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.

**Key to Species Profile**

**Conservation Status**

IUCN—Red List ranking

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

- G | N | S
- 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

- Excess light
- Energy & mining
- Pesticides & run-off

Agriculture

- Crop systems
- Livestock & pasture

Habitat Loss, Degradation, Fragmentation

- Habitat loss
- Trampling / crushing
- Invasive species

Commercial & development

- Urban & residential development
- Water quality

Climate & Severe Weather

- Climate change
- Severe storms & flooding
- Rising temperatures

Drought

- Sea level rise

**Pyractomena ecostata**  
Keel-Necked Firefly

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  
- **NS:** G3; SNR (AL, DE, FL, NJ)  
- **SGCN:** Delaware  
- **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.

**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.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>♂</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><img src="image_url" alt="One-second flashes repeated at eight-second intervals" /></td>
</tr>
<tr>
<td>♀</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><img src="image_url" alt="Female response unknown*" /></td>
</tr>
</tbody>
</table>

* 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.