

Protect the Cherry Blossoms from Aliens

1. Motivation behind Research Paper

In recent years, globalization has been accelerating, and a problem regarding an alien species has gained global attention. Unfortunately, Nara prefecture has fallen victim to this “alien invasion.” Cherry blossom trees are being eaten and negatively impacting Japan’s environment. This infestation has been spreading across not only Nara but also the whole of Japan. Cherry blossom trees are one of the most popular features during spring, and they are essential to Japan both environmentally and economically. The *Aromia Bungii*, is the name of the species that has been causing all of this damage. In order to protect the environment and to prevent the further spread of damage, my group and I decided to investigate more about this insect.



Figure 1. *Kubiakatsuyakamikiri (Aromia Bungii)*

•Body length : 2~4cm

•The *Arimia Bungii*, or red-necked longhorn has a red neck, shiny shell, and the ability to spread rapidly.

2. Introduction

The *Aromia Bungii* was discovered to have caused an invasion in Japan in 2011, and was classified as a “specific alien species” in January 2018. The “specific alien species” are an alien species which have the potential to impact agriculture, forestry and fisheries, human lives, and the ecosystem. It is prohibited to import, keep, transport, and release this species outside of their native countries. Once seen, it is recommended that they are exterminated immediately. The *Aromia Bungii* can be found in China, Mongolia, Korea, Taiwan, and Vietnam. It is not clear how they came to invade Japan, but it seems that they invaded Japan through a global shipment of wood or packaging materials. Their laying period is from late May to late August, and with a single spawning, they can lay 350 eggs on average. In addition, some of them can also lay more than 1,000 eggs. They tend to target and eat trees such as cherry, ume, peach, and oyster trees which are highly popular and represent Japan. We need to deal with this invasion as quickly as possible because they will just spread rapidly otherwise. In Nara, my group and I have confirmed that they have spread across Nara in just under two years.

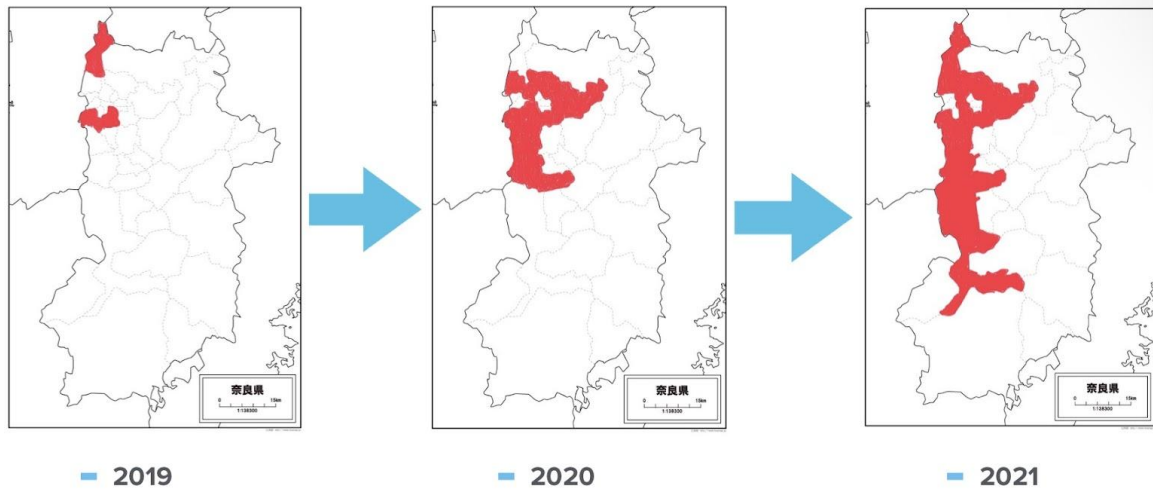


Figure 2. Map showing the spread of Aromia Bungii

3. Results and Analysis

About the reality of the Aromia Bungii Survey

On August 4, 2021, my group and I visited Kufunji temple in Gose to learn how to deal with trees which have been invaded by the Aromia Bungii. The staff of the Nara Prefectural Government Office taught us how to deal with this issue. For example, they covered these trees to prevent Aromia Bungii from moving to other trees. They also injected insecticides to exterminate them. This work takes a long time and it seems very hard to do this in the summer. We were also taught other kinds of measures and efforts people need to take to control their invasion. In Nara, there are four places which are registered as an important monitoring point.

About the survey at the Akishino River

We investigated a row of cherry trees on the Akishino River near our school with a local group called 'A Meeting to Love and Nurture the Headwaters of the

Akishino River'. Our research area is about 1.3 kilometres wide with 154 cherry blossom trees. For our investigation, we mainly compared the characteristics of infested trees with healthy trees. We checked whether or not: there were less leaves, the infested trees had cracks, there were mushrooms surrounding the trees, whether there were frass, which is a mixture of larvae droppings and wood chips. We also investigated whether there were carnivorous insects, called Yokozuna Sashigame which feed on the larvae of *Aromia Bungii*. We did these experiments in the range that can be confirmed by the height of the human eye from the root of the trees.

We conducted our experiment three times. The first investigation was in October, 2021. According to the survey, 144 of the 154 were healthy individuals. There were 10 unhealthy individuals, of which 8 were able to see Yokozuna Sashigame. The second investigation was in November. 139 trees were found to be healthy and 15 trees were unhealthy. Out of 15 trees, we found the insects in 11 trees. The third investigation was in June, 2022. In this survey, there were 77 both healthy and unhealthy trees. Out of unhealthy trees, we found the insect in only one tree. In the third survey, a lot of weakened trees were confirmed. *Kubia Katsuya* Kamikiri could not be found despite doing three investigations.



Figure 3. YOKOZUNASASHIGAME is a carnivorous insect that preys on the larvae of *Aromia Bungii*.



Figure 4. Frass, a mixture of larvae droppings and wood waste. From the root of the trees, you can check the height of the human eye

	健康	衰弱	健康・虫	衰弱・虫
10月	144	10	2	8
11月	139	15	4	11
6月	77	77	0	1

Figure 5. Survey results

About the presentation at the Japanese Forestry Society

We participated in the 9th High School Poster Presentation hosted by the Japanese Forestry Society. At that time, it was outside the activity period of *Aromia Bungii*, so I was exploring not only to get rid of *Kubia Katsuya Kamikiri*, but also how to coexist with them. However, my group and I were unable to come up with a good idea, so we tried to get opinions from experts and university professors. Then, I received opinions and questions from many people, learned a lot of ways of thinking, and expanded my perspective. For example, "It's important to think about

coexistence with living things, but it's tough in reality." "Assuming that seeing flowers is absolutely necessary for humans, it can be regarded as an act of extermination" and so on. I felt once again that our ideal "coexistence with foreign organisms" is difficult, and it is an important issue that we should continue to think about in the future.

4. Conclusion and Future Problems

If we find the *Aromia Bungii*, we would like to catch and kill them and report them to the wards, municipalities in the area where they were found. This is called the environmental point of contact. However, only to exterminate the invaded *Aromia Bungii* is a makeshift response. It does not solve the fundamental problem. Then, we focus on more fundamental problems. One way that can always help is to spread awareness about this issue, which increases the chances of actions being taken to solve the problem. By simply informing people, and saying that "there is serious damage by alien insect species", I believe that we can make a positive impact. Together, we can work together to ensure that no foreign species come to Japan in order to protect our environment.

5. Reflection

I was able to understand the importance of the action of exterminating alien species through this research project. I was able to understand the feelings of the extermination side through a book called "The Feelings of Alien Species" that I read in the beginning of my research. At first, I thought it was natural to get rid of the alien species but they have lives like humans, so I had to reconsider my stance on this issue. I realized that the reasons for getting rid of them are not only that they are

alien species but also that humans want to see the cherry blossoms. Humans want to save the environment but they also want to satisfy their selfish desires. This reminded me of the problem of palm oil and Borneo which I learned in first grade. In order for the palm oil industry to succeed, humans need to destroy a lot of land which endangers the lives of many animals such as orangutans and elephants. I was able to spend my days conscious of my life on the sacrifice of the arrogance of taking lives by people's desires and the fact that what I took for granted was on a lot of sacrifices and lives.

6. Work Cited

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