

Saving the Dark: A Session by Sriram Murali and Chandrashekar Rathnam on Fireflies

"Stars on the ground" — this is the phrase that comes to mind when we recall the magical sight of fireflies glowing around us, 50 km away from Coimbatore. The mesmerizing experience felt like stepping into a fairy tale, all made possible by two passionate individuals, Sriram Murali and Chandrashekar Rathnam, whose love for stargazing and wildlife brought us to this enchanting place.

Sriram Murali, once an employee at Google, has been a stargazing enthusiast for many years. His journey began with a simple bet with his family and friends — he wanted to prove that capturing the brilliance of a star-filled sky was possible, even in a world overwhelmed by light pollution. Determined to succeed, he created a breathtaking video that showcased how artificial light obstructs starlight from reaching Earth. Using the Bortle scale, which rates sky darkness from 1 (darkest) to 9, his video vividly contrasted pristine skies with those polluted by artificial light. The film earned him international acclaim, annual awards, and widespread recognition for his exceptional storytelling and filming skills.

A pivotal moment in Sriram's life came during a visit to Anamalai, where he encountered hundreds of fireflies alongside his friend Chandrashekar. Inspired by the ethereal beauty of these "stars on the ground," he photographed the fireflies, creating images that went viral and earned him prestigious photography awards. Though he continued his corporate job, Sriram's heart remained in the magical landscapes where

he experienced awe and wonder with fireflies. This profound connection eventually led him back to India, where he decided to dedicate his life to preserving the beauty of the night.

Together with Chandrashekar, Sriram founded Wild and Dark Earth (WiDE), an NGO aimed at raising awareness about fireflies and the



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detrimental effects of light pollution. Their work involves ongoing research, conservation advocacy, and community outreach to inspire action. They emphasized restoring darkness by retrofitting lights, as darkness and temperature play a crucial role in triggering fireflies' glowing patterns. Their research also investigates how different colors of light impact fireflies, highlighting the complex relationship between artificial lighting and these enchanting creatures.

During our time in the Ram Hattikudur Advance Training in Conservation, Sriram and Chandrashekar taught us about the challenges for firefly emergences and strategies to address them. He presented a video that beautifully captured the impact of light pollution on the night sky. One particular quote resonated deeply: "The story of nocturnal life got support from the role of the diurnal life". This thought-provoking statement emphasized the interconnectedness of diurnal and nocturnal species and the need to view them as part of a cohesive ecosystem.

We also learned about the fascinating ecology of fireflies. Firefly larvae are voracious predators, consuming 5–10 leeches per night. They use mandibles to inject venom into their prey, paralyzing it before cutting the flesh into smaller pieces, dissolving it with digestive enzymes, and consuming it. When fully grown, most firefly larvae pupate underground or in rotting logs. Depending on moisture availability,

pupae delay their emergence until suitable leaves appear. Fireflies are commonly found in teak and rosewood plantations, where they lay up to 50 eggs in moist leaf litter. Major threats to fireflies include habitat loss, light pollution, and increased pesticide use.

The conservation efforts shared by Sriram and Chandrashekar include studying the correlation between sky brightness and firefly flash density, examining the effects of light spill from adjoining properties versus distant light sources, and collaborating with experts to design environment-friendly lighting guidelines. They also conduct outreach programs to raise public awareness. They presented a sustainable



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method for pesticide use, suggesting that instead of spraying chemicals across plants, pesticides should be buried in soil and covered. This approach minimizes harm to fireflies and other insects, promoting a more sustainable solution to pest control.

After having this session, we went to Pollachi to see fireflies in the wild in Aatral, led by Saravanan. We observed the firefly emergence starting at around 7 PM. On the ground, we noticed some firefly larvae crawling around. We also witnessed firsthand the impact of light pollution on firefly populations. In a farm affected by light pollution from a nearby petrol pump, the firefly population was noticeably sparse compared to the areas with less light pollution, where the number of fireflies was abundant.

One particularly enticing incident was observing a male firefly mimicking the signal pattern of a female. Our interpretation of this behavior was that the male might be attempting to eliminate competition from other males. We also observed different flashing patterns, mating behaviors, and social interactions among the fireflies.

This session not only deepened our understanding of firefly conservation but also inspired us to contribute actively to preserving these luminous marvels of nature. The passion and dedication exhibited by

Sriram and Chandrashekar stand as a testament to the impact individuals can have in driving meaningful change.

Acknowledgement:

We would like to express our gratitude to for the opportunity provided to us to gain knowledge on firefly conservation during the Ram Hattikudur Advanced Training in Conservation course at Zoo Outreach Organisation. This exercise has been instrumental in helping us deepen our understanding of the real threats to fireflies and the conservation methods required to address them. We would also like to convey our thanks to Mr. Sriram Murali and Mr. Chandrasekhar Rathnam for allowing us to get insights on the challenges we will encounter as emerging conservationists, particularly in addressing issues such as light pollution and pesticide usage. We are truly grateful for this insightful experience, which will significantly guide our future efforts in conservation.

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