

2021 Report

IUCN SSC Firefly Specialist Group



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NUMBER OF MEMBERS
47

SOCIAL MEDIA AND WEBSITE

Facebook: Friends of Fireflyers International; @silent.sparks;
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 2021–2025

By the end of the quadrennium we hope to: (1) establish monitoring programmes for most of the threatened firefly species on the Red List (Critically Endangered, Endangered, Vulnerable); (2) distribute guidelines for sustainable tourism to places where firefly tourism is rapidly developing; and (3) complete the Assess to Plan (A2P) process for congregating mangrove fireflies of Southeast Asia.

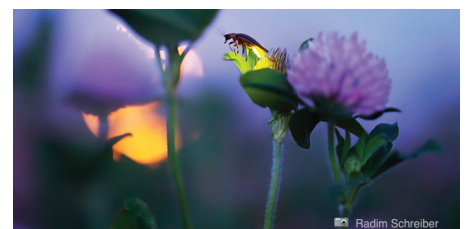
Targets 2021–2025

ASSESS

- T-004 Write and publish a scientific article with guidelines for sustainable firefly tourism.
- T-005 Submit global assessments for North American firefly species.
- T-006 Write and publish scientific articles including: new species descriptions, ecology and behaviour, threats.
- T-007 Complete global assessments of fireflies in Hong Kong, Thailand, Malaysia, Europe and Taiwan.
- T-008 Develop and disseminate standardised methodologies for monitoring firefly species abundances.

PLAN

- T-009 Identify stakeholders and hold a national Workshop on Guidelines for Sustainable US Firefly Tourism.
- T-010 Organise a regional Key Biodiversity Area/Conservation Planning Workshop to protect habitat of congregating mangrove fireflies with other taxa in Southeast and East Asia.
- T-011 Identify stakeholders and hold a national Conservation Planning Workshop for threatened US fireflies (South-eastern and Mid-Atlantic states).



Photinus firefly (US) and *Photuris* firefly (US)
Photos: Radim Schreiber



Females of many firefly species lack functional wings, making them especially vulnerable to accidental trampling in areas of heavy foot traffic
Photo: Radim Schreiber / FireflyExperience.org

Courtship display of Japanese fireflies
Photo: Tsuneaki Hiramatsu



Tsuneaki Hiramatsu

T-012 Identify stakeholders and hold a national Conservation Planning Workshop in Mexico to discuss guidelines for sustainable tourism for the endemic firefly *Photinus palaciosi*.

T-013 Start developing guidelines for captive breeding and restoration of firefly populations.

T-018 As needed, issue regional-specific position statements addressing major drivers and/or emerging threats of firefly species/population loss.

ACT

T-014 Act as consultant to Forestry Research Institute of Malaysia (FRIM) on their 6-year project to do national conservation planning and tourism guidelines for congregating mangrove fireflies in 12–14 river systems.

T-015 Provide technical consults for national and local entities to support firefly conservation efforts, including local Firefly Sanctuaries.

T-016 Prepare intervention letters addressing major drivers and/or emerging threats of firefly species/population loss.

T-017 Establish biological monitoring programmes to determine population trends for threatened firefly species by working with citizen science groups, volunteers, local and state agencies.

T-020 Disseminate firefly tourism guidelines developed in Thailand, Malaysia, Taiwan and Mexico to other countries to encourage sustainable natural resource use.

NETWORK

T-001 Strengthen existing partnerships with Xerces and New Mexico BioPark Society for species assessment and planning.

T-002 Strengthen existing partnership with Fireflyers International Network for outreach and communication.

T-019 Strengthen ties with the International Dark-Sky Association (IDA) for IDA/Firefly Sanctuary certification.

COMMUNICATE

T-021 Compile a list of relevant documents and make them publicly available (e.g. on the Fireflyers International Network website).

T-022 Work with IUCN Communications, national and international media to publicise threatened firefly species, conservation actions and outcomes.

T-023 Appoint a focal person to manage social media outreach (e.g. Twitter, Instagram, others).

T-024 Give interviews and presentations to schools, communities, government agencies and the public.

T-025 Harness the power of visual imagery by collaborating with artists, videographers, photographers and musicians to spread awareness of firefly ecology and conservation.

Activities and results 2021

ASSESS

Red List

T-005 (KSR 6)

Number of new global Red List assessments completed: 135

Result description: Global assessments for ~135 US species have been submitted to the Red List Unit.

T-007 (KSR 6)

Number of new global Red List assessments completed: 1

Result description: In 2021, we started discussions with the Conservation Planning Specialist Group (CPSG), who agreed to help us undertake Assess to Plan (A2P) for congregating mangrove fireflies of Southeast Asia.

Research activities

T-004 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1



A trolley brings visitors to display sites of *Photinus carolinus* in their forest habitat at Elkmont TN, US
Photo: Great Smoky Mountains National Park, public domain



In Taiwan at Liyu Lake, tourists learn about firefly life cycles and species identification from a trained guide
Photo: Sara Lewis

Result description: Scientific article forthcoming in *Conservation Science and Practice*.

T-006 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 8

Result description: Multiple members published peer-reviewed articles on firefly species descriptions, ecology and behaviour, light pollution impacts on fireflies and other insects.

T-008 (KSR 6)

Publication of standardised monitoring protocols: 0

Result description: Vor Yiu (Red List Authority Coordinator) is working on development and dissemination of standardised methodologies for monitoring firefly species abundances.

PLAN

Planning

T-009 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: In collaboration with The Xerces Society, we identified stakeholders and held a remote Workshop on Guidelines for Sustainable US Firefly Tourism. After this meeting, we established a US Firefly Tourism Council and are currently working on materials to distribute to site managers and tourists.

T-011 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: In collaboration with the Xerces Society, we have met virtually with federal, state and local officials who will begin surveys for threatened fireflies in three US regions to gather occurrence data during summer 2022.

T-018 (KSR 8)

Number of position statements issued: 0

Result description: In 2021, we worked in collaboration with The Xerces Society to establish a US Firefly Tourism Council, to publish a downloadable pdf with Guidelines for US Firefly Tourism for site managers, and tips for firefly-watching intended to minimise impact on target firefly populations.

ACT

Technical advice

T-015 (KSR 10)

Number of technical consultations provided to support conservation actions: 4

Result description: Letters were sent supporting US local conservation efforts. A podcast interview was given for the first US Firefly Sanctuary established by the New Canaan Land Trust (Connecticut, US).

NETWORK

Synergy

T-001 (KSR 1)

Number of 'in kind' partnerships established and maintained: 1

Result description: Together with New Mexico BioPark Society and Xerces Society, we have submitted the first Red List assessments for ~135 US firefly species. In addition, thanks to Anna Walker and colleagues, nearly all our Specialist Group members have gone through Red List training.

T-002 (KSR 1)

Number of 'in kind' partnerships established and maintained: 1

Result description: Partnership with Fireflyers International established, and collaborative planning underway for an International Firefly Symposium to be held in Portugal in June 2022.

T-019 (KSR 1)

Number of 'in kind' partnerships established and maintained: 1

Result description: Dr Avalon Owens, an expert on how light pollution affects fireflies, is our new IDA Dark-Sky liaison. In collaboration with The Xerces Society, we have published Firefly-Friendly Light Guidelines (in English and Spanish, available in the SSC DATA database).



Firefly tourism site in Chiayi County, Taiwan
Photo: Hua-Te Fang

COMMUNICATE

Communication

T-022 (KSR 12)

Number of media articles mentioning IUCN

Species theme: 36

Result description: Firefly Specialist Group members wrote or presented at least 13 popular articles or talks about conservation.

In 2021, Firefly Specialist Group members' activities were covered in at least 23 media outlets (online, radio, TV, newspaper, podcast, interviews). Please see the file '2021 Firefly Specialist Group Activities' in the SSC DATA database for details and links. In addition, the Mysterious Lantern Firefly (*Photuris mysticalampas*), an Endangered US species, was featured as an Amazing Species on the Red List.

T-024 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 50

Result description: In 2021, Firefly Specialist Group members wrote or presented at least 13 popular articles or talks about conservation. In 2021, Firefly Specialist Group members' activities were covered in at least 23 media outlets (online, radio, TV, newspaper, podcast, interviews). Please see the file '2021 Firefly Specialist Group Activities' in the SSC DATA database for details and links.

T-025 (KSR 13)

Number of communication products using innovative tools: 2

Result description: Photographers Radim Schreiber and Hua-Te Fang joined the Specialist Group as Visual Storytelling Specialists.

Acknowledgements

The Firefly Specialist Group thanks the New Mexico BioPark Society for sharing their expertise in Red List training and assessment, and The Xerces Society for Invertebrate Conservation for working on Red List assessments for North American species. The Xerces Society has also been an invaluable partner in preparing and disseminating public information on firefly conservation guidelines, US Red List status, guidelines for sustainable firefly tourism, and firefly-friendly lighting practices. We are also grateful to the Parque Biológico de Gaia for hosting and to the Mohamed bin Zayed Species Conservation Fund and IUCN SSC internal grant for providing support for our 2022 Red Listing Workshop in Portugal.

Summary of achievements

Total number of targets 2021–2025: 24

Geographic regions: 17 Global, 5 America, 3 Asia

Actions during 2021:

Assess: 5 (KSR 5, 6)

Plan: 3 (KSR 8)

Act: 1 (KSR 10)

Network: 3 (KSR 1)

Communicate: 3 (KSR 12, 13)

Overall achievement 2021–2025:

