Mountain Basins Montane Sagebrush Steppe Biophysical Setting (BpS) is mapped to 11 percent of the BTNF. Vegetation is generally composed of mountain big sagebrush, antelope bitterbrush, and mountain snowberry with moderate to abundant herbaceous cover. The trend is for a deficit of late development, closed structure and surplus, or near surplus, of mid-development, open structure. There is also a deficit in S-Class A, however; this is mainly due to herbaceous vegetation exceeding the mapping rule cover threshold and thus being mapped as “uncharacteristic native” (Helmbrecht et al. 2012).</p> <p>Although sagebrush habitat makes up 11 percent of the BTNF and is distributed throughout the forest, pygmy rabbits have only been documented in two different locations (Table 1.) The occurrence records, and modeled habitat indicate that portions of the BTNF are at the very edge of the species range and factors other than habitat availability likely play a role in the species distribution on the Forest.</p>
Vulnerability of Habitats on the Bridger-Teton National Forest	<p>Pygmy rabbit annual survival rates vary considerably with site, year, sex, age, etc., but generally are low, with predation typically the main source of mortality (Price et al. 2010). Loss and fragmentation of sagebrush habitat due to fire, invasive plant species (e.g., cheatgrass (<i>Bromus tectorum</i>)), and anthropogenic modification/conversion practices are also detrimental to the species (Keinath and McGee 2004). Fragmentation and loss of sagebrush habitat due to energy development is currently occurring throughout Wyoming and is predicted to increase (Keinath 2015 in WGFD 2017). Under current climate change projections, cheatgrass is likely to continue to invade sagebrush habitat, along with native conifer species, and fire frequency (including extent and severity) will likely continue to increase across this landscape (Nature Serve 2018). Climate change is likely to exacerbate existing threats to pygmy rabbits.</p>
<p>Summary and recommendations: The Bridger-Teton National Forest (BTNF) is essentially outside the identified distribution for the pygmy rabbit and there is very little predicted or modeled habitat for this species on the Forest. Additionally, occurrence records suggest that established populations of pygmy rabbits are either not present or more likely, “unknown at this time” on the BTNF. Due to the species low abundance and little suitable habitat on Forest, there is no concern for this species capability to persist on the planning unit at this time. Therefore, it is recommended that the pygmy rabbit is not a Species of Conservation Concern for the Bridger-Teton National Forest.</p>	

Species (Scientific and Common Name): ***Brachylagus idahoensis* [Pygmy Rabbit]**

Criteria

Rationale

Literature Cited

Cudworth, N., Karsch, M., and Grenier, M. (2014) Pygmy Rabbit (*Brachylagus idahoensis*) distribution and occupancy in Wyoming, In Threatened, Endangered, and Nongame Bird and Mammal Investigations: Annual Completion Report (Orabona, A. C., and Cudworth, N., Eds.), pp 295-306, Wyoming Game and Fish Department.

Estes-Zumpf, W., Griscom, H., and Keinath, D. (2009) Pygmy Rabbit monitoring in the Pinedale Anticline Project Area, Sublette County, Wyoming., Wyoming Natural Diversity Database.

Hayden-Wing Associates. (2014) Pygmy Rabbit monitoring in the Pinedale Anticline Project Area, Sublette County, Wyoming, p 16, Prepared for Wyoming Game and Fish Department, Pinedale Anticline Project Office, and Bureau of Land Management by Hayden-Wing Associates, LLC, Laramie, Wyoming.

Helbrecht, D., M. Williamson, and D. Abendroth. 2012. Bridger-Teton National Forest Vegetation Condition Assessment.
Keinath, D. (2015) Evaluating the vulnerability of Wyoming's wildlife to habitat disturbance, p 176, University of Wyoming, Laramie, WY.

NatureServe. (2018). NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: September 7, 2018).

Price, A. J., Estes-Zumpf, W., and Rachlow, J. (2010) Survival of juvenile Pygmy Rabbits, *Journal of Wildlife Management* 74, 43-47.

Ulmschneider, H. (2008) Surveying for Pygmy Rabbits (*Brachylagus idahoensis*), p 57, Interagency Pygmy Rabbit Working Group, Boise, Idaho.

WYNDD. (2018). Data Explorer, species distribution model for the pygmy rabbit. https://wyndd.org/data_explorer.

Evaluator(s): Randall Griebel

Date: September 7, 2018