

State of the Fireflies of the United States and Canada:



Southwest Synchronous 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

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

Photinus knulli

Southwest Synchronous Firefly



< VULNERABLE >

VU



Type habitat from the area species was first documented in Peña Blanca Canyon, Arizona [above]; live male specimen [below]. (Photos: Alan Schmierer / Flickr [above]; Arthur V. Evans [below and on cover].)

Conservation Status

- » IUCN: VU (tentative, unpublished)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

Distribution

USA—Arizona; MEX—Sonora



5–8 mm

Description

The Southwest synchronous firefly is found primarily in southeastern Arizona and northern Sonora, Mexico. Males of this species congregate to put on unusual synchronous flash displays from lek arenas. These leks, where larvae and adult females also tend to gather, are typically found near permanently wet areas of xeric habitats like desert streams.

Because of its congregating behavior, this synchronous firefly is especially vulnerable to extinction due to human-caused habitat modification and drought. It has already been extirpated from at least one locality.

Flash Pattern & Activity Period

Adults are active in July and August, 35–120 minutes after sunset. The flash displays are composed of triplet yellow flashes emitted about every six seconds.



	0	1	2	3	4	5	6	Seconds
♂	●	●	●					→ Three (to rarely six) flashes over one second, repeated at six second intervals
♀	▨	▨	▨	▨	▨	▨	▨	→ Female response is extremely varied, ranging from short pulses to long, continuous glows