

State of the Fireflies of the United States and Canada:



Southwest Spring Firefly

THREATENED & NEAR THREATENED SPECIES PROFILE

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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:

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

<p>Pollution</p> <ul style="list-style-type: none"> Excess light Energy & mining Pesticides & run-off 	<p>Agriculture</p> <ul style="list-style-type: none"> Crop systems Livestock & pasture 	<p>Habitat Loss, Degradation, Fragmentation</p> <ul style="list-style-type: none"> Habitat loss Trampling / crushing Invasive species 	<p>Commercial & development</p> <ul style="list-style-type: none"> Commercial & development Urban & residential development Water quality 	<p>Climate & Severe Weather</p> <ul style="list-style-type: none"> Climate change Severe storms & flooding Drought Rising temperatures Sea level rise
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Bicellonycha wickershamorum Southwest Spring Firefly



< VULNERABLE >

VU



The species' habitat along the Cienegas Creek in the Las Cienegas National Conservation Area [above]; an adult southwest spring firefly [below]. (Photos: Patrick Alexander / flickr [above]; Scott Cylwik [below and on cover].)

Conservation Status

- » IUCN: VU
- » NS: G₂G₃, SNR (AZ)
- » SGCN: None
- » US ESA: Not listed

Description

The southwest spring firefly is found in montane desert habitats of Arizona, including wet and marshy areas in the Madrean Sky Islands and surrounding foothills and stream canyons. The main threats to this species are climate change and habitat loss and degradation due to cattle grazing and modification for agriculture and pasturing. However, light pollution is also of concern. Adults are active from early June to late July, before summer monsoons, and communicate using a green flash-answer routine. See subspecies below for more information.

Distribution

USA—Arizona



9–10 mm



< EN > *Bicellonycha wickershamorum* ssp. *piceum* Gila Southwest Spring Firefly

Conservation Status

- » IUCN: EN
- » NS: G₂G₃T₁T₂, SNR (AZ)
- » SGCN: None
- » US ESA: Not listed

Distribution

USA—Arizona

Description

This subspecies has only been reported from its type locality near Morenci, AZ. Because of this, not much is known about its

habitat associations. However, like its parent species, *B. wickershamorum*, it is likely a riparian desert specialist. The type locality where this subspecies has been documented is a seepage area within a floodplain of a permanent river.

The Gila southwest spring firefly is threatened by habitat degradation and loss due to mining, trampling by cattle, and modification for pasturing and agriculture, in addition to flooding and light pollution. Surveys throughout the area from where it has been reported are needed to determine if the species remains extant, and to get a better understanding of this subspecies' distribution.

Flash Pattern & Activity Period

Adults are active from dusk to dark from June to July. The flash behavior of this subspecies is not known because too few individuals have been observed.



Seep habitat along Eagle Creek, close to the type locality. The actual type locality for this species is likely lost. (Photo: Anna Walker) No photos of this subspecies are available.



Bicellonycha wickershamorum* ssp. *wickershamorum **Southwest Spring Firefly**

9–10 mm



Conservation Status

- » IUCN: VU
- » SGCN: None
- » NS: G₂G₃T₂T₃, SNR (AZ)
- » US ESA: Not listed

Description

This subspecies is the more widespread of the two subspecies and therefore is also referred to as the southwest spring firefly. As suggested in the species level account, it can be found in montane desert habitats in Arizona at elevations ranging from 4,000–6,000 feet. This includes habitats in the Madrean Sky Islands and surrounding foothills and stream canyons, where it is associated with marsh areas and other ephemeral habitats along permanent streams, including seeps and areas with standing water.

The main threats to this species are climate change and habitat loss and degradation due to cattle grazing and modification for agriculture and pasturing. However, light pollution is also of concern.

Flash Pattern & Activity Period

Adult males pronounce one flash per interval, but the duration of the flash and the timing between intervals have not been recorded. A diagnostic feature of this subspecies is the way it flashes higher and higher above ground as the sun sets. In southern Arizona, this subspecies and *Photinus knulli* are the only known flashers.

Distribution

USA—Arizona



The southwest spring firefly [top] has a complicated flash pattern that has yet to be described [bottom]. (Photos: Scott Cylwik.)