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

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

DRAFT AMENDMENT 1

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 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, page 16 of the recovery plan. Recovery plans are non-regulatory documents that provides guidance on how best to help recover a species.

For
U.S. Fish and Wildlife Service
Southeast Region
Panama City Field Office
Panama City, Florida

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METHODOLOGY USED TO COMPLETE THE RECOVERY PLAN AMENDMENT

The amendment was accomplished using information obtained from the 2010 status review, the Recovery Plan of September 1983, peer-reviewed scientific publications, several unpublished research projects, unpublished field observations by U.S. Fish and Wildlife Service (Service), State and other experienced biologists, and personal communications. 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 listing factors.

Recovery Criteria

See previous version of criteria in recovery plan, page 16
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), 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, the recovery potential is high, but 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 sites: coastal Gulf County; Liberty and Gadsden counties in the vicinity of Hosford (hereafter: Hosford population); and in Clay County on Camp Blanding Military Installation (Camp Blanding). Fifty-five Element Occurrences (EOs) distributed throughout this species range were documented between 1944 and 2007 with an estimated 4,699 clumps[1]. Based on status evaluation in 2010, the estimated maximum counts of clumps decreased to about 3,279 (a 30% decline, USFWS 2010).

This species is mainly threatened by habitat destruction/modification. The privately owned Hosford population is the largest with about 2,942 clumps (USFWS 2010), 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 locations between 1982 and 2007 indicated the presence of 24 EOs within 6,511 acres, with about 983 clumps (Schultz and Johnson 1997, FNAI 2009), a potential 55% decline. Currently, the status of these EOs are unknown due to the effect of Hurricane Michael in October, 2018, in addition, the majority of these EOs were not censused since 1997 (USFWS 2010). Therefore, a comprehensive census is needed to update this information and accurately evaluate the status of the Gulf County EOs. The population at Camp Blanding is protected and adequately managed (USFWS 2010). 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 events 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 2010). Factor C, disease or predation, is not a threat, but factor D, inadequacy of existing regulatory mechanisms, is a potential threat. Factor E, the effect of catastrophic events such as hurricanes, is a new threat.

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

[1] Clumps: clusters of stems of the same plant

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 DPS) 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*, 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 should be considered for delisting when:

1. The three (3) existing populations (Hosford, Gulf, and Camp Blanding) exhibit a stable or increasing trend, evidenced by natural recruitment and multiple size-classes. Their occupied habitat are conserved, restored, and properly managed (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 these populations exhibit a stable or increasing trend, evidenced by natural recruitment and multiple size-classes (addresses Factors A and E).

3. Threats (e.g. urban development, timbering, agriculture, inadequate fire management) have been reduced and/or managed to a degree that *R. m. chapmanii* will remain viable for the foreseeable future(addresses Factors A and D).

Justification

Criterion 1. Of the three known locations, only the Camp Blanding population is stable with current surveys and management in place (USFWS 2010). The Gulf County locations, surveyed between 1982 and 2007, potentially possess 24 EOs with about 983 clumps (Schultz and Johnson 1997, Huffman 2007, FNAI 2009). 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. This population contains the highest number of *R. m. chapmanii* clumps. Consequently, if the Gulf and Hosford populations are permanent lost, this precludes recovery of *R. m. chapmanii*. This criterion and Action 2 consider measures to protect the Hosford population and Gulf Co. locations as well as maintaining the Clay Co. population stable, addressing Factors A and D. 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 guarantee that there is adequate representation across the species' historic and current range.

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, the Hosford and the northern EOs of Gulf County populations are threatened by future development for home-sites, agriculture, logging, recreational facilities, or other purposes (USFWS 2010). This criterion and Actions 2-6 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 2-5 will help target improvement of *R. m. chapmanii* conservation status, temporary rescue, and protecting against catastrophes or imminent threats. This criterion and actions will address resiliency.

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, to ensure 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. Since 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 are recommended. For other recommended actions, see the 5-year review of 2010, pages 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 Camp Blanding (addresses Factors A and D).
3. 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, and maintained at botanical gardens and other Service approved facilities for research, recovery, and public outreach (addresses Factors A and E, and representation).
4. 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).
5. 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).
6. Assess the *R. m. chapmanii* demographic responses (e.g., recruitment, reproduction, and mortality) to hurricane disturbance (addresses Factor E and resiliency).

COSTS, TIMING, PRIORITY OF ADDITIONAL RECOVERY ACTIONS

New information was gained on this species and we were able to establish delisting criteria, therefore we propose reasonable costs to recovery based on the above six actions, and as a result, this is an estimated cost (in 1000s of dollars).

Year	Action 1	Action 2	Action 2	Action 3	Action 4	Action 4	Action 6	*Total*
1	40	5		3	30	48	25	146
2	20	3		3	30	25	25	106
3	15	2		3	10		10	40
4	7			3	7		8	25
5	7			1	5		5	18
Total	89	10		13	82	70	73	***337***

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