

Deer and Littering in Nara

1. Motivation behind Research Paper

In recent years, humans have built a civilization of mass production and consumption. While a society of mass production and consumption makes us rich, the problem of resources decreasing, the environment being destroyed and global warming is still occurring. We took a class called Global Exploration in which we thought about various world problems and learned the aim of SDGs17- Sustainable Development Goals. First, we explored global-scale problems but we were limited in the impact we could make. Then we tried to solve problems that could be found locally by examining Nara, which is our town. There are a lot of historic monuments and nature, so many tourists visit it. According to the foundation for the protection of deer in Nara, due to park visitors, there is a large amount of littering which the deer then eat. It is a serious problem. The purpose of this research paper is the analysis of the garbage problems in Nara.

2. Introduction

We have explored to solve damage to deer and the environment due to littering in Nara park. According to the Foundation for the Protection of Deer in Nara, there is a problem that deer eat plastic bags that smell like food. There is littering because there is no trash box. In the past, for example, there were about 3.2 kg of plastic bags in the stomach of a dead deer.(Left chart) The picture on the right is

plastic bags from the stomach of a female deer on July 22, 2021. The deer are a really rare existence because they live in Nara City even though they are wild animals, so deer and people's lives have become closer and deer eat something that it's not originally food. According to the results of a garbage pick-up survey by Mr.Usami of the University of Veterinary and Life Sciences of Japan, the result was that the majority of garbage found in their stomachs was plastic bags. Some deer eat it by mistake. Also, as shown below, they will eat consume paper on the ground such as pamphlets.



Foundation for the Protection of Deer in Nara Vlog From Event Information and Daily Events (July 2021)

Figure 1. Plastic found in the stomachs of deer

3. Results and Analysis

We asked two questions directly by phone to the Foundation for the Protection of Deer in Nara: how to reduce the damage of deer in Nara. It is an organisation that conducts activities to protect deer in Nara. Since it is an

organisation where deer experts from Nara gather, we decided that it was the best, most reliable, so I asked this organisation two questions. First, I asked if I could install a trash can in Nara Park. We thought the installation of trash cans was the most effective. However, according to the person in charge, he replied that he could not install a trash can in Nara Park. Because there is a problem of human resources and labour costs to collect the trash.

Second, I asked what was the most effective measure. I was advised that activities such as garbage picking campaigns, signboards, and posters are the most effective. As a general rule, garbage is taken home. In order for the general public to know about the damage of deer in Nara Park, we decided to make a poster that anyone can understand. Because I thought that changing people's consciousness would lead to solving this problem. First, we thought about what kind of posters are easy to see. So we created a picture-centred poster and a character-centred poster, posted it in front of the school entrance, and a week later, we took a questionnaire on which poster is easier to see. As a result, more than 80% of people say that posters centred on pictures are easy to see. People who saw the poster gave opinions such as "colourful and conspicuous" and "design cute."

On the other hand, the result was that posters with only letters were easy to see. There were opinions that even foreigners can understand, "it's simple and not too much", and it was also true that some people focused on the advantages of only letters although the percentage is small. Based on these, we tried to create a groundbreaking poster that introduced both advantages. In addition, we thought about a place to put up posters for more people to see. We immediately made

Kintetsu Nara Station a candidate. According to the open data website, Kintetsu Nara Station is ranked 5th in Nara Prefecture by station and is used by about 34,400 people a day, and the number of foreign tourists is second only to JR Nara Station. From these data, we thought that Kintetsu Nara Station was a good place to be seen by more people, conscious of it, and understood by tourists. However, there is no point if people don't see it even though we put it on the station. So we thought about where the station is the easiest to see, and we thought it would be nice around the ticket gate where everyone passes through. It is impossible for everyone who uses the ticket gate to see the poster, but the probability of seeing people increases.

4. Conclusion and Future Problems

As mentioned above, making posters is the best way to protect deer in Nara Park, so we tried to make posters that anyone can understand to know about deer damage in Nara. Then, we asked Kokusai High School students which is the better poster, a picture poster or a poster with letters only. According to the results of the questionnaire, 83.3% of the people chose a picture poster. Some people said a picture poster is easy to understand. Others said a poster with letters only has an impact. And, we knew where the best place to put a poster was. It is near the ticket gate of Kintetsu Nara Station because there are a lot of people. From these results, we suggested that a poster with English sentences which foreign people can understand too and with pictures which anyone can understand is put near the ticket gate of Kintetsu Nara Station. Yet, our exploration finished without acting on it.

I don't plan to continue exploring in the future, but we are conscious about learning it in our daily life and we hope to make a sustainable earth.

5. Reflection

We could not carry out the solution that we had thought of because there were some problems. At first, we thought it was a problem that could be solved. However, it is harder for us to solve the problem than we expected and there is a long way to go. The coexistence between deer and people in Nara is different from the coexistence between common wild animals and people. The deer in Nara are animals that respect people and have quickly achieved peaceful coexistence with people. We should change our concerns, then we respect deer. It is the best way to put up posters that we actually carried out, and it is easy for us to solve if humans can even be conscious and bring back trash but few people try to take action. We always want to be aware of this and act. There were few things that we could have done through this explanation, and it may not have been a big step but our conscience changed certainly.

6. Work Cited

Blog of the Foundation for the Protection of Deer in Nara, Event Information Daily Events.

Blog of Mr. Usami, Japan University of Veterinary and Life Sciences.

<https://opendata-web.site/> Open Data Website