

## Conservation Activity of Firefly Habitat in Kanagawa Prefecture, Japan

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Genji firefly  
(*Luciola cruciata*)

### Abstract

There are 61 municipalities in Kanagawa Prefecture, next to Tokyo Metropolis (Prefecture) and questionnaire survey was conducted in order to figure out how many of municipalities and/or local communities are conserving firefly habitat in urbanized cities. At least 25 municipalities (40.1%) have firefly habitat and 20 (32.8%) have conservation and/or observation activities. Despite those activities, there are only 3 municipalities (4.9%) which have opportunity of information exchange and that might be insufficient for the local community to manage habitat.

### Introduction

Fireflies live almost all over Japan, but some species require complex habitats. A case of Genji-botaru or Genji firefly (*Luciola cruciata*) which is one of common species in Japan for example, it is observed only in an environment that includes many factors such as good water quality when larvae, a place to lay eggs such as moss and/or grassland, no artificial lighting, an appropriate water flow strength, and a shade of trees that serves as a resting place for adults. Therefore, in these years, fireflies have narrowed their habitat due to environmental changes.

In order to restore such environment, firefly conservation activities and projects have been conducted to revive the environment, and events such as appreciation and education are considered to be increased.

However, there are some information reported about firefly conservation partially, there are not objectively collected in Kanagawa, which is second populated prefecture in Japan and just adjacent to Tokyo Metropolis (Prefecture).

### Methodology

Kanagawa Prefecture consists of 33 local governments (city, town and village), and when the wards of government-designated cities (which has ward in city) are added, it becomes 61 bodies (cities, wards, towns and one village).

Questionnaire survey has been taking place to all municipalities in order to clarify the projects that these cities, wards, towns and villages are directly working on, and activities that are both directly and/or indirectly supported local communities. Questions are focused on four topics, which

are concerning activity to conserve firefly habitat, concerning activity to aim at enlightening local residents, such as firefly appreciation events, and concerning to protect of firefly by enacting ordinances and designating natural monuments by local government.

### Results and Discussion

The questionnaire survey was sent to 61 municipalities in Kanagawa Prefecture, and 47 municipalities responded as of January 29, 2021. Effective recovery rate was 77.0%.

25 municipalities (53.2% of respond, 40.1% of municipalities in Kanagawa) recognized there is/are firefly habitat(s) in their municipalities.

22 municipalities (46.7% of respond, 36.1% of municipalities in Kanagawa) replied they are Genji firefly. 14 municipalities (29.8% of respond, 23.0% of municipalities in Kanagawa) were found to be inhabited by Heike-botaru or Heike firefly (*Luciola lateralis*).

Currently, 15 municipalities (31.9% of respond, 24.6% of municipalities in Kanagawa) themselves are engaged in firefly conservation. Besides, it was found that 20 municipalities (42.6% of respond, 32.8% of municipalities in Kanagawa) are providing support to the local community or volunteer groups in municipalities. One municipality designated as ward's insect.

On the other hand, there are only 3 municipalities (6.4% of respond, 4.9% of municipalities in Kanagawa) which have opportunity of information exchange prepared by local municipalities and that might be insufficient to share technical information to conserve firefly and its habitat to descendants, and it might be the issue to be solved in near future.

### References

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