

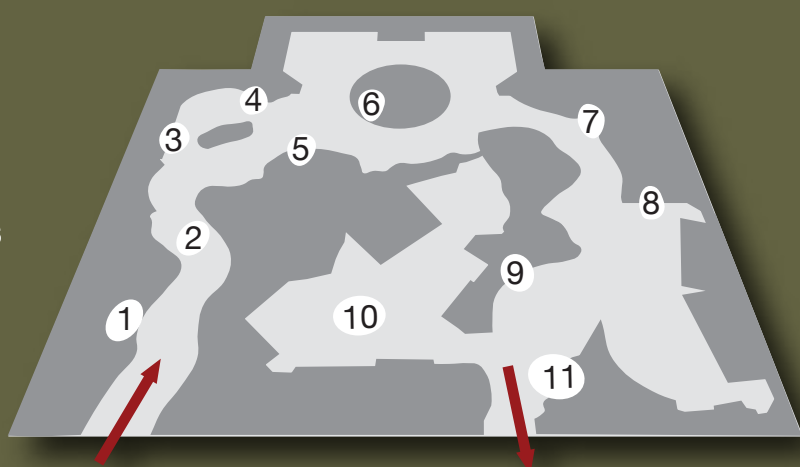
A Brief Guide to the Galleries





The rocks that lie beneath Shiga Prefecture have a very long history, stretching back 250 million years.

These rocks and the fossils preserved in them can tell us a great deal about the history of the area.



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Fossilized *Metasequoia* tree stump

Where Did Those Rocks in the River Bed Come From?

Two million years ago the area was dominated by forests of *Metasequoia*, the dawn redwood. The fossil stump of a large *Metasequoia* tree displayed in the museum died approximately two million years ago after reaching an age of 400 years. It was only recently exposed by erosive floodwater of the Echi River, east of Lake Biwa. With the fossilized stump, researchers also found elephant footprints and fossil insects and plants. This information has helped to build up an idea of life in the area two million years ago.

Rocks that Form Mountains

The rocks that underlie the lowlands and form the mountains of Shiga Prefecture consist of igneous, metamorphic and sedimentary types.



2
Igneous rocks, such as granite, formed by the slow solidification of molten rock deep in the crust. Later, these igneous rocks were uplifted and now form many of the mountains in the area. Basalts are solidified volcanic lava, and welded tuffs consist of volcanic material that was sufficiently hot at time of eruption to weld together. Sedimentary rocks, such as mudstones, limestones and sandstones, were formed by the compaction of sediments.



Crumpled rocks



3
Formation of the Sea of Japan

Twenty-five million years ago, the Sea of Japan did not yet exist, and the land destined to become Japan was still part of the eastern margin of continental Asia. Through the process of tectonic rifting, the eastern margin of the continent developed a large rift valley that contained one or more freshwater lakes. As the rifting continued, about 22 million years ago, saltwater began to flood the rift valley, and by 19 million years ago the rift had become a continuous saltwater strait, the beginning of the Sea of Japan.

Seventeen million years ago, the southeastern corner of Shiga Prefecture was covered by the sea. Fossil dolphins, whales, sharks, seals, fish, marine clams, oysters and snails have been found from this time and are on display in the museum.



Replica of a whale fossil found in Shiga Prefecture



Origin of Freshwater Fishes in East Asia **4**

East Asia is home to a huge number of freshwater fish of the Cyprinidae family (the carp family). Some of these fish evolved in the freshwater lakes that formed in the rift valley that was the beginning of the Sea of Japan. This long, narrow lake lasted several million years and was home to many of the ancestors of Lake Biwa's fish, including cyprinids.

The fossil teeth of these fish are very useful for studying their evolution.

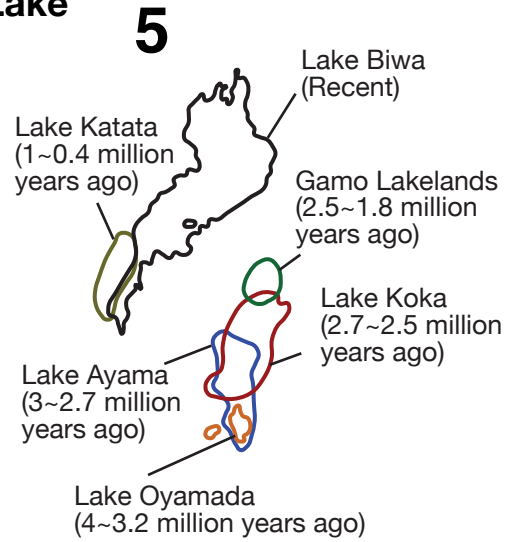


Fossil fish through time

History of Lake Biwa: a Much-traveled Ancient Lake

Lake Biwa is a member of a very special group of lakes called ancient lakes. These lakes have an uninterrupted history of longer than 100,000 years, and there are fewer than 30 such lakes in the world. The Lake Biwa region has a lake history stretching back four million years, when Lake Oyamada formed to the southeast of the location of the present-day lake.

Such ancient lakes are biologically very interesting as they often contain endemic species (species that are found nowhere else) that have evolved in the lakes. The secret to lake longevity is subsidence; if subsidence rates of the bedrock are faster than sediment can fill up the lake, they continue to survive and can get deeper over time. The land below Lake Biwa has subsided 720 m over the last 800,000 years and the lake will continue to get deeper.



History of lakes in the area



Life Under a Subtropical Climate **6**

Between 3.5 and 4 million years ago the climate of this region was subtropical. During that time, a small, shallow lake, Lake Oyamada, existed to the southeast of the present Lake Biwa. Large mud snails, two-meter long carps and now-extinct fish lived in the lake together with very large soft-shelled turtles and crocodiles. The shores of the lake were inhabited by the Mie elephant, which could reach a height of 4 m at the shoulder.

Replica of a *Stegodon* elephant skeleton similar to the Mie elephant

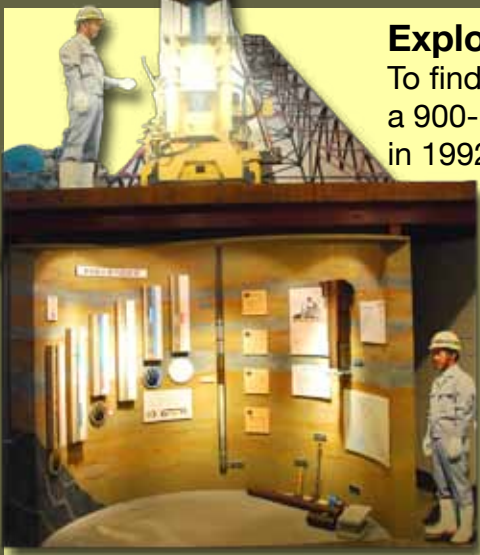
The Age when Elephants Roamed **7**

Two million years ago this area was dominated by the Gamo Lakelands, surrounded by a forest of 20- to 30-meter-high *Metasequoia*. Reduced mostly to swamplands, the Gamo Lakelands were still not at the present location of Lake Biwa. The climate had cooled slightly from two million years earlier, but was still warm. The Mie elephant had already disappeared and a smaller species, the Akebono elephant, now lived here.

Later, about one million years ago, when the climate became even colder, the Akebono elephant also disappeared from Japan.



The Akebono elephant in the swamp



Exploration Beneath the Museum

8

To find out what happened to the lake during the last million years, a 900-meter core was drilled below the present site of the aquarium in 1992.

Analysis of the core revealed that during the past 1.8 million years the site was located either near to the lake shore, or near a river which flowed into the lake. Among the sedimentary strata present in the core were deposits of volcanic ash that had settled out in the lake basin after volcanic eruptions elsewhere. These ash layers can be dated precisely, making it possible to trace the succession of events revealed by the different kinds of sediment in the core and their relation to the dated ash layers. The surface of the core corresponds to the present time, and the bottom to 1.8 million years ago.

Sections of the borehole

The Process of Evolution in Lake Biwa

Lake Biwa is home to many endemic species, i.e. species that live only in Lake Biwa and its connected rivers, and nowhere else in the world. About 54 fish species are native to this lake basin, and 13 (25%) of them are endemic at the species or subspecies level. Endemism reaches 39% for snails (Gastropoda) and 56% for mussels and clams (Bivalvia).

Well known examples of endemic fish are the Lake Biwa catfish, the Lake Biwa salmon and two kinds of crucian carps. Other species, like the lakeweed chub and some shellfish, are known as relict endemics. This means that in ancient times they were widely distributed, but now are found only in Lake Biwa.



9

Above the grey line are endemic species, below are widely distributed species



10

Natural History Laboratory

The techniques used by researchers to reconstruct the history of Lake Biwa are very varied. Palaeontological sites, often in river beds, have been carefully examined and information on fossils, sediment type and age of the strata have been carefully collected.

Back in the laboratory, researchers first clean the fossils using drills, brushes and hammers and then identify them. For very small fossils, such as fossil fish teeth, a scanning electron microscope may be used. Some of these techniques and tools are displayed in the Natural History Laboratory.

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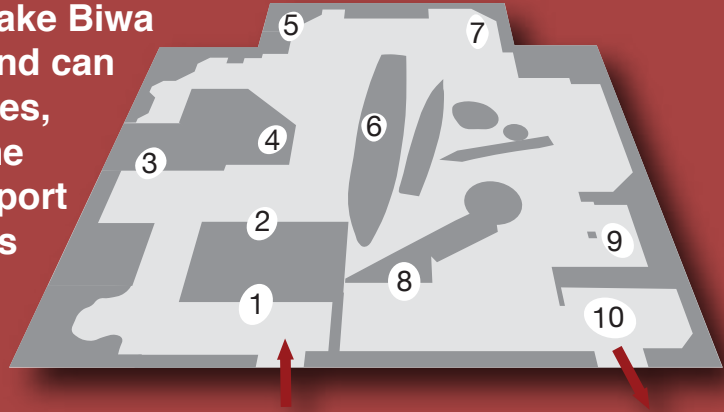


Sediments

By the exit of the Natural History Laboratory is a model of a sediment profile from the future. Sedimentation is a continuous process: it happened in the past, it is occurring now, and it will continue in the future.



Lake Biwa has played an important role in shaping the local culture of the surrounding area and this gallery explores this relationship. The earliest evidence of human activity around Lake Biwa dates back more than 20,000 years and can be seen at various archaeological sites, some of which are now flooded by the lake. The lake acted as a major transport route for goods for hundreds of years and the main land route from east Japan to Kyoto and the west passed nearby.



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Underwater Archaeology

Traces of ancient people's activities are frequently discovered around Lake Biwa. However, due to ongoing, slow changes in the outline of the lake, parts of the former shore have become submerged, taking with them the remnants of old lakeshore societies. Over 100 well preserved sites of ancient human settlements have been found underwater in Lake Biwa.



SCUBA

Two main methods are used to study underwater archaeological sites. One method is for SCUBA divers to use pumps to suck substrate from the bottom to a boat. The sediment is then examined to collect any artifacts it may contain. The other method is to construct a coffer dam so that archaeologists can study the site under dry conditions. First a water-tight barrier is constructed around the site and then the water is pumped out.



Model of a coffer dam



Discarded shells

Life in the Jomon Period: Hunting and Gathering

From 1989 to 1991 a coffer dam was used to study the Awazu shell mound in the southern basin of Lake Biwa. The shell mound is one of the largest freshwater shell mounds in the world and was a garbage tip for the ancient Jomon people more than 5,000 years ago.

After they had eaten shellfish (mostly freshwater clams), people disposed of the empty shells in the same place nearby, forming a large and permanent refuse dump. In addition to shells, archaeologists found many other items in the mound, such as fish bones, plant remains, pottery, earrings, knives, net sinkers and preserved animal dung. The site provided an extraordinary insight into the life of some of the first people to live in this area.



Bone and stone tools

Life in the Yayoi Period: Beginning of Cultivation

Agriculture-based civilization appeared rather recently in Japan. During the Yayoi Period, from about 900 B.C. until 250 A.D., agricultural techniques imported from China and the Korean Peninsula initiated paddy-field rice cultivation around the lake. It was as a result of the need to control rice production and regulate land-use that society became socially stratified and the lake and river areas began to be governed by local lords.



Wooden agricultural tools



Wood used to make fire

Many of the agricultural tools used during this period were made from wood. Such tools are often found very well preserved in the peaty mud or in attached lakes in the Lake Biwa area.



7th century foundations of the Seta Bridge

Lake Biwa and Ancient Transport Routes

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In ancient times Lake Biwa was an important crossroads connecting many points of the country, from east to west and from north to south. One of the places that used to be a major junction for ground transport is the Seta Bridge. It was first built during the 7th century using Korean techniques and spans the Seta River at the southern end of Lake Biwa. Warriors aspiring to be rulers of Japan fought on the bridge and in the sediments around the bridge various artifacts have been recovered, such as swords, arrowheads and coins.

5

Products of Ancient Lake Biwa

The rich natural products of the Lake Biwa region were sent as tax payments to the successive imperial capitals of Nara and Kyoto. Arrangements for providing such goods were made through government offices called 'mikuriya', which were located around the shores of Lake Biwa. The goods, which included rice, fish, wine, cereals, leather, fruits, medicines, cotton, oil, and dyes for fabrics, were then transported south on the lake.



Products transported from northern areas of Japan to Otsu in the five years from 1778

Ship-borne Transportation

From ancient times until the late 19th century Lake Biwa was the most important route for transportation of goods and materials coming from the northern and eastern parts of Japan to the capital, Kyoto, and to Osaka.

The 'maruko-bune' is a traditional wooden boat unique to Lake Biwa, which formerly played a major role in transportation in the region. They were used extensively during the Edo Period (1603-1868), and even though much reduced in number were still in use before World War II. The Museum has the last 'maruko-bune' ever built, commissioned from the last surviving 'maruko-bune' builder.

6



A 'maruko-bune' boat



A fisherman's house

Fishing in Lake Biwa

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Fishing has played a central role in the culture of the area, and many different techniques have been employed.

One ancient technique that is still used today is the 'eri' fish trap. These are permanent, anchor-shaped fish traps built near the shore, that concentrate fish into two traps. The fishermen scoop the fish from the trap using long-handled nets. The placement of these traps requires detailed knowledge of fish behaviour and water currents, and their use was strictly controlled. A village that could obtain permission to build an 'eri' usually became very prosperous and powerful.



Model of an 'eri' fish trap

Mastering Water: Modern Period

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Rice farming requires a very careful control of the water system for irrigation purposes. As a result, the natural streams and rivers in Japan have been extensively modified.



Several devices, such as human-powered irrigation wheels and versions of Archimedes' screw, were developed for drawing water from a river or the lake and directing it to the fields.



Archimedes' screw

An irrigation wheel

Regulating Water Levels

Although they have long enjoyed the benefits of Lake Biwa's water supply, the lakeside residents until recently also had to endure its floods. With 120 inflowing rivers, but only one outflowing river, the Seta River, coupled with deforestation of the areas around the lake, flooding has been a major problem in the area. In 1896 a devastating flood occurred, with water levels rising 3.7 m above normal, and some areas remained under water for over eight months.

Today, floodgates on the outflowing Seta River allow careful control of the water levels in Lake Biwa so that lake flooding is no longer a problem for the residents in the region.



Orange areas were flooded in 1896

The Age of Steamships

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From the end of the 19th century to the early 20th century Nagahama, located on the east side of the lake's north basin, was a very important connection point for trains and ships. In those days there was no railroad connecting Nagahama to Otsu, and people travelling by rail had to tranverse the lake between these two points by ship.

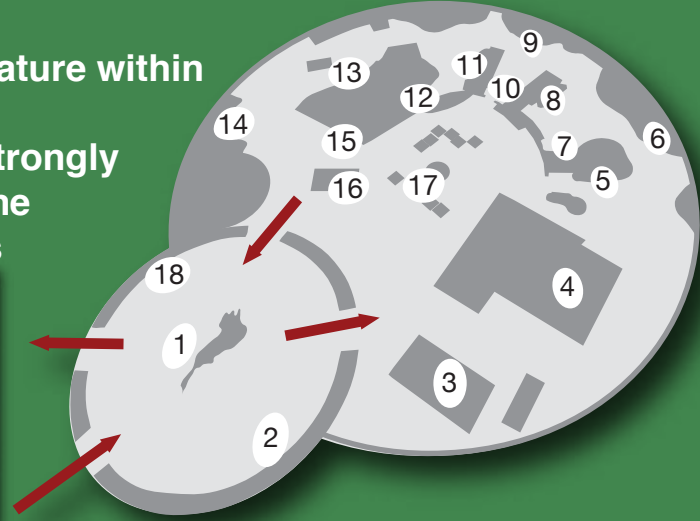


Replica of a waiting room

This gallery displays various aspects of nature within the Lake Biwa watershed, and of people's interactions with it. Lake Biwa has been strongly influenced by the changes in lifestyle of the people living around it. From the old ways of living in harmony with nature, to the modern way of life centered on convenience and ease, the changes have been profound.



Aerial photos of Lake Biwa



A Walk around the Lake Biwa Watershed

The entire catchment area of Lake Biwa can be seen on the floor of the circular 'bird's-eye view' room. Here you can walk upon more than 2,000 aerial photographs at a scale of 1:10,000.

The water leaves Lake Biwa via the Seta River, which changes its name downstream first to the Uji River, and then the Yodo River. Finally the water enters the sea in Osaka Bay. The lake is surrounded by paddy fields, rivers, forests and mountains up to 1,377 m high. Urban centres, such as Otsu and Hikone, can also be seen on the shores of the lake. The detail on the map is so fine that individual buildings can be distinguished.

1



Everyday Life during the Past 50 Years
In this gallery is a display of objects, mementos and events related to daily life in Japan over the past 50 years. These include electrical appliances, magazines, toys and posters.

2

Many Japanese people viewing this display comment on how rapidly things have changed, and how it seems like only yesterday that they were using a certain object or watching a certain event. The progress of technology and the ensuing change from an environmentally-conscious lifestyle to one centred on 'convenience' has been that rapid!



Changes of Japanese popular culture

3 Life and Water Usage in the Countryside



A traditional 'kawayu' kitchen, built over a stream

Many traditional houses in rural areas had a 'kawayu', an old-fashioned kitchen located over a stream. The water in the stream was used for daily chores, such as washing vegetables and a source of cooking water. The water in the stream was kept very clean, as after it left one 'kawayu', it entered a neighbour's. Water from the laundry and the family's bathwater and human waste from the outside toilet was used in the vegetable garden as fertilizer.

However, by the mid-1960s things had begun to change. Washing machines, for instance, became commonplace, and the water used for the laundry was instead just drained into the nearest stream.



4



A Countryside House

Opposite the 'kawayu' is a countryside house that was built between 1880 and 1890. It was occupied until 1993, after which it was donated to the Museum.

The house is set out as it would have looked in 1964. Items from that time include a barrel-shaped bath. Using only 10 buckets of water, this type of bath was very efficient. In the traditional living room is a television set, another item that dramatically changed the Japanese way of life.



The living room

A barrel bath



5



Life with Tapwater

With the development of modern water supply systems, even the average household has access to unlimited quantities of cold and hot water for washing dishes and for bathing. Toilets and sinks now collect wastewater loaded with a great variety of chemicals, detergents and food items, which get flushed together down the drain.

Household waste

6



Life on the Riverside

About 30 years ago the forests along river banks were well developed, with tall deciduous trees and many evergreens. People used to conserve the trees on the river bank as protection against bank erosion by the water flow, and the trees sheltered a wide assortment of shrubs and herbs and their associated wildlife.

The riverside 30 years ago

Recently, however, these riverside forests have been disappearing. From the purely mechanical viewpoint of civil engineers, the riverside forests are of no use, and so many trees have been cut down to make way for residential areas and agricultural fields.

Forests and Water

7

Natural forests play an important role in producing good-quality drinking water. Even during heavy rain, forest soil can absorb water like a sponge, delaying run-off and preventing flash flooding. The soil of the forest filters the rainwater and also contributes to the water's quality through increases in the amount of dissolved minerals and in alkalinity. After penetrating into the soil and percolating down to the water table, the water will eventually become groundwater.



Forest soil

A Look into an Urban Stream

Life in urban streams is not usually diverse, but it is often abundant. In Japan these streams are often polluted by domestic waste and therefore people tend to dislike them. Indeed, in some places, raw sewage is discharged directly into them. However, from the perspective of some organisms living in these polluted streams, such habitats are a paradise because they are so rich in food. For these organisms polluted urban streams are a good environment. Let's think about the meaning of a 'good environment'.



An urban stream

8

Traditional interaction with 'satoyama'

9



Life in Harmony with Nature

The countryside called 'satoyama' is characterized by rice fields, irrigation ponds and surrounding woods, and a moderate level of human exploitation.

Until recently, people's life in the countryside had, in many respects, been harmoniously related to Nature. In the past, villages obtained most of what they needed from the countryside surrounding them and, as a result, a diversity of habitats was available for many kinds of organisms.

10

Display collection

Specimens of various terrestrial fauna and flora from around Shiga Prefecture can be viewed in the drawers.



Butterfly collection

Fisherman's Life

11



Since the Jomon Period, when hunting and gathering was the norm, fisheries have flourished around Lake Biwa and in its satellite lakes and rivers.

However, since the 1950s the total fish catches have been decreasing, giving rise to concern about the future of lake products in this region. Most fishermen are worried about the reluctance of the younger generation to contemplate a career in Lake Biwa commercial fisheries.

A fisherman emptying an 'eri' fish trap

the future of lake products in this region. Most fishermen are worried about the reluctance of the younger generation to contemplate a career in Lake Biwa commercial fisheries.

Okishima



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Okishima island is the only inhabited island in Lake Biwa and supports a fishing village.

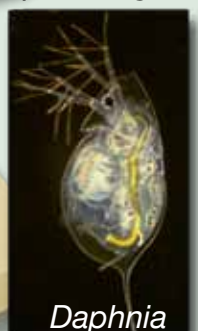
Produce of the lake

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Lake Biwa is home to an astounding range of microscopic fauna and flora. 3D images of some of them can be seen in the 'Micro-World' tunnel.



Every morning a fresh plankton sample is taken from Lake Biwa. Visitors can view the sample using the microscope in the gallery.



Daphnia



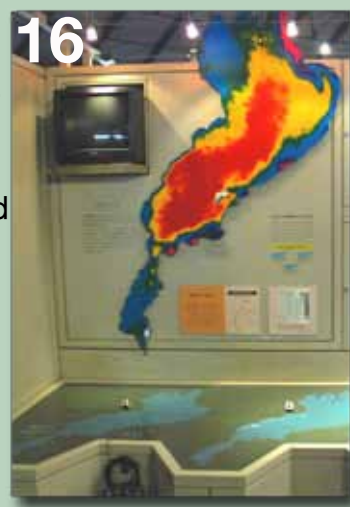
14 World of Aquatic Plants and the Function of Reed Beds

The distribution of aquatic plants within Lake Biwa varies in relation to water depth, sediment type and the actions of waves. The lake is home to several endemic species of water plants, such as Biwa tapegrass, but has also been invaded by alien species, such as Canadian pond weed.

Reeds are particularly important in the lake for providing habitats for organisms, such as attached algae, snails and many types of aquatic insect larvae, and also act as spawning sites for fish and nesting sites for birds. Additionally, reed beds absorb excess nutrients and thus help to purify the water, while also stabilizing the lake shore with their roots.

Physical Characteristics of the Lake

The waters of the lake can be classified into two types according to light availability and the potential for photosynthesis. The upper zone where light can penetrate sufficiently for photosynthesis is called the euphotic zone, and below that is the decomposition zone. During the summer Lake Biwa is stratified thermally. The sun heats up the top layer of the lake and this warm water rests on top of the colder water below. During the winter the top layer of water gets colder than the underlying water and because cold water is denser than warmer water, it sinks causing vertical mixing of the water column.



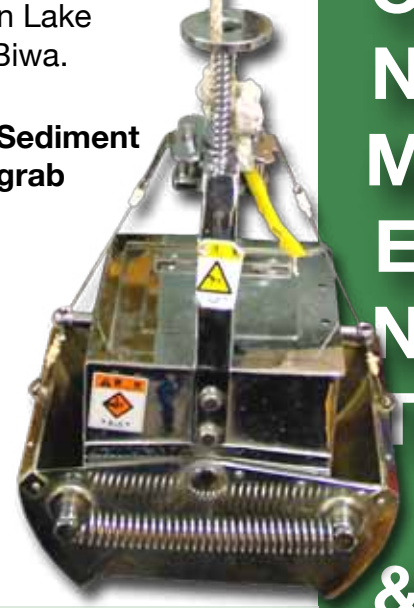
16 Topography of the lake

15

Lake Research

Various pieces of equipment are used by museum scientists to sample the water, substrate, phytoplankton and zooplankton in Lake Biwa.

Sediment grab



The Environment and our Daily Life

Since the 'Soap Movement' of the early 1970s, the people of Shiga Prefecture have taken a keen interest in the changes to the environment around them. Part of this gallery is dedicated to the various projects that local people have worked on in collaboration with museum staff. Examples include surveys of fireflies and the progress of an invasive species of dandelion.

People can also write comments, observations and opinions here and many of them are then displayed in the Opinion Corner.

Local community science projects

17

Water Use of Lake Biwa

On leaving the gallery a series of maps shows the areas that have depended on Lake Biwa or its out-flowing river for tapwater at various times.

In 1895 it was just an area in downtown Osaka. As the decades passed this dramatically increased, so that now a staggering 14 million people depend on Lake Biwa for tapwater.

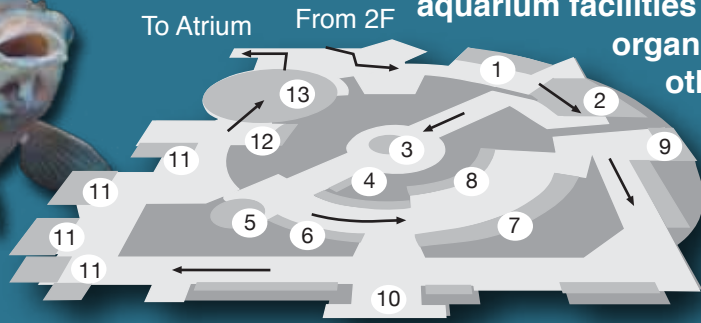
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Maps showing water usage





The Lake Biwa Museum's aquarium is one of the largest fresh-water aquarium facilities in Japan, and features fishes and other aquatic organisms from Lake Biwa, its watershed and several other lakes of the world. A variety of endangered fish species from Japan are bred in the aquarium's Fish Conservation and Breeding Center, as part of a national collaborative effort among several zoos and aquariums to conserve these species and, in some cases, save them from imminent extinction.



AQUARIUM

Lake Biwa; Reed Marsh Habitat

Reed marshes, characterized by an abundance of reeds and other emergent plants, are still present around the lake shore, although in many areas they have been destroyed by land reclamation and development activities. These habitats are inhabited by a highly diverse and abundant fauna. This outdoor tank accommodates 13 species of fish, including carps, bitterlings and gudgeons, and two species of freshwater mussels.

It should be noted that this is how the fish community looked up until 35 years ago. Invasive species, such as largemouth bass and bluegill, now dominate such communities.



1

A crucian carp

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Lake Biwa; Rocky Shore and Offshore

The tunnel tank represents rocky shore and offshore habitats around Chikubu Island in the northern part of Lake Biwa.

In this tank are piscivorous chub and crucian carps, which prefer to swim in surface to mid-waters, and the rock catfish and Japanese eel, which prefer to remain close to the bottom.

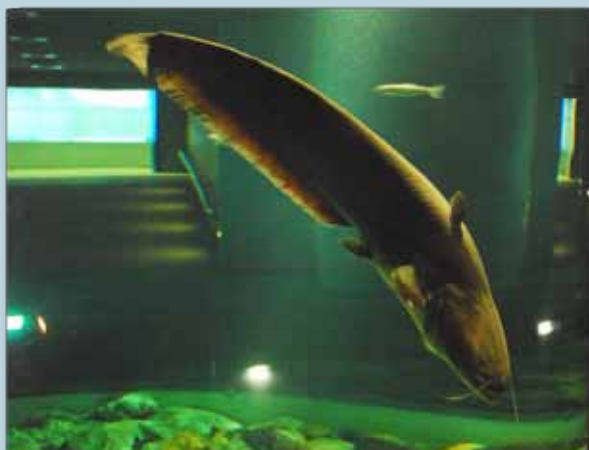
The walls of the tunnel tank are made from acrylic plastic almost 16 cm thick!



Lake Biwa; The Biwa Catfish

Known as the guardian spirit of Lake Biwa, the endemic Biwa catfish is one of the largest fish in the lake. It can grow up to 1.2 m in length and weigh over 10 kg.

It is a nocturnal predator, spending the day at over 40 m depth and coming up into shallower water at night to prey on smaller fish.



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Lake Biwa; Ko-Ayu

Although small in size, the ko-ayu is one of the most abundant fish in Lake Biwa, and also comprises the highest-value fishery in the lake. The ko-ayu spawns either in rivers or on wave-washed pebble beaches along the lake shore.

Lake Biwa; Cold-Water Biwa Salmon

The Biwa salmon is a land-locked subspecies endemic to the lake. They live in the deep pelagic zone of the lake where the water is around 15°C. Spawning takes place in the middle reaches of rivers during October to November when the fish reach 3 to 5 years old. Due to the destruction of the natural river systems around the lake, the population of Biwa salmon is now maintained through artificial propagation in hatcheries.



Lake Biwa; Littoral Zone

6

In the nearshore area aquatic plants are abundant and are used as shelter and as nurseries by many organisms, especially small fish and invertebrates. Examples include freshwater snails, the Japanese trident goby, the Japanese ricefish, the golden venus chub, the lake prawn and the Oriental river prawn.

Lake Biwa; Fish with Unusual Habits

7

Several species of fish in Lake Biwa lay their eggs within the shells of living mussels. As the females use their long spawning tube to place eggs into the inhalent siphon of the mussel, the male releases sperm to fertilize them.

Other fish with unusual habits include the forktail bullhead catfish, which makes sounds to communicate threat, and the silver crucian carp, an entirely female subspecies of fish that can reproduce without any genetic contribution by a male.



Bitterlings laying eggs in a mussel



8

Lake Biwa; Alien Species

Many species from different parts of the world have been introduced into Japan, and in particular Lake Biwa. These include the northern snakehead, the red swamp crayfish and the water hyacinth.



Red-eared slider (terrapin); once a pet, now an invader

The predatory largemouth bass

The two most destructive species are the largemouth bass and bluegill sunfish. Both were introduced for sport fishing and/or as a source of food, but have bred uncontrollably in the lake resulting in the near disappearance of several endemic species.

Aquatic Life of Rivers, Streams and Ponds 9

Recent changes to lowland waters in much of Japan have resulted in some once common species becoming endangered. These include the predatory diving beetle, the water scorpion and the giant water bug, which used to be common in ponds and irrigation ditches.

Faunas from different stretches of rivers are also displayed. Species from middle reaches of rivers include the Japanese giant salamander, dark chub, pale chub, dace, gudgeons, minnows and barbels.

Freshwater crabs, sculpins, catfish and loaches can be found in upper reaches of rivers.



Japanese giant salamanders can grow to 1.5 m in length



The extinct black kokanee salmon

Endangered Fish; Fish Conservation and Breeding Center **10**

Within Japan, many freshwater fish species have declined drastically in number owing to the effects of man: pollution, habitat alteration and destruction, overfishing and the introduction of alien species. Some of these fish are kept and bred at the museum for conservation. For two species, however, conservation measures are too late. The Amur ninespine stickleback and the black kokanee salmon are now both extinct in Japan.



11

The Museum also houses fish from other lakes in the world. These include Lake Dongting (China), Tonle Sap (Cambodia), Lake Tanganyika (East Africa) and the Laurentian Great Lakes (North America).



Representatives of 'ancient' groups

Ancient Fish

12

Some of the largest fish in the Museum are also the oldest. Sturgeons and gars are representatives of ancient fish, groups that have survived relatively unchanged for tens of millions of years.

Sturgeons are bottom-feeders, and use their barbels to find prey. They are famous for their eggs, which are sold all around the world as caviar.

Gars catch smaller fish in their long, narrow snouts, which are lined with a row of pointed, needle-sharp teeth.

Lakes and People around the World

13

Just outside the aquarium several exhibits compare the natural environments of a variety of lakes around the world, and the lifestyles of the people living in the regions surrounding these lakes. These include Lake Dongting (China), Lake Baikal (Russia), Lake Geneva and Lake Constance (Europe), Lake Tanganyika (East Africa), the Laurentian Great Lakes (North America) and Lake Titicaca (South America).



Lake culture from around the world

By making comparisons among these and other lakes we can expand our understanding of lake biology and lakeshore cultures in other parts of the world.



The Discovery Room is an exhibition gallery catering especially for young children and families. It contains eighteen hands-on exhibits, designed to provide a diverse range of activities geared towards exploring the countryside and local culture within the Lake Biwa watershed.



Grandma's kitchen



There are lots of Discovery Boxes to explore!



Be a crayfish and catch your dinner



Use the microscopes to discover the very small

Open
10:00 am
to 4:30 pm
(last entry
4:00 pm)

Discover fossilized life



Put on a show with the hand puppets!



Look for the animals living here

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Forests of ancient times

When elephants roamed the area two million years ago typical trees included *Metasequoia* and other deciduous conifers. Later, during the Jomon and Yayoi periods (5,500 ~ 1,800 years ago), evergreen and broadleaf trees were common.



In the Museum's grounds there are various exhibits including ponds and streams created to provide a variety of habitats

Life and Culture Laboratory

Modelled on a traditional Japanese farmhouse, this building is used for various Museum activities throughout the year.



Rice field

Every year the Museum plants small rice and vegetable fields. During the growing season the rice field teams with aquatic life.

Observation Pond

This pond was dug at the same time as the Museum was built (1995 - 1996). Nothing was deliberately introduced into the pond so it could be used as an experiment to monitor natural dispersal of freshwater flora and fauna.



Lake Biwa's Birdlife

Approximately 100,000 birds representing about 140 species overwinter on the lake every year.

Little grebe



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Museum Activities

The Lake Biwa Museum runs many activities for the local community and visitors. These include hands-on courses for school children, such as studying plankton and making plankton models, making fossil replicas and using reeds as musical instruments.

Other activities include Field Reporters and Hashikake Groups for people of all ages who wish to use the Museum as a center to pursue research and other activities associated with the Museum.

For further details please contact a staff member or email query@lbm.go.jp



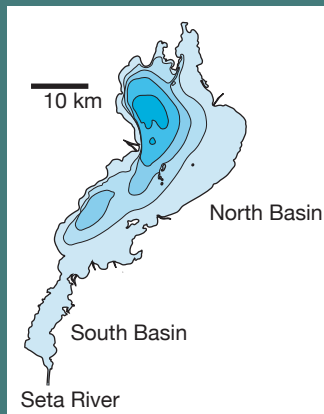
One of the Museum's teaching labs, fully equipped with microscopes



Panpipes made from reed stems

Lake Biwa Facts

- Size: 674 square km
- Volume: Total 27.5 cubic km
 - North Basin 27.3 cubic km
 - South Basin 0.2 cubic km
- Max depth:
 - North Basin 104 m
 - South Basin 8 m
- Mean depth:
 - North Basin 44 m
 - South Basin 3.5 m
- Length of shoreline: 235 km
- Catchment area: 3,174 square km
- No. of inflowing rivers: 120
- No. of outflowing rivers: 1 (the Seta River)
- Trophic status:
 - North basin mesotrophic
 - South basin eutrophic
- Conservation Status:
 - Lake Biwa was designated a quasi-national park in 1950.
 - The entire Lake Biwa region was designated as a wildlife sanctuary in 1971
 - Lake Biwa was registered with the Ramsar Convention on Wetlands in 1993 as a wetland of international importance
- No. of endemic species/subspecies: 59, including:
 - 11 species/subspecies of fish (19% of total)
 - 9 species of bivalves (56% of total)
 - 11 species of gastropods (39% of total)



A Brief Guide to the Galleries

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Second version

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Note: Because the contents of the galleries are regularly updated, some of the exhibits on display during your visit might differ from the description in this guide.