

**Brown bears in Hokkaido should also consider population adjustments.** -They even appear in urban areas of Sapporo, first of all, more scientific research and consideration should be conducted.

Hiroyuki Matsuda

This document is originally published in Japanese, by Ronza, Asahi

<https://webronza.asahi.com/science/articles/2019073100002.html>

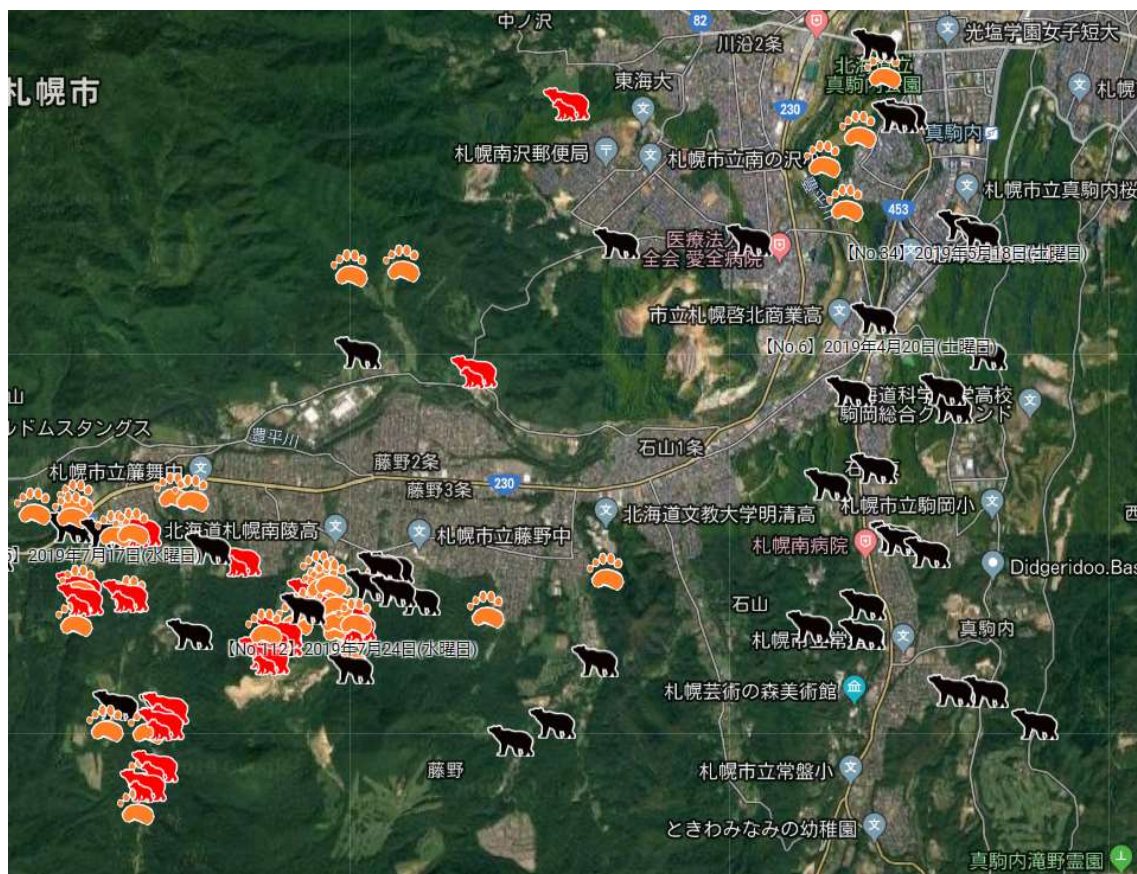


Fig. 1: Brown bear sightings in Minami Ward, Sapporo. Black indicates a sighting, red indicates a sighting of a parent and offspring, and orange indicates footprints. Brown bears are regularly seen in urban areas adjacent to forests, including near Makomanai Subway Station. (Information on brown bears appearing in Minami Ward, Sapporo. [html](https://webronza.asahi.com/science/articles/2019073100002.html))

Brown bears are often seen in the urban area of Sapporo (Fig. 1). The brown bear habituation problem in the Shiretoko World Heritage Area was described in Matsuda (2015), but the bear problem is not limited to national parks, and even metropolis cities are now facing a serious bear problem. It must be said that the Ministry of the Environment, Hokkaido and Sapporo City administrations and bear scientists are taking a back seat.

### **Deer populations controls are being enforced in both Shiretoko and Yakushima.**

One way of dealing with an overabundance of wildlife is 'population control' (controlling the population through culling). In the 1970s, the population of Japanese sika deer, including yezo deer (*Cervus nippon yezoensis*) in Hokkaido, was low and was protected, but as their numbers increased, in 1998 the East Hokkaido Region Yezo Deer Conservation and Management Plan ([pdf](#)) and population control were enforced. At that time, the plan received a lot of criticism. However, deer populations are now also being controlled in the World Heritage areas of [Shiretoko](#) and [Yakushima](#).



Photo. A brown bear appears in an expanding field. Nibbling a beet of crop, July 2017, Morimachi, Hokkaido, Japan; photo by Atsushi Kurosawa.

Unlike deer, damage caused by bears can be fatal to people, and simply appearing in urban areas can result in restrictions such as the cancellation of children's school trips and marathon events. The City of Sapporo states that 'in advance to go outside, please collect information on brown bear appearances from the website, etc., and stay away from areas where brown bears are known to appear' ([Sapporo City](#)), but it is definitely insufficient to reassure residents.

### **Only 'nuisance bears' are culled**

The current management plan states that 'nuisance individuals' that intentionally approach people or destroy farmland will be culled by capping the number of animals killed to the extent

that this does not affect the population persistence.

段階	人間に対するヒグマの行動	個体区分	対応方針	
0	人間を恐れて避ける。	非問題個体	市街地 農耕地	住民周知、見回り、被害防止措置、誘引物除去
			森林地帯	住民周知、入林者への情報提供、被害防止措置、誘引物除去
1	人間を恐れず避けない。 人家付近や農地に頻繁に出没する。	非問題個体 ／問題個体	市街地 農耕地	住民周知、追い払い、被害防止措置、出沒継続は捕獲
			森林地帯	住民周知、入林禁止、追い払い、被害防止措置、出沒継続は捕獲
2	農作物に被害を与えるなど、人間活動に実害をもたらす。	問題個体	市街地 農耕地	住民周知、見回り、被害防止措置、問題個体の捕獲等
			森林地帯	住民周知、入林禁止、被害防止措置、問題個体の捕獲等
3	人間に積極的につきまとう、又は人間を攻撃する。	問題個体	市街地 農耕地 森林地帯	住民周知、見回り、被害防止措置、問題個体の捕獲、対策本部設置等

Table 1: Summary of the stages of harmfulness of individuals that have appeared and the policy for dealing with them = from the Hokkaido brown bear management plan outline.

<https://ecorisk.web.fc2.com/2019/19RonzaSapporoTable1.pdf> (English)

Instead, it is my opinion that the option of converting to population control as with yezo deer should be considered. However, this is not as easy as it might seem and there are many problems.

### The population estimate is too uncertain.

The brown bears that appear in Sapporo are the Shakotan-Eniwa population, which, together with the neighbouring Teshio-Masuge population, is designated an 'endangered local population' by the Ministry of the Environment. Recent population estimates for the Shakotan-Eniwa population are  $800 \pm 600$  individuals (i.e. 200-1400 individuals, [pdf](#)). This estimate also has not yet been published in peer-reviewed article, but if there are really 200 individuals, they should be protected. However, the number of problem individuals is quite high and reducing them would increase the threat of regional extinction.

On the other hand, for the Teshio and Masuge populations, the number of problem individuals is significantly lower than in other areas, so there is little need to exterminate them. In any case, more precise population estimates are needed, but the Ministry of the Environment has allocated a research budget for estimating the bear population in Shiretoko from this year, but there is no prospect of even estimating the bear population in Sapporo. This is troubling because the accuracy of population estimates needs to be improved in order to discuss population adjustments.



The Ministry of the Environment may focus on national park policies, but the relationship between people and wildlife in urban areas should also be an important issue: in May 2019, a bear was physically attacked by a car in Sapporo when it spotted a bear that appeared to have chased a bicycle. Apparently, the bear was not intentionally tracked and is therefore less dangerous. But in the first place, should we accept the coexistence of wild bears and humans in the urban area of metropolis?

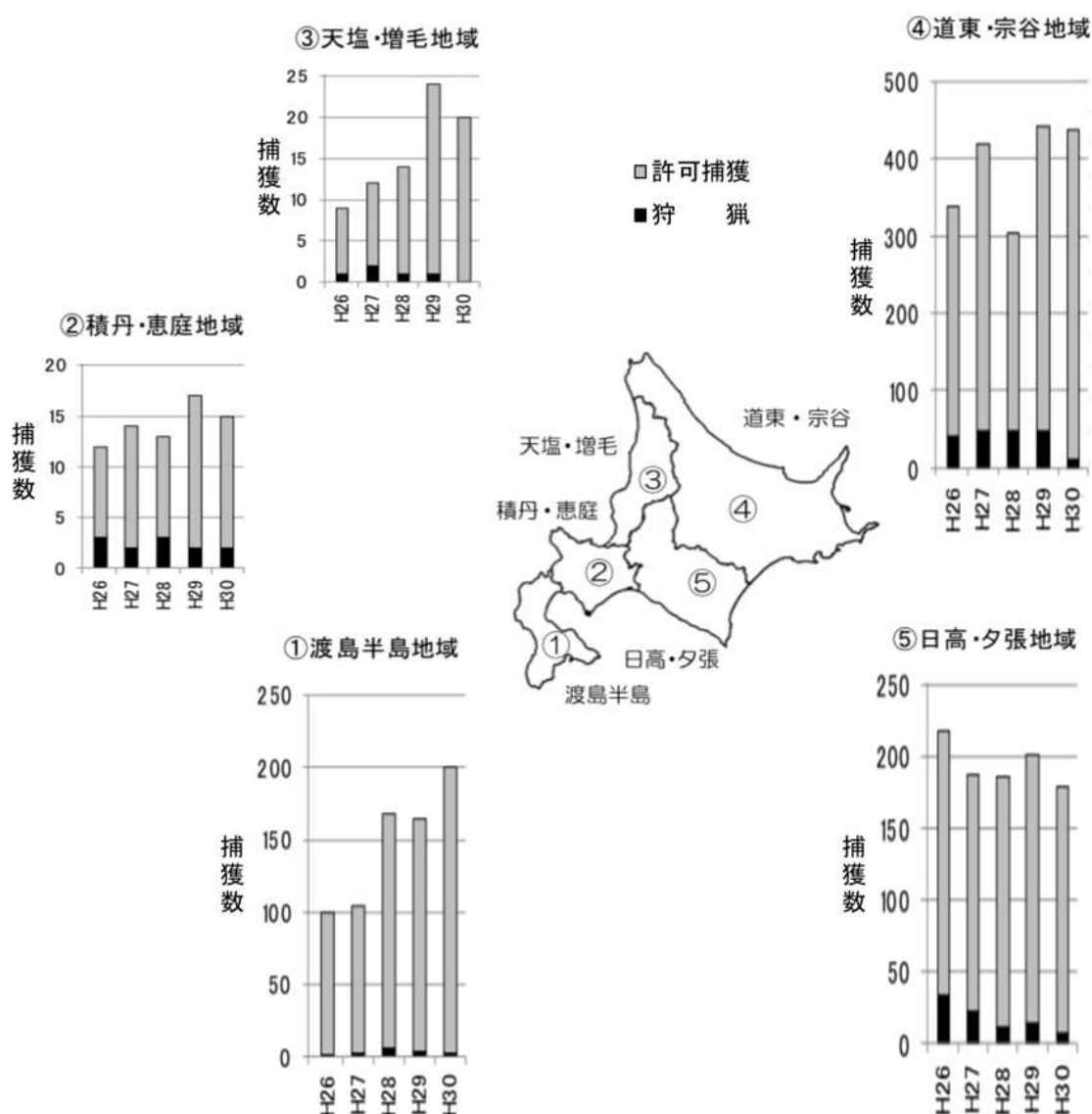


Fig. 2 Number of brown bears captured by local population = from Hokkaido data.

<http://www.pref.hokkaido.lg.jp/file.jsp?id=1189484>

### **Problems common to black bears in Honshu Island**

In brown bear control, the habituation of the bears was more of an issue than the number of individuals. In ancient times, the Ainu (the indigenous people) recognised bears separately as kimkamui (god in the mountain) and wenkamui (bad god). We are trying to estimate the population of both separately. If this can be done, management can be based on population dynamics models (Matsuda, [2021](#)).

At present, the number of non-problem individuals is uncertain, but the number of problem individuals that appear in public can be determined to some extent (brown bear management plan [Ref. 6](#)). And it is also clear that although the number of individuals captured in the Shakotan and Eniwa areas, including Sapporo, is low as shown in Fig. 2, the number of nuisance bears (stage 2 or above in Table 1) is considerably higher.

### **More scientific research and study is needed.**

The [specific system](#) for wildlife management under the Birds and Beasts Protection and Management Law, of which yezo deer was a precedent, advocates 'adaptive management' in which measures are changed according to the situation. Depending on the increase or decrease in the population, the following can be used: 1) when non-nuisance individuals are also captured to reduce the overall population; 2) when only nuisance individuals are culled to maintain the population and reduce damage only; 3) when nuisance individuals are not immediately captured and released for study to avoid extinction of the bear. The bear population and distribution and nuisance bears have increased significantly since the ban on spring bear hunting was imposed in 1990. If the policy is still remains the same, I must to say that the adaptive management is not adopted.

In the cases of Steller's sea lions and harbour seals, damage to fisheries has become so serious that in 2015, the Fisheries Agency and the Ministry of the Environment set targets to reduce their populations after downgrading them to near threatened species in Japan, and began to control their populations respectively. As for the bears that appear in Sapporo, the estimation error of the population is too large and there is no sign to review the listing of the threatened local population.

In any case, what science can do is to consider measures to reduce the number of bears appearing in urban areas, or methods that stimulate bears that appear in urban areas as little as possible. The choice between the two is a societal choice, not a scientific one. However, while the City of Sapporo is working on the latter, the former has not even been discussed. We would like to see more scientific research and consideration in preparation for when society will control the population to reduce their number in urban areas.

The black bear is found in Honshu and Shikoku Islands. Only a dozen or so black

bears have been identified in Shikoku, and the extinction risk is quite high. In the black bear, the enlarged bile of hibernating individuals in particular can be traded at a high price. The situation is the same for brown bears in Hokkaido. Black and brown bears are listed as Annex I or II species under CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), respectively. If they are to be captured in large numbers, it has been pointed out that a bear bile management system needs to be established, for example to ensure the proper distribution of bear bile.

Attention should also be paid to how bears are controlled in forests and parks in and near urban areas of metropolis. The number of hunters with experience in bear hunting is decreasing and technical considerations will need to be made.

There are many more problems in bear population control than there were when we started the population control of sika deer in 1998. But at the very least, it would be better if the government and scientists were prepared to make it an option for society.

This is not limited to brown bears in Hokkaido. Hyogo Prefecture, which used to catch and release nuisance bears alive, has recently begun to cull them. The Kinki, Chubu and eastern Japan regions may have reached a stage where a change of policy should be technically considered.