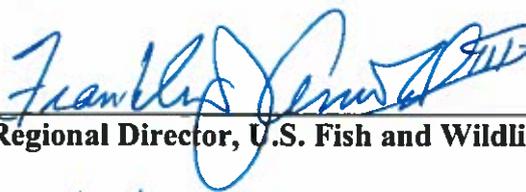


**Recovery Plan for *Rhododendron chapmanii* (Chapman's Rhododendron)**  
[https://ecos.fws.gov/docs/recovery\\_plan/chapmans%20rhododendron%20rp.pdf](https://ecos.fws.gov/docs/recovery_plan/chapmans%20rhododendron%20rp.pdf)

**Original Recovery Plan Approved: September 8, 1983**  
**Original Prepared by: Robert W. Simons**

We have identified best available information that indicates the need to amend recovery criteria for *Rhododendron minus* var. *chapmanii* (Chapman's Rhododendron) since the recovery plan was completed. In this proposed modification, we synthesize the adequacy of the existing recovery criteria, show the amended recovery objective and criteria, and the rationale supporting the proposed recovery plan modification, and state key recovery actions. The proposed modification is shown as an addendum that supplements the recovery plan, superseding only section II. Recovery, A. Objective (USFWS 1983, p. 16). Recovery plans are non-regulatory documents that provide guidance on how best to help recover a species.

For  
U.S. Fish and Wildlife Service  
Atlanta, Georgia

Approved:   
Acting Regional Director, U.S. Fish and Wildlife Service

Date: 11/7/19

#### **METHODOLOGY USED TO COMPLETE THE RECOVERY PLAN AMENDMENT**

This amendment to the recovery plan was developed using the most recent and best available information for the species. Primary sources of information included the 5-year status review (USFWS 2019) and the current recovery plan (USFWS 1983). Also used were peer-reviewed scientific publications; several unpublished research projects; unpublished field observations by U.S. Fish and Wildlife Service (Service), State and other experienced biologists; and personal communications. The document was peer-reviewed by five external reviewers. This review was completed by the Service's lead Recovery botanist in the Panama City Field Office, Florida.

#### **ADEQUACY OF RECOVERY CRITERIA**

Section 4(f)(1)(B)(ii) of the Endangered Species Act (Act) requires that each recovery plan shall incorporate, to the maximum extent practicable, "objective, measurable criteria which, when met, would result in a determination...that the species be removed from the list." Legal challenges to recovery plans (see *Fund for Animals v. Babbitt*, 903 F. Supp. 96 (D.D.C. 1995))

and a Government Accountability Audit (GAO 2006) also have affirmed the need to frame recovery criteria in terms of threats assessed under the five factors.

## Recovery Criteria

The recovery plan only provides downlisting criteria, found on page 16 of the document: [https://ecos.fws.gov/docs/recovery\\_plan/chapmans%20rhododendron%20rp.pdf](https://ecos.fws.gov/docs/recovery_plan/chapmans%20rhododendron%20rp.pdf)

## Synthesis

*Rhododendron minus* Michaux var. *chapmanii* (Alph. Wood) (Chapman's Rhododendron) is an evergreen shrub, federally listed as endangered, and subject to habitat loss. A taxonomic treatment (Duncan and Pullen's 1962), accepted by Luteyn et al. (1996), the Integrated Taxonomic Information System (<https://www.itis.gov/>), and the Flora of North America ([www.efloras.org](http://www.efloras.org)), recognized two varieties of one species, *R. minus* var. *chapmanii* and *R. minus* var. *minus*. The name *R. minus* Michaux var. *chapmanii* (Alph. Wood) Gandhi & Zarucchi was validated by Gandhi and Zarucchi (2009). The Service will follow the current taxonomy (hereafter: *R. m. chapmanii*).

*Rhododendron m. chapmanii* has a recovery priority of 8C because the degree of threat is moderate and the recovery potential is high. However, it is in conflict with development and growth. The species is endemic to Florida, in habitat defined as a fire-dependent community, and known from only three populations: coastal Gulf County; Liberty and Gadsden counties in the vicinity of Hosford (hereafter: Hosford population); and Clay County (on Camp Blanding Military Installation). Fifty-five Element Occurrences (EOs) distributed throughout this species range were documented between 1944 and 2007 with an estimated 4,699 clumps<sup>1</sup>. These EOs, which are currently mapped as 23 EOs (FNAI 2019), technically represent 15 EOs based on the parameter of 1 km separation distance (USFWS 2019). Based on current surveys, about 20 sites (36%) appear to have been extirpated (USFWS 2019).

This species is mainly threatened by habitat destruction/modification. The privately owned Hosford population is the largest with about 2,942 clumps (USFWS 2019), but the safety of this population is undetermined because it is not protected and was recently sold to a for-profit company. Surveys conducted in Gulf County between 1982 and 2007 indicated the presence of 24 EOs (technically, we are considering 8 EOs) within 6,511 acres, with about 811 clumps (FNAI 2019, Schultz and Johnson 1997). Currently, the status of most of these EOs are unknown due to the effect of Hurricane Michael in October, 2018, in addition, the majority of these EOs have not been censused since 1997 (USFWS 2019). A comprehensive census is needed to update this information and accurately evaluate the status of the Gulf County EOs. The population at Clay Co. is protected and adequately managed (USFWS 2019). In general, the main pressures reducing or eliminating the number of EOs and clumps are urban development, timbering, agriculture, and inadequate fire management, i.e., fire suppression, and catastrophic event such as hurricanes. This species was considered a commercially exploited taxon and is still sold by several nurseries, but the magnitude of overcollection has been reduced (USFWS

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<sup>1</sup> Clumps: clusters of stems of the same plant

2019). Factor 3, disease or predation, is not a threat, but factor D, inadequacy of existing regulatory mechanisms, is insufficient. Factor E, the effect of catastrophic events such as hurricanes, is a new threat.

For more information see: 5-Year Review: Summary and Evaluation, Section II Review Analysis, Subsection D. Synthesis, for relevant information since the approved recovery plan (USFWS 2019).

## **AMENDED RECOVERY CRITERIA**

Recovery plans provide important guidance to the Service, States, and other partners on methods of minimizing threats to listed species and measurable objectives against which to measure progress towards recovery; they are guidance and not regulatory documents. Recovery criteria serve as objective, measurable guidelines to assist in determining when an endangered species has recovered to the point that it may be downlisted to threatened, or that the protections afforded by the Act are no longer necessary and the *R. chapmanii* may be delisted. Delisting is the removal of a species from the Federal Lists of Endangered and Threatened Wildlife and Plants. Downlisting is the reclassification of a species from an endangered species to a threatened species. The term “endangered species” means any species (species, sub-species, or distinct population segment) which is in danger of extinction throughout all or a significant portion of its range. The term “threatened species” means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Revisions to the Lists, including delisting or downlisting a species, must reflect determinations made in accordance with sections 4(a)(1) and 4(b) of the Act. Section 4(a)(1) requires that the Secretary determine whether a species is an endangered species or threatened species (or not) because of threats to the species. Section 4(b) of the Act requires that the determination be made “solely on the basis of the best scientific and commercial data available.”

Recovery criteria should help indicate when we would anticipate that an analysis of the species’ status under section 4(a)(1) would result in a determination that the species is no longer an endangered species or threatened species. A decision to revise the status of or remove a species from the Federal Lists of Endangered and Threatened Wildlife and Plants, however, is ultimately based on an analysis of the best scientific and commercial data then available, regardless of whether that information differs from the recovery plan, which triggers rulemaking. When changing the status of a species, we first propose the action in the *Federal Register* to seek public comment and peer review, followed by a final decision announced in the *Federal Register*.

The objective of this addendum is to provide a framework for the recovery of *R. m. chapmanii* so that its protection by the Endangered Species Act is no longer necessary. The ultimate goal is to reduce the threats to *R. m. chapmanii* over the next 20 years to ensure its long-term viability in the wild, and allow for its removal from the list of threatened and endangered species. In this amended document, we provide recovery criteria for the *R. m. chapmanii*, which will supersede those included in Chapman’s Rhododendron Recovery Plan, as follows:

## Delisting Recovery Criteria

*Rhododendron m. chapmanii* will be considered for delisting when:

1. The three (3) existing populations (Hosford, Gulf, and Clay) and their occupied habitat are conserved, restored, and properly managed, and monitoring demonstrates that the populations are stable or increasing over multiple prescribed burn cycles, evidenced by a type of natural recruitment and/or multiple size-classes (addresses Factors A and D).
2. At least five (5) new populations are discovered or established within the historic range of the species on lands protected by a conservation mechanism, and exhibit stable or increasing trends over multiple prescribed burn cycles, evidenced by a type of recruitment and/or multiple size-classes (addresses Factors A and E).
3. Threats (e.g. urban development, timbering, agriculture, inadequate fire management, invasive species) have been reduced and/or managed to a degree that *R. m. chapmanii* will remain viable into the foreseeable future (addresses Factors A and D).

## Justification

Criterion 1. Of the three known populations, only the Clay County population is stable with current surveys and management in place (USFWS 2019). The Gulf County population, surveyed between 1982 and 2007, potentially possess 24 EOs with about 983 clumps (Schultz and Johnson 1997, FNAI 2019). The status of the majority of these EOs is unknown because they have not been censused since 1997, and may have been further impacted by Hurricane Michael in 2018; therefore, it is imperative to conduct a comprehensive inventory (Action 1 below). The privately owned population near Hosford is not protected, and was sold to a for-profit company, that may maintain timber and agricultural uses of the land. The Hosford population contains the highest number of *R. m. chapmanii* clumps. Consequently, if the Gulf and Hosford populations are permanently lost, this precludes recovery of *R. m. chapmanii*. This criterion and Action 2 consider measures to protect the Hosford and Gulf county populations as well as maintaining the Clay County population as stable, addressing Factors A and D. Action 2 provides specific area of occupancy necessary for the three existing populations to persist. Action 3 will help address protection of the Hosford population, which contains nearly 90% of all individuals. Management with prescribed fire were applied to several populations on a 3 to 5 year return interval, but the fire effects on this species and its habitat have not been monitored. Prescribed fires may occur under different seasons, intensities, conditions, or return intervals, and therefore have different effects on plants. Because effects of a single fire cannot be extrapolated, a science-based understanding of impacts of this management will require multiple years of data (Slapcinsky et al. 2010). According to Slapcinsky et al. (2010), monitoring projects continued for over 10 years may be insufficient to completely understand patterns of response to fire; therefore, we are recommending at least 20 years. These data will help understand whether these areas are relatively invulnerable to extirpation or sustained population declines, and population trends over a longer period of time are consistent. Overall, this criterion would address the ecological principles of resiliency, and redundancy for reducing extinction risk and maintaining self-sustaining populations.

Criterion 2. This criterion and recovery Action 1 will help establish, or detect new populations/EOs, addressing the ecological principle of redundancy, reducing the likelihood of extinction or extirpation due development and catastrophic events such as hurricanes. In addition, this criterion guarantees that there is adequate representation across the species' historic and current range. Although we are suggesting five additional populations for delisting, this criterion can be re-evaluated based on new information from Action 1 and criterion 1. A time frame of 20 years is necessary to assess whether the newly discovered populations or those artificially planted are likely to persist in the wild.

Criterion 3. Population extirpations due to threats related to Factors A (urban development, timbering, agriculture, and inadequate fire management, i.e., fire suppression), D (inadequate existing regulatory mechanisms), and E (catastrophic event such as hurricanes) have led to a reduction of this species' range and, likely, the overall genetic diversity. Given that the Endangered Species Act does not provide protection for plants on private lands, plants in the Hosford population and the northern EOs of the Gulf County population are threatened by future development for home-sites, agriculture, logging, recreational facilities, or other purposes (USFWS 2019). This criterion and Actions 2-7 ensures that threats are addressed or managed, enabling populations to become stable and to contribute to the viability of the species. The information obtained from actions 2-6 will help target improvement of *R. m. chapmanii* conservation status, temporary rescue, and protecting against catastrophes or imminent threats. This criterion and actions will allow evaluation of resiliency and will require a time frame of at least 20 years to rigorously assess the response of this species to current threats.

### **Rationale for Amended Recovery Criteria**

*Rhododendron m. chapmanii* has a very narrow distribution as well as a low population density. At the time the recovery plan was completed (1983), the plan neither incorporated delisting criteria nor provided an explanation of why it was not practicable to incorporate them. The amended criteria reflect current available information obtained over the past 35 years about the species distribution, ongoing plant surveys, management, and current review of the threats posed to its continued existence.

The amended recovery criteria are designed to increase population numbers, maintain habitat, and alleviate current threats, ensuring that the species' status does not further decline and the recovery goal of delisting is attained. To reverse the current decline that is occurring in the wild, it is necessary to preserve, restore, and secure sites that contain the necessary elements for *R. m. chapmanii*'s persistence with the appropriate number, size, and distribution of populations. Conserving new and existing viable wild populations will maintain and increase redundancy and resiliency for this species. Understanding how *R. m. chapmanii* responds to disturbances, such as hurricanes (and its components, e.g., salt-water intrusion), is crucial to further evaluate resiliency. Imperative to recovery is protection of currently occupied habitat, and among the existing populations, Hosford and Gulf County are priorities. As these two populations occur primarily on privately owned lands, recovery depends largely on the voluntary cooperation and participation of private landowners. Thus, establishing and maintaining a strong and long-lasting working relationship with the landowners is essential for a long-term commitment to recovery and post-delisting conservation of *R. m. chapmanii*. Protecting these sites, and determining and

conserving the extent of the genetic makeup of this species across its range, is expected to preserve the adaptability of this species over time.

### **ADDITIONAL SITE SPECIFIC RECOVERY ACTIONS**

To accomplish these criteria, all the following actions should be met. For other recommended actions, see the 5-year review of 2019, pp. 15 and 16.

1. A comprehensive census is conducted throughout the present distribution and on new locations where appropriate habitat exists (addresses Factor A and redundancy).
2. The level of occupancy of the three existing populations persists as at least: 5,000 acres for Hosford, 6,000 acres for Gulf County with a minimum of 2,000 clumps, and 30 clumps for Clay County (addresses Factors A and D) and management with prescribed fire is implemented on a 3 to 5 year return interval.
3. Foster a partnership with the current landowner of the AgReserves, Inc. to promote the protection of the Hosford population (found in Liberty and Gadsden counties) and help implement best management practices (e.g., prescribed fire, mowing/fuel reduction, invasive species removal) (addresses Factors A and D).
4. A long-term ex-situ conservation program is ongoing to help avert the risk of extinction from stochastic events, environmental catastrophes, or development. The living collection should emphasize the privately owned Hosford population and coastal areas (see Justification of criteria 1 and 3). The collection should be maintained at botanical gardens and other Service approved facilities for research, recovery, and public outreach (addresses Factors A and E, and representation). The full genetic diversity represented in the Hosford population needs to be protected through ex-situ management efforts.
5. The contribution of sexual reproduction to population maintenance is assessed via research related to in-situ soil seed bank, seed viability, and seedling recruitment (in-situ seed germination, seedling survival and growth) (addresses Factors A, D, E, and resiliency).
6. The genetic composition within and among populations is assessed to clarify species boundaries, define evolutionarily significant units, detect inbreeding, identify clonal reproduction, and determine effective management (addresses Factors A, D, E; informs the ecological principle of representation).
7. Assess the *R. m. chapmanii* demographic responses (e.g., recruitment, reproduction, and mortality) to hurricane and fire disturbances (addresses Factor E and resiliency).

### **COSTS, TIMING, PRIORITY OF ADDITIONAL RECOVERY ACTIONS**

New information over the past decades was gained on this species (USFWS 2019) and we were able to establish delisting criteria, therefore we propose reasonable costs to recovery based on the above seven actions, and as a result, this is an estimated cost (in 1,000's of dollars).

Year	Actions							Total
	1	2	3	4	5	6	7	
1	40	5	25	3	30	48	25	176
2	20	3	25	3	30	25	25	131
3	15	2	25	3	10		10	65
4	7		7	3	7		8	32
5	7		7	1	5		5	25
<b>Total</b>	89	10	89	13	82	73	73	<b>429</b>

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## APPENDIX.

### SUMMARY OF PUBLIC, PARTNER, AND PEER REVIEW COMMENTS RECEIVED

We published a notice of availability in the Federal Register on August 6, 2019 (84 FR 38291) to announce that the draft amendment to the *Rhododendron chapmanii* Recovery Plan was available for public review, and to solicit comments by the scientific community, State and Federal agencies, Tribal governments, and other interested parties on the general information base, assumptions, and conclusions presented in the draft revision. An electronic version of the draft amendment was posted on our Species Profile website ([https://ecos.fws.gov/docs/recovery\\_plan/Chapmans%20Rhododendron%20Recovery%20Plan%20Amendment.pdf](https://ecos.fws.gov/docs/recovery_plan/Chapmans%20Rhododendron%20Recovery%20Plan%20Amendment.pdf)). We also sent specific notifications to key stakeholders in conservation and recovery efforts to ensure that we provided adequate notification to all potentially interested audiences of the opportunity to review and comment on the draft amendment.

We received five responses in total (4 comments specific for *R.m. chapmanii*, and 2 documents with collective comments to the amendment plan). These included comments from interested citizens as well as non-governmental organizations and interest groups. Public comments ranged from providing minor editorial suggestions to specific recommendations on plan content. We have considered all substantive comments. We thank the reviewers for these comments and to the extent appropriate, we have incorporated the applicable information or suggested changes into the final recovery plan amendment. In response to comments expressing concerns about the proposed revised recovery criteria, we edited each criteria and specified a time frame (see justification) for conducting population trend analyses. Below, we provide a summary of public comments received; however, some of the comments that we incorporated as changes into the recovery plan amendment (e.g., updating citations, updating the technical number of EOs) did not warrant an explicit response and, thus, are not presented here.

*Comment 1:* “It is unknown but the landowner, AgReserves, Inc. may convert the Hosford population’s Mesic to Scrubby Flatwoods to cattle pasture/Improved Pasture, which would destroy the population. Would suggest another Site Specific Recovery Action needed: Private landowner consultation for long-term management of populations, including creating Conservation Easements, the Partners for Fish and Wildlife program, etc. Maybe some funding assistance for private lands management such as prescribed fire, mowing/fuel reduction, and invasive species removal.”

*Response:* We included an additional recovery action, Action 3, page 6. In addition, reasonable costs to undertake this action was proposed (page 6, section: Costs, timing, priority of additional recovery actions, action 3).

*Comment 2 (three related comments by 3 different reviewers (a, b, c)):*

- a. “Delisting criterion 1 states “1. The three (3) existing populations (Hosford, Gulf, and Clay) exhibit a stable or increasing trend, evidenced by natural recruitment and multiple size-classes.” No time frame is associated with this criterion. Because this species is a long-lived perennial, we suggest that monitoring of population numbers and seedling recruitment occur over twenty years”

b. ‘...population(s) exhibit a stable or increasing trend as evidenced by natural recruitment and multiple size classes...’. It is not clear how this provides quantitative criteria for what constitutes recovery.’

c. “you might want to add a timeline for the stable or increasing population trend or status. It should be over a time period that makes sense biologically and be long enough for the trend analysis to have some statistical rigor.”

*Response:* Criterion 1 was edited by adding ‘multiple prescribed burn cycles’ and specifying a time frame of 20 years in the justification section of this criterion, as suggested by reviewers. This time frame will provide sufficient time to conduct at least 5 prescribed burn cycles allowing for rigorous evaluation of population projections and this species’ status.

*Comment 3:* How much of the habitat should be conserved? What are the restoration practices that need to occur? What is the proper management of this species?

*Response:* Actions 2 and 3 and justification of criterion 1 address these comments. Action 2 provides specific area of occupancy for populations to persist, as well as management; Action 3 stipulates financial support for management (see Table, action 3, page 6).

*Comment 4:* Prior to the species being delisted or downlisted measurable goals need to be defined.

*Response:* The goal was updated by incorporating a time frame that has been suggested by reviewers. See page 3, last paragraph, and last sentence: ‘The ultimate goal is to reduce the threats to *R. m. chapmanii* over the next 20 years to ensure its long-term viability in the wild, and allow for its removal from the list of threatened and endangered species.’

*Comment 5 (suggested by two reviewers):* “The number of additional populations chosen also needs some justification, and need a time frame (over twenty years) to assess whether the newly discovered populations likely to persist”

*Response:* The number of populations (delisting criterion 2) can be re-evaluated based on Action 1 and criterion 1 (page 5, criterion 2, 1<sup>st</sup> paragraph). A time frame of 20 years will allowed rigorous evaluation of population projections and this species' status.

*Comment 6:* “The delisting criteria do not address the fact that the Hosford population is not on protected land and thus not protected from extermination. We suggest the addition of a criterion making it a priority to acquire the Hosford population, or at least to acquire seeds and cuttings of individuals from the Hosford population, to ensure its protection.”

*Response:* Actions 2, 3, 4 and 6 will safeguard this population addressing the reviewer’s concern.