telemarketing purposes (or on whose behalf such a call is made) receives a request from a residential telephone subscriber not to receive calls from that person or entity, the person or entity must record the request and place the subscriber's name, if provided, and telephone number on the do-not-call list at the time the request is made. Persons or entities making such calls (or on whose behalf such calls are made) must honor a residential subscriber's do-not-call request within a reasonable time from the date such request is made. This period may not exceed ten (10) business days from the receipt of such request. If such requests are recorded or maintained by a party other than the person or entity on whose behalf the call is made, the person or entity on whose behalf the call is made will be liable for any failures to honor the do-not-call request. A person or entity making an artificial or prerecorded-voice telephone call pursuant to an exemption under paragraphs (a)(3)(ii) through (v) or any call for telemarketing purposes must obtain a consumer's prior express permission to share or forward the consumer's request not to be called to a party other than the person or entity on whose behalf a call is made or an affiliated entity.

* * * * *

[FR Doc. 2024–04587 Filed 3–4–24; 8:45 am]

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DEPARTMENT OF DEFENSE

GENERAL SERVICES ADMINISTRATION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

48 CFR Parts 22, 25, and 52

[FAC 2024–03; FAR Case 2023–012; Item II; Docket No. FAR–2023–0012; Sequence No. 1]

RIN 9000–AO62

Federal Acquisition Regulation: Trade Agreements Thresholds

In rule document 2024–2798 beginning on page 13961 in the issue of Friday, February 23, 2024, make the following correction:

52.212–5 [Corrected]

On page 13964, in the first column, in the amendatory instruction 10.c., in the third line ''(FEB 2025)'' should read ''(FEB 2024)''.

[FR Doc. C1–2024–02798 Filed 3–4–24; 8:45 am]

BILLING CODE 1505–01–D

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R4–ES–2019–0071; FF09E22000 FXES1113090FEDR 2223]

RIN 1018–BE00

Endangered and Threatened Wildlife and Plants; Removal of Chrysopsis floridana (Florida Golden Aster) From the Federal List of Endangered and Threatened Plants

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), are removing the Florida golden aster (*Chrysopsis floridana*), a short-lived perennial, from the Federal List of Endangered and Threatened Plants (List) due to recovery. Our review indicates that the threats to the species have been eliminated or reduced to the point that the species has recovered and no longer meets the definition of an endangered or threatened species under the Endangered Species Act of 1973, as amended (Act). Accordingly, the prohibitions and conservation measures provided by the Act will no longer apply to this species.

DATES: This rule is effective April 4, 2024.

ADDRESSES: This final rule, supporting documents used in preparing this rule, the post-delisting monitoring plan, and the comments we received on the June 24, 2021, proposed rule are available at *https://www.regulations.gov* under Docket No. FWS–R4–ES–2019–0071.

FOR FURTHER INFORMATION CONTACT: Lourdes Mena, Division Manager, Florida Classification and Recovery, U.S. Fish and Wildlife Service, Florida Ecological Services Field Office, 7915 Baymeadows Way, Jacksonville, FL 32256; telephone 904–731–3336. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of contact in the United States.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, a species warrants delisting if it no longer meets the definition of an endangered species (in danger of extinction throughout all or a significant portion of its range) or threatened species (likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range). The Florida golden aster is listed as an endangered species, and we are delisting it. Delisting a species can only be completed by issuing a rule through the Administrative Procedure Act rulemaking process (5 U.S.C. 551 *et seq.*).

What this document does. This rule removes the Florida golden aster from the Federal List of Endangered and Threatened Plants based on the species' recovery.

The basis for our action. Under the Act, we may determine that a species is an endangered or threatened species because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. The determination to delist a species must be based on an analysis of the same factors.

Under the Act, we must review the status of all listed species at least once every 5 years. We must delist a species if we determine, based on the best available scientific and commercial data, that the species is neither an endangered species nor a threatened species. Our regulations at 50 CFR 424.11(e) identify three reasons why we might determine a species should be delisted: (1) The species is extinct, (2) the species does not meet the Act's definition of an endangered species or a threatened species, or (3) the listed entity does not meet the Act's definition of a species. Here, we have determined that the Florida golden aster does not meet the definition of an endangered species or a threatened species; therefore, we are delisting it.

Previous Federal Actions

Please refer to the proposed delisting rule (86 FR 33177) for the Florida golden aster published on June 24, 2021, for a detailed description of previous Federal actions concerning this species.

Peer Review

A species status assessment (SSA) team prepared an SSA report for the Florida golden aster. The SSA team was composed of Service biologists, in consultation with other species experts.

The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including the impact of past, present, and future factors (both negative and beneficial) affecting the species.

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review in listing actions under the Act, we solicited independent scientific review of the information contained in the Florida golden aster SSA report. As discussed in the proposed rule, we sent the SSA report to six independent peer reviewers and received two responses. The peer reviews can be found at *https://www.regulations.gov.* In preparing the proposed rule, we incorporated the results of these reviews, as appropriate, into the SSA report, which was the foundation for the proposed rule and this final rule. A summary for the peer review comments and our responses can be found in the Summary of Comments and Recommendations below.

Summary of Changes From the Proposed Rule

In this final rule, we make no substantive changes to our June 24, 2021, proposed rule. Minor, nonsubstantive changes have been made throughout this final rule.

Summary of Comments and Recommendations

In the proposed rule published on June 24, 2021 (86 FR 33177), we requested that all interested parties submit written comments on our proposal to delist the Florida golden aster and the draft post-delisting monitoring (PDM) plan by August 23, 2021. We also contacted appropriate Federal and State agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposal. A newspaper notice inviting public comments was published on June 30, 2021, in the Tampa Bay Times. We did not receive any requests for a public hearing. All substantive information provided during the comment period is addressed below.

Peer Reviewer Comments

As discussed in Peer Review above, we received comments from two peer reviewers on the draft SSA report. The SSA report was also submitted to our Federal, State, and Tribal partners for scientific review. We received review from two partners. We reviewed all comments we received from the peer and partner reviewers for substantive issues and new information regarding the contents of the SSA report. The reviewers did not raise any substantive issues and provided only editorial comments that we incorporated into the final SSA report, which was the foundation for the proposed rule and this final rule.

Public Comments

We reviewed all public comments for substantive issues and new information regarding the species. Substantive comments we received during the comment period are addressed below.

(1) *Comment:* Several commenters stated the species should not be delisted because populations are performing poorly. Multiple commenters pointed to the report titled, ''Demographic Data Collection to Assess the Endangerment of *Chrysopsis floridana* 2020'' (Peterson et al. 2020, entire) as supporting their position that the species should not be delisted.

Our response: The report titled, ''Demographic Data Collection to Assess the Endangerment of *Chrysopsis floridana* 2020'' (Peterson et al. 2020, entire) was funded by the Service to analyze a subset of known populations and did not look at all known populations. The intent of the effort was to collect data to provide additional information to supplement the 2018 Florida golden aster SSA report. The results of Peterson et al. (2020, entire) reinforce our determination that the Florida golden aster no longer meets the Act's definition of an endangered species or a threatened species.

The 18 sites for the report were chosen specifically based on aster population size and habitat development risk, which results in increased future management constraints. Eleven of the selected populations were classified as low risk, and the remaining seven were classified as high risk, based on modeling projections in the SSA report (Service 2018, p. 35). Of the 18 populations analyzed for the report, all populations were analyzed for demographic data, and 8 of those also had stage class (*i.e.,* seedlings, vegetative plants, reproductive plants) data collected. Data were collected over a 3-year period, and annual survival and annual seedling survival were calculated each year. This approach was intended to provide an analysis of the variation in populations across the species' range, looking at population resiliency and habitat management effectiveness. The analysis was a comparison of the populations' metrics between the populations studied but is not comparable to the overall current condition of the species. Stage structure was used as an indirect measure of population health because fecundity data (seed production) were not collected, and full demographic models could not be assembled for the species.

Annual survival was variable among populations and across years. Stage structure (''small vegetative'' plants, ''large vegetative'' plants, and ''reproductive'' plants) also varied over the 3-year period, with demographically healthy populations having more seedlings and the least healthy populations having more flowering plants. This variation would be expected based on the annual variations in climate conditions over time as well as the phenology of the species. Demographic results indicated moderate annual survival rates for 2017–2018 (75.6 percent) and 2018–2019 (71.8 percent). The annual survival rate for the 2017–2018 populations ranged from 55–91 percent with similar rates of 42–89 percent in 2018–2019. The annual seedling survival (62.0 percent and 64.6 percent, respectively) was slightly lower. The report concluded that at least 6 populations might be considered healthy and self-sustaining, and it may be determined that the other 12 populations (all on protected lands) will fare better in future years given increased management efforts (ideally fire), especially within wild populations.

Variation in survival rates could be attributed to the time since the last fire, habitat management application, and/or age of the mature plant during the study period. Florida golden aster is a short-lived perennial (3–5 years) that flowers multiple years once reproductive. Not knowing the age of the plants being analyzed over the short timeframe in the randomly selected plots could have biased the results, as some of the plants may have been already at the end of their lifespan or not reproductive yet. In addition, consideration of early versus late lifespan productivity or species cycles (phenology), which are currently unknown, may be important factors influencing the analyzed data. The survival rate for this species is described as moderate; the annual survival rates for this aster are adequate for the species and the habitat it occupies (Peterson et al. 2020, entire). Although survival rates varied among introduced and wild populations and varied based on the habitat management status of the population, populations consistently showed seedling recruitment, which is an indication of recruitment in all populations regardless of health conditions.

Based on the most current survey across the species' range (2006–2018), 30 known extant populations, natural and introduced, occur in five counties. Of these, 25 populations occur on 22 protected and managed conservation lands. The post-delisting monitoring plan will utilize baseline data for the populations studied in the report to further assess long-term trends.

(2) *Comment:* Some commenters stated the species should not be delisted because recovery criteria for delisting have not been achieved.

Our response: Recovery plans provide a roadmap for us and our partners on methods of enhancing conservation and minimizing threats to listed species, as well as measureable criteria against which to evaluate progress towards recovery and assess the species' likely future condition. However, they are not regulatory documents and do not substitute for the determinations and promulgation of regulations under section 4(a)(1) of the Act. A decision to delist a species is ultimately based on an analysis of the best scientific and commercial data available and consideration of the standards listed in 50 CFR 424.11(e) to determine whether a species is no longer an endangered species or a threatened species, regardless of whether that information differs from the recovery plan. According to the recovery plan there are many paths for this species to be recovered without all the criteria being fully met. The recovery plan states that one or more criteria may be exceeded while other criteria may not yet be accomplished. In this instance, we have determined that the threats to Florida golden aster are minimized sufficiently and that the species no longer meets the Act's definition of an endangered species or a threatened species.

(3) *Comment:* One commenter indicated delisting was premature because there was no data-driven management plan for the species. The commenter further stated that while short-term monitoring has suggested a role for fire in maintaining populations, critical data are lacking pertaining to the best management practices to maintain Florida golden aster habitat, specifically disturbance dynamics and the optimal fire frequency for managing populations.

Our response: In our June 24, 2021, proposed rule (86 FR 33177), we announced the availability of a draft PDM plan for the Florida golden aster, and we requested comments on the draft PDM plan. We also solicited comments on the draft PDM plan from agencies that manage Florida golden aster on their conservation lands, as well as State and county partners that have been engaged in the species' conservation. We received comments from both the Florida Forest Service and Hillsborough County's Environmental Lands Acquisition and Protection Program, and their comments were incorporated into the final PDM plan. See Post-delisting Monitoring, below, for more information.

The decision to revise the status of a species, or to delist a species, is ultimately based on an analysis of the best scientific and commercial data available to determine whether a species is no longer an endangered species or a threatened species. Complete understanding of specific data pertaining to best management practices for Florida golden aster such as disturbance dynamics or the fire return intervals for optimal survival and health, is not a requirement of the Act. Nevertheless, the general response of Florida golden aster to disturbance regimes is sufficiently understood to inform management. The delisting of Florida golden aster should not discourage continued research on the species and its habitat needs. Indeed, the PDM plan includes recommendations for this type of research.

(4) *Comment:* One commenter noted that growing development surrounding Florida golden aster populations will further complicate fire management, which is important for maintaining suitable habitat. It will become increasingly difficult for many areas where Florida golden aster is present to be managed with fire, and there is little evidence that mechanical disturbance could serve as an effective surrogate for fire.

Our response: The development pressures on native landscapes throughout peninsular Florida are challenging and will continue to persist indefinitely. Habitat management on conservation lands in the wildland-urban interface can experience various constraints. However, not all conservation lands with Florida golden aster populations are subject to these constraints, and development often does not preclude fire management; for example, the national wildlife refuges in Florida frequently conduct prescribed fires despite close proximity to developed areas. Additionally, various treatments and techniques to prepare fuel loads prior to prescribed fire application can also overcome many of these constraints, along with managing the area without the use of fire. New and innovative methods are constantly being developed and employed to accomplish the desired habitat conditions. Best management practices and sound management planning alleviates many of the obstacles land managers encounter when pursing optimal conditions in support of the targeted species.

While the commenter stated that mechanical disturbance is not as effective as fire in maintaining habitat for the Florida golden aster, mechanical treatments can be effective, if deployed correctly. We note in the SSA report that in the absence of fire, habitat openness can be maintained with mowing, hand removal of trees and shrubs near plants, or other mechanical treatments. Populations have persisted along periodically mowed rights-of-way (*e.g.,* underneath powerlines, along roads and railroads) for decades without a prescribed burn program (Service 2018, p. 12).

(5) *Comment:* One commenter stated that keeping the species listed will improve the Florida golden aster's chances of recovery, adding that continued listing would provide support necessary to continue research and conservation work for the species.

Our response: We agree that the protections of the Act have helped recover the Florida golden aster, such that it no longer meets the Act's definition of an endangered species or a threatened species. Currently, the vast majority of the known populations occur on protected and managed conservation lands and have at least moderate resiliency. Additionally, we expect habitat management for the species to continue, such that these populations will only increase, though this was not relied on for the delisting determination. The Florida golden aster, therefore, is recovered and no longer warrants the protections of the Act, now or in the foreseeable future. Retaining the species on the Federal List of Endangered and Threatened Plants would be contrary to the direction of the Act and would continue to draw resources from other species that still need the protections of the Act.

Background

A thorough review of the taxonomy, life history, ecology, and overall viability of the Florida golden aster is presented in the SSA report available on *https://www.regulations.gov* under Docket No. FWS–R4–ES–2019–0071. A summary of that information is presented here.

Florida golden aster is endemic to xeric (very dry) uplands east and southeast of the Tampa Bay area of central Florida. The historical range of the Florida golden aster is thought to span parts of Hillsborough, Manatee, Pinellas, Highlands, and Hardee Counties, but the true extent of the historical range is uncertain because the ecosystems on which it occurs were rapidly converted to residential, commercial, and agricultural uses after European settlement of the region. Agriculture began in 1880, with grazing and production of citrus and row crops. Residential and commercial activity began around 1840, mainly in the Tampa Bay area and beach communities through the 1940s and 1950s, but suburban and rural areas started expanding in the 1960s and 1970s and that expansion has continued at a consistent rate. The species was first collected and described from a specimen in Manatee County in early 1901, with subsequent collections in Pinellas and Hillsborough Counties in the 1920s. The earliest known Manatee County and Pinellas County populations occurred in coastal areas of Bradenton Beach and St. Petersburg Beach. However, these populations have since been extirpated. The last remaining natural population known to occur in Pinellas County was discovered in 1983; however, a housing development eliminated all available habitat by 1985.

When the species was listed as endangered in 1986 (see 51 FR 17974; May 16, 1986), nine known extant populations of the species occurred in five locations, all coastal, in southeastern Hillsborough County (Wunderlin et al. 1981, entire). Since the listing of the species, increased survey efforts have resulted in the discovery of additional populations, including occurrences farther inland. Many of the newly discovered locations have since been acquired as protected sites with active conservation management activities implemented to improve habitat conditions. As discussed below, introductions have occurred on conservation lands in Hardee, Hillsborough, Manatee, and Pinellas Counties. It is not known whether these introduction sites were historically occupied by the Florida golden aster or, if so, how long ago they supported natural populations.

Based on the most current surveys across the species' range (2006–2018), 30 known extant populations, natural and introduced, occur in 5 counties (Hardee—4 populations, Highlands—1 population, Hillsborough—16 populations, Manatee—5 populations, and Pinellas—4 populations; figure 1). Populations were delineated using a separation distance of 2 kilometers (km) between occurrences (see Current Condition, below, for more information). Of these, 25 populations occur entirely or mostly on 22 protected sites; a protected site is a site that has been acquired in fee simple and placed into long-term conservation, or that has a conservation easement or other binding land agreement by the site owner that shows a commitment to its conservation in perpetuity. In addition, all protected sites have a management agreement or plan both developed and implemented. None of the lands occupied by the Florida golden aster are federally owned or managed but rather they are owned and managed by a State, local, or nongovernmental entity. The remaining five extant populations occur on private lands or along roadways or railroad lines.

The most recent surveys (occurring between 2006 and 2018) show that just over half of the Florida golden aster individuals occur in nine introduced populations at eight sites. The earliest introductions, a total of 10, were undertaken in 1986; three of those populations remain extant in Hardee and Manatee Counties, while seven other introductions in Pinellas and Hillsborough Counties failed. Introductions were again initiated during 2008–2013, when Bok Tower Gardens introduced six additional populations in Hardee, Manatee, and Pinellas Counties, containing 24,825 plants (as of the most recent censuses, with about 12,000 in one population). Four of the six populations contain more than 1,000 plants; the remaining two populations (North and South Duette Preserve) are the most recently introduced populations (2013), have been growing rapidly, and are surrounded by ample habitat and little to no development, so they will also reach sizes comparable to the other introduced populations.

According to the most recent surveys, approximately 50,000 individuals exist with more than 90 percent occurring in the 25 populations located on protected lands. Although this estimate is the best available information, it gives only an approximation of the true current abundance of the Florida golden aster because surveys are not conducted every year and are conducted for different objectives. Moreover, population sizes fluctuate annually. Twelve of the 30 populations had more than 1,000 individual plants present when last observed. We note that a 56-km gap occurs between the easternmost naturally occurring population in Manatee County and the nearest naturally occurring population in Hardee County, and it is not presently known whether this gap is due to the lack of suitable habitat, lack of observation, a long-distance dispersal event, or fragmentation of a formerly continuous distribution.

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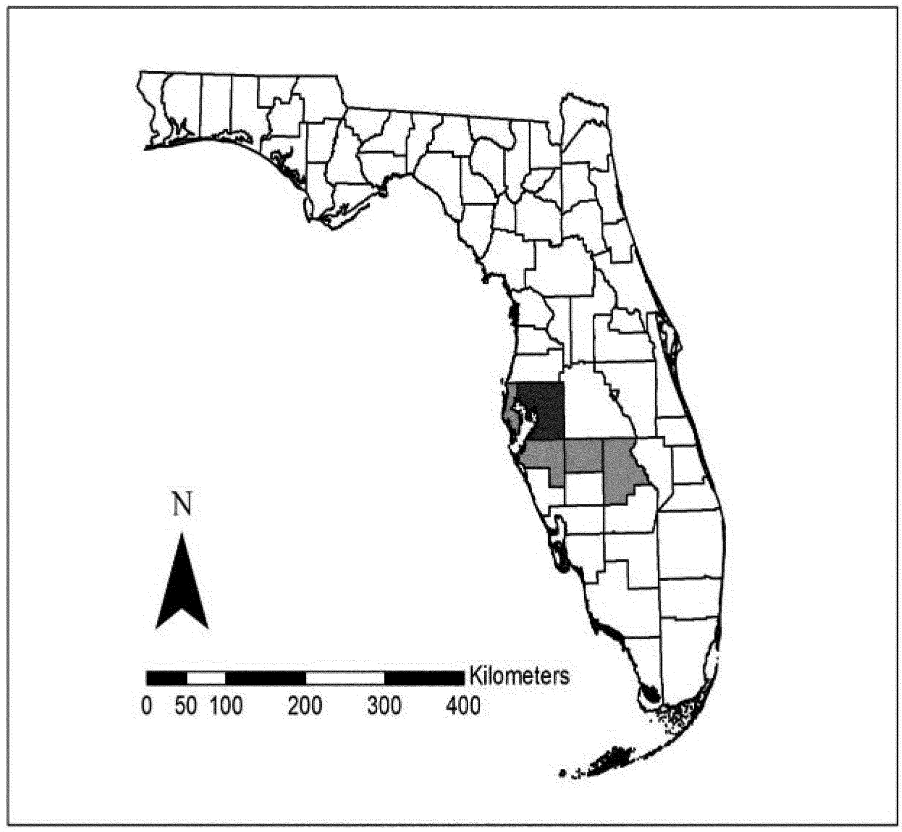

FIGURE 1. The five Florida counties where the Florida golden aster occurs as of 2017 are highlighted in gray, with Hillsborough County shaded darker gray. At the time of listing in 1986, populations of the Florida golden aster were only known to occur in Hillsborough Country.

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Recovery Criteria

Section 4(f) of the Act directs us to develop and implement recovery plans for the conservation and survival of endangered and threatened species unless we determine that such a plan will not promote the conservation of the species. Under section 4(f)(1)(B)(ii), recovery plans must, to the maximum extent practicable, include objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of section 4 of the Act, that the species be removed from listed status.

Recovery plans provide a roadmap for us and our partners on methods of enhancing conservation and minimizing threats to listed species, as well as measurable criteria against which to evaluate progress towards recovery and assess the species' likely future condition. However, they are not regulatory documents and do not substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. A decision to revise the status of a species or to delist a species is ultimately based on an analysis of the best scientific and commercial data available to determine whether a species is no longer an endangered species or a threatened species, regardless of whether that information differs from the recovery plan.

There are many paths to accomplishing recovery of a species, and recovery may be achieved without all the criteria in a recovery plan being fully met. For example, one or more criteria may be exceeded while other criteria may not yet be accomplished. In that instance, we may determine that the threats are minimized sufficiently and that the species is robust enough that it no longer meets the Act's definition of an endangered species or a threatened species. In other cases, we may discover new recovery opportunities after having finalized the recovery plan. Parties seeking to conserve the species may use these opportunities instead of methods identified in the recovery plan. Likewise, we may learn new information about the species after we finalize the recovery plan. The new information may change the extent to which existing criteria are appropriate for identifying recovery of the species. The recovery of a species is a dynamic process requiring adaptive management that may, or may not, follow all the guidance provided in a recovery plan.

We issued the recovery plan for the Florida golden aster on August 29, 1988. The primary objective of the recovery plan was to provide sufficient habitat for the Florida golden aster, both through protection of the sites and proper vegetation management. The recovery plan calls for establishment of new populations of the species. The recovery plan states that reclassification of this species to threatened could be considered if 10 geographically distinct populations are established in its three native counties, and delisting could be considered if 20 such populations are secured (USFWS 1988, p. 3). Currently, Florida golden aster occurs in 30 geographically distinct populations across five counties, 25 are on protected lands, and 18 of these populations have high or very high resiliency (see table 2), which is consistent with the recovery plan's delisting criterion.

Regulatory and Analytical Framework

Regulatory Framework

Section 4 of the Act (16 U.S.C. 1533) and the implementing regulations in Title 50 of the Code of Federal Regulations set forth the procedures for determining whether a species is an endangered species or a threatened species, issuing protective regulations for threatened species, and designating critical habitat for endangered and threatened species. In 2019, jointly with the National Marine Fisheries Service, the Service issued a final rule that revised the regulations in 50 CFR part 424 regarding how we add, remove, and reclassify endangered and threatened species and the criteria for designating listed species' critical habitat (84 FR 45020; August 27, 2019). On the same day, we issued a final rule that revised 50 CFR 17.31 and 17.71 (84 FR 44753; hereinafter, ''the 20194(d) rule'') and ended the ''blanket rule'' option for application of section 9 prohibitions to species newly listed as threatened after the effective date ofthose regulatory revisions (September 26, 2019). Blanket rules had extended the majority of the protections (all of the prohibitions that apply to endangered species under section 9 and additional exceptions to the prohibitions) to threatened species, unless we issued an alternative rule under section 4(d) of the Act for a particular species (*i.e.,* a species-specific 4(d) rule). The blanket rule protections continued to apply to threatened species that were listed prior to September 26, 2019, without an associated species-specific rule. Under the 2019 4(d) rule, the only way to apply protections to a species newly listed as threatened is forus to issue a species-specific rule settingout the protective regulations that are appropriate for that species. Our analysis for this decision applied our current regulations, portions of which were last revised in 2019. Given that we proposed further revisions to these regulations on June 22, 2023 (88 FR 40742; 88 FR 40764), we have also undertaken an analysis of whether the decision would be different if we were to apply those proposed revisions. We concluded that the decision would have been the same if we had applied the proposed 2023 regulations. The analyses under both the regulations currently in effect and the regulations after incorporating the June 22, 2023, proposed revisions are included in our decision file.

The Act defines an endangered species as a species that is in danger of extinction throughout all or a significant portion of its range, and a threatened species as a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether any species is an endangered species or a threatened species because of any of the following factors:

(A) The present or threatened destruction, modification, or curtailment of its habitat or range;

(B) Overutilization for commercial, recreational, scientific, or educational purposes;

(C) Disease or predation;

(D) The inadequacy of existing regulatory mechanisms; or

(E) Other natural or manmade factors affecting its continued existence.

These factors represent broad categories of natural or human-caused actions or conditions that could influence a species' continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects. The determination to delist a species must be based on an analysis of the same five factors.

We use the term ''threat'' to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term ''threat'' includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term ''threat'' may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an endangered species or a threatened species. In determining whether a species meets either definition, we must evaluate all identified threats by considering the species' expected response and the effects of the threats—considering those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all the threats on the species. We also consider the cumulative effect of the threats considering those actions and conditions that will have positive effects on the species, such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an endangered species or a threatened species only after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future.

The Act does not define the term ''foreseeable future,'' which appears in the statutory definition of ''threatened species.'' Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis. The term ''foreseeable future'' extends only so far into the future as we can reasonably determine that both the future threats and the species' responses to those threats are likely. In other words, the foreseeable future is the period of time in which we can make reliable predictions. ''Reliable'' does not mean ''certain''; it means sufficient to provide a reasonable degree of confidence in the prediction. Thus, a prediction is reliable if it is reasonable to depend on it when making decisions.

It is not always possible or necessary to define foreseeable future as a particular number of years. Analysis of the foreseeable future uses the best scientific and commercial data available and should consider the timeframes applicable to the relevant threats and to the species' likely responses to those threats in view of its life-history characteristics. Data that are typically relevant to assessing the species' biological response include species-specific factors such as lifespan, reproductive rates or productivity, certain behaviors, and other demographic factors.

Analytical Framework

The SSA report documents the results of our comprehensive biological review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent our decision on whether the species should be reclassified or delisted under the Act. It does, however, provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies.

To assess Florida golden aster viability, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency is the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years); redundancy is the ability of the species to withstand catastrophic events (for example, droughts, large pollution events), and representation is the ability of the species to adapt to both near-term and long-term changes in its physical and biological environment (for example, climate changes, pathogen). In general, species viability will increase with increases in resiliency, redundancy, and representation (Smith et al. 2018, p. 306). Using these principles, we identified the species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species' viability.

The SSA process can be categorized into three sequential stages. During the first stage, we evaluated individual species' life-history needs. The next stage involved an assessment of the historical and current condition of the species' demographics and habitat characteristics, including an explanation of how the species arrived at its current condition. The final stage of the SSA involved making predictions about the species' responses to positive and negative environmental and anthropogenic influences. Throughout all these stages, we used the best available information to characterize viability as the ability of a species to sustain populations in the wild over time. We use this information to inform our regulatory decision.

The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at Docket No. FWS–R4–ES–2019–0071 on *https://www.regulations.gov.*

Summary of Biological Status and Threats

In this discussion, we review the biological condition of the species and its resources, and the threats that influence the species' current and future condition, in order to assess the species' overall viability and the risks to that viability.

Summary of SSA Analysis

For a species to be viable there must be adequate redundancy (suitable number, distribution, and connectivity to allow the species to withstand catastrophic events), representation (genetic and environmental diversity to allow the species to adapt to changing environmental conditions), and resiliency (ability of a species to withstand unpredictable disturbance). Resiliency for Florida golden aster improves with maintained open habitat. Lambert and Menges (1996, pp. 121–137) recommend prescribed burning that mimics the historic burn pattern (frequent low-intensity fires in sandhill, less frequent burns in scrub, with fires primarily in late spring and summer) and periodic mechanical disturbance of the ground cover during late winter or early spring when seeds are dispersed. In the absence of fire, habitat openness can be maintained with mowing, hand removal of trees and shrubs near plants, or other mechanical treatments; populations have persisted along periodically mowed rights-of-way (*e.g.,* underneath powerlines, along roads and railroads) for decades without a prescribed burn program. Populations must be suitably large and connected to provide a reservoir of individuals for cross-pollination, as plants will not self-fertilize, and to maintain levels of genetic diversity high enough to prevent harmful consequences from inbreeding depression and genetic drift (Ellstrand and Elam 1993, pp. 217–242). Redundancy improves with increasing numbers of populations, and connectivity (either natural or human-facilitated) allows connected populations to ''rescue'' each other after catastrophes. Representation improves with increased genetic diversity and/or environmental conditions within and among populations.

Viability of the Florida golden aster has been and will continue to be impacted both negatively and positively by anthropogenic and natural influences. Historically, the primary threats to the Florida golden aster were habitat loss (resulting from human development) and habitat degradation due to lack of adequate habitat management. As threats to habitat have been alleviated via habitat protection and management, recovery has been further bolstered by captive propagation followed by introduction into unoccupied sites.

Analysis of Threat Factors

Present or Threatened Destruction, Modification, or Curtailment of the Species' Habitat or Range

The main threat to this species at the time of listing was the destruction and modification of habitat. Habitat destruction, modification, and degradation on private lands and habitat degradation from lack of adequate habitat management on public lands remain the primary risk factor to the species. The five populations occurring on private lands remain subject to adverse human activity including dumping, off-road recreational vehicles use, and land clearing. However, these activities are no longer threats to the 25 populations on protected conservation lands because of controlled access and restricted use.

Lack of management, especially the absence of periodic fire, historically led to habitat degradation throughout the species' range. The Florida golden aster occurs in open, sandy patches that historically were maintained by fire under natural conditions. Without naturally ignited fires or prescribed fire applications, the habitat becomes overgrown, resulting in unfavorable conditions for the species' persistence. Ideal habitat management is generally regarded as prescribed burning that mimics the historical burn patterns (frequent low-intensity fires in sandhill, less frequent burns in scrub, with fires primarily in late spring and summer) and periodic mechanical disturbance of the ground cover during late winter or early spring when seeds are dispersed (Lambert and Menges 1996, pp. 121–137). Initial burning to restore the openness of degraded habitat involves frequent intense fires, after which burning can be less intense and less frequent to simply maintain the habitat. Failing to maintain open scrub habitat can disrupt the Florida golden aster's reproduction, survival, and dispersal (Lambert and Menges 1996, pp. 121–137).

As with habitat destruction and modification, this threat from lack of management remains a concern mainly on private, non-conservation lands. Populations that occur on conservation lands are often being managed to maintain optimal open scrub habitat. However, budget constraints, manageability, conflicting priorities, and other factors (weather, lack of equipment, staff shortages, etc.) may preclude proper management activities even on conservation lands. Additionally, proximity to urbanized areas can limit the number of days available for prescribed burns, and urbanization in the Tampa Bay area is increasing rapidly (Xian et al. 2005, pp. 920–928). To be optimal, burn days must have wind speeds and wind directions that do not unduly burden urbanized areas with smoke. For this reason, large rural tracts of habitat are easier to burn than small tracts tucked into developed areas. Increasing commercial and residential development could lead to further decreases in the ability to conduct prescribed burning in the future, which may or may not be replaced with adequate habitat management by other means (*e.g.,* mowing) that are more expensive than using fire. The type of development also factors into management ability and flexibility, with major roads, schools, hospitals, retirement homes (places with vulnerable populations) weighing more heavily on the decision of if/when to burn than other types of development (Camposano 2018, pers. comm.).

Since the time of listing, conservation efforts for the Florida golden aster and other scrub habitat species have reduced the threat of habitat destruction, modification, and degradation. These conservation efforts include acquiring properties where the species naturally occurs, introducing populations on conservation lands, and conducting habitat management on conservation lands (*e.g.,* prescribed burning). While habitat destruction and modification may still occur on private lands, 83 percent of the sites are on public conservation lands and, therefore, for the most part, are adequately managed and protected. Land acquisitions and introductions have increased the number of established populations within the historical range and have resulted in the expansion of the species' known range. Further, although the species will be delisted under the Act on the effective date of this rule (see **DATES**, above), the Florida golden aster will remain listed as threatened under State laws. Based on the best available information, we conclude that resources for necessary management activities on conservation lands will continue.

Disease or Predation

At the time of listing, grazing by domestic livestock was identified as a stressor because the species' populations were on private lands and many of the properties were in cattle production. However, at present, the 25 populations on conservation lands are not subject to any agriculture practices. No cattle grazing occurs on any of these properties. Therefore, we no longer consider grazing to be a threat.

Inadequacy of Existing Regulatory Mechanisms

The Florida Administrative Code (FAC) chapter 5B–40 (Preservation of Native Flora of Florida) provides the Florida Department of Agriculture and Consumer Services limited authority to protect plants on State and private lands (primarily from the standpoint of illegal harvest). Florida golden aster is listed as an endangered plant under this statute, which requires anyone wishing to willfully harvest, collect, pick, remove, injure, or destroy any plant listed as endangered growing on the private land of another, or on any public land or water, to obtain the written permission of the owner of the land or water or his legal representative (FAC 5B–40.003(1)(a)). A permit is also required to transport for the purpose of sale, selling, or offering for sale any plant contained on the State's endangered plant list that is harvested from such person's own property (FAC 5B–40.003(1)(c)). The delisting of the Florida golden aster under the Act will not affect this State listing.

Several sites, consisting of thousands of plants, are now under county and State protection. Specifically, Hillsborough County has purchased considerable acreage through the Endangered Land Acquisition and Protection Program (ELAPP) that contains several large populations of Florida golden aster. In 1987, Hillsborough County passed the Environmentally Sensitive Lands Ordinance that established the foundation for ELAPP. This applies to nine populations on six sites in Hillsborough County. In 1990, this ordinance was amended and approved for another 20 years by increasing county taxes to allow additional funds to acquire conservation lands. In November 2008, voters approved the issuance of up to $200 million in bonds for additional purchases.

ELAPP has worked with the Southwest Florida Water Management District and Florida Forever to jointly fund the acquisition of lands. Some of this money is also used for ELAPP to actively manage their properties to benefit Florida golden aster. Therefore, we find that the existing regulatory mechanisms will provide sufficient protections to the species and habitat after delisting, especially on public lands with ordinance protection. Currently, 27 sites where the species occurs are subject to Florida State law. These State and local protections have proven effective. For example, prescribed burning will continue through the ELAPP. Although we acknowledge that this could change in the future, we do not anticipate any future changes to the implementation of these programs at this time.

Other Natural or Manmade Factors Affecting the Species' Continued Existence

Our analyses under the Act include consideration of ongoing and projected changes in climate. The terms ''climate'' and ''climate change'' are defined by the Intergovernmental Panel on Climate Change (IPCC). A recent compilation of climate change and its effects is available from reports of the IPCC (IPCC 2014, entire). The term ''climate change'' thus refers to a change in the mean or variability of one or more measures of climate (*e.g.,* temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (IPCC 2007, p. 78). Various types of changes in climate can have direct or indirect effects on species. These effects may be positive, neutral, or negative and they may change over time, depending on the species and other relevant considerations, such as the effects of interactions of climate with other variables (*e.g.,* habitat fragmentation) (IPCC 2007, pp. 8–14, 18–19). In our analyses, we use our expert judgment to weigh relevant information, including uncertainty, in our consideration of various aspects of climate change.

The IPCC concluded that the climate system is warming (Pachauri et al. 2014, entire). Effects associated with changes in climate have been observed, including changes in arctic temperatures and ice, widespread changes in precipitation amounts, ocean salinity, and wind patterns and aspects of extreme weather including droughts, heavy precipitation, heat waves, and the intensity of tropical cyclones (Pachauri et al. 2014, entire). Species that are dependent on specialized habitat types, limited in distribution, or at the extreme periphery of their range may be most susceptible to the impacts of climate change (Byers and Norris 2011, entire; Anacker et al. 2013, pp. 193–210). However, while continued change is certain, the magnitude and rate of change is unknown in many cases and could be affected by many factors (*e.g.,* weather circulation patterns).

According to the IPCC, most plant species cannot naturally shift their geographical ranges sufficiently fast to keep up with current and high projected rates of climate change on most landscapes (IPCC 2014, p. 13). Plant species with restricted ranges may experience population declines as a result of the effects of climate change. The concept of changing climate can be meaningfully assessed both by looking into the future and reviewing past changes.

Using the National Climate Change Viewer and using greenhouse gas emission scenario (representative concentration pathway (RCP) 8.5), we calculated projected annual mean changes from 1981–2010 to those projected for 2025–2049 for maximum temperature, precipitation, soil storage, and evaporative deficit in all counties where Florida golden aster occurs (Adler and Hostetler 2017, entire). We also calculated projected annual mean changes for a more conservative greenhouse gas emission scenario (RCP 4.5) using the same timeframes for maximum temperature, precipitation, soil storage, and evaporative deficit in all counties where Florida golden aster occurs (Adler and Hostetler 2017, entire). Based on these results, all 5 counties within the range of Florida golden aster will be subjected to higher temperatures (annual mean increase of 2.6 degrees Fahrenheit (°F) (RCP 4.5) or 2.9 °F (RCP 8.5)) and slightly higher precipitation (annual mean increase of 0.1 inch per month (RCP 4.5) or 0.2 inch per month (RCP 8.5)) in the period of 2025–2049 relative to the period of 1981–2010.

Additionally, climate change will likely influence Florida golden aster into the future by affecting habitat suitability and the ability to manage habitat with prescribed fire. Species that are dependent on specialized habitat types, limited in distribution (*e.g.,* Florida golden aster), or at the extreme periphery of their range may be most susceptible to the impacts of climate change (Byers and Norris 2011, entire; Anacker et al. 2013, pp. 193–210). There is evidence that some terrestrial plant populations have been able to adapt and respond to changing climatic conditions (Franks et al. 2014, pp. 123–139). Both plastic (phenotypic change such as leaf size or phenology) and evolutionary (shift in allelic frequencies) responses to changes in climate have been detected. Given enough time, plants can alter their ranges, resulting in range shifts, reductions, or increases (Kelly and Goulden 2008, pp. 11823–11826; Loarie et al. 2008, p. 2502).

The climate in the southeastern United States has warmed about 2 °F from a cool period in the 1960s and 1970s and is expected to continue to rise (Carter et al. 2014, pp. 396–417). Projections for future precipitation trends in the Southeast are less certain than those for temperature, but suggest that overall annual precipitation will decrease, and that tropical storms will occur less frequently, but with more force (*e.g.,* more category 4 and 5 hurricanes) than historical averages (Carter et al. 2014, pp. 396–417). Climatic changes, including sea level rise (SLR) and shifts in seasonal precipitation, temperature, and storm cycles, are projected to impact the southeastern United States over the next century. Under both lower and higher emissions scenarios, temperatures are expected to increase (Carter et al. 2018, pp. 751–752), and climate change is expected to intensify the hydrologic cycle and increase the frequency and severity of extreme events like drought and heavy rainfall (Carter et al. 2018, p. 775). Increases in evaporation of moisture from soils and loss of water by plants in response to warmer temperatures are expected to contribute to increased frequency, duration, and intensity of droughts. Local sea level rise impacts depend not only on how much the ocean level itself is increasing, but also on land subsidence and/or changes in offshore currents (Carter et al. 2014, pp. 396–417), and impacts on terrestrial ecosystems can occur via submergence of habitat during storm surges or permanently, saltwater intrusion into the water table, and erosion. Of the current populations of the Florida golden aster, only one (Fort De Soto County Park, Pinellas County) is directly vulnerable to inundation from 0.3 m of sea level rise, a reasonable estimate of sea level rise by 2050. Hotter and drier conditions in the future could lead to fewer days with optimal conditions for prescribed burning, which could lead to reduced habitat quality if land managers are unable to make up for the lack of burning with adequate mechanical treatment.

It is possible that there will be increases in the number of lightning strikes and sizes and severities of resulting fires, which could have a positive or negative effect on specific Florida golden aster populations. Hurricanes similarly could have positive or negative effects on the species. Prolonged flooding could harm populations, but the mechanical disturbance of trees being uprooted from flood events could improve habitat for colonizing species like the Florida golden aster (Menges and Johnson 2017, pers. comm.).

Other potential climate change effects include changes in temperature and precipitation. Projections for future precipitation trends in the Southeast are less certain than those for temperature but suggest that overall annual precipitation will decrease. Hotter and drier conditions may complicate the ability to manage Florida golden aster with prescribed fires. Some terrestrial plant populations have been able to adapt and respond to changing climatic conditions (Franks et al. 2014, entire). Both plastic (phenotypic change such as leaf size or phenology) and evolutionary (shift in allelic frequencies) responses to changes in climate have been detected. Both can occur rapidly and often simultaneously (Franks et al. 2014, entire). However, relatively few studies are available that (1) directly examine plant responses over time, (2) clearly demonstrate adaptation or the causal climatic driver of these responses, or (3) use quantitative methods to distinguish plastic versus evolutionary responses (Franks et al. 2014, entire).

As noted earlier, only one population (Fort De Soto County Park, Pinellas County) is directly vulnerable to inundation from 0.3 meters of sea level rise, a reasonable estimate of sea level rise by 2050. Hotter and drier conditions in the future could lead to fewer days with optimal conditions for prescribed burning, which could lead to reduced habitat quality if land managers are unable to make up for the lack of burning with adequate mechanical treatment. It is possible that there will be increases in the number of lightning strikes and sizes and severities of resulting wildfires, which could have a positive or negative effect on specific Florida golden aster populations. Hurricanes similarly could have positive or negative effects on the species. Prolonged flooding could harm populations, but the mechanical disturbance of trees being uprooted could improve habitat for colonizing species like Florida golden aster (Menges and Johnson 2017, pers. comm.). We have no additional information or data regarding effects of climate change with respect to Florida golden aster populations into the future; further research will be helpful to determine how this species responds directly to changes in temperature and water availability. However, from the known and forecasted information, we anticipate that effects to Florida golden aster from climate change will be limited and will not rise to the level of a threat.

Other influences not discussed in detail here, either because they are not thought to be a major threat or there is little information available, include invasive plant species like cogongrass (*Imperata cylindrica*), and future genetic consequences of small and/or translocated populations.

Synergistic Effects

Many of the stressors discussed in this analysis could work in concert with each other and result in a cumulative adverse effect to Florida golden aster, *e.g.,* one stressor may make the species more vulnerable to other threats.

Synergistic interactions are possible between effects of climate change and effects of other threats, such as mowing, dumping, off-road recreational vehicle use, and land clearing. However, we currently do not have information to determine the likely effects of climate change on interaction/competition between species, or on drought conditions. Uncertainty about how different plant species will respond under a changing climate makes projecting possible synergistic effects of climate change on Florida golden aster speculative. However, the increases documented in the number of populations since the species was listed do not indicate that cumulative effects of various activities and stressors are affecting the viability of the species at this time. Based on our analysis of future stressors, we do not anticipate that cumulative effects will affect the viability of the species in the foreseeable future. Likewise, climate change, as discussed above, with hotter and drier conditions can add additional complexity to future prescribed burns. Available habitat in those tracts that are easier to burn, or that can be managed by other methods (*e.g.,* mechanical manipulation), will be sufficient. Similarly, most of the potential stressors we identified either have not occurred to the extent originally anticipated at the time of listing or are adequately managed as described above. In addition, we do not anticipate significant stressors to increase on publicly owned lands or lands that are managed for the species.

Current Condition

Delineating Populations

For the SSA, we delineated populations using a 2-km separation distance rule based on species expert opinion, resulting in 30 populations across five counties. This strategy differs from the 1-km separation distance rule that was used in the most recent 5-year review, which was based on NatureServe's default criteria for defining plant populations (NatureServe 2004, entire). The team of species experts providing input on the SSA suspected that 1 km is likely an underestimate of the distance that gene flow can regularly occur via pollination. While the exact insect pollinators of the Florida golden aster are not known, studies on multiple bee species (major plant and *Chrysopsis* pollinators) demonstrate foraging distances that regularly exceed 1 km (Greenleaf et al. 2007, pp. 289–296; Hagler et al. 2011, p. 144).

Current Resiliency

Resiliency refers to the ability of populations to withstand stochastic events, whether demographic, environmental, or anthropogenic. Populations with low resiliency are highly vulnerable to stochastic events and face a high risk of extirpation within the next few decades. Populations with moderate resiliency are less likely to be extirpated within the next few decades, but require additional growth (with help of regular habitat management and/or restoration) to become more self-sustaining and resilient to stochastic events. Populations with high resiliency are unlikely to be extirpated within the next 30 years in the absence of catastrophes or significant declines in the quality of habitat management. Populations with very high resiliency are the most robust and resistant to stochastic fluctuations.

In the SSA, we assessed resiliency for each population using three factors: (1) population size, (2) habitat protection, and (3) area of available habitat. Other factors were considered that likely contribute to population resiliency, but data were not available to assess them over all or most of the populations including certain explicit measures of habitat quality, fire management, existence of land management plans, and population trends. While some past survey data are available for many populations, species experts did not feel comfortable comparing population counts across time periods. In many cases, differences in population sizes were likely not a result of increasing populations, but rather of differences in survey methodology, number of surveyors, and/or areas searched (*e.g.,* surveyors who were more likely to visit known patches and not find new patches; alternately, a bias toward larger counts over time as old patches are revisited and additional patches are found). Nevertheless, we are confident that these population data demonstrate resiliency of the species. Regardless, this species has not been extensively studied; therefore, there was some uncertainty in the SSA in precisely how these factors influenced Florida golden aster population resiliency.

Population Size

Population size is both a direct contributor to resiliency and an indirect indicator of resiliency. Small populations are more susceptible to demographic and environmental stochastic events than larger populations. Small populations are also more likely to suffer from decreased fitness because of low genetic diversity from inbreeding or genetic drift (Willi et al. 2005, pp. 2255–2265). For Florida golden aster, large populations are more buffered from the effects of prescribed burning or other disturbances, which are necessary to maintain open habitat but can temporarily reduce population sizes by killing plants. Indirectly, large population sizes are likely indicative of other conditions that contribute to population resiliency. For example, in the SSA, we did not have adequate data to assess habitat quality and the quality of management at all the Florida golden aster populations; therefore, we assumed large population sizes likely generally reflect good habitat quality and management (among other factors) compared to smaller populations, although this assumption may not hold in all cases.

We categorized populations into 4 size classes: fewer than 100 individuals, 100–500 individuals, 501–1,000 individuals, and more than 1,000 individuals. Each population size class was associated with one of the following baseline resiliency classes, respectively: low, moderate, high, and very high (explained further below).

We chose the population size threshold between high and very high resiliency of 1,000 individuals because it is the typical population size used to rank element occurrences as having ''excellent viability'' and likely to persist for the next 20–30 years (NatureServe 2008, entire). This is a generic population size limit that was not specifically tailored to Florida golden aster with empirical data. Further support for using 1,000 individuals as the threshold for the highest resiliency category came from a study of 10-year extirpation rates for populations of varying sizes of eight short-lived plant species in Germany (Matthies et al. 2004, pp. 481–488). In this study, for seven of eight species, the probability of population persistence increased with population size, and all populations of more than 1,000 individuals (flowering plants) persisted for the duration of the 10-year study.

We obtained the most recent size data for all 30 populations, with data collected as recently as 2018 for some populations, and none older than 2006 for any population. However, population sizes have undoubtedly changed since the most recent surveys, as populations fluctuate in response to management actions, time since management, environmental events, stochastic demographic processes, and so forth. Thus, the reported numbers reflect best available estimates for population sizes, rather than precise counts meant to represent actual current population sizes. According to the SSA report, population sizes include all plants counted, whether flowering or not. Survey data for some populations provide separate counts for each life stage, but for many populations, survey data are simply numbers with no information about whether that number was only flowering plants, or all plants (Service 2018, p. 22). Using total plant numbers, and assuming that ambiguous counts are minimum counts of total plants in each population, we were conservative in our population counts. The alternative of assuming that ambiguous counts are of only flowering adult plants, when they may include basal rosettes, would inflate population sizes in cases where the assumption was wrong.

Habitat Protection

Habitat was considered ''protected'' if it was acquired in fee simple and placed into long-term conservation by a nongovernmental, local, State, or Federal entity, or if there is a binding land agreement. Protected sites have management plans developed and being implemented. The effect of the degree of habitat protection on resiliency is discussed below.

Habitat Area Available

Florida golden aster population sizes fluctuate and can occur in high densities in small patches of habitat. However, as a general rule of thumb for a given population size, a population covering a large area will be more resilient than a population covering a small area. A perturbation of the same size will have a proportionally larger effect on small-area populations than large-area populations. In assessing population resiliency, we considered the amount of habitat available rather than the amount of habitat occupied for two reasons. First, the amount of area occupied was very uncertain for most populations. Surveys are likely to return to known patches of the Florida golden aster, but new patches can be easily missed, and it is likely that the data we have underestimates the true amount of area occupied by the Florida golden aster. Adding to the uncertainty, the most current spatial data for some populations comes from 2006, and may no longer reflect the current distribution at those sites. Second, population footprints are not always static across available habitat; the Florida golden aster can spread into unoccupied areas as populations grow, or shift across a landscape as different areas become more or less suitable or both. For this reason, we used the amount of habitat available for populations to occupy currently, grow into, or shift into as a factor contributing to population resiliency. We identified available habitat within a 2-km radius around known occurrences, consistent with the assumption we made about pollinator movement when delineating populations. We characterize the available habitat for populations as small or large, with 14.2 hectares as the threshold between the two groups. This value was selected based on natural breaks in the data and expert input.

Classifying Resiliency Based on the Selected Factors

Resiliency classes were based primarily on population size as described above, with four resiliency classes corresponding to four population size categories. Populations with fewer than 100 individuals were determined to have low resiliency. Within the three higher population size categories (100–500, 501–1,000, and more than 1,000 plants), populations were assigned a baseline resiliency score associated with their population size (moderate, high, or very high, respectively). This baseline score could then be lowered by either of the two other factors, habitat protection and habitat area available; see table 1 below.

TABLE 1—STRATEGY FOR ASSIGNING CURRENT RESILIENCY SCORES TO POPULATIONS OF C. FLORIDANA

Population size (# plants)	Habitat protected	Habitat not protected	Habitat area available
<100	Low		Small.
			Large.
100–500	Low	Low	Small.
	Moderate	Low	Large.
501–1,000	Moderate	Moderate	Small.
	High	Moderate	Large.
>1,000	High	High	Small.
	Very High	High	Large.

Populations that occur on non-protected lands were assigned to the resiliency class one step lower than they would if they were on protected lands. By doing this, we did not intend to discount the importance of populations on non-protected lands to the viability of the species or imply that owners of these parcels are managing the land poorly or are harming the Florida golden aster. Large populations of Florida golden aster can be supported on private lands. For example, when private landowners burn pasture to improve forage for cattle, they may improve habitat for Florida golden aster. However, even large populations of fire-adapted scrub plants can rapidly decline due to poor management (*e.g., Polygal lewtonii,* Weekley and Menges 2012, entire; *Warea carteri,* Quintana-Ascenscio et al. 2011, entire), and private lands that are not protected for conservation are at higher risk of changes in management or land use that could harm Florida golden aster populations. For populations that extend across property boundaries and contain individuals occurring on both protected and non-protected lands, we used the protection status that applied to most individuals to classify the entire population.

Populations occupying or surrounded by a small area of available habitat were assigned to the resiliency class one step lower than they would otherwise be assigned if they existed within a larger area of available habitat, as they are less able to withstand and recover from perturbations or shift across a landscape as habitat quality changes. For any populations experiencing both resiliency-reducing conditions (small habitat area on non-protected lands), the resiliency score was only reduced one step rather than being reduced twice (*i.e.,* once for each condition). The Duette populations were the most recently introduced populations. They have been growing rapidly and are surrounded by ample habitat and little to no development; therefore, these two populations were projected to increase from high to very high resiliency.

Summaries of the 30 delineated populations and their resiliency scores can be found in the SSA report (Service 2018, p. 32) and in table 2, below. In conclusion, resiliency scores remained stable.

TABLE 2—SUMMARY OF CURRENT RESILIENCY SCORES BY PROTECTED STATUS FOR FLORIDA GOLDEN ASTER

Resiliency class	All populations	Protected	Not protected
Very High	7	7	0
High	11	10	1
Moderate	6	5	1
Low	6	3	3

Current Redundancy and Representation

Redundancy for Florida golden aster is naturally low because it is an endemic species with a narrow range in Florida around the Tampa Bay region and Hardee County farther inland (with one population just across the border in Highlands County). The entire species' range spans five counties, with half of the populations occurring in Hillsborough County (see figure 2, below). The longest distance between two populations is 131 km. However, as this is a narrow-ranging endemic, the spatial distribution of populations across its range does confer a moderate amount of redundancy, defined as the ability of the species to withstand catastrophic events. Catastrophic events could include, among others, fires occurring too frequently, droughts, disease outbreaks, or hurricanes with prolonged flooding, each of which have impacts at a different spatial scale. No information is known about seedbank resiliency in the soil for this species; without knowing this, it is difficult to predict long-term impacts of catastrophes.

The 30 known populations are distributed in three main groupings. There are about 20–30 km between each of the groupings, providing a buffer around each that may protect them from catastrophic events affecting the others (*e.g.,* disease outbreak, depending on transmission type and vectors). Within each geographic cluster, there are at least two highly or very highly resilient populations, which could serve as sources to naturally recolonize populations lost to catastrophic events. The Hardee-Highlands cluster has the lowest redundancy (two moderately resilient populations, six populations total) and is the most isolated from the other clusters. The Pinellas cluster has the next lowest redundancy of resilient populations (3 highly resilient populations, 4 populations total), and the Hillsborough-Manatee cluster has the highest redundancy (13 resilient populations, 20 populations total); see figure 2 below. Another factor contributing to redundancy is the wide range of property ownership; with so many managing entities, the species is buffered against poor management of any one entity (*e.g.,* due to budget issues or changing priorities). Based on the spatial distribution of resilient populations managed by a variety of entities across a narrow range, current redundancy is considered qualitatively to be low to moderate. Rather than solely relying on this rather subjective classification in assessing the current viability of the species, characterizing current redundancy is most useful in comparison to redundancy under the future scenarios; see Future Conditions discussion below.

FIGURE 2. Spatial distribution of Florida golden aster populations in three main geographic clusters across five counties in Florida. The number of populations with high and very high resiliency is shown within each cluster.

Representative units for this species could not be defined based on available data, with representation defined as the ability of the species to adapt to changing environmental conditions. Species experts contributing to the SSA suspect that there might be representative units with different genetic adaptations associated with soil differences, elevation above the water table, fire regime, or habitat structure. However, there are no data currently to confirm or refute these hypotheses. Genetic studies have found little to no genetic clustering among populations, with 80 percent of observed genetic variation occurring within populations, and only 20 percent of the variation attributable to between-population differences (Markham 1998, p. 41). These results support the existence of a single representative unit for the species. However, that study did not examine genetic markers known to be associated with adaptive traits. Vital rates and morphology were observed to differ between individuals from different source populations that were grown at Bok Tower Gardens and introduced to other sites (Campbell 2008, entire). This observation provides evidence that there might be adaptive differences between different ''types'' of the Florida golden aster across the species' range. However, without any firm evidence to define representative units, we refrain from doing so here. Future research on the Florida golden aster's genetics, life history, and habitat differences can provide a more definitive basis for defining representative units in future iterations of the SSA report.

Future Conditions

Analytical Framework

For the SSA report, we developed three plausible future scenarios under which to capture the breadth of all likely future variability and assess the future viability of Florida golden aster in terms of resiliency, redundancy, and representation. Based on expert opinion, the lifespan of the Florida golden aster, ideal fire-return intervals (at least every 10 years), uncertainty about future conditions, and lack of knowledge about certain aspects of Florida golden aster ecology, we chose to project populations 20 years into the future under each scenario, although some of these projections could be reasonably expected to continue for some time after the 20 years. With approximately 30 years of real data and trends, we project that the same trends will continue. The three hypothetical future scenarios are Status Quo, Pessimistic, and Targeted Conservation.

In considering development as a threat, we used the SLEUTH (Slope, Land use, Excluded, Urban, Transportation and Hillshade; Jantz et al. 2010, p. 34:1–16) data sets from the years 2020 (closest to current year) and 2040 (closest to 20 years in the future), and examined the area predicted, with at least 80 percent probability, to be urbanized. Therefore, our assessment was both quantitative, calculating the area within the 5-km buffer surrounding each population that was urbanized at each time point, and qualitative, inspecting the distribution of urbanization and major roads within that area (*e.g.,* is the urbanization concentrated to one side of the population or surrounding it).

With both the quantitative and qualitative assessments, we categorized populations as having either low risk or high risk of development impacting management for Florida golden aster. We defined high risk of impacting management as greater than 50 percent chance of negatively impacting management, and less than 50 percent for low risk. Populations classified as having low risk from development averaged 7.9 percent developed area within the 5-km buffer by 2040, with a range of 0 to 39 percent developed. Populations classified as having high risk from development averaged 45.5 percent developed area within the same buffer, ranging from 23 to 85 percent. For three populations with a percent of developed area in the overlapping range between the two categories (23 to 39 percent developed), the deciding factor between low risk and high risk was the distribution of development and roads around the population.

Habitat Quantity

Habitat quantity can be negatively impacted by development or land use change (particularly on private lands) or positively impacted by land acquisition, restoration, and introductions into unoccupied sites that already have presumably suitable habitat.

Habitat Quality

Habitat quality is closely tied to active habitat management to maintain openness either by prescribed burning or by other types of management. In constructing our scenarios, we considered two avenues by which future habitat management can be influenced: (1) the level of habitat management effort and (2) the amount and type of development near the Florida golden aster populations (to the extent the development affects the ability to conduct management actions, such as prescribed burns). First, the managing entities can choose their desired level of management effort by implementing (or not) a management plan or by allocating funding or personnel to or away from habitat management among competing priorities and limited resources. For our scenarios, we allowed for three levels of habitat management effort by managing entities. The first was management for stability, a moderate level of management that would be expected to maintain populations at their current size. The other two management levels were an increase, or a decrease, compared to management for stability. An increase in management effort would be expected to grow populations, while a decrease in management would be expected to result in population declines.

The second avenue by which future habitat management can be influenced is development, particularly major roads and types of development associated with ''vulnerable'' human populations (*e.g.,* schools, hospitals). This kind of development surrounding habitat limits management via prescribed burns by limiting the days that burns can take place—weather conditions must align to ensure proper smoke management. For example, if a population is surrounded by nearby development to the north and west, it can only be burned when the wind is blowing to the south and east. As more development surrounds populations, there is less flexibility for prescribed burns. However, the appropriate radius around populations within which development might impact management ranges from 0.8 km up to 8.0 km as the appropriate radius depends on a variety of factors for each burn, including the type of development, temperature, humidity, wind conditions, size of the planned burn, risk tolerance of those implementing the burn, and other factors. For the SSA, we chose an intermediate value, 5 km, in which to examine current and predicted future development. In choosing this concrete value, we acknowledged that this number is quite variable, and some burns will need to consider areas greater or less than 5 km away, but this value allowed us to gain a general understanding of the risks of development on managing surrounding populations.

Within a 5-km radius around the Florida golden aster occurrences, we used geographic information systems (GIS) to examine current and projected urbanization and roads. Urbanization data came from the SLEUTH model, and road data were available from the

Florida Department of Transportation. The SLEUTH model has previously been used to predict probabilities of urbanization across the southeastern United States in 10-year increments, and the resulting GIS data are freely available (Belyea and Terrando 2013, entire). For our 20-year future projection, we used the SLEUTH data sets from the years 2020 and 2040, and examined the area predicted, with at least 80 percent probability, to be urbanized. Our assessment was both quantitative, calculating the area within the 5-km buffer surrounding each population that was urbanized at each time point, and qualitative, inspecting the distribution of urbanization and major roads within that area (*e.g.,* is the urbanization concentrated to one side of the population or surrounding it?). With this quantitative and qualitative assessment, we categorized populations as having either a low risk or a high risk of development impacting the ability to manage the population.

These two aspects of future management, (1) management resources and willingness of the entity to manage, and (2) impacts of surrounding development on management, interacted in our future scenarios in the following way: with decreases in management effort (compared to management for stable populations), population resiliency decreased one level. With management for stability, population resiliency stayed the same as the current condition resiliency when there was low risk of development impacts; but where there was a high risk, resiliency decreased one level, reflecting that management will be more challenging with higher risk from development. With increases in management effort, population resiliency increased when there was low risk of development impacts, but stayed the same when there was a high risk; the increased management effort canceled out the increased risk caused by development.

Future Scenarios

Status Quo

Under the Status Quo scenario, no new protected areas were acquired and no new populations were introduced. Management efforts for all populations were maintained at current levels, assuming that the ability to manage would not be hampered climate change or other factors. This scenario also assumes that conservation commitments outlined in management plans currently being implemented will continue. Of the introductions since 2008, all have more than 1,000 plants except for the two populations at Duette Preserve (North and South).

Pessimistic

Under the Pessimistic scenario, management effort on all populations decreased, resulting in a drop in resiliency scores across the board. Additionally, based on uncertainty in whether populations on non-protected lands would continue to be managed in a way that is compatible with continued Florida golden aster persistence, in this scenario all populations on non-protected lands were assumed to be lost due to presumed land use or management change. As with the Status Quo scenario, no new protected areas were acquired, and no new populations were introduced.

Targeted Conservation

Under the Targeted Conservation scenario, populations with high and very high resiliency were managed to maintain their rank. In cases where populations had a high risk of development limiting the ability to manage, this goal involved an increase in management effort compared to what would be needed to maintain the same level of resiliency for a population with a low risk of development impacts. Populations with currently moderate resiliency on protected lands received management effort increases to either move them into the high resiliency class (low risk from development) or maintain moderate resiliency (high risk from development). Conservation resources were steered towards maintaining and growing these larger populations, and not as much towards rescuing populations that currently have low resiliency. Additionally, five new sites were selected across the species' range in which to introduce new populations, thus improving species redundancy.

Likelihood of Scenarios

Of these three scenarios, the Status Quo scenario is the most likely to occur, although the Targeted Conservation scenario represents a likely future if both habitat-focused management (prescribed burning and mechanical or manual habitat management) by a variety of partners/managing entities and species-specific conservation (captive propagation and introductions) are prioritized and well-funded. The Pessimistic scenario was unlikely; given that Florida golden aster populations span so many different ownerships, it is unlikely that all the different managing entities will develop the land especially when there are other co-occurring endangered, threatened, and candidate species occupying the same habitat (*e.g.,* Florida scrub-jay, *Aphelocoma coerulescens;* eastern indigo snake, *Drymarchon couperi;*. The Targeted Conservation scenario was not likely with current conservation resources but, as noted above, could reflect a likely future if the needed management and conservation actions are prioritized and well-funded.

Future Resiliency

Future (20 years) resiliency of Florida golden aster populations under three scenarios is summarized in the SSA report (Service 2018, p. 49), and is presented below in table 3. As implied by the scenario name, resiliency of populations under the Pessimistic scenario was predicted to be poor, with only 7 highly resilient populations, a decrease from 18 currently highly or very highly resilient populations. Under the Status Quo scenario, we expect resiliency to drop to 12 highly or very highly resilient populations due solely to the effect of development limiting the ability to adequately manage habitat. Under the Targeted Management scenario, focused management and conservation efforts to counteract detrimental effects of urbanization, the growth of existing populations, and the introduction of new populations are expected to result in significant gains in resilient populations, with an increase from 18 to 27 highly or very highly resilient populations expected highly or very highly resilient populations.

TABLE 3—SUMMARY OF RESILIENCY SCORES TALLIED ACROSS ALL POPULATIONS OF FLORIDA GOLDEN ASTER FOR THE CURRENT CONDITION AND FUTURE CONDITION UNDER THREE HYPOTHETICAL SCENARIOS: STATUS QUO, PESSIMISTIC, AND TARGETED CONSERVATION

Resiliency class	Current	Status quo	Pessimistic	Targeted conservation
Very High	7	4	0	9
High	11	8	7	18
Moderate	6	11	11	2
Low	6	3	5	2
Likely Extirpated	0	4	7	4

Future Redundancy and Representation

Redundancy 20 years in the future was expected to decrease compared to current condition under the Status Quo and Pessimistic Scenarios. In all scenarios, the majority of highly and very highly resilient populations were found in Hillsborough and Manatee Counties. All redundancy of highly resilient populations in Pinellas County and the Hardee and Highlands Counties cluster is lost under the Pessimistic scenario. In the Status Quo scenario, where drops in resiliency were due to development risks to management, no highly resilient populations remained in the heavily urbanized Pinellas County. Even in the Targeted Conservation scenario, redundancy within Pinellas County did not improve, but both the number and distribution of highly resilient populations in the other two clusters did improve. We did not assess representation in the future due to a present lack of information needed to delineate representative units.

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have analyzed the cumulative effects of identified threats and conservation actions on the species. To assess the current and future condition of the species, we evaluate the effects of all the relevant factors that may be influencing the species, including threats and conservation efforts. Because the SSA framework considers not just the presence of the factors, but to what degree they collectively influence risk to the entire species, our assessment integrates the cumulative effects of the factors and replaces a standalone cumulative-effects analysis.

Conservation Efforts and Regulatory Mechanisms

The Florida Administrative Code 5B–40 (Preservation of Native Flora of Florida) provides the Florida Department of Agriculture and Consumer Services (FDACS) limited authority to protect plants on State and private lands (primarily from the standpoint of illegal harvest). Florida golden aster is listed as an Endangered Plant under this statute, which requires anyone wishing to ''willfully harvest, collect, pick, remove, injure, or destroy any plant listed as endangered growing on the private land of another or on any public land or water'' to ''obtain the written permission of the owner of the land or water or his legal representative'' (FAC 5B–40.003(1)(a)). A permit is also required to transport ''for the purpose of sale, selling, or offering for sale any plant contained on the endangered plant list which is harvested from such person's own property'' (FAC 5B–40.003(1)(c)).

There are now several sites and thousands of plants under county and State protection. Specifically, Hillsborough County has purchased considerable acreage through the Endangered Land Acquisition and Protection Program that contain several large populations. Golden aster is also documented at Lake Manatee State Recreation Area and Little Manatee River State Park in Manatee and Hillsborough Counties. Currently, 27 sites where the species occurs are subject to State laws.

Determination of Florida Golden Aster's Status

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of an endangered species or a threatened species. The Act defines an endangered species as a species that is in danger of extinction throughout all or a significant portion of its range, and a threatened species as a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether a species meets the definition of an endangered species or a threatened species because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence.

Status Throughout All of Its Range

After evaluating threats to the species and assessing the cumulative effect of the threats under the Act's section 4(a)(1) factors, we find that the present or threatened destruction, modification, or curtailment of Florida golden aster habitat (Factor A), which was the basis for listing the species, is no longer a threat. At the time of listing, Florida golden aster was thought to persist only in Hillsborough County. Now, the species is known to occur in four additional counties: Hardee, Highlands, Mantee, and Pinellas Counties. While destruction and modification of habitat is still the primary threat to the species, the magnitude of this threat has been greatly reduced since listing. Further, the number of populations has increased. Under the recovery plan for the species, delisting could be considered if 20 populations were secured. The number of known extant populations has increased from 9 in 1986 to 30 in 2017 because of additional surveys, habitat restoration, and outplanting within the historical range of the species. Of those 30 populations, 25 populations are located on protected conservation lands, and 22 of those 25 populations have been determined to have at least moderate resiliency. We expect current levels of management to continue these conservation lands at these locations, and we anticipate the number of individuals within the populations to increase.

For the determination of whether the species is likely be become endangered within the foreseeable future throughout all its range, and thus meet the Act's definition of a threatened species, we considered the ''foreseeable future'' to be 20 years into the future under the three hypothetical future scenarios. Our SLEUTH tool projected future possible development to 20 years, NatureServ considers large population sizes likely to persist over the next 20–30 years, and considerations of climate change make projections beyond 20 to 30 years much more speculative. Also, given the average lifespan of the species (approximately 3–5 years), a period of 20 to 30 years allows for multiple generations and detection of any population changes. Under all three scenarios evaluated, the Florida golden aster is expected to continue to persist across its currently known range. Under the Status Quo scenario, which is also the most likely to occur, 12 populations are projected to be highly or very highly resiliency and 11 moderately resilient across all three geographic clusters, as habitat modification is no longer a threat for the populations on protected lands and current management of those lands is expected to continue. Four populations (three natural and one introduced) currently in low condition are projected to become extirpated in the Status Quo scenario. Even under the Pessimistic scenario, which is least likely to occur, 7 populations are projected to be in high condition and 11 in moderate condition, all of which occur on protected lands with conservation management expected to continue at some level. Given that most populations projected to remain extant with at least moderate resiliency are on protected lands managed for scrub habitat, it is unlikely the species will become endangered within the foreseeable future throughout all its range. Thus, after assessing the best available information, we conclude that the Florida golden aster is not in danger of extinction now or likely to become so within the foreseeable future throughout all its range.

Status Throughout a Significant Portion of Its Range

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so within the foreseeable future throughout all or a significant portion of its range. Having determined that the Florida golden aster is not in danger of extinction or likely to become so within the foreseeable future throughout all of its range, we now consider whether it may be in danger of extinction or likely to become so within the foreseeable future in a significant portion of its range—that is, whether there is any portion of the species' range for which it is true that both (1) the portion is significant, and (2) the species is in danger of extinction now or likely to become so within the foreseeable future in that portion. Depending on the case, it might be more efficient for us to address the ''significance'' question or the ''status'' question first. We can choose to address either question first. Regardless of which question we address first, if we reach a negative answer with respect to the first question that we address, we do not need to evaluate the other question for that portion of the species' range.

For Florida golden aster, we chose to evaluate the status question first. We began by identifying portions of the range where the biological status of the species may be different from its biological status elsewhere in its range. For this purpose, we considered information pertaining to the geographic distribution of individuals of the species, the threats that the species faces, and the resiliency condition of populations.

We evaluated the range of the Florida golden aster to determine if the species is in danger of extinction now or likely to become so within the foreseeable future in any portion of its range. The range of a species can theoretically be divided into portions in an infinite number of ways. We focused our analysis on portions of the species' range that may meet the Act's definition of an endangered species or a threatened species. For the Florida golden aster, we considered whether the threats or their effects on the species are greater in any biologically meaningful portion of the species' range than in other portions such that the species is in danger of extinction now or likely to become so within the foreseeable future in that portion.

We examined the following threats: development and climate change, including cumulative effects. Currently, there are 30 known extant Florida golden aster populations occurring in five counties (Hillsborough, Manatee, Pinellas, Highlands, and Hardee Counties), with 25 of these populations occurring on conservation lands (Federal, State, and conservation easements). Climate change, as discussed above, is uniformly acting upon the species across its range, except for sea level rise, which would only potentially affect one population at Fort De Soto County Park in Pinellas County. As this would potentially impact just a single population out of 30 populations, we do not consider this concentration of threats to be at a biologically meaningful scale.

Although development is currently concentrated in Pinellas County, that activity would negatively impact in the foreseeable future only five populations that occur on private lands or along roadways or railroad lines. However, two of these populations have high and moderate resiliency (the remaining three populations have low resiliency), and this pattern will continue in the future. The Pinellas County populations are currently in low condition, and some may become extirpated within the foreseeable future due to development. Therefore, our examination leads us to find that there is substantial information that the Pinellas County populations may become in danger of extinction within the foreseeable future.

We then proceeded to consider whether this portion of the range (*i.e.,* the Pinellas County populations) is significant. For the purposes of this analysis, the Service is considering significant portions of the range by applying any reasonable definition of ''significant.'' We assessed whether any portions of the range may be biologically meaningful in terms of the resiliency, redundancy, or representation of the entity being evaluated. This approach is consistent with the Act, our implementing regulations, our policies, and case law.

Currently, the Pinellas County populations represent a small portion (less than 10 percent based on current extant populations) of the species' range, which is not a large geographic area relative to the range of the species. Further, these populations were all introduced after listing (*i.e.,* they are not naturally occurring populations) and are not contributing much to the viability of the species. This portion does not contribute high-quality habitat or constitute high-value habitat for the species. In addition, this portion does not constitute an area of habitat that is essential to a specific life-history function for the species that is not found in the remainder of the range. Therefore, this area does not represent a significant portion of the species' range.

Accordingly, we find that the Florida golden aster is not in danger of extinction now or likely to become so within the foreseeable future in any significant portion of its range. This does not conflict with the courts' holdings in *Desert Survivors* v. *Department of the Interior,* 321 F. Supp. 3d 1011, 1070–74 (N.D. Cal. 2018), and *Center for Biological Diversity* v. *Jewell,* 248 F. Supp. 3d 946, 959 (D. Ariz. 2017) because, in reaching this conclusion, we did not apply the aspects of the Final Policy on Interpretation of the Phrase ''Significant Portion of Its Range'' in the Endangered Species Act's Definitions of ''Endangered Species'' and ''Threatened Species'' (79 FR 37578; July 1, 2014), including the definition of ''significant,'' that those court decisions held to be invalid.

Determination of Status

Our review of the best available scientific and commercial data available indicates that the Florida golden aster does not meet the definition of an endangered species or a threatened species in accordance with sections 3(6) and 3(20) of the Act. In accordance with our regulations at 50 CFR 424.11(e)(2) currently in effect, Florida golden aster does not meet the definition of an endangered or threated species. Therefore, we are removing the Florida golden aster from the List of Endangered and Threatened Plants.

Effects of This Final Rule

This final rule revises 50 CFR 17.12(h) by removing the Florida golden aster from the Federal List of Endangered and Threatened Plants. On the effective date of this rule (see DATES, above), the prohibitions and conservation measures provided by the Act, particularly through sections 7 and 9, will no longer apply to the Florida golden aster. Federal agencies will no longer be required to consult with the Service under section 7 of the Act if activities they authorize, fund, or carry out may affect the Florida golden aster. There is no critical habitat designated for this species, so this rule does not affect 50 CFR 17.96.

Post-Delisting Monitoring

Section 4(g)(1) of the Act requires us, in cooperation with the States, to implement a monitoring program for not less than 5 years for all species that have been recovered. Post-delisting monitoring (PDM) refers to activities undertaken to verify that a species delisted due to recovery remains secure from the risk of extinction after the protections of the Act no longer apply. The primary goal of PDM is to monitor the species to ensure that its status does not deteriorate, and if a decline is detected, to take measures to halt the decline so that proposing it as an endangered or threatened species is not again needed. If at any time during the monitoring period, data indicate that protective status under the Act should be reinstated, we can initiate listing procedures, including, if appropriate, emergency listing.

We have prepared a PDM plan for Florida golden aster. The PDM plan: (1) summarizes the status of Florida golden aster at the time of proposed delisting; (2) describes frequency and duration of monitoring; (3) discusses monitoring methods and potential sampling regimes; (4) defines what potential triggers will be evaluated to address the need for additional monitoring; (5) outlines reporting requirements and procedures; (6) proposes a schedule for implementing the PDM plan; and (7) defines responsibilities.

We made the draft PDM plan available for public comments with the proposed rule published on June 24, 2021 (86 FR 33177). We did not receive any comments on the draft PDM plan; therefore, we are adopting the draft plan as the final plan. The final PDM plan for the species can be found at *https://www.regulations.gov* under Docket No. FWS–R4–ES–2019–0071. It is our intent to work closely with our partners towards maintaining the recovered status of the Florida golden aster.

Required Determinations

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994(Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretary's Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes. We have determined that no Tribes will be affected by this final rule because no Tribal lands, sacred sites, or resources will be affected by the removal of the Florida golden aster from the List of Endangered and Threatened Plants.

References Cited

A complete list of references cited is available on the internet at *https://www.regulations.gov* under Docket No. FWS–R4–ES–2019–0071 and upon request from the Florida Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**, above).

Authors

The primary authors of this final rule are staff members of the Service's Species Assessment Team and the Florida Ecological Services Field Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Plants, Reporting and recordkeeping requirements, Transportation, Wildlife.

Regulation Promulgation

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

§ 17.12 [Amended]

■ 2. In § 17.12, in paragraph (h), amend the List of Endangered and Threatened Plants by removing the entry for ''*Chrysopsis floridana*'' under FLOWERING PLANTS.

Stephen Guertin,

Acting Director, U.S. Fish and Wildlife Service.

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