REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: **Townsend's big-eared bat (Corynorhinus townsendii)**

Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	B	Although found in a variety of vegetation types, distribution is limited to areas with adequate roosting sites (e.g., caves, mines) that are proximate to foraging habitat (e.g., wooded streams, forest edges). This generally occurs only in areas with cave forming rock outcrops (e.g., limestone, sandstone, dolomite, lava tubes) or areas with deep mines, although they sometimes use abandoned buildings with large, assessable attics. Further, *C. townsendii* have been shown to exhibit high roost site fidelity, which may limit dispersal between roost sites. Confidence in Rank High or Medium or Low	• Pierson et al., 1999 • Wilson and Ruff, 1999 • Welp et al., 2000 • WYNDD Database, 2001 • Kunz and Martin, 1982 • CO GAP, 2001 • SO GAP, 2001 • CNHP Database, 2001
2 Distribution outside R2	C	There are 5 subspecies of *C. townsendii*, which are found throughout the western United States , as well as portions of Canada and Mexico. The two eastern subspecies are disjunct from the main population and listed as endangered under the federal Endangered species act. Populations of the other subspecies are more contiguous, although still limited by patchy roosting habitat. Those occurring in R2 are likely all of the subspecies *C. t. pallescens,* which also occurs (with varying degrees of abundance) in parts of Idaho, Montana, Nevada, New Mexico, Oklahoma, Oregon, Texas, Utah, and Washington. The status of populations in many of these states is often unknown or declining, so confidence in this rank is medium. Confidence in Rank High or Medium or Low	• Pierson et al., 1999 • Wilson and Ruff, 1999 • Kunz and Martin, 1982
3 Dispersal Capability	A-B	*C. townsendii* do not seem to migrate or disperse except at a local scale. In the few populations that have been studied, there was fairly high site fidelity. Further, they appear to forage relatively close to roost sights (e.g., less than about 5 miles). Since relatively little information exists on juvenile dispersal or the extent of site fidelity, this rank has been given a low confidence score. Confidence in Rank High or Medium or Low	• Pierson et al., 1999 • Kunz and Martin, 1982

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4 Abundance in R2	D	Based on very limited sampling, a small number of *C. townsendii* maternity roosts and hibernacula have been found in the Rocky Mountains. Each of these locations seem to have fewer individuals than similar sites in other western states. Abundance in Nebraska and Kansas is likely very low, while Colorado, South Dakota and Wyoming probably have slightly larger populations due to a relatively more suitable roosting habitat. Confidence in Rank High or Medium or Low	• Pierson et al., 1999 • WYNDD Database, 2001
5 Population Trend in R2	A	Little historic exists for historic abundance in R2 so trends are generally unclear. However, repeat visits to a few know roost sites indicate a potential decline in overall population abundance throughout the region. Due to the scarcity of information, our confidence that this is indicative of a persistent, long-term trend is moderate. Confidence in Rank High or Medium or Low	• Pierson et al., 1999
6 Habitat Trend in R2	A	Both the quantity and quality of suitable roosting habitat is declining within R2, largely due to human activity. Since *C. townsendii* roosts on open cave roofs (not in crevices) it is very sensitive to disturbance at roosting sites. Even if no direct interaction with the bats occurs, repeated recreational and scientific visitation of roost caves has been shown to drastically reduce or extirpate *C. townsendii* populations in those caves. Further, the last decade has witnessed extensive closure of underground mineral and coal mines in the western United States with no regard to bat use, effectively eliminating potential roosting habitat. Confidence in Rank High or Medium or Low	• Pierson et al., 1999 • WBWG, 2000

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7 Habitat Vulnerability or Modification	A	Cave roosts are very vulnerable to the extent that they experience human visitation. Mine roosts are vulnerable if they are subject to closing that does not allow bat access (e.g., capping or backfilling). These effects can be mitigated by closing caves and mines with gates that exclude humans but allow passage of bats. Foraging habitat can be degraded by timber harvest or vegetative conversion that reduces cavities for day roosts, alters riparian and shrub-steppe foraging areas, or reduces the lepidopteran population. Pesticide spraying that reduces the lepidopteran population reduces available forage. Confidence in Rank High or Medium or Low	• Pierson et al., 1999 • WBWG, 2000
8 Life History and Demographics	B	*C. townsendii* reproductive potential is low, since females generally have only one young per year and natality is quite high (perhaps over 90%) and yearling survival is moderate (perhaps about 50%). Annual adult survival is greater (about 80%) and individuals can live more than 20 years. Confidence in Rank High or Medium or Low	• Pierson et al., 1999 • Kunz and Martin, 1982 • Wilson and Ruff, 1999

Initial Evaluator(s):	Date: 5/30/01
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National Forests in the Rocky Mountain Region where species is KNOWN (K) or LIKELY(L)[1] to occur:

Colorado NF/NG	**Known**	**Likely**	**Kansas NF/NG**	**Known**	**Likely**	**Nebraska NF/NG**	**Known**	**Likely**	**South Dakota NF/NG**	**Known**	**Likely**	**Wyoming NF/NG**	**Known**	**Likely**
Arapaho-Roosevelt NF	3,4	-	Cimmaron NG	-	3?	Samuel R.McKelvie NF	-	-	Black Hills NF	3,5	-	Shoshone NF	-	2
White River NF	3,4	-				Halsey NF	-	-	Buffalo Gap NG	5	-	Bighorn NF	1	-
Routt NF	4	-				Nebraska NF	-	-	Ft. Pierre NG	-	-	Black Hills NF	-	1
Grand Mesa, Uncompahgre, Gunnison NF	3	-				Ogalala NG	-	-				Medicine Bow NF	-	1
San Juan NF	-	3,4										Thunder Basin NG	-	?
Rio Grande NF	-	3,6												
Pike-San Isabel NF	4	-												
Comanche NG	-	3												

Footnotes

Comments:

- * The species is known or likely to occur in this unit during migration periods, but residence or breeding in the area is uncertain.
- ? The species is known or likely to occur in this unit, but the information on which this designation is made is indirect, insufficient, or uncertain, making it somewhat questionable without further input from local experts.

Primary Sources:

1. WYNDD Database, 2001
2. USGS Surface geology maps – presence of cave-forming surface geology
3. Pierson et al., 1999 – known distribution map
4. CNHP Database, 2001
5. SD GAP, 2001 – predicted distribution map
6. CO GAP, 2001 – predicted distribution map

[1] Likely is defined as more likely to occur than not occur on the National Forest or Grassland. This generally can be thought of as having a 50% chance or greater of appearing on NFS lands.

References

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