

動物園と防災

－災害に対する動物園の役割－

Natural Hazards and Zoos

Function of Zoos against Natural Hazards and Disasters

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動物園（水族館を含む）の役割には、①レクリエーション、②環境教育、③種の保全、④調査研究の4つがあると言われている。そのような多様な役割を持つ動物園を楽しみ、時に学ぶために、世界中で年間7億人以上の人々が訪れている。北米の動物園の年間入園者数は、実に1億3,600万人に及び、この数字は野球、バスケット、ホッケーおよびサッカーの年間入場者数の合計より多い。このように多くの来園者が訪れる動物園は、災害に関わる問題も多く抱えている。

記憶に新しい例としては、2011年（平成23年）3月11日に発生した東日本大震災による東北地方の動物園や水族館の被災が挙げられる。被災したのは、東北および関東などに位置する14の動物園水族館であるが、中でも仙台市八木山動物園、福島海洋科学館（ふくしまアクアマリン）、マリニピア松島水族館の被害が甚大であった。被災した動物園・水族館は、長期間にわたり復旧作業に追われ、さらに休業を余儀なくされた。被災園館に対して、国内外から援助の手が差し伸べられ、支援金は2011年6月末までに国内から1,013件、国外から13件が寄せられ、総額は5,000万円近くまで達した。国内の動物園水族館も被災直後から支援活動を開始し、動物たちの餌や緊急避難場所を提供してきた。今後も、全国の動物園水族館が同様の災害に遭遇する可能性があることから、公益財団法人日本動物園水族館協会（JAZA）は、安全対策委員会内に災害対策部を設けて、災害救護や支援の訓練に取り組んでいる。

東日本大震災の16年前（1995年）の1月17日に発生した阪神・淡路大震災時には、私が勤務していた神戸市立王子動物園が被災し、自然災害が動物園や飼育下動物たちにもたらす影響を実体験した。同時に、地震災害時に復旧・復興等の防災拠点となる都市公園としての役割も認識する機会ともなった。つまり、動物園の周辺地区からの避難者を収容し、市街地火災等から避難者の生命を保護する避難場所としての機能を動物園が有しているこ

とを学んだ。阪神・淡路大震災直後から、王子動物園は周辺住民の避難所や自衛隊の駐屯基地となるだけでなく、園内施設の一部が遺体安置所としても利用された。本震災以前は、動物園建築がマグニチュード 7 以上の地震を予測して設計されることに疑問を抱いていたが、震災後の動物園が果たした避難所の役割を経験して自らの不明を恥じた。

一般的な災害とは少し意味合いが異なるかもしれないが、主に畜産分野で発生する鳥インフルエンザや口蹄疫などの感染症にも、動物園水族館は監視や防御の対策を必要としている。2010年に宮崎県内で発生した口蹄疫では、宮崎市フェニックス動物園が本家畜伝染病の感染防止と園内動物保護のために一時休園した。養鶏場や野鳥で鳥インフルエンザが発生した場合には、全国の動物園が同様に鳥類展示の縮小や休園を行うことが決められている。

以上のように、動物園は様々な災害を想定し防災に配慮しながら、来園者が安全に楽しめる場の提供に努めていることを知っていただきたい。

It is said that zoos (including aquariums) play the following four functions: (1) recreation, (2) environmental education, (3) species conservation, (4) research studies. All over the world, in a year, more than 700 million people visit the zoos with such various functions to enjoy them and, sometimes, to learn from them. The number of annual visitors of North American zoos reached 136 million indeed, and this number was more than the total number of annual visitors of baseball, basketball, hockey, and soccer matches. Thus, the zoos have many visitors, but have many problems related to natural hazards and disasters.

Examples which are still fresh in my mind are some disaster-stricken zoos and aquariums in the Tohoku region as a result of the Great East Japan Earthquake on March 11, 2011. The fourteen zoos and aquariums located in the Tohoku and Kanto regions and others were stricken by the earthquake. Among them, the Yagi-yama Zoo in Sendai City, Marine Science Museum in Fukushima Prefecture (Fukushima Aquamarine), and Marinepia Matsushima Aquarium suffered enormous damages. The disaster-stricken zoos and aquamarines became busy with their restoration operations for a long time and were forced to close. Helping hands were extended in Japan and from overseas to the disaster-stricken zoos and aquariums. By the end of June 2011, 1,013 financial assistance offers in Japan and 13 offers from the overseas were made, and the total amount reached nearly 50 million yen. Other zoos and aquariums in Japan started assistance operations immediately after the disaster hit, and have provided emergency evacuation places and feed for animals. Since there is a possibility for Japan's zoos and aquariums to encounter similar natural hazards and disasters in future, the Japanese Association of Zoos and Aquariums (JAZA) has set up a natural hazard and disaster measure office in its safety measure committee, and has undertaken rescue and assistance training activities related to natural hazards and disasters.

During the Great Hanshin-Awaji Earthquake on January 17, 1995, about sixteen years before the Great East Japan Earthquake, the Kobe City Oji Zoo where I worked was affected, and I actually experienced the effects of the natural hazard and disaster on the zoo and captive animals. At the same time, it became an opportunity to recognize the zoo's function as the city's park that became one of the disaster prevention places to carry out restoration, reconstruction and other operations when the earthquake-related disaster occurred. That is, I learned that the zoo had the function as the evacuation place to accommodate some evacuees from the areas surrounding the zoo and to protect the evacuees' lives against fire and other matters in the urban area. Immediately after the Great Hanshin-Awaji Earthquake, the Oji Zoo became the station base for the Japan Self-Defense Forces and the evacuation place for the surrounding residents. In addition, the zoo's facilities were partially used as mortuaries. Before this earthquake-related disaster, I questioned the fact that the zoo was designed and constructed in anticipation of earthquakes with magnitudes greater than 7. However, I felt ashamed of my ignorance, having experienced the zoo's function as the evacuation place after the earthquake-related disaster.

Moreover, the zoos and aquariums need monitoring and protection measures against infectious disease such as avian flu and foot-and-mouth disease occurring mainly in the livestock production sector although the implications are a little different from natural hazards and disasters in general. When foot-and-mouth disease incidents happened in Miyazaki Prefecture in 2010, the Miyazaki City Phoenix Zoo closed temporarily to prevent this domestic animal contagious disease from infecting and to protect the zoo's animals. Similarly, if avian flu is observed in chicken farms and wild birds, Japan's zoos are required to close or reduce their bird exhibition.

As seen above, I would like to point out that the zoos are making various efforts to provide places for visitors to enjoy safely while giving thoughtful consideration to such disaster prevention measures on the assumption that diverse natural hazards and disasters could happen.