

# Zukunftsplan & ZUGvögel

The Museum für Naturkunde is celebrating a premiere and opening two exhibitions at the same time. From 11 June 2024, the two exhibitions so called *Zukunftsplan* and *ZUGvögel - A Collection in Motion*, will be on display for an initial period of three years.

Over the next few years, the Museum für Naturkunde will be working on its future plan: the Museum will be refurbished, the scientific objects in the collection will be made more accessible and new exhibitions will be created with the participation of the public. These plans will be displayed in various installations throughout the permanent exhibition and information on the progress will be provided over the coming years.

As part of the Museums future plan, the collection room of the historical bird collection will also be renovated. This means a temporary removal of the approximately 11,500 specimens. To this end, all the specimens have been cleaned, photographed and packed in transport boxes. Instead of storing the boxes behind closed doors, they were quickly elevated to exhibition architecture, making this part of the collection visible to everyone in the exhibitions for the first time with the *ZUGvögel* project.

The Museum's exhibition team spoke to more than 350 people for the special exhibition. Their perspectives, associations and questions about the bird specimens form the foundation of the exhibition themes. From the history and origins of the collection to the diversity of species and characteristics of birds, through to environmental protection, research and the diverse relationships between humans and birds, the resulting exhibition is now as diverse as the bird world itself thanks to their input.

## History of the collection

The Museum's bird collection comprises 200,000 specimens and covers 80 % of all known bird species. This room contains a small part of it: the historical mounted birds. In total, these consist of around 11.500 objects. In addition to the birdlife of Brandenburg and Germany, it includes many objects from former European colonies in South America, Africa, South-East Asia and New Guinea as well as from other parts of Asia. This exhibition room contains historical mounted specimens. They are part of the Museum's scientific bird collection, which also includes bird skins, skeletons, nests, eggs, wings and alcohol specimens.

Many of the objects in this collection were prepared over 200 years ago and are therefore, like almost all the specimens in this box, are older than the museum itself. The collection was established as part of the university collection as early as 1810. Only when the university's main building became overcrowded with objects was a new building erected: today's Museum für Naturkunde. It opened its doors in 1889 and most of the objects in this room were part of the original collection.

Once prepared through taxidermy, natural history collections outlast entire eras. In their "second life", the objects then become contemporary witnesses to history. The historical bird specimens were in the Museum when Otto Lilienthal undertook experiments in flight near Berlin, when the First World War began and ended, during the Roaring Twenties, when Hitler seized power and the bombs of the Second World War hit Berlin, when the Wall was built and fell again. All these events have left direct or indirect traces on the collection, making it a cultural and historical legacy.

As part of the future plan, the historical mounted birds have all now been cleaned, repaired and digitally indexed. However, nothing has been added, as only the original parts of the objects are of importance for scientific research: for example, there will always be "headless" or otherwise damaged specimens in the boxes.

Preserving the collection and making it usable for research and society is an important goal of the Museum. In addition to conservation and proper storage, digital indexing is particularly important. As part of the Museum's future plan, all digital object data relating to the bird collection is to be made available online in the coming years. After this exhibition station, the historical bird specimens themselves will move back to their newly renovated collection room on the first floor of the Museum. There they will continue to be accessible to visitors as a public collection.

## Bird species and characteristics

There are around 11,000 different species of birds worldwide. All birds have feathers, a beak, and lay eggs. They range from tiny to majestically large, dazzlingly colourful to mottled grey. Among them are seed eaters, nectar drinkers, insect hunters, carnivores and scavengers. They build nests, perform courtship dances, use tools and are excellent singers.

Their feathered wings gave them the ability to fly. Some species have perfected their flight skills, while others have lost them completely over the course of evolution, such as ostriches and kiwis. Around 20% of all living species today are migratory birds: they take to the skies twice a year and sometimes cover tens of thousands of kilometres on their journey. In total, there are six times as many birds as people in the world: around 50 billion individuals.

Birds have sophisticated behaviours that help them obtain food, find a mate and ensure survival. Crows, for example, use cars as nutcrackers by deliberately placing nuts in front of waiting traffic at red lights. In Berlin, swifts are summer guests, circling between houses and breeding in the cracks of the facades. However, this breeding season is the only period in which the insectivores actually interrupt their flight. Swifts spend almost their entire lives in the air. Scientists proved that the animals spend more than ten months almost exclusively in flight by using micro-transmitters. Swifts eat while flying and can even sleep while flying. To do this, they first rise high and then slowly glide towards the earth. Only one half of the brain needs to be active. The two hemispheres of the brain sleep alternately, so to speak.

## Historical contexts and ethic

The desire to understand living nature means the irretrievable end of life for many objects of study. Many objects also come from countries that were oppressed by the Western world. Research institutions benefited from the unequal balance of power: expeditions were made possible by colonial structures, and explorers enjoyed military support. Access to and careers in science were also shaped by racist prejudices and Western worldviews and are still so today.

Today, many countries have strict laws that determine under what circumstances, where, when and how many animals can be hunted for research purposes. But that wasn't always the case. Nature was seen as an infinite resource and collecting even large quantities of animals was only questioned in rare cases.

Collection objects not only tell stories about biological connections, but also about the political conditions under which they were collected, preserved and studied. They are evidence of the complex interactions between people and nature, power and knowledge, politics and science.

## Preparation und conservation

Everything that lives decomposes after death. For a natural history collection, this decay process must first be halted, and then animal or plant specimens are stored under certain conditions.

Temperature and humidity are checked regularly and the objects are checked for damage in order to preserve them in the collection for posterity. In the museum world, these fields of work are called "preparation" and "conservation". Different groups of objects have their own specific requirements. Skeletons have to be treated differently to skins, tissue samples are preserved and stored differently to DNA samples.

The emptying of the bird hall as part of the future plan was the perfect occasion to clean, repair, photograph and digitize the 11,500 historical specimens. Decades-old dust deposits and biocides had to be removed, birds, plinths and mounts repaired and labelling updated and made legible. Compressed air was used to blow the dust out of the feathers.

As a taxidermist, you need manual dexterity, precision, knowledge of species and artistic creativity. Since its opening in 1889, the Museum für Naturkunde has operated its own taxidermy workshops, which have always been known for their outstanding quality and innovativeness. This is still the case today; the taxidermists can call themselves World and European Champions. This knowledge and expertise should also be passed on. Since April 2024, the Museum für Naturkunde, together with the Natural History Museum in Vienna, has started to offer vocational training for taxidermists for the first time in decades.

## Environmental protection and biodiversity

Birds can be found around the world and are often easy to study and observe. Therefore, they can be excellent indicators of biodiversity and the health of their environment. The fewer birds we find, the greater the impact on local ecosystems and ultimately on us humans. In 2022, 49 % of all bird species worldwide were suffering from population decline, and 12 % threatened with extinction.

Birds are facing many different threats: climate change, a lack of food due to the death of insects, loss of habitats, plastic pollution in the oceans, the spread of diseases or illegal hunting. These combined factors have contributed to an alarming rate of species loss today. Targeted measures can counteract the loss of species, and the Museum für Naturkunde's bird collection, which will be made available globally as part of the future plan, will contribute to this.

Since 1963, the "Red List of Threatened Species" has tried to record all animal and plant species threatened with extinction around the world, and helps to ensure that risks can be identified and actions to protect species can begin in a timely manner. Even if measures to preserve biodiversity are complicated, expensive, or time consuming, it is up to us as humans to protect habitats and preserve biological diversity worldwide. Positive Berlin sample: There is a lot of air traffic at Tempelhofer Feld despite airport operations being closed. 50 % of Berlin's total population of skylarks (*Alauda arvensis*) breed in these open spaces. Every spring and summer, protection zones are set up so that people and animals do not get in each other's way.

## Research and collection

Collecting, preserving and researching are among the main tasks of a museum. The growth of the collection is also symbolic of our growing knowledge. Research builds on one another and becomes more complex.

Today, the collection is by no means outdated. New technologies make it possible to study "old DNA" and isotope studies provide information about ecological relationships. The animal sound archive of the Museum serves as the basis for AI-supported species recognition and citizens collect large amounts of data in citizen science projects.

Thousands of citizens have collected valuable data on bird migration and behavior over many decades and contributed to new findings. Using the Museum für Naturkunde's "Naturblick-App", citizens were able to record the songs and locations of nightingales and feed them into a large database. None of this could have been dreamed of when the Natural History Museum opened in 1889. Who knows what insights can be gained from these old exhibits in the future?

## Of people and birds

The fascination with birds and their relationship with us is as old as human culture itself. As symbols of freedom or messengers of the gods, birds play an important role in stories and legends worldwide. Today, we share the airspace with birds, at least some of the time. Yet human-bird relationships are also omnipresent on the ground. We keep them as pets and sometimes even include them on our own menus. Sparrows steal our cake crumbs in the café, a blackbird sings outside the window, and starlings hop around our feet as we wait for the S-Bahn at Alexanderplatz.

Although starlings are actually migratory birds, more and more of them stay in the cities in winter and can also be found in our bird boxes. A clear advantage for the starling: those who stay here in winter do not waste energy on migration and are the first at the nesting site in spring. For example, starlings now often fly around Berlin's Alexanderplatz all year round. Some of these talented singers have even added the Berlin S-Bahn soundtrack to their repertoire.

Birds are everywhere. They are wild animals whose habitats overlap with ours. Many people take advantage of this, for example by birding on Tempelhofer Feld, installing birdhouses and nesting boxes. You can watch the colourful goings-on from the comfort of your window. What's more, birdsong has been proven to lighten the mood and prevent mental illness. It's no wonder that we love to greet our feathered guests on our balconies and in our gardens.