

Wide-leaf Warea
(*Warea amplexifolia*)

Status Review:
Summary and Evaluation



Marion County. Photo Todd Mecklenborg

U.S. Fish and Wildlife
South Atlantic-Gulf and Mississippi Basin Region
Florida Ecological Services Office
Gainesville, Florida

July 2022

STATUS REVIEW
Wide-leaf Warea (*Warea amplexifolia*)

GENERAL INFORMATION

Current Classification: Endangered

Lead Field Office: Florida Ecological Services Office, Todd Mecklenborg 727-892-4104

Reviewers:

Lead Regional Office: South Atlantic-Gulf and Mississippi Basin Region, Carrie Straight, (404) 679-7226

Florida Ecological Services Office, Vivian Negron-Ortiz, (850) 769-0552

Date of original listing:

April 29, 1987 (52 FR 15501)

Methodology used to complete review:

In accordance with section 4(c)(2) of the Endangered Species Act of 1973, as amended (Act), the purpose of a status review is to assess each threatened species or endangered species to determine whether its status has changed and if it should be classified differently or removed from the Lists of Threatened and Endangered Wildlife and Plants ([50 CFR 424.11](#)). The U.S. Fish and Wildlife Service (Service) evaluated the biology, habitat, and threats of the wide-leaf warea (*Warea amplexifolia*) to inform this status review.

We announced initiation of this review in the Federal Register on July 14, 2021 (86 FR 37178) with a 60-day comment period. The primary sources of information used in this analysis were the 1987 final listing rule (52 FR 15501), the *Warea amplexifolia* (Clasping Warea) Recovery Plan (1993), our previous 5-year reviews, research project reports, unpublished field observations, and personal communications. We relied on the best available information pertaining to historic and current distributions, life history, threats, and habitat of the species. This review was completed by the U.S. Fish and Wildlife Service, Florida Ecological Services Office, Gainesville, Florida. All literature and documents used for this review are on file. All recommendations resulting from this review are the result of thoroughly reviewing the best available information on *Warea amplexifolia*.

We have not received significant new information, interpreted previously reviewed information in a new, significant light since the last review of the species and the level of public interest is low and non-controversial; therefore, no peer review was conducted.

FR Notice citation announcing the species is under active review:

July 14, 2021 (86 FR 37178)

Species' Recovery Priority Number at start of 5-year review ([48 FR 43098](#)):

2C. The “2” indicates a high degree of threat and high recovery potential; the “C” reflects a degree of conflict with development and growth.

Review History:

Previous 5-year reviews notice citations include: 1991 (56 FR 56384), 2006 (71 FR 56545), and 2014 (79 FR 56821). No change in status was recommended.

REVIEW ANALYSIS

Listed Entity

Taxonomy and nomenclature

The taxonomy of the listed entity is still valid (Integrated Taxonomic Information System 2022). Refer to the previous 5-year review (2017).

Distinct Population segment (DPS)

The Act defines species as including any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish and wildlife. The definition limits listing DPS to vertebrate species of fish and wildlife and because this species is a plant, the DPS policy does not apply.

Recovery Criteria

Recovery Plan or Outline

Clasping Warea (*Warea amplexifolia*) Recovery Plan, February 17, 1993.

Recovery plans are not regulatory documents and intended to provide guidance to the Service, States, and other partners on methods of minimizing threats to listed species and on criteria that may be used to determine when recovery is achieved. If the recovery criteria defined in the plan are still valid, meeting recovery criteria can indicate that the species no longer requires protections under the Act. However, when recommending whether a listed species should be delisted, the Service must apply the factors in section 4(a) of the Act ([84 FR 45020](#)).

- *Warea amplexifolia* could be considered for reclassification from endangered to threatened status when 10 geographically discrete, self-sustaining populations are protected and managed for 10 years.
- Delisting could be considered when 20 such populations are protected and managed, and each has been monitored for at least 8 years.
- Recovery will require a minimum of 10 years (until 2003) if establishment of new populations is prompt and obviously successful.

Biology and Habitat Summary

Warea amplexifolia is an annual herbaceous species with a resilient seed bank often having large fluctuations in plant numbers on a yearly basis, which is influenced by the previous dormant season's climatic conditions. Populations are endemic to central peninsular Florida sandhill habitat associated with the central ridges. Additional information on the biology and habitat can be referenced in the final listing rule, recovery plan and previous 5-year reviews.

Nine extant populations that were documented in the previous 5-year review (2017) still persist. Four populations occur on public lands while the remaining five are in private ownership. Current plant counts for these locations are not included in this reporting. The Florida Forest Service Warea Tract in Lake County and the Ocklawaha Corridor in Marion County (Duke Energy and private ownership) are the largest populations and account for ~95% of the plants range-wide.

In 2019, the Service along with the Putnam Land Conservancy, Florida Native Plant Society, and Warea Working Group collaborated to acquire and initiate habitat management on a 12.5-acre parcel in the Ocklawaha Corridor. The parcel is adjacent to the Duke Energy Corporation powerline corridor, which supports numerous local populations within its right-of-way (ROW). The Warea Working Group began coordinating with Duke Energy Corporation on compatible habitat management activities to minimize negative impacts to the species during maintenance of their (ROW) including herbicide use, mowing, shrub removal, and educational awareness signs. Outreach efforts are ongoing to engage private landowners on conservation activities to encourage species persistence on their lands.

Threats (Five-Factor Analysis) Summary

The status of a species is determined from an assessment of factors specified in section 4 (a)(1) of the Act, including: Factor A: the present or threatened destruction, modification, or curtailment of its habitat or range; Factor B: overutilization for commercial, recreational, scientific, or educational purposes; Factor C: disease or predation; Factor D: the inadequacy of existing regulatory mechanisms; Factor E: other natural or manmade factors affecting its continued existence. A summary of this assessment is detailed below.

Factor A. Continued habitat loss and degradation remains the primary threat for the species. Sandhill habitat in central Florida is under extreme development pressure as the increasing infrastructure throughout Florida provides improved access to these areas. Conversion to agriculture uses is still a concern resulting in loss of suitable habitat; however, commercial and residential development is the greater threat because of the potential management restrictions on adjacent occupied habitat. Increased prescribed fire restrictions increases the degradation of the increasing fragmented native landscape remaining.

Factor D. The Act prohibits the removal of federally listed threatened and endangered plants or the malicious damage of such plants on areas under federal jurisdiction, or the destruction of endangered plants on non-federal areas in violation of state law or regulations or in the course of any violation of a state criminal trespass law. The Act does not provide protection

for plants on non-federal lands in Florida unless their removal or damage is in violation of state law (Florida Department of Agriculture and Consumer Services [FDACS] Rule 5B-40).

State: *Warea amplexifolia* is listed by FDACS as endangered (5B-40.0055 Regulated Plant Index; 2020). Florida Statute 581.185 protects endangered plant species from willful destruction and harvest on both public and private lands. State regulations require both written permission from the owner or their legal representative and a permit issued by FDACS to collect or remove plants or parts of plants listed as endangered on the Florida Regulated Plant Index from any property (Section 3), but these regulations can be waived by private landowners and public agencies for land clearing associated with agriculture, fire control, mining, or construction (Section 8). Listing by the State does not provide any direct habitat protection.

In summary, there are no existing mechanisms that adequately reduce or remove the threat to or loss of *Warea amplexifolia* populations or habitat on private property, and there are only limited protections on public land.

Factor E. The effects of climate change may be positive, neutral, or negative and are likely to vary over time. The Service is unaware of any climate change data specific to the habits or habitat of *Warea amplexifolia* that would indicate what potential effects climate change and increasing temperatures and rainfall, or extended drought conditions may have on this species.

The National Climate Assessment (NCA 2014) reports that the average precipitation has decreased in central Florida since 1900; however, heavy downpours are increasing in frequency and intensity since 1970. Future projected precipitation changes in seasonality for central Florida indicate 0 to +10% in winter, 0 to -10% in spring, -10 to -20% in summer, and +10 to +20% in fall will occur. Statewide annual rainfall is projected to increase from 0 to +20% by 2100.

Consecutive dry days are expected to increase 10 to 20% for most of Florida. Predictions of increased drought frequency, intensity, and duration could result in plant losses due to prolonged drought conditions. However, this plant and other scrub species are relatively drought-resistant, but seasonality changes may affect seedling recruitment and general phenology of the species. The Service has no evidence that climate changes observed to date have had any adverse impact on the species, or its habitat nor is there information suggesting that the species, will not be able adapt to predicted changes in drought conditions.

There is no indication that Factors B and C poses a significant threat for the species. Factors A, D and E threats remain ongoing and occur throughout the species range. These threats are anticipated to continue in the future.

Synthesis

The annual herbaceous *Warea amplexifolia* occurs in sandhill habitat in Central Florida associated with the ancient central ridges. This species has a reliant seed bank, so the number of plants fluctuate widely each year depending on seasonal conditions. Of the extant populations, four occur on public lands not including a newly acquired parcel. This new

parcel within the Ocklawaha corridor that will provide a safe haven for a small portion of the population formerly on private lands to persist once habitat management is conducted. Loss, degradation, and fragmentation of habitat continues to be the primary threat to the species. Limited regulatory protection for the five populations surviving on private lands remains a concern due to lack of habitat management and potential development pressures. As a result, *Warea amplexifolia* continues to meet the definition of an endangered species.

RECOMMENDED FUTURE ACTIVITIES

- Acquisition and management of the remaining known populations on private lands. Areas within the Ocklawaha and Ferndale Ridge developments where native sandhill habitat still exists would be the primary areas to target near-term.
- Active management of the four natural populations on public lands to maintain or create openness of the habitat and to control the invasive plant species encroachment.
- Update range-wide survey to determine number of extant populations and individual plant abundance at each location.
- Continue collaboration with Duke Energy Corporation on compatible habitat management activities within the Ocklawaha Corridor population occurring in their right-of way.

RESULTS / SIGNATURES

U.S. Fish and Wildlife Service

Status Review of Wide-leaf Warea (*Warea amplexifolia*)

Status Recommendation

On the basis of this review, we recommend the following status for this species. A 5-year review presents a recommendation of the species status. Any change to a status requires a separate rulemaking process that includes public review and comment, as defined by the Act.

Downlist to Threatened

Uplist to Endangered

Delist:

The species is extinct

The species does not meet the definition of an endangered or threatened species

The listed entity does not meet the statutory definition of a species

No change is needed

**Field Office Approval: Lourdes Mena*, Division Manager, Classification and Recovery,
Florida Ecological Services Field Office**

Approve: _____

* In 2021, the Classification and Recovery Division Manager in the Florida Ecological Services Field Office was delegated authority to approve 5-year reviews that do not recommend a status change.

REFERENCES

NCA 2014. Climate change impacts in the United States: the third national climate assessment. U.S. Global Change Research Program. Washington D.C.