

# State of the Fireflies of the United States and Canada:



Keel-Necked Firefly

## THREATENED & NEAR THREATENED SPECIES PROFILE

Candace Fallon, Anna Walker, Sara Lewis, and Sarina Jepsen

This species profile was compiled based on information gathered from the IUCN Red List assessments and augmented with new information that has become available since its publication. Full Red List assessments (including range maps) are available at [www.iucnredlist.org/](http://www.iucnredlist.org/).

### KEY TO SPECIES PROFILE

#### Conservation Status

IUCN—Red List ranking

NS—NatureServe Global (G), National (N), and Subnational (S) Conservation Status Rank:

GX   NX   SX	Not located despite intensive searches and virtually no likelihood of rediscovery
GH   NH   SH	Known from only historical occurrences but still some hope of rediscovery
G1   N1   S1	At very high risk of extinction or collapse
G2   N2   S2	At high risk of extinction or collapse
G3   N3   S3	At moderate risk of extinction or collapse
G4   N4   S4	At fairly low risk of extinction or collapse
G5   N5   S5	At very low risk or extinction or collapse
GNA   NNA   SNA	A conservation status rank is not applicable because the species or ecosystem is not a suitable target for conservation activities
GNR   NNR   SNR	Global rank not yet assessed
GU   NU   SU	Currently unrankable due to lack of information or due to substantially conflicting information about status or trends
G#G#   N#N#   S#S#	Numeric range rank (e.g., G2G3, G1G3) is used to indicate uncertainty about the exact status of a taxon or ecosystem type

SGCN—Species of Greatest Conservation Need, legal designation by state

US ESA—Species' legal status under the US Endangered Species Act

#### Male Size Ranges

The documented size range for males of each species has been provided in the profiles as follows:

9–10 mm



With the smallest size in grey ( ) superimposed over the largest size in green ( ). When printed at 100% scale, the bars match the lengths provided.

#### Habitat Threats

Pollution	Agriculture	Habitat Loss, Degradation, Fragmentation	Climate & Severe Weather
Excess light	Crop systems	Habitat loss	Climate change
Energy & mining	Livestock & pasture	Trampling / crushing	Severe storms & flooding
Pesticides & run-off		Invasive species	Rising temperatures
		Water quality	Drought
			Sea level rise

***Pyractomena ecostata***  
Keel-Necked Firefly



< ENDANGERED >

EN



Keel-necked firefly tidal marsh habitat [above]; an adult male *Pyractomena ecostata* [below]. (Photos: Andy Atzert / Flickr [above]; Oliver Keller / BugGuide [below and on cover].)

**Conservation Status**

- » IUCN: EN
- » SGCN: Delaware
- » NS: G3; SNR (AL, DE, FL, NJ)
- » US ESA: Not listed

**Distribution**

USA—Alabama, Delaware, Florida, New Jersey

**Description**

This firefly has a disjunct distribution, with populations in Alabama, Florida, Delaware, and New Jersey. It is a habitat specialist associated with brackish tidal marshes and wet pastures.

Habitat loss and degradation due to sea-level rise, development, the spread of invasive plants, and artificial light at night are the main threats to this species.



11.5–16 mm



**Flash Pattern & Activity Period**

Adults are active after dark from April through September (depending on the latitude). Males emit bright, yellow, explosive courtship signals, about a second in duration, every eight seconds or so.

	0	1	2	3	4	5	6	7	8	9	Seconds
♂											→ One-second flashes repeated at eight-second intervals
♀											→ Female response unknown*

\* Due to the aggressive mimicry utilized by some “femme fatale” firefly species—some of which have been documented using multiple flash-pattern responses—it has been difficult to determine which flash-patterns are used to attract mates or, alternately, to lure in unsuspecting prey males from other firefly species.