

IUCN SSC Firefly Specialist Group

2019 Report



Sara Lewis



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Co-Chairs

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Red List Authority Coordinator

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Location/Affiliation

- (1) Department of Biology, Tufts University, Medford, Massachusetts, US
- (2) Conservation Division, Malaysian Nature Society, Kuala Lumpur, Malaysia
- (3) Hong Kong Entomological Society, Yuen Long, Hong Kong

Number of members

26

Social networks

Facebook: Fireflyers International, Silent Sparks: The Wondrous World of Fireflies
Twitter: @silent_sparks
Website: fireflyersinternational.net



Mission statement

Our mission is to compile existing knowledge for ~2000 lampyrid species worldwide on their geographic range, population size, and population trends, to identify major extinction threats and risk factors, to increase public knowledge concerning firefly diversity, ecology and behaviour, and to promote long-term conservation efforts.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, the Firefly Specialist Group (FSG) envisions: (1) compilation and publication of a global review of firefly extinction threats; (2) complete data compilation (extent of occurrence (EOO), area of occupancy (AOO), population size, risk factors) in preparation for Red List assessment for fireflies in certain regions (North America, others); (3) increased communication and educational initiatives through the newly announced World Firefly Day, the Selangor Declaration on firefly conservation, and awareness campaigns conducted in individual member countries.

Targets for the 2017-2020 quadrennium

Assess

Red List: (1) complete Red List assessments for a selection of 1–10 flagship species in one year; (2) complete global Red List assessments of 100–200 species for 2020; (3) develop and disseminate standardised methodologies for monitoring firefly species abundances.

Research activities: (1) develop a global distribution database for fireflies that includes relevant behavioural and life history data, then use this information to inform Red List assessments; (2) determine whether the congregating mangrove fireflies in Malaysia and other Southeast Asian countries could be used to establish Key Biodiversity Areas (KBAs); (3) develop a prioritised list of threats to firefly population persistence within different regions.

Network

Membership: recruit members, appoint regional coordinators.

Synergy: provide guidance and work with local communities to protect threatened species and prevent their extinction.

Communicate

Communication: (1) articulate and share guidelines to promote sustainable firefly ecotourism; (2) ignite public interest and garner local and regional support for firefly conservation and management; (3) develop a medium to track FSG activities and keep members updated; (4) information about the FSG posted on the Fireflyers International Network (FIN) website: <https://fireflyersinternational.net>

Technical advice: disseminate technical information and advice about firefly conservation issues to interested parties.



Hotaria parvula fireflies in Okayama, Japan
Photo: Tsunaeki Hiramatsu



Front cover of *BioScience* depicting fireflies
Photo: FSG archives



Photinus firefly in Iowa, USA
Photo: Radim Schreiber, fireflyexperience.org

Activities and results 2019

Assess

Research activities

- i. Global distribution database for fireflies that includes relevant behavioural and life history data: Checklist sent in by members from Taiwan, Korea, North America, Japan, Central America, Papua New Guinea/Pacific Islands, Bangladesh, Indonesia, India, Philippines, and Australia. This was not entered into the database; it was compiled by the Red List Authority. (KSR #1)
- ii. A preliminary KBA for mangrove fireflies workshop was held in July 2019 in Malaysia; we planned a Southeast Asian workshop in Thailand in 2020. (KSR #14, 22)
- iii. A paper was accepted for publication in *Insect Conservation and Diversity*. We also published: Lewis, S.M., Wong, C.H., et al. (2020). A global perspective on firefly extinction threats. *BioScience* 70(2):157–167. [DOI: 10.1093/biosci/biz157] (KSR #26)

Network

Membership

- i. We have recruited four new members; recruitment is ongoing.

Synergy

- i. In Malaysia, formation of the Firefly Komuniti network is involving local communities in firefly conservation, outreach and monitoring as well as tourism. Sharing sessions took place during the annual get-together. (KSR #15)

Communicate

Communication

- i. Facebook pages: Fireflyers International; Silent Sparks: The Wondrous World of Fireflies. (KSR #28)

Technical advice

- i. The firefly conservation guidelines prepared in cooperation with The Xerces Society have been published: Fallon, C., et al. (2019). *Conserving the Jewels of the Night: Guidelines for Protecting Fireflies in the United States and Canada*. Portland, Oregon, USA: The Xerces Society for Invertebrate Conservation. (KSR #26)

Acknowledgements

Supporters: Fireflyers International Network and Firefly Specialist Group members for their contributions to the firefly checklist; Tufts University and FSG led a paper on global firefly extinction threats; The Xerces Society for Invertebrate Conservation, Tufts University and FIN contributed to guidelines for protecting fireflies in the US and Canada; and Malaysian Nature Society, FSG and FIN for a trial run designating KBAs for fireflies, especially the congregating mangrove fireflies.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

Assess	3	■■■
Network	2	■■
Communicate	2	■■

Main KSRs addressed: 1, 14, 15, 22, 26, 28

KSR: Key Species Result