Butomopsis latifolia (a plant, no common name)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, April 2021
Revised, April 2021
Web Version, 7/28/2021

Organism Type: Plant
Overall Risk Assessment Category: Uncertain

Photo: Shaun Winterton. Licensed under CC BY-NC 3.0. Available: https://www.invasive.org/browse/detail.cfm?imgnum=5562631 (April 2021).

1 Native Range and Status in the United States

Native Range

From Cowie et al. (2000):

"Old World tropics from Africa to N Australia (NT, Qld). Rare in NT where known from near the Adelaide River, South Alligator River, East Alligator River floodplains and Arafura Swamp.

From POWO (2021):

"Native to: Assam, Bangladesh, Benin, Botswana, Burkina, Cameroon, Central African Repu, Chad, China South-Central, East Himalaya, Ghana, Guinea, Guinea-Bissau, India, Ivory Coast, Jawa, Laos, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Nigeria, Northern Territory [Australia], Queensland [Australia], Senegal, Sudan, Tanzania, Thailand, Uganda, Vietnam, Zambia, Zimbabwe"

Status in the United States

No records of *Butomopsis latifolia* in trade or in the wild in the United States were found.

Means of Introductions in the United States

No records of *Butomopsis latifolia* in the wild in the United States were found.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to WFO (2021), *Butomopsis latifolia* (D.Don) Kunth is the current valid name for this species.

From India Biodiversity Portal (2021):

"[Kingdom] Plantae > [Phylum] Tracheophyta > [Class] Liliopsida > [Order] Alismatales > [Family] Alismataceae > [Genus] *Butomopsis* > [Species] *Butomopsis latifolia* (D.Don) Kunth"

GBIF Secretariat (2021) lists the following synonyms for *Butomopsis latifolia*: *Butomopsis cordofana* (Hochst.) Kunth, *Butomopsis cordofana* (Hochst.) Kunth ex Walp., *Butomopsis lanceolata* (Roxb.) Kunth, *Butomus lanceolatus* Roxb., *Butomus latifolius* D.Don, *Elattosis apetala* Gagnep., *Tenagocharis alismoides* Hochst., *Tenagocharis cordofana* Hochst., *Tenagocharis lanceolata* (Roxb.) Baill., and *Tenagocharis latifolia* (D.Don) Buchenau.

Size, Weight, and Age Range

From Cowie et al. (2000):

"Erect emergent herbs, to 0.7 m tall […] Leaves with petioles 6–24 cm long, sheathing at base; blades floating or emergent, usually more or less elliptic, 5–13 cm long, 1.5–6.5 cm wide; primary veins 5–7; […] Peduncle to 57 cm long, 3–5-angled; pedicels 8–14 cm long, triquetrous; bracts membranous, to 18 mm long. Sepals green, 4–7 mm long, oblong-ovate, enlarging in fruit. Petals broadly obovate, c. 9 mm long. Carpels connate along inner margin in lower half. Follicles 7–12 mm long, acute, opening toward apex along ventral suture. Seeds numerous, obloid, c. 0.5 mm long, smooth."

Environment

From Ghogue and Juffe-Bignoli (2020):

"Freshwater (=Inland waters)"

"This annual hydrophyte occurs in muddy soils, streams of up to 0.5 m depth, rivers, lakes, marshes and paddy fields."

From Cowie et al. (2000):

"Grows on the edges of lagoons and floodplains at first in shallow water, plants flowering as the site dries out; on clay or gravelly soils."

From Holmes et al. (2005):

"[…] often in shallow water 5-15 cm deep; on sandy, clayey, gravelly or black soils."

Climate

According to POWO (2021), *B. latifolia* is found in Tropical Africa and Tropical Asia.

Distribution Outside the United States

Native

From Cowie et al. (2000):

"Old World tropics from Africa to N Australia (NT, Qld). Rare in NT where known from near the Adelaide River, South Alligator River, East Alligator River floodplains and Arafura Swamp.

From POWO (2021):

"Native to: Assam, Bangladesh, Benin, Botswana, Burkina, Cameroon, Central African Repu, Chad, China South-Central, East Himalaya, Ghana, Guinea, Guinea-Bissau, India, Ivory Coast, Jawa, Laos, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Nigeria, Northern Territory [Australia], Queensland [Australia], Senegal, Sudan, Tanzania, Thailand, Uganda, Vietnam, Zambia, Zimbabwe"

Introduced

No records of introductions were found for *Butomopsis latifolia*.

Means of Introduction Outside the United States

No records of introductions were found for *Butomopsis latifolia*.

Short Description

From WFO (2021):

"Petiole 5-20 cm; leaf blade 5-15 × 1-5 cm, 3-7-veined, base attenuate, apex acute. Scapes 10-30 cm; umbels 3-15-flowered; bracts ca. 1.3 cm. Pedicels 2-14 cm. Sepals broadly elliptic, ca. 5 × 3 mm, margin membranous, apex rounded or retuse. Petals ca. 6 × 4 mm. Filaments 1.5-3 mm; anthers 1-1.5 mm. Carpels ca. 5.5 mm. Follicles 1-1.2 cm. Seeds brown, ca. 0.5 mm. Fl. and fr. May-Sep."

From Cowie et al. (2000):

"Erect emergent herbs, to 0.7 m tall; cut stems exuding white sap. Leaves with petioles 6–24 cm long, sheathing at base; blades floating or emergent, usually more or less elliptic, 5–13 cm long, 1.5–6.5 cm wide; primary veins 5–7; base cuneate; apex obtuse with a blunt mucro. Inflorescence an emergent terminal umbel of 8–25 flowers. Peduncle to 57 cm long, 3–5-angled; pedicels 8–14 cm long, triquetrous; bracts membranous, to 18 mm long. Sepals green, 4–7 mm long, oblong-ovate, enlarging in fruit. Petals broadly obovate, c. 9 mm long. Carpels connate along inner margin in lower half. Follicles 7–12 mm long, acute, opening toward apex along ventral suture. Seeds numerous, obloid, c. 0.5 mm long, smooth. Flowering & fruiting: Apr.–June."

Biology

From Cowie et al. (2000):

"Grows on the edges of lagoons and floodplains at first in shallow water, plants flowering as the site dries out; on clay or gravelly soils."

"Annual herbs. Leaves radical. Inflorescences umbelliform, exceeding the leaves. Flowers on long triangular pedicels. Corolla white. Stamens 6–12. Staminodes absent. Carpels 6–9; follicles exserted from the calyx. Seeds numerous, obloid."

From Ghogue and Juffe-Bignoli (2020):

"This annual hydrophyte occurs in muddy soils, streams of up to 0.5 m depth, rivers, lakes, marshes and paddy fields."

From Holmes et al. (2005):

"Seasonally inundated open situations, especially edges of swamps and lagoons and on floodplains; often in shallow water 5-15 cm deep; on sandy, clayey, gravelly or black soils."

Human Uses

Singh and Kumar (2016) list tender leaves of *B. latifolia* as edible.

Diseases
No information on parasites or pathogens of *Butomopsis latifolia* was found.

Threat to Humans
No information on threats to humans from *Butomopsis latifolia* was found.

3 Impacts of Introductions
No records of introductions were found for *Butomopsis latifolia*; therefore, there is no information on impacts of introduction.

4 History of Invasiveness
No records of introduction, establishment or impacts were found for *B. latifolia*, and no evidence of trade was found outside the native range for this species. Based on this lack of evidence of introductions or trade, the history of invasiveness for *B. latifolia* is categorized as No Known Nonnative Population.

5 Global Distribution

Figure 1. Known global distribution of *Butomopsis latifolia*. Observations are reported from Western, Central and Southern Africa, India, Southern and Southeast Asia, and Northern Australia. Map from GBIF Secretariat (2021).

No georeferenced observations were available for Bangladesh, China, Guinea, Laos, Mozambique, Uganda, Vietnam and Zambia.

6 Distribution Within the United States

No records of *Butomopsis latifolia* in the wild in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Butomopsis latifolia* was low across the majority of the contiguous United States, with medium matches occurring along the southern border, as well as southern California and southern Florida. The overall Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.002, low (scores between 0.000 and 0.005, inclusive, are classified as low). The following States had medium individual Climate 6 scores: Arizona and Texas; all other States had low individual climate scores.

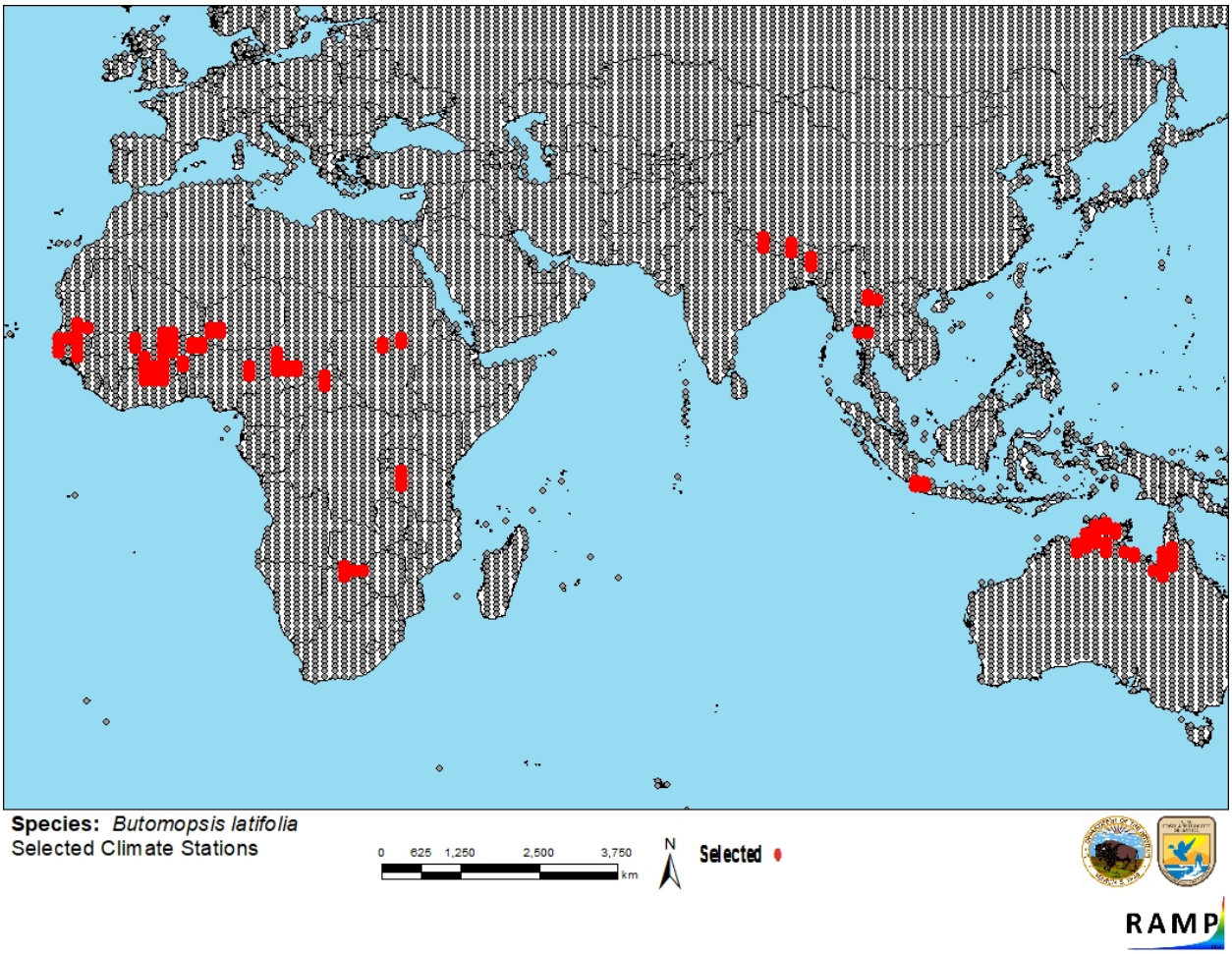

Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in Africa, Asia and Australia selected as source locations (red; Australia, Bangladesh, Benin, Botswana, Burkina Faso, Cameroon, Central African Republic, Chad, Ghana, Guinea-Bissau, India, Indonesia, Ivory Coast, Laos, Mali, Mauritania, Myanmar, Nepal, Niger, Nigeria, Senegal, Sudan, Tanzania, Thailand, Zimbabwe) and non-source locations (gray) for *Butomopsis latifolia* climate matching. Source locations from GBIF Secretariat (2021). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

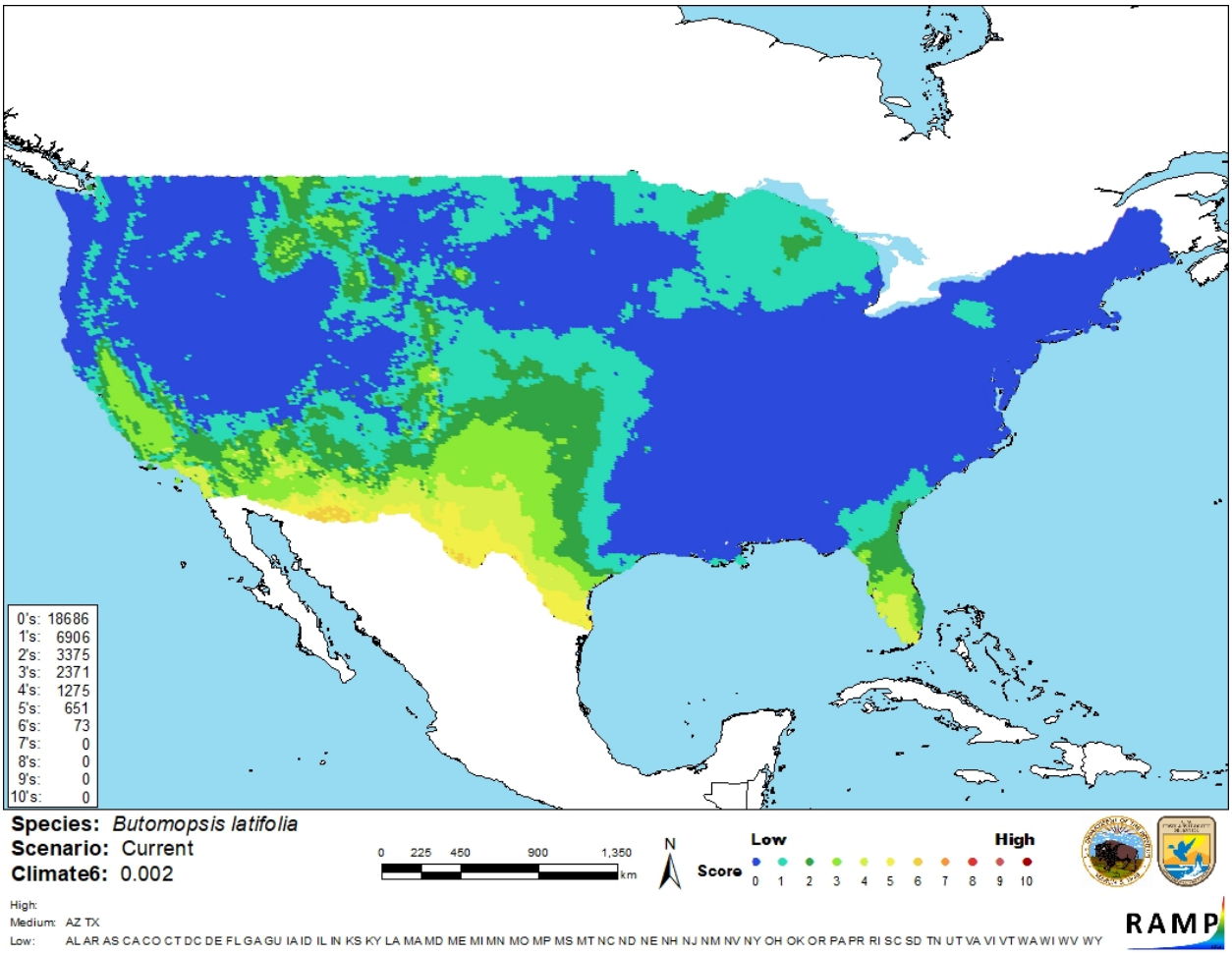

Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Butomopsis latifolia* in the contiguous United States based on source locations reported by GBIF Secretariat (2021). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

The High, Medium, and Low Climate match Categories are based on the following table:

Climate 6: (Count of target points with climate scores 6-10)/ (Count of all target points)	Overall Climate Match Category
0.000≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

8 Certainty of Assessment

There is very little information available on *Butomopsis latifolia* other than native range and basic biology. The native range is well described, although georeferenced location data is lacking in parts of Africa and Asia, which may reduce the certainty of the climate matching analysis. The

absence of information on introductions and impacts, along with the breaks in location data results in a low certainty of assessment for *B. latifolia*.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Butomopsis latifolia is an annual aquatic plant native to tropical Africa, Southern Asia and Northern Australia. The leaves of this plant are sometimes eaten by local people as a vegetable, but it does not appear to be farmed or cultivated for such purpose. No information was found on any introductions or impacts thereof for *B. latifolia*, resulting in a history of invasiveness categorization of No Known Nonnative Population. The climate match for *B. latifolia* in the contiguous United States was Low, with the only medium matches occurring along the southern border and in southern California and southern Florida. Due to a lack of information regarding the history of invasiveness and gaps in georeferenced location data, the certainty of this assessment is Low. The overall risk assessment category for *Butomopsis latifolia* is Uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Low**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks/Important additional information: No additional remarks.**
- **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.

Cowie ID, Short PS, Osterkamp Madsen M. 2000. Floodplain flora: a flora of the coastal floodplains of the Northern Territory, Australia. Canberra: Australian Biological Resources Study. Flora of Australia Supplementary Series Number 10.

GBIF Secretariat. 2021. GBIF backbone taxonomy: *Butomopsis latifolia* (D.Don) Kunth. Copenhagen: Global Biodiversity Information Facility. Available: https://www.gbif.org/species/2864611 (April 2021).

Ghogue J-P, Juffe-Bignoli D. 2020. *Butomopsis latifolia*. The IUCN Red List of Threatened Species 2020: e.T168925A136674905. Available: https://www.iucnredlist.org/species/168925/136674905 (April 2021).

Holmes J, Bisa D, Hill A, Crase B. 2005. A guide to threatened, near threatened and data deficient plants in the Litchfield Shire of the Northern Territory. Sydney, Australia: World Wildlife Fund.

India Biodiversity Portal. 2021. *Butomopsis latifolia* (D.Don) Kunth. India Biodiversity Portal, species page. Available: https://indiabiodiversity.org/species/show/244471 (April 2021).

[POWO] Plants of the World Online. 2021. *Butomopsis latifolia* (D.Don) Kunth. London: Royal Botanic Gardens, Kew. Available: http://www.plantsoftheworldonline.org/taxon/urn:lsid:ipni.org:names:58284-1 (April 2021).

Sanders S, Castiglione C, Hoff M. 2018. Risk Assessment Mapping Program: RAMP. Version 3.1. U.S. Fish and Wildlife Service.

Singh G, Kumar J. 2016. Diversity and traditional knowledge on some less known edible wild herbaceous plant resources from district Khunti, Jharkhand, India. International Journal of Bioassays 5:4557–4562.

[WFO] World Flora Online. 2021. World Flora Online – a project of the World Flora Online Consortium. Available: http://www.worldfloraonline.org (April 2021).

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.

No references in this section.