BARNOD SILLA The newsletter Loro Parque Fundación

2018 # 112

200 KG PYGMIES

SAVING THE HUMPBACK WHALES' BAHIA

NEW CALEDONIAN HORNED PARAKEETS BRED AT LPF

SAVING THE MACAWS OF GUATEMALA IRRUPTION OF THE "VOLCÁN DE FUEGO"







Cyanopsitta # 112 - 2018

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COVER:

Humpback Whale *(Megaptera novaeangliae)* in Whale Bay (Cape Verde). Photo: Pedro López

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Dear friends,

time flies and proof of this is that you now have in your hands the latest issue of Cyanopsitta, which means we have now passed the halfway point of 2018. It also means that the first reports from our conservation projects for this year are starting to come in and we will be sharing them with you in this bulletin.

In this issue we bring you an update from our breeding centre and its latest successes which help to make Loro Parque Fundación a world leader in the reproduction and conservation of endangered species of parrots. You can also read the latest news about the El Oro Parakeet project in Ecuador. The Loro Parque Fundación has devoted much research to this species since 2002. All the data the project has generated in the field over more than a decade is now being put to use to declare an ecological corridor that could offer a brighter for this endangered species.

This and other news about parrots will be discussed at our International Parrot Convention. If you don't want to miss what will no doubt be the biggest event over the next four years, don't forget to register as soon as possible – there are very few places left!

The biggest news in this issue is undoubtedly the arrival of the Pygmy Hippopotami at Loro Parque. This new development for the zoological reserve not only adds to its attraction for visitors, but it is also a sign of its commitment to the Europe-wide breeding programme for this species. The new enclosure which has been built to provide the animals with the very best living conditions will be a perfect addition to the other areas dedicated to other African species in the Park. The institutional collaboration between zoos to establish a gene security network is one of the reasons for the existence of wild life conservation centres. And for Loro Parque, the ability to offer new areas for the conservation and breeding of species in need of them is a pledge we are happy to make.

And, in this issue we could not fail to report on the progress we are making with our conservation efforts in the marine world, which have stepped up since the inauguration of Poema del Mar. Our front-cover photo shows the splendour of the new species which Loro Parque Fundación has pledged to support: the humpback whale. One of the world's most threatened populations of these ocean nomads, which migrate across the North Atlantic every year, have a breeding ground in Cape Verde. We hope, with our assistance, to achieve the protection of a bay that is of crucial importance for mothers and their calves, and thus form the basis for the development of an emerging whale-watching industry which must be undertaken with absolute respect for these creatures. As well as the whales, we will also be talking about a new project with which we hope to uncover the secrets of the green turtles, of which the only resident populations in Europe are to be found in the Canary Islands.

We also take this opportunity to introduce you to a new initiative on which we are working together with the Canary Island Regional Government. This initiative will see the launch of an ambitious project which will lay the foundations for a surveillance system to monitor the effects of climate change, ocean acidification and submarine noise in the Macaronesian region. This project will make use of the latest technology to obtain data that will enable us to protect the most threatened marine species in this region. It will be linked to another project being undertaken in Poema del Mar, which aims to reintroduce loggerhead sea turtles.

As you can see, this is a Cyanopsitta packed with news and exciting developments, which brings you up to date with our Foundation's latest successes. If you would like to get involved, don't hesitate to become a member. As you well know, we guarantee that 100% of your contributions are invested in our projects.

WE CARE

M. N -V. Am/1h

Christoph Kiessling. President of Loro Parque Fundación







Saving the humpback whales' bahia



Humpback Whale, Megaptera novaeangliae

Each spring, groups of humpback whales (Yubartas) gather with their months-old calves on the west coast of the island of Boa Vista (Cape Verde). This is the only place we know of in the north-eastern Atlantic where the reproduction of this species occurs.

It is visited by some 260 whales and is considered to be one of the most threatened sub-populations of humpback whales in the world. This number may not appear to be too small for a sub-population, but it represents just 5% of those that were thought to have lived around this archipelago before they were hunted at the start of the 18th century. This population is an important one because humpback whales do not live permanently around Cape Verde. On the contrary, they are great migrators and each year they travel from the tropical waters around the southern-most archipelago of the Macaronesian region, to the Canary Islands, Madeira and the Azores, and then on towards Norway and Iceland. This long annual return journey makes it extremely difficult to manage and protect them, since the threats the humpback whales face are different in every region they traverse.

Fortunately, Cape Verde is an ocean archipelago quite some distance

away from industrialised areas, so chemical or noise pollution are not a major threat here. But their distance does not eliminate every danger: the growing interest of tourists in the archipelago has led to an increased popularity in whale and dolphin watching, and since 2008 the cetacean-watching industry has been expanding constantly in the north-east of Boa Vista Island. Whale-watching is not always the harmless pastime you might imagine it to be. If it is conducted without the right precautions or if the load capacity is exceeded, it can cause serious problems for the populations of wild whales and dolphins. Indeed, the threat is so real that the Scientific Committee of the International Whaling Commission has been studying it since 1996, and has produced over a hundred documents with recommendations about

sustainable whale-watching practices. BIOS.CV, the Cape Verde Biologists Association, has been studying this population since the 1990s by means of the photo-identification of their tail fins. Each humpback whale has a white colour pattern on the underside of its tail that is totally unique, which enables us to distinguish each

individual whale in the way that fingerprints identify humans. Thanks

to the work previously undertaken by BIOS.CV, we have ascertained that the populations in the east and west of the North Atlantic are not completely isolated, and that there are cases of individual whales crossing the Atlantic, thus connecting the two sub-populations.

But the work of BIOS.CV is not restricted to photo-identification or the bioacoustics study of cetaceans. Since they use the cetacean-watching boats as an opportune platform for their work, they are in direct contact with the crews on the boats that take tourists to the area on whale-watching trips. Thanks to this association, BIOS.CV has been able to prepare a document outlining humpback whale-watching good practice, especially in relation to mothers and calves in the Whale Bahia. To encourage the use of these rules on the whale-watching boats, this year, prizes are to be awarded to the boat owners who abide most closely by the rules, who are chosen by vote among the owners themselves and the scientists. Contacts are also being established with politicians in an attempt to make the good-practice document a nationwide regulation with the hope that this becomes the first step in protecting the Whale Bahia by eventually declaring it as

a Protected Marine Area. This project is also linked to the Interreg MARCET project, of which Loro Parque Fundación

is a member. Among its aims is that of harmonising all the cetacean-watching good-practice rules and manuals across the entire Macaronesia region. At Loro Parque Fundación, we work closely with BIOS.CV, not only in funding its field activities, but also in political actions aimed at regulating cetaceanwatching and achieving effective protection for the Whale Bahia.





El Oro Parakeet population on the rise



The population has grown thanks to artificial nests.

Photo: DouchWechsler

We have received important news from the Ecological Corridor in Ecuador of the successful increase in the numbers of this scarce and rarely seen species. *More than 93% of chicks hatched in the* artificial nests managed to fly and live independently in their natural habitat. Over the last breeding season, 67

young birds have joined the known population of this species, improving upon the most successful year to date, which was 2014.

These photos are proudly shared by this project, supported by Loro Parque Fundación, where the on-going coordination between environmental education, scientific studies and field work, along with reforestation has given rise to a fruitful agreement that is in continual expansion

Trainers involved in the reforestation plans. Children help to plant and care for 300 native species trees around their schools, for their future replanting in the jungles.

Reforestation work has been undertaken in the Buenaventura and Piña reserves, which is also supported by Loro Parque Fundación together with Fundación Jocotoco. This enterprise has galvanised the people who live their daily lives in this landscape into action as they have come to realise the benefits it brings them, as well as obtaining deep satisfaction from learning about and understanding the natural environment that surrounds them.

The scientific studies conducted in the various reserves have examined deforestation and the plants needed for the survival of El Oro Parakeets. Gathering seeds and planting the extension of the future forests is the task entrusted to the local inhabitants in which the children are also involved. They are creating the future landscape that they themselves will enjoy and where this parrot will once again become a major attraction.

Get involved in projects like this one and become a member of Loro Parque Fundación. Don't leave it until tomorrow, join WeCare now!



Chick of El Oro Parakeet, Pyrrhura orcesi.

The secret life of the green turtles

The Poema del Mar aquarium is to become a testing ground for a modern wildlife tracking device that Loro Parque Fundación has just received. It will be instrumental in a project which aims to reveal the behaviour and movements of the green turtles that live to the south of Tenerife. These turtle populations, which are unique in Europe, comprise young individuals that spend several years making the most of the resources available to them in the calm waters of the southern coasts of the Canary Islands before returning to the coastal waters of the United States to reproduce.

In recent years there has been much concern about how uncontrolled tourism-related activities may affect these animals, so the project being implemented by Loro Parque Fundación, in

Parque Fundación, in collaboration with the company INCABE, seeks to provide information

which can be used to protect these turtles.

Prior research conducted by Las Palmas de Gran Canaria University established that alterations to the turtles' diet was occurring due to people unlawfully feeding them to lure them into tourism activities, to the point that abnormal levels of fat was detected in their blood. Last summer, several green turtles had to be rescued in the area after being hit by vessels or suffering broken shells caused by propellers, after which they required long recuperation periods. The tagging devices

acquired by Loro Parque Fundación allow the capture of HD video

images. They can also record the sounds the animals are exposed to and reconstruct their movements by means of a compass, three accelerometers and a pressure sensor that records the depth at which the turtles are swimming at all times. The devices are attached to the turtles' shell with suction cups, which do not damage them in any way,



The green turtles, Chelonia midas.

and they can be programmed to be released automatically over periods ranging from a few minutes up to several days. After their release, the devices float to the surface and are located with a VHF receiver, and after their recovery their scientific data they contain is processed. By analysing the data gathered from the trackers, it is possible to accurately establish the turtles' movements, to determine their critical habitat in the area and the intensity and type of interaction they have with humans. With all this data, the government authorities can develop plans for its use and management that will enable tourism activities to co-exist harmoniously alongside the only populations of green turtles that exist in Europe.

In June, the devices have been tested on two rescued loggerhead turtles that are recovering in Poema del Mar, and in the next few months we will be experimenting with placing them on green turtles in the sea.



You are my hero. The solidarity award



Ana María García San Juan (ANDA) Javier Almunia (LPF).



The organisation "Unidos Por Ti" of Santa Cruz, Tenerife, awards every year the prize "You are my hero" to people or organisations that support people in distress. On this occasion, solidarity with animals was rewarded. The awards winners

were the organization ANDA and Loro Parque Fundación for their unconditional support of animals and nature.

The awards were accepted by Ana María García San Juan on behalf of ANDA, and by Javier Almunia, the director of Loro Parque Fundación. This recognition will give further impetus to collaboration in favour of animals in need.

Sport and nature





Madeiran Chaffinch, *Fringilla coelebs* maderensis. Photo: R. Álvarez

The Azores, the Canary Islands, Cape Verde, Madeira and Savage Islands. Its environmental richness and biodiversity are similar, and it also includes a marine area of high conservation interest to which the foundation is committed.

Chendo Álvarez.

As a representative of Loro Parque Fundación, the runner, Chendo Álvarez, participated in the ULTRA-TRAI race in Madeira and let us take part in the stunning landscape of the

Macaronesian islands, which remind us of the Canary Islands: cloud forests, mountain peaks that emerge from the clouds and unique bird species. Chendo managed to photograph a Madeiran Chaffinch (*Fringilla coelebs madeirensis*), an endemic subspecies of the Madeira Islands, which lives in an island ecosystem similar to that of the Canary Islands' Chaffinch.

Macaronesia comprises five Atlantic Oceanic archipelagos:



New Caledonian horned parakeets bred at LPF



A horned parakeet couple, Eunymphicus cornutus.

Photo: LPF.

The peculiar name of this parrot that is endemic to New Caledonia is derived from the feathers on its head, which, when they are ruffled by the wind, look like horns with brilliant red tips.

The decline in their population is caused mainly by the loss of their habitat and illegal trade. The presence of predators in their habitat has also contributed to a silent decrease in their numbers over the last three decades: the introduction of the Javan rusa (Rusa timorensis) that has degraded its habitat, and Black Rats (Rattus rattus), also known as ship rats, that can prey on the hidden nests of this species of parrot. Curiously, it has few threats related to its capture, since it was not traditionally kept in a cage as a pet in New Caledonia. Black rats are particularly dangerous in island ecosystems where they devour all the resources available, sometimes having devastating effects for endemic birds.

The group of birds we have worked with included one male and three female one-year old birds. The group was maintained with the aim that they would interact and stimulate each other over the year. Shortly after this period, the pair which displayed the greatest empathy were separated from the rest and placed in a breeding enclosure.

The reproduction enclosure is 3.65 m wide x 1.80 m long and 2.15 m high and is situated in a reserved area of our breeding centre where we keep species originating from tropical climates.

The peripheral vegetation in their enclosure enhances the comfort

and tranquillity the pair requires and enriches the natural environment for the birds.

At least twice a week we made some changes to the enclosure so that the pair was constantly



Chicks at the LPF breeding station.

stimulated. The

enrichment is provided by pine branches, palm tree trunks, trunks from other non-toxic species, grasses such as alfalfa (Medicago sativa), dandelion (Taraxacum officinale), artificial rainfall, diet changes, and calcium blocks, among others.

During reproduction, in the mornings we gave them a variety of pieces of fruit mixed with cooked seeds. Grapes and figs are well accepted by this species at this particular time.

In the evenings we provided a mix

of balanced grains for Australian parrots, of the Versele Laga brand. It is important to point out that seeds should never be given on demand so that the birds do not consume excess fat. We put a 20g mix of seeds in the enclosure for each pair in the evenings.

One year following the pairings and at the end of the winter the posturing began. The initial number of eggs laid was 4, from which one chick was born. We also observed that two unfertilised eggs were laid, as well as one embryo that did not develop from the outset of the incubation period, probably due to a lack of incubation experience by the pair.

When the first chick had been raised, after it was one month old, the parents began to lay again. We removed the fledgling from the nest to raise it by hand in case there were any problems when the next eggs were laid. Just less than a month later three more chicks hatched from the five eggs laid, of which only three were viable.

The pair raised their three new offspring well, although we observed that the smallest developed slowly. The hand-raised chicks developed very well being fed on a mash containing 21-22% protein and around 8-9% fat. At two weeks, their weight was around 70g, at 3 weeks, 100g and at 4 weeks they weighed 111g and started to become independent.

We can conclude with satisfaction that it is a reasonably prolific species, and through varying the genes and a proficient egg and fledgling management, the sustainability of this species can be achieved in other breeding centres.

Thanks to Loro Parque Fundación their conservation is assured.

No scientific research had been made into their ecology until Dr. Jörn Theuerkauf's team (from the Polish Academy of Sciences) and Sophie Rouys (from the University of New Caledonia) came on the scene with a project backed by Loro Parque Fundación.

This species that lives in the rainy forests of New Caledonia is not threatened, as we mentioned, by capture or by being kept in captivity, but rather by the collateral effects of the climate and invasive species which have contributed to the decline in the populations of this endemic species.

Wild cats and black rats are also major threats to these parakeets, as revealed by *a project supported by Loro Parque Fundación. The project monitored 12 breeding locations of this species with cameras,*

recording 11,000 hours, which revealed several cases of eggs or chicks preyed on by rats. On one occasion, a female lost her life defending the nest, which is extremely stressful for a species that has a great ability in hiding its breeding sites.

The young chicks were tracked with transmitters before they flew out of the nest for the first time to determine their survival capabilities, their social interaction, their feeding habits and their behaviour in general.

All the research conducted over the years, with the backing of Loro Parque Fundación, has been crucial for the long-term conservation of the Horned Parakeet and other endemic

species of this location. Thanks to all the conservation actions, this is one species that has been saved from extinction. This species was classified as **endangered**, which has now changed to **vulnerable**, according to the IUCN Red List of Endangered Species.

If you would like to support projects like this one and get involved in the conservation of parrot species, contact us at lpf@loroparquefundacion.org and become a member of Loro Parque Fundación.





Saving the macaws of Guatemala



A recovered scarlet macaw (Ara macao) in Guatemala.

From Guatemala, where the tragic irruption of the "Volcán de Fuego" (Spanish for Volcano of Fire) had a huge negative impact on the surrounding population and nature, news has arrived about the project Loro Parque Fundación is supporting in this country. Our partners at WCS (Wildlife Conservation Society) have told us that, fortunately, the Scarlet Macaw (*Ara macao*) has not been affected, thanks to the distance from the volcano of the Maya Biosphere Reserve, which is located further north, and that the management of the survival of young fledglings is more than satisfactory.

These fledglings are birds rescued from nests that have been occupied and attacked by Africanized bees. These are hybrid insects resulting from the cross-breeding of local bees and African bees introduced in the past, and are extremely violent. They can cause the parents to abandon the nest or can sometimes even kill them, leading to the tragic consequence of the death of the fledglings due to lack of food.

Our support for a small veterinary care, handrearing and artificial incubation station means that we are able to save

these macaws that otherwise would have no chance of survival.

The ash from the "Volcán de Fuego", which reached a height of 6,000m, could affect the climate and in turn the surrounding habitats. The scientists are still on alert and are continuing with their field programmes in Guatemala to protect this species, known locally as the Red Macaw.



Before and after image of the "Volcán de Agua" eruption (Hunahpú by Maya). Photos provided by WCS Ricky López Bruni

Traditions helping to save macaws in Bolivia



Chick of Blue-throated Macaw, Ara glaucogularis.

The Beni festivities have taken place in Trinidad, where headdresses and sombreros feature strongly in the local celebrations.

This year the presence of Loro Parque Fundación has been decisive, as it stressed the importance of using artificial feathers on these headdresses so as not to harm the local

Wildlife. Loro Parque Fundación's appearance at all the most important celebrations of the year for the



Representation of the machete-makers' festival in the centre of Fine Arts, Trinidad.

inhabitants of Trinidad, Bolivia, the habitat of the Blue-throated Macaw



Headdress and hats exhibition and at the municipal interpretation centre.

(Ara glaucogularis), has been welcomed by the community, and the Illustrious Town-Hall has given strong support to the work through Aves Bolivianas, the local partner, which is enthusiastically putting the project into effect. The new cultural interpretation centre in the town was host to several events, while at the Beniano Fine Arts Institute a huge variety of headdresses were displayed with an educational exhibition informing about the benefits of this project for the Bolivian macaws through which thousands of birds have been saved.



Headdress and hats exhibition at the municipal interpretation centre Mauricio Herrera of "Aves Bolivianas" during one of the interviews with the press explaining the work of the Loro Parque Fundación in protecting the Blue-throated Macaw.

7



It is divided into two halves. They often carry scars and colour patterns that are used to identify whales.

It is located on each side of its body. It can grow up to 4,5 m.

FIND THE DIFFERENCES

Scientists identify whales by their dorsal fin that is located on the backside. Just like a human fingerprint, each dorsal fin is different.

Are these two fins from the same animal? Find the five differences!





12 to 13 throat grooves on the length of the whale's underside. It allows the whale's huge mouth to expand while feeding.

MAZE

Humpback whales undertake long migrations. They travel from polar water to tropical waters. In their course of their journey they are exposed to danger such as fishing nets and other marine waste.

Help this whale get to the krill. Beware of fishing nets!





WORD SEARCH PUZZLE

The Pygmy hippopotamus is native to the forests and swamps of West Africa and is herbivorous. However, they do not feed on a single plant, but eat different **fruits, leaves, ferns, stems and roots.** All these foods are hidden in this hippopotamus footprint. Can you find them?



HOW ABOUT YOU?

Do you eat fruit and vegetables?

Post a photo on Facebook or Instagram with the hashtag #healthyasanhippo and link @loroparque_fundacion You can win a ticket and get

to know the new inhabitants of Loro Parque.

200 Kg Pygmies

LORO PARQUE

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Common names: English - Pygmy Hippopotamus |Spanish - Hipopótamo Pigmeo

Loro Parque is to present an animal that formed part of the science that studied mysterious and mythical

animals, cryptozoology. For a long time, the scientific community was unable to clearly describe a species of nocturnal habits, which despite its large size, was not easy to identify. It was

after 1870 when the first description was made of examples of this species spotted in Liberia, when it was observed to be a miniature replica of the big African hippopotamus.

At one time, they were mistaken for mysterious night-time wild boars, but today they are classified as an Endangered (EN) species by the IUCN (International Union for the Conservation of Nature) Red List of Endangered Species.

This species, the Pygmy Hippopotamus (Choeropsis liberiensis), continues to be a mystery, even today. Its reserved behaviour, spending much time under the water, in out of the way locations,





has hindered the effective study of its populations.

At Loro Parque, you can sense the excitement as it has become the new home for two pygmy hippopotami.

A female called Adela that came from Plzen Zoo in the Czech Republic was born on 22 November 2014.

The other will arrive from Chemnitz Zoo in Germany. It was born on 4 April 2016.

Pygmy hippopotami (*Choeropsis liberiensis*) are herbivores and live predominantly in the west of Liberia in Africa, and in fewer numbers in Nigeria, Ivory Coast, Guinea and Sierra Leone. It is a very shy creature, much more so than the larger hippopotamus. It generally lives in swamps and rivers, and prefers dense tropical forests and wetlands on lowlands. The pygmy hippopotamus is a nocturnal animal, and often likes to hide in burrows near to rivers. As they are semiaquatic, it is crucial that they are never far from water. Water is vital for these hippopotami, as it cools their body down and hydrates their skin. They are unable to sweat, so when their skin is in contact with the air. it dries very quickly.

Pygmy hippopotami are vegetarian and mainly eat dense vegetation, ferns, grass, roots, fallen fruit and bushes. They occasionally feed on semi-aquatic plants. Another curiosity is that, contrary to most other animals, pygmy hippopotami use their lips rather than their teeth to chew.

Loro Parque has accommodated a specially designed habitat for their arrival; heated ground, a totally filtered water system and glass, so visitors can view these magnificent animals in movement for themselves. This natural environment will be a fabulous new home for these animals in danger of extinction.

They become endangered due to habitat loss. It will represent his species in Loro Parque, which as a wildlife conservation centre, will show visitors the interesting biology of this peculiar animal.

New! Zen Garden in LORO PARQUE



Impressive fisheye view of the new Zen Garden.

Loro Parque inaugurated a sensational Zen Garden

Aquarium. A place to relax and contemplate aquatic nature. This new, worldwide unique panoramic view is located in the Aqua Viva area, where a mangrove and an impressive jellyfish exhibition form a series of aquarium systems that leave no one indifferent.

The new natural aquarium is based on the techniques of "aquascaping" and "bioscaping" developed by the famous Takashi Amano to the highest degree. One of his outstanding students, Yago Alonso, is responsible for designing the unique corners of this living ecosystem, where different species of algae, aquatic plants and bonsai structures provide ideal habitats for a wide variety of freshwater fish, which, depending on the species, move in small shoals



Varieties of algae and aquatic plants.



Glass catfish, Kryptopterus bicirrhis.

or in some cases occupy individual cavities.

The new Zen Garden is an indispensable appointment to experience the oriental spirit of reflection through observation of nature



A pioneering network for monitoring the effects of climate change in the sea

In the coming years, we will be facing the greatest challenge that humanity has ever had to deal with: global climate change caused by carbon dioxide emissions pumped into the atmosphere since the dawn of the industrial age. In a little over a century and a half, human activity has changed the atmospheric chemistry on a global scale, and these changes have begun to alter the average temperature of the Earth. What is most worrying is that scientific knowledge about climate behaviour on our planet is not yet at a level that allows us to be able to make accurate predictions about the effects climate change will



have on each region of the planet. If this were not bad enough, even less is known about how climate change will affect the oceans, including how the intensity or pattern of the circulation of the currents might change, including the vertical stratification which regulates the oxygen supply to marine organisms, or the effect of ocean acidification due to atmospheric carbon dioxide dissolving in the sea.

In order to prepare ourselves for the changes the near future will bring, surveillance networks need to be set up that provide data to improve forecast models on the one hand, and on the other, to generate data on climate trends and the ocean environment in each of the regions. This is important not just for human beings. In this context of uncertainty. the impact these changes will have on animal and plant species is often forgotten. In many cases (for example in island territories), most species will not have the chance to migrate to latitudes with more accommodating environments. Meanwhile, the tropicalisation of the climate and the ocean temperatures open the door to new species that will arrive from equatorial regions. The repercussions will be much stronger for species that are unable to regulate their body temperature (such as fish), for those for which environmental temperatures can

to contribute 2 million euros over the next 4 years to the establishment of a surveillance network to monitor various marine environment parameters. This is a public-private initiative without precedent that will be the start of the development of a coastal network for monitoring parameters linked to climate change, ocean acidification, underwater noise pollution and their effects on marine biodiversity around the Canary Islands.

The project's activities will rest on three central pillars:

• CO2 absorption by the ocean, climate change and ocean acidification.

• Acoustic environment,

underwater noise and its effects on wildlife.

• Loss of marine biodiversity and species disappearance.

The evaluation of carbon dioxide absorption by the ocean and its effects on marine acidification will be measured in two spheres. First, a coastal network of sensors fixed to buoys specifically configured for the Canary Islands. In addition, a measurement grid will be set up on

board boats that will read data continuously between the Canary Islands and

have a great impact on their biology (such as marine turtles, since the temperature of the sand can determine the sex of the baby turtles that hatch from their eggs). In this context of unprecedented environmental change that the Canary Islands are facing, Wolfgang Kiessling (president emeritus of Loro Parque Fundación) proposed to the Canary Islands Regional Government that they cofinance a large-scale environmental project that could generate large volumes of information in order to monitor the effects of global climate change. Following a detailed technical appraisal with universities and scientific research centres, an agreement was reached between Loro Parque Fundación and the Canary Islands Regional Government

the Iberian Peninsula. In both cases, the aim is that these networks will expand in the future to cover the whole of the Macaronesian region with coastal buoys on the archipelagos and making use of the boats that travel between them as opportunity platforms.

Monitoring the coastal acoustic environment and underwater noise is founded on more than 12 years of bio-acoustic research that La Laguna University has been undertaking, with funding provided by Loro Parque Fundación. The technology and know-how developed in the Orca Ocean pools form the basis of the



instruments and software that will be used with the buoys employed for the underwater acoustics surveillance.

With the automatic detection and classification systems developed by the ULL, unprecedented data reduction is possible, enhancing the analysis capability of each node on the grid. An additional key element of the acoustic surveillance will be the development of acoustic systems to configure underwater gliders, selfpropelling vehicles that undertake surveillance missions among the Macaronesia archipelagos, classifying the noise and the acoustic environment and how it changes over time.

Finally, the third major pillar of the project will focus on marine biodiversity and how it is affected by climate change. Several species have been selected for analysis, such as algae and marine phanerogam, loggerhead turtles, spiny butterfly rays and angel sharks. These projects create synergies with Loro Parque Fundación's previous work in the Canary Islands, and crucial information will be obtained in all cases, which will assist us with interpreting the effects climate change will have on marine organisms in the Canary Islands and the Macaronesian region.

The work to be undertaken through this partnership will make the

Canary Islands a global pioneer in the field because of the valuable climate change data it

will be providing for the international community. It will also contribute to



the diagnosis of the effects of climate change in the Canary Island region. The agreement also provides the basis for ensuring the future development of oceanographic measurement stations using technology developed in the Canary Islands. This way, Loro Parque Fundación is deepening its commitment to becoming a scientific and technological authority in the sphere of global climate change and the Blue Economy.





A step further in our research into artificial insemination



Cockatiel chicks born by artificial insemination.

The international Theriogenology journal recently published the encouraging results from the scientific work that defines the protocol for the long-term conservation of parrot sperm by freezing.

The work was conducted on cockatiels (*Nymphicus hollandicus*). The male bird sperm was conserved in good condition and was used to inseminate the female birds, which laid fertile eggs.

The Faculty of Veterinary Medicine at the Justus-Liebig Giessen University in Germany, led by researcher H. Schneider, together with the team monitored by our eminent partner Prof. Dr. Michael Lierz, have been the masterminds behind this project.

Professor Dr. Lierz, has also recently been appointed Vice-President of scientific infrastructure at Justus-Liebig University in Giessen, in veterinary medicine.

This step is a very important one for the reproduction of parrots in controlled environments, since this is a species with which the collection of sex cells and artificial fertilisation is not as simple as it is with birds of prey or pheasants. This establishment of a

cryopreservation protocol opens up a



Prof. Dr. Michael Lierz, Director of the Bird Clinic. Photo: JLU Press Office / Rolf K. Wegst.

real opportunity to work with species in critical danger of extinction, the examples of which are physically separated, for a variety of reasons. It also enables actions where the ex situ and in situ fields overlap to promote conservation.

Loro Parque Fundación has funded this crucial study which, after many years, is finally seeing the light as a scientific forerunner.

A special dive

To get to know the wonders and secrets of the sea depths, we all want to become professional divers right away. In Poema del Mar, nature lovers only need to bring their curiosity.

The care centre for children with disabilities San Juan de Dios from Gran Canaria has visited the aquarium. The

children could dive into the different oceans without getting wet. The enthusiasm and interest shown by the visitors gave the technical team a lot of pleasure, who showed full of stimuli all the disable-friendly facilities.



BECOME LPF MEMBER

Nature lovers always want to be up to date. The sources of information are key to the development of our concerns. That is why parrot lovers look with great interest for these knowledge resources in their daily lives in order to care for the animals that live in their surroundings.





"I am a member of Loro Parque Fundación since 2010. Thanks to the membership I have learnt a lot of the parrot world. The membership allows free admission to Loro Parque and offers the possibility to observe undoubtedly fascinating species. The member card also gives the opportunity to visit once a year the amazing breeding station. Here you can learn a lot and exchange your own experiences with the experts.

But nothing satisfies me more than the guarantee that 100% of my donation goes to nature and especially to parrots since this species is my real passion.

Ramsés Báez. Member LPF

Become member!

LPF awaits for you. Let's fight together for nature

HELP US:

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PERSONAL MEMBERSHIP FORM:

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Surname:
DNI:
Date of birth (Obligatory for children):
Address: Post Code:
Address: Post Code:
Address: Post Code:

A- WE CARE Adult:	120,00 € □
A- WE CARE Child:	80,00 € □
B- WE CARE Forever:	1.650,00 € □
C- Addional Donation:	€□
BANK TRANSFER: Bank account holder: Loro Parque Fu Bank account number(IBAN): ES85 0 BIC: BBVAESMM	undación)182 5310 61 0016356158
Expiring date of previous membershi	p:
Date and signature:	

Note: From the beginning of Mach until the end of August, unfortunately it is not possible to visit our breeding center in La Vera due to the breeding season of our parrots, in order not to disturb them in their protected surroundings.





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