

Protection and Recovery Program for the Yanbaru long-armed scarab beetle (*Cheirotonus jambar*)

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Ministry of Education, Science and Culture

Ministry of Agriculture, Forestry and Fisheries

Environment Agency

I. Objectives of the Program

The largest Japanese beetle, the Yanbaru long-armed scarab beetle (*Cheirotonus jambar*), was described as a new species in 1984. Occurring in the northern part of Okinawa Island, this species is found in forests that feature large trees, such as *Castanopsis sieboldii*, with hollows that serve as living space for eggs and larvae. Degradation of suitable environments and other factors have reduced the distributional range of this species. In addition, illegal collection and the destruction of breeding environments by maniac amateur collectors have raised concerns, with incidents of illegal collection confirmed to occur even today. Very few confirmed sightings have been recorded in recent years.

The objectives of this of the program is to ensure the stable survival of the beetle in a natural state by clarifying and monitoring the status of the species; maintaining and improving the environments necessary for the species; and establishing captive breeding techniques and implementing captive breeding programs.

II. Program Area

The distribution area of this species in the northern part of Okinawa Prefecture.

III. Overview of the Program

1. Understanding the species status and monitoring

To ensure appropriate and effective implementation of the protection and recovery program for this species, surveys will continuously monitor the status of the species, including recent fluctuations in population and breeding status, as well as habitat conditions. The program will also accumulate any other pertinent information. In the event of alarming changes in the species status or habitat, countermeasures will be implemented as needed to preserve this species, including research to clarify the cause of the problem.

The program will also involve research and studies to better understand the biological characteristics of the species and the structure of the ecosystems in which this species occurs, and to gather information on the current status of various factors that pose potential threats to the current population and their impacts.

2. Habitat maintenance and improvement

The stable survival of this species in its natural state will require efforts to maintain the health of the entire ecosystem, including large specimens of *Castanopsis sieboldii* and *Quercus miyagii*, which provide the hollows needed for egg-laying and larva growth.

In particular, the tree hollows required for habitat appears to be in decline. Based on the results of Item 1 above, the program will explore effective methods for filling hollows with humic substances, and creating and setting artificial hollows based on a due consideration of the ecological characteristics of this species, thereby maintaining and improving suitable environments for habitat and breeding.

When land use or business activity on species habitat arises, the program will seek to ensure the environmental conditions needed for the survival of the species.

3. Captive breeding and reintroduction

Species conservation will focus on the maintenance and growth of wild population in their habitats. However, given the very low numbers of the current population confirmed, an aggressive captive breeding program may be required. For this reason, the program will also seek to establish captive breeding techniques and to proceed with captive breeding programs based on the techniques established.

If deemed necessary, the program will seek to strengthen current population by reintroducing individual beetles over the current range of the species by the appropriate method. If so, special care will be taken to avoid genetic disturbances that may threaten the survival of existing wild population.

4. Preventing illegal collection

Habitats will be patrolled to prevent illegal collection, a major threat to the species survival.

5. Promotion of education and awareness-raising activities

To achieve effective progress with the program, understanding and cooperation is crucial on the part of the parties carrying out various business activities, relevant administrative organs, and citizens including community residents. The program will promote public awareness on the species status, the need for protection, and the progress of the protection and recovery program. These activities will help foster better understanding and cooperation in protecting the species. The program will also seek to facilitate the development of voluntary conservation activities of the community through efforts such as fostering a deeper understanding of the species in the concerned area.

6. Consolidation of collaboration for effective promotion of the program

When implementing the program, efforts will seek to facilitate cooperation and collaboration among the national government, Okinawa Prefecture and relevant municipalities, experts in ecology or other aspects of this species, and local residents.