

IUCN SSC Firefly Specialist Group

2020 Report



Sara Lewis



Wong Choong Hay (Sonny)

Co-Chairs

Sara Lewis (1)
Wong Choong Hay (Sonny) (2)

Red List Authority Coordinator

Vor Yiu (3)

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

32

Social networks

Facebook: Friends of Fireflies International; Silent Sparks: The Wondrous World of Fireflies; IUCN SSC Firefly Specialist Group
Twitter: @silent_sparks
Website: fireflyersinternational.net
YouTube: Fireflyers International Network



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 and 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) post information about the FSG on the Fireflyers International Network (FIN) website: <https://fireflyersinternational.net>

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

Activities and results 2020

Assess

Research activities

i. ~130 North American species assessments were submitted to the Red List Unit in December 2020. (KSR #1)

ii. Workshops to determine whether the congregating mangrove fireflies in several Southeast Asian countries could be used to establish KBAs are planned for 2022. (KSR #14, 22)



Females in many firefly species are flightless, reducing dispersal and increasing risk. In this photo *Phausis reticulata*, in North Carolina, US
Photo: Raphael De Cock

The mysterious Lantern Firefly, *Photuris mysticalampas*, is an Endangered wetlands specialist in Delaware, US
Photo: Radim Schreiber



Skyrocketing firefly tourism brings both benefits and threats in many countries, including Mexico
Photo: Tania Lopez-Palafox



iii. Scientific review published: Lewis, S.M., et al. (2020). 'A global perspective on firefly extinction threats'. *BioScience* 70(2):157–167. <https://doi.org/10.1093/biosci/biz157> (KSR #26)

Network

Membership

i. Thirty-two members recruited from five regions, including new members from Israel, Korea, Brazil, and mainland China; Anna Walker (New Mexico BioPark Society) joined as Project Manager.

Synergy

i. We provided guidance and worked with seven groups to protect threatened species and prevent their extinction. (KSR #15)

Communicate

Communication

i. One guideline to promote sustainable firefly ecotourism was submitted for publication in *Conservation Science and Practice*. (KSR #15)

ii. World Firefly Day 2020 garnered great interest from the public, media and on social media. (KSR #28)

iii. Firefly Specialist Group Facebook page launched. (KSR #28)

Technical advice

i. Eight scientific publications from group members plus Firefly Conservation Guidelines for the US and Canada were published and distributed online. (KSR #26)

Acknowledgements

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Thank you to all the co-authors for collaborating on a major scientific review of global threats to fireflies published in 2020, and for working together to gather data on firefly tourism around the world. World Firefly Day (2020) was celebrated with support from Fireflyers International Network, Harriet Brooker (Species Media and Communications Officer, IUCN Global Species Programme) and Matthias Fiechter (Media and Communications Officer, IUCN Global Communications Unit). And thanks to the many artists who contributed their talents to raising awareness during the virtual celebration of World Firefly Day in 2020.

Summary of activities 2020

Components of Species Conservation Cycle: 3/5

Assess	3	■■■
Network	2	■■
Communicate	4	■■■■

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

KSR: Key Species Result