Eastern Dwarf Treefrog (*Litoria fallax*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, May 2012
Revised, March 2017
Web Version, 2/9/2018

Photo: Michael Jefferies. Licensed under CC BY-NC. Available: http://eol.org/data_objects/25762625. (March 2017).

1 Native Range and Status in the United States

Native Range

From Hero et al. (2009):

"This Australian species occurs along the coast and in adjacent areas from Cairns in northern Queensland south to southern New South Wales, including Fraser Island."

Status in the United States

From Hero et al. (2009):

"Guam"

Means of Introductions in the United Status

From Christy et al. (2007):

"The initial specimen of the now-established species *L. fallax* was discovered in the central courtyard of Guam's International Airport in 1968 (Falanruw, 1976), leading Eldredge (1988) to speculate that the species was brought to Guam on board an aircraft. Aircraft and maritime vessels entered Guam from Australia, the home range of the species (Cogger, 2000) during the late 1960s, although documentation with respect to the frequency of these arrivals and the types of commodities shipped is difficult to obtain. It is therefore unclear whether the Guam population is the result of released pets, stowaways onboard a transport vessel, or stowaways in suitable cargo such as fruit or vegetables."

Remarks

From GBIF (2016):

"BASIONYM
Hylomantis fallax Peters, 1880"

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2017):

"Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Tetrapoda
Class Amphibia
Order Anura
Family Hylidae
Subfamily Pelodryadinae
Genus *Litoria*
Species *Litoria fallax* (Peters, 1880)"

"Current Standing: valid"

Size, Weight, and Age Range

From Atlas of Living Australia (2017):

"Up to less than 30mm"

Environment
From Hero et al. (2009):

"Terrestrial; Freshwater"

"It is usually found in vegetation bordering swamps, streams, lagoons, ponds and farm dams often in large numbers."

Climate/Range
From Powell (2017):

"Its range spans four biogeographical zones from northern Queensland to central New South Wales (James and Moritz, 2000)."

From Hero et al. (2009):

"The extent of occurrence of the species is approximately 300,000 km^2."

Distribution Outside the United States
Native
From Hero et al. (2009):

"This Australian species occurs along the coast and in adjacent areas from Cairns in northern Queensland south to southern New South Wales, including Fraser Island."

Introduced
No introductions have been reported outside U.S. states and territories.

Means of Introduction Outside the United States
No introductions have been reported outside U.S. states and territories.

Short Description
From Atlas of Living Australia (2017):

"A small slender frog, usually all green, but can be green with fawn legs or all fawn. A white stripe runs underneath the eyes. The backs of its thighs and groin are orange to yellow-white. The skin on its back is smooth and its belly is granular. Its irises are golden and its pupils are horizontal. Its toes are partially webbed and its toe discs are large."

Biology
From Hero et al. (2009):

"In the day it shelters in the leaf-axils of *Pandanus* and emergent vegetation and or/nearby trees. It can be found well away from water/breeding sites. Breeding occurs throughout spring/summer,

usually after rain. Small clumps of eggs are laid attached to submerged vegetation; larvae are free swimming."

From Atlas of Living Australia (2017):

"Can be found sheltering and spending much of its time in the vegetation, occasionally lunging out to catch mosquitoes and other flying insects. Its call is similar to 'Reek...pip, reek...pip...pip'. The male calls from vegetation both day and night in warmer weather."

Human Uses

From Hero et al. (2009):

"There are no reports of this species being utilized."

Diseases

From Browne et al. (2006):

"*Myxobolus fallax* (Myxosporea) infects the testes of the dwarf green tree frog *Litoria fallax* without apparently affecting the host's health, behavior, or testicular sperm numbers or quality."

From Stockwell et al. (2015):

"*Litoria fallax* is susceptible to infection by *B*[*atrachochytrium*] *dendrobatidis* (Speare and Berger 2005), but infection does not appear to result in population decline (Stockwell et al. 2008)."

Infection by *B. dendrobatidis* is OIE-reportable.

Threat to Humans

No information available.

3 Impacts of Introductions

From Powell (2017):

"Unknown."

4 Global Distribution

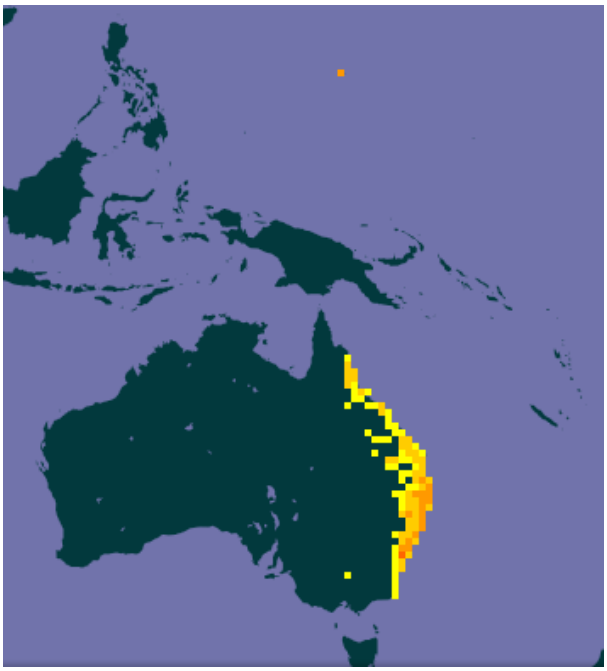

Figure 1. Known global established locations of *Litoria fallax*. Map from GBIF (2016). Point in north-central Victoria was not included in climate matching because it does not represent an established population.

5 Distribution Within the United States

Figure 2. Known global established locations of *Litoria fallax* in the United States (Guam). Map from BISON (2017).

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was medium across much of the eastern, south-central, and southwestern U.S. High matches were found in Texas and a few locations in Florida. The climate match was low in the western, north-central, and far northeastern U.S. Climate 6 proportion indicated that the contiguous U.S. has a medium climate match overall. Proportions between 0.005 and 0.103 indicate a medium climate match; Climate 6 proportion for *L. fallax* was 0.092.

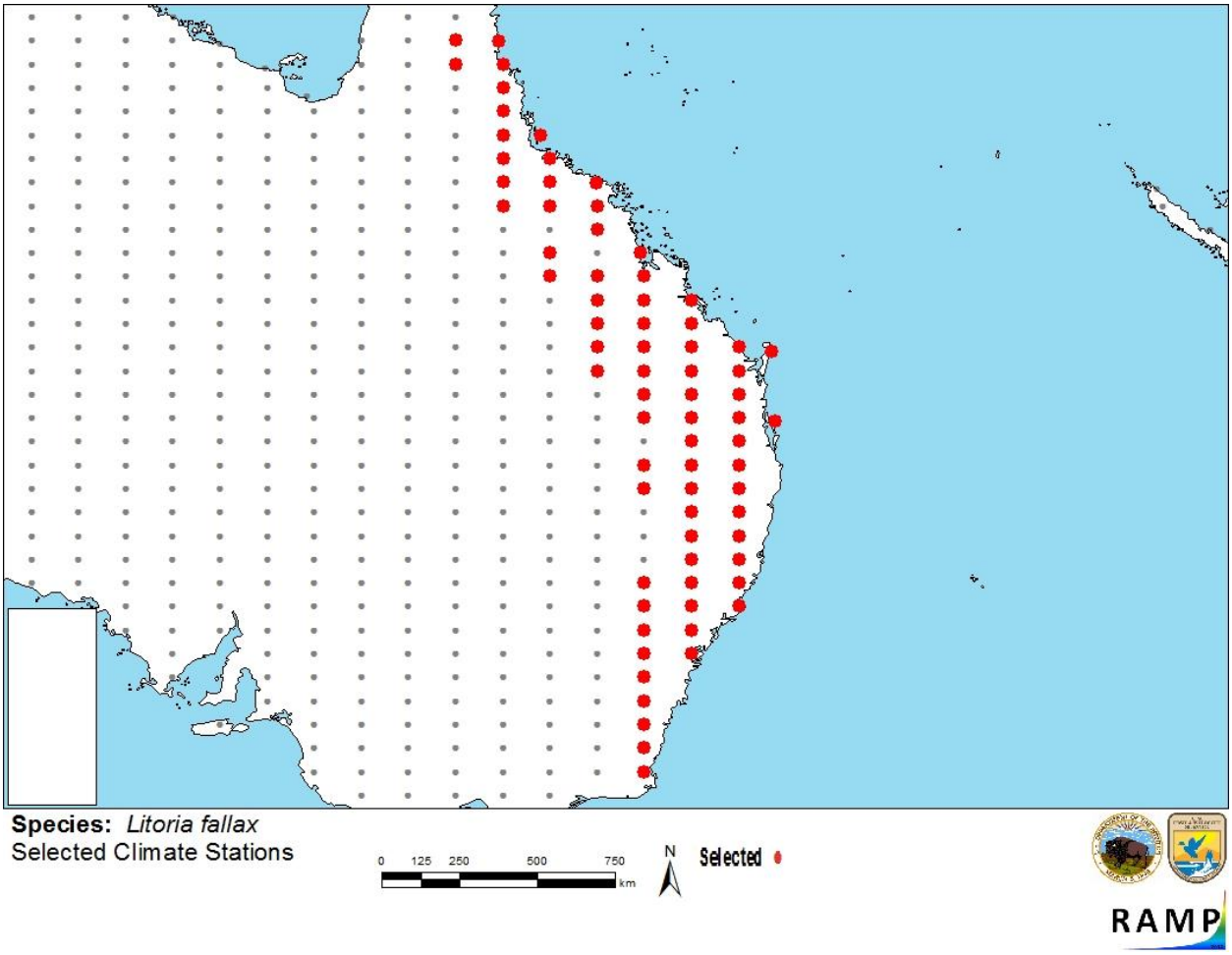

Figure 3. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) and non-source locations (gray) for *Litoria fallax* climate matching. Source locations from GBIF (2016).

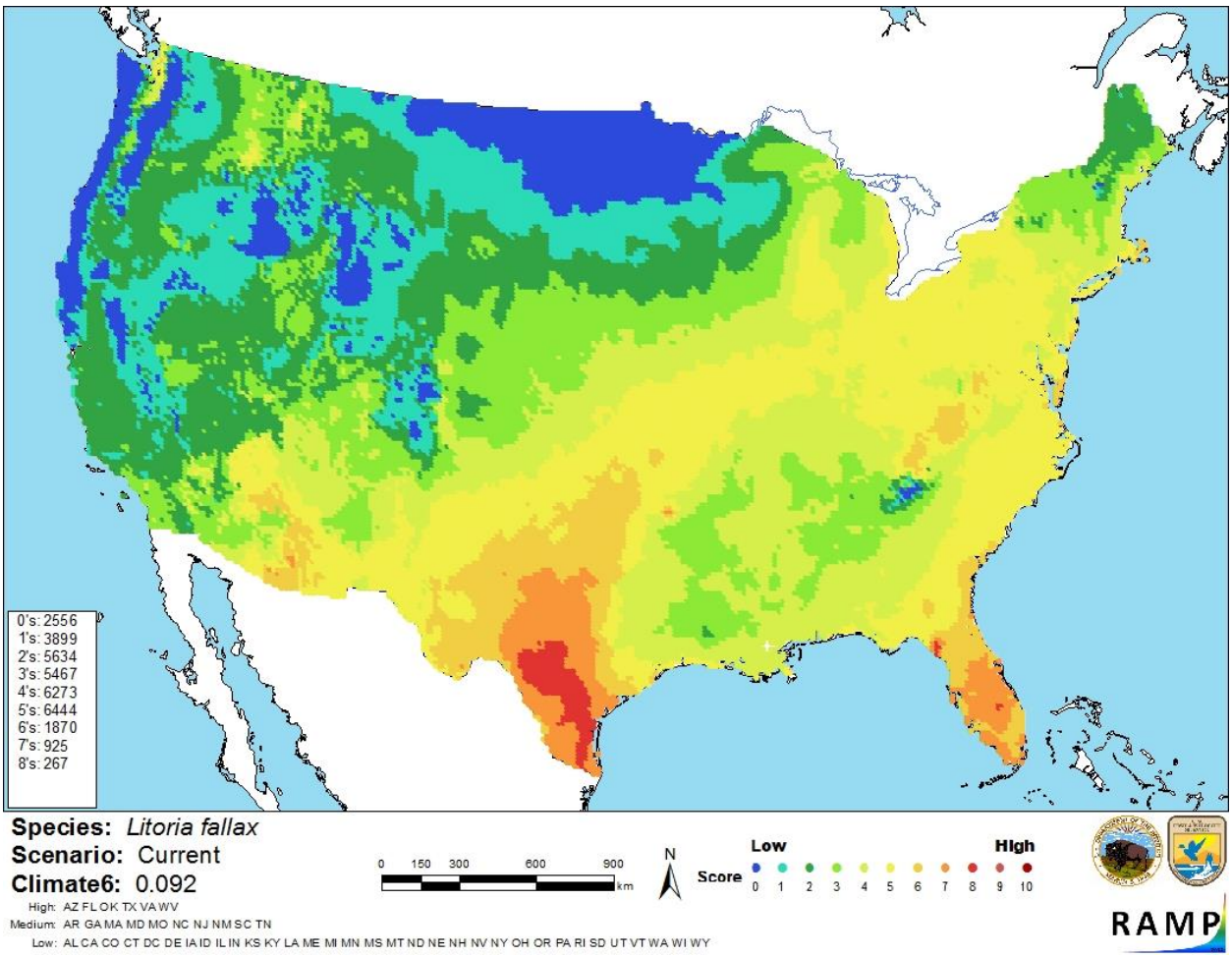

Figure 4. Map of RAMP (Sanders et al. 2014) climate matches for *Litoria fallax* in the contiguous United States based on source locations reported GBIF (2016). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

The "High", "Medium", and "Low" climate match categories are based on the following table:

Climate 6: Proportion of (Sum of Climate Scores 6-10) / (Sum of total Climate Scores)	Climate Match Category
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

Information is available on the biology, ecology, and distribution of *L. fallax*. However, no information is available on impacts of introduction of *L. fallax* to Guam. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Litoria fallax is a frog native to eastern Australia. It became established in Guam in the mid-twentieth century by unknown means. The scientific literature has not yet reported on any impacts, or lack thereof, of *L. fallax* on native wildlife in Guam. *L. fallax* is susceptible to infection by chytrid fungus (*Batrachochytrium dendrobatidis*), an OIE-reportable disease. Climate match to the contiguous U.S. is medium, with areas of medium to high match occurring in Texas and Florida. Overall risk posed by *L. fallax* is uncertain.

Assessment Elements

- **History of Invasiveness: None Documented**
- **Climate Match: Medium**
- **Certainty of Assessment: Low**
- **Important additional information: Susceptible to infection by an OIE-reportable disease.**
- **Overall Risk Assessment Category: Uncertain**

9 References

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.

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10 References Quoted But Not Accessed

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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