

Factors of damages by wild animals from the perspective of the characteristics of villages in Iida city, Japan

HASHIMOTO, Misao^{1*}

¹University of Tsukuba, Graduate School of Life and Environmental Sciences

In recent years, it can be seen that the damages to agriculture, forestry injuries by invasion of wildlife to human dwellings (hereafter called animal damage) have become evident. In particular, studies on damage management, from the point of view of environmental improvement of village wild animal is less likely to appear, it has been emphasized that analysis of the Natural and Human environment at the micro scale related to appearance point of wild animals. However, the regional characteristics of factors where the wild animal's damage occurred, have not been studied.

Therefore, the objective of this study is to clarify the factors of damage by wild animals analyzing the changes of the natural environment and the human activities from the perspective of the characteristic of settlements.

This study area is Iida city, Nagano prefecture. Iida city can be divided into three characteristic areas (Ryu-sai, Ryu-to and Toyama) and the trend of animal damage and issues of measures differ in these areas. Therefore, this study selected three case study districts, Kamisato, Chiyo, Kamimura, one from each area. And this study targets Japanese deer and Japanese black bear by the distribution of wild animals causing damages, the ecological features and the characteristics of damage.

Furthermore, major occurrence factors of animal damages can be summarized by the following two points: 1.Feed which deer and bears can take exists in a village all throughout the year and 2.Due to the aging population or depopulation, deserted cultivated land and abandoned houses have increased and farmlands are adjacent to forests and as a result, invasions pathways for wildlife exist in a village and its surrounding areas.

However, this study shows that the patterns of damage factors by wild animals are different by features of a village. A suburban village of an urban area like Kamisato district, the amount of farm produce is large by large scale agriculture. Therefore there are many farm products which wild animals can get as a feed from the village. Moreover, since it is close to an urban area, its altitude is relatively low and the forest area is small. In addition, a secondary forest is no longer functions as a buffer zone separating settlements and deep mountains. Since there is also no buffer zone between the habitats of wild animals and the life sphere of human beings damages by wild animals occurs. In the village such as Chiyo district, which is between suburban village and underpopulated village due to depopulation and an aging population, agriculture has declined and management of deserted cultivated land and measures against damage have been difficult. Therefore, the situation where wild animals can easily invade. Moreover, despite the decline of agriculture, there are still large amounts of farm products which wild animals can feed in a village, thus wild animals are attracted into the villages. As a result, damage is more. An underpopulated village such as Kamimura district is far from an urban area and is surrounded by forests. Moreover, depopulation and aging population are remarkable and the production of farm products is relatively low and the scales of agricultural damages are also low. However, due to depopulation and aging population, the counter force for wild animals in a village is weaker and fruit such as persimmons cultivated in gardens and fields for private use in a village are also get damaged. It can be pointed out that the underpopulated village used to be in the forefront of damage by wild animal, as depopulation preceded, its forefront shifted to other villages. Under the present situation where the power of the underpopulated village to counter damages by wild animals is weakening, it is significant for each village to take measures against damages by wild animals.

Keywords: Characteristics of villages, Factors of damages by wild animals, Iida city, Nagano prefecture, Japan, Japanese Deer, Japanese Black Bear, Wildlife Management