

Pink Redstem (*Ammannia latifolia*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, July 2024

Revised, February 2025

Web Version, 7/29/2025

Organism Type: Flowering Plant

Overall Risk Assessment Category: Uncertain



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1 Native Range and Status in the United States

Native Range

From POWO (2024):

“The native range of this species is New Jersey to Tropical & Subtropical America.”

According to POWO (2024), *Ammannia latifolia* is native to the following areas: Argentina (Northeast, Northwest), Bahamas, Bolivia, Brazil (Northeast, Southeast), Cayman Islands, Colombia, Cuba, Dominican Republic, Ecuador, French Guiana, Haiti, Jamaica, Lesser Antilles (including Trinidad and Tobago, the Venezuelan Antilles, and the former Netherlands Antilles),

Mexico (Northeast, Southeast), Panamá, Peru, Turks and Caicos Islands, United States (Alabama, Florida, Georgia, Louisiana, Maryland, Mississippi, New Jersey, North Carolina, Puerto Rico, South Carolina, Texas, Virginia) and Venezuela.

Status in the United States

According to POWO (2024), *Ammannia latifolia* is native to Alabama, Florida, Georgia, Louisiana, Maryland, Mississippi, New Jersey, North Carolina, Puerto Rico, South Carolina, Texas, and Virginia.

From Graham (1985):

“[...] distributed in brackish to fresh-water marshes and ditches along the Atlantic and Gulf coasts from New Jersey southward to Florida, west to Texas, [...]”

No records of *Ammannia latifolia* in trade in the United States were found.

Regulations

No species-specific regulations on possession or trade were found within the United States.

Means of Introductions within the United States

No records were found of *Ammannia latifolia* introduced outside its native range in the United States.

Remarks

From Graham (1985):

“The species is not present in California; specimens so identified are *A. coccinea*.”

From Dodds (2022):

“[...] is critically imperiled (very high risk of extinction) in two states [New Jersey and North Carolina], imperiled (high risk of extinction) in one state [Maryland], vulnerable (moderate risk of extinction) in one state [Alabama], apparently secure in one state [Virginia], and unranked in five states [Texas, Louisiana, Mississippi, Georgia, and Florida]. LeGrande et al. (2022) indicated that the North Carolina state rank was a mismatch with its actual abundance, suggesting instead that a rank of vulnerable would be more appropriate.”

Ammannia latifolia is also known commonly as Pink Redstem and Koehn's Toothcup (Dodds 2022). Online database and literature searches were conducted using both the valid scientific name and common names.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2024):

Kingdom Plantae
Subkingdom Viridiplantae
Infrakingdom Streptophyta
Superdivision Embryophyta
Division Tracheophyta
Subdivision Spermatophytina
Class Magnoliopsida
Superorder Rosanae
Order Myrtales
Family Lythraceae
Genus *Ammannia*
Species *Ammannia latifolia* L.

According to WFO (2024), *Ammannia latifolia* L. is the current accepted name for this species.

Size, Weight, and Age Range

From WFO (2024):

“Erect, glabrous subshrub to 1 m tall; [...]”

From USDA, NRCS (2024):

“Duration: Annual”

Environment

From WFO (2024):

“*Ammannia latifolia* grows in freshwater wetlands including Sabal palmetto areas.”

From Dodds (2022):

“*Ammannia latifolia* is an obligate wetland species, meaning that it almost always occurs in wetlands (U. S. Army Corps of Engineers 2020).”

“*Ammannia latifolia* occurs in both freshwater and saltwater sites and can adapt to a wide range of salinity levels (Graham et al. 2021); a salinity tolerance of up to 10.0 parts per trillion has been reported (Les 2017). The species may occur in tidal and nontidal marshes, ditches, shorelines, wet forest edges, and other open, wet places at elevations up to 28 meters (Tiner 2009, Weakley 2015, Les 2017). Substrates may include marl, peat, sand, or sandy muck (Les 2017). In New Jersey, Snyder (1994) found *A. latifolia* growing in a brackish tidal marsh on bare

mud covered with 1–2 inches of water and noted that the plants were most likely to be encountered in areas with open, low vegetation.”

Climate

From POWO (2024):

“[...] Tropical & Subtropical [...] grows primarily in the seasonally dry tropical biome.”

Distribution Outside the United States

Native

From POWO (2024):

“[...] Tropical & Subtropical America.”

According to POWO (2024), *Ammannia latifolia* is native to the following areas: Argentina (Northeast, Northwest), Bahamas, Bolivia, Brazil (Northeast, Southeast), Cayman Islands, Colombia, Cuba, Dominican Republic, Ecuador, French Guiana, Haiti, Jamaica, Lesser Antilles (including Trinidad and Tobago, the Venezuelan Antilles, and the former Netherlands Antilles), Mexico (Northeast, Southeast), Panamá, Peru, Turks and Caicos Islands, and Venezuela.

Part of the native range of this species is within the United States; see section 1 for a complete description of the native range.

Introduced

From POWO (2024):

“Introduced into: Chile Central, Morocco”

Castro et al. (2005) report *A. latifolia* as naturalized in a single administrative region in Chile, with the first record in the country occurring in 1992.

Means of Introduction Outside the United States

No information was found on means of introduction of *Ammonnia latifolia* outside the United States.

Short Description

From Graham (1985):

“*Ammannia latifolia* is a robust, erect, sparsely branched species in which the flowers are short styled, sessile, and usually three in each axil, with petals lacking or one to four. Broad calyx lobes with minute, mucronate apices are distinctive.”

“Petalous and apetalous plants are found throughout most of the range [...] Although all specimens collected north of approximately 28°30'N latitude in the eastern United States have petals, 24 percent of the collections studied from south of that latitude also have them [...].”

From Dodds (2022):

“*Ammannia latifolia* (Koehn's Toothcup or Pink Redstem) is a smooth, erect annual herb with green or reddish stems. The leaves are paired, and those along the upper portion of the stem have a clasping base although the lower leaves are often simply tapering and sessile or short-stalked. The inconspicuous flowers are tucked in the leaf axils in small clusters of 2–10 (usually 3) and may have 0–4 petals. When petals are present, they are small (1 mm) and white or pinkish and their presence is fleeting: Snyder (1994) noted that they can be dislodged with just a touch. The flowers and fruits bear short (0.5 mm), thick styles that are notably shorter than the ovaries.”

Biology

From Dodds (2022):

“[...] may flower from July through September.”

“The morphology of *A. latifolia* flowers facilitates self-fertilization [...] No reports of cross-fertilization were found for the species.”

“The capsules of *Ammannia latifolia* contain numerous of small seeds (Les 2017), and *Ammannia* species in the western hemisphere typically produce an average of 250 seeds per capsule (Graham 1985).”

“*Ammannia latifolia* seeds can either germinate rapidly or remain in the soil until conditions are favorable, but the factors that determine the trajectory of an individual seed are unclear.”

“In Louisiana, *Ammannia latifolia* was present in the seed bank of communities dominated by *Paspalum vaginatum* and *Spartina patens*, particularly the latter, but absent from those dominated by *Sagittaria lancifolia* (Baldwin et al. 1996). [...] In a salt marsh community where *Ammannia latifolia* was abundant in the seed bank but rare in the vegetation, experimental removal of the extant *Spartina*-dominated cover promoted the establishment of *A. latifolia* (Baldwin and Mendelssohn 1998).”

Human Uses

From Upadhyay (2018):

“The plants of genus *Ammannia* are widely used in traditional Chinese medicine (TCM) and many Chinese patents are available on this plant.”

From WFO (2024):

“*Ammannia latifolia* is not known to be used medicinally in the Bahamas.”

Winterton et al. (2018) list *A. latifolia* as one of five species in the genus *Ammannia* that is cultivated for sale or trade.

Diseases

No information was found on diseases associated with *Ammannia latifolia*.

Threat to Humans

Gonzalez et al. (1983) report *A. latifolia* as a weed in wetland rice in Peru but no other Latin American countries.

3 Impacts of Introductions

No information available on impacts of reported introductions.

4 History of Invasiveness

The History of Invasiveness for *Ammannia latifolia* is classified as Data Deficient. *A. latifolia* has been documented as introduced in Chile, where it is established, and Morocco, where the status is unknown. Impacts of these introductions are also unknown.

5 Global Distribution



Figure 1. Reported global distribution of *Ammannia latifolia*. Map from GBIF Secretariat (2023). Observations are reported from Taiwan; Portugal; and North, Central, and South America. Reported locations in Taiwan, Portugal, western Mexico, and parts of the United States (Arkansas, New Mexico, and Colorado) are not known to represent established populations of *A. latifolia* and were not used to select source points for the climate matching analysis.

6 Distribution Within the United States

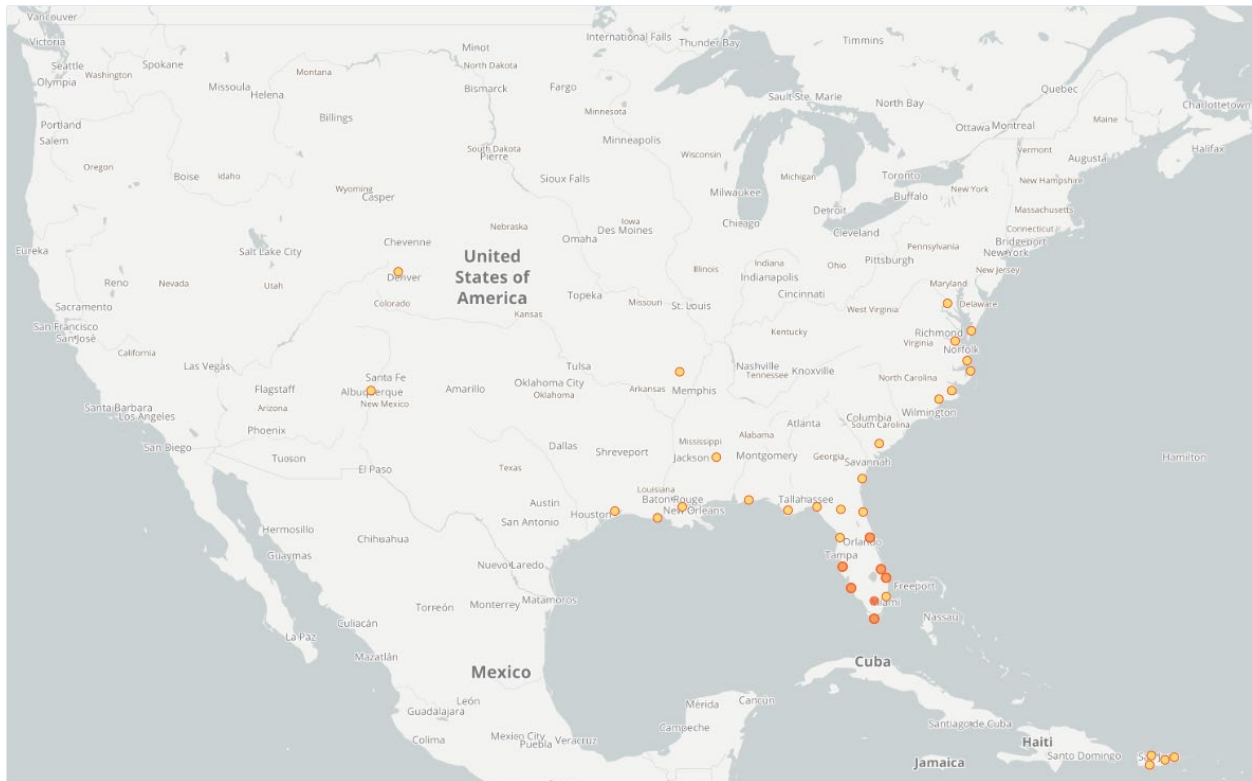


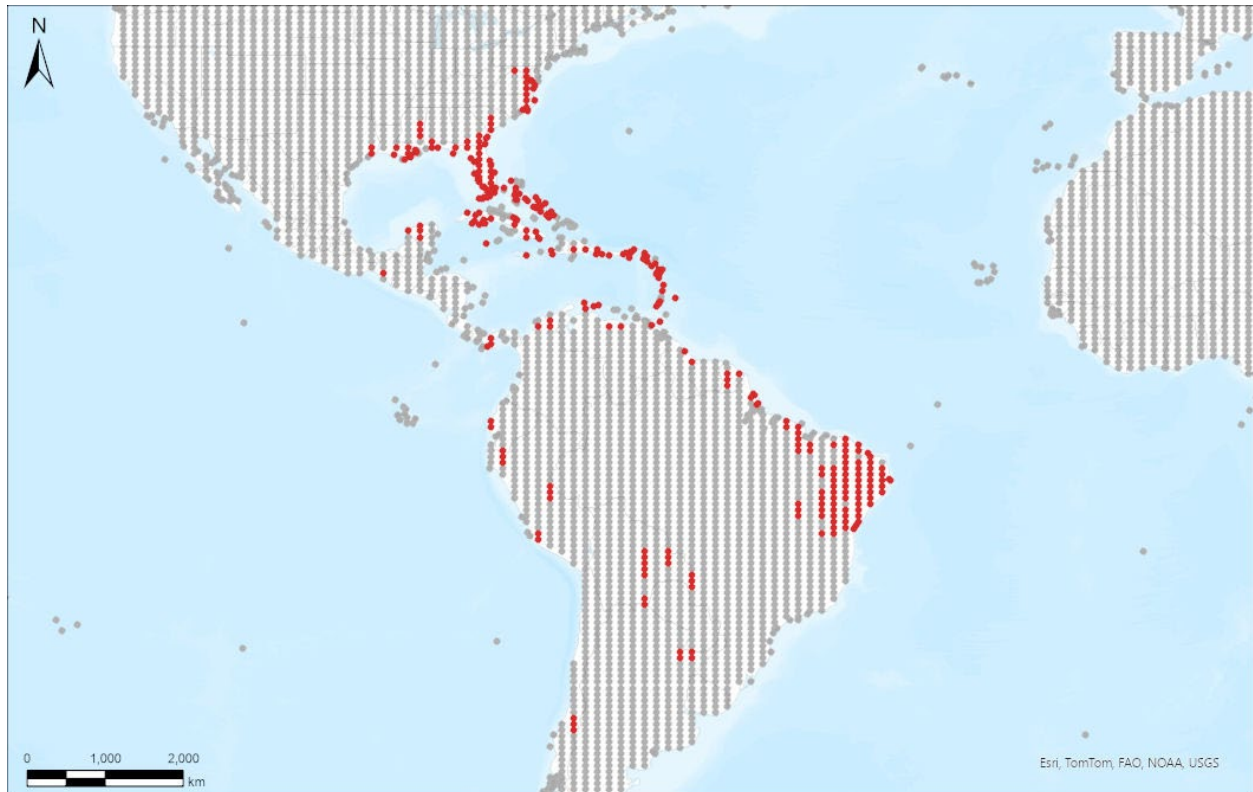
Figure 2. Reported distribution of *Ammannia latifolia* in the United States. Map from GBIF-US (2025). Observations are reported from the southeastern United States, New Mexico, and Colorado. The observations from Arkansas, New Mexico, and Colorado were not used to select source points for the climate matching analysis as they do not represent known established populations.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Ammannia latifolia* to the contiguous United States was high throughout the Mid-Atlantic and Southeast regions, including peninsular Florida and the Gulf Coast to eastern Texas. *A. latifolia* is native to many of these areas. The climate match was also high in the Midwest region, south of the Great Lakes. There were narrow bands of high climate match along the Pacific coast and the Sierra Nevada range, and high climate match was scattered through the Northeast. Low climate matches were observed particularly in the Great Basin and also scattered through the Rocky and Cascade Mountains. The overall Climate 6 score (Sanders et al. 2023; 16 climate variables; Euclidean distance) for the contiguous United States was 0.406, indicating that Yes, there is establishment concern for this species outside its native range. The Climate 6 score is calculated as: $(\text{count of target points with scores} \geq 6) / (\text{count of all target points})$. Establishment concern is warranted for Climate 6 scores greater than or equal to 0.002 based on an analysis of the establishment success of 356 nonnative aquatic species introduced to the United States (USFWS 2024).

Projected climate matches in the contiguous United States under future climate scenarios are available for *Ammannia latifolia* (see Appendix). These projected climate matches are provided as additional context for the reader; future climate scenarios are not factored into the Overall Risk Assessment Category.



Species: *Ammannia latifolia*

Selected Climate Stations



RAMP

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Figure 3. RAMP (Sanders et al. 2023) source map showing weather stations in North, Central, and South America selected as source locations (red; United States including Puerto Rico and the U.S. Virgin Islands, Mexico, Cuba, Cayman Islands, Jamaica, The Bahamas, Haiti, Dominican Republic, British Virgin Islands, Anguilla, Antigua and Barbuda, Montserrat, Guadeloupe, Dominica, Martinique, St. Lucia, St. Vincent and the Grenadines, Barbados, Granada, Trinidad and Tobago, Curaçao, Aruba, Panama, Colombia, Venezuela, Guyana, French Guiana, Brazil, Ecuador, Peru, Bolivia, Argentina, Chile) and non-source locations (gray) for *Ammannia latifolia* climate matching. Source locations from GBIF Secretariat (2023). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

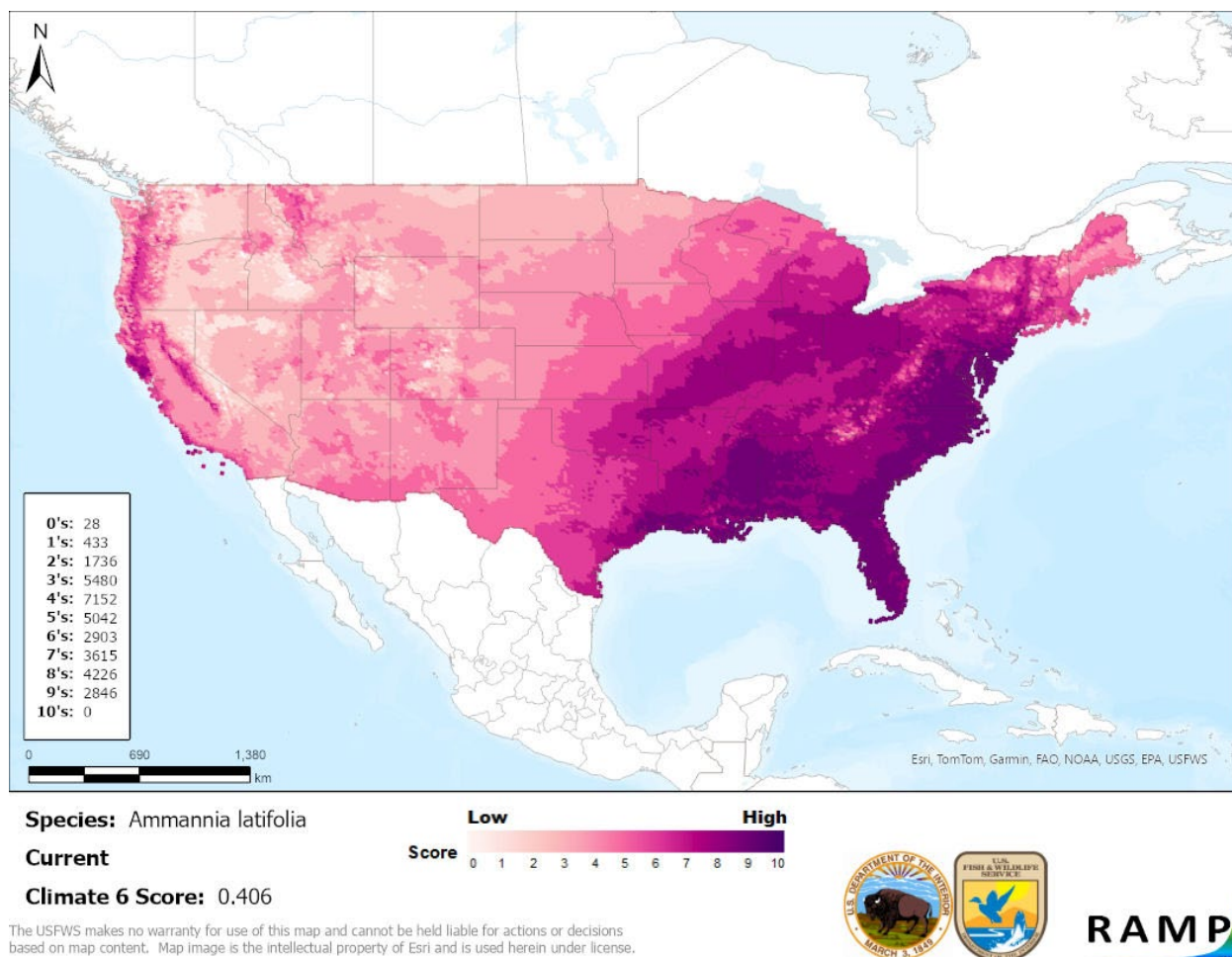


Figure 4. Map of RAMP (Sanders et al. 2023) climate matches for *Ammannia latifolia* in the contiguous United States based on source locations reported by GBIF Secretariat (2023). Counts of climate match scores are tabulated on the left. 0/Pale Pink = Lowest match, 10/Dark Purple = Highest match.

8 Certainty of Assessment

The certainty of assessment for *Ammannia latifolia* is classified as Low. There is adequate information available on the biology and distribution of *A. latifolia*. However, there is limited information on its introduction history and any impacts of introductions are unknown.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Ammannia latifolia, Pink Redstem, is an aquatic plant that is native to the Mid-Atlantic and Southeastern United States and Central and South America. *A. latifolia* is an erect annual herb that occurs in both freshwater and saltwater habitats. The species has been reported as introduced outside its native range in Chile and Morocco; it has naturalized within a limited range in Chile. The History of Invasiveness for *A. latifolia* is classified as Data Deficient due to a lack of information on any impacts of these introductions. The climate matching analysis for the

contiguous United States indicates establishment concern for this species outside its native range. The climate match was high in parts of the Midwest, Northeast, Pacific Northwest, and California, in addition to the native range in the Mid-Atlantic and Southeast regions. The Certainty of Assessment for *A. latifolia* is classified as Low due to unknown impacts of introductions and establishment outside of its native range. The Overall Risk Assessment Category for *A. latifolia* in the contiguous United States is Uncertain.

Assessment Elements

- **History of Invasiveness (see Section 4): Data Deficient**
- **Establishment Concern (see Section 7): Yes**
- **Certainty of Assessment (see Section 8): Low**
- **Remarks, Important additional information: None**
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in section 11.

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11 Literature Cited in Quoted Material

Note: The following references are cited within quoted text within this ERSS, but were not accessed for its preparation. They are included here to provide the reader with more information.

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Appendix

Summary of Future Climate Matching Analysis

Future climate projections represent two Shared Socioeconomic Pathways (SSP) developed by the Intergovernmental Panel on Climate Change (IPCC 2021): SSP5, in which emissions triple by the end of the century; and SSP3, in which emissions double by the end of the century. Future climate matches were based on source locations reported by GBIF Secretariat (2023).

Under the future climate scenarios (figure A1), on average, high climate match for *Ammannia latifolia* was projected to occur in the eastern third of the contiguous United States (Appalachian Range; Great Lakes; Mid-Atlantic; Southeast, including the southern Atlantic Coast and southern Florida). Smaller areas of high climate match also appeared along the Pacific coast and in the Rocky Mountains under all future scenarios. Areas of low climate match were projected to occur primarily in the Great Basin region. The Climate 6 scores for the individual future scenario models (figure A2) ranged from a low of 0.375 (model: UKESM1-0-LL, SSP5, 2085) to a high of 0.461 (model: IPSL-CM6A-LR, SSP5, 2055). All future scenario Climate 6 scores were above the Establishment Concern threshold, indicating that Yes, there is establishment concern for this species under future scenarios. The Climate 6 score for the current climate match (0.406, figure 4) falls within the range of scores for future projections. The time step and climate scenario with the most change relative to current conditions was SSP5, 2085, the most extreme climate change scenario. Areas within the Colorado Plateau, Northeast, and Rocky Mountains saw a large increase in the climate match relative to current conditions at the 2085 time step and a moderate increase at the 2055 time step. Additionally, areas within the Great Lakes, Northern Pacific Coast, and Northern Plains saw a moderate increase in the climate match relative to current conditions under one or more future scenarios. Primarily at the 2085 time step, areas within the Appalachian Range, California, Gulf Coast, Mid-Atlantic, Southeast, Southern Atlantic Coast, and Southern Florida saw a moderate decrease in the climate match relative to current conditions. No large decreases were observed regardless of time step and climate scenarios. Additional, very small areas of large or moderate change may be visible on the maps (figure A3).

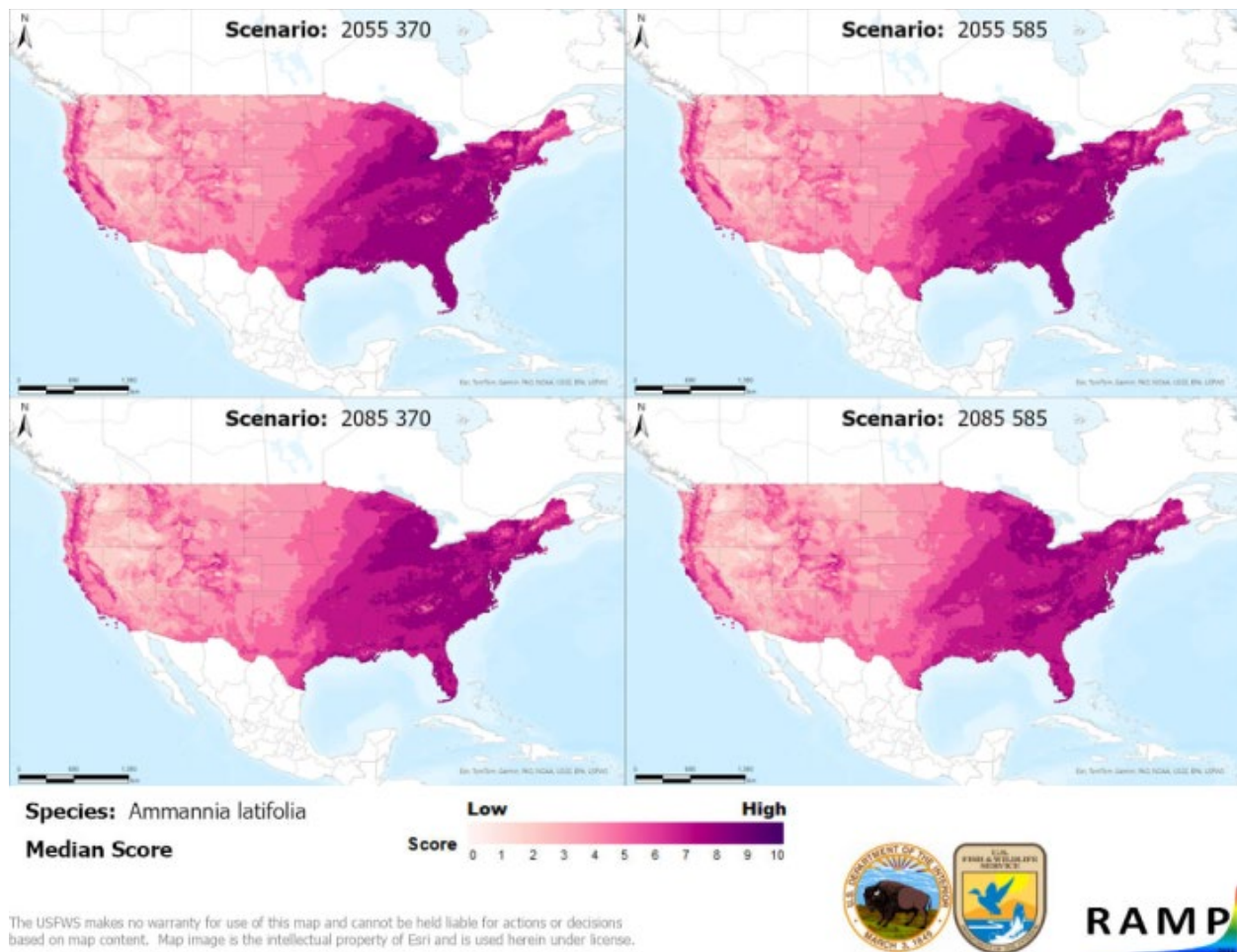


Figure A1. Maps of median RAMP (Sanders et al. 2023) climate matches projected under potential future climate conditions using five global climate models for *Ammannia latifolia* in the contiguous United States. Climate matching is based on source locations reported by GBIF Secretariat (2023). Shared Socioeconomic Pathways (SSPs) used (from left to right): SSP3, SSP5 (IPCC 2021). Time steps: 2055 (top row) and 2085 (bottom row). Climate source data from CHELSA (Karger et al. 2017, 2018); global climate models used: GFDL-ESM4, UKESM1-0-LL, MPI-ESM1-2-HR, IPSL-CM6A-LR, and MRI-ESM2-0. 0/Pale Pink = Lowest match, 10/Dark Purple = Highest match.

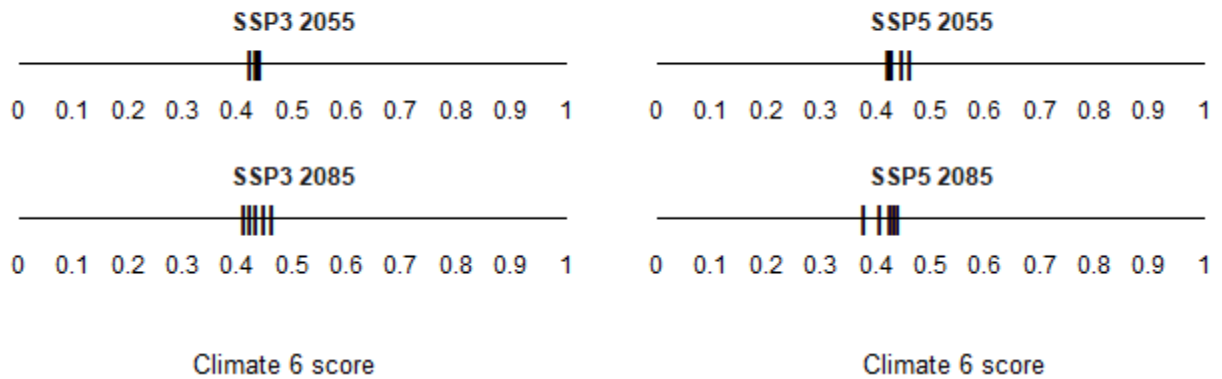


Figure A2. Comparison of projected future Climate 6 scores for *Ammannia latifolia* in the contiguous United States for each of five global climate models under four combinations of Shared Socioeconomic Pathway (SSP) and time step. SSPs used (from left to right): SSP3, SSP5 (Karger et al. 2017, 2018; IPCC 2021). Time steps: 2055 (top row) and 2085 (bottom row). Climate source data from CHELSA (Karger et al. 2017, 2018); global climate models used: GFDL-ESM4, UKESM1-0-LL, MPI-ESM1-2-HR, IPSL-CM6A-LR, and MRI-ESM2-0.

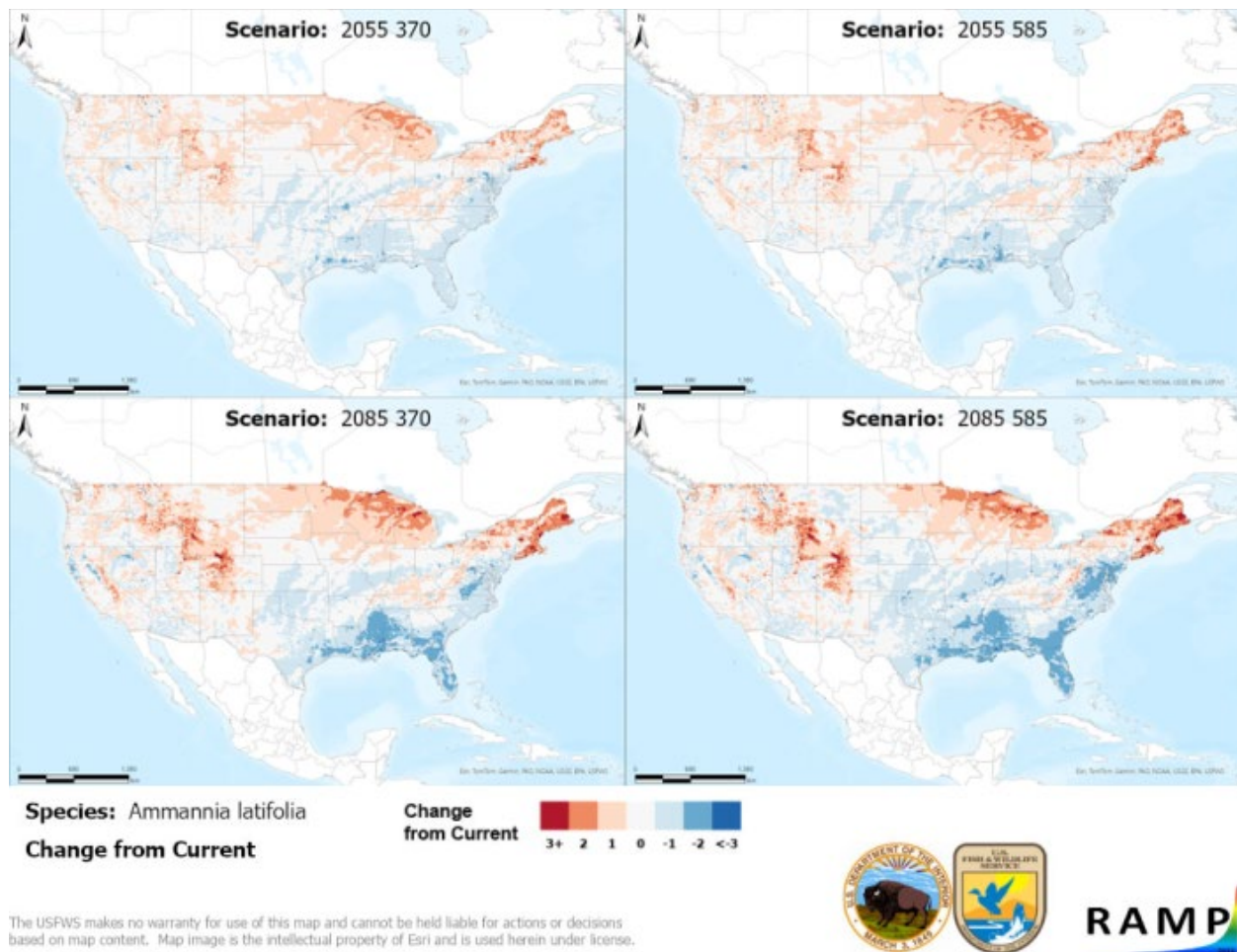


Figure A3. RAMP (Sanders et al. 2023) maps of the contiguous United States showing the difference between the current climate match target point score (figure 4) and the median target point score for future climate scenarios (figure A1) for *Ammannia latifolia* based on source locations reported by GBIF Secretariat (2023). Shared Socioeconomic Pathways (SSPs) used (from left to right): SSP3, SSP5 (IPCC 2021). Time steps: 2055 (top row) and 2085 (bottom row). Climate source data from CHELSA (Karger et al. 2017, 2018); global models used: GFDL-ESM4, UKESM1-0-LL, MPI-ESM1-2-HR, IPSL-CM6A-LR, and MRI-ESM2-0. Shades of blue indicate a lower target point score under future scenarios than under current conditions. Shades of red indicate a higher target point score under future scenarios than under current conditions. Darker shades indicate greater change.

Literature Cited

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