SPECIES: Scientific [common]	*Ochotona princeps* [American pika]
Forest:	Bridger Teton National Forest
Forest Reviewer:	Randall Griebel, James Wilder
Date of Review:	03/22/2018; reviewed 4/24/2025
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 (USFS District, Town, River, Road Intersection, HUC, etc.)	Source of Information
2007-2012	2	Blackrock Ranger District	USFS Natural Resources Information System Wildlife (March 2018); Wyoming Natural Diversity Database (March 2018)
1979-1982	8	Jackson Ranger District	USFS Natural Resources Information System Wildlife (March 2018); Wyoming Natural Diversity Database (March 2018)
2006-2017	117		
1979-1994	2	Greys River Ranger District	USFS Natural Resources Information System Wildlife (March 2018); Wyoming Natural Diversity Database (March 2018)
2009-2016	100		
1983-1990	22	Kemmerer Ranger District	USFS Natural Resources Information System Wildlife (March 2018); Wyoming Natural Diversity Database (March 2018)
1991-2016	151		

Year Observed	Number of Individuals	Location of Observations (USFS District, Town, River, Road Intersection, HUC, etc.)	Source of Information
1981-1991	13	Big Piney ranger District	USFS Natural Resources Information System Wildlife (March 2018); Wyoming Natural Diversity Database (March 2018)
1994-2015	39		
1980-1998	10	Pinedale Ranger District	USFS Natural Resources Information System Wildlife (March 2018); Wyoming Natural Diversity Database (March 2018)
2005-2015	97		

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_X__ No___

If no, provide explanation and stop assessment.

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?

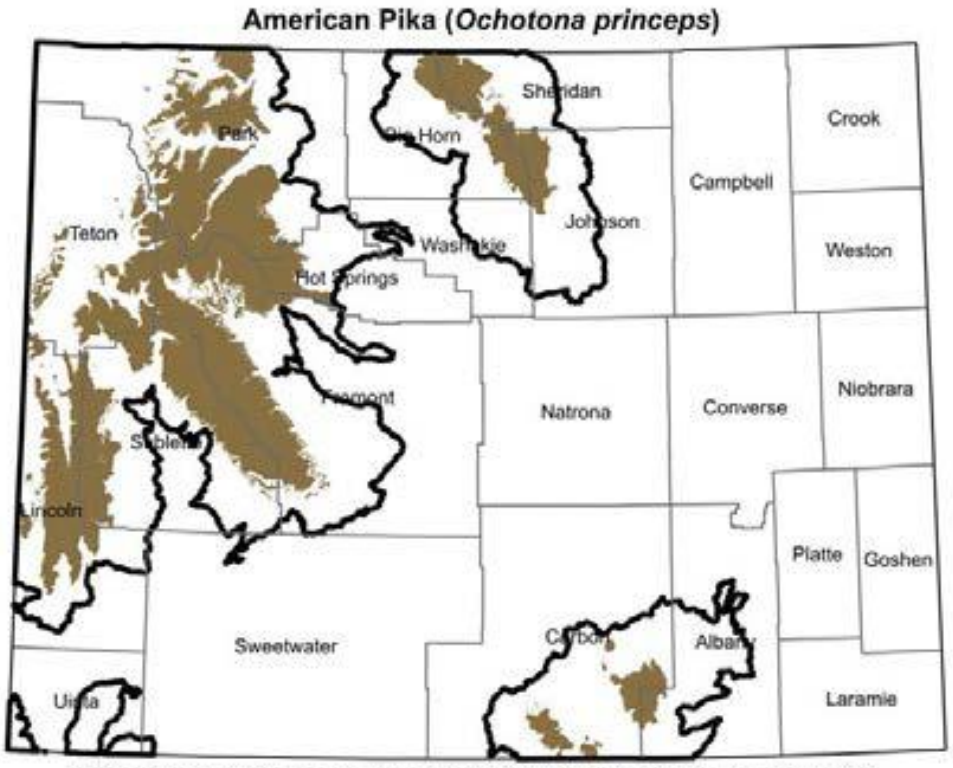
Yes_X__ No___

If no, provide explanation and stop assessment.

d. **Map 1**, American pika range map of North America

Wyoming Game and Fish Department. 2017. State Wildlife Action Plan. American pika (*Ochotona princeps*).

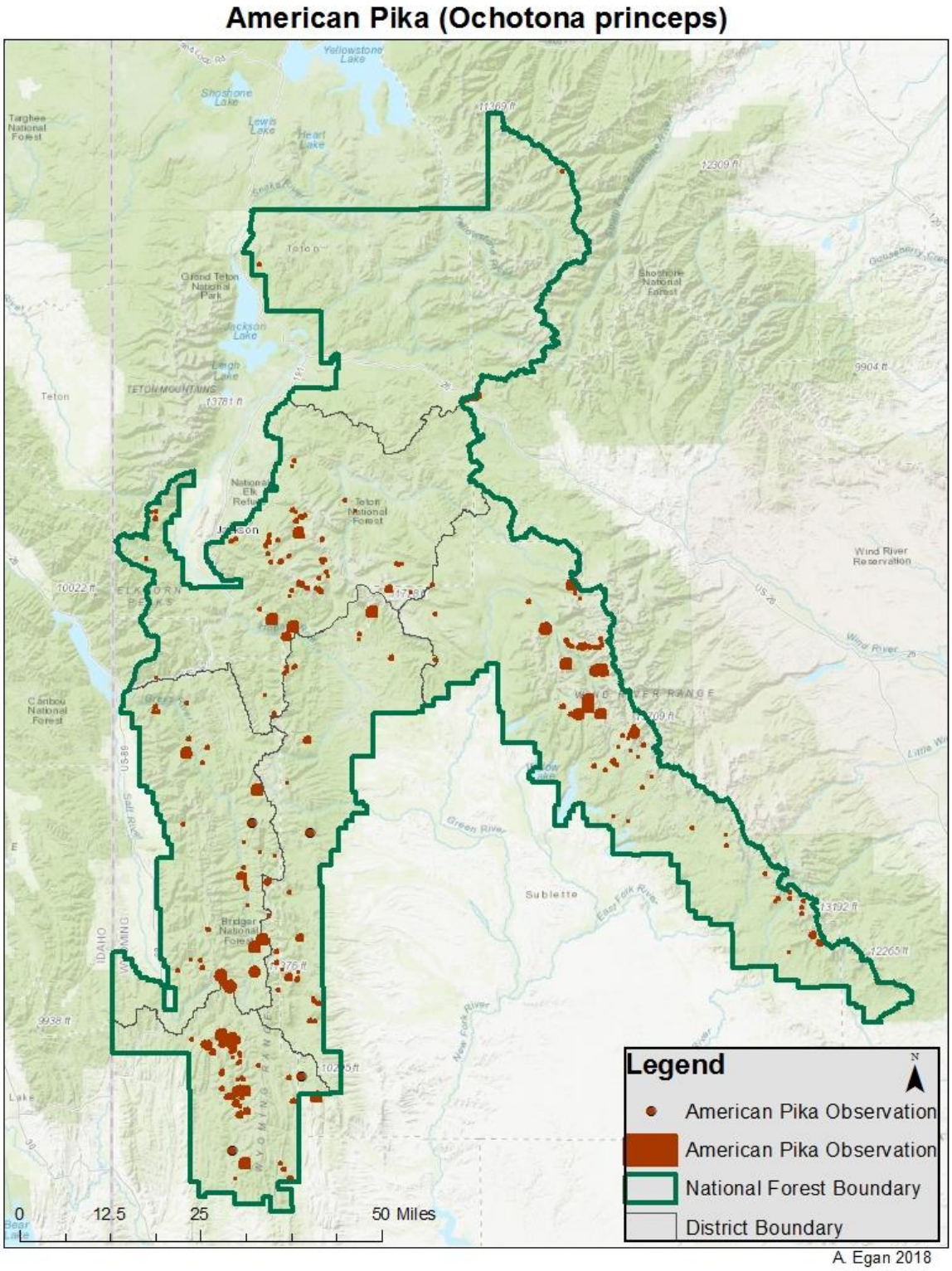
e. **Map 2**, Range and predicted distribution of *Ochotona princeps* in Wyoming



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. American pika (*Ochotona princeps*).

f. **Map 3**, American pika occurrences on the Bridger-Teton National Forest [USFS Natural Resources Information System Wildlife (March 2018)]



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)
NatureServe Global Status	**G5—Secure** *Common; widespread and abundant*
NatureServe State Status	**S2—*Imperiled*** *At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.*
State of Wyoming	**Protected Animal**
WGFD	**NSS2 (Ba), Tier II** *Population Status: Population size or distribution is restricted or declining but extirpation is not imminent.* *Limiting Factors: Limiting factors are severe and continue to increase in severity.* *Tier II: Moderate priority.* *[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.]* (WGFD - Wyoming Species of Greatest Conservation Need)
WYNDD	**Species of Concern** *Species vulnerable to extirpation at the global or state level due to:* *a. their rarity (e.g., restricted distribution, small population size, low population density)* *b. inherent vulnerability (e.g., specialized habitat requirements, restrictive life history)* *c. threats (e.g., significant loss of habitat, sensitivity to disturbances)* (Wyoming Natural Diversity Database - Species of Concern)

USDA Forest Service	**Region 4: No Special Status**
UDI FWS	**No Special Status; Listing Not Warranted**
WY BLM	**No Special Status**
IUCN	**LC-Least Concern** *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.*

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

Species (Scientific and Common Name): ***Ochotona princeps [American pika]***		
Criteria	**Rationale**	**Literature Citations**
Distribution on Bridger-Teton National Forest	The American pika is a year-round resident on the Bridger-Teton National Forest (Map 1) where populations are restricted to higher elevation alpine terrain (Map 2). Occurrence records indicate that pika have been documented throughout all 6 Ranger Districts (Table 1, Map 3). However; due to the nature of the terrain and wilderness designations, there is a considerably lower distribution of pika on the northern part of the Forest, particularly the Blackrock Ranger District. Alpine talus landscapes are fairly isolated on the BTNF, resulting in pika populations that are naturally distributed as isolated patches with limited opportunity for dispersal.	
Abundance on the Bridger-Teton National Forest	There are no abundance estimates for American pika in Wyoming (WGFD 2017). Due to the nature if their restricted distribution and isolated habitat, they are considered uncommon throughout the state. Pika abundance in Wyoming, including the BTNF, and is typically associated with suitable habitat characteristics. Pikas are regularly found in patches of marginal and suitable habitat, typically between 2,700–3,600 m (WGFD 2017).	Wyoming Game and Fish Department. 2017. State Wildlife Action Plan. American Pika (*Ochotona princeps*).
Population Trend on the Bridger-Teton National Forest	Population trends for American pika on the BTNF are unknown. Additionally, there are no published studies of American pika population trends in Wyoming (WGFD 2017). Pikas are still widely documented throughout mountain ranges in the state; however, recent surveys of historical sites have noted population extirpations in several regions of the western US (Smith and Beever 2016). While there is no special status currently in place at the federal level, the state	Smith, A.T. and Beever, E. 2016. *Ochotona princeps*. The IUCN Red List of Threatened Species 2016: Internet website: http://www.iucnredlist.org/details/41267/0. Accessed March 2018.

Species (Scientific and Common Name): ***Ochotona princeps [American pika]***		
Criteria	**Rationale**	**Literature Citations**
	status suggests that American pika populations are in decline due to their isolated distribution. Populations on the BTNF are located within the middle of their continental range; thus, impacts from climate change, as discussed in greater detail below, may be less sever than those associated with southern populations. However, since population and abundance surveys have not been conducted on the Forest, information is insufficient to assess this criterion extensively.	Wyoming Game and Fish Department. 2017. State Wildlife Action Plan. American Pika (*Ochotona princeps*).
Habitat Trend on the Bridger-Teton National Forest	American pika is considered a habitat specialist, requiring rocky habitats that provide thermal refugia interspersed with mesic meadows or patches of abundant forage (WGFD 2017). Pikas are typically associated with alpine habitats consisting of rock outcrops and talus slopes at high elevation, typically adjoining a meadow or source of vegetation for forage. Populations may also occur in rocky areas within forests or near lakes at lower elevations (NatureServe 2017). In order to maintain a balance between keeping cool during summer months and remaining active during winter months, habitat requirements and limitations vary throughout the geographic range, depending on climate context (WGFD 2017). Regardless of location, American pika require space within the rocky substrate for thermoregulation. While alpine habitat represents 10.9% of the potential suitable habitat for pika on the BTNF, less than 2% of the BTNF consists of barren rock (Helmbrecht et al. 2012). However, the integrity and remoteness of alpine and barren/rock habitat on the BTNF, and the lack of forest management practices that influence this habitat type, indicates that the BTNF will continue to provided adequate suitable habitat for the species. As discussed in the following section, pika habitat in the long-term future could be threatened in the face of climate change.	Hall, E. 2014. Understanding changing climate conditions in alpine habitats: a test of wildlife responses, limits and plasticity. 2014 Annual Report. Wyoming Cooperative Fish and Wildlife Research Unit. University of Wyoming. Helmbrecht, D., M. Williamson, and D. Abendroth. 2012. Bridger-Teton National Forest Vegetation Condition Assessment. NatureServe. 2017. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://explorer.natureserve.org. (Accessed: March 21, 2018). Wyoming Game and Fish Department. 2017. State Wildlife Action Plan. American Pika (*Ochotona princeps*).

Species (Scientific and Common Name): ***Ochotona princeps [American pika]***		
Criteria	**Rationale**	**Literature Citations**
Threats to the Species and its Habitat on the Bridger-Teton National Forest	<u>*Climate Change & Physiological Requirements*</u> Habitat alteration and loss driven by climate change is likely the biggest threat to American pika (WGFD 2017). Wyoming is the 13th fastest-warming state in the nation and climate change is one of five leading wildlife-conservation challenges identified in the Wyoming State Wildlife Action Plan (Hall 2014). In addition to specific habitat requirements, physiological requirements may be the most limiting factor for pika, and such requirements are directly influenced by increased global temperatures as a result of climate change. Pika can have specific body temperature thresholds that make them vulnerable to high temperatures during the summer months and cold temperatures during the winter months. Climate change could result in increased temperatures that are too warm to allow the species adequate foraging time, or patterns that alter their food source due to a reduction in vegetation growing season. Increased temperatures during the winter months could also decrease snowpack and impact the insulation layer. Considering the impacts of climate change, modification of pika habitat on the BTNF is anticipated overtime with conditions departing from the natural range of variation. Climate change will likely limit pika distribution indirectly by altering food availability, timing of daily activity, predation risk, and disease (WGFD 2017). However, effects from climate change on the BTNF are currently unclear. Because summer temperatures are mild in Wyoming's more cool and mesic alpine landscapes, increasing summer temperatures may not be as threatening as compared to populations in lower latitudes (WGFD 2017). Additionally, micro-refugia provided by talus crevices may allow pika to persist in sites even with periodic extreme temperatures, albeit to an unknown extent. While pikas are expected to be vulnerable within isolated sites and at low elevations where they are already at their physiological tolerance, some evidence of the pika's resilience to warming temperatures has been	Beever E. A., Hall L. E., Varner J., Loosen A. E., Dunham J. B., Gahl M. K., Smith F. A., Lawler J. 2017. Behavioral flexibility as a mechanism for coping with climate change. Front Ecol Environ., 15:299–308. Beever, E.A.; Wilkening, J.L.; McIvor, D.E. 2008. American pikas (*Ochotona princeps*) in northwestern Nevada: a newly discovered population at a low-elevation site. Western North American Naturalist. 68: 8–14. Hall, E. 2014. Understanding changing climate conditions in alpine habitats: a test of wildlife responses, limits and plasticity. 2014 Annual Report. Wyoming Cooperative Fish and Wildlife Research Unit. University of Wyoming. Halofsky, J. E., D. L. Peterson, J. J. Ho, N. J. Little, L. A. Joyce. (in press). Climate change vulnerability and adaptation in the Intermountain Region. Gen. Tech. Rep. RMRS-GTR20. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Millar, C. I., and R. D. Westfall. 2010. Distribution and climatic relationships of the American pika (*Ochotona princeps*) in the Sierra Nevada and western Great Basin, U.S.A.; Periglacial landforms as refugia in warming climates. Arctic, Antarctic, and Alpine Research. 42: 76–88.

Species (Scientific and Common Name): ***Ochotona princeps [American pika]***		
Criteria	**Rationale**	**Literature Citations**
	documented. Although the nature of this resilience varies according to landscape context, pikas have recently been found to occur at lower elevations than previously thought, suggesting a broader range of temperature tolerance (Beever et al. 2008; Halofsky et al. in press; Millar and Westfall 2010). Additionally, flexibility in foraging and thermoregulatory behavior may allow some populations to make use of suitable microclimates in seemingly unsuitable landscapes (Beever et al. 2017, Hall 2014). Across the species' range, resilient populations are likely to occur in locations that support loose, deep rock features, and are in proximity to wetlands or other high-quality forage (Millar and Westfall 2010). Therefore, populations in the northern regions, like those on the BTNF, may be fairly resilient. *Wildfire Suppression* Long-term fire suppression on the BTNF is continuing to promote conifer encroachment into alpine areas; this effect, compounded by climate change, could impact pika habitat. Fire suppression has also increased the severity, extent, and frequency of fires on national forests due to fuel loading, which may have both positive and negative effects on pikas. Wildfires can open up talus fields that are starting to get enclosed with conifer and also stimulate herbaceous growth, increasing available forage to pika. This may result in reduced predation pressure and lead to site colonization, re-colonization, and increased abundance of pikas over time. However, fires may also promote the establishment of non-native plant species that are unfavorable to pika; thereby, reducing the quality of forage (Moyer-Horner 2016).	Moyer-Horner, L., E. A. Beever, D. Johnson, M. Biel, and J. Belt. 2016. Predictors of Current and Longer-Term Patterns of Abundance of American Pikas (*Ochotona princeps*) across a Leading-Edge Protected Area. PLoS ONE11(11): e0167051. https://doi.org/10.1371/journal.pone.0167051. Wyoming Game and Fish Department. 2017. State Wildlife Action Plan. American Pika (Ochotona princeps).
Summary and recommendations: The Bridger-Teton National Forest is located within the range of the American pika and suitable habitat for this species is present throughout the Forest. Although populations are isolated due to the nature of their habitat, pika appear to be well distributed across the Forest. While population status and abundance are unknown on the BTNF, population declines have been noted across their range. This is largely due to their isolated distribution, restricted habitat requirements, and specific physiological requirements.		Date: March 22, 2018

Species (Scientific and Common Name): ***Ochotona princeps [American pika]***		
Criteria	**Rationale**	**Literature Citations**
	Suitable pika habitat on the BTNF is likely to remain stable given the nature of high elevation alpine terrain, minimal human disturbance, and low involvement this habitat type has with forest management. It is more likely that alpine habitat will be influenced by climate change, posing a threat to the species. Impacts from climate change on pika populations on the BTNF will likely occur over the long-term; however, the degree of such impacts to this species is unknown at this time. Pika have shown the ability to adapt, exhibit a change behavior, and increase their tolerance to environmental conditions, which shows the potential resiliency of this species. Although American pika and their habitat are highly vulnerable to climate change, populations in the northern regions, such as those on the BTNF, may be fairly resilient to climate change effects. Therefore, the factors discussed above do not indicate a substantial concern for the species persistence on the Forest, and the American pika is not recommended as a Species of Conservation Concern for the Bridger-Teton National Forest at this time. If future evidence, research, and scientific information suggests population declines or impacts from climate change are becoming more apparent, this species should be reassessed. Evaluator(s): Ashley Egan, Randall Griebel	