

Efforts for World Natural Heritage Site Registration made by the Okinawa Churashima Foundation



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The Okinawa Churashima Foundation has for over 40 years operated and managed Okinawa's national government parks accomplishing research leading to new knowledge of Okinawa's subtropical plants and animals, technological development, and public awareness. The foundation aims to respond to environmental problems and crises, preserve the natural environment of Okinawa, utilize historical culture, and promote sustainable regional development.

Developments by local communities, residents and private businesses are being made with the goal to register Amami and Okinawa as a World Natural Heritage Site and to further environmental conservation and regional development after registration.

To solve problems, and build a sustainable management system, Okinawa Churashima Foundation will outline measures to be taken and how to contribute in the future.

Table of contents

- (1) Protection of rare species and the natural environment.
- (2) Awareness activities related to World Natural Heritage Sites.
- (3) Non-native species, poaching, and anti-smuggling measures.
- (4) Regional contribution and development through activities connected to rare species and the natural environment.
- (5) Cooperating with communities to reach sustainable development goals (SDGs).
- (Reference) Scientific research related to marine life.
- (Reference) Overview of fund-raising, collection and restoration of Shuri Castle and cultural assets.

(1) Protection of rare species and the natural environment

Surveys of rare plant species on Okinawa and Amami ^{*1}

Part Contracted by the Ministry of Environment

We are monitoring the conditions of the local habitats, conservation and proliferation outside the habitat to attempt restoration to the area.



Dendrobium okinawense *Platanthera sonoharai*

Iriomote Island Botanical Database Project

Iriomote Island has a treasure trove of creatures many unique to the island, but there had not been the creation of a botanical database that serves as foundation for conservation. A botanical database based on the latest taxonomy began in 2018 with field surveys and specimen organization underway.



Specimens of endemic species in Iriomote Island (*Chikusichloa brachyanthera* Ohwi)



Conservation project of Ryuku-ayu (*Plecoglossus altivelis ryukyuensis*) ^{*1}

We are contributing to the conservation of this species through researching the population changes within the river.



Ryukyu-ayu



Fish ladder cleaning

Wildlife rescue activities

Our foundation has access to one of the best CT scanners within the prefecture which significantly aids in the medical treatment and examination for wildlife with the cooperation of the NPO Conservation & Animal Welfare Trust Okinawa.



Pygmy sperm whale

^{*1} Conducted by "Designated Facility Management Operation of the Okinawa Commemorative National Government Park

(2) Awareness activities related to World Natural Heritage Sites

Yanbaru environmental study (school visits) ^{*1}

Our foundation managed lecturers targeting elementary and junior high schools, conducting programs to teach students about the precious nature of the Yanbaru area. There has been a total of 200 sessions reaching around 6,200 children.



Environmental Education Project in ^{*1} collaboration with media

Co-sponsored with prefectural newspapers, the educational program has been conducted since 2009. Approximately 350 children and students have learned about Okinawa's natural environment through their research, field trips, and hands-on learning.



Eco-coupon project ^{*1}

Since 2008, the Eco-coupon project has provided entrance tickets to Okinawa Churaumi Aquarium to schools, local groups and NPOs within the prefecture and outer islands that are undertaking beach cleaning or activities to prevent red soil runoff.



Night Tours of Ocean Expo Park ^{*2}

The programs give the chance to see rare nocturnal animals. Around 50 sessions and 900 people have participated. Visitors can see Yanbaru's rare small animals such as coconut crabs and the Kuroiwa's ground gecko (*Goniurosaurus kuroiwa*). Species identification using photos revealed that there are approximately 1,000 coconut crabs and around 160 Kuroiwa's ground geckos living within Ocean Expo Park.



Coconut crab



Kuroiwa's ground geckos

^{*2} Conducted by "Okinawa Commemorative National Government Park Operation and Maintenance Affairs."

(2) Awareness activities related to World Natural Heritage Sites

Exhibits of Okinawa's rare plants

A permanent exhibit of Okinawa's rare plants such as wild orchids are displayed at the Ocean Expo Park Tropical Dream Center. There are also special exhibits held at facilities managed and operated by the foundation, creating opportunities for many visitors to learn about the rare plants in Okinawa.

Exhibits of Endangered Plants Exhibition *2

From 2011 to 2016: T.D.C. Approximately 45,000 participants



Plants Of The Ryukyus Exhibit *2

In 2017: Tropical Dream Center. 13,257 participants



Beauty of Yanbaru forest - Photo Exhibit

In 2017: Okinawa Prefectural Museum. 4,880 participants



Precious Plant Exhibition of Amami, Yanbaru and Iriomote *2

In 2018: Tropical Dream Center. 4,744 participants



(Reference) Marine animal researches

Studies of sea turtles *1

Since the 1980's, we have in cooperation with research volunteers from various areas of main island of Okinawa, studied the sea turtles in Okinawan waters.

Long term research allowed us to understand the long-term changes in numbers of turtle nesting sites and see the sudden decline from 2015 onwards of loggerhead sea turtle nests. Studying dead stranded sea turtles has showed how human activity and ocean trash have become a serious threat to wildlife. In addition, we provide grants and support the activities of researchers who conduct ecological surveys of sea turtles.



Surveying a nest by an authorized researcher



Hawksbill turtle

Studies of cetaceans *1

Since the 1980's we have studied the whales and dolphins spotted in Okinawan waters. Analysis of unique tail fluke patterns has allowed the identification of approximately 1,500 individuals. Questions about their reproductive ecology and migration routes have been answered. This cooperative system of research has led to the sharing of information of whale sightings, and the formulation of self-regulation rules by the whale watching operators within the prefecture.



Marine life surveys *1

In order to study the biodiversity of fish, sample surveys have been conducted in Okinawan waters since the 1990's. Approximately 60,000 specimens have been collected and around 40 species have been discovered for the first time in Okinawa, or the first time in the world.



First record of the Mindoro snake eel (*Lamnostoma mindorum*) in Okinawa

(3) Non-native species, poaching and measures to prevent smuggling

Eradication surveys of invasive species

Many invasive species have established themselves in Okinawa. These invasive species include those brought in deliberately and those that arrived unintentionally. Technology is being developed to remove these invasive species that threaten native species, especially those species which are competitive or reproduce quickly.

Tilapia Eradication Studies

To reduce reproduction in tilapias, high-temperature sterilized male juvenile tilapia were released within Ocean Expo Park. The sterilized males are marked with colored tape to monitor their fertility, and the effectiveness of eradication.



Taiwan habu Eradication Studies

By gathering the latest information in cooperation with related research institutions, efforts are being made to develop more effective habu traps that don't use a mouse as bait.



Removal of invasive plants with vigorous growth *2

At Ocean Expo Park, managing vegetation within the park with consideration for the ecosystem is conducted by removing vigorous invasive species such as wedelia (*Sphagneticola trilobata*) and white leadtree (*Leucaena leucocephala*).



Wedelia (*Sphagneticola trilobata*)



White leadtree (*Leucaena leucocephala*)



(3) Non-native species, poaching, and anti-smuggling measures.

Cooperative revision of the Red Data Book

The Red Data Book, which lists rare animals and plants. From 2013 to 2018 we have cooperated in revising the Okinawa section of the Red Data Book with data collection, additional surveys and writing.



Callicarpa pilosissima



Eleutherococcus trifoliatus

Identification of marine lives suspected of having been illegally collected.

Since 2013, at the request of Nago Coast Guard, we have undertaken the identification of marine lives that are suspected of being illegally collected such as corals and shells.



Cooperation to develop an identification guide for rare plants

From 2016 to 2017, materials and information were provided to the Ministry of Environment for them to create a manual that helps prevent the unintentional collection of rare species by allowing the general public to identify the protected rare plants.

ヒメカクラン (2/3)

自生地における近縁種・類似種との識別点

類似種としては、トクサラン属のトクサランが挙げられる。

これら 2 種は同所に混在して生育していることがある。花の色や個数など形状が明らかに異なるため、花の時期 (11~1 月) であれば識別が可能である。しかし、花のない時期には葉の形状など類似しており識別は困難である。

和名	ヒメカクラン	トクサラン
識別点		
花	<p>花期は 11~12 月。 淡紅紫色の花をまばらに 8 個程度つける。</p>  <p>写真提供: (左) 財団法人沖縄県立自然博物館 総合研究センター</p>	<p>花期は 11~12 月。 淡黄色の花を 20 個内外、やや密につける。</p>  <p>写真提供: 植物図鑑</p>

葉	<p>倒卵状長楕円形。長さ 20~30cm、幅約 8.5cm。上面に光沢あり。鈍頭状鋭尖頭。</p> <p>表面は濃い緑色、光沢があり、3 本の葉脈が目立つ。</p>  <p>鈍頭鋭尖頭</p> <p>写真提供: (左) 財団法人沖縄県立自然博物館 総合研究センター</p>	<p>狭長楕円形。長さ 20~40cm、幅 4~7cm。鋭尖頭。</p> <p>表面は黄緑色、平行脈が何本もある。</p>  <p>鋭尖頭</p> <p>写真提供: (左) 財団法人沖縄県立自然博物館 総合研究センター</p>
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(4) Regional contribution and development through activities connected to rare species and the natural environment.

Technological development of tissue culture of useful plants. * Part Contract by Okinawa Prefecture

Since 2015, efficient techniques to propagate tissue cultures from useful plants such as high-quality pineapples have been developed. Also, processed commodities are being developed to improve the degree of recognition for these agricultural products.



Research into growing plants using vacant school classrooms * 1

Since 2018, using vacant classrooms in Motobu Village experiments are being conducted using artificial lighting and organic liquefied fertilizer to grow plants, utilizing the large windows and good ventilation of the classrooms.



Northern Okinawa Tourist Support Navigation Site “Yanbaru Travel Navi” * 1

Yanbaru Travel Navi was set up in 2009 as a sightseeing guide, allowing tourists to more easily see Yanbaru’s nature and culture after visiting the Okinawa Churaumi Aquarium. More than 800 local facilities and events are registered in the website.



Research into the cultivation of plants * 1

Since 2012, research has been conducted on the cultivation of rare plants to utilize their traits for the benefit of regional development. Ryukyu Benkei was thought to be extinct but has been rediscovered, and not only has there been an increase in its cultivation but through crossbreeding with related species breeders have created an ornamental plant which they are selling in Okinawa as cut flowers under the Churara brand.



(5) Cooperating with communities to reach sustainable development goals.

Development of straws made from barley

Technological developments to provide replacements for plastics are being undertaken worldwide. Since 2019, there has been the development to manufacture straws from barley rather than plastic with the aim to use these at our restaurants.



*1

Research of marine folklore and local outreach

Since 2014, studies of local folklore such as traditional marine festivals have taken place and the information shared with the community.

Understanding local culture provides the opportunity to preserve culture while also linking it to sustainable development such as tourism and new industries.



Traditions of *harii* dragonboat racing



abushibare

Establishment of the O. C. Farm Inc.

In 2013, an agricultural production cooperative, Okinawa Churashima Farm Inc. was established with the aims to promote local agriculture, and spread the adoption of new technology. Local sustainable development of the region is facilitated through the production of high-quality and high-added-value agriculture.



Cultivation of high-quality pineapple



Agriculture processing plant

Establishment of OSC Co., Ltd.

In 2015, OSC Co., Ltd. was established with the purpose of developing the Kunigami Fisheries Cooperative Association. We contribute to the sustainable development of the local community with the goals of 1. regional development, 2. profit stability for fisherman, 3. promoting regional business, 4. promoting tourism.



Manta feeding experience



Fixed fishing net belonging to Kunigami Fisheries Cooperative Association

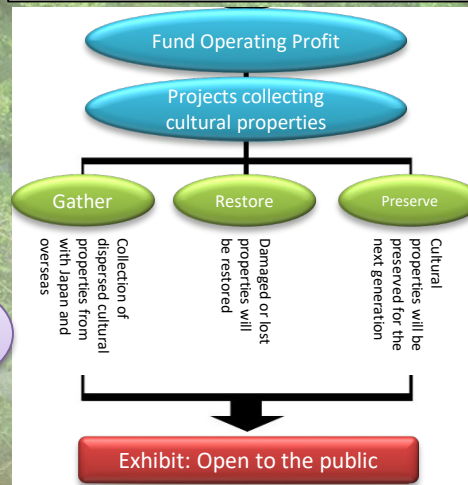
(Reference) Overview of Shuri Castle fund-raising

The Foundation set up the Shuri Castle Fund, soliciting donations from a wide range of citizens and companies. The profits from the business are used to collect and restore items of cultural heritage.

Structure of Shuri Castle Fund



Project outline of the collection of cultural properties



Cultural properties restored and gathered by the Shuri Castle Fund

Over the past 20 years we have been devoted to restoring and collecting 610 cases and 1,113 items of Ryukyu Dynasty cultural heritage such as lacquerware, textiles, paintings and calligraphy that were scattered both across Japan and overseas. (March 31, 2019. Currently)

* Profits from donations and operating funds from this foundation have been invested.



Textiles [bingata-lined garment]

Bingata garment made from high-quality silk dyed in earth yellow with beautiful patterns of plum blossom, cherry blossom and maple leaves. There is no other example of bingata with such a pattern. It is thought to have been worn by the royal family. (top left)

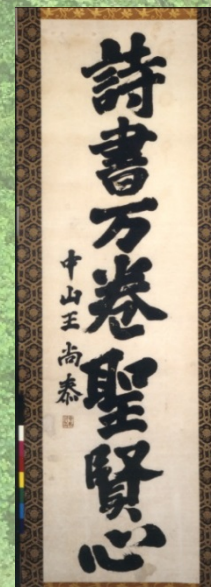
Hengaku (plaque) [Chuzan-Seido]

In 1683, this plaque was gifted by Chinese Emperor Kangxi along with documents bestowing peerage on King Sho Tei. Restoration of the plaque was important to recreate the historical appearance of Shuri Castle and was completed on November 1st, 1995. (Top right)

Calligraphy of King Sho Tai

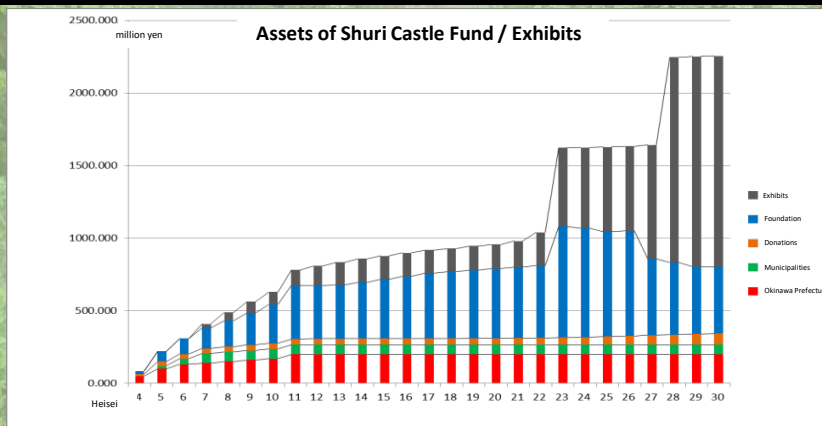
Sho Tai was the 19th king of the Second Sho Dynasty and was the last king of the Ryukyu Kingdom. These highly valued documents were found in an air-raid shelter and bore the Buddhist signature Rokunyo Koji. It matches with paper and Japanese ink of the era which indicates the documents were indeed King Sho Tai's writing, and therefore highly valuable.

(Left)



Establishment and Operation of Shuri Castle Fund

Over 300 million yen was generated from the municipality, companies and citizens, and 700 million yen was generated by the foundation. Exhibits amount to approximately 1.4 billion yen due to direct purchase by the foundation through investment gains and foundation generated funds.



Bringing the beauty of the islands to all.

Okinawa Churashima Foundation will utilize knowledge cultivated through scientific research, public awareness and park management operations to achieve the goals written below for the benefit of society.

Response to Environmental Issues

- Conservation of biodiversity
- Protection and nurturing of rare species
- Promotion of environmental preservation etc.

Contribute to Industrial Development

- Development of utilizing native plants
- Proliferation in the use of tissue culture etc.

Improvements in Park Function

- Increase customer satisfaction
- Provide attractive green spaces
- Environmental study, community cooperation etc.

The Research Center of the Okinawa Churashima Foundation

There are 40 specialists (18 with doctorates), divided between four sections, who are engaged in approximately 80 research projects and public awareness. The scientific results are evaluated by outside experts. The 2nd floor of the research building is equipped with various types of equipment including a CT scanner and a sterile culture room, along with collections of fish specimens (around 50,000), botanical specimens (around 20,000) and a Ryukyu cultural asset collection (around 1,500 items).

Zoological Laboratory



Research and technological development related to marine organisms

- Biodiversity conservation of corals
- Conservation of cetaceans and migration research
- Research on captive breeding of large sharks and rays

Botanical Research Lab



Research and technological development related to plants

- Conservation of endangered plants
- Utilization of subtropical plants and implementation of useful plants
- Botanical management techniques

Ryukyu Culture Assets Research Lab



Research and technological developments related to historical culture

- Conservation of the historical culture of Shuri Castle and the Ryukyu Kingdom
- Ocean culture that connects the Ryukyu and the Oceania regions
- Ocean Culture of the Ryukyu Archipelago

Education Development Division



Public Awareness Projects

- Human resource development and research grant program
- Community cooperation and international cooperation project
- Library and newsletter publishing