

Protecting & Harnessing the Lifestyles,
Culture and Nature of Snow Country

Tadami Biosphere Reserve

Philosophy & Overview



Tadami, Fukushima Prefecture



Inquiries

Area Development Section, General Policy Division, Tadami Town Hall
1039, Aza Amatsutsumi, Oaza Tadami, Tadami-machi, Minamiaizu-gun, Fukushima 968-0498
TEL 0241-82-5220 FAX 0241-82-2117 E-mail: kikaku@town.tadami.lg.jp



Tadami, Japan's natural heartland
Capital of Mother Nature Tadami

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What is a biosphere reserve?

A biosphere reserve under the UNESCO MAB program to achieve co-existence between humanity and nature

A biosphere reserve is a central part of UNESCO's Man and the Biosphere (MAB) program. The MAB program was initiated in 1970 as an international cooperation project to conduct scientific studies and research as well as to exchange information in order to build harmonious relationships between humanity and the natural environment under our present circumstances, in which global human activity continues to destroy the environment and the very basis of humanity's existence is under threat. Thereafter, the biosphere reserve system was set up within the MAB program for the purpose of working for the socio-economic development of communities by utilizing their natural environments and

resources in a sustainable manner while working to protect and conserve those natural environments. A biosphere reserve is an internationally recognized "model community that puts into practice co-existence between human society and the natural environment." (In contrast, the purpose of the UNESCO World Natural Heritage is to rigorously conserve the world's unique and valuable natural environments.) In order to raise biosphere reserves' recognition in Japan, they are called "UNESCO Eco Parks." There are currently 631 of these communities in 119 countries around the world, of which seven have been registered in Japan (as of June 2014).

Environmental problems caused by human activity



Nuclear accidents
©DigitalGlobe-Imagery



Deforestation



International cooperative project to build harmonious relationships between humanity and the natural environment: UNESCO MAB program

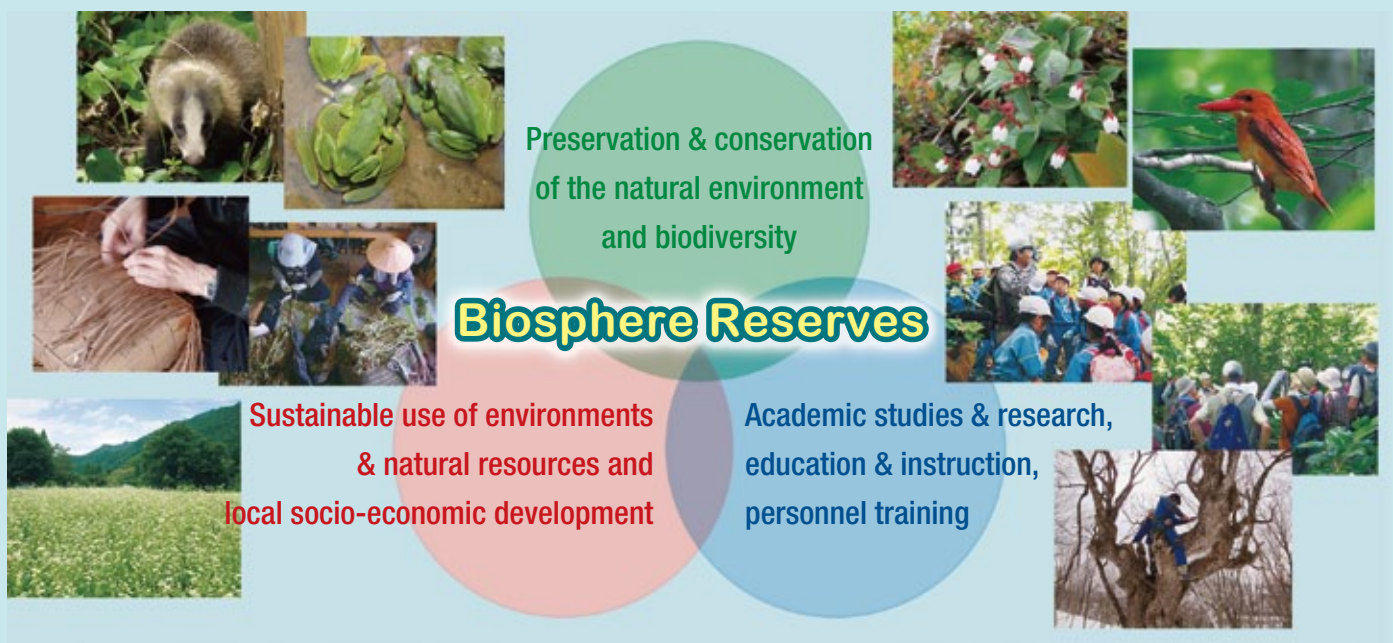
Model community that puts into practice co-existence between human society and the natural environment: Biosphere Reserve

Goals of biosphere reserves:

Protection & conservation, community development, academic studies & research, personnel training

Biosphere reserves cite the following three goals in order to achieve "co-existence between human society and the natural environment." These three goals are not

independent of each other: they complement and strengthen each other.



Biosphere Reserve Composition

Land use categories and soft law system

❖Three biosphere reserve land use categories

A characteristic of biosphere reserves is their adoption of three land use categories (core areas, buffer zones and

transition areas) in order to effectively implement the three goals and achieve "co-existence between human society and the natural environment."

Core Area

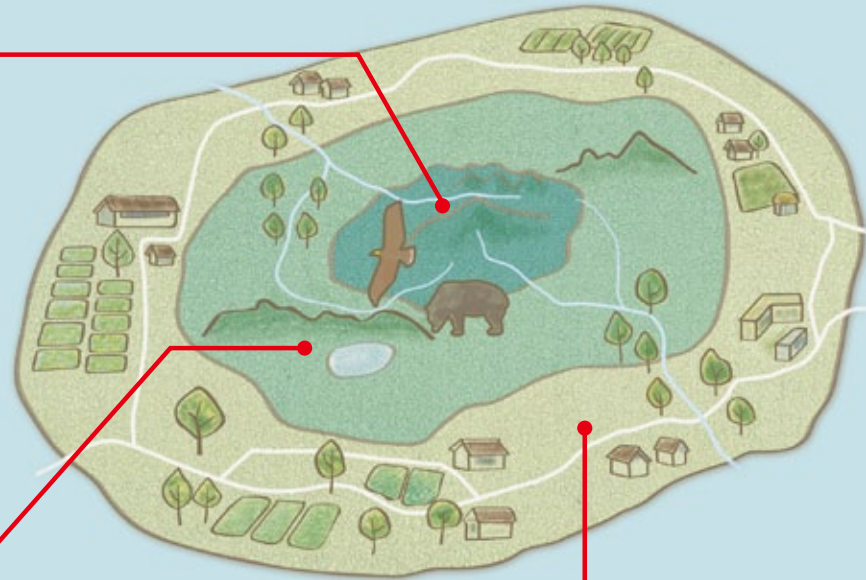
A core area is defined for the purpose of conserving and maintaining biodiversity and its natural environment. It covers a valuable natural environment in need of protection. A core area must be entirely surrounded by a buffer zone. Entry is generally prohibited, but use is possible for observation, surveys and basic research.

Buffer Zone

A buffer zone is defined for the purpose of protecting a core area from human activity in a transition area. It possesses roughly the same natural environment as the core area. Traditional harvesting/gathering and hunting is possible, as well as use for education/instruction, recreation and experimental research.

Transition Area

An area whose goal is the sustainable socio-economic development of the community through environmentally-conscious industrial activity. It covers areas where humans live.



❖Biosphere reserves are a soft law system

Legal status is required for the framework to define core areas and buffer zones and to restrict and limit usage, but biosphere reserves employ a soft law system that uses the land's existing legal status, rather than establishing a new legal status when registering a reserve. (In other words, registering a biosphere reserve does not prohibit anything that was allowed beforehand.)

❖Examples of existing legal status used at biosphere reserves

- Natural Park Act (National Parks, Quasi-national Parks, Prefectural Natural Parks)
- Nature Conservation Law (Wilderness Areas, Nature Conservation Areas)
- Forest ecosystem reserves based on the Law on the Administration and Management of National Forests
- Protected Forests based on the Law on the Administration and Management of National Forests ("Hometown Forests" and "Green Corridors")

Existing legal status used in the Tadami area include the Oku-Aizu Forest Ecosystem Reserve and the Echigosanzan-Tadami Quasi-national Park.



Why does the town of Tadami push the creation of a biosphere reserve?

The 6th Tadami-town Development Plan and Turning the "Capital of Mother Nature Tadami" Declaration into Reality

The town of Tadami's population is declining and growing older. This is accompanied by an accelerating decline in local industry. How to sustain and develop the area's society in the future poses a major challenge.

The town of Tadami elected not to join in the wave of mergers between Japanese municipalities that peaked in 2005. In 2006 the town formulated the 6th Tadami-town Development Promotion Plan and began down the path toward independent town development. The Development Promotion Plan is the town's top-priority program. Its philosophy is "A town living life with beech, a town living with snow; challenge of Oku-Aizu Tadami – creation of real local value."

In other words, this means breaking away from conventional local development promotion that follows the lead of cities, proceeding with town development that utilizes the traditional lifestyles, culture and industry that has become the foundation of the rich natural environment of heavy snow in the Tadami area unlike what the cities have, and creating genuine human values recognizing that humanity is part of the ecosystem. Furthermore, the town made "The Capital of Mother Nature Tadami" declaration in 2007 stating that Tadami is the natural heartland of Japan and announcing that we are obligated to protect and conserve the natural environment of Tadami represented by its beech forests and to pass them on to future generations. Then, in order to make the Development Promotion Plan and "The Capital of Mother Nature Tadami" declaration a more powerful reality, the town embarked on a strategic initiative to establish a biosphere reserve that aspires toward local socio-economic development through the sustainable utilization of the natural environment and resources while preserving and conserving them.



Formulation of the 6th Tadami-town Development Promotion Plan

Effectively utilize a biosphere reserve and turn the Development Promotion Plan and "The Capital of Mother Nature Tadami" declaration into reality!

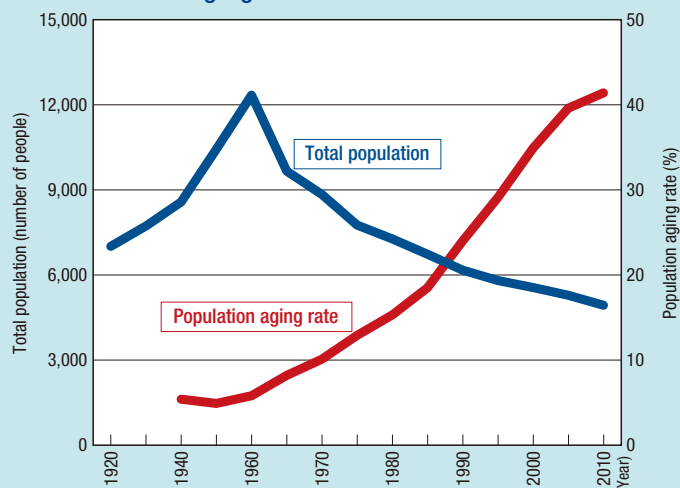


"The Capital of Mother Nature Tadami" declaration



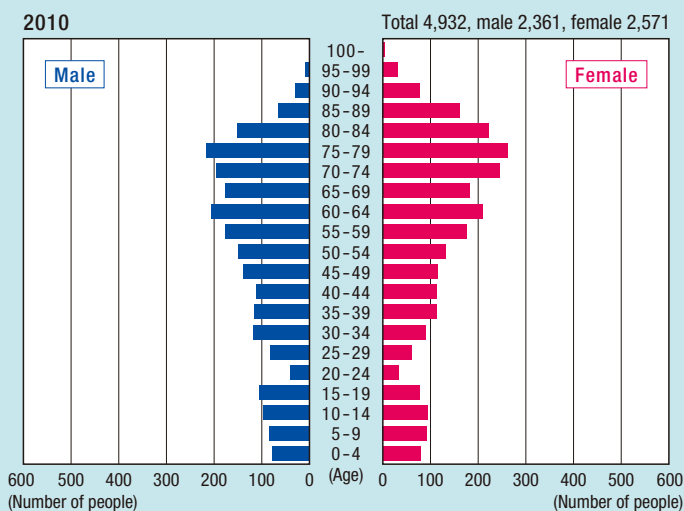
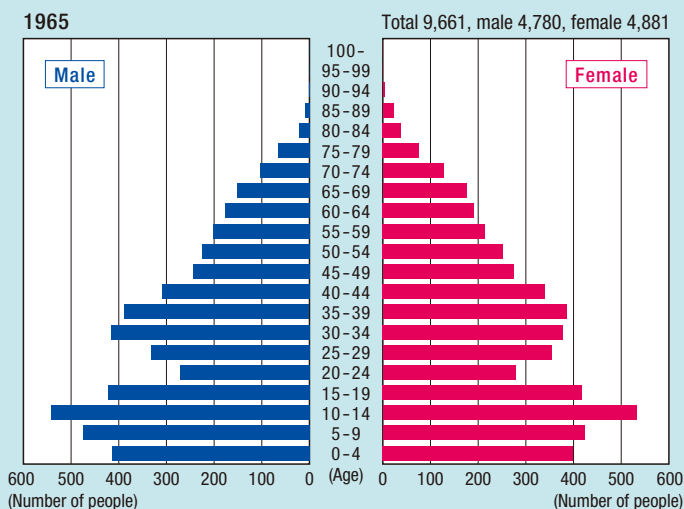
Study committee to establish "The Capital of Mother Nature Tadami" brand

Transition of total population and population aging rate of Tadami-town



* "National census," Ministry of Internal Affairs and Communications

Changes in population composition of Tadami-town (1965-2010)



* "National census," Ministry of Internal Affairs and Communications

Tadami Biosphere Reserve

The unforgiving yet rich natural environment produced by heavy snows and the people who live there

A distinctive natural environment

The Tadami area, situated on the border with Niigata Prefecture on the western end of Fukushima Prefecture, is a mountainous area surrounded by Aizu-Asahidake, Asakusadake and other peaks with an elevation of around 1,000 meters. In winter the area faces seasonal winds filled with masses of humid air from the Sea of Japan, bringing heavy snow that makes this area one of Japan's snowiest places, with snowfall reaching 2 to 3 meters deep even on flat land.

While the area is a mountainous zone with forests of beech and other broad-leaved deciduous trees grow, slopes are shaved off by avalanches, bedrocks are exposed, and a steep and complicated "nivation landform" is created, due to the geological characteristics and heavy winter snowfall. Due to these locations and environments, a vegetation mosaic is formed with evergreen conifer forests of Japanese white pine (*Pinus parviflora* var. *pentaphylla*) that stand like a horse's mane on the ridges, shrubs like

Japanese dwarf oak (*Quercus mongolica* var. *undulatifolia*) on the avalanche slopes, Japanese beech (*Fagus crenata*) on the stable lower slopes, and riparian forests like Japanese horse chestnut (*Aesculus turbinata*) and Japanese wing nut (*Pterocarya rhoifolia*) along the streams. This kind of landscape is very rare in mountainous zones below an elevation of 1,000 meters. It is also in a pristine state, largely untouched by human hands, and covers an expansive area of more than 50,000 hectares.

This composition of fauna with such rich variety allows a diversity of animal species to live here. In fact, a large concentration of species at the top of the ecological pyramid inhabit the area: the mountain hawk-eagle (*Spizaetus nipalensis orientalis*) and the golden eagle (*Aquila chrysaetos japonica*), both birds of prey that require the presence of a rich biota of animals for their habitat, as well as the Asiatic black bear (*Ursus thibetanus japonicus*), a large mammal. In other words, we can say that their presence symbolizes the rich natural environment of the Tadami area.



"Nivation landform" and "mosaic vegetation" formed by heavy snow

Presence of wildlife symbolizes rich biodiversity

Mountain hawk-eagle (*Spizaetus nipalensis orientalis*)



Asiatic black bear (*Ursus thibetanus japonicus*)



Golden eagle (*Aquila chrysaetos japonica*)



◆Treasure trove of rare species There are many rare plants and animals in need of protection in the Tadami area.



Endangered lilly (*Lilium rubellum*)



Endangered willow (*Salix hukaoana*)



Japanese serow (*Capricornis crispus*)



Tadami clawed salamander (*Onychodactylus fuscus*)



Japanese char (*Savelinus leucomaenis pluvius*)



Lifestyle and culture based on the natural environment and local resources

❖Agriculture as the basic industry

Fields of crops spread out on the river terraces and diluvial plains along the Tadami River and Ina River, where farmers cultivate rice, buckwheat and tomatoes. There are also planted forests of cedar and larch skirting the mountains. Promotion of organic farming and the development of a sustainable forestry are anticipated for the future.



❖Picking wild edible plants and mushrooms

The people of the Tadami area pick wild plants like fiddlehead ferns and brackens when they appear after the snow melts in spring and gather mushrooms in the fall to use as a valuable source of food. These are carried out in a sustainable manner under the traditional system of forests where local people are habitually allowed to get in.



❖Use of firewood as fuel

Lumber (firewood) is used as a continuous source of fuel for stoves, and this holds potential for keeping down fossil fuel consumption in the area and serving as a model for a low-carbon society. Today the people climb the lingering snow in spring to trim trees and convey that wood out.



❖Handiwork using plants (vine weaving)

The people of the Tadami area have come to make baskets and other everyday necessities from traditional plants such as silver vine, three leaf akebia and grass of *Carex dolichostachya* as indoor work during the snowy season that lasts roughly half the year. The techniques are still passed on today in workshops.



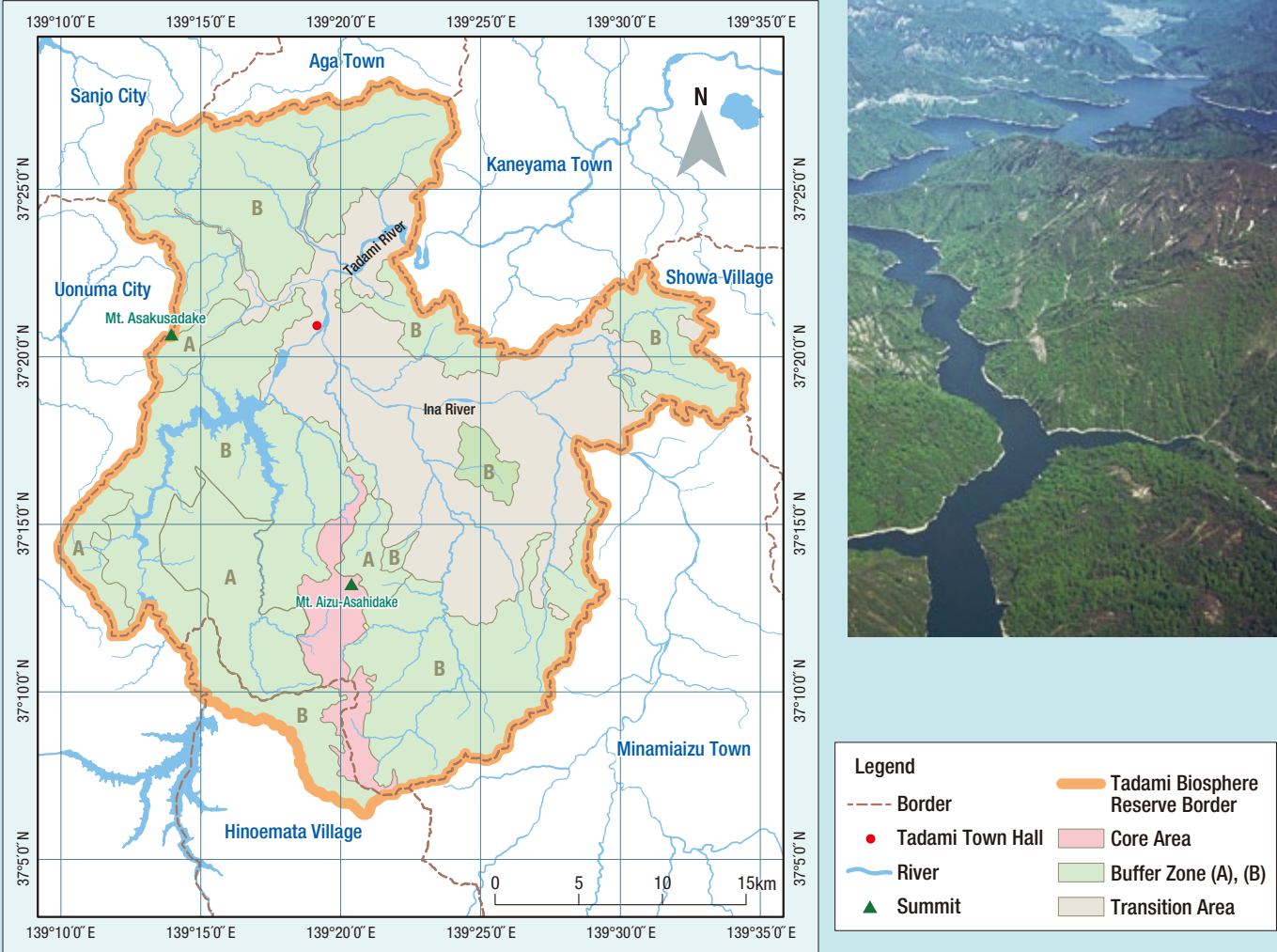
❖Traditional arts and year-round events

The traditional performance offering prayers for good harvests in the year, "Saotome dance and Daidai Kagura of Kobayashi and Yanatori," started in the early Edo Period, has been passed down by the local preservation society. In addition, during the Lunar New Year a fire festival known as "Onbe (Sainokami; New Year's bonfire)" is held in settlements here and there.



Tadami Biosphere Reserve Overview: Covered Land Area & Restrictions

Tadami Biosphere Reserve comprises the entire town of Tadami and part of the adjacent village of Hinoemata, with a total area of 78,032 hectares.



| Land Use Category (Area) | Covered Area | Land Use Restrictions | Existing Legal Status as Basis of Restrictions |
|---------------------------------------|--|---|---|
| Core Area (3,557 ha) | <ul style="list-style-type: none">Forest ecosystem reserve "protected zone" (includes part of the overlapping Echigosanzen-Tadami Quasi-national Park "special protection zone" and "special zone") | <ul style="list-style-type: none">Entry generally restricted | <ul style="list-style-type: none">Law on the Administration and Management of National Forests (protected forest)Natural Park Act (quasi-national park) |
| Buffer Zone A (8,380 ha) | <ul style="list-style-type: none">Echigosanzen-Tadami Quasi-national Park "special protection zone" (includes part of the overlapping "conservation and utilization zone" of a forest ecosystem reserve) | <ul style="list-style-type: none">Generally restricted to studies & research, and monitoring onlyNatural Park Act (quasi-national park) | <ul style="list-style-type: none">Law on the Administration and Management of National Forests (protected forest) |
| Buffer Zone B (42,953 ha) | <ul style="list-style-type: none">National forest outside Core Area and Buffer Zone ATown forests and community forests adjacent to the Core Area | <ul style="list-style-type: none">Encourage activities that maintain ecosystem valueStudies & research and monitoring allowedTraditional picking of wild edible plants and mushrooms by local residents allowed | <ul style="list-style-type: none">Law on the Administration and Management of National Forests (protected forest, green corridor)Natural Park Act (quasi-national park, prefectural natural park) |
| Transition Area (23,142 ha) | <ul style="list-style-type: none">Mountains, forests and wilderness outside the Core Area and Buffer Zones, cropland, residential land | <ul style="list-style-type: none">Conservation of the natural environment is a non-binding goal and not enforceable by law | <ul style="list-style-type: none">Natural Park Act (prefectural natural park)Mountain Villages Development ActAct on Special Measures for Promotion for Independence for Underpopulated AreasRegulation for the protection and encouragement of natural scenery of Tadami-town, etc. |

What exactly does the town of Tadami do at the biosphere reserve?

Protection & conservation, community development, academic studies & research, personnel training

Tadami Biosphere Reserve projects (local revitalization projects)

The three goals of the biosphere reserve, where people utilize the Tadami area's natural environment and resources passed down to us to create lifestyles and culture for local residents based thereon, are: the protection and conservation of the natural environment; community development; and academic studies & research and personnel training. Projects are carried out to achieve these goals.

* * * *

Preservation & conservation of the natural environment I.e., Sharing the wealth of the precious natural environment and biodiversity

- Conservation of the town's wetlands
- Maintenance of Tadami Nature Observation Forest
- Protection of big trees and giant trees (countermeasures to prevent the death of Japanese Oaks), etc.



Tadami Nature Observation Forest maintenance (Shimofukui zone beech forest)



Pest control of pollarded Konara oaks (Makidaira Kurosawa)

Local economic stimulation and promotion of industrial development using local resources

I.e. Local economic stimulation and passing on traditional culture

- Support and assistance project for traditional product brand "Capital of Mother Nature Tadami"
- Fish (Japanese char) reproduction project

- Training of official Tadami nature guides
- Tadami model forest cultivation project
- Landscape restoration project on Ina River right bank, etc.



Support and assistance project for traditional product brand "Capital of Mother Nature Tadami" (development of and encouragement for products using locally-made goods)



Training of official Tadami nature guides (Hijiori Salix hukaoana forest)

Academic studies & research and personnel training I.e. Create a center of academic study, research and education

- "The Capital of Mother Nature": An academic investigation research subsidy project
- Registration and support for UNESCO schools
- Basic research on the natural environment (studies of Tadami's unknown nature), etc.



Basic research on the natural environment (Entomological research)

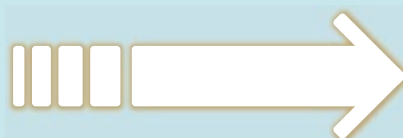
Establishment of the Tadami Biosphere Reserve Governance Board and Tadami Biosphere Reserve Contributing Board

We established a governance board composed of groups involved in the management and administration of Tadami Biosphere Reserves as well as a contributing board to investigate and advise on individual issues. (July 2014)

Tadami's future as portrayed by the biosphere reserve

Tadami town's value & appeal

The rich natural environment passed down to us upon which our lifestyles and culture are based



Maintain & develop the biosphere reserve framework

- Plan and implement relevant projects
- Contact and coordinate through the governance board
- Support and cooperation from the contributing board

Socio-economic maintenance and development of the Tadami area

- Show Tadami to the world as a model area for achieving co-existence between humanity and nature
- Show the effectiveness of a biosphere reserve for solving problems facing mountainous areas