

Natural Heritage Ranking Form - Oregon State Rank

Oregon Ranking Form White-tailed jackrabbit (*Lepus townsendii*)

Oregon Biodiversity Information Center

SPECIES ASSESSED

Scientific Name	<i>Lepus townsendii</i>	ELCODE	AMAEB03040
Common Name	White-tailed jackrabbit	Element ID	7003

Species Concept Reference Citation

Wilson, D. E., and D. M. Reeder (editors). 1993. Mammal species of the world: a taxonomic and geographic reference. Second edition. Smithsonian Institution Press, Washington, DC. xviii + 1206 pp. Available online at: <http://www.nmnh.si.edu/msw/>.

CONSERVATION STATUS RANK

Assigned Rank	S2?		
Rank Assignment Author	Eleanor Gaines	Rank Review Date	1/06/2021
Rank Factors Author	Eleanor Gaines	Rank Factors Date	01/06/2021
Calculated Rank	S2?	Rank Change Date	01/06/2021
Rank Methodology Used	Rank calculation - Biotics v2		

Assigned Rank Reasons

Few recent observations, loss and degradation of suitable grassland habitat, increasing fire frequency and intensity.

Rank Adjustment Reasons

Question mark added to calculated rank because of lack of recent survey data.

RANGE/DISTRIBUTION

Range Extent

Rating	20,000-200,000 square km (about 8000-80,000 square miles)		
Estimate	105,267 sq km	Unit Used for Estimate	Square Kilometer
Comments	Based on all EOs; most of these are historic.		

Area of Occupancy

Grid Cell Size	4 km ² Grid Cells		
Rating (as Number of 4 km² Grid Cells)	E = 26-125		
Comments			

ABUNDANCE AND CONDITION

Number of Occurrences

Rating	6 - 80		
Estimate	Estimate of occurrences post-1990 is 15		
Comments	15 recent occurrences may be an underestimate; there are no recent surveys. Number of occurrences based on records since 1990.		

Population Size

Rating	Unknown		
Comments	No information available.		

Good Viability/Ecological Integrity

Number of Occurrences with Good Viability/Ecological Integrity

Rating Very few to few (1-12)

Estimate Probably 3 to 5

Comments

Lack of survey effort makes this difficult to estimate. Clusters of observations in southern Lake and Harney Cos, and northern and southern Malheur Co. may indicate viable populations, but most records are from 1990s.

THREATS

<u>Threat Category Code</u>	<u>Threat Category</u>	<u>Calculated Impact</u>	<u>Scope</u>	<u>Severity</u>	<u>Timing</u>	<u>Comments</u>
11	Climate change & severe weather	C = Medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%	High: Continuing	
11.1	Habitat shifting & alteration	C = Medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%	High: Continuing	loss of grassland habitat due to climate change is a serious threat; woody invasion, changing fire regime, increased invasives (cheatgrass). Conversion of grassland habitat for agriculture/grazing can have negative impacts
2	Agriculture & aquaculture	C = Medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%		Overgrazing can render grassland habitat unsuitable
2.3	Livestock farming & ranching	C = Medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%		
5	Biological resource use	Not in timeframe	Small: Affects a small proportion (1-10%) of the total population or occurrences or extent	Slight: Likely to only slightly degrade/reduce affected occurrences or habitat, or reduce population 1-10%	Insignificant/Negligible: Only in past and unlikely to return, or no direct affect but limiting	
5.1	Hunting & collecting terrestrial animals	Not in timeframe	Small: Affects a small proportion (1-10%) of the total population or occurrences or extent	Slight: Likely to only slightly degrade/reduce affected occurrences or habitat, or reduce population 1-10%	Insignificant/Negligible: Only in past and unlikely to return, or no direct affect but limiting	
5.1.3	Persecution/control	Not in timeframe	Small: Affects a small proportion (1-10%) of the total population or occurrences or extent	Slight: Likely to only slightly degrade/reduce affected occurrences or habitat, or reduce population 1-10%	Insignificant/Negligible: Only in past and unlikely to return, or no direct affect but limiting	Populations were poisoned to prevent agricultural loss, but species is now too uncommon for this to remain a threat.

7	Natural system modifications	C = Medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%	High: Continuing	
7.1	Fire & fire suppression	C = Medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%	High: Continuing	Fire suppression has led to woody encroachment, and results in larger, more intense fires.

Calculated Overall Threat Impact B = High

Assigned Overall Threat Impact B = High

Overall Threat Impact Comments

Habitat loss and degradation, changing fire regimes under climate change are primary threats. See Brown et al. 2019 for discussion of threats.

TRENDS

Short-Term Trend

Rating U = Unknown

Comments

Current trends are unknown because recent surveys are lacking. Declines suspected, but extent of decline unknown.

Long-Term Trend

Rating BD = Decline of 50-90%

Comments

Large declines since European settlement, but exact numbers not available.

OTHER FACTORS

Intrinsic Vulnerability Rating

Comments

Other Rank Considerations

Brown et al. 2019 suggest white-tailed jackrabbit may be extirpated in OR, however there are a handful of current (post-2000) records, and given the lack of systematic surveys in Oregon and the species' nocturnal habits, this determination seems premature

ADDITIONAL SPECIES INFORMATION

Oregon Habitat Comments

Where sympatric with *L. californicus* in Oregon, occupies different habitats (open fields and ryegrass habitats).

RANKING REFERENCES

<u>Short Citation</u>	<u>Author</u>	<u>Year</u>	<u>Full Citation</u>
Brown		2018	Brown, D. E., G. Beatty, J. E. Brown, and A. T. Smith (2018). History, Status, and Population Trends of Cottontail Rabbits and Jackrabbits in the Western United States. <i>Western Wildlife</i> 5:16–42.
Brown		2019	Brown, D. E., A. T. Smith, J. K. Frey, and B. R. Schweiger (2019). A Review of the Ongoing Decline of the White-Tailed Jackrabbit. <i>Journal of Fish and Wildlife Management</i> 11:341–352.
Ferguson		2014	Ferguson, H. L., and M. Atamian (2014). Habitat Connectivity for White-tailed Jackrabbit (<i>Lepus townsendii</i>) in the Columbia Plateau Ecoregion. Washington Connected Landscapes Project Appendix A.4.
Lim		1987	Lim, B. K. 1987. LEPUS TOWNSENDII. <i>Am. Soc. Mamm., Mammalian Species</i> 288:1-6.
Shults		1985	Shults, L. M., and L. G. Rickard (1985). Helminth Parasites of the White-Tailed Jackrabbit, <i>Lepus townsendii</i> , from Northwestern Colorado and Southern Wyoming. <i>The Great Basin Naturalist</i> 45:604–606.
Simes		2015	Simes, M. T., K. M. Longshore, K. E. Nussear, G. L. Beatty, D. E. Brown, and T. C. Esque (2015). Black-Tailed and White-Tailed Jackrabbits in the American West: History, Ecology, Ecological Significance, and Survey Methods. <i>Western North American Naturalist</i> 75:491–519.

RESOURCES

Oregon Biodiversity Information Center, Institute for Natural Resources
Portland State University, Mail Stop: INR, PO Box 751, Portland, OR 97207-0751 Phone: 503-725-9950

Additional ORBIC species ranking forms posted at
<https://inr.oregonstate.edu/orbic/rare-species/ranking-documentation>

Information on Natural Heritage ranking methodology is available at
<http://www.natureserve.org/biodiversity-science/publications/natureserve-conservation-status-assessments-methodology-assigning>

The Conservation Rank Calculator is developed and maintained by NatureServe and is available from
<http://www.natureserve.org/conservation-tools/conservation-rank-calculator>

ASSESSMENT CITATION

Oregon Biodiversity Information Center. 2021. Oregon state rank assessment for White-tailed jackrabbit (*Lepus townsendii*). Institute for Natural Resources, Portland State University, Portland, OR.