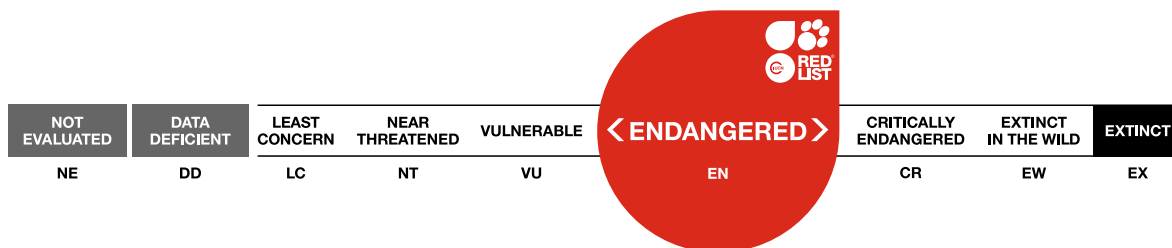


Thelomma carolinianum, Carolina Thelomma Lichen

Assessment by: Lendemer, J.



View on www.iucnredlist.org

Citation: Lendemer, J. 2020. *Thelomma carolinianum*. The IUCN Red List of Threatened Species 2020: e.T80703121A80703126. <https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T80703121A80703126.en>

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Fungi	Ascomycota	Lecanoromycetes	Teloschistales	Physciaceae

Scientific Name: *Thelomma carolinianum* (Tuck.) Tibell

Synonym(s):

- *Acolium carolinianum* Tuck.

Common Name(s):

- English: Carolina Thelomma Lichen, Carolina Fence Dots

Identification Information:

The species can be recognized by its occurrence on old conifer wood and by its thick, whitish-yellow crustose thallus with mound-like fruiting bodies bearing black spore masses at the tips.

Assessment Information

Red List Category & Criteria: Endangered A2bce+4bce; B2ab(i,ii,iii,v) [ver 3.1](#)

Year Published: 2020

Date Assessed: August 26, 2017

Justification:

Thelomma carolinianum is distinctive crustose lichen that has been lost from 72% of the total known sites (inferred from a comparison of historical vs. modern (pre-1990 vs. post-1990) occurrence data supported by voucher specimens), together with a 68% loss of Area of Occupancy and 95% loss of Extent of Occurrence. The causes of this reduction are considered to be the large scale degradation and loss of habitat, as well as loss of suitable substrates, throughout the range of the species. These losses have occurred in the past, are ongoing at present at smaller scales, and will likely continue in the future. Therefore, it is listed as Endangered under criteria A2bce+4bce; B2ab(i,ii,iii,v).

Geographic Range

Range Description:

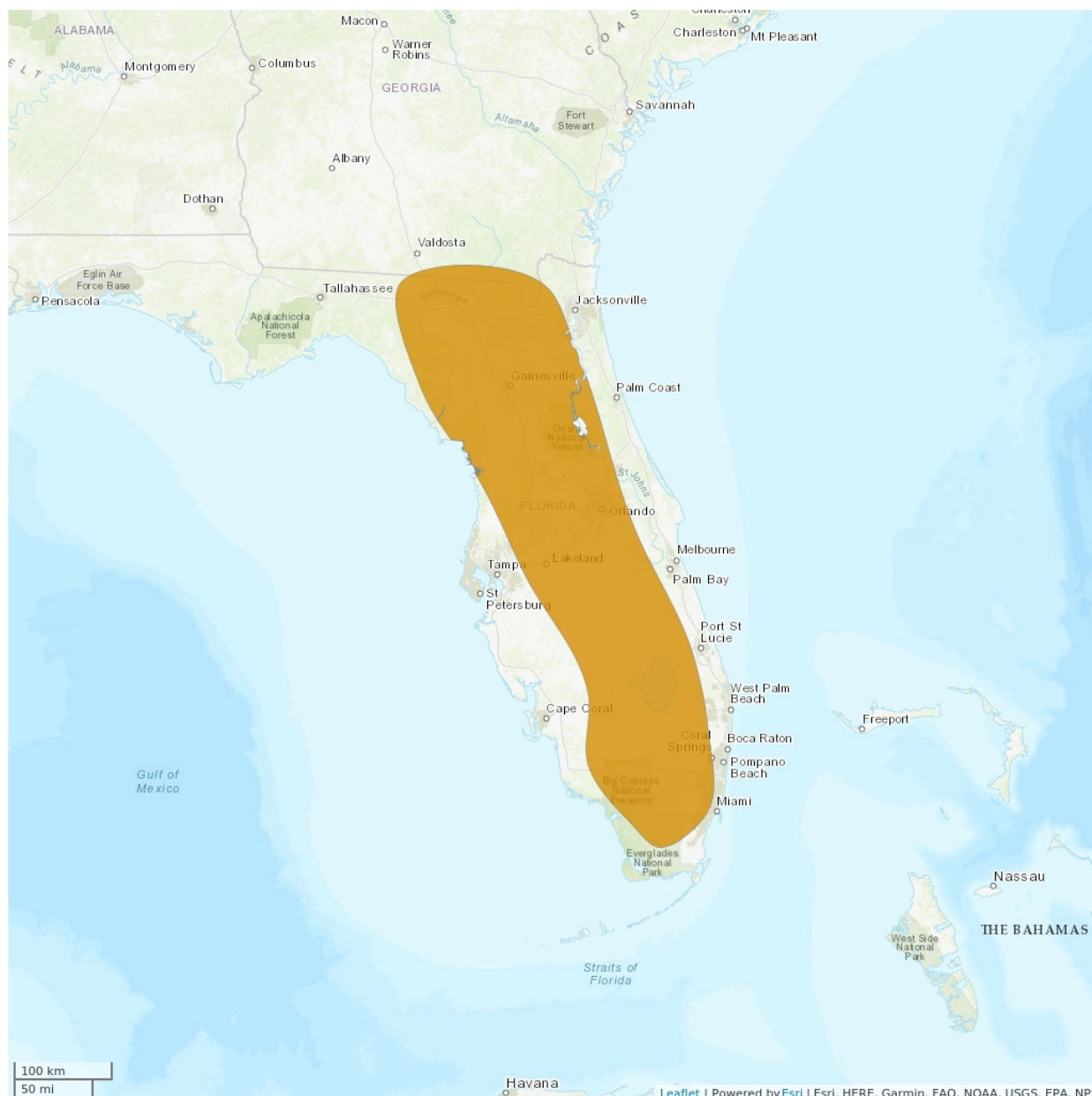
Thelomma carolinianum is narrowly endemic to the Coastal Plain of south-eastern North America, where it was historically known from scattered locations in Florida, Louisiana, and South Carolina. Online databases (CNALH) report several vouchers from North Carolina, however, these are erroneous and the vouchers are actually derived from localities in Florida and South Carolina. A single voucher (Rolfs 215, NY) is labelled as having been collected in Clemson, South Carolina in 1900. That site is well outside of all other known occurrences and is treated as a probable error.

Country Occurrence:

Native, Extant (resident): United States (Florida)

Native, Extinct: United States (Louisiana, South Carolina)

Distribution Map

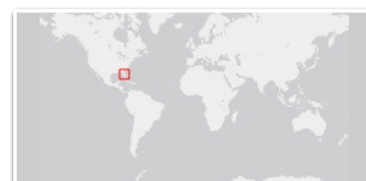


Legend

EXTANT (RESIDENT)

Compiled by:

IUCN (International Union for Conservation of Nature) 2020



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

Population

This species has been considered rare since its initial discovery, as is evidenced by the note “rare” on labels of some specimens collected by William Wirt Calkins in Florida in the late 1800’s. Of the 25 total documented sites, 18 were located prior to 1990 and the majority of those were collected prior to 1950 in areas that are now heavily fragmented and developed (e.g. the metro-regions of Jacksonville and Orlando). Extensive post-1990 fieldwork has been conducted within the range of the species by multiple experts. Only seven populations are known to have been located post-1990, and two of these are in protected management units (Archbold Biological Station and Big Cypress National Preserve, Florida).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The species occurs on both naturally occurring, and introduced old, weathered conifer wood, often in low-lying coastal swamps, including that of juniper (*Juniperus*) and pine (*Pinus*). Many collections are from old wooden fence rails, a substrate that has become less common in the last century due to the introduction of plastic and metal building materials.

Systems: Terrestrial

Threats (see Appendix for additional information)

Thelomma carolinianum has been significantly impacted by large scale loss and degradation of suitable habitat throughout its range historically (Drummond and Loveland 2010, Napton *et al.* 2010). The major threat to the species is the continuation of these trends into the future as the majority of extant sites are not within existing protected management units. The lack of protection by state, federal, and international legislation is a further threat to the species. In addition to intense pressure from development and other forces (i.e. industry, urbanisation), much of the remaining habitat in the region where this species occurs is imperilled by sea-level rise. Additional threats include pollution, road expansion and maintenance, logging, and other threats that would further degrade the remaining habitats where this species is known, as well as where it is predicted to occur.

Conservation Actions (see Appendix for additional information)

The species is not currently included on lists of threatened taxa. A species-based management plan needs to be developed, and the species needs to be incorporated into existing management plans for suitable habitat and extant sites. Additionally, detailed surveys and increased protection for suitable habitat is needed. Potential reintroduction into formerly occupied areas and supplementing existing available substrates (i.e. promoting the use of wooden fences made from non-treated conifer woods) should also be considered. Increased research and education about the species, its ecology, and how it could be conserved would also be highly beneficial.

Credits

Assessor(s): Lendemer, J.

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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	Resident	Suitable	Yes
1. Forest -> 1.8. Forest - Subtropical/Tropical Swamp	Resident	Suitable	Yes
3. Shrubland -> 3.6. Shrubland - Subtropical/Tropical Moist	Resident	Suitable	No

Plant Growth Forms

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

Plant Growth Form
M. Fungus
E. Epiphyte
LC. Lichen

Threats

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

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.1. Housing & urban areas	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
1. Residential & commercial development -> 1.2. Commercial & industrial areas	Ongoing	Majority (50-90%)	Negligible declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
1. Residential & commercial development -> 1.3. Tourism & recreation areas	Ongoing	Majority (50-90%)	Negligible declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
4. Transportation & service corridors -> 4.1. Roads & railroads	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		

5. Biological resource use -> 5.3. Logging & wood harvesting -> 5.3.2. Intentional use: (large scale) [harvest]	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
7. Natural system modifications -> 7.1. Fire & fire suppression -> 7.1.1. Increase in fire frequency/intensity	Ongoing	Majority (50-90%)	Very rapid declines	High impact: 8
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		
7. Natural system modifications -> 7.1. Fire & fire suppression -> 7.1.2. Supression in fire frequency/intensity	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
11. Climate change & severe weather -> 11.4. Storms & flooding	Ongoing	Minority (50%)	Very rapid declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects		

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
Area based regional management plan: No
Occurs in at least one protected area: Yes
In-place species management
Harvest management plan: No
Successfully reintroduced or introduced benignly: No
Subject to ex-situ conservation: No
In-place education

Conservation Action in Place
Subject to recent education and awareness programmes: No
Included in international legislation: No
Subject to any international management / trade controls: No

Conservation Actions Needed

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

Conservation Action Needed
1. Land/water protection -> 1.1. Site/area protection
2. Land/water management -> 2.1. Site/area management
2. Land/water management -> 2.3. Habitat & natural process restoration
3. Species management -> 3.2. Species recovery
4. Education & awareness -> 4.1. Formal education
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.2. Policies and regulations

Research Needed

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

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.6. Actions
2. Conservation Planning -> 2.1. Species Action/Recovery Plan
2. Conservation Planning -> 2.2. Area-based Management Plan

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km ²): 28-56
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): No
Estimated extent of occurrence (EOO) (km ²): 15465
Continuing decline in extent of occurrence (EOO): Yes

Distribution
Extreme fluctuations in extent of occurrence (EOO): No
Number of Locations: 5-10
Continuing decline in number of locations: Unknown
Lower elevation limit (m): 0
Upper elevation limit (m): 300
Population
Continuing decline of mature individuals: Yes
Population severely fragmented: Yes
All individuals in one subpopulation: No
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 30

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