

Lecanora masana

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Fungi	Ascomycota	Lecanoromycetes	Lecanorales	Lecanoraceae

Scientific Name: *Lecanora masana* Lendemer & R.C.Harris

Assessment Information

Red List Category & Criteria: Vulnerable A3ce [ver 3.1](#)

Year Published: 2021

Date Assessed: January 13, 2021

Justification:

This species is endemic to high elevations in the southern Appalachian Mountains. The narrow distribution, threats to the ecosystem in which it lives, including invasive pests, and climate change all contribute to the current status of *Lecanora masana*. A decline of at least 30% in the population size of this species is projected to occur within the next 36 years (three generations) due to hotter, drier climates, the invasive woolly adelgid, and air pollution. Therefore, it is assessed as Vulnerable (A3ce).

Geographic Range

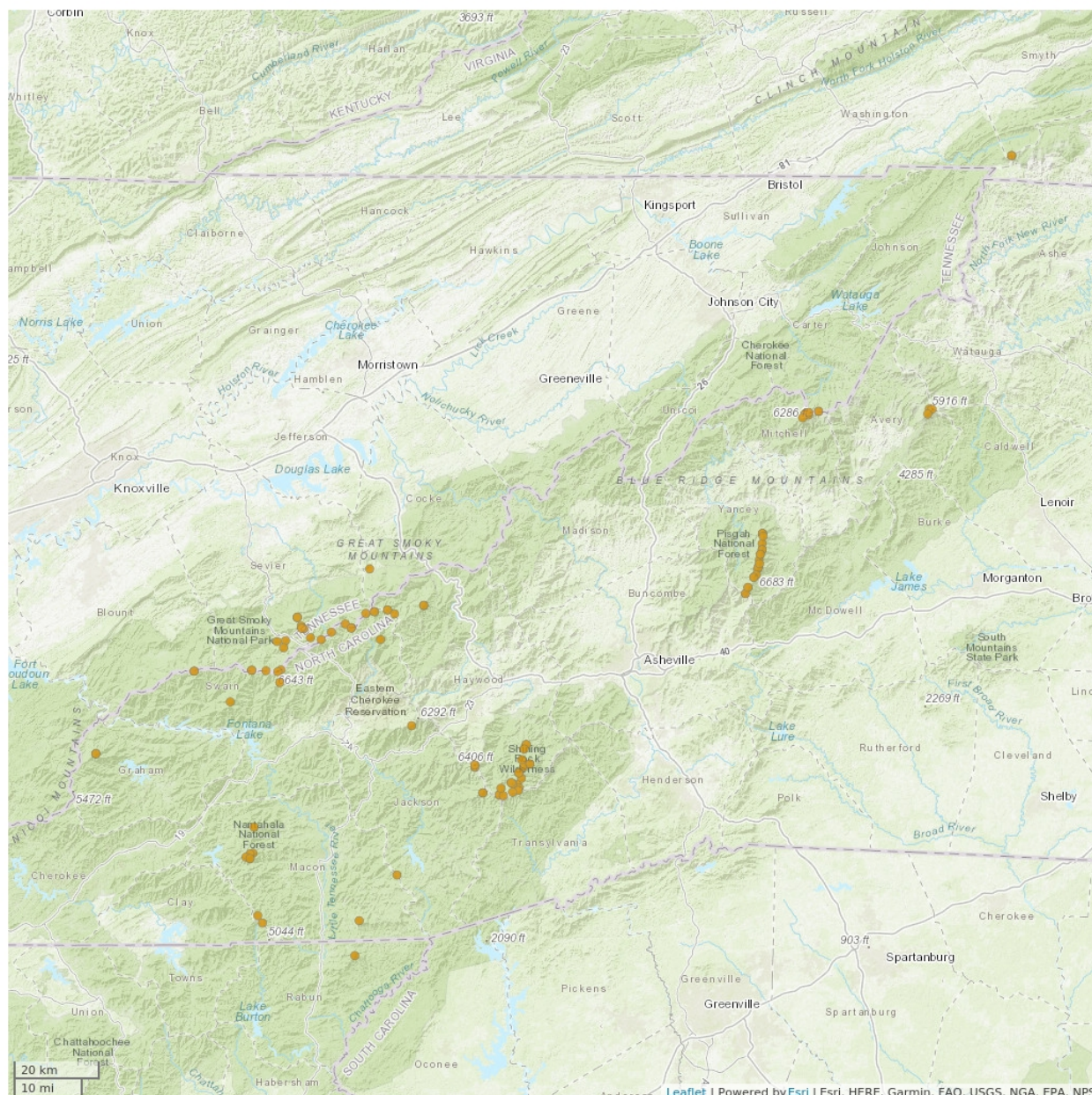
Range Description:

Lecanora masana is endemic to the southern Appalachian Mountains in the south-eastern United States where it grows at middle to high elevations throughout the region (Tripp and Lendemer 2020).

Country Occurrence:

Native, Extant (resident): United States

Distribution Map

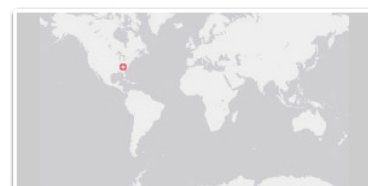


Legend

● EXTANT (RESIDENT)

Compiled by:

IUCN 2021



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



Population

The population size of this species is projected to decline 30-40% in the next 36 years (three generations). The highest elevation sites are found in spruce-fir forest, which has been, and continues to be, significantly negatively impacted by the invasive Balsam Woolly Adelgid, which likely constitutes a ~5% decline. The lowest elevation sites are likely to be negatively impacted by hotter, drier climates, likely constituting a ~20-30% decline (Allen and Lendemer 2016). Air pollution is likely an additional threat that continues to negatively impact the population size of this species, constituting an additional ~5% decline.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

This species is found in multiple different habitats, including spruce-fir forests, northern hardwood forests, and shrub balds. It grows on the bark of a diversity of phorophytes, including Ericaceous shrubs, *Picea rubens*, *Abies fraseri*, and *Betula* spp.

Systems: Terrestrial

Threats (see Appendix for additional information)

Loss of habitat due to invasive tree pests (Balsam Woolly Adelgid) and climate change are the most important threats to *Lecanora masana*. Many other high-elevation endemic lichens in the southern Appalachians are threatened by climate change, and *Lecanora masana* is likely to be negatively impacted to a similar degree (Allen and Lendemer 2016). Air pollution is likely an additional threat that continues to negatively impact the population size of this species.

Conservation Actions (see Appendix for additional information)

Most of the population occurs on public lands that are protected to various degrees. Many sites are in National Parks and federally designated National Forest wilderness areas, both of which are largely protected from direct anthropogenic impacts. At sites on other public lands where direct impacts may occur (e.g. infrastructure improvement/construction, road improvement/construction, logging) the species would benefit from protections from such threats. As the species is not presently listed at the state or federal level, inclusion in conservation policy would also benefit the species. Finally, as is the case with many lichen species, conservation of this species would be advanced through education efforts to increase public awareness and train resource managers to recognize the species. Monitoring of population trends is needed to detect any acceleration in declines.

Credits

Assessor(s): Allen, J., Lendemer, J. & McMullin, T.

Reviewer(s): Yahr, R.

Facilitator(s) and Compiler(s): Lymbery, C. & Allen, J.

Bibliography

Allen, J.L. and Lendemer, J.C. 2016. Climate change impacts on endemic, high-elevation lichens in a biodiversity hotspot. *Biodiversity and Conservation* 25(3): 555-568.

IUCN. 2021. The IUCN Red List of Threatened Species. Version 2021-2. Available at: www.iucnredlist.org. (Accessed: 04 September 2021).

Tripp, E.A. and Lendemer, J.C. 2020. *Field Guide to the Lichens of Great Smoky Mountains National Park*. University of Tennessee Press, Knoxville.

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External Resources

For [Supplementary Material](#), and for [Images and External Links to Additional Information](#), please see the Red List website.

Appendix

Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.4. Forest - Temperate	-	Suitable	-

Plant Growth Forms

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Plant Growth Form
LC. Lichen

Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.2. Named species (Adelges piceae)	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
9. Pollution -> 9.5. Air-borne pollutants -> 9.5.1. Acid rain	Ongoing	Whole (>90%)	Negligible declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 2. Species Stresses -> 2.1. Species mortality		

Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Action in Place
In-place research and monitoring
Action Recovery Plan: No
Systematic monitoring scheme: No
In-place land/water protection
Conservation sites identified: Yes, over entire range

Conservation Action in Place
Area based regional management plan: No
Occurs in at least one protected area: Yes
Invasive species control or prevention: No

Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Action Needed
1. Land/water protection -> 1.1. Site/area protection
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level
5. Law & policy -> 5.1. Legislation -> 5.1.3. Sub-national level

Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Research Needed
3. Monitoring -> 3.1. Population trends

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km ²): 232
Estimated extent of occurrence (EOO) (km ²): 12068
Number of Locations: 50
Population
Population severely fragmented: No
Habitats and Ecology
Generation Length (years): 12

The IUCN Red List Partnership



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