Department of the Environment

THE ENVIRONMENT
in the Principality of Monaco

Edition 2016

Gouvernement Princier
PRINCIPAUTÉ DE MONACO

www.gouv.mc

Contents

At the instigation of His Serene Highness, Prince Albert II, the Princely Government is working to encourage the sustainable development of the Principality by focussing its actions on conserving biodiversity, preservation resources, reducing greenhouse gas emissions and championing a sustainable city policy.

The Government's sustainable development policy is structured around four cornerstones: managing natural heritage and protecting biodiversity; implementing the Energy Climate Plan; moving towards a Sustainable City; Increasing the involvement of the people of Monaco and the State, with first and foremost, getting Government buy-in for an environmentally friendly approach.

H.S.H. PRINCE ALBERT II
A COMMITTED HEAD OF STATE

THE 2015 ENVIRONMENT DIARY OF H.S.H. PRINCE ALBERT II OF MONACO

VISIT OF H.S.H. PRINCE ALBERT II OF MONACO TO TROMSO

H.S.H. Prince Albert II of Monaco took part in the 9th 'Arctic Frontiers Conference' on 18 and 19 January in Tromso (Norway) which brought together more than 1,800 participants.

During the opening plenary session, H.S.H. the Sovereign Prince stressed that protecting the Arctic represents a global challenge given its major role in maintaining planetary energy and temperature balance, especially for the climate.

The Sovereign Prince's trip to Tromso ended with a visit to the Museum of Polar History, which retraces the great discoveries made in the Arctic. His Great-Great Grandfather, Prince Albert I of Monaco, actively contributed to these discoveries in the last century.

H.S.H.PRINCE ALBERT II OF MONACO PRESENTS THE 2015 PRINCE'S PRIZE FOR INNOVATIVE PHILANTHROPY TO AMITABH SHAH OF YUVA UNSTOPPABLE

The 2015 Prince's Prize for Innovative Philanthropy was presented to Mr Amitabh Shah of YUVA Unstoppable at the Yacht Club of Monaco. This non-profit organisation based in India encourages young people to do good, by encouraging them to do two hours of volunteering per week. YUVA volunteers and corporate partners improve school buildings, help in digital literacy and launch awareness campaigns about traffic and cleanliness throughout the country. Over the last nine years, more than 100,000 young people have been mobilised in 30 cities, to help more than 240,000 people.

1 • H.S.H. Prince Albert II of Monaco rewarding Mr. Amitabh Shah, YUVA unstoppable, for his innovative philanthropic work ©FPA2

2 • H.S.H. Prince Albert II of Monaco at the rostrum of the Arctic Frontiers conference ©Pernille Ingebrigtsen, Arctic Frontiers 2015

3 • H.S.H. Prince Albert II of Monaco surrounded by pilots Bertrand Piccard, Founder and President, and André Borschberg, co-founder and CEO, of Solar Impulse ©Charly Gallo

4 • H.S.H. Prince Albert II of Monaco at the closure of the Plastic in the Mediterranean Conference with the speakers ©FPA2

MONACO AT THE HEART OF THE FIRST SOLAR FLIGHT AROUND THE WORLD

On 10 February 2014, the Monaco Control Center (MCC) was inaugurated for Solar Impulse, the first attempt to fly around the world. This project was initiated by pilots Bertrand Piccard, Initiator and Chairman, and Mr André Borschberg, cofounder and CEO of Solar Impulse.

Given the personal commitment of H.S.H. the Sovereign Prince along with Monaco's exemplary record in sustainable development and promoting renewable energies, the Princely Government, along with the Prince Albert II of Monaco Foundation, have decided to support the Solar Impulse initiative by hosting the Mission Control Centrer in Monaco, at the Congress Center Auditorium Rainier III throughout the entire circumnavigation.

The journey of Solar Impulse 2 represents a unique attempt in the history of circumnavigation attempts: the partners of this exploration can demonstrate how the spirit of innovation and clean technologies can change the world. This adventure also makes it possible to showcase new technical solutions to tackle climate change and support governments in their desire to implement more ambitious energy policies.

CONFERENCE - PLASTICS IN THE MEDITERRANEAN: NOW WE KNOW IT IS THERE, WHAT CAN WE DO ABOUT IT?

A panel of stakeholders concerned by plastic pollution in the sea met in Monaco on 10 and 11 March 2015. After first setting out the current state of plastic pollution in the Mediterranean Sea, concrete actions to tackle this problem emerged. These constructive debates led to the drafting of the 'Monaco Declaration to act against plastic pollution in the Mediterranean', which generated an impetus, notably by announcing the launch of the 'Beyond Plastic Med' Task Force supported by H.S.H. Prince Albert II of Monaco.

5 • H.S.H. Prince Albert II of Monaco during the opening of the Forum with Mrs Park Geun-Hye, the first woman President in the history of South Korea. ©F.Nebinger/Palais Princier

6 • H.S.H. Prince Albert II of Monaco at the podium, during the ceremony of the 2015 Peter Benchley Ocean Awards ©FPA2

7 • H.S.H. Prince Albert II of Monaco surrounded by Professor Klaus Töpfer, former German Federal Minister for the Environment, the Protection of Nature and the Nuclear Safety and Mr Sven Plöger, well known German meteorologist, during the conference on climate change in Sylt ©F. Nebinger

8 • H.S.H. Prince Albert II of Monaco in the company of Mr François Hollande, President of the French Republic at MEDCOP21, Mediterranean summit to counter global warming ©Palais Princier

PARTICIPATION OF H.S.H. THE PRINCE AT THE 7TH WORLD WATER FORUM

H.S.H. Prince Albert II of Monaco participated in the 7th World Water Forum in Daegu (South Korea), which brought together policy makers, NGOs, Scientists and manufacturers, in order to discuss how to give widespread access to this resource in the face of issues such as pollution, population increase and geopolitical tensions.

Today, more than 2 billion people worldwide have no access to safe drinking water. On behalf of His Foundation, H.S.H. Prince Albert II of Monaco attended sessions on subjects as varied as the treatment of wastewater and reusable water as well as using water extracted from mountains. 7 Heads of State attended this forum, which gave rise to bilateral discussions. During the Opening Forum, H.S.H. the Sovereign Prince met with Mrs Park Geun-Hye, the first ever woman President in the history of South Korea. Discussions covered managing water resources, but also the economy and will hopefully lead to closer ties between the Economic Development Chamber (now the Monaco Economic Board) and this country's chamber of commerce. H.S.H. the Sovereign Prince continued His bilateral discussions with the President of Turkmenistan Mr G. Berdimuhamedow.

H.S.H. PRINCE ALBERT II OF MONACO ACCEPTS AN AWARD AT THE 2015 PETER BENCHLEY OCEAN AWARDS

H.S.H. Prince Albert II of Monaco has received the 'Award for Excellence in National stewardship' on Thursday 14 May 2015, at the Carnegie Institution for Science in Washington (United States) on the occasion of the award ceremony for the 2015 Peter Benchley Ocean Awards.

Since 2004, the Benchley Awards, often considered as the 'Oscars' of the sea, acknowledges outstanding achievements in protecting the oceans in the political, scientific and media sectors.

In His speech, H.S.H. the Sovereign Prince stressed that: "Together we can change things, so that, while there is still time, humanity does not irreparably destroy the oceans. Together, we can invent a new growth model, which is able to acknowledge, protect and enhance the extraordinary richness of the oceans."

During his trip, H.S.H. the Sovereign Prince also attended the 'Ocean in 2050' forum at the headquarters of National Geographic in Washington. This forum, dedicated to the governance of oceans was attended by many eminent figures including the Vice-Admiral Charles D. Michael, representing the US Coast Guard, Dr Sylvia Earle and Dr Enric Sala, explorers from National Geographic.

MEDITERRANEAN GLOBAL WARMING SUMMIT

H.S.H. Prince Albert II of Monaco, attended the MEDCOP21 on 4 June 2015, the Mediterranean global warming summit in Marseille, inaugurated by the President of the French Republic, Mr François Hollande.

This summit was called to prepare for the Paris climate summit: COP21, but most of all to discuss the economic, social and health consequences already observed in this region.

CONFERENCE ON CLIMATE CHANGE AND ITS IMPACT ON THE SEA LEVEL - SYLT

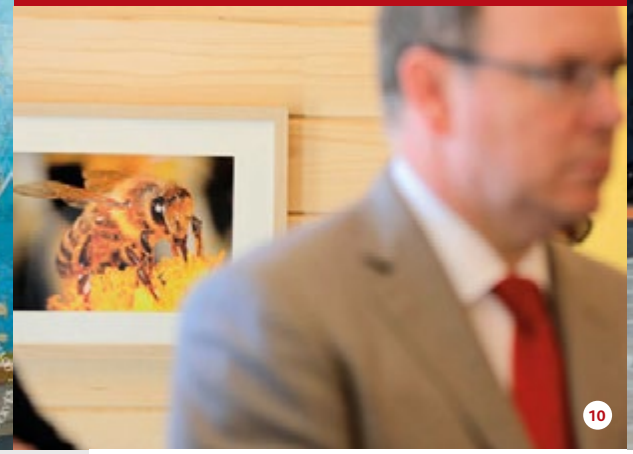
On 29 May 2015, the German branch of the Prince Albert II of Monaco Foundation organised a conference on climate change and its impact on the sea levels, on the island of Sylt, the most northerly of Germany's islands. 2 experts were invited to speak: Professor Klaus Töpfer, former German Federal Minister for the Environment, Protection of Nature and Nuclear Safety, who presented and facilitated the conference, and Mr. Sven Plöger, the renowned German meteorologist, who gave a presentation that was both informed and amusing.

During His opening speech, H.S.H. Prince Albert II of Monaco stressed that "although only 40% of the world's population lives less than 60 km from the coast, yet eight of the ten largest cities on the planet are coastal, and more than 80% of the transcontinental trade takes place by sea, the development of marine resources is more than ever necessary to meet the needs of a growing world population, and our oceans are now more than even a global issue."

9 • H.S.H. Prince Albert II of Monaco with Mrs Irina Bokova the Director General of UNESCO, at the World Oceans Day at UNESCO ©Palais Princier

10 • Photograph of a worker stealing the limelight from H.S.H. Prince Albert II of Monaco, during the inauguration of the Maison de l'Apidologie ©Palais Princier

11 • Their Royal Highnesses at the anniversary of the 10-year reign of H.S.H. Prince Albert II of Monaco ©Palais Princier



His Excellency Mr Bernard Fautrier, Vice President and Managing Director of the Prince Albert II of Monaco Foundation closed the conference by presenting the Foundations actions in the field to mitigate or adapt to the effects of climate change and encourage the development of renewable energies.

WORLD OCEAN DAY AT UNESCO

The Principality of Monaco was actively involved in celebrating the United Nations World Ocean Day. Monaco's Permanent Delegation to UNESCO collaborated with UNESCO's Intergovernmental Oceanographic Commission, the Ocean and Climate Platform, the French Delegation and different partners, to organise a day highlighting the role the ocean plays in the climate system. This important event took place on a strategically chosen date, six months from the crucial dateline for the 21st Conference of the Parties at the Framework Convention on Climate Change (COP21), also referred to as 'Paris 2015' which took place from 30 November to 10 December 2015.

H.S.H. Prince Albert II took part in the World Oceans Day and met Mrs Irina Bokova, Director-General of UNESCO. Along with Laurent Fabius (French Minister of Foreign Affairs and International Development) and the President of Palau, H.S.H. the Sovereign Prince gave a speech at UNESCO to close this World Oceans Day, which led to the Paris Appeal, aimed at getting the Oceans included in the future climate change Accord during the COP21 in December.

INAUGURATION OF THE APIDOLOGY CENTRE IN MAZAUGUES

H.S.H. Prince Albert II inaugurated the *Maison de l'Apidologie* (Apidology Centre) in Mazaugues in the presence of Mr Thierry Dufresne, Chairman of the Laboratoire Français d'apidologie and Mr Stéphane Le Foll, French Minister for Agriculture, Food Processing and Forestry. This laboratory situated in the middle of nature, will work to protect bees by studying their habits and helping to boost their fertility.

THE 10TH ANNIVERSARY OF THE REIGN OF H.S.H. PRINCE ALBERT II OF MONACO

«[…] I cannot conclude this overview without of course mentioning the environmental challenges we are facing. The additional work of my Government and my foundation, Prince Albert II, as well as in certain cases, the work of the Albert I Foundation, under my leadership, will remain decisive in this area.

COP21 will be the next, albeit difficult step in this long process of getting our society to adapt to a more authentic development that is both coherent and sustainable. In this respect, I am delighted that the French Republic and the Principality, already united by many ties, are showing a total convergence of views and a perfect unity in their actions.

In ten days' time, I will attend the Sommet des Consciences (Climate consciousness summit) in Paris, to fine tune the preparation for this environmental conference.

No doubt, it will be marked by this goal for an 'integral ecology' which Pope Francis mentioned in his recent Encyclical, in which he invited us to embrace the changes in store, however difficult they might be.

We must all do some soul searching:

While the urban development of the Principality is essential, it must be controlled, sustainable and take account of our citizens' quality of life;

Our economic prosperity cannot be built at the expense of the major environmental and social equilibrium. In terms of the environment, if you remember, we have set ourselves the goal of achieving carbon neutrality by 2050. Furthermore, our dynamic economy will be the driver for creating essential positive jobs, including beyond our borders. […] I will take full responsibility for managing these challenges, if necessary by guiding those who might lose sight of the overall goal, which must always keep in view."

REINTRODUCTION OF THE BEARDED VULTURE: YEARS OF EFFORT REWARDED.

On August 5, 2015, Aunos, the first bearded vulture chick of the Mercantour National Park to be born in the wild since the disappearance of this species in the Alps at the beginning of the 20th century, was observed during a visit to the site by H.S.H. Prince Albert II of Monaco, Ms Colette Fabron, Mayor of St Etienne de Tinée, Mr Fernand Blanchi, Chairman of the Mercantour National Park, H.E. Mr Bernard Fautrier, Vice Chairman of the Prince Albert II of Monaco Foundation and Mr. Alain Brandeis, the Director of the Mercantour National Park, together with his teams.

This young bearded vulture, born in March, is the offspring of two bearded vultures that were reintroduced thanks to the support of the Prince Albert II of Monaco Foundation, in the context of an ongoing programme in the Alps and began in 1986 in Austria.

The bearded vulture, the largest bird of prey in Europe (around 3 metres) was eradicated by Man at the start of the last century; people wrongly believed that it killed livestock and took the young. We now know that this scavenger plays an essential role in the food chain. It feeds almost exclusively on bones that it swallows and then dissolves in its digestive tract. In spite of its young age, at just 4 months, Aunos was seen eating bones 30 cm long brought to the nest by its parents.

We are intentionally not mentioning where the chick is located, to ensure that Aunos and its parents are not disturbed. A 'bubble of tranquillity' in a 700 m radius around the nesting site must be respected.

The Mercantour National Park warns visitors that any deliberate disturbance, including photographic or bird watching activities, is forbidden in the vicinity of nesting sites under the national action plan for the bearded vulture.

Today there are around thirty breeding pairs in the Alps, including 7 in France for the 2015 breeding season.

THE PRINCE ALBERT II OF MONACO FOUNDATION AND THE CHINA ENVIRONMENTAL PROTECTION FOUNDATION ANNOUNCE THEIR COLLABORATION

At the official inauguration of the 'Oceans an invitation to the dream, a promise of adventure' by H.S.H. Prince Albert II of Monaco, at the Salone Monaco in Beijing, the China Environmental Protection Foundation and the Prince Albert II of Monaco Foundation signed a partnership agreement to set out the framework of their collaboration in the fulfilling their shared objectives for environmental protection and encouraging sustainable development.

A DAY PACKED WITH EVENTS FOR THE 8TH AWARD CEREMONY OF THE PRINCE ALBERT II OF MONACO FOUNDATION

The 8th awards ceremony of the Prince Albert II of Monaco Foundation took place on 2 October 2015, in the Hall of the Princes at the Grimaldi Forum, which was attended by more than a thousand people. On this occasion, H.S.H. the Sovereign Prince rewarded people for their exemplary work for the environment in His Foundation's three priority areas: tackling climate change, protecting biodiversity and finally accessing water and tackling desertification.

During His Speech, H.S.H. Prince Albert II of Monaco stressed: "At a time when the world is sometimes so violent, and so painful, every time I come here, every time I look into the eyes of those assembled here, I see so many reasons not to give up hope. This is what makes this ceremony so important this evening. The pleasure of getting together and paying tribute to those who inspire us, who show us the way. Those who give us hope, through their work, their thoughts and their influence. The winners whom we will be honouring tonight are three such people. They are the people who, despite the difficulties and the bad news, have not given up. They are the people who look after our dreams and make them reality."

The 'Water Prize' was awarded to Mr Loïc Fauchon for his remarkable commitment to protecting this vital resource, notably with the World Water Council, the Mediterranean Institute of Water and the 'TransSahara-Caravanes sans frontières' NGO.

The 'Climate Change Prize' went to Mr Bill McKibben, writer, ecologist and founder of the charity '350.org', the leading global popular movement concerned with climate change.

The 'Biodiversity' Prize was given to Mr Emmanuel de Merode for his exemplary efforts to conserve biodiversity over the last twenty-five years in the national parks of the Democratic Republic of the Congo (DRC) and more specifically the Virunga National Park. His work involved supporting the national park guards during the civil war which cost the lives of more than five million Congolese citizens.

'OUR OCEAN' THE COMMITMENT OF H.S.H. PRINCE ALBERT II OF MONACO FOR MARINE PROTECTED AREAS.

"Today, the Marine Protected Areas epitomise the only durable solution, that is viable for everyone, environmentally friendly and financially relevant. This is why we should develop them quickly, before it is too late. We need to find the resources to go far beyond the objective of 10% fixed in Aichi - even if this objective seems difficult to achieve, given the current situation." This was the message that H.S.H. Prince Albert II of Monaco gave on the Marine Protected Areas (MPA) at the 'Our Ocean' conference, which was held in Valparaíso (Chile) on 5 and 6 October 2015.
During this conference, Prince Albert II reiterated His government's commitment to developing MPAs, especially in the Mediterranean, and has set up a trust fund to strengthen existing and create new MPAs. Monaco is also very active in reinforcing the biggest Specially Protected Marine Area in the Mediterranean: The Pelagos sanctuary. This protected region extends over 87 500 km² and three countries: France, Italy and Monaco.

This conference was also marked by a speech from Mr Jean-Pierre Gattuso, Research Director of the Oceanographic Laboratory in Villefranche and President of the *Association Monégasque sur l'Acidification des Océans* (Monaco Ocean Acidification Association), who presented the Ocean-Climate interactions, focussing notably on the impact of the rising sea levels and its acidification.

On this topic, H.S.H. Prince Albert II declared: "We are also aware of the other consequences of global warming on our oceans, the destruction of fragile ecosystems, species migration and above all, the rising sea levels caused by melting ice." He therefore warned of the consequences if no decision was reached by all the States at the climate talks in Paris.

CLIMATE CHANGE, RISING SEA LEVELS: THE TARAWA (KIRIBATI) APPEAL

At the invitation of H.E. Mr Anote TONG, President of the Republic of Kiribati, H.S.H. Prince Albert II of Monaco attended a high level meeting on climate change induced migration, especially issues around the rising level of the oceans affecting island nations and the atolls in the Pacific, on 9 and 10 October in the archipelago of Tarawa.

The Tarawa appeal, jointly signed at the end of the meeting by President Tong, H.S.H. Prince Albert II of Monaco and the representatives of the islands of Tuvalu, Tokelau and Fiji, therefore stressed the urgent need to lend financial and technical support to these nations weakened by rising sea levels, notably by enabling them to access the UN's financial

12 et 13 • Signing the cooperation agreement between the Prince Albert II of Monaco Foundation and the China Environmental Protection Foundation ©FPA2

14 • The Sovereign Prince presenting the award of the Prince Albert II Foundation to Mr Emmanuel de Merode and Mr Loïc Fauchon ©JC. VINAJ/FPA2

15 • Inauguration of the marine station at the University of Plymouth H.S.H. The Sovereign Prince ©FPA2

16 • The Sovereign Prince presenting the 'Prince Albert II of Monaco - Institut Pasteur' award to Professor Samuel Myers ©Palais Princier

17 • Their Serene Highnesses Prince Albert II, Princess Charlène and their children Jacques and Gabriella during the Monaco Walks for the Climate ©FPA2

mechanism, the Green Climate Fund, part of the United Nations Framework Convention on Climate Change (UNFCCC), whose State Parties met in Paris from 30 November to 11 December 2015 (COP21).

H.S.H. THE SOVEREIGN PRINCE INAUGURATES THE MARINE STATION AT THE UNIVERSITY OF PLYMOUTH

On Thursday 20 October 2015, H.S.H. Prince Albert II of Monaco officially inaugurated the marine station at the University of Plymouth, a new centre of excellence and research in this historical maritime city in Devon, in South-West England.

In his speech, H.S.H. the Sovereign Prince mentioned that "at a time when we have no other choice than to move forward together, science is indeed the most concrete basis, the most solid form of this universal approach. It is through your work that we will be able to get our society to understand the issues affecting the ocean; it is thanks to you that we will offer it effective solutions and alongside you, we will make it want to use them."

After receiving an Honorary PhD in Marine Sciences from the University of Plymouth in 2013, H.S.H. the Sovereign Prince discovered the latest generation of equipment used by the Centre and discussed with the research teams, the centre's ongoing programmes including the 'Marine Protected Areas' developed by the University and supported by the Prince Albert II of Monaco Foundation since 2014.

This three-year project is studying the impact of human activities on marine biodiversity and aims to give us a better understanding of how the different protection levels for the Marine Protected Areas can help the local economy, especially the fishing industry, aquaculture and ecotourism.

Professor. David Coslet, Vice-Chancellor of the University of Plymouth, thanked H.S.H. Prince Albert II of Monaco for 'His exemplary commitment through His Foundation, to protecting the environment, promoting the sustainable and ethical management of natural resources and supporting innovative solutions for countering climate change, protecting biodiversity and preserving access to water.'

PRESENTATION OF THE 'PRINCE ALBERT II OF MONACO - INSTITUT PASTEUR' AWARD

H.S.H. Prince Albert II of Monaco presented the 'Prince Albert II of Monaco - Institut Pasteur' award to Professor Samuel Myers on 23 November at the Monaco Yacht Club. This biennial award recognises a scientist who has made a significant contribution to studying the impact of environmental changes on Human health.

This award follows the Agreement signed between the Centre Scientifique de Monaco (Monaco Scientific Centre), the Prince Albert II of Monaco Foundation and the Institut Pasteur since 2010. Aside from presenting an award, this agreement provides for joint meetings on the topic of climate change and its impacts on human health. The recipient of the 2015 award is an epidemiologist - researcher at the School of Public Health, in Harvard University. He is interested in the impact of environmental and climate change on human nutrition.

Using very diverse geographical field data, his research concerned the deficiencies in iron, zinc, protein, vitamins A and B12, which we are likely to see in the future harvests related to the increases in atmospheric CO_2 levels. Furthermore, he showed that the decrease in pollinating insects presents a major risk for the production of fruit and vegetables, which could also lead to nutritional deficiencies.

He is involved in scientific and social plans (NGO, regional/local authorities) through different organisations, which he has sometimes helped to found. His work is published in very high-level journals (Nature in 2014, PNAS in 2013 and 2014, etc.)

MONACO WALKS FOR THE CLIMATE

On the eve of the COP 21, Sunday 29 November 2015, more than a thousand people gathered at the Place du Palais in Monaco, in order to take part in the Climate walk organised by the Prince Albert II of Monaco Foundation, and led by H.S.H. Prince Albert II of Monaco, H.S.H. Prince Charlene and Their Serene Highnesses Prince Jacques and Princess Gabriella.

Accompanying the Princely Couple and Their children, were representatives of the Monaco institutions,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18 • H.S.H. Prince Albert II of Monaco at the opening of the COP 21 surrounded by a part of Monaco's delegation ©Edouardo Santillan

19 • The President of the French Republic, Mr François Hollande awarding the Medal of Commander of Maritime Merit to H.S.H. Prince Albert II ©Palais Princier

20 • H.S.H. The Prince Albert II of Monaco surrounded by (from left to right) Mr Gildo Pallanca Pastor, Raphaël Domjan, Bertrand Piccard and André Borschberg at the founding of the Eco Explorers Society © Igor Lubinetsky - Hopscotch - Photo pro event

mayors of neighbouring towns, the citizens of Monaco, residents and citizens of neighbouring towns, charities, companies and many schools in the Principality. All participants spontaneously responded to this appeal in order to express their commitment to counter the effects of climate change, because the future of this planet requires the involvement of each and every one of us.

This symbolic walk, organised as a prelude to the Conference of the parties of the UN Framework Convention on Climate Change (COP21 in Paris) was designed to increase the awareness of the public and decision makers on the urgency need to take concerted action to counter the effects of climate change.

H.S.H. PRINCE ALBERT II OF MONACO SPEAKS AT THE OPENING OF COP 21

More than 150 heads of State or Government spoke to give a 'political impetus' to the negotiations which took place from 30 November to 11 December 2015.

During the opening session, H.S.H. Prince Albert II of Monaco restated the Principality's commitment to tackling climate change by noting that "at the end of the first commitment period of the Kyoto Protocol, Monaco has already reduced its emissions beyond that to which it had committed. […] Monaco accepts its share of contributions to the Green Climate Fund. Today, it is not possible to settle for a rise assessed at 2.7°C, since we cannot build our prosperity at the expense of future generations. […] We have to admit that each and every one of our actions has a cost on the environment and the climate. We must bite the bullet and not leave this burden to our children or future generations."

The objective of the 40,000 attendees at the COP21 was to reach a universal agreement to reduce greenhouse gases in order to keep the global warming at below the bar of 2 °C.

BIRTH OF THE ECO EXPLORERS SOCIETY

Under the stewardship of the Prince Albert II of Monaco Foundation and with its support, Raphaël Domjan, Gildo Pallanca Pastor and Bertrand Piccard created the Eco Explorers Society.

The Monaco-based charity aims to set up innovative and sustainable development projects to explore the seas, lands and skies. It aims to reconcile sustainably managing ecosystems, preserving goods and services that these produce and creating economic wealth for the people who live in them.

The three eco-adventurers are championing innovative technological projects applied to clean and sustainable mobility and have written some of the most epic pages in this very new story. Raphaël Domjan set out on and completed the first round the world trip in a solar boat with Planet Solar, Gildo Pallanca Pastor has set several world speed records in battery powered and electric vehicles via the Venturi VBB programme, while Bernard Piccard is undertaking a round the world trip in the plane, Solar Impulse.

These extraordinary prototype machines tested under extreme conditions, are developing new technological approaches for using energy from its capture to its consumption, including its transformation, management and storage. They are therefore open air laboratories where the most powerful systems have to endure the most demanding conditions.

The three partners also share that fact that they developed their projects in the Principality of Monaco, with the support of the Prince Albert II Foundation.

The Eco Explorers Society will enable them to join forces with 4 major players in the sustainable development sector to implement mixed, efficient solutions through cutting edge engineering.

COMMANDER OF MARITIME MERIT

President François Hollande presented H.S.H. Prince Albert II of Monaco with the medal of the Commander of Maritime Merit, during a ceremony which took place at the Elysée Palace.

This honour is awarded to people who have distinguished themselves in the maritime field.

In his tribute, President François Hollande reminded attendees of H.S.H. the Sovereign Prince's long standing commitment to protect the seas and the oceans, His missions to the North and South Poles, His personal involvement in banning Red Tuna fishing in the Mediterranean Sea along with to His commitment for turning the Ross sea (Antarctica) into a marine sanctuary.

MANAGING THE NATURAL HERITAGE
A PRIORITY

The Principality of Monaco is a city state of 2 km², that is highly urbanised. The major challenge for the Principality in terms of protecting biodiversity is to reconcile economic and demographic development with a concerted, forward-looking and sustainable management of its territory.

The Government is being particularly proactive in protecting its sometimes surprisingly rich marine and land biodiversity. The policy for managing the Principality's natural heritage is implemented using several tools: inventory programmes, mapping, monitoring fauna and flora, monitoring habitats and pollution, conservation measures.

MARINE BIODIVERSITY

> PROTECTED MARINE AREAS

The policy of sustainably managing the marine resources is based on the creation of 2 Marine Protected Areas in order both to maintain the ecosystems and protect species:

- the Larvotto Marine Reserve created in 1978, covers an area of 33 hectares, and is mainly aimed at conserving and revitalising a field of Posidonia sea grass, a species that is endemic to the Mediterranean;
- the Spélugues reserve, a 'coralline drop off', created in 1986, is mainly home to iconic Mediterranean species, such as red coral, sponges and groupers.

> MONITORING MARINE BIOCOENOSES

Species and habitat inventories and mapping are knowledge and awareness building tools, but also help the State make decisions when implementing its strategy for biodiversity monitoring and conservation as well as its territorial development policy.

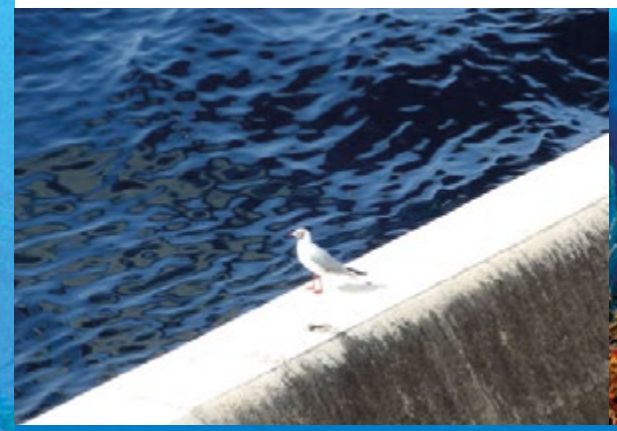
The Department of the Environment is implementing a programme of marine biodiversity inventories in order to monitor the change in ecosystems over time and identify species that can be used as bioindicators. These inventories together with mapping the biocoenoses not only allow us to understand the spatio temporal distribution of species and different types of habitats, but also contribute to assessing the state of health and the richness of the natural heritage in the Principality.

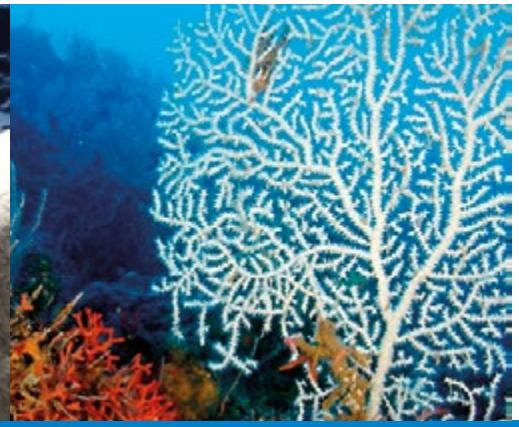
Specific attention has been given to 'heritage' or protected species (posidonia sea grass, noble pen shells, brown groupers, red corals, sea fans, etc.), remarkable habitats (coral drop off, St Martin rocks, St Nicolas rocks, etc.), and the Marine Protected Areas (Larvotto and Spélugues).

The iconic species (grouper, posidonia and noble pen shells) give an indication of water quality. By monitoring them, the habitat can be conserved (lower limit of the posidonia fields, growth of the grouper populations, monitoring the development of the noble pen shell population).

> FIELD OF POSIDONIA SEA GRASS

The Posidonia (*Posidonia oceanica*) is a marine phanerogam (flowering plant) endemic to the Mediterranean, which grows in vast sub-marine fields, starting from the surface of the water down to a depth of 40 m. In the Larvotto reserve, the first markers on the lower limits of the





Posidonia sea grass fields were put in place in 1976 in order to monitor the growth over the medium and long term. This area's biodiversity has now been monitored for forty years. In 2002, the Department of the Environment placed 48 permanent markers around the entire lower limit of the posidonia sea grass fields. That represents a distance of around 1 km, and is therefore sufficient to monitor the evolution of this field over the long term.

> CORALLINE ALGAE

Coralline algae create a true marine landscape that is rich yet fragile. Sea fans and corals, symbols of corallines, play a role in its construction. In the Principality, these Corraline colonies are mainly found in the Réserve du Tombant des Spélugues, the rocks of St Martin, St Nicolas and the rocks off the coast.

In 2003, the exploration of the St Martin Rocks, located off the great dike at a depth of 60 m, resulted in identifying clusters of large bryozoans and sponges, large colonies of sea fans, as well as red coral. The colonies on these rocks are perfectly healthy, notably thanks to plenty of cold, choppy water. Among the species identified on the St Martin rocks, more than thirty are regarded as remarkable or determinative by the French network of Sites of Ecological Interest, Fauna and Flora (ZNIEFF sea).

After the sea floor of the Principality was mapped in 2010, new zones likely to shelter corraline species were identified. These sites were confirmed by dives carried out by the Department of the Environment and led to the discovery of a rich Coralline colony, including the first sighting of the black coral (*Antipathes spp*) in the waters of Monaco. These rocks were the focus for a characterisation campaign of species under the RAMOGE agreement (Saint-Raphaël - Monaco - Genoa).

> ICHTHYOLOGICAL FAUNA

In 2006, the ichthyological (fish) inventory identified 224 species of fish grouped into 87 families in the waters of Monaco. This inventory was supplemented by regular countings of the population of brown grouper, a protected species in the Principality. The last campaign, carried out in 2015 led to the identification of 193 individuals and showed a significant increase in the population of young groupers (3-4 years), measuring around 30 cm. This monitoring programme shows the effectiveness of the conservation measures taken by the Government in January 1993. The population of this iconic species has now recovered in our waters.

> NOBLE PEN SHELLS

The mapping of noble pen shells (*Pinna nobilis*) carried out by the Department of the Environment resulted in 650 individuals being identified over around a little less than half the area of the Larvotto Reserve.

The reserve's current population is estimated at more than 1,000 individuals. Some of these pens shells are being monitored over time (for growth and mortality rates) in order to assess the health status of this colony over the long term. This iconic mollusc of the Mediterranean maritime environment is a protected species that is particularly sensitive to pollution. It is a sentinel species, a bioindicator of the good overall quality of marine waters.

> PROJET RESPIRE

The Principality of Monaco has joined the RESPIRE project (Réseau pour le suivi du recrutement) a new tool to monitor the biodiversity and abundance of young fish (fingerlings) in ports. This monitoring network plans to monitor the arrival of populations of small fish larvae for ecological and scientific purposes on the coastal zone. In 2015, more than 40 artificial habitats, called Biohuts® placed under pontoons, were installed in the ports of Monaco.

The goal in installing these structures is to develop nurseries, a role more usually played by shallow sea floors. They will be regularly monitored scientifically according to a specific protocol, three times a year.

> QUALITY OF COASTAL WATERS AND CONTROLLING POLLUTION

The Department of the Environment monitors the physical, chemical and bacteriological quality of coastal waters, based on samples and analyses of the marine environment (water and sediments), but also through the knowledge of activities or natural and anthropogenic inputs likely to affect the quality of the environment.

The quality of swimming water is monitored from May to September at each beach on the Monaco coast. Since 2007, a health and environmental monitoring scheme, together with the preventive management of risks due to the presence of the algae Ostreopsis ovata has been implemented around the swimming areas at Larvotto.

The Department of the Environment took part in the European 'M3 Hab' project, aimed at providing a joint Mediterranean strategy to monitor toxic benthic microalgae. The aim is to develop joint procedures and

protocols making the process more efficient in terms of time and cost, while building knowledge on the environmental factors which affect the proliferation of harmful algae.

ONSHORE BIODIVERSITY

The Principality's onshore biodiversity is part of the biogeographic area of Alpes-Maritimes and Liguria, forming one of the 10 regional 'biodiversity hot spots' in the Mediterranean basin.

In the sites around the Principality where the natural habitat remains intact (cliffs, slopes and valleys), a survey of fauna and flora has identified several rare species. Since 2006, land based inventories of the wild flora, insects, birds, reptiles and butterflies, have revealed an unsuspected richness, and has included several remarkable discoveries. What makes Monaco unique as an urban country, in maintaining and developing this biodiversity, is that it seems to have certain specific characteristics:

- the geological and urban configuration of the territory. The cliffs of the 'Rocher' are true sanctuaries where wildlife can survive and prosper away from any anthropogenic pressure;
- 'green confetti' (gardens, terraces, green walls, etc.). These green spaces are particularly important as habitat for birds and insects;
- green spaces, managed on environmentally friendly principles, are an oasis of greenery for bird life.

> TERRESTRIAL FLORA

The inventory of land flora native to the Principality's territory, carried out in 2006, identified 347 species and subspecies, including 6 endemic species and 18 species of significant scientific interest. *Acis nicaeensis* (Nice Snowflake), a rare and highly threatened species, endemic to the Nice region has been found at 4 sites in the Principality. This inventory was also a chance to draw up a map of the remarkable sectors of the Principality.

> ENTOMOFAUNA

The inventory of entomofauna (insects) produced very interesting results: no less than 330 species of coleoptera (beetles, ladybirds and weevils) and 101 species of heteroptera (shield beetles) were identified, with the discovery of two species of coleoptera, entirely new to science.

In 2014 and 2015, this inventory was completed by a further study of mesofauna and macrofauna in the soil of green spaces maintained by the Principality of Monaco. The study was particularly interested in finding four classes of Anthropods: Springtails (Collembola), insects especially beetles, Isopoda (woodlice) and Miriapoda (millipedes, centipedes). The encouraging results point to the excellent health of the soil.

> AVIFAUNA

The ornithological inventory undertaken in 2010 helped identify 60 species of birds, including 10 species protected at the European level and 7 that are considered as endangered.

A nesting site for the peregrine falcon has also been discovered, with three peregrine falcon chicks hatching on the cliffs of the *le Rocher* (the Rock) in spring of 2010. This nesting site was also detected in 2015.

2015 was marked by another important discovery in Monaco: the proof that the Mediterranean shag (*Phalacrocorax aristoletis desmaresti*) had bred successfully. This Mediterranean subspecies of shag, relatively rare on our coast, is protected in the Principality. The only known colony in mainland France is located in the Bouches-du-Rhône, and a pair has only be shown to have been breeding successfully in the Var since 2006. This discovery is the first official nesting site for the species in this sector of the Mediterranean coast.

Therefore, the Principality is now home to two iconic nesting species in its territory: the peregrine falcon and the shag.

The cliffs of the 'Rocher', with their insular nature in a marine environment, clearly provide the richest biodiversity in the Principality. These results confirm how remarkably rich the biodiversity is in the Monegasque territory.

> BEES 'SENTINELS FOR THE ENVIRONMENT'

By helping to pollinate more than 80% of plant species in our planet, bees play an essential role for the environment. As part of an awareness raising campaign to protect this threatened species, the Principality signed a partnership agreement with the *Union Nationale de l'Apiculture Française* (UNAF - National Union of French Beekeeping) which led to six hives being installed on the roof-terrace of the *Musée des Timbres et des Monnaies* (Museum of Stamps and Coins) in Monaco.

In addition, in partnership with the National Office of Forests (NFB), an insect hotel was set up in the St Martin gardens in 2013. By reproducing the specific habitat for certain species, such as wild bees, this installation allows you to study and follow the life of these pollinating insects.

These programmes have been made possible by the Department of Urban Amenities' policy of managing urban open space ecologically, eliminating the use of pesticides and creating nectar-filled flower beds.

> PARTNERSHIP AGREEMENT WITH THE PARKS OF MERCANTOUR AND ALPI MARITTIME

In 2008, a framework partnership agreement between the Government of the Principality, the Mercantour National Park, the Natural Park Alpi Marittime and the Prince Albert II of Monaco Foundation, was signed in 2008. These two parks have outstanding natural ecosystems. One of the projects in this partnership is to carry out one of the most ambitious general natural inventories of living world ever carried out. This ATBI (All Taxa Biodiversity Inventory) relies specifically on hosting and managing international teams of scientists, but also local naturalists. Consequently, more than 350 taxonomists from over 10 European countries contributed to this inventory that will provide decision makers with a benchmark. It has also led to the discovery of species entirely new to science. In total, no less than 12,000 species were identified over a region covering close on 2,500 km², which is considered as a hot-spot for biodiversity.

In 2015, the government of the Principality and the Prince Albert II of Monaco Foundation signed a new Framework Partnership Agreement for the period 2015-2018. The goals of this Framework agreement are to identify new projects and continue to support ongoing projects, including the nomination for this natural environment to be listed as a UNESCO World Heritage Site.

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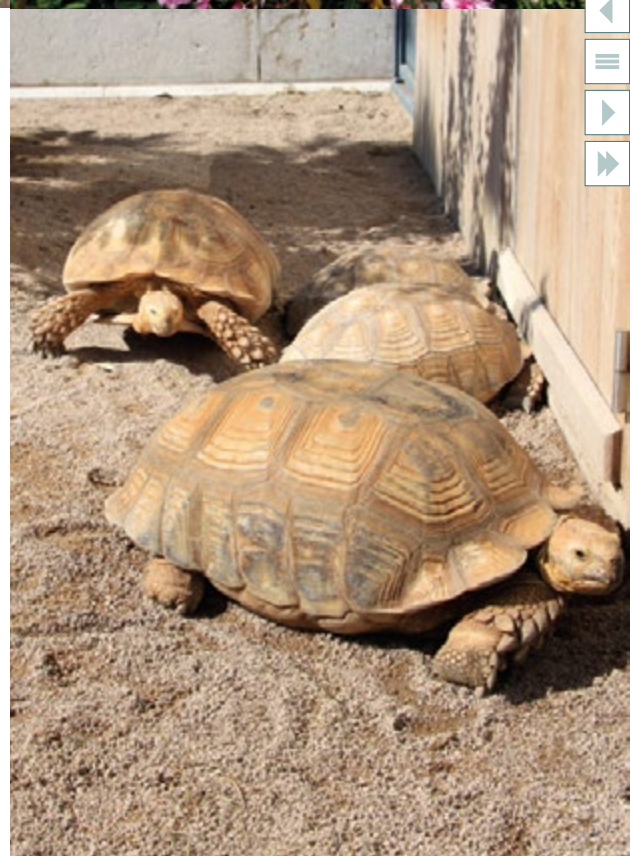
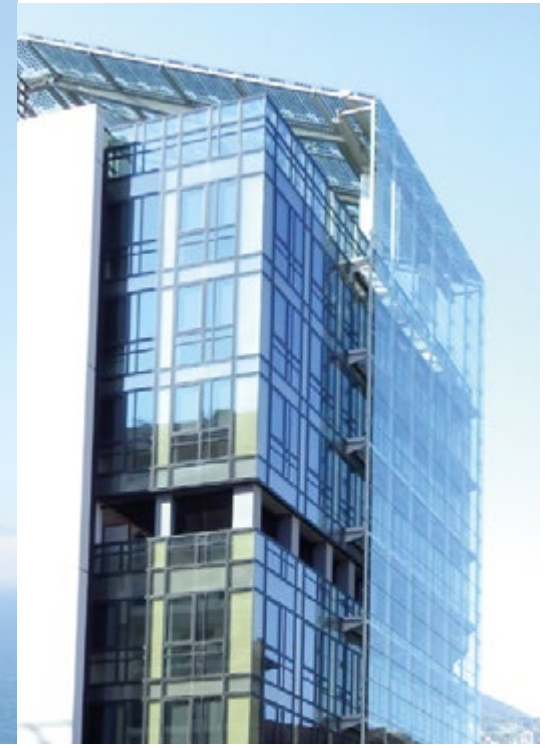
> THE WASHINGTON CONVENTION (CITES)

The CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) aims to protect wild species from an overexploitation through trade, which is partly responsible for the decline of global biodiversity. Signed on 3 March 1973 in Washington, the Washington Convention come into force internationally on 1 July 1975.

The Principality of Monaco has been a signatory to CITES since 19 April 1978. The responsibility for implementing CITES in Monaco is handled by: a management body responsible for liaising with the CITES Secretariat (Department of International Relations), a management body charged with issuing permits and performing inspections (Department of the Environment), a scientific authority which gives its opinion on the effects of trade on species (Department of the Environment).

Since November 2014, a digital procedure has been set up on the Government's site, making it easier for both individuals and professionals to request CITES documents.





TACKLING CLIMATE CHANGE
ENERGY CLIMATE PLAN

Current scientific knowledge has confirmed that global warming is unequivocal, and that the changes observed in recent decades are without precedent. The 5th report of the Intergovernmental Panel on Climate Change (IPCC), confirmed that human activities are the main cause of global warming.

Conscious of these issues, the Principality of Monaco is committed to implementing an ambitious energy and climate policy.

The Principality's government has implemented an Energy Climate Plan which aims to:

- tackle climate change;
- adapt and reduce our country's vulnerability to climate change.

This biggest source of greenhouse gases (GHG) in the Principality is the energy sector, which covers transport, building heating and waste management. In this context, successfully transitioning to a carbon free energy mix and continuing to reduce energy consumption, are the main challenges if we are to contribute to tackling climate change, increase our energy independence and our different energy sources.

Targeting this new growth is at the crux of sustainable development; it requires a commitment from the whole community: businesses, civil society and non-governmental organisations to rethink the way we live, travel, produce and consume.

INTERNATIONAL COMMITMENT

International awareness of the risks of global warming led to the adoption of the United Nations Framework Convention on Climate Change (UNFCCC) at the Earth Summit held in Rio de Janeiro in 1992.

Monaco joined the UNFCCC in 1993 and in 1997 the Principality was officially included in the number of countries listed in Appendix 1 of this Convention.

> KYOTO PROTOCOL

In 2006, Monaco ratified the Kyoto Protocol, and committed to reduce its greenhouse gas emissions by 8% (compared with 1990) for the first commitment period from 2008 to 2012.

At the end of this first commitment period in 2012, the Principality had reduced its emissions by 13.2%, thus exceeding this initial objective.

In 2013, Monaco became the first country listed in Annex 1 of the Kyoto Protocol, to have submitted acceptance instruments for the second period of the Kyoto Protocol and committed to reduce its emissions by 30% as of 2020.

> THE PARIS AGREEMENT

In December 2015, the Paris Agreement, which was reached during COP21 of the UNFCCC, was a turning point in tackling climate change. For the first time, this universal Agreement commits all parties to implement measures to tackle climate change, in order to keep global warming below 2°C (and if possible to 1.5°C), but also take measures to adapt to climate change.

Each country was required to propose a national contribution to tackle climate change caused by human activities. Monaco has strengthened its commitments, by setting an objective to reduce its GHG emissions by 50% in 2030. This is an ambitious goal, putting the Principality on target to reach the objective set by H.S.H. the Sovereign Prince to achieve carbon neutrality by 2050.

ENERGY CLIMATE PLAN

The purpose of Principality of Monaco's Energy Climate Plan is to tackle climate change and adapt the country to these changes. Ultimately the goal is to build a resilient, robust territory, well adapted to its population and its activities.

If we are to take the country forward to a vision of sustainable development in the context of climate change, we must get all business sectors actively involved and get the entire community of Monaco on board and committed.

> THE OBJECTIVES OF THE ENERGY CLIMATE PLAN

The objectives set for the 2020 time line are as follows:

- reduce direct GHG emissions by 30% (compared to 1990), and by 50% in 2030;

- reduce unit energy consumption in buildings by 20%, (compared to 2007);
- increase the share of renewable energy in final energy mix to 20%;
- keep peak electricity consumption stable (compared to 2006).

> IMPLEMENTING THE ENERGY CLIMATE PLAN

In 2012, the Government committed to a programme of environmental certification through the European Energy Award (EEA) programme.

This certification rewards states committed to ambitious energy and climate policies, and acts as a quality management process for their Energy Climate Plan.

In November 2014, the European Energy Award certification was awarded to the Principality for 4 years. The action plan for the next four years (2014-2018) is aimed at consolidating the steps already undertaken to achieve the objectives set.

The Government's climate policy action plan covers 6 areas:

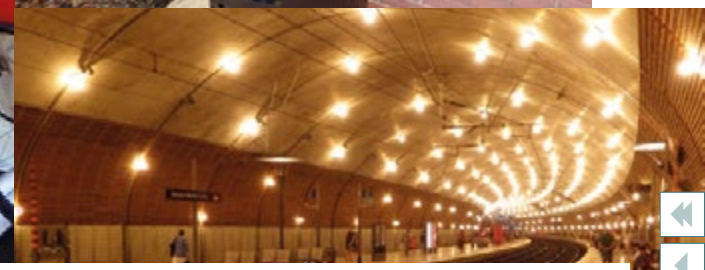
- planning urban development;
- managing the Principality's heritage;
- supplying energy, water, sanitation and managing waste;
- mobility;
- organising the implementation of the energy climate policy internally;
- communication and cooperation.

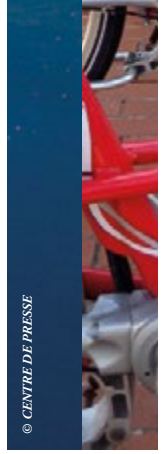
REDUCING GREENHOUSE GAS (GHG) EMISSIONS

Monaco keeps its inventory of GHG emissions up-to-date. The emissions are calculated using a method established by the Intergovernmental Panel on Climate Change (IPCC), and are then subject to an audit, before being included in the global record of GHG emissions at the UNFCC and the Kyoto Protocol.

Around 90% of GHG emissions in the Principality come from energy use in the sectors of waste, road transport and building heating systems. The remaining emissions mainly concern the use of fluorinated gases for the air conditioning in buildings and vehicles as well as industrial and retail cooling plants.

The action plan set up by the Government takes into account this emission profile, in order to define the priorities for implementing actions in the sectors with the biggest emission levels.





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> WASTE TREATMENT

Since 1982, the Principality disposes of its waste at an energy recovery plant, which generates heat, cooling and electricity. Reducing the emissions of the energy recovery plant, and more widely for waste management, is a priority area in the Government's policy for reducing GHG emissions.

Since 2008, measures to prevent waste generation and intensified selective recycling of waste has resulting in stabilising the amount of waste incinerated. These measures are currently being strengthened, with the goal of progressively reducing the volumes incinerated and with it, reducing the share of fossil carbon mainly derived from plastics. Further measures, such as the ban on single use plastic bags in 2016 and improving recycling, especially for household packaging, should play a role in meeting the overall objectives of reducing GHG emissions.

In parallel, work has begun to assess upgrading the waste to energy plant, in line with energetic and environmental objectives.

> TRANSPORT AND MOBILITY

Transport measures are based on an Urban Development Plan (UDP), an infrastructure master plan, the active management of road traffic (Integrated Mobility Management Centre) and logistics for goods (logistics park and urban distribution centre), all planning for the mobility of the future.

This planning and managing for the mobility of the future is accompanied by an incentive-based policy, which aims to encourage individuals to prefer alternative modes of transport to the car (modal transfers, development of public transport, etc.), and soft modes (lifts, travelators and other mechanical pedestrian links, pedestrian paths, bicycles, etc.).

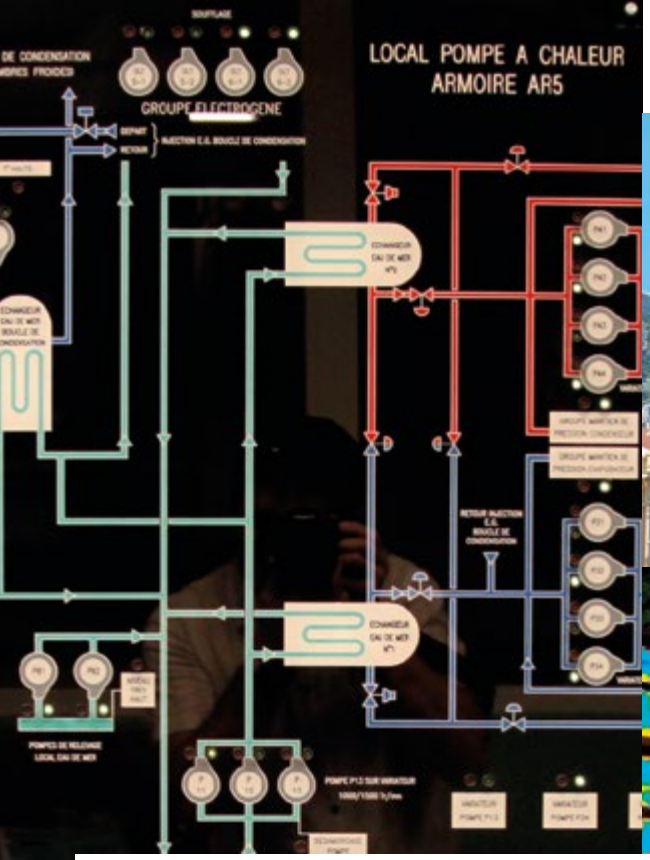
These measures are supported by significant subsidies to develop clean electric and hybrid vehicles: including purchase subsidies, free charging, preferential pricing (parking and registration).

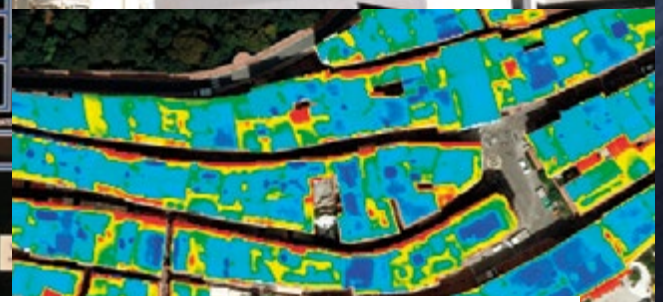
> BUILDING SECTOR

Oil and gas emissions are the third major source of emissions in the Principality of Monaco.

As of 2003, following oil-fired heating systems being banned in any new buildings, accelerated the transition towards energies with lower carbon emissions.

In addition to reducing the use of fossil fuels in buildings, the energy efficiency must be measured.





/ MANAGING ENERGY DEMAND AND DEVELOPING DISTRIBUTED GENERATION FACILITIES LOCALLY.

By managing energy demand and developing local distributed generation facilities in new buildings or in old building stock, GHG emissions are being reduced in this sector (environmental certifications, thermal regulations, encouraging the development of renewable energies, etc.).

> DEMAND SIDE MANAGEMENT IN PUBLIC BUILDINGS

The challenges of managing the demand side in the State's real estate assets are particularly crucial, since this covers more than 250 buildings or sites, with a floor space of almost 1 million m², more than half of which are multi-storey car parks.

The process of managing and monitoring energy implemented by the Public Buildings Maintenance Office results in the energy consumption data for the buildings being pooled, and remote corrective action are possible. This system, which will be deployed in all public buildings, has already managed to reduce energy consumption by 30%.

Responsible power consumption

Since 2015, the Government has committed to a responsible power consumption approach, by selecting power generation methods from renewable energy sources for all of its supply contracts.

Across the territory, 30% of the power purchased in 2015 was generated from renewable energy sources.

Energy performance contract

In partnership with the Berlin Energy Agency, the Government set up an Energy Performance Contract (EPC) to renovate the energy installations in public buildings.

For the owner of a building or building stock, an EPC involves subcontracting the improvement of the building's energy performance and its financing to an energy services company. The company reimburses its investment from the savings generated by reducing the energy bill. These energy savings are guaranteed and the company agrees to accept the financial consequences of failing to meet the objectives.

The energy retrofit of four public buildings will be fully self-financed over the duration of the contract (12 years), with the contractual objective of achieving savings of 27%.

Energy savings were 25%, for the first year that the performance was measured (2014) and 27% in the second year (2015).

New high energy performance buildings

Since 2007, the Government has built new buildings and carried out major renovations which comply with the *Haute Qualité Environnementale* (HQE - High Environmental Quality) process. As well as complying with thermal energy regulations, some buildings are subject to enhanced energy performance measures in line with the *Très Haute Performance Energétique* (THPE - Very High Energy Performance) certification. In order to guarantee the energy integrity of its assets and boost the local energy generation, the Government is also trying to systematise solar thermal and photovoltaic facilities. These facilities are deployed in new build and renovation projects for buildings and public infrastructure: the new technical lycée, 'Jardins d'Apolline', résidence Hélios, etc.

Measures for the Territory and community involvement

To achieve the goals set by the Energy Climate Plan, the Government is putting in place measures to manage energy use across the territory.

Responsible energy distribution

When the energy distribution agreement was being renewed in 2009, a contribution to the sustainable development policy was written into the new concession agreement with the *Société Monégasque de l'Electricité et du Gaz* (SMEG - Monaco Electricity and Gas Utility Company), notably:

- the introduction of specific sustainable development services, such as guarantees of the renewable source of the distributed power, compensation for emissions, and energy audits;
- building a database of consumption and uses, called 'DATA+', which aims to improve knowledge on how the energy is used;
- deploying Nexio smart meters so that the concession holder can gain a better understanding of consumption and users can manage their energy costs;
- Finally, creating a sustainable development fund, financed by energy sales, in order to finance measures to improve energy demand management and develop renewable energies.

Positive results and community commitment

The thermal regulation sets a general framework in the building sector, requiring any new building or major renovation to meet stringent thermal performance values. Furthermore, energy retrofit work benefits from reduced VAT rates of 5.5% instead of 10%, if applicable.

The effects of the different measures are now bearing fruit: oil consumption is in sharp decline, the increases in gas sales are contained, and since 2006, total peak power consumption has stabilised.

The commitment of the local community can be also measured by the take-up rate for the renewable energy guarantees of origin contracts, which today represent around 30% of the Principality's total energy use.

30% of gas sales also include voluntary offsetting of GHG emission under the 'Monaco Carbon Offsetting' programme set up by the Prince Albert II of Monaco Foundation.

DISTRIBUTION ENERGY GENERATION

Energy is generated in the territory via the waste to energy facility: *Usine d'Incinération des Résidus Urbains et Industriels* (UIRUI), the different solar power conversion systems (thermal and solar photovoltaic) and via heat pumps, which draw energy for heating and air conditioning from the environment and especially, in Monaco, sea water.

Waste to energy

The energy generated from burning waste within the incineration plant in converted into:

- electrical energy, re-used by UIRUI with the excess supplying the local urban grid;
- steam, sent to a thermofrigorific plant, to supply heating and cooling for most of the buildings in the Fontvieille district.

In 2013, the capacity of the thermofrigorific plant in Fontvieille was upgraded with a sea water circuit and added heat pumps in order to supply the new buildings on the SNCF brownfield site. This new sea water circuit will also supply the future Princess Grace Hospital due for completion in 2020.

Sea water heat pumps

Heat pumps are efficient energy generation systems since they draw energy from the environment. The Principality is fortunate to have buildings within easy access from a sea which is temperate throughout the year, thereby significantly increasing the energy efficiency for power generation systems. Taking full advantage of its location the Principality began developing these systems as early as 1963; today, more than 70 heat pumps produce around 17% of the energy consumed in Monaco.

Solar thermal and photovoltaic power

The main source of renewable energy power comes from solar energy. Since 2008, the Government has been subsidising thermal generation systems using solar power (solar thermal panels), by replacing oil-fired boilers and/or in addition to gas or wood fired boilers. In 2012, this subsidy was extended to the installation of any solar power generation system. This incentive measure provides a subsidy of 30% of the installation cost, capped at €30 000.

The development of photovoltaic facilities is now a Government renewable energy development priority.

In order to further encourage their development, the Government introduced a financial incentive for generating photovoltaic power in 2014. This incentive is guaranteed for 15 years, and may be granted to any owner of a planned or existing facility, whose installed capacity is greater than or equal to 3 kWp.

ADAPTATION TO CLIMATE CHANGE

By implementing the Energy Climate Plan, Monaco is committed to producing an adaptation strategy for global warming. This forward-thinking strategy has many objectives: preventing potential impacts, limiting their cost and taking advantage of local opportunities.

A detailed analysis of climate projections conducted at the global, then regional level, has enabled to Principality to have an initial understanding what the likely impacts of climate change will be.

These forecasts point to temperatures rising by 1.4 to 2.5°C in the near term, while a rise of 4.1°C can be expected in Monaco by the end of the century. This warming could translate into an increase in heat waves, but also by a decrease in the risk of cold and frost in winter.

There will also more than likely be a change in rain patterns.

Given that Monaco is exclusively a coastal state, the rise in sea levels must also be considered when assessing its vulnerability. According to the measurements taken in Monaco between 1999 and 2014, this level has risen twice as fast as that observed since 1900. By the end of the century, the sea level could have risen by 80 cm.

> VULNERABILITY ASSESSMENT AND ADAPTATION PLAN

An audit on Monaco's vulnerability to climate change flagged up the local impacts and effects that climate change will have in the following areas: natural disasters, water, energy, transport infrastructure, urban services, development of the building and business sectors, health and biodiversity.

An adaptation plan, including a climate action plan has laid out both strategic and operational objectives for each of the challenges around climate change: awareness building, training, knowledge building, including the effects of climate change in the risk prevention plan, assessment of thermal phenomena in the territory such as urban heat islands, etc.

COOPERATION AND PARTNERSHIPS

> PARTNERSHIP WITH THE *COMMISSARIAT À L'ENERGIE ATOMIQUE ET AUX ENERGIES RENOUVELABLES* (CEA - FRENCH ATOMIC ENERGY AND RENEWABLE ENERGY COMMISSION)

The CEA and Monaco have been cooperating since 2007 within the competitive cluster CapEnergie to develop a local dynamic energy policy aimed at promoting energy solutions that do not emit GHG.

This cooperation was further strengthened in 2013, by signing a Framework cooperation agreement in the sector of renewable energies, energy efficiency and sustainable mobility.

This agreement has already given rise to two cooperation agreements, one for optimising the heat and cooling district network and the other for optimising waste processing and conversion of CO_2.

> COOPERATION AGREEMENT WITH EDF ON ENERGY

A Framework cooperation agreement was signed with *Électricité De France* (EDF - French Electricity Company) for an 'energy strategy' aimed at developing cooperation to meet the challenges set by security of supply, territorial competitiveness and sustainable development objectives.

This agreement covers five areas: power supply, environment and biodiversity, effective energy solutions, renewable energies as a solution to security of supply and the city of the future.

Through its subsidiary SODETREL, EDF has already signed a partnership with Monaco to set up the car-pooling service 'Mobee'.

THE SUSTAINABLE CITY

The Principality has approximately 50,000 employees and 36,000 residents who travel around the territory of 2 km² every day. In total almost 386,000 trips are made each day, across all modes of transport (lorries, heavy goods vehicles, buses, 2-wheeled vehicles and pedestrians) and for all purposes (business, leisure, etc.)

As a business and tourist destination, Monaco also attracts more than 5 million visitors per year. These figures clearly illustrate the importance of traffic flows and their impact on the city.

The Government of Monaco is developing a sustainable city policy, focusing on preserving or strengthening a quality of life that is recognised and appreciated. This policy is centred around managing mobility as well as waste and wastewater, managing green spaces, pollution and risks.

MOBILITY AND TRAVEL

The Government's mobility policy aims to reduce the negative impacts of road transport (traffic, air quality, noise pollution, etc.), but also aims to encourage alternative transport solutions.

> DEVELOPING PUBLIC TRANSPORT

One of the main focuses of this mobility policy is to encourage the use of public transport for travel within the city. The *Compagnie des Autobus de Monaco* (CAM - Monaco Buses Company) has improved its services by providing enhanced information to users, by using GPS location and real time data, increasing the number of buses running, introducing incentive pricing as well as a night bus service on Friday and Saturday nights.

In order to encourage children and teenagers to use the public transport system to travel around the city, schoolchildren in the Principality can buy a free annual bus ticket (with just the administrative costs of 10 euros to pay), since the start of the 2014/2015 school year.

> ENCOURAGING INTERCITY PUBLIC TRANSPORT

The Principality is served by the Côte d'Azur network of express buses, which run regular services between Nice airport, Nice, Monaco and Menton. The development of these inter-city services has led to the launch of the number 101 service, which runs between Eze-sur-Mer and Monaco-Roquebrune-Cap-Martin, during the morning and evening rush hours.

The State is also encouraging train/bus inter-modality, between the CAM bus network, SNCF, bordering towns and the French departmental bus services.

Thanks to the interoperability between the TER (Transport Express Regional) and CAM, a monthly season ticket and a concessional ticket available for those under 26, can be bought by those who travel both on the TER rail network and the CAM bus.

The Principality is also developing inter-modality with the *Carte Azur* (Azur Card), a scheme whereby people can use both the buses in Monaco and those in the Alpes Maritimes department.

> CAR POOLING

The Government is encouraging initiatives such as carpooling, to improve the way personal travel is managed. Created in 2006, 'MonacoVoiturage.mc' has more than 1,200 members. Through special rates for car parks, sharing travel costs (fuel and motorway tolls), carpooling can substantially reduce travel costs.

> SOFT MOBILITY

In the context of gentle mobility, low impact transport methods (walking, cycling, etc.) are encouraged. Consequently, Monaco has 79 lift links, 35 escalators and 8 travelators. To help people move around the city, the *Monaco Malin* (Smart Monaco) guide includes all alternative modes to the car: bus stops, car parks that loan out e-bikes (electric bikes) free of charge to season ticket holders and residents, cycle lanes and lifts that accept bicycles (provided you push them).

> PROMOTING ELECTRIC AND HYBRID VEHICLES

The Government has adopted a committed policy to encourage clean or low emission vehicles, thanks to a subsidy scheme for:

- electric vehicles;
- rechargeable hybrid vehicles;
- hybrid petrol vehicles emitting less than 110 g of CO_2 per km (hybrid diesel vehicles are not covered by this aid).

The subsidy level for electric vehicles is 30% of the purchase price including VAT, capped at €9,000 for 4-wheeled vehicles and €3,000 for motorbikes.

The regulation also requires certain vehicles, such as taxis, to have emissions less than 190 g of CO_2 emissions per km.

The Public car parks agency provides more than 500 recharging sockets free of charge to users of electric vehicles and offers discounts on its car park season tickets.

Electric vehicles are also exempt from vehicle registration and can park on roads free of charge.

Since 2016, there are 1,266 electric and hybrid vehicles registered in the Principality, including 103 in the Government.

A partnership signed between the Metropolitan area of Nice Côte d'Azur and Monaco means users of electric cars who are members of the Principality's Public Car park scheme can charge their vehicles free of charge at the Auto-Bleue stations in Nice, provided that they register on the Auto-Bleue site first (www.auto-bleue.org).

Furthermore, CAM and the Government have developed a pedal-assist bicycle (pedelec) service, which now has 72 bicycles and 12 stations. This service is due to expand, as new stations will be installed progressively in the different districts of Monaco.

CAM has also taken delivery of 4 hybrid buses, in addition to its current park running entirely on biodiesel. Since 2016, 7 new generation hybrid buses, to add to this existing fleet.

> 'MOBEE' CAR POOLING SERVICE

July 2014 saw the official launch of 'MOBEE' a car pooling service for electric vehicles. This scheme set up by the Government and Sodetrel (subsidiary of EDF), has a fleet of 25 Renault TWIZYs. In order to facilitate the use of this service, a smartphone application geolocates and reserves the closest vehicle. This scheme is notably for its 'freefloating' or 'open loop' system, by which the user can return the car to anywhere in the Principality, without being required to return it to a specific parking space.

Members can therefore park free of charge and return their TWIZY to a car park, in the 2 or 4-wheel spaces, or in the public car parks of the scheme's partners.

WASTE MANAGEMENT

The Principality's waste management policy has the objective of reducing waste at source, optimising collection, recycling and disposal, notably via resource recovery. The Government is therefore working to intensity selective recycling and develop recycling awareness building campaigns with residents.

By updating the waste disposal plan, it will be possible to increase consistency and coordinate all measures required to manage the waste generated in the territory economically and ecologically by 2030.

WATER MANAGEMENT

> MANAGING WATER RESOURCES

The Principality's policy for managing waste resources meets efficient environmental objectives related to preserving resources and waste water treatment.

Streamlining and reducing water use is still one of the major challenges to sustainably managing water resources. Over the last few years, increased awareness of households, and companies and public bodies in the Principality has resulted in a considerable drop in water use in Monaco.

Thanks to the State's policies, the private sector and households, drinking water consumption has been decreasing by on average 1% per year over ten years.

Most of the water used in the Principality comes from France (Vésubie and Roya valleys). The Principality of Monaco also uses its local resources (Alice, Marie, Testimonio, Fontdivina and Ingram springs), which depending on the year, provide between 30 and 50% of the domestic water supply.

> WASTE WATER TREATMENT

All the waste water in the Principality, Beausoleil and a large part of the water from the municipalities of Cap d'Ail and La Turbie are collected and treated. The treatment of residual water is separated into two distinct sites:

- An underground sewage pre-treatment plant (*Usine de Pré-Traitement des Eaux Résiduaires* - UPTER), located under the Rock of Monaco, which physically treats the effluent: removing large objects, screening, removing grit and sand, removing fat and grease;
- a residual water treatment plant (*Usine de Traitement des Eaux Résiduaires* - UTER), located in the basement of an industrial building in Fontvieille which handles primary and secondary treatment of the sewage. It was designed to meet specifications for compactness and absence of noise pollution.

The Government is working to optimise the sewage system and its treatment in order to limit pollution in natural environments and health impacts on humans.

MANAGING PUBLIC GREEN SPACES

Green spaces are managed using environmentally friendly practices, by stopping all chemical treatments, using organic fertilizers and pest controls. It also manages water use, by optimising hydraulic facilities and equipment including renovating the old networks, using equipment that reduces water-use and planting Mediterranean plants that require little watering.

Thanks to these innovative and rigorous management methods, put in place by the Department of Urban Amenities, three sites in the Larvotto sector and the Princess Grace Rose Garden have been awarded the *Espace Végétaux Ecologique* (EVE - Ecological Green Space) certification. This international award represents a real recognition of the policy for managing public green spaces implemented for many years.

PROCUREMENT AND SUPPLY MANAGEMENT

The Department of the Environment carries out continuous monitoring of the quality of the environment throughout the year, through the air, water and noise pollution quality monitoring networks to tackle two priority challenges: countering pollution and improving the quality of life in the Principality.

In a territory of around 2 km², the Principality of Monaco has a dense monitoring network of different measured parameters, enabling it to have a robust sample of the variations in an urban environment.

This monitoring network of different environments is supplemented by a monitoring network of natural hazards, the challenge entails providing the Principality with reliable local data, while keeping in constant contact with the data and alerts defined by the monitoring networks in the bordering region.

The risk monitoring network comprises:

- a system of seismic sensors;
- a tide gauge in cooperation with the *Service Hydrographique de la Marine* (SHOM - Navy's Hydrographic and Oceanographic Department);
- an environmental radioactivity detection system;
- a network of 3 meteorological monitoring stations to collect data on temperature, precipitation, wind, rainfall and solar radiation;

Each year, the meteorology and climate 'Focus', published by the *Institut Monégasque de la Statistique et des Études Économiques* (IMSEE - Monegasque Institute of Statistic and Economic Studies), provides an analysis of the average temperature and rainfall data recorded annually compared to the climatic standards calculated over the period 1981-2010. This data is recorded at the meteorological station in the Jardin Exotique, and processed jointly by the Department of the Environment and the IMSEE.

> AIR QUALITY

The Principality began monitoring air quality in 1991. It is carried out via an automated network of 5 stations (quai Antoine 1er, rue Grimaldi, place des Moulins, Fontvieille et boulevard Charles III). This network provides continuous measurements, issues alerts when there are pollution peaks and monitors long-term changes in air quality.

The pollutants monitored are: nitrogen dioxide, fine particles and suspended particulates, lead, sulphur dioxide, ozone, carbon monoxide and benzene. The data recorded is compared to the thresholds set by European directives.

In the Principality, the annual change in air quality shows an ongoing improvement of the readings recorded by the monitoring network. The encouraging situation has a lot to do with the Principality's mobility policy: cars are relatively new, and therefore less polluting, there is a growing number of electric and hybrid vehicles, an efficient urban transport network, maximum traffic speeds are limited to 50 km/h in the city and its industrial sector has a low pollution impact.

> PARTNERSHIP BETWEEN THE GOVERNMENT AND AIR PACA

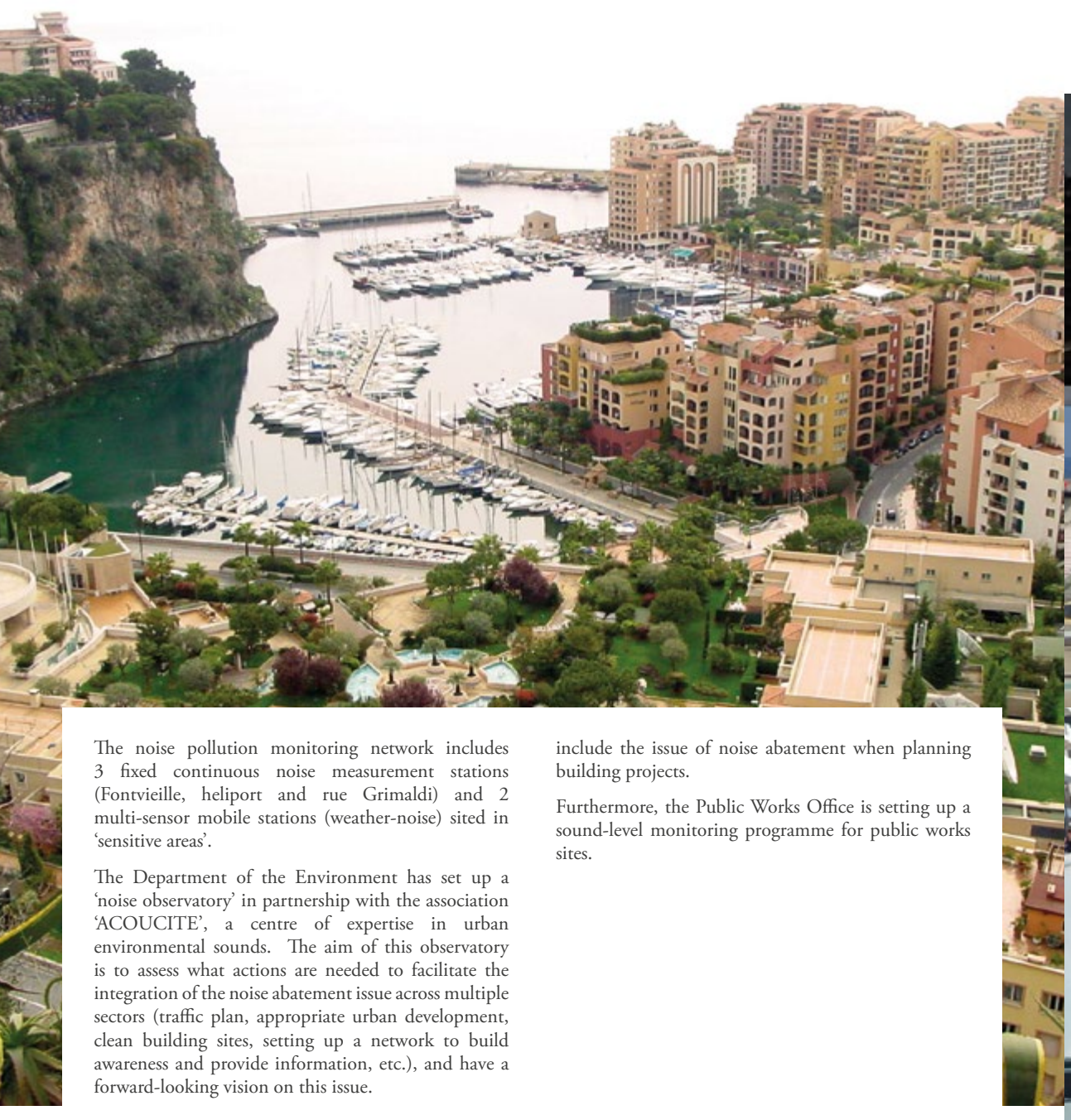
In December 2015, the Principality signed a Framework cooperation agreement on air quality and climate. This partnership mainly concerns:

- changes in air quality readings;
- network maintenance;
- monitoring indoor air quality;
- developing an inventory of greenhouse gas emissions;
- modelling and forecasting air quality;
- building awareness of the atmospheric environment.

> NOISE ABATEMENT

The main sources of noise pollution in the Principality are building sites, road transport, the heliport, noise from night clubs, bars and neighbourhood noise.

The Government is focussing on two aspects: monitoring noise pollution and noise abatement for building sites.



The noise pollution monitoring network includes 3 fixed continuous noise measurement stations (Fontvieille, heliport and rue Grimaldi) and 2 multi-sensor mobile stations (weather-noise) sited in 'sensitive areas'.

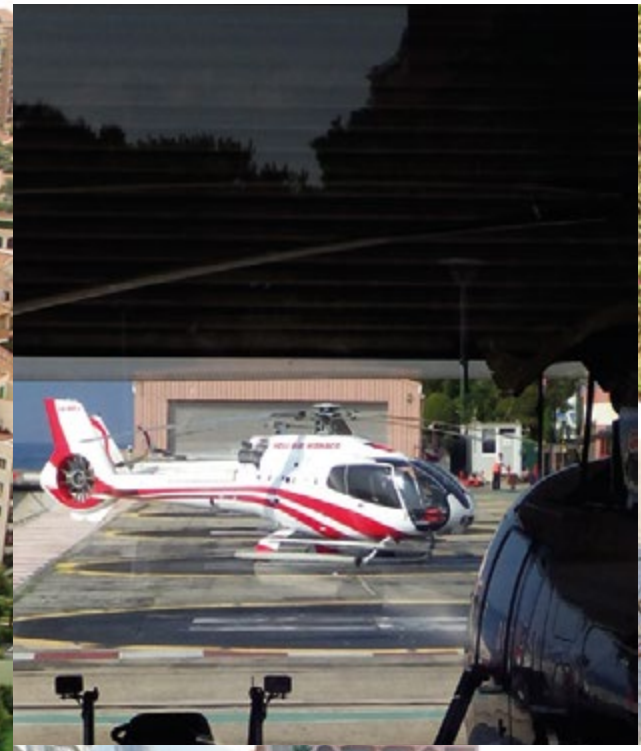
The Department of the Environment has set up a 'noise observatory' in partnership with the association 'ACOUCITE', a centre of expertise in urban environmental sounds. The aim of this observatory is to assess what actions are needed to facilitate the integration of the noise abatement issue across multiple sectors (traffic plan, appropriate urban development, clean building sites, setting up a network to build awareness and provide information, etc.), and have a forward-looking vision on this issue.

> BUILDING SITE NOISE ABATEMENT

Given the many and sometimes highly complex building sites, the States makes every effort to reduce disturbance and the inconvenience such sites may cause in the immediate vicinity.

Efforts to reduce building site noise has been strengthened with the enforcement of the Ministerial Order No 2010-500 as amended in 2014, concerning building site operational hours. In 2011 a circular was issued to the construction industry requiring it to include the issue of noise abatement when planning building projects.

Furthermore, the Public Works Office is setting up a sound-level monitoring programme for public works sites.



NEWS OF THE YEAR

THE PRINCIPALITY'S ENERGY CLIMATE PLAN 'DATA +' A DATABASE ON THE ENERGY AND ITS USES IN THE PRINCIPALITY - 12 JANUARY 2015

Monday 12 January 2015, the *Société Monégasque de l'Electricité et du Gaz* (SMEG - Monaco Electricity and Gaz Utility Company) and the Government of the Principality jointly presented the new Data + database. Through this process which is in line with the Principality's Energy Climate Plan, the Government tasked SMEG to develop Data +, a database of energy consumption data across the Principality, in order to gain a better understanding of how energy is used, and therefore be able to better target the goals of the energy demand policy and hence improve energy efficiency.

Determined to set the example, the Government has signed up to the EGEO plan (renewable energy guarantee of origin certificates) for all of its supply contracts, since 1 January 2015. These certificates attest that an equivalent of your consumption over one year was generated from renewable energy sources which can be either wind, solar, geothermal or hydrothermal.

3rd WORKSHOP ON THE ACIDIFICATION OF THE OCEANS - 14 JANUARY 2015

The conclusions of the third workshop on the economics of the acidification of the oceans were presented on Wednesday 14 January at the Oceanographic Museum. This workshop focussed on the socio-economic impact assessment study of the acidification of the oceans on coastal communities and their possible adaptation to different levels, in order to produce recommendations to policy makers and managers. 53 experts from 20 countries attended.

The main conclusions concerned the impacts of acidification on oceans which will be mainly be negative at the economic, social and cultural level. Although these impacts are barely detectable today, they are set to increase in the future.

H.S.H. The Sovereign Prince Albert II warned that the acidification of the ocean was a major issue for the Principality, as evidenced by the work of His Foundation, as well as the creation of a Monaco-based ocean acidification association which will coordinate the activities of the Monaco bodies (Prince Albert II of Monaco Foundation, Monaco Scientific Centre, International Atomic Energy Agency and the Oceanographic Institute) in this field.

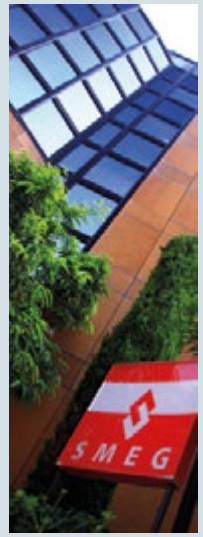
DAY OF TESTING ELECTRIC VEHICLES, 16th JEUN'ELEC' EVENT - 5 FEBRUARY 2015

As part of the 16th Jeun'Elec event, more than 400 students in Year 10 pupils (aged 14) from the Principality's secondary schools took part in a day of testing electric vehicles in the Pêcheurs car park. All modes of electric transport were presented: scooters, pedal-assist bicycles (pedelecs), cars and go-karts. Like last year, a road safety workshop, run by the Police Department, was also available to this teenagers, who are soon likely to be driving scooters.

Organised by the Monaco Club of Electric Vehicles in close collaboration with the Department of Education, Youth and Sport and the Department of the Environment, this annual event aims to build awareness of 14-year old pupils in Monaco about the pollution problems caused by urban road transport and the solutions for reducing them.

Pupils were also invited to take part in a competition to find a 'slogo' (a cross between slogan and logo) for electric mobility. Up for grabs, an electric scooter awarded at a ceremony held on 25 March 2015, during the Ever exhibition.

NEW DEAL FOR THE FEED-IN TARIFF FOR SOLAR PHOTOVOLTAIC



The feed-in tariff was set at €0.36 ex.VAT for flat roofs, not integrated into the building, and €0.53 ex.VAT for other cases. This incentive is guaranteed for 15 years, and may be granted to any owner of a planned or existing installation, whose installed capacity is greater than or equal to 3 kWp, (the kWp corresponds to peak capacity. This value indicates the capacity reached by a solar panel exposed to solar radiation in optimal conditions).

PLASTICS IN THE MEDITERRANEAN: 'NOW WE KNOW IT IS THERE, WHAT CAN WE DO ABOUT IT?' - 10 AND 11 MARCH 2015

On 10 and 11 March 2015, more than 200 participants from 10 Mediterranean countries spent two days at the Yacht Club of Monaco debating the thorny problem of plastic pollution in the Mediterranean. After first setting out the current state of plastic pollution in the Mediterranean Sea, concrete actions to tackle this problem emerged. During this conference H.S.H. the Sovereign Prince announced the ban on single-use plastic bags in the Principality. A measure which was implemented on 1 June 2016.

REORGANISATION OF THE E-BIKES (ELECTRIC BIKES) NETWORK - 1 APRIL 2015

The roll-out of the pedal-assist bicycle (pedelecs) network of stations is continuing in the territory of Monaco, with the purchase of 15 additional bikes and the installation and commissioning of 2 new stations: the 'Notari' bike station, in rue Louis Notari and the 'Carmes' bike station in the boulevard du Larvotto.

The Principality now has 12 stations and more than 72 pedelecs. Other sites for stations are being examined in order to strengthen the network in the Principality of this soft mobility mode.

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THE PRINCIPALITY JOINS THE 'RESPIRE' PROJECT - 2 APRIL 2015

The Principality of Monaco has joined the *Réseau Pour le Suivi du Recrutement* (RESPIRE - Network to Monitor Recrutment) project. This monitoring network plans to monitor the arrival of populations of small fish larvae for ecological and scientific indicators on the coastal zone. The aim is to assess if the harbours can be used as larvae nurseries and to study the role harbour areas can play in the lifecycle of fish.

To do this, 9 artificial habitats, called Biohuts® placed under pontoons, were selected from the 40 already installed in the ports of Monaco. The Biohut® is an artificial habitat installed during the season when the coasts are colonised (March to October) by fish larvae, and consists of a steel cage filled with oyster shells, together with an empty cage. In the Principality, the oyster shells used come from the Fontvieille hatchery, and constitute an innovative way of recycling waste.

In total, twenty ports and harbours around the Mediterranean will be fitted with Biohuts® specifically to create shelters for fish larvae, fingerlings and fry. They will be monitored scientifically following a specific protocol, three times a year.

END OF THE OPTIMA PAC STUDY - 22 AVRIL 2015

Four years after its launch and an investment of €1.6 million, the Optima-PAC project, coordinated by Veolia and Dalkia, as well as the Department of the Environment, has come to an end.

Under the title 'Optimising performance and managing the impact in the marine environment of sea water heat pumps - Optima PAC' this project, certified by the Mediterranean Sea Centre, was selected by the Interdepartmental Working Group on 1 March 2011 as part of the 11th Call for Projects and financed by the *Fonds Unique Interministériel* (Single Inter-Ministerial Fund).

It has also received a grant from the Regional Council of Provence-Alpes-Côte d'Azur, and the General Council of the Principality of Monaco. It intends to enhance the technical and environmental performance of sea water heat pumps, by taking into consideration the potential effects on the marine environment.

Working with a true network of stakeholders and partners, this innovative and collaborative project has resulted in building an industrial sector to develop heat pumps in an overall approach. Carried out along Monaco's coast since 2011, which is an exceptional laboratory (with 70 heat pumps, producing around 17% of the total energy consumed by the Principality of Monaco), the research has given a fillip to this technology which generates thermal energy from the sea, a clean and renewable resource.

The conclusions, presented at the closing meeting in the Oceanographic Museum on 21 April 2015, in the presence of H.S.H. Prince Albert II of Monaco, set out the best conditions for developing this thermal marine energy.

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THE DEPARTMENT OF MARITIME AFFAIRS CERTIFIED ISO 9001 2008 FOR THE 'MANAGEMENT OF VESSELS FLYING THE MONACO FLAG, MARITIME AREAS AND NAVIGATION SECURITY' - 26 MAY 2015

During the award ceremony, Mrs Marie-Pierre Gramaglia, Government Advisor - Minister of Public Works, the Environment and Urban Development congratulated the Maritime Affairs team on this ISO 9001 certification. 2008 by stressing: "For a State department, committing to this process is also a deliberate way of wanting to associate the notion of public service with quality and therefore efficiently meet the legitimate expectations of users. This is fully in line with our Government's spirit of modernisation.

The Department of the Maritime Affairs is one of three directorates in the Department of Public Works, the Environment and Development to be ISO certified, after the Public Car Park Office (ISO 14001 and 9001) and the Department of the Environment (ISO 14001).

A MONACO ASSESSMENT FOR THE ANTARCTIC - 8 JUNE 2015

On 6 June 2015, Mrs Isabelle Rosabrunetto, Director General of the Ministry of Foreign Affairs and Cooperation opened the meeting of the Scientific Committee on Antarctic Research (SCAR) entitled 'The Antarctic and the Strategic Plan for biodiversity 2011-2020: The Monaco Assessment', jointly organised by the Government of the Principality, the Monaco Scientific Centre, the Scientific Committee for Antarctic Research and Monash University. The central purpose of this meeting, which was attended by 20 international experts, was to identify the national strategies and actions plans for biodiversity in the Antarctic and Sub-Antarctic regions and to assess how these action plans fitted in to the Convention on Biological Diversity (CBD).

Therefore, the Monaco Assessment on the Strategic Plan for Biodiversity in the Antarctic will provide decision makers with recommendations to curb the impacts of activities such as fishing and tourism on these vulnerable ecosystems.

APIDAYS 2015 - 15 JUNE 2015

Friday 19 June, the Principality took part in the French national Apidays event, organised by beekeepers from the *Union Nationale de l'Apiculture Française* (UNAF - National Union of French beekeeping) in more than 80 towns & cities. This programme aimed at raising awareness of bees and beekeeping amongst members of the public, gives people the chance to understand and learn about the essential role this pollinating insect plays. During this Apidays event, children helped harvest honey and went home with a little pot of this 'Made in Monaco' nectar.

We should point out that this event is a result of the framework partnership agreement which Monaco signed with the UNAF in 2011. After signing this partnership, 6 hives were placed on the roof terrace of the *Musée des Timbres et des Monnaies* (Museum of Stamps and Coins), and each year the Principality gets involved in the 'Bee, sentinel of the environment' awareness building exercises to spread the message about the consequences of bees becoming extinct, and encourage their protection.

More information: amenagement@gouv.mc

UNESCO PARTNERSHIP 23 JULY 2015

The Prince's Government renewed its support to the *Groupement Européen de Coopération Territoriale* (GECT - European Grouping of Territorial Cooperation) Alpi Marittime – Mercantour, alongside the Prince Albert II of Monaco Foundation. The extension of the Framework partnership agreement, signed on 19 September 2008, paves the way for continuing the projects committed to as part of the Convention-Programme 'Inscription to the UNESCO World Heritage list' which aims to prepare, support and present a nomination for the GECT to be included on the list of UNESCO world heritage sites.

The Principality of Monaco and the Mercantour National Park have developed strong ties since 1979 with the creation of the 'Friends of the Mercantour Park 'association. Alpi Marittime - Mercantour, a shared region at the gates of Monaco, which has become GECT is the southernmost part of the Alps mountain range; its inscription in the UNESCO world heritage list will be international recognition for this exceptional area, both for the richness of its biodiversity, geology and culture and for its unique character.

THE MEDITERRANEAN SHAG NESTS IN MONACO - 23 SEPTEMBER 2015

Since it was set up in 2008, the Department of the Environment has committed to an inventory of the fauna and flora of the Monegasque territory. Teams from the Conservatoire d'Espaces Naturels de Provence Alpes Côte d'Azur have been working with it for five years and are notably involved in monitoring the avifauna on a regular basis.

In this context, 2015 was marked by another important discovery in Monaco: the proof that the Mediterranean shag (*Phalacrocorax aristoletis desmaresti*) had bred successfully on the cliffs of the Rock.

This Mediterranean subspecies of shag, relatively rare on our coast, is protected in the Principality. The only known colony in mainland France is located in the Bouches-du-Rhône, and a pair has only been shown to have been breeding successfully in the Var since 2006. This discovery is the first official nesting site for the species in this sector of the Mediterranean coast. This therefore plugs a hole in the network of French and Italian colonies.

The Principality now occupies a central position in the expansion of this species.

SPECIES INVENTORY OF BROWN GROUPERS AND BROWN MEAGRE ALONG MONACO'S COAST - 16 OCTOBER 2015

As part of its programmes to study and monitor the marine biocoenosis, the Department of the Environment conducted its 6th inventory of brown grouper and brown meagre along the coast of Monaco in October 2015. These important species, whose life expectancy can exceed a thirty years, are particularly vulnerable. In the Principality, these two species are protected under the Code of the Sea; in France they are covered by a protection moratorium of 10 years for the brown grouper (until 2023) and 5 years for the brown meagre (until 2018).

This inventory follows the protocols used by the Groupe d'Etude du Mérou (GEM) (Brown Grouper Study Group) for more than 30 years, in particular in the National Park of Port-Cros, in some nature reserves in Corsica and mainland France, but also outside of reserves.

With the logistical support of the Department of Maritime Affairs a dozen divers and free divers, GEM scientists working with the divers of the Department of the Environment, set up grids on the Monaco's seabed down to a depth of 40 m.

This new round of inventories recorded the change in populations of these two protected species in the waters around Monaco, by identifying 193 brown groupers and 25 brown meagres. During the previous inventory, dating back to October 2012, 78 groupers (20 to 95 cm in length) and 13 brown meagres (from 25 to 35 cm) were recorded.

THE 40 ANNIVERSARY OF THE AMPN - 21 NOVEMBER 2015

Set up on 21 November 1975, at the initiative of Prince Rainier III, the *Association Monégasque pour la Protection de la Nature* (AMPN - Monaco Nature Conservation Association) celebrated its 40 anniversary by diving in the waters of Larvotto, in commemoration of the association's Founding Chairman, Mr Eugène Debernardi. Now chaired by his daughter, Jacqueline Debernardi, the AMPN continues its meticulous work of protecting and maintaining this reserve in Monaco.

SMART MOBILITY CITY AWARD 2016

All the measures taken by Monaco's Government in terms eco-mobility were rewarded by the Smart Mobility City Award 2015' awarded by the *Fondation Prospective et Innovation* (Prospective and Innovation Foundation). This award was presented to the Principality on 24 November 2015 during a ceremony which took place in the CINEV (China New Energy Vehicle Show) in Hong Kong.

MONACO HONOURED IN HONG KONG - 26 NOVEMBER 2015

At the China New Energy Vehicle Show, which took place in Hong Kong from 24 to 26 November 2015, the Principality's sustainable development strategy, and more specifically clean mobility, was honoured by the 'Europe-China Smart Mobility City Award'.

This distinction was presented during the event by Mr Jean-Pierre Raffarin, Chairman of the Fondation Prospective et Innovation Foundation, to one European and one Chinese city. The Chinese city recognised was the city of Shenzhen. At the initiative of the Chinese authorities, a memorandum of understanding was also signed at this event, between the Principality, represented by H.E. Mr Bernard Fautrier, Plenipotentiary Minister, Project manager for the Minister of States and the Director General of the 'Shenzen Development and Reform Commission', Shenzen's municipal body, responsible for preparing new energy development plans and policies, energy efficiency and promoting environmental conservation. This memorandum provides for the developing cooperation between the two bodies in the field of clean mobility, energy efficiency and urban development.

CONTINUING THE INVENTORIES ON THE BIODIVERSITY OF MONACO

In 2014 and 2015, the inventory of entomofauna was supplemented by a study of the mesofauna and macrofauna in the soils of the green spaces in the Principality of Monaco, focusing particularly on 4 classes of arthropods: Springtails (collembola), insects especially beetles, isopoda (woodlice) and Miriapoda (millipedes and centipedes).

The initial results are encouraging, and point to the excellent health of the soil. The results are still being analysed, but 6 species of beetles have already been added to the initial inventory, including one invasive species, *Altaenius picenus*, as well as the smallest hive beetle in the world, *Ptinella mekula Kubota*. A rare species has been found in the garden of the Villa Sauber: *Trechus fairmairei*, a ground beetle.

Begun in 2015, the inventories of Lepidoptera (moths) and Chiroptera (bats) will continue into 2016, to complete the diversity of the land fauna in Monaco.


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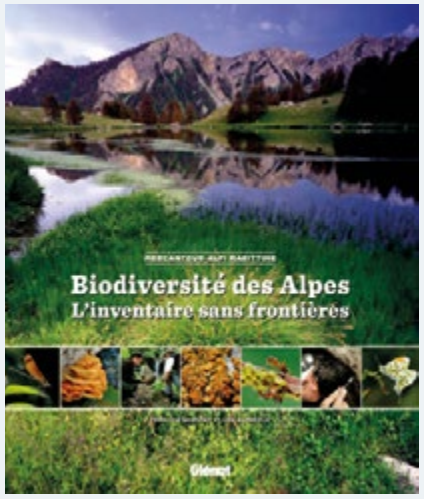
ATBI BOOK - 16 DECEMBER 2015



Since 2008, the Government of Monaco and the Prince Albert II of Monaco Foundation have supported the widespread use of biodiversity inventories in the in Mercantour and Alpi Marittime Parks, and in this context, a book entitled *Biodiversité des Alpes, l'inventaire sans frontières* (Alpine Biodiversity, The Inventory that Knows no Borders) was published at the end of 2015. To promote the publication of this work, a reception was organised in the Novotel hotel on 16 December 2015 at 7 pm in the presence of Mrs Marie-Pierre Gramaglia, H.E. Mr Bernard Fautrier and the new President of the Mercantour National Park, Mr Charles-Anges Ginésy. This event was a chance to thank the partners for their support in the great adventure which was the ATBI (All Taxa Biodiversity Inventory), but also all those who took part: scientists, naturalists, park rangers, the book's photographers and authors and journalists, etc.

This is the first time such as widespread biodiversity inventory has been conducted in Europe, and only the second time globally. Consequently, more than 350 taxonomists from over 10 European countries contributed to this inventory, which led to the discovery of more than fifty species new to science, providing decision makers with a benchmark study. In total, no less than 12,000 species were identified over a region covering close to 2,500 km², identified as a hot-spot for biodiversity. This ambitious project mobilised more than 300 specialists, scientists, naturalists and park rangers.

'OF ELEPHANTS AND MEN' EXHIBITION
NOVEMBER - DECEMBER 2015

This photographic exhibition, organised by *the* association *Les Clichés de l'Aventure* and the Government of Monaco, together with the association *Baby et Nepal* was held in the exhibition gallery of the Pêcheurs car park from 16 November 2015 to 3 January 2016.

The images of photographer Jean-François Mutzig. They perfectly illustrate the very special relationship between elephants and humans.

Victim of poaching, climate change and the progressive destruction of its habitat, the elephant has become an object of concern to the international community.

SIGNING OF THE PARTNERSHIP AGREEMENT WITH AIR PACA
DECEMBER 2015

At the end of 2015, the Principality signed Air PACA, a partnership agreement to monitor air quality. This partnership with the Department of the Environment covers 6 areas:

- changes in air quality readings;
- network maintenance;
- monitoring indoor air quality;
- developing an inventory of greenhouse gas emissions;
- modelling and forecasting air quality;
- building awareness of the atmospheric environment.

AirPACA
QUALITÉ DE L'AIR

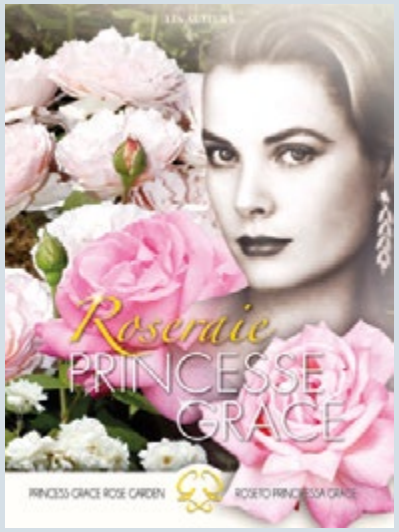
ENERGY PERFORMANCE CONTRACT

2015 was the second year in which performance was measured. This agreement will allow the Principality to benefit from raising private investment to manage its energy savings.

This project must lead to a 35% reduction in greenhouse gas emissions in the buildings covered. The second year of operations ended with a 27% improvement in energy efficiency, compared to 25% in 2014.

MPE
27%
IN 2015

STRUCTURE IN THE PRINCESS GRACE ROSE GARDEN



In 2014, for the 30th anniversary of the creation of the Princess Grace Rose Garden, the Department of Urban Amenities (DUA), with the support of PIAGET, carried out an extension and modernisation of this garden.

In order to retrace the history of this place, created in 1984, on the initiative of H.S.H. Prince Ranier III, who wanted to dedicate this garden in memory of his wife Princess Grace who was passionate about flowers and always found the words to describe roses. In 2015, the DUA erected a structure in the newly renovated Princess Grace Rose Garden.

Written by the DUA, Mr Gérald Meylan, Former Chairman of the Federation of Rose Societies, and most of the photos were taken by Mr Giuseppe Mazza, this book tells the story of this garden by themes, relating its history and its modernity.

This work presents this iconic rose garden which now extends over a surface area of 5 000 m^2 with 8 000 newly planted rose plants and more than 300 different varieties.

This rose garden now presents a threefold image:

- Landscaping: now bigger and opening to the outside, the lawns have been removed, and a 50m long water wall installed;
- Ecological: both in its creation and its maintenance, this space aims to be as environmentally friendly as possible, and has been certified an 'Espace Végétal Ecologique' (EVE - Ecological Green Space: certification awarded by the international body 'Ecocert Environment');
- Educational: the rose garden is divided into eight different themes, highlighting the history of the rose, this iconic flower's link with the Princely family and personalities, the place of roses in cities, and the new varieties which have marked the development of modern roses by their beauty and their powerful perfume.

1ER JUIN 2016,

LE SAC PLASTIQUE À USAGE UNIQUE EST INTERDIT À MONACO.

UN SAC POUR LA VIE

A BAG FOR LIFE

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