



BIODÔME



CARING FOR THE LIVING

"Having animals at the Biodôme allows us to show the interrelationships that exist within a given ecosystem. Through our educational programs, we try to inspire visitors to help protect ecosystems and the species that inhabit them."

Yves Paris, Director of the Biodôme

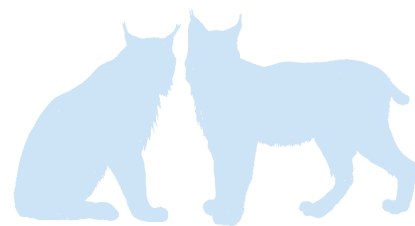
Showcasing ecosystems

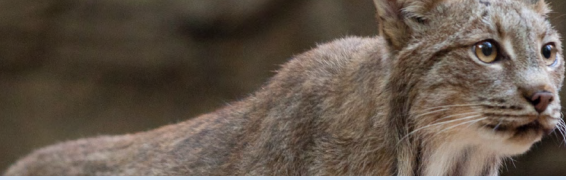
The Biodôme de Montréal is not really a zoo, but it's not a botanical garden, either. Ever since it was first established in 1992, the Biodôme has innovated by opting to focus on ecosystems and the interrelationships between animals, plants and their habitat, and between the various components of these ecosystems. Raising public awareness about environmental issues was its primary purpose right from the very outset. Its founder, Pierre Bourque, spoke of "a cry of hope for planet Earth." Almost 30 years later, guided by its mission of education, research and conservation, the Biodôme is pursuing its commitment to nature by increasing its initiatives and inspiring visitors to do their part.

Why a Biodôme in 2020?

Why continue to showcase animals in captivity in 2020? To help humans reconnect with nature out of pure wonder, to arouse their curiosity to learn more and to raise their awareness of the issues threatening nature. We only protect the things we cherish.

A lesser-known aspect of the work of zoological institutions is organizing and supporting research and conservation programs. The animal populations now in captivity represent a sort of insurance policy for the preservation of those species. Thanks to those populations, some animal species that had almost disappeared from the face of the Earth could be reintroduced into the wild before they became extinct. Last, thanks to the expertise developed in zoological institutions and the extensive collaborative work between them, a body of valuable knowledge has been built up for the benefit of nature, which is increasingly under threat.





Precious little chorus frogs



Although there was a sizeable population 50 years ago, the boreal chorus frog is now very rare in Quebec. Habitat destruction, urban sprawl and intensive agricultural practices are to blame. What is especially serious is that most of the known remaining populations are very small and isolated from one another. Yet despite being so tiny, the boreal chorus frog plays a key role in maintaining biodiversity. That is why it is crucial to continue to protect the woodlands and fields that are its habitat, and also why the Biodôme team is working with Québec's Ministère des Forêts, de la Faune et des Parcs (MFFP), Université Laval and the University of Ottawa to conserve it.

Raising wood turtles



Since 2014, Espace pour la vie and Québec's Ministère des Forêts, de la Faune et des Parcs (MFFP) have been working together on a plan to re-establish the wood turtle (*Glyptemys insculpta*), which has been designated a vulnerable species in Québec. To increase the turtle's poor survival rate during its first year of life, the MFFP has been collecting eggs and incubating them artificially in the lab. Soon after hatching, tiny baby turtles are transferred to the Biodôme, where they are raised for one to two years, until they reach a weight of 260 g. This stage increases their chances of survival considerably, as the mortality rate of young turtles is particularly high in the wild. The turtles are microchipped before being released near where they were laid. Wireless emitters are attached to the shells of some of them for the purpose of conservation effort assessment.

Animal welfare

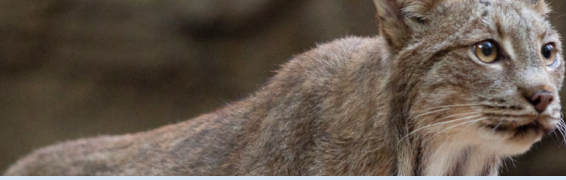
If there's one topic the Biodôme team is passionate about, it's animal welfare. Here, it's everyone's business. The constantly evolving scientific knowledge underlying decisions about animal welfare means that methods can now be adapted to meet the needs of each individual animal. When we think about animal welfare, one of the first things to come to mind is habitat size, but the issue goes far beyond the amount of space available.

At the Biodôme, we take an interest not just in the physical characteristics of an animal's habitat, but also in stimulating activities that prompt an animal to express its natural behaviour. For instance, we might hide some of its food on a branch, so that it has to find the food itself. We also give animals options, so that they can make choices: choose what food to eat, where to rest or what activities to explore. Of course, all these actions are monitored so that ways of doing things can continuously be adjusted to better meet the needs of each individual animal. We human beings obviously don't share a language with animals, but animals do express themselves in their own way, and at the Biodôme, we make a real effort to decipher their messages.

What is your name?



At the Biodôme, we avoid naming the animals, we don't try to tame them and we don't teach them to perform tricks for an audience. Our policy is clear: we're not here to get animals to perform. While for many visitors, the animals are clearly the stars of the show, for the Biodôme team, the ecosystem in its entirety is the star that makes their work meaningful.



Offering options

While our ecosystem habitats already, prior to the renovation work, provided stimulating environments for the animals that prompted them to behave as they do in the wild, the renovations have afforded an opportunity to make further adjustments and improvements. For instance, in the lynx habitat, the nets have been raised so that these agile, curious animals can clamber up and look down from the cliffs. A cooling and heating plate, hidden under a rock, has also been added to help keep them cool during the summer heat and warm in the depths of winter. Thanks to the plate, the Biodôme's lynx can now choose what suits him best.

New residents

- **Capybaras from Paris**

Four sisters born in June 2018 that arrived at the Biodôme in December 2019 will be sharing with other animals a space that has been redeveloped for them.

- **Flock of parrots**

Two female scarlet macaws and a pair of blue-and-yellow macaws have joined two scarlet macaws already at the Biodôme in a new habitat specially created for them.

- **School of false piranhas**

A school of hundreds of false piranhas has been added to the Tropical Rainforest fish collection.

- **A new species of primates**

Two young common marmosets will now be living in the Tropical Rainforest.

- **A pair of broad-snouted caimans**

The only two broad-snouted caimans in a zoological institution in Canada are now residents of the Biodôme.

- **Spectacular chinstrap penguins**

Five birds from New York's Central Park Zoo should arrive at the Biodôme in the next few months.



Adorable penguins

The Biodôme's king penguins, which have been living at the Calgary Zoo during the renovations, will be staying there permanently. This will save the five older birds the stress of a return journey by plane and at the same time enhance the genetic biodiversity of the Calgary colony. In exchange, younger penguins will be settled in the Biodôme soon.



A ripe old age

Thanks to excellent care from our crews and optimum living conditions (no predators, regular medical monitoring, etc.) many of the Biodôme animals live longer than they would be expected to in the wild. As for pushing boundaries, our 37-year-old puffin has lived almost twice as long as it likely would have in the wild (around 20 years). Several of our common murres have also exceeded their life expectancy in the wild (about 25 years) by almost 10 years. The same goes for the sunbittern, which is 25 years old, but has a life expectancy in the wild of around 15 years.

Research and conservation

The Biodôme's expertise in keeping animals happy and healthy and its success in getting them to breed in captivity means that it is a top site for species conservation in Québec. Biodôme researchers and various collaborators are actively involved in a number of animal conservation programs, including for the wood turtle, copper redhorse, spotted wolffish, Atlantic wolffish and boreal chorus frog. They are also putting considerable effort into the conservation and restoration of various plant species, such as wild leek, Mingan thistle and North American ginseng, to ensure they don't disappear and to promote their reintroduction into the wild. There are also programs to combat invasive species, such as garlic mustard, and a program to conserve and raise awareness of urban woodlands. These programs take a participatory, citizen-science approach advocated by all the Espace pour la vie institutions.

Concerted efforts

The Biodôme is taking part in the Species Survival Plan (SSP), a program of the Association of Zoos and Aquariums (AZA) devoted to organizing the conservation efforts of North American zoos and aquariums to preserve certain species endangered in the wild. Participating zoological institutions together manage certain populations under their responsibility when breeding in captivity programs may be the only way to give them a chance of surviving in the wild. Keeping the species in good health and maintaining genetic diversity are essential conditions for reintroducing them into nature. There are currently 165 species covered by the 111 SSP programs in North America. The Biodôme is involved in some twenty such programs.



A rare success story!

The Panamanian golden frog no longer exists in the wild. The Biodôme is involved in the SSP for this species and is breeding it successfully. The northern rockhopper penguin is another good example. This species is now found in just three institutions in North America, and the Biodôme is the only one to have bred it successfully. It's a source of pride for the whole team!



Biodôme flora

To underscore ecosystem importance, plants are given a very prominent role at the Biodôme. While we can all appreciate their beauty, we sometimes forget the essential role they play in animal survival, including that of humans! Without plants, life simply wouldn't be possible. The Biodôme's horticulturists care for over 800 species of plants. Among this vast collection representing over 110 botanical families, the Biodôme's Tropical Rainforest ecosystem has plants from the following families: Bromeliaceae, Araceae, Orchidaceae, Marantaceae, Arecaceae (palm trees) and Cactaceae, as well as the temperate families Cyperaceae and Asteraceae.

Of course, all the plants are chosen for their compatibility with the animals in the same ecosystem, so there are none that produce irritating sap or compounds that could bother them. Sometimes the species chosen are especially attractive to herbivores like sloths, which are particularly fond, for instance, of guamo (*inga*) leaves and young kapok tree (*ceiba*) shoots.





Like a garden

Five full-time horticulturists and three gardeners take care of ecosystem maintenance and the production of tropical and native plants. Thanks to this production, plants can be replaced on a regular basis, and the spring bloom of woodland flowers in the Laurentian Maple Forest can be “forced and extended.”



Land of giants

During the renovations, the Biodôme team planted 23 new trees in the Tropical Rainforest. Two of them are a *Tabebuia* sp. and a *Peltophorum* sp., respectively 6 and 7.6 m tall! To take delivery of them in the middle of December, a heated lobby had to be built and, because of their size, a scaffolding and hoisting system had to be used to move them into position. The *Tabebuia* is a very hard, slow-growing type of tree that includes species used to make flooring under the name ipe.

Facts and figures

- **Number of animals:** 2,500 of more than 200 species
- **Number of plant species:** Over 800 species of tropical and temperate plants presented seasonally in the ecosystems
- **Biggest collection:** Invertebrates and fish
- **Tallest tree:** Specimen of the genus *Sterculia*, over 18 m tall
- **Source of pride:** Birth of a northern rockhopper penguin chick in 2019 in the temporary penguin habitat
- **Oldest residents:** Four sturgeons over 46 years old, one 37-year-old Atlantic puffin, several common murres over 33 years old, several turtles at least 30 years old

