ATLAS

Biodiversity of the Francophonie

Richness and Vulnerabilities











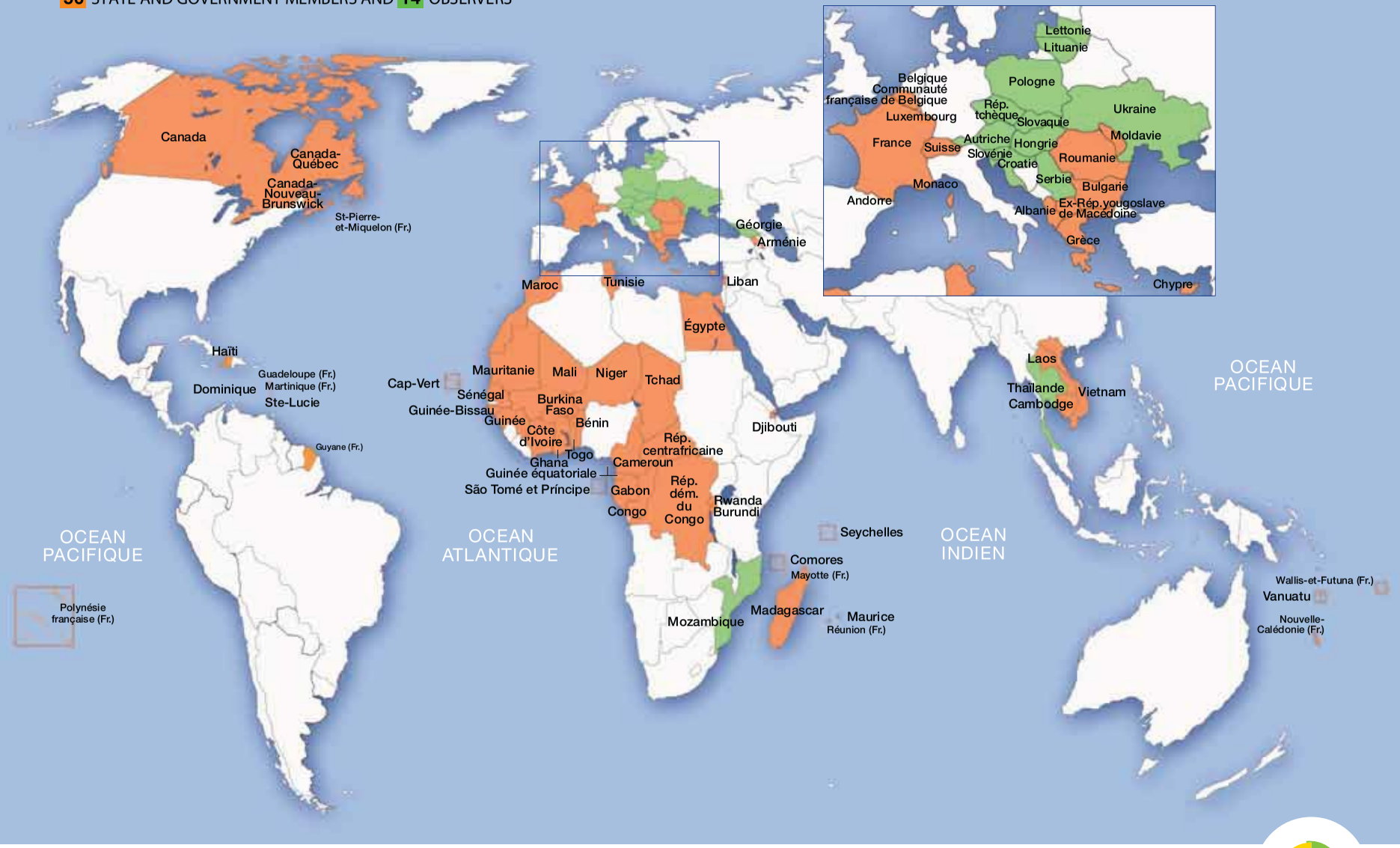

la francophonie 40 ans

2010

IUCN

LA FRANCOPHONIE IN THE WORLD

56 STATE AND GOVERNMENT MEMBERS AND **14** OBSERVERS



ORGANISATION INTERNATIONALE DE la francophonie

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ATLAS

Biodiversity of the Francophonie

Richness and Vulnerabilities

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The International Organization of the Francophonie (OIF) is an institution based on a common language, French, and shared values. Today, it includes fifty six member States and governments and fourteen observers. Present on five continents, it represents about one third of the United Nations member States.

OIF supports its member States in developing or enhancing their policies. It performs multilateral cooperation actions, in accordance with the main missions defined by the Francophonie Summit:
Promote the French language and cultural and linguistic diversity; promote peace, democracy, and human rights; support learning, training, higher education and research; and develop cooperation at the service of sustainable development and solidarity.

The main actions of OIF in the energy and environmental areas are carried out by the Institute of Energy and Environment of the Francophonie (IEPF). IEPF is a subsidiary body of OIF, created in 1988 to reflect the commitment of heads of States and governments of Francophone countries for a concerted action on developing the energy sector in member countries. In 1996, this mission was expanded to include the environment. Headquartered in Quebec City, IEPF has the mission today to build national capacities and develop partnerships on energy and environmental aspects.

OIF - IEPF

International Organization of the Francophonie - Institute of Energy and Environment of the Francophonie

IUCN

International Union for
Conservation of Nature

IUCN, the International Union for Conservation of Nature, helps the world find pragmatic solutions to our most pressing environment and development challenges. It supports scientific research, manages field projects all over the world and brings governments, non-government organizations, United Nations agencies, companies and local communities together to develop and implement policy, laws and best practice.

IUCN is the world's oldest and largest global environmental network - a democratic membership union with more than 1,000 government and NGO member organizations, and almost 11,000 volunteer scientists in more than 160 countries. IUCN's work is supported by more than 1,000 professional staff in 60 offices and hundreds of partners in public, NGO and private sectors around the world. The Union's headquarters are located in Gland, near Geneva, Switzerland.

IUCN at a glance :

- Founded in 1948 as the world's first global environmental organization
- Today the largest professional global conservation network
- A leading authority on the environment and sustainable development
- More than 1,000 member organizations in 140 countries including 200+ government and 800+ non-government organizations
- Almost 11,000 voluntary scientists and experts, grouped in six Commissions
- A neutral forum for governments, NGOs, scientists, business and local communities to find pragmatic solutions to conservation and development challenges
- Thousands of field projects and activities around the world
- Governance by a Council elected by member organizations every four years at the IUCN World Conservation Congress
- Funded by governments, bilateral and multilateral agencies, foundations, member organizations and corporations
- Official Observer Status at the United Nations General Assembly

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PREFACE

Long before the Rio and Johannesburg Summits, it became clear for some people that the development of human technologies, control of increasingly abundant energy, and accelerated urbanization represented a major threat for a balance that has prevailed for a millennium. The International Union for Conservation of Nature was created in 1946 to provide the necessary tools to alert humanity and increase awareness on the vital role of the diversity of living species.

After a long period marked by slavery, then by colonization, and characterized by despise and oblivion for cultures perfectly adapted to their natural environment, some wanted to assert the equal dignity of all languages and cultures. In 1970 in Niamey, the intergovernmental Francophonie was created, gathering today 70 members and observers sharing the same values and the same willingness against a destructive uniformity.

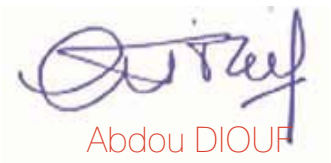
The partnership between IUCN and the Francophonie is consistent with their history and a common engagement for all diversities - biological, cultural, linguistic.

Joining their efforts to help countries define their policies on biodiversity conservation, build their capacities to implement and spread best practices, IUCN and the Francophonie felt the need to create a status survey that was rigorous, but also easily accessible for both political, administrative, and economic decision-makers and the global population. Natural heritage remains the base for sustainable development in all countries, especially the poorest ones.

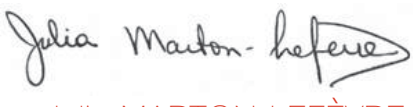
Both organizations initiated the development of this publication, convinced that it is a step towards a truly new tool: an evolving and participatory tool on the various forms of diversity in Francophone countries, biological as well as linguistic and cultural diversity.

Thanks to computer tools and networks, many participants can share their knowledge, verify the accuracy of data, and prove the depth and extent of biodiversity-related phenomena.

This ambition, combining rigorous knowledge and dynamic action, is worthy of two organizations at the service of both man and nature.



Abdou DIOUF
Secretary General
Francophonie



Julia MARTON-LEFÈVRE
Director General
IUCN

Message of the CBD

2010 International Year of Biodiversity! The international biodiversity community gave itself a challenge: namely, to make its concerns become, in 2010 and beyond, a “common concern of humankind”, as stated in the preamble of the Convention on Biological Diversity!

2010 International Year of Biodiversity! It is also a time to take stock of the 2010 biodiversity target of achieving a significant reduction of the rate of biodiversity loss. Has it been met at the global, regional and national levels? Despite all the efforts and all the energy expended since 2002, the results are relatively disappointing.

2010 International Year of Biodiversity! Never before have the press, the media, companies, local communities, scientists, different economic sectors, public administrations and citizens spoken so much on biodiversity. Throughout the world, initiatives have sprung out or have been developed. There is now a real global movement for biodiversity.

2010 International Year of Biodiversity! This year’s international agenda is full of meetings essential to building in a coordinated manner the future of biodiversity and the current and future well-being of humankind. The world’s high-level political leaders are now aware of the vital role that biodiversity plays in the world’s social and economic development and security.

2010 International Year of Biodiversity! Of course, biodiversity will not be the only focus of concern for this year. However, the importance of biodiversity as it relates to health, prosperity and climate change, which has been underestimated for a long time, is now unquestionable.

2010 International Year of Biodiversity! A pivotal year for the Convention on Biological Diversity, which needs both to finalize the negotiations on access to genetic resources and the equitable sharing of benefits from their use and to revise its Strategic Plan, objectives, vision and mission beyond 2010.

2010 International Francophone Year of Biodiversity! The Francophone community has always been very active on biodiversity issues. Now, and through the joint initiative of La Francophonie and IUCN, it is providing an outstanding exercise in stock-taking, frank assessment and deep review, while at the same time considering a brighter future. I am convinced that, of the long list of the initiatives undertaken this year, this document and the momentum it will generate will represent a new start--one of a strengthened and more ambitious Francophone alliance for biodiversity.

Ahmed Djoghlaf
Executive Secretary
Convention on Biological Diversity

Foreword

Fatimata DIA TOURE

Director, Institute of Energy and Environment
of la Francophonie

Jean-Claude JACQUES

Head of the Representation
to the European Union, IUCN

The International Organization of la Francophonie, through its subsidiary body the Institute of Energy and Environment of la Francophonie (IEPF) and IUCN have entered into a successful collaboration since 2007 to better build on the synergies and complementarities between both organizations, in order to enhance assistance for sustainable biodiversity management to member and observer States of the Francophonie.

In 2008, at the World Conservation Congress (Barcelona, Spain), this cooperation was reflected by a strong francophone presence: a formal reception with 350 participants and many personalities, three publications, including a special issue of Liaison-Energie-Francophonie (LEF), a dozen sailboats and as many stands, two workshops coordinated by the IEPF, and a francophone trail map published in 3,000 copies, etc.

To pursue in this direction, for the International Year of Biodiversity, and in consistent with the partnership agreement signed in 2008 between OIF and IUCN, a decision was made to publish in 2010 a report on the state of biodiversity in all countries of the Francophonie.

Therefore, both organizations established a Steering Committee with all financial partners, a Scientific Committee in charge of completing and approving the content of the document, and a development and mapping team with members in West Africa, Brussels, and Paris.

Beyond their contribution in human resources, IEPF and IUCN also mobilized several financial partners, including six member countries or governments of the Francophonie, the Global Environmental Facility, and three partners from the public and private sectors.

> This effort is the first of its kind as nothing has ever taken place at such a global scale. It is only the first step.

This document, published in English and in French, has the objective of focusing the attention of decision-makers in all countries involved in the crucial role of preserving an irreplaceable heritage for future generations, both for the well-being of their co-citizens and the survival of the planet.

The state of biodiversity is presented under separated forms by country and grouped under regions to highlight supra-national issues.

Developing these factsheets also highlighted the challenges, notably for the poorest countries, to fulfill their commitments under the Rio Conventions (The Convention on Biological Diversity, the Convention on Climate Change, and the Convention on Desertification) and the Millennium Development Goals. A summary note has been developed to provide a few ideas on how to improve biodiversity management.

Finally, the leaders of this publication wished to ask several renowned experts to write a short note on more thematic subjects on biodiversity knowledge and ecosystem services, sustainable development, climate change, land planning, the economic value of biodiversity, exploitation of genetic resources, and conservation finance.

This effort is the first of its kind as nothing has ever taken place at such a global scale. It is only the first step. For these forms to become a true development tool for countries and governments, the static document on the situation in 2010 has to be converted into a dynamic document, to be permanently improved by its users. The next step will focus on this conversion, in collaboration with Quebecois, French, and African geomatic centers and in partnership with the Association of Universities of the Francophonie.

As for natural habitats, the countries of the Francophonie represent about 19,4 % of all terrestrial areas across the world, 6,9 % of the oceanic surface, over 20% of coral reefs and 15% of tropical forests. It also represents 13.5 % of the world's population and about 40% of the world's countries.

It is crucial for the future of our planet that the Francophonie recognizes its role for future generations and contributes to conserve the Earth's ecosystem.

Summary

On the occasion of the International Year of Biodiversity (2010), IUCN and OIF decided to develop an atlas presenting the state of biodiversity in the 70 member or observer states and governments of the Francophonie.

The Francophonie covers a terrestrial area of about 29 million km² (19.4 % of the global terrestrial area) and a marine area of 25 million km² (Exclusive Economic Zone – 6.9 % of the total oceanic surface) and is home to 910 million people. Present on all continents and seas, it plays a crucial role in conserving the world's biological diversity.

This atlas includes a first series of thematic fact sheets developed by international scientists and experts. Their objective is to throw some light on the main issues related to biodiversity, such as biodiversity knowledge and management, integration in land planning and integrated management of large rivers, ecosystem services, the economic value attached to such services, and funding mechanisms to be implemented in order to ensure sustainable management of natural habitats.

The second part consists of 67 fact sheets summarizing the status of biodiversity in the Francophonie countries, in addition to 10 fact sheets on New Brunswick and Quebec (Canada), the Brussels-Capital Region and Wallonia (Belgium), and French overseas territories. Specifically, each fact sheet includes information on:

- Ecoregions or biogeographic regions (WWF, European Commission, and Canada), terrestrial and marine, present in the country, and their protection level ;
- Biodiversity Hotspots (Conservation International) ;
- Forest cover and wetlands ;
- Flora and fauna diversity and threats to species (threatened species on the IUCN Red List, the presence of invasive alien species, climate change, and human activities) ;
- Terrestrial and marine protected areas (IUCN Categories I to V – meaning effective legal protection); and
- Other biodiversity-related information: World Heritage sites, Biosphere Reserves, Ramsar wetlands, Important Bird Areas (Birdlife International).

Furthermore, these fact sheets highlight exemplary actions undertaken by the relevant government and the challenges they faced.

Some issues could only be discussed at regional level (for example, management of large rivers, marine biodiversity, transboundary protected areas, management of populations of large mammals, protection of biomes and ecoregions, etc.). Therefore, fact sheets are grouped under 10 regions: Central Africa, West Africa, North America– Canada, Antarctica-Sub-Antarctica, Continental South-East Asia, Mediterranean Basin, Caribbean-Guiana Shield, the European continent, Indian Ocean, and Oceania.

Summary

The Francophonie is present in a dozen Biodiversity Hotspots, more than 250 terrestrial ecoregions, and 70 marine ecoregions. While several countries have achieved or are close to achieving the objective of protecting 10% of each terrestrial ecoregion, almost all of them are very far from reaching this goal for the marine environment. It suffices to compare the existing 30,472 terrestrial protected areas (2.24 million km^2 or 7.7% of the Francophonie's total surface area) and marine protected areas (198 marine protected areas, 145,700 km^2 or 0.6% of the EEZ).

The island nature of many Francophone States translates into a high level of endemism in closed areas that are highly vulnerable to anthropogenic pressures, invasive species, and climate change. Conservation of this irreplaceable genetic heritage is one of the formidable challenges of this century.

In addition, the Francophonie plays a crucial role in the protection of the last major forest block of Africa, coral reefs and atolls (25 to 30% are found in the waters of its member states), and the sustainable management of wetlands (30% are located in the Francophone area, with 473 Ramsar wetlands covering 850,000 km^2).

The importance of this natural heritage has been recognized by international authorities, as the Francophonie now harbours 135 Biosphere reserves and 89 World Heritage natural sites.

Based on the gathered data, the steering committee of this atlas decided to suggest a series of actions for the future, to the international community, the Francophonie, and its member and observer States and governments. The global recommendations include:

1. For the 20th anniversary of the Rio Earth Summit, produce a new Biodiversity Atlas, this time covering all Parties to the Convention on Biological Diversity;
2. Put the International Platform on Biodiversity and Ecosystem Services – IPBES into operation as soon as possible;
3. Improve and align the definition and delimitation of ecoregions and ecozones;
4. Update the World Database on Protected Areas; and
5. Promote the emergence of funding mechanisms for the conservation of biodiversity and ecosystem services.

Suggestions for Future Actions

GENERAL PROPOSALS :

1. For the 20th anniversary of the Rio Earth Summit, produce a new Biodiversity Atlas, this time covering all Parties to the Convention on Biological Diversity ;
2. Put the International Platform on Biodiversity and Ecosystem Services – IPBES into operation as soon as possible ;
3. Improve and align the definition and delimitation of ecoregions and ecozones ;
4. Update the World Database on Protected Areas ; and
5. Promote the emergence of funding mechanisms for biodiversity and ecosystem services.

PROPOSALS TO THE FRANCOPHONIE :

6. Encourage the International Organization of the Francophonie – through the Institute of Energy and Environment of The Francophonie (IEPF), and in relation with the Agence Universitaire de la Francophonie (AUF) – to support the development of interactive tools to use and update data from the current atlas ; and
7. Support development of a land planning scheme, integrating protection and restoration of ecosystem services, water management by watersheds, and forest restoration in Haiti.

PROPOSALS TO THE STATES AND GOVERNMENTS OF THE FRANCOPHONIE:

Take all necessary measures to fulfill their commitments to the Convention on Biological Diversity, and in particular:

8. Promote integration of biodiversity and ecosystem services in sectoral policies ;
9. Identify priority areas for ecosystem services and integrate those in territorial planning ;
10. Respect commitments on the protected percentage of terrestrial and marine ecoregions ;
11. Provide adequate protection to vulnerable endemic species as well as sites of international significance (such as Biosphere Reserves, UNESCO World Heritage Sites, and Wetlands of International Importance under the Ramsar Convention) ;
12. Improve management effectiveness and connectivity of protected areas, particularly with regard to ongoing climate change ;
13. Establish national observatories for protected areas to monitor and assess implemented policies;
14. Encourage water management by watershed ;
15. Actively support the efforts on biodiversity of civil society members ; and
16. Develop education, awareness, and communication to reduce biodiversity loss.

Acknowledgements

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Our thanks also extend to the financial partners of this publication (please see the presentation sections) for their significant contribution, essential for the completion of this work, and to the photographers who graciously accepted to provide some of the illustrations. Special thanks go to Yann Arthus-Bertrand, Patrick Desgraupes and Pierre Poilecot, as well as Patrick Boireau, Jean-Louis Chapuis, Jean-Yves Meyer and Hervé Moschler.

The editorial team also wishes to thank the personalities who accepted to bring their written contribution to the introductory pages or the thematic fact sheets, sharing their views and experience with the readers, and Prof. Pierre Pech, of the Université de Paris1-Sorbonne, for organizing and supervising the cartographic work.

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Introduction

This Atlas of Biodiversity in the 70 States and governments of the Francophonie was developed through an OIF and IUCN partnership, on the occasion of the International Year of Biodiversity. The publication aims at gathering information in a concise form to assess the state of biodiversity in each country and of implemented measures to fulfill countries' commitments towards the Convention on Biological Diversity.

Data were pooled in 77 summary fact sheets (two pages for each entity or group of territorial entities) under ten main geographic regions, presenting the main supra-national challenges (water management, transboundary protected areas, marine habitat, biomes). In addition to the 67 Francophonie States, forms were developed for Quebec, New Brunswick, the Brussels-Capital Region, Wallonia, as well as the overseas French collectivities and territories grouped in 6 fact sheet. The publication includes a total of 87 fact sheets.

The editorial and cartography team used readily available data, including:

- The latest national reports to the CBD Secretariat;
- The national databases on protected areas;
- The WDPA database where national data were missing, bearing in mind that this database is incomplete and out of date for some countries. Protected areas were divided into two groups based on the IUCN categories: Categories I and II (strictly protected) and Categories III to V (protected). Defining the groups was a challenge at times as some countries have not classified their protected areas in accordance with IUCN definitions or have improperly applied the IUCN classification;
- The IUCN Red List of threatened species, based on the global list and the existing national lists. Only the highest-threat categories were taken into account (Critically Endangered, Endangered, Vulnerable);
- The database on wetlands of the Ramsar Convention;
- The list of Biodiversity Hotspots (Conservation International) ;
- The Important Bird Areas (Birdlife International) ;
- The list of main ecozones or ecoregions (WWF) ;
- The list of Biosphere Reserves or World Heritage Sites (UNESCO); and
- The Natura 2000 sites (European Union).

To better assess the responsibilities of each country or government with regard to the marine environment, data on the EEZ and the surface of existing marine protected areas were also collected.

Draft documents were submitted to the Scientific Committee and to the CDB focal point in each country. Contributions of focal points were often significant, and some even revised the document completely. However, additional information could not be obtained for some countries. Therefore, the corresponding fact sheets might contain errors or omissions.

This work is the first in its kind and, therefore, open to improvement. This is a snapshot of the state of biodiversity in the Francophonie in 2010. To prevent its rapid obsolescence, a dynamic version of the text and maps will be uploaded online, offering readers the possibility to update information, subject to scientific and governmental validation.

The member or observer states and governments of the Francophonie are present on all of the Earth's continents and seas. Therefore, they play a crucial role in the preservation and sustainable management of our global biodiversity. A tool such as this atlas is particularly expedient to assist them in this endeavor.

REFLECTIONS ON BIODIVERSITY THEMES

Biodiversity and Knowledge, a 21st Century Challenge

The web of life, biodiversity, is our living environment, the source of our resources, and our guarantee for the future and its uncertainties. Preserving biodiversity to the extent possible, ensuring its evolution and adaptation capacities against changes, both expected and unexpected, is a major challenge for the 21st century. This challenge requires further knowledge enhancement and sharing of biodiversity inventories, analysis of ecosystem functions, understanding of their resilience, assessment of ecosystem services, and habitat and species management, conservation, and restoration.

This requires a stronger mobilization of human and technical resources. It involves pursuing the great initiatives on harmonizing knowledge on ecosystems, fauna, and flora – GBIF, GTI, IUCN Red Lists, Living Planet – and developing and mainstreaming ecological indicators for monitoring such as the "Common Birds" to complete the above-mentioned mechanisms. There is a crucial need for what should be called Biodiversity Observatories, to monitor and understand biodiversity trends and long-term ecosystem services, as well as to assess the effectiveness of measures. Such ecological indicators tell us more than the state of monitored species. For instance, the Common Birds indicator, covering insectivores, piscivores, granivores etc., species from grassland and forest habitats, both urban and rural, also "tells" us about the status of habitats and biodiversity. Therefore, this is truly an indicator on ecology rather than simply on fauna.

The protected area network, potentially completed and strengthened by connectivity elements such as the "green and blue frame" implemented in France, should play a crucial strategic role, first as biodiversity conservation areas but also for biodiversity monitoring and knowledge acquisition tools and as special places for education and sharing. Simply, as a great support tool for research, education and communication on biodiversity and its issues.

The ultimate goal? To ensure that biodiversity and its conservation are seriously integrated in the management strategies on our territories. To contribute to reconcile nature preservation and the humanization of our societies and their development, as promoted since 1971 by the UNESCO Man and Biosphere Program, through its network of 560 Biosphere Reserves.

by Robert Barbault

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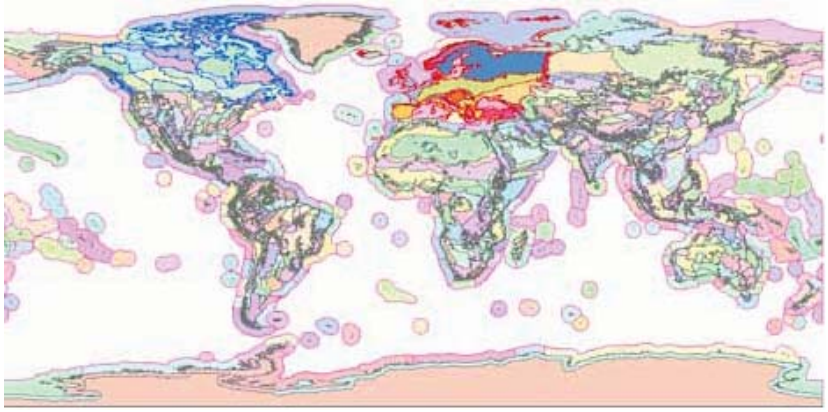
Author of many books and scientific publications, he recently published: Un éléphant dans un jeu de quilles : l'homme dans la biodiversité. Seuil, Paris, 2006. (points Science, 2008).

Biogeographic Framework for Ecosystem Biodiversity



Biogeographical framework used in the fact sheets.
Purple lines : TNC-WWF marine ecoregions, gray : WWF ecoregions,
red : EU biogeographical regions, bleues : terrestrial ecozones of Canada.

Biodiversity, or the various living organisms, is found at three levels: genetic diversity, species diversity, and ecosystem diversity. The latter relates to the diversity of ecosystems found on Earth.

Various methods have been developed to represent ecosystem diversity, from local or regional scales to global scale. Methods for ecosystem classification and mapping are usually hierarchical and interlocked. By selecting the appropriate scale for a given range, ecosystem mapping reflects the diversity of the territorial ecosystem. It can also be presented as a reference biogeographic framework to evaluate biodiversity at species and genetic levels, as well as for a number of other uses such as protected area planning or sustainable use of natural resources.

This publication on the state of biodiversity in the Francophonie is presented in this context under a consistent biogeographic framework. With the exception of the terrestrial parts of the European Union and Canada, which have long developed and used their own reference frameworks, the reference framework used in this publication includes WWF's world's terrestrial ecoregions (OLSEN et al., 2001) and the world's marine ecoregions defined by The Nature Conservancy (TNC) and WWF (SPALDING et al., 2007). The hierarchical system to map terrestrial ecoregions includes eight biogeographic realms, fourteen biomes, and 867 terrestrial ecoregions. Biomes are used for regional maps and terrestrial ecoregions for francophone countries or territories. The reference framework for marine ecoregions includes a hierarchical system of 12 realms, 62 provinces, and 232 ecoregions. This publication applies the marine ecoregion level. It should be noted that marine ecoregions are defined by coastal areas and were artificially adjusted to a width of 200 nautical miles, or 370 km, corresponding to the edge of exclusive economic zones.

Since 1992, the European Union countries have adopted a reference framework named "biogeographic regions" for the conservation of natural habitats and wildlife. Regularly revised, the 2001 version of this map covers the pan-European territory and includes eleven biogeographic regions. As this framework is formally used both by the Natura 2000 network of the European Union member countries and the Bern Convention Emerald Network of areas of special interest for conservation, it has been selected as the reference for terrestrial areas in the European countries of the Francophonie.

Similarly, since the 1980s, Canada has developed a national ecological framework including 15 terrestrial ecological zones and 194 ecoregions (WIKEN, 1986; GTSÉ, 1995). The framework developed in Quebec under the name of "natural provinces and regions" and integrated in the Canadian framework, is used to establish the network of protected areas of Quebec and to assess the representativeness of biodiversity (DUCRUC et coll., 1995; MDDEP, 2010). Therefore, the ecological zones of Canada were selected as baselines for the forms on Canada and other francophone territories in this region, with the exception of Saint Pierre and Miquelon.

by Tingxian Li

Tingxian Li holds a Bachelor of Physical Geography from the Sun Yat-sen University (China, 1982) and a Doctorate in Populations and Ecosystems Biology Science from the University of Science and Techniques of Languedoc (France, 1987). An expert in mapping and ecological land classification, he is one of the main authors of the reference Ecological Framework of Quebec and has participated in the development efforts of the National Ecological Framework for Canada.

The Forgotten Element: The "Invisible" Biodiversity

Since the UNCTAD Conference in Rio de Janeiro in 1992, biodiversity conservation has become one of the main objectives of international environmental policies. We focus mostly on the loss of large mammal species: we are deeply affected by the extinction or decline of emblematic species such as pandas, tigers, elephants, apes, or any other large vertebrate. However, invisible or inconspicuous living species also play an equally important role. The visible life represents a tiny percentage of what lies under our feet.

To date, there are 1.9 million known and documented species but experts estimate the total number of living species at several tens of millions! While practically all vertebrate species are documented, including about 50,000 species, invertebrates and micro-organisms remain largely unknown. New species are discovered each day, mostly invertebrates. In 2007, 75% of all new species discovered where invertebrates, while plants represented 11% and vertebrates 7%.

All organisms play a crucial role for ecosystems. Marine invisible biodiversity, including planktons, protozoans, viruses, or bacteria, constitutes 98 % of the oceanic biomass. It plays an important role in marine ecosystem functioning, notably for carbon cycle, and is the base of the oceanic food chain. Over the past decades, we have started to understand that the ocean floor is far from inert and is on the contrary the world's most important region. Between 65 to 80 % of all volcanic activity takes place under oceans. In the middle, oases are swarming with virtually unspoiled life. A sunken whale carcass rapidly attracts a mass of organisms. Some will feast for over 100 years !

Similarly to oceans, soil is one of the most diverse habitats on Earth and contains one of the most remarkable organic assemblages. One gram of soil might hold several thousand species of bacteria, and one hectare of tropical forest might contain over 42 million arthropods, with 70% living in soil! In any case, soil biodiversity represents thousands of species per gram. Such diversity is of significant interest for the services it provides. Sustainable use of biodiversity for agriculture helps reduce the use of pesticides by replacing them with useful insects, decreases plowing by valorizing soil activities, and maintains yields by relying more on pollination !

We increasingly realize that conservation of biodiversity aboveground also implies preserving the mass of organisms on the ground, and therefore maintaining the productivity of agricultural systems through key ecological functions such as mineralization, bioturbation, decomposition, ventilation, drainage, etc.

by Didier VandenSpiegel

Didier VandenSpiegel holds a PhD in biological sciences and is a research leader at the Royal Museum for Central Africa in Tervuren, Belgium in the Zoology Department Invertebrates non-insects Section. He works on the systematics and ecology of Diplodopa of Africa and echinoderms. He is also a cofounder and permanent editor of the taxonomy journal "Abc Taxa" (www.abctaxa.be).

Integrated Water Resources Management

Water is a common heritage and is crucial for supply and health. And yet, over a billion people do not have access to water in acceptable quantity and quality and one third of the world's population live in countries with average to serious shortage.

Water is a key development factor. In particular, irrigation uses 70% of drawn water and is expected to use even more to feed 2 to 3 billion additional people in the next 25 years.

Water resources must be protected because they are limited. Yet, demand is increasing, risks are getting worse, and there are many interactions and linkages between the various parts of a watercourse. Fragmentation of rivers might lead to conflicting actions on a given watershed.

Ecosystems play an important role for regulation, replenishment, and protection of watercourses and groundwater. Inversely, they also highly depend on the existence and quality of rivers and groundwater.

by Jean-François Donzier

Jean-François DONZIER has been the Director General of the International Office for Water since 1991. He is an administrator of the Global Water Partnership (GWP) in Stockholm, Permanent Technical Secretary of the International Network of Basins Organizations (INBO) since its creation in 1994, as well as Secretary of the International Network of Water Training Centers (INWTC). He had previously held several managerial positions in the French central administration.

There is an urgent need to implement an integrated water resources management (IWRM), to address an already critical situation and furthermore to face crisis situations looming in the short run, both in regards to watercourses shared by several countries, and internal resources. Integrated management should be carried out based on six main principles:

- Manage water at the scale of watersheds (local, national, transborder, for rivers, lakes, or aquifers),
- Draw on integrated information systems (on ecosystems, resources, usages, and pollution), and assess risks and trends,
- Establish development and management plans, or master plans, elaborated in a concerted way and setting medium to long term objectives,
- Define and implement priority successive action and investment programs over several years, and ensure monitoring and evaluation,
- Ensure participation to decision making, along with governmental administrations and relevant local authorities, of representatives of user categories and environmental or common interest associations,
- Gather specific funding, based on the "polluter pays" and "remover pays" principles, to make each user pay based on its impacts and to ensure global financial resources.

Management plans and basin measures programs should allow for relevant answers to address climate change.

France has a long experience of IWRM, introduced in 1964. The Water Framework Directive of 2000, aiming at a good ecological health of watercourses, generalized this approach in the European Union. It is also spreading today in the Francophonie area.

IWRM contributes to biodiversity preservation by taking into account the needs for quantity and quality, both for human activities and ecosystems, and specifically for actions on managing watercourses and their hydro-morphology, which plays an essential role for aquatic biodiversity.

and Pierre Chantrel

Pierre Chantrel is Deputy Director General of the International Office for Water. For the past ten years, he has been in charge of the design and implementation of technical assistance and cooperation programs related to water issues. Specialized in institutional aspects, quality, protection, and management of water resources, he supervised numerous projects in Eastern Europe, Central Asia, and Africa.

Living on the Planet

by Sylvie Brunel

A geographer, Sylvie Brunel, is a university lecturer at la Sorbonne (Paris IV). Author of many books on sustainable development, previously President of the NGO Action against Hunger, she leads the Master on Globalization, Southern Countries, and Sustainable Development.

Managing our land is crucial for biodiversity preservation. Left alone, any natural area is colonized by invasive species, leading to the disappearance of the weakest and the least adapted species. Human intervention is required for balance.
The beautiful natural parks of North America would not be the natural wonders we know without the work of foresters, who have preserved for a century the variety of species and prevented colonization – by men as well! Even the African savanna, the archetype of a natural area, is in fact a park: rural societies have made all efforts to select useful trees and to maintain pastures, in a perfect symbiosis between livestock and wild ruminants not feeding on the same vegetation. The traffic of the former prepares the land to feed the latter!

The common view that human beings are necessarily parasitic and destructive does not hold true : whole ecosystems are created and maintained by man. This contributes to the variety and beauty of our landscapes. For ages, the world's agricultural societies have shaped the Earth's beauty: terraced rice fields, hanging gardens, hedged farmlands, home to thousands of plants and animals…
However, man is often perceived as a predator, with a huge potential for destruction. But man's ability to conserve or even create is as important. As soon as he understands the usefulness of a species, he fights for its survival. How many animals doomed for destruction have been saved, from the New Zealand kiwi to the North African Oryx! How many flowers, vegetables, trees would not exist without varietal selection, the patient and meticulous hybridization of passionate botanists!
The gardener is as useful to biodiversity as flooding, distributing its beneficial silt. However, man's wisdom has to be heard to create landscapes. The memory of risks, a feature of agrarian societies, should be taken into account. Nature left alone is violent, destructive. Man has to reestablish the balance through a constant, careful, and courageous interventionism. Restoration of wetlands, coastal protection against sea erosion, protection of fragile areas…land management is crucial everywhere.
The outcomes are remarkable: sustainability-conscious farmers feed the world while offering us a fulfilling environment through their unremitting efforts to preserve the elusive balance of the landscape. Let's preserve the world to live in it. Together.

ABS and the perspective of a northern hemisphere country : is the state only a user of genetic resources ?

by Benoît Limoges

Benoît Limoges got his Master in Biology from Montreal University, Canada in 1987. He worked for various NGOs in Quebec and in Africa and Latin America. He has been employed for six years at the Ministry of Sustainable Development, Environment and Parks of Quebec. After working on the establishment of protected areas, he currently coordinates the implementation of the Convention on Biological Diversity by the government of Quebec.

and Michel Provencher

Michel Provencher got his degree in chemical engineering in 1974 from Sherbrooke University, Canada. He has worked at the Ministry of Sustainable Development, Environment, and Parks of Quebec in the areas of water quality, environmental assessment, and pesticides before focusing on GMOs and ABS for the last 10 years. He coordinates the two task forces on these subjects and participates in the related efforts under the Convention on Biological Diversity.

ABS, i.e. access to genetic resources and sharing of benefits from their use, relates to the third objective of the Convention on Biological Diversity. Its objectives are to:
1. Facilitate access to and valorize genetic resources;
2. Promote a fair and equitable sharing of benefits from the use of such resources and the often associated traditional knowledge.
About 80 % of the worlds' population directly depends on natural resources for health care. In fact, almost all medicinal plants and numerous pharmaceutical products (aspirin, quinine, an anti-rejection drug produced from a Norwegian mushroom, etc.) come from nature. Since the 1970s, genetic resources have been for instance very useful in the United States to counter the major corn rust outbreak by crossing the cultivated variety with a resistant Mexican wild corn.
Access to genetic resources faces some issues due to the lack of clear rules and to the doubts on equitable sharing of potential financial or other benefits derived from research on their properties. Implementation of enabling conditions for research is needed to develop useful products for human beings.
As a federal State, Quebec is in charge of resources management on its territory. It has agreed to the principle and objectives of the Convention on Biological Diversity and has committed to its implementation in 1992. Quebec also closely follows the ongoing negotiations on ABS to be potentially adopted in Nagoya, Japan in October 2010. Based on the results of these negotiations, the government of Quebec will specify its commitments to ABS, in consultation with other Canadian governments.

Western States, such as Quebec, are often viewed as users of genetic resources. Based on a 2008 survey among users of genetic resources, it appears that Quebec is also a provider of such resources, as 68 % of all users confirmed their acquisition of these resources in Quebec or in Canada. Proximity and specific properties of extremophile organisms, such as those living in Northern or marine environments, are among the reasons for this choice. The survey also shows that genetic resources are mainly used for public or academic research (58 %) and for private industry (22 %).
A fine example of agreement on ABS is the partnership between the College of Medical Studies of the University of Montreal and the Crie indigenous nation of Quebec. The ongoing research project applies the healers' traditional knowledge of plants to help the population address the increasing issue of diabetes in this community. Based on this knowledge, eight plants have been targeted for laboratory studies due to their promising anti-diabetic properties.
Therefore, genetic resources and related traditional knowledge can directly contribute to human well-being. To stimulate their valorization, access should be managed with clear regulations, providing legal security to the user and promoting equitable sharing of potential benefits. The ongoing international negotiations on ABS are therefore very important to prevent reactions blocking access to genetic resources and to promote research and development of new products.

Role of Access and Benefit Sharing for Development

It is crucial to reconcile a balanced economic growth and biodiversity conservation for sustainable development. Biological and genetic resources have significantly contributed – and still do – in meeting the needs of the poor and the world's economy. The 1992 United Nations Convention on Biological Diversity sets three main objectives: biodiversity conservation, its sustainable use, and equitable access and benefit sharing (ABS) from its valorization. All three objectives are equally significant as they are complementary. The majority of developing countries are signatories to this Convention, not only because they are home to most of the world's biodiversity, but also because they own a rich traditional knowledge contributing to its conservation and sustainable use. Fortunately, the Convention recognizes this point, Therefore, the times when populations of developing countries remained indifferent to the exploitation and use - without their agreement - of their genetic resources and traditional knowledge are ending, notably with the negotiation of a protocol of implementation of the third objective, ABS.

Regulation of access and benefit sharing from the valorization of biological and genetic resources can significantly contribute to economic growth of developing countries, particularly in Africa. Benefits from resources use will contribute to poverty reduction and creation of incentives for participatory conservation and management. However, only an adequate application of ABS will effectively contribute to significant development of the South. Under its implementation, it will be necessary to innovate and revise the way Africa intends to participate in the conservation and sustainable use of its biological resources and its traditional knowledge. This means that Africa should also invest and prioritize national development and research on biological/genetic resources while cooperating with other countries at international level, as recommended by the Convention. Africa cannot remain a mere source of raw material and knowledge to feed research and development industries located thousands of kilometers away. Benefits from valorization should include financial resources as well as human and technical capacities to increase the autonomy of developing countries for research and biodiversity valorization. Therefore, implementation of ABS could become a significant development tool for Africa.

by Augustine B. Njamnshi

Augustine Njamnshi is a lawyer specialized in ABS and biosecurity. He has over 16 years of experience in biodiversity management and policies in the Congo Basin and particularly in Cameroon where he has significantly contributed to developing biodiversity policies. He is also the Executive Secretary of the Program for the Development and Conservation of Biological Resources (BDCPC), one of the most experienced NGOs of Cameroon in the area of biodiversity. He also holds key positions in large networks such as TAI and PACJA.

Biodiversity and Development

When we speak of development, the keywords that come to my mind are “security, wellbeing, and responsibility”.

In order to live well today while ensuring substantial and satisfactory opportunities for future generations, we need to guarantee our own security at the national and global levels: food security, water security (both in terms of quantity and quality), and social and economic security. It is undeniable that countries able to guarantee the wellbeing of their populations are those that can balance nature exploitation and environmental health, and know how to share and take their responsibilities: we live in a world with increasing interdependence between the elements of the living world, notably the biophysical environment (plants and animals) and the human environment (social, economic, and cultural organizations).

Biodiversity or the diversity of all life on Earth is a complex unit characterizing and enriching all habitats: mountains, plains, deserts, oceans (including coral reefs and sea grass meadows), forests, savannas, tundra, rivers, lakes, estuaries, deltas, mangroves, etc.

Our own health relies on the health of our biophysical and human environments, themselves dependent on the diversity of natural habitats (ecosystems), in which we need plants and animals as diverse as possible to meet our vital needs for food, clean air, safe and sufficient water, and multiple options to support our economic and social activities. Planning and implementation of land and water use activities are two crucial factors to reduce biodiversity loss, and to achieve sound use of water, plants, and animals around us to ensure our survival.

Sustainable development invites us to find and support the best balance in a fragile world, where the search for immediate and personal satisfactions often prevails over the long term wellbeing of most humans, particularly the weakest and the poorest.

The Francophonie family is a concrete and dynamic framework under which it is possible and desirable to align our views and reconcile the present with the future, by adjusting our attitudes, behaviors, and economic and social activities to valorize the diversity of life as a foundation for sustainable development. We are all responsible, and we all have an added value. It is up to us to keep it alive and make it heard.

by Anada Tiéga

M. Anada Tiéga, a citizen of Niger, holds a Master from Niamey University and a Master from Arizona University (United States). Specialized in the links between environment and development, he held many positions at national level as Director of Wildlife and Fisheries in Niger, and at the international level, at IUCN, the Ramsar Convention (Africa Coordinator), and GEF (in collaboration with the World Bank and UNDP). He became the Secretary General of the Ramsar Convention in 2007.

Biodiversity and Ecosystem Services

by Robert Watson

Watson's career has evolved from research scientist at the Jet Propulsion Laboratory: California Institute of Technology, to a US Federal Government program manager/ director at the National Aeronautics and Space Administration (NASA), to a scientific/ policy advisor in the US Office of Science and Technology Policy (OSTP), White House, to a scientific advisor, manager and chief scientist at the World Bank, to a Chair of Environmental Sciences at the University of East Anglia, the Director for Strategic Direction for the Tyndall centre, and Chief Scientific Advisor to the UK Department of Environment, Food and Rural Affairs. In parallel to his formal positions he has chaired, co-chaired or directed international scientific, technical and economic assessments of stratospheric ozone depletion, biodiversity/ecosystems (the GBA and MA), climate change (IPCC) and agricultural S&T (IAASTD).

Biodiversity is central to human wellbeing, providing a variety of ecosystem services that humankind relies on, including: provisioning (e.g. food, freshwater, wood and fiber, and fuel); regulating (e.g. of climate, air quality, flood, diseases); cultural (e.g. aesthetic, spiritual, educational, and recreational), and supporting (e.g. nutrient cycling, soil formation, and primary production). These ecosystem services contribute to human wellbeing, including livelihoods, security, health, social relations, and freedom of choice and action.

Biodiversity is being lost and ecosystems are being degraded at an unprecedented rate throughout the world. The major indirect drivers of change are primarily demographic, economic, sociopolitical, technological, and cultural and religious. These indirect drivers result in the conversion of natural habitats (e.g., native forests and mangroves to agricultural systems), over-exploitation (e.g., over-fishing), air and water pollution (e.g., nitrogen, sulfur and phosphorus), introduction of exotic species and human-induced climate change, which are in many instances causing tremendous harm to both the environment and human well-being. While climate change has not been a major cause of biodiversity loss over the last 100 years it is likely to be a major threat in all ecosystems in the next 100 years.

Addressing the issue of biodiversity and ecosystem services requires changing the economic background to decision-making. There is a need to: (i) make sure that the value of all ecosystem services, not just those bought and sold in the market, are taken into account when making decisions; (ii) remove subsidies to agriculture, fisheries, and energy; (iii) introduce payments to landowners in return for managing their lands in ways that protect ecosystem services, such; and (iv) establish cost-effective market mechanisms to reduce nutrient releases and carbon emissions.

There is also a need to improve policy, planning, and management by integrating decision-making between different departments and sectors, as well as international institutions, to ensure that policies are focused on the protection and sustainable use of ecosystems. It will require: (i) empowering marginalized groups to influence decisions affecting ecosystem services, and recognize in law local communities' ownership of natural resources; (ii) restoring degraded ecosystems and establishing additional protected areas, particularly in marine systems and supporting those that already exist; and (iii) using all relevant forms of knowledge and information in decision-making, including the knowledge of local and indigenous groups.

Success will depend on influencing individual behavior, providing public education on why and how to reduce consumption of threatened ecosystem services, and by establishing reliable sustainably-produced certification systems.

It will also be important to develop and use environment-friendly technologies, thus requiring investments in agricultural science and technology aimed at increasing food production with minimal harmful trade-offs

Biodiversity and Climate Change

Climate change represents an enormous challenge to biodiversity but also an enormous opportunity--there is increasing evidence that the planet's biodiversity and ecosystems, and the multi trillion dollar services they provide, may be the key to cost effective 'carbon capture and storage'.

Forests, for example, have moved into the centre post at the UN climate convention meeting last year in Copenhagen. Deforestation currently accounts for close to 20 per cent of greenhouse gas emissions.

by Achim Steiner

Steiner, a German and Brazilian national, holds a BA from the University of Oxford as well as an MA from the University of London. He has been elected as the Executive Director of UNEP in 2006 and was also appointed in 2009 Director-General of the UN Offices at Nairobi (UNON). Before joining UNEP, he served as Director General of the World Conservation Union (IUCN) from 2001 to 2006, Secretary-General of the World Commission on Dams and took different assignments with governmental, non-governmental and international organizations. He serves on a number of international advisory boards, including the China Council for International Cooperation on Environment and Development (CCICED).

Norway, a key supporter of Reduced Emissions from Deforestation and forest Degradation (REDD), along with countries including Australia, Germany, France, the UK and the United States recently pledged over $4 billion.

Indonesia, one of the early partners, could earn around $1 billion a year by halving deforestation rates. Along with safeguards for forest-living communities, REDD offers—perhaps for the first time—a chance to marry the climate change agenda with the urgent need to substantially reverse the rate of loss of biodiversity.

UNEP, along with the Food and Agricultural Organization of the UN and the UN Development Programme are preparing around a dozen countries to take part. These include Zambia, Tanzania, Vietnam, Papua New Guinea, Paraguay and the Democratic Republic of the Congo.

Other areas of the natural world are also now being assessed. UNEP, with funding from the Global Environment Facility and in partnership with the World Agroforestry Centre and universities, is half way into the Carbon Benefits Project.

It is working with farmers and landowners in Niger, Nigeria, Kenya and China and is aimed at generating ways of assessing how much carbon is taken up by soils and vegetation under different landscapes and management regimes. It could lead to carbon payments for sustainable land management and agriculture in the same way as forests.

And what about marine ecosystems and biodiversity? According to the Blue Carbon report, compiled by UNEP, IUCN and others, mangroves, salt marshes and sea grasses may be absorbing levels of carbon equal to half the world's transport emissions.

Given that seven per cent of these 'blue carbon sinks' are being lost annually, bringing them into a fund or the carbon markets could deliver multiple benefits including climate ones but also biodiversity gains.

Biodiversity is more than just Euros or Yuan. But factoring the enormous economic value of the planet's ecological infrastructure into development, not least in respect to climate change, is perhaps the 'missing link' towards true sustainable management in 2010 and beyond.

The Economic Value of Biodiversity

by Patrick Ten Brink

Patrick Ten Brink is an environmental and natural resource economist and Head of the Brussels Office of the Institute for European Environment Policy (IEEP), which he helped set up in 2000. Patrick is the coordinator for the TEEB for Policy Makers report (see www.teebweb.org) and editor of the book – The Economics of Ecosystems and Biodiversity in National and International Policy Making (Earthscan, forthcoming, 2011).

Nature provides humanity with a myriad of benefits – food, food security through genetic diversity, water, fuel, materials for construction and development of medicines. Ecosystem functions help to purify water, waste, air, to regulate climate and in natural pest control and managing natural hazards such as flooding, fires and avalanches. Nature also creates opportunities for recreation and tourism, is integral to identity and cultural values and provides a store of information at the genetic, organism, species and ecosystem level. Every stretch of land, wetland or marine area - from grassland to coral reefs and sea mounds – has a range of ecosystem functions that can deliver services of value to a diverse group of beneficiaries from local to global level. The specific values of those services will vary depending on the site, the state and functions of the ecosystem and the prevailing social and economic systems.

However, the many values of biodiversity have historically been largely invisible and are still often overlooked or poorly understood. Although markets recognise certain values (e.g. food, timber, fuel), many others are rarely taken fully into account through economic signals, in day to day decisions by business and citizens, or accurately reflected in society's accounts.

Under-valuing biodiversity and ecosystem services has contributed to the steady loss of forests, soils, wetlands and coral reefs as well as wild species and productive assets like fisheries. Ignoring values beyond the immediate and private means that we are running down our natural capital stock without understanding the value of what we are losing.

Recent years have seen a growing appreciation of the ecological importance of ecosystem services and the economic value of nature. There is now a real opportunity for a renaissance in decision making to take nature and a wider range of public goods and private benefits into account. Biodiversity values of this kind - and the methods for calculating them - are increasingly understood not just by economists, but also by policy makers. They are beginning to play a bigger role in policy assessment and choice. This has real world effects on policies, instruments and investments and is starting to show results. Decisions on land use conversion, restoration, flood control, designation of protected areas and payment schemes for ecosystems services (PES) are just some areas which have taken the value of nature into account.

Systematically assessing the status, risks to and values of natural assets and integrating this into decision making is essential to slow and eventually halt biodiversity loss and erosion of natural capital. This will require investment in natural capital accounts and biodiversity and ecosystem service indicators as well as broadening the information base used in decisions. Having an Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES) offers to be an important help here to complement national action.

We need new momentum to get prices right and reward those who help to maintain or provide ecosystem benefits. PES (payments for ecosystem services) instruments are one potential growth area for carbon as well as water. REDD+ (Reduced Emissions from Deforestation and Degradation) offers a major new source of payment, but will require major global transfers of funds and investment in learning, monitoring and verification to be credible, and should also factor in wider ecosystem services. Making polluters pay will have complex implications for decisions on prices, regulation and compensation for damage.

Above all, we need to change the mindset from "nature as a resource to be exploited" to "working with nature within nature's limits" (i.e. resource boundaries and critical thresholds to avoid fish stock collapse, aquatic deadzones, salinated soils and enhance resilience to climate change). We can take opportunities wherever nature offers value for money and where new and more sustainable markets can be supported (e.g. certified goods, bioprospecting and biomimicry with due sharing of benefits). These are the key steps to help us move to a green economy and work with nature to address global challenges – climate change, water security, food security and poverty.

Sustainable Conservation Funding

Conservation funding is a headache for all governments and their partners: How to allocate sufficient and foreseeable resources for natural resources protection and management objectives, while many countries are not able to meet the costs of primary expenses for health, education, and economy?

State endowments, even insufficient ones, are crucial to reflect the country's goodwill and to catalyze further investment. They are completed by projects supported by donors and multilateral and bilateral partners. Several mechanisms have been tested for a while to generate more sustainable revenues through service or taxation activities (tourism, visitor services, transportation, etc.).

More recently, arrangements based on payment of ecosystem services (PES) have been tested. This involves an estimation of the value of goods and services provided by ecosystems and development of a market transaction between a client - the beneficiary of ecosystem services- and a provider –a natural resources manager for instance. Such systems have been tested in the United States since the 1970s and more recently in Australia. There are also many initiatives in South America, notably funded by GEF (Mexico, Costa Rica). The services include watershed and water quality, carbon benefits, biodiversity, and landscapes.

One PES application is the valorization of carbon storage associated with forests and other land uses. Several experiences of reduction of emissions from deforestation and forest degradation (REDD) represent pilot examples. A REDD+ mechanism is under discussion under the United Nations Convention on Climate Change.

Over the last twenty years, trust funds have been developed to play an intermediary financial role. This method has been highly successful in South America and almost all countries have developed platforms to manage various funding systems: capital investment, amortization funds, funds endowed by taxation or PES.

The three largest funds are in Brazil, Mexico, and Peru, with a capital exceeding $100 million. Such funds are used to fund one or several protected areas, sometimes the entire national network, or more globally to implement national environmental strategies. Several funds have been endowed through debt-for-nature swaps.

Market instruments are highly popular. However, they require favorable conditions in terms of financial flows and capacities, which might be an issue in fragile countries. For this reason, sustainable conservation funding is only one pillar of conservation: Capacity-building should be pursued for increasingly variable actors and innovative tools should be tested on protected areas and natural resources sustainable use (conservation concessions, traditional community management, corridors, certifications, etc.).

by Monique Barbut

Chief Executive Officer and Chairperson
Global Environment Facility (GEF)

Monique Barbut was appointed Chief Executive Officer and Chairperson of the GEF in June 2006 by unanimous decision of its Council. During her first mandate, Mrs. Barbut has undertaken a revitalization of the GEF. Reelected in November 2008, she led the fifth replenishment of the GEF at a level expected to exceed $4.25 billion.

Prior to joining the GEF, Mrs. Barbut was the head of the Division of Technology, Industry, and Economics of the United Nations Environment Program from 2003 to 2006. Prior to UNEP, she held several positions at the French Development Agency (AFD) from 1981 to 2003, notably in relation with French overseas departments and the Caribbean, Pacific, and Indian Ocean regions. Mrs. Barbut was part of the French delegation at the 1992 Rio Summit and head of the French GEF Secretariat.

FACT SHEETS

CENTRAL AFRICA

BURUNDI
CAMEROON
CENTRAL AFRICAN REPUBLIC
CHAD
DEMOCRATIC REPUBLIC OF THE CONGO
EQUATORIAL GUINEA
GABON
REPUBLIC OF THE CONGO
RWANDA
SAO TOME AND PRINCIPE

Regional Surface Area
5,420,240 km²

Population
2007 119.1 million
2020 163.2 million

Stretching on 2,000 km, from the Atlantic Coast to the Albertine Rift, Central Africa includes 10 countries, all members of the Francophonie. There are two main sub-regional organizations: the Economic Community of Central African States (ECCAS) and the Central African Forests Commission (COMIFAC). COMIFAC was created following the Yaoundé Declaration of March 1999, when 6 regional Heads of States declared their commitment to preserve forest ecosystems, through strict protection of 10 % of their area. COMIFAC has acquired a legal personality through a treaty ratified by the 10 countries.

BIOGEOGRAPHICAL DATA

Central African forests, all types included, cover an area of 2 million km² and constitute the world's second reserve of tropical forests, representing 70 % of the moist dense forest cover of Africa. Over 80% are Guinea-Congo forests. There are two afromontane forest areas, in Cameroon and in the easternmost part of the region. Six countries still have a dense forest cover on 1,637,000 km² or 40 % of their total surface area (4,048,470 km²).

The Congo River (the world's second river for its average volume after the Amazon) flows through 2/3 of the Central African forests. Half of these forests are found on the DRC territory. There are also other important basins, such as Sanaga, Ntem, Ogooué, Nyanga, Niari, or Kouilou. In addition, the Gulf of Guinea islands (Bioko and Annobón, São Tomé and Príncipe) are of high biodiversity interest due to their isolation and the resulting level of endemism.

A BIODIVERSITY WITH UNCERTAIN FUTURE

Lowland forests are home to about 10,000 species of vascular plants, out of which 30% are endemic (with 9 endemic families). Altitude forests harbor about 4,000 species with an endemism rate of 70 % (including two endemic families). In the Ruwenzori and Virunga Mountains, above 3,000m, the afromontane vegetation has a wealth of exceptional plant forms: Lobelia, giant groundsels, tree heaths, etc.

Fauna is as rich with 655 species of birds (36% are endemic) and 58 species of mammals (45 % endemism). Birds include 5 endemic families and the emblematic Congo peafowl. The Atlantic beaches are globally important nesting sites of sea turtles and numerous cetaceans are found offshore. New species are regularly discovered, notably amphibians, reptiles, and fish (over one thousand in the DRC alone); however, 16 species of birds and 23 of mammals are threatened.

Logging and mining are opening large areas of this once preserved forest block. Bushmeat demand is increasing, and commercial hunting increasingly takes place in protected areas. In 2010, the International Year of Biodiversity, ivory prices are once again soaring in Central Africa. While deforestation rates seem low (less than 1 %), annual loss is significant due to the size of the region. Numbers are misleading: the Congo Basin has 341 protected areas under IUCN Categories I to VI for an area of 570,000 km². However, among these areas, 380,000 km² or 188 areas are under Category VI and very weakly protected. Ultimately, there are only 48 national parks, covering an area of 180,000 km², or only 4.4 % of the Congo Basin total area of 4,048,470 km².

CONSERVATION STATUS IN THE SUB-REGION

With a population doubling every 25 to 30 years, the situation is worse than it seems. Everything seems to suggest that conservation of the Central African forests is at stake today. There are many threats on the ecosystems: opening of new communication access, slash-and-burn, logging and mining, uncontrolled hunting creating an "empty forest syndrome" in some areas, ivory trade, informal harvesting, and lack of planning.

Several environmental cooperation structures and initiatives exist at regional level. The Congo Basin Forest Partnership (PFBC) aims at coordinating the contributions of the various partners, in order to improve consistency and efficiency of their programs and policies. Significant funding has been mobilized under several funds to support conservation and mitigate deforestation effects. A first foundation for the Sangha Tri-National has a Board of Directors with a majority of private sector representatives. In 2005, COMIFAC adopted a Convergence Plan to improve conservation of Central African forests. The organization also facilitated a sub-regional agreement on forest control.

In 2006, COMIFAC created a Biodiversity Task force in Central Africa aiming at supporting CBD implementation at national level, developing and coordinating expertise and actions, and defining the related sub-regional strategy.

SPECIFIC RECOMMENDATIONS

Biodiversity conservation requires enhancement of several sectors in each country: organization of the informal sector exploiting natural resources, improvement of conservation activities in protected areas, hunting control and management of the bushmeat industry, land planning, production of fuelwood near major urban centers, and modernization of the agricultural sector.

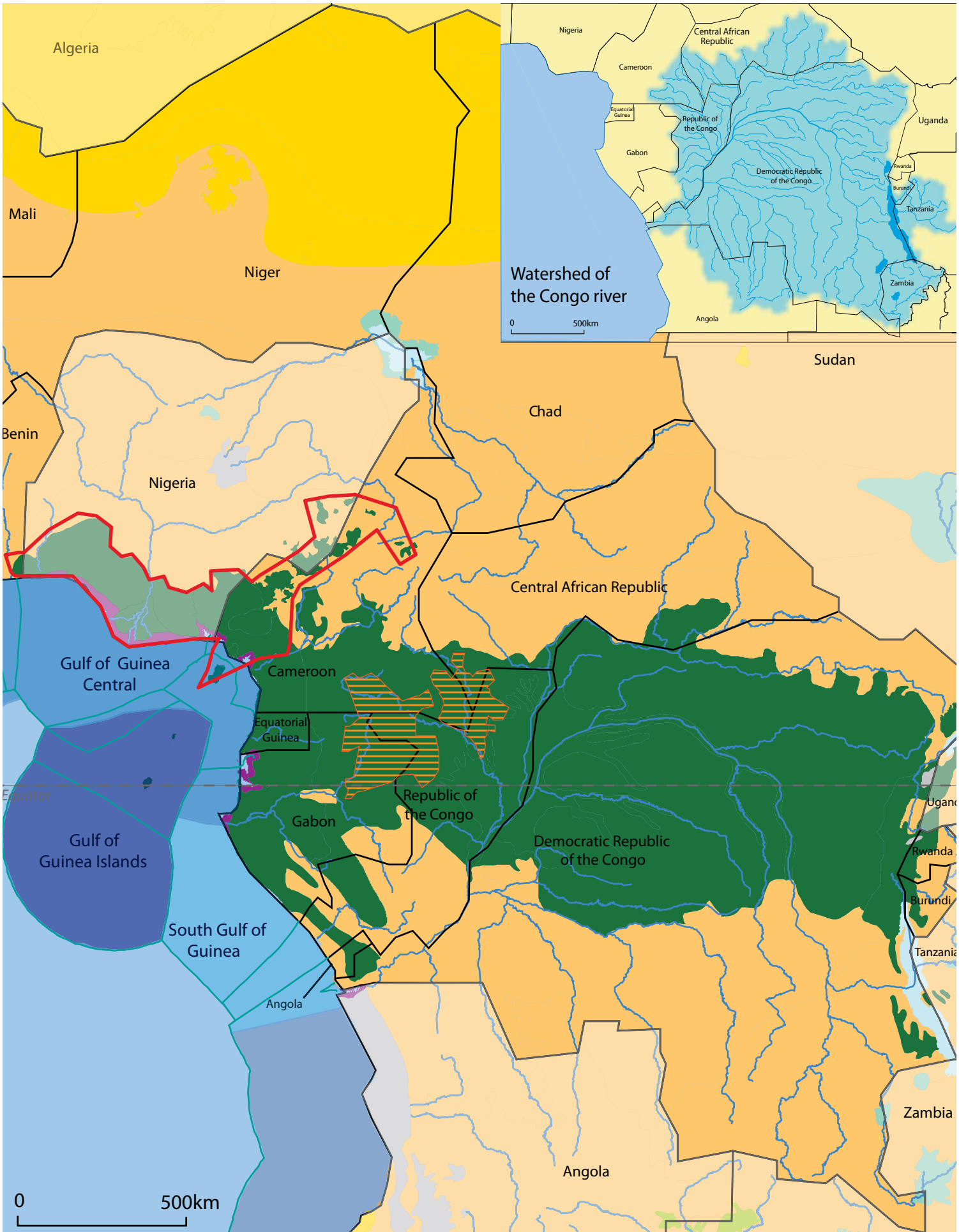
Priority actions should focus on the regional approach to

- better assess the relevance of protected areas and adjust them accordingly
- improve monitoring by refining indicators and data quality
- allocate fair compensation for ecosystem services
- improve forest governance through promotion of management plans, stronger law enforcement, designation of independent observers, and establishment of legal wood certification
- promote the development of conservation concessions.

OFAC: From Data Collection to Decision-Making

The Observatory for the Forests of Central Africa (OFAC) is an initiative of several PFBC members. The objective is to pool all necessary knowledge and available data for forest monitoring, economic, ecological, and social. Implemented by the Joint Research Center of the European Commission and a consortium of scientific institutes, it produced two remarkable "State of the Forests" reports in 2006 and 2008.

The core areas of biodiversity conservation, i.e. national parks, are still insufficient. Strengthening the network, along with land planning, should be of high priority for the countries in the region.


Algeria
Mali
Niger
Benin
Nigeria
Chad
Sudan
Central African Republic
Cameroon
Equatorial Guinea
Gabon
Republic of the Congo
Democratic Republic of the Congo
Uganda
Rwanda
Burundi
Tanzania
Zambia
Angola
Gulf of Guinea Central
Gulf of Guinea Islands
South Gulf of Guinea
Equator
0
500km
Watershed of the Congo river
0
500km

BURUNDI

A member of ECCAS and COMIFAC, Burundi is located east of Lake Tanganyika. A succession of plateaus and hills culminates at 2,670 m at Mt. Heha. The equatorial climate is greatly tempered by altitude. Annual rainfall reaches on average 1,275 mm. The Ruzizi Valley and the areas around Lake Tanganyika in the west are part of the Albertine Rift, and are bordered by the slopes of the Congo-Nile Crest. The eastern side of the crest lies on a plateau area, gradually decreasing in altitude eastwards. The economy of Burundi greatly relies on agriculture and livestock.

Lake Tanganyika is the second largest lake in Africa in terms of surface (32,900 km²) and the second deepest lake in the world (-1,453 m). It is home to more than 250 species of cichlids. Most of them are sought-after endemic species for aquaria.

FLORA AND FAUNA

Burundi has an estimated 2,909 vascular plant species. The country's fauna includes 163 species of mammals, 716 of birds, 52 of reptiles, 56 of amphibians, and 215 of fish. There are 8 documented exotic invasive species. Endemism rates amount to 2.5 % for higher plants (70 species), 10.4 % for mammals (17 species), and 3.1 % for birds (22 species). Based on the global Red List, threatened species include 2 plants, 9 mammals, 9 birds, 6 amphibians, and 18 fish species. However, the number of species at risk of extinction in the country is higher at above one hundred.

ECOSYSTEM SERVICES

High population growth is a key driver of biodiversity degradation. Clearing and unsustainable cultivation practices, uncontrolled harvesting of biological resources, excessive pasture, bushfires, pollution, and large-scale introduction of exotic species have worsened the situation. Soil erosion, reflected by the turbidity and siltation of most rivers, is a national concern.

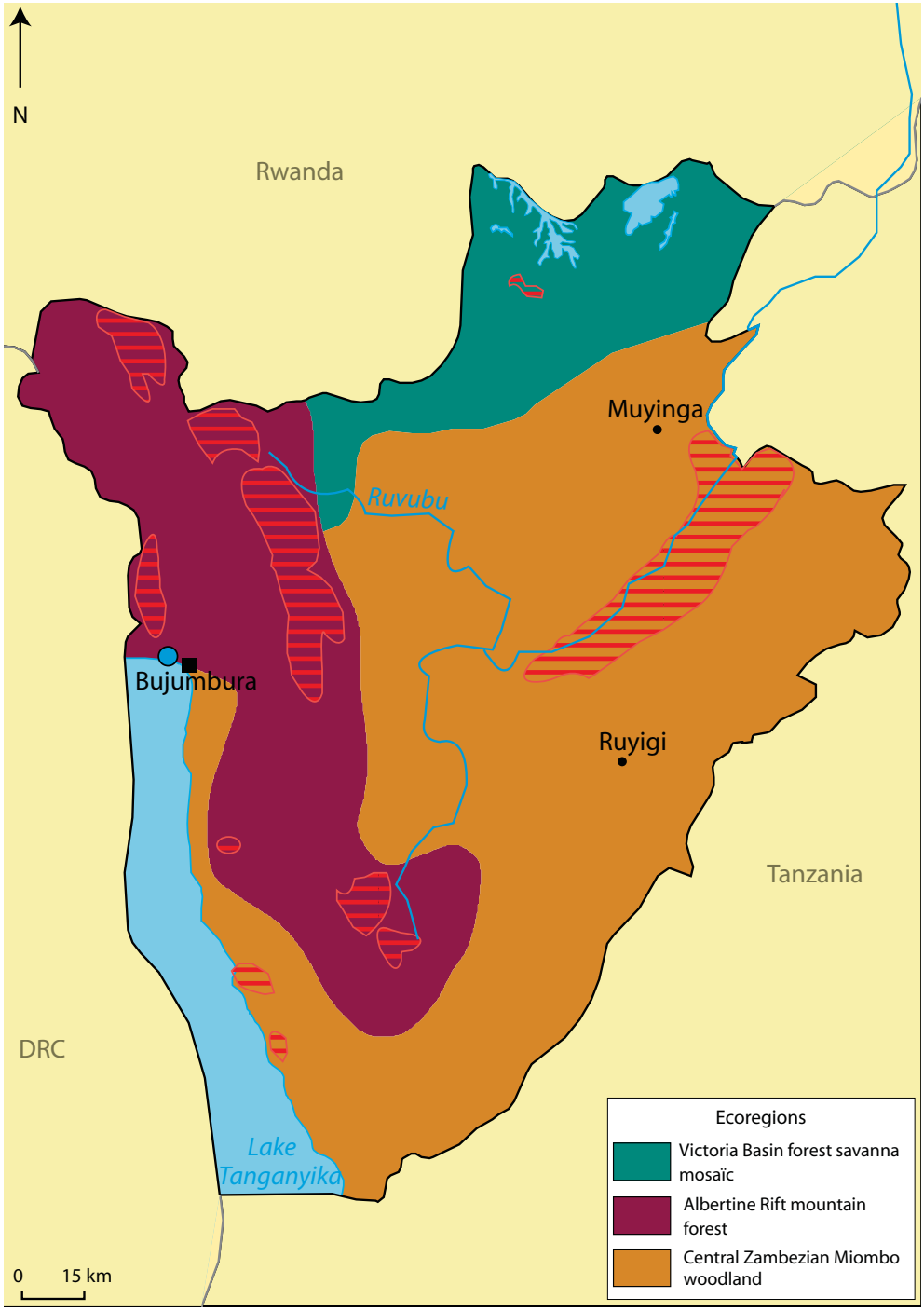
GOVERNANCE

To ensure the preservation of biological resources for sustainable use, several regulations have been promulgated and a public institution, the National Institute for the Environment and Nature Conservation was created, as well as the Ministry of Land Management and Environment in 1989. Lack of legal enforcement hampers biodiversity management in many ways. Important aspects are not regulated, such as biotechnology or sharing of benefits generated by biodiversity exploitation.

FOREST COVER : 27,830 km², 4.6 % under protection

WETLANDS : 3,760 km², 27 % under protection

Terrestrial Protected Areas			% of land area under protection
IUCN Cat. I-II IUCN Cat. III-IV-V IUCN Cat. VI	14	1,276 km²	4.6 %
Ramsar Sites	1	10 km²	-
IBA	5	1,000 km²	-



Surface Area
27,834 km²

Population
2007 7.8 million
2020 10.3 million

Population Density
280 inhab./km²

GDP per capita
in purchasing power parity
$ 383

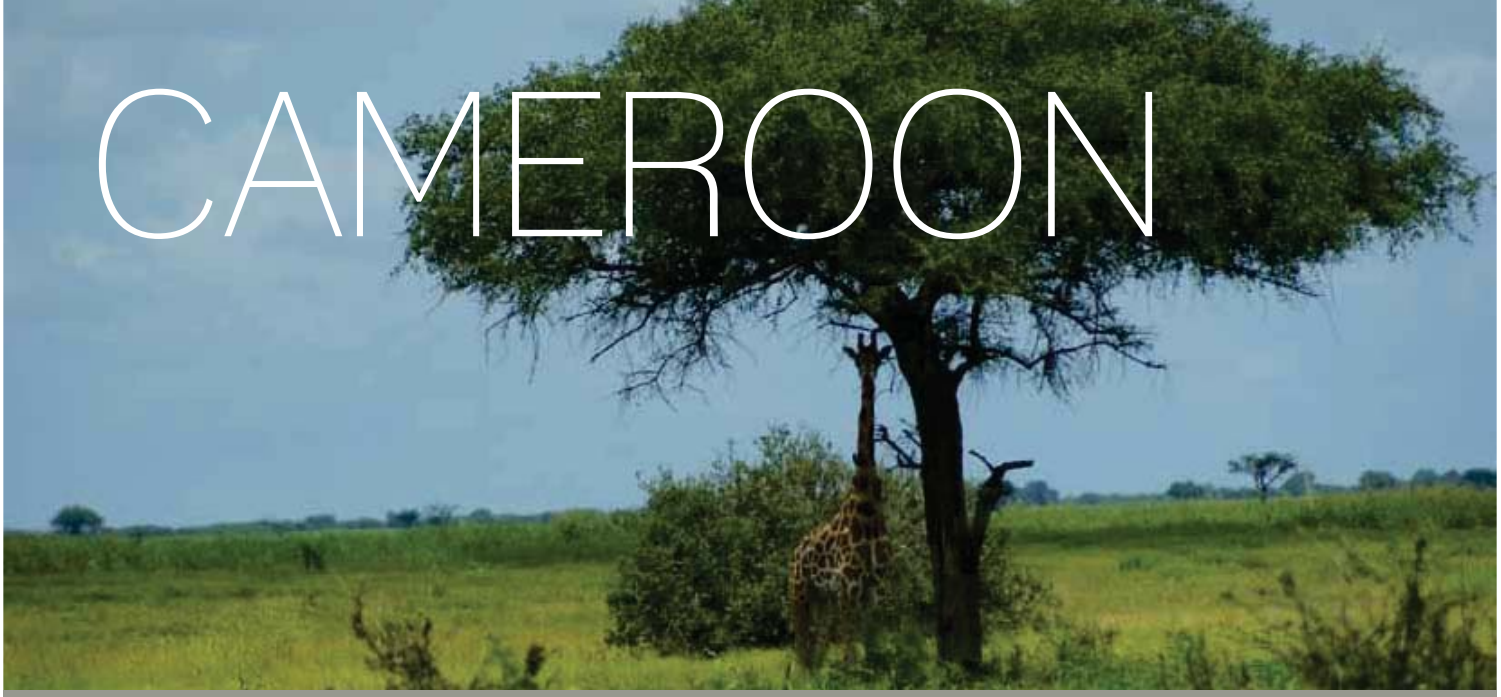
Human Development Index
0.394

Ecological Footprint
in global hectares per capita
0.8

MAIN NATURE AREAS

Within 3 ecoregions, vegetation formations spread along the dividing line between the Zambezian and the Eastern realms. They include some rainforests, dry dense forests, miombo woodlands, gallery forests, several types of savannas and swamps, in addition to the palm stand of the Rusizi Valley.
Watercourses form a dense network. The Ruvubu ("hippopotamus") River, flowing on about a third of the land area, is the southernmost part of the Nile Basin. Burundi shares three great lakes with its neighboring countries: Lake Tanganyika, attached to the Congo Basin, and two shallower northern lakes, the Cohoha and the Rweru. The country also has thermal springs and two natural sites in the south-east: the Karera Falls and the Nyakazu Break.

Burundi participates in the Nile Basin Initiative, along with 8 other countries, with the Ruvubu, the southernmost river of the Nile tributaries. Burundi benefits from agro-ecosystem management programs to improve livelihoods. The Initiative provided support to 22 Burundian non-governmental organizations working on this subject.



CAMEROON

Located in the middle of the Gulf of Guinea, Cameroon has diverse landscapes (plains in the north, the Adamaoua Plateau at the center, and high plateaus and mountains in the west reaching 4,070m at Mt. Cameroon). There is a succession of climate types from Equatorial to Sudanian-Sahelian. A member of the CEMAC and the ECCAS, Cameroon is the largest sub-regional supplier of produce and the country also exports to Europe and North America. It has numerous mining resources and the State has undertaken structural reforms to promote industrial activities.

In 1999, Cameroon organized the first Central African Heads of State Summit on the conservation of forests. The Yaoundé Declaration engages the Heads of States of 5 other countries (Congo, Gabon, Equatorial Guinea, CAR, and Chad), to put priority on forest issues and consolidate partnerships with the international community. A Ministerial Commission on Central African Forests (COMIFAC) was immediately created. In 2005, it became the Central African Forests Commission. Its Executive Secretariat is still based in Yaoundé.

MAIN NATURAL AREAS

Cameroon is home to about 90 % of the continent's ecosystems, including: Sahelian formations, Sudanian savannas, lowland wet tropical forests, alpine vegetation, and coastal and marine habitats. About half of country is still covered with forest-type formations. Water resources are significant with the basins of (i) the Logone river and its vast flooding plains, feeding Lake Chad, (ii) the Benoue flowing into the river Niger, (iii) the central and west regions towards the Atlantic, including the Sanaga River (920 km), the biggest river in the country, and (iv) the south-east basin attached by the Sangha to the Congo Basin.

ECOSYSTEM SERVICES

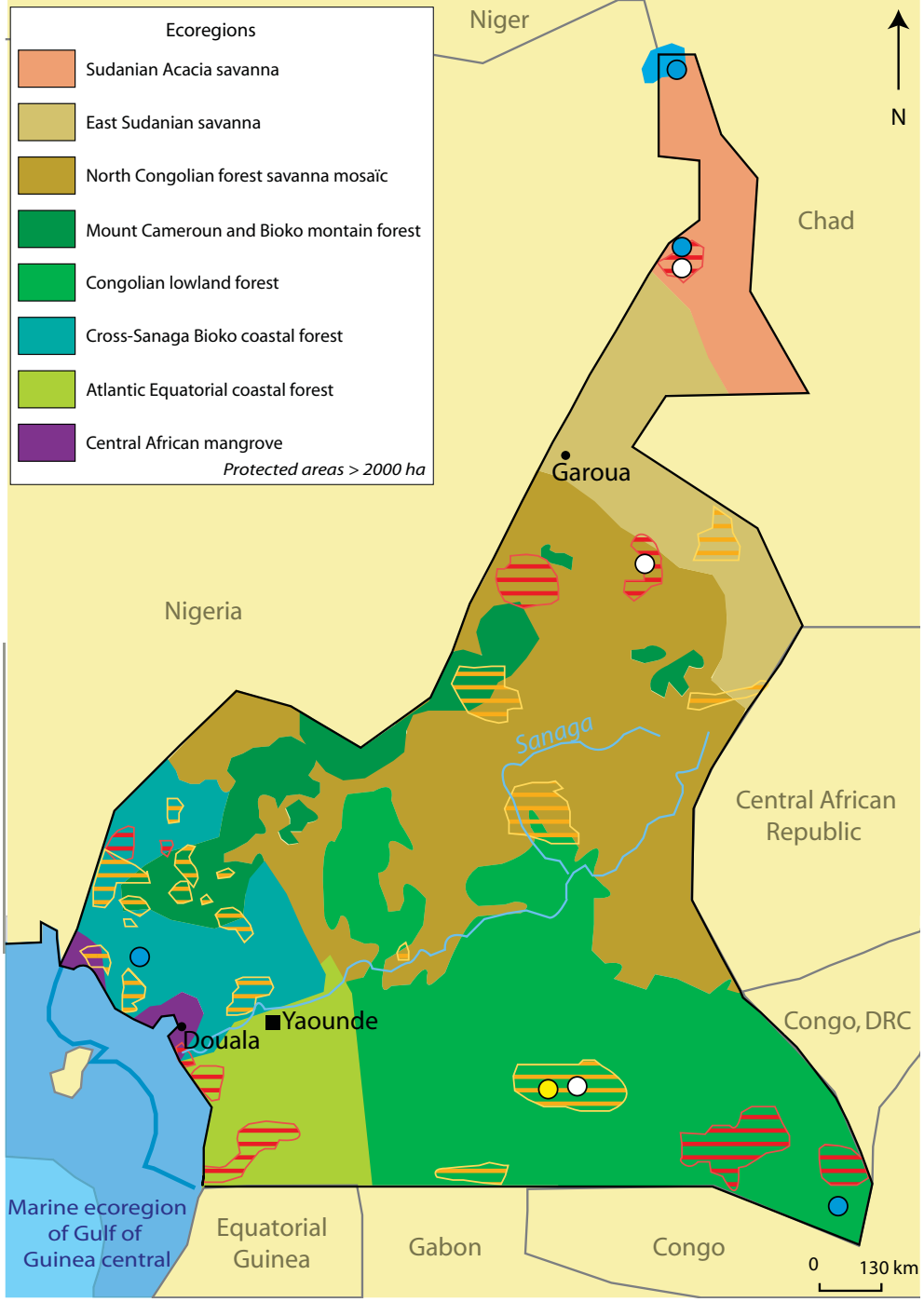
Forest resource exploitation is one of the economic pillars. The potential for nature-related tourism is very high. However, outside of the network of protected areas and despite a favorable legislation, natural ecosystems are degraded by overuse, in marine and coastal areas as well as inland and in aquatic systems.

GOVERNANCE

In 1994, Cameroon promulgated a law stating that permanent forests should cover at least 30 % of the land area and represent the ecological diversity of the country. Many projects plan the establishment of protected areas while the National Participatory Development Program involves local communities in the sustainable development process. The creation of community forests and village hunting zones empower local communities to sustainably manage forest and fauna resources.

FAUNA AND FLORA

The total number of plant species is estimated at 9,000 including 156 endemic species. There are 297 species of mammals, 849 of birds, 373 of reptiles and amphibians including 19 endemics, and 451 fish species. Threatened species include 74 plants, 14 birds, 3 reptiles, 53 (14 %) amphibians, and 51 (11 %) fish. There are 17 documented exotic invasive species.



Surface Area
475,500 km²

EEZ
312,000 km²

Population
2007 18.7 million
2020 24.3 million

Population Density
40 inhab./km²

GDP per capita
in Purchasing Power Parity
$ 2,093

Human Development Index
0.523

Ecological Footprint
in global hectares per capita
1.1

FOREST COVER : 213,975 km², 15 % under protection

WETLANDS : 40,192 km²

Terrestrial Protected Areas			% of total land area under protection
IUCN Cat. I-II	19	28,912 km²	6 %
IUCN Cat. III-IV-V	6	2,430 km²	
Marine Protected Areas	-	-	-
Mixed Protected Areas			
IUCN Cat. I-II	1	2,604.5 km²	100 %
IUCN Cat. III-IV-V	1	1,283.6 km²	100 %
			% under protection
Ramsar Sites	5	784,115 km²	-
Biosphere Reserves	3	8,760 km²	100 %
World Heritage Sites	1	5,260 km²	100 %
IBA	3	8,390 km²	21 %

An environmental impact assessment recommended the creation of protected areas as a mitigation measure to the construction of the oil pipeline from Chad. The Ma'an, Mbam, and Djerem National Parks were therefore created as well as a specific foundation, the FEDEC.

CENTRAL AFRICAN REPUBLIC

Located at the heart of the continent, as indicated by its name, the Central African Republic is a member of ECCAS and CEMAC. It is mainly formed of a vast peneplain with a central plateau. Gentle slopes in the north-east and north-west reach respectively 1,410m at Mt. Ngaouli and 1,330m at Mt. Toussoro. The tropical climate varies from an equatorial type in the south to a Sahelian type in the north. The economy is based on a mostly extensive agriculture, which accounts for half of GDP. The other main sectors are logging and mining.

The Yobé-Sangha Community Association and the Bayanga Development Committee participate in decision-making on the use of revenues generated by the Dzanga-Sangha Special Dense Forest Reserve; 90 % of tourism revenues remain on site (40 % to local communities, 50 % to the administration to maintain infrastructures), and only 10 % is transferred to the national level.

FAUNA AND FLORA

The flora of the Central African Republic includes 3,602 species of vascular plants with about a hundred endemics. With 209 mammal species and 537 bird species, the country's fauna includes many flagship species: bongo, buffalo (forest and savanna), chimpanzee, elephant, giraffe, gorilla, and hippopotamus. The aquatic fauna is represented by 260 fish species in the Oubangui Basin and 195 in the Chari Basin. Threatened species include 15 vascular plants, 7 mammals, 5 birds and one reptile.

ECOSYSTEM SERVICES

The majority of the Central African population meets its vital needs through direct use of biodiversity resources. Threats include bushfires, forest clearing for agriculture, various mining activities, degradation of gallery forests, chemical fishing, and the lack of capacities for in situ and ex situ conservation. The black rhinoceros disappeared from the country 20 years ago and the future is very fragile for fauna. There is still potential for hunting and ecotourism if necessary infrastructures are restored. Proliferation of mining operations inside protected areas and hunting sectors in the north and the east is a growing threat.

GOVERNANCE

A member of the COMIFAC, CAR faces a decline in fauna numbers: after the disappearance of the black rhinoceros, lions, elephants, and other large or medium-size antelopes are becoming rare in areas where they used to be numerous. Implementation resources are lacking and the country is not able to reduce poaching. Environmental preservation should mainly focus on measures and actions to reduce impacts of all types of irrational exploitation of the many natural resources.

Surface Area
622,984 km²

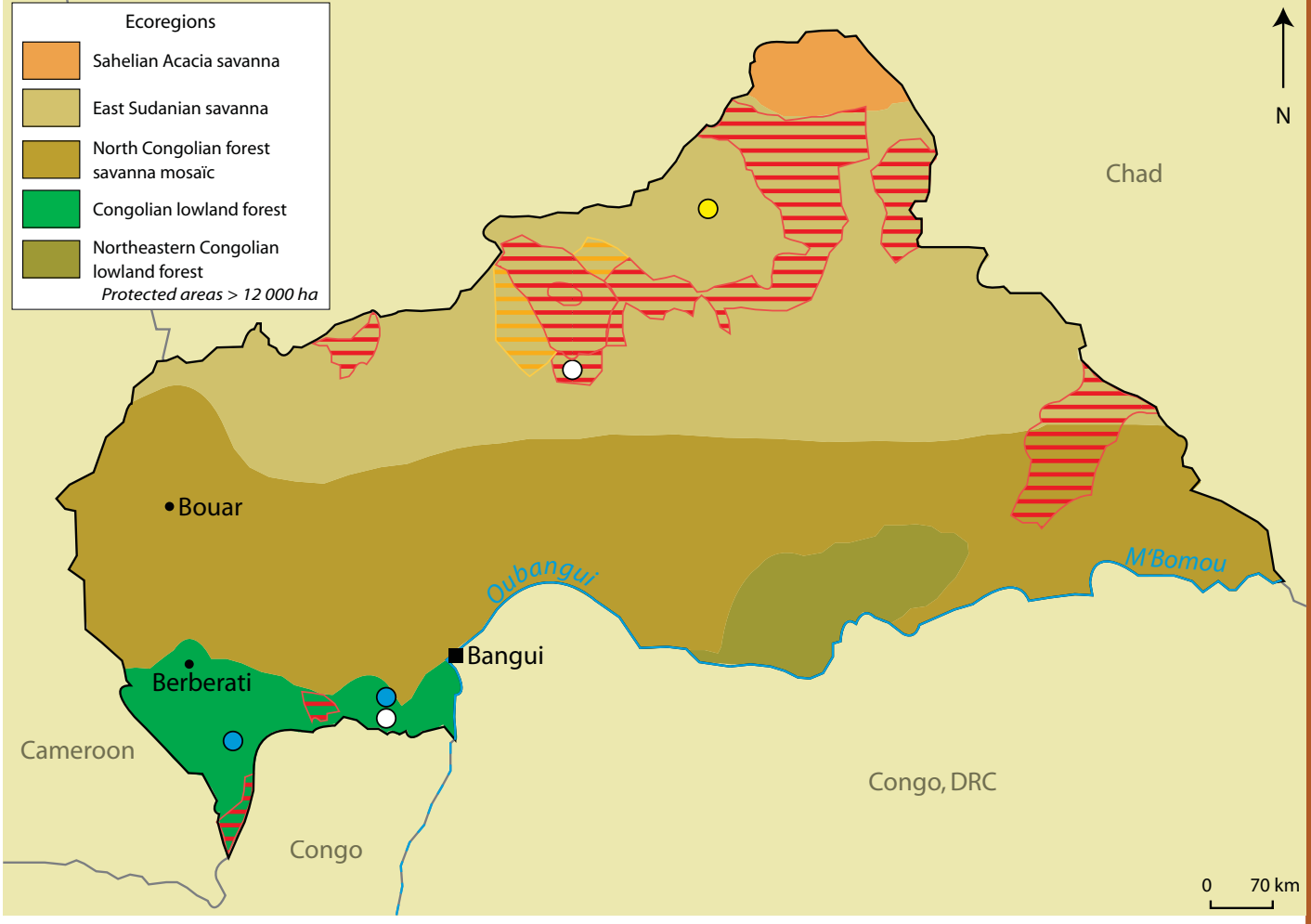
Population
2007 4.3 million
2020 5.3 million

Population Density
10 inhab./km²

GDP per capita
in purchasing power parity
2010 $ 774

Human Development Index
0.37

Ecological Footprint
in global hectares per capita
1.4



MAIN NATURAL AREAS

From south to north, there are successive vegetation formations within 5 ecoregions including: forested areas in the south-west, Sudanian-Guinean areas (wet tropical), beautiful wooded savannas and woodlands, Sudanian-Sahelian, and Sahelian. The country extends over two large watersheds: Lake Chad with the Logone and the Chari Rivers, and the Oubangui Basin attached to the Congo Basin. Flood plains to the north of the country are remarkable sites.

FOREST COVER : 283,136 km², 24 % under protection

WETLANDS : 31,500 km²

Terrestrial Protected Areas			% of land area under protection
IUCN Cat. I-II			11.1 %
IUCN Cat. III-IV-V	8	38,029 km²	
IUCN Cat. VI	8	30,446 km²	
			% under protection
Ramsar Sites	2	3,763 km²	0 %
Biosphere Reserves	2	10,846 km²	100 %
World Heritage Sites	1	17,400 km²	100 %

Located in the north of the Congo Basin, the Dzanga-Sangha site is renowned for the beauty of its tropical forest and its remarkable wildlife diversity. There is a very rich local culture, mainly through ancient traditions maintained by Sangha-Sangha fishermen and hunter-gatherer BaAka pygmies.

CHAD

Chad is at the biogeographic junction of Maghreb, Sub-Saharan Africa and the Western and Eastern regions of the continent. A member of CEMAC, CBLT, and CILSS, the country is considered one of the cradles of humanity since the recent discovery of "Toumai", a hominid more than 7 million years old. With the exception of Tibesti in the north, Ennedi in the east, and the Lam Mountains in the south, Chad is a vast sedimentary basin. The climate is Guinean in the southernmost part and Saharan in the entire northern part. The economy is mainly based on agriculture, livestock, and fisheries, in addition to mining.

The Zakouma National Park is considered to be a Sudanian wildlife sanctuary both for Chad and the sub-region. It is highly impacted by the recrudescence of poaching. Its significant elephant population is in dramatic decline and may lead to the local extinction of the species if appropriate measures are not urgently applied.

FLORA AND FAUNA

Flora remains poorly known. There are 1,600 documented species including 50 endemic species for the sole Tibesti Massif. Fauna is very diverse with 160 mammal species. With the exception of the Scimitar oryx and the black rhinoceros, extinct since the 1980/90s, Chad still harbors significant populations of Sudanian fauna and most Sahelo-Saharan antelopes and gazelles. There are 532 species of birds including 354 resident species, 80 reptiles, and about 120 fish. Based on the global Red List, threatened species include 11 plants, 12 mammals, and 7 birds.

ECOSYSTEM SERVICES

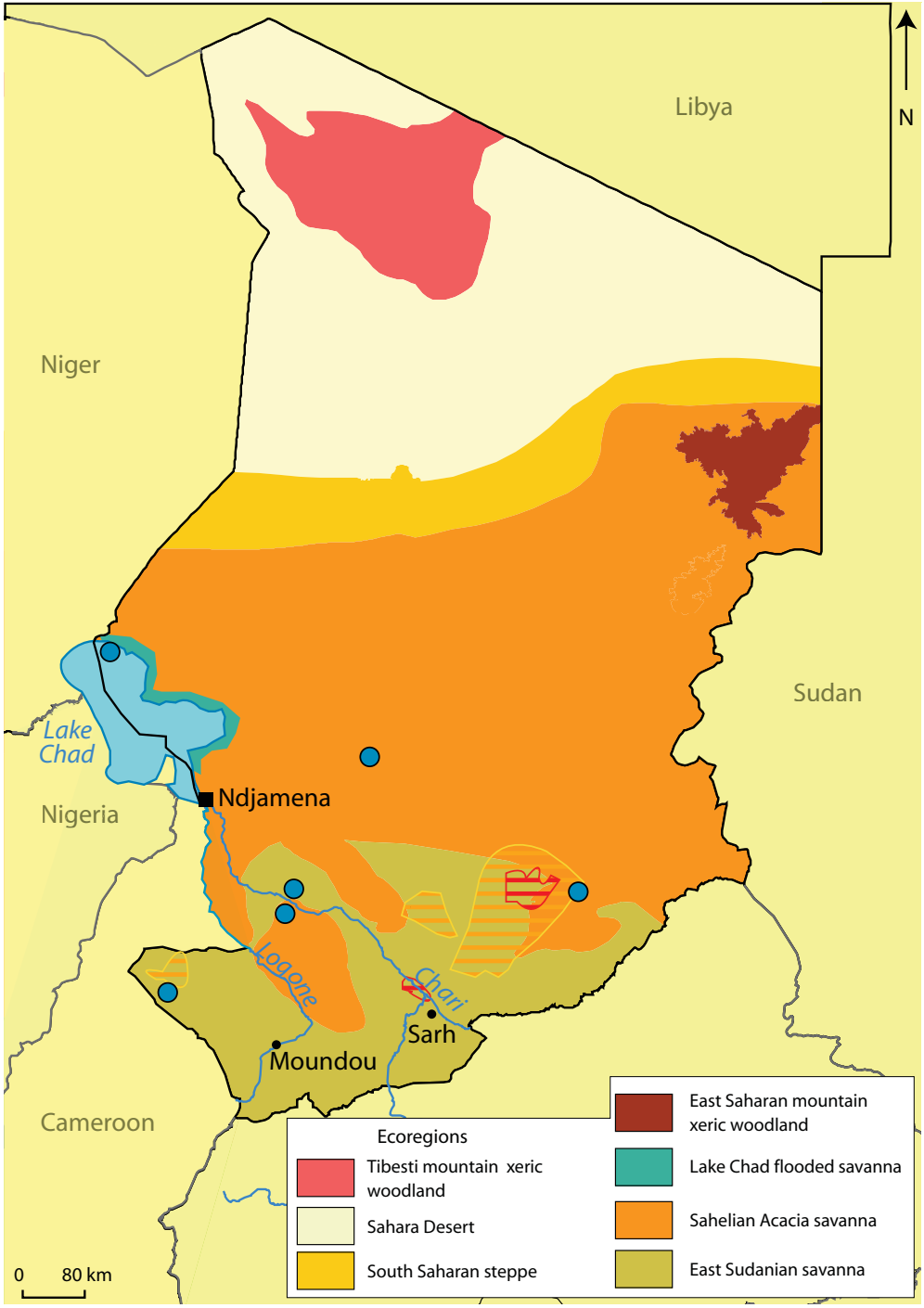
Chad faces numerous adverse climate and anthropogenic factors: repeated drought on 90 % of the country, clearing for subsistence and industrial agriculture, harvesting of fuelwood, uncontrolled bushfires, intensive fishing, and poaching. Livestock farming presents serious failures and contributes to poor management of natural resources and water. Lack of soil management plans leads to uncontrolled land-use with severe impacts on biodiversity. The water hyacinth, introduced in 1989, is a true scourge for Lake Chad.

GOVERNANCE

Armed conflicts have largely contributed to environmental degradation. Despite the involvement of national public institutions, NGOs and cooperation agencies, there is still a lack of human and financial resources to effectively manage environmental problems and a consultation and dialogue structure is missing to coordinate the various activities. In collaboration with 13 other countries, Chad actively participates in the program to preserve Sahelo-Saharan antelopes.

MAIN NATURAL AREAS

Chad is characterized by a diversity of ecosystems, from the southern Sudanian region up to the massifs, the Sahelian Ennedi Massif and the Saharan Tibesti massif. Vegetation includes savannas and woodlands in the south, and becomes steppe then desert and diminutive in the north. Lake Chad, shared with Niger, Nigeria, and Cameroon, is a huge reservoir with the Logone and the Chari the main rivers. The network of protected areas covers over 10 % of the 7 ecoregions of the country. However, the level of classification and protection is inadequate to ensure long term conservation, and most Ramsar sites are not protected.



Surface Area
1,284,000 km²

Population
2007 10.6 million
2020 14.9 million

Population Density
8.2 inhab./km²

GDP per capita
in purchasing power parity
$ 1,672

Humand Development Index
0.39

Ecological Footprint
in global hectares per capita
1.8

FOREST COVER : 26 % of the total land area, 1,8 % under protection

WETLANDS : 114,970 km²

Terrestrial Protected Areas			
IUCN Cat. I-II	2	4,140 km²	8.9 % of the land area
IUCN Cat. III-IV-V	7	110,800 km²	under protection
Ramsar Sites	6	124,050 km²	0.01 % under protection
IBA	8	146,490 km²	58.4 % under protection

Spirulina, a blue-green alga from the cyanobacteria family was discovered by scientists in Lake Chad in the 1950s. Local populations have been aware of its nutritious value for thousands of years (the “dihé”, enjoyed by pregnant women and during times of food scarcity).
Today, spirulina is used as a nutritional supplement all over the world and production farms are present in several countries.

CONGO

A member country of ECCAS and CEMAC, the Republic of the Congo, colloquially called Congo-Brazzaville straddles the Equator and opens on to 169km of Atlantic Coast. Besides coastal habitats, landscapes are divided into forests (60 %) and savannas (40 %). Climate is equatorial in the north, with wet tropical and sub-equatorial variations respectively in the south-west and in the center of the country. Average rainfall is 1,650 mm. The economy is mostly based on oil and gas (90 % of all exports) explorations along the coast and offshore, making Pointe-Noire the economic capital of the country.

MAIN NATURAL AREAS

Congo-Brazzaville has a dense river system with a dozen smaller rivers and two main ones, the Congo and the Kouilou-Niari. The main landscape components include, from south to north, the narrow coastal plain, the Mayombe Range near the coast and the Chaillu Range separated by the Niari-Nyanga plain, the Batéké Plateaus, the Congolese basin in the north-east and the sandstone plateaus reaching 1,040 m at Mt. Leketi. In the 4 recognized ecoregions of the country, vegetation formations are very diverse: the Guinean-Congolese and Zambezian regions include rainforests, woodlands, gallery forests, swamps, grassy savannas, flooded savannas, and forest-savanna mosaics.
While it covers over 10 % of the land area, the network of protected areas does not adequately represent all ecosystems as forest formations are its main component.

FLORA AND FAUNA

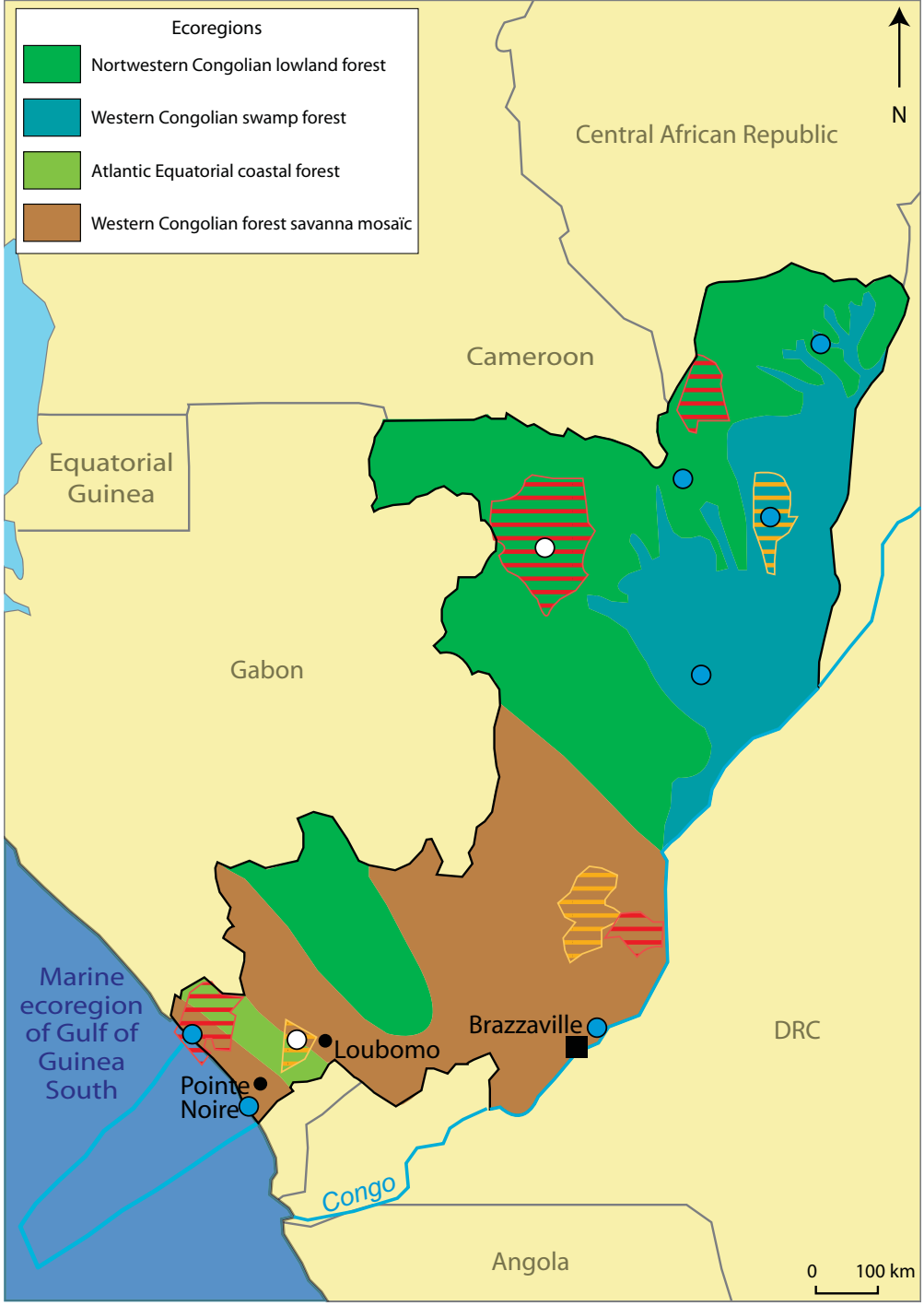
Habitat diversity is a source of species richness; there are an estimated 6,500 higher plants, but only about 4,000 have been documented, 200 for mammals, 617 for birds, 45 and 38 respectively for reptiles and amphibians, and 76 for fish. The Red List of threatened species includes 35 plant species, 12 mammals, 3 birds, 2 reptiles, and 21 fish species. There are ten exotic invasive species.

ECOSYSTEM SERVICES

The vast forests to the south of Congo have been exploited since the 1940s but there are still numerous key species. However, selective and intensive logging of some tree species undeniably represents an important threat. Extinction of some partially protected animal species is alarming. The representative fauna of the Congo savannas seem to be the most affected by unsustainable management.

GOVERNANCE

For plant species, only high commercial value species are protected by the forest code with regards to logging. Several protected areas have been expanded, notably the Odzala National Park (now Odzala-Kokoua). Among coastal habitats and wetlands, the Conkouati-Douli National Park was also extended to protect marine habitats and the Lake Tele Community Reserve was created. Congo joined the Ramsar convention and succeeded in inscribing the Lake Télé/Likouala-aux-Herbes area, a vast area in the north of the country rich in swamp forests, flooded savannas, and river grasslands with significant biodiversity.



Surface Area
342,000 km²

EEZ
60,000 km²

Population
2007 3.6 million
2020 4.7 million

Population Density
10.5 inhab./km²

GDP per capita
In purchasing power parity
$ 4,599

Human Development Index
0.6

Ecological Footprint
In global hectares per capita
1

Reflecting the species richness of Congolese flora, over 800 species of medicinal plants have been documented in the country.

FOREST COVER : 210,000 km² *

WETLANDS : 84,365 km²

Terrestrial Protected Areas		36,554 km²	10.6 % of land area
IUCN Cat. I-II	3	22,461 km²	
IUCN Cat. III-IV-V	5	12,506 km²	
IUCN Cat. VI	6	1,587 km²	
Marine Protected Areas	-	-	-
Mixed Protected Areas			
IUCN Cat. I-II	1	5,049.5 km²	100 % under protection
Ramsar Sites	7	84,542.59 km²	16 % under protection
Biosphere Reserves	1	1,360 km²	100 % under protection
World Heritage Sites	3	22,461 km²	100 % under protection
IBA	6	30,060 km²	90.2 % under protection

* including 13 million hectares of production forests and 7 million hectares of flooded forests

With the Nouabalé-Ndoki National Park, Congo participates in the common management of the Transboundary Forest Complex of Sangha Tri-National, which also includes the Lobeke National Park (Cameroon), and the Dzanga-Ndoki National Park (CAR), as well as periphery areas.

DEMOCRATIC REPUBLIC OF THE CONGO

A country member of ECCAS, SADC, and COMESA, the Democratic Republic of the Congo (DRC) shares its borders with 9 countries. It is the third largest country in Africa and the 12th largest in the world. Climate varies from equatorial to tropical with a montane influence in the east. It has one of the highest rainfall levels in Africa (an average of 1,545 mm/year). The country has high development potential with numerous natural and mineral assets, and the possibility to boost industrial activities for potential national or sub-regional markets.

DRC has the most important water reserves in Africa (60 %) and one of the largest equatorial forest ranges on Earth (47 % of the tropical forest range of Africa and 6 % of the world's tropical reserves). Some of the rarest and most remarkable animal species are found in the country, such as the bonobo, the okapi, and the rare mountain gorilla. More than half of the 720 remaining members of the latter species live in the east of the country.

FLORA AND FAUNA

The importance of DRC for biodiversity conservation is reflected in its number of species – higher plants: 10,007, mammals: 409, birds: 1,086 including 345 nesting birds, reptiles: 304, amphibians: 215, and fish: 669 (in the central basin alone). Threatened species include 65 plants, 29 mammals (with a particularly high rate – 7%), 32 birds, 3 reptiles, and 13 amphibians.

ECOSYSTEM SERVICES

Instability over the past decades has strongly affected natural resources, particularly fauna. The last northern population of white rhinoceros in the Garamba Park is now extinct and flagship species such as the mountain gorilla and the elephant continue to pay a heavy toll to poaching. However, there are significant natural assets. For instance, the country has huge hydroelectric power potential as the Inga Dam at its maximum capacity is supposed to be able the feed the entire continent.

GOVERNANCE

DRC implemented a National Biodiversity Strategy and Action Plan but implementation has been prevented by lack of funding resources. A specific strategy for protected areas was developed in November 2004, contributing, among other results, to the integration of wetlands into the network of parks and reserves, managed by a special institution, the Institut Congolais de Conservation de la Nature - ICCN .

Surface Area
2,345,000 km²

EEZ
1,600 km²

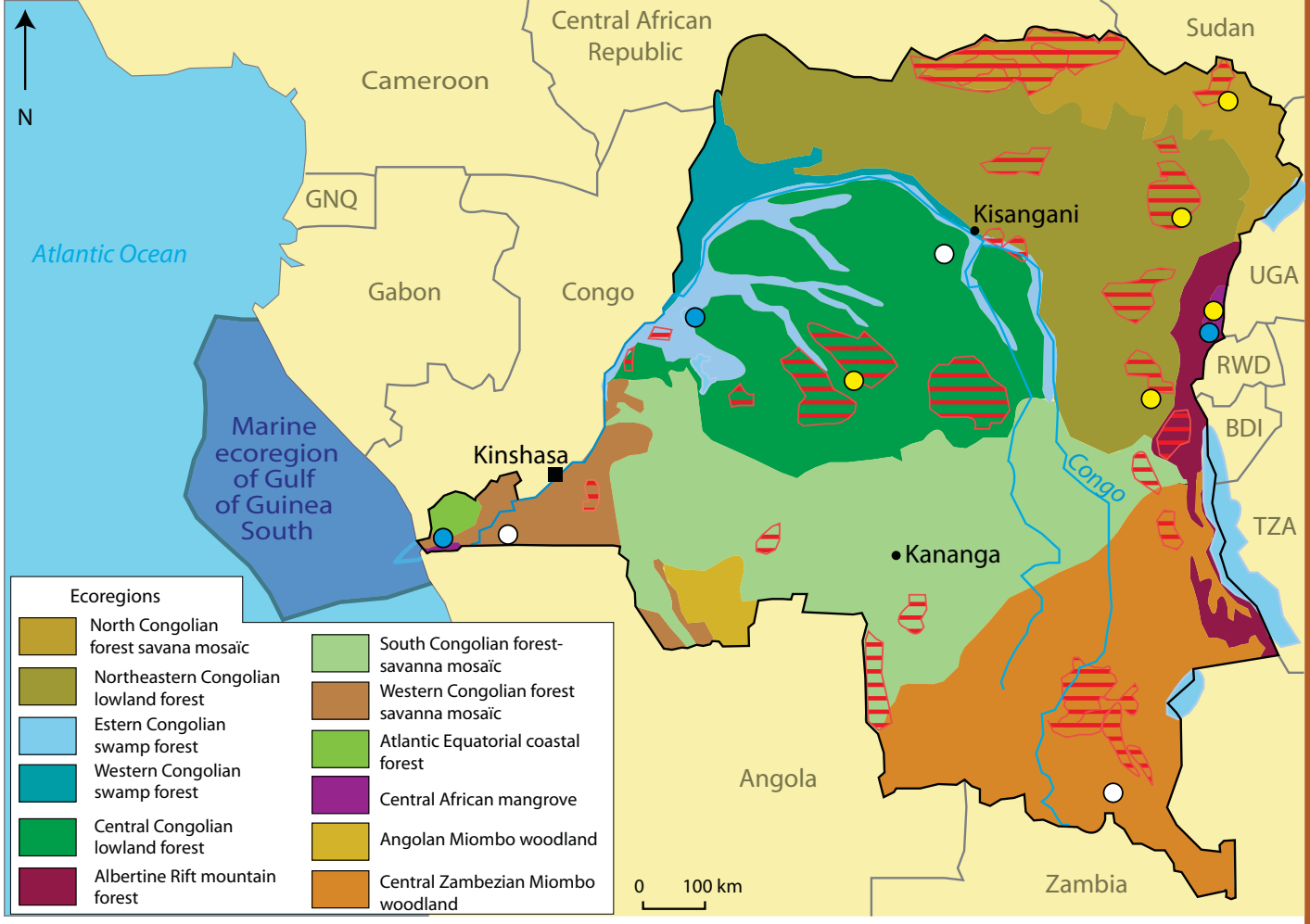
Population
2007 62.5 million
2020 87.6 million

Population Density
27 inhab./km²

GDP per capita
in purchasing power parity
2010 $ 347

Human Development Index
0.39

Ecological Footprint
in global hectares per capita
0.7



MAIN NATURAL AREAS

One third of the country is covered with a vast central plain, dominated by Equatorial forests and marshes. Plateaus rise gradually in the north and in the south, up to an altitude of a thousand meters. In the east and north-east parts of the country, a series of lakes and volcanoes are found at the edge of the East African Rift with mountain ranges culminating at 5,000 m. About thirty major rivers run over 20,000 km towards the Congo River. The mouth of the Congo River generates the world's second largestdischarge flow (30,000 m3/s), after a course of 4,670 km. Forests cover about half of the land area. Among the 19 main ecosystems, 15 (grouped in 12 ecoregions) are represented in the protected areas.

FOREST COVER : 1,450,000 km², 10 % under protection

WETLANDS : 122,100 km²

			% of the land area under protection
Terrestrial Protected Areas			
IUCN Cat. I-II	8	85,770 km²	7.7 %
IUCN Cat. III-IV-V	2	14,486 km²	
IUCN Cat. VI	10	81,097 km²	
Marine Protected Areas			
IUCN Cat. I-II	1	760 km²	0.4 % of the EEZ
Ramsar Sites	3	74,356 km²	12 % under protection
Biosphere Reserves	3	2,674 km²	100 % under protection
World Heritage sites	5	69,006 km²	100 % under protection
IBA	3	74,356 km²	100 % under protection

The Virunga National Park (formerly Albert) was the first park created in Africa. 23 rangers and conservationists were killed defending this park and its elephants against invaders. At the beginning of the 1960s, Sergent Sauswa,along with his colleague Saambili were the first to sacrifice themselves for nature, they fell as heroes, fighting against poachers, mainly from Uganda. Near the hot water springs at the foothills of the Kasali Mountains, near the Rutshuru River, a monument near the May ya Moto locality honors their memory.

EQUATORIAL GUINEA

Equatorial Guinea is a member country of ECCAS and CEMAC and is divided into two geographic entities, a region with islands of volcanic origin (Bioko – formerly Fernando Po - and Annobon Islands, 650 km offshore) and a continental part (Mbini, formerly Rio Muni) with several adjacent islets (Corisco, Elobey Grande, and Elobey Chico). The discovery of important oil deposits at the beginning of the 1990s has transformed the national economy, even if 70 % of the population still pursues agricultural practices.

Annobon Island (23,000 hectares), the Rio Muni Estuary Nature Reserve (80 000 hectares), and the Ntem River (33,000 hectares) were recently inscribed on the Ramsar list. The two latter ones are coastal wetlands with a great richness of water birds, the first one at the border with Gabon, and the second at the border with Cameroon.

FLORA AND FAUNA

Equatorial Guinea is located in a high biodiversity area. The country has 3,250 species of plants, 184 of mammals (with 16 primate species), 418 of birds (with 172 nesting birds), and 91 of reptiles. Threatened species include 63 vascular plants, 18 mammals (including the Ogilby duiker, the drill, and the Preuss's monkey – one of the ten most endangered primates in Africa), 5 birds, and 5 reptiles (including 4 species of sea turtles: hawksbill, leatherback, Olive ridley, and green). Island isolation has led to a very high level of endemism: for instance, 28 % of mammals and 32 % of Bioko resident birds are endemic sub-species.

ECOSYSTEM SERVICES

Despite exploitation of oil deposits, Equatorial Guinea has kept its agricultural tradition. Agricultural extension is done at the expense of forest cover. Agriculture and logging are increasing and have severely degraded forests, including on Bioko Island where logging used to be prohibited. However, the island is still of high biological value and has a potential for ecotourism development.

GOVERNANCE

Legal foundations for environmental protection were developed at the end of the 1990s. They formed the framework for the creation of protected areas, starting with the Monte Alen Park in 1998 in the Niefang Mountain range. Through other creation efforts, 21 % of the land area is currently under protection but conservation actions remain insufficient to prevent threats.

Surface Area
28,051 km^2

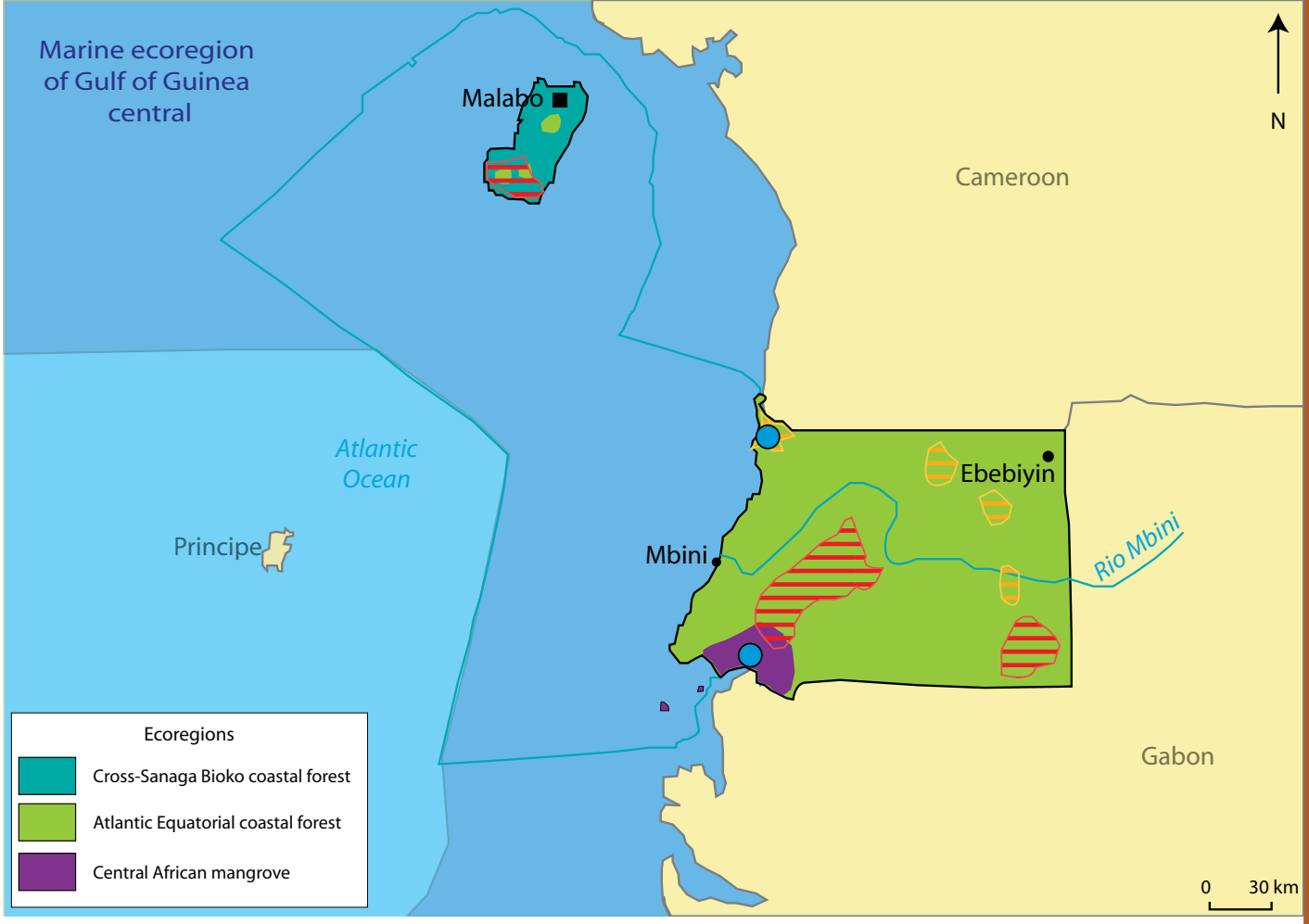
EEZ
312,000 km^2

Population
2007 0.6 million
2020 0.9 million

Population Density
21,3 inhab./km^2

GDP per capita
in purchasing power parity
$ 16,158

Human Development Index
0.72



MAIN NATURAL AREAS

Equatorial Guinea is a forest country; 60% of the land area is still covered with forest formations and the percentage reaches 75 % in the continental province. Wet dense forests and mangroves are the characteristic natural formations in the country; Bioko Island has a great diversity of landscapes with highlands culminating at 3,011m at Pico Basile. One of the characteristics of the island is the great rainfall variation between the south, holding a world record of 10,900 mm of rain annually, and the north, with an average annual rainfall of 2,000 mm. The country's 3 ecoregions are well protected with 13 protected areas, including 2 on Bioko Island (Pico Basile and Gran Caldera de Luba). Annobon Island is fully protected.

FOREST COVER : 22,000 km², 28 % under protection

WETLANDS : 157 km²

Terrestrial Protected Areas			% of the total land area
IUCN Cat. I-II	5	3,545 km²	21 %
IUCN Cat. III-IV-V	8	2,315 km²	
Ramsar Sites	3	1,360 km²	

The Goliath frog is one of the most spectacular endemic species of Equatorial Guinea, with a distribution restricted to the lowland wet forests of south-west Cameroon and Equatorial Guinea. It is the largest frog on Earth, measuring up to 40 cm and weighing up to 4kg. It can jump up to 3 meters.

GABON

A member of the ECCAS and CEMAC, Gabon has the highest forest cover per capita in Africa. It includes three large geomorphologic areas: a coastal basin on sedimentary soils, a mountain range interrupted by the Ogooue River Valley, and an area of plateaus to the east. Climate is of equatorial and wet tropical types, with a rainfall level between 1,400 mm and 3,200 mm. 84 % of the population lives in urban areas. The economy depends on exploitation of both underground, and forest raw material.

Gabon is home to half of the hundred or so species of begonias of the continent. One third is endemic and with 211 plant species documented on 200 m□ the Ekobakoba Station near Makokou holds one of the world's records.

FLORA AND FAUNA

Flora and fauna have a great specific richness with an exceptional rate of plant endemism, notably in the old Pleistocene refuges: over 10,000 species of higher plants with at least 6,000 trees, 130 mammals including 20 primates (with one endemic species and 2 endemic sub-species) and 6 cetaceans, 650 bird species, 3 African crocodile species, and about a hundred amphibians. The Cristal and Birougou Ranges are two of the richest regions in tropical Africa for plant species. However, there are numerous threatened species (108 vascular plants and 52 vertebrates, including 14 mammals and 6 reptiles / amphibians). There are 11 documented exotic invasive species.

ECOSYSTEM SERVICES

While the Gabonese forest is exploited on about 60 % of its surface, ecological processes and natural habitats are still well preserved. However, localized over-exploitation of natural habitats, particularly related to excessive hunting or fishing pressures are increasingly noted. Natural habitats, notably marine and coastal, are vulnerable to pollution. Coastal erosion is increasing due to sand collection. Most importantly, high deforestation rates observed over the past years could rapidly lead to the loss of forest resources without imposed sustainable management.

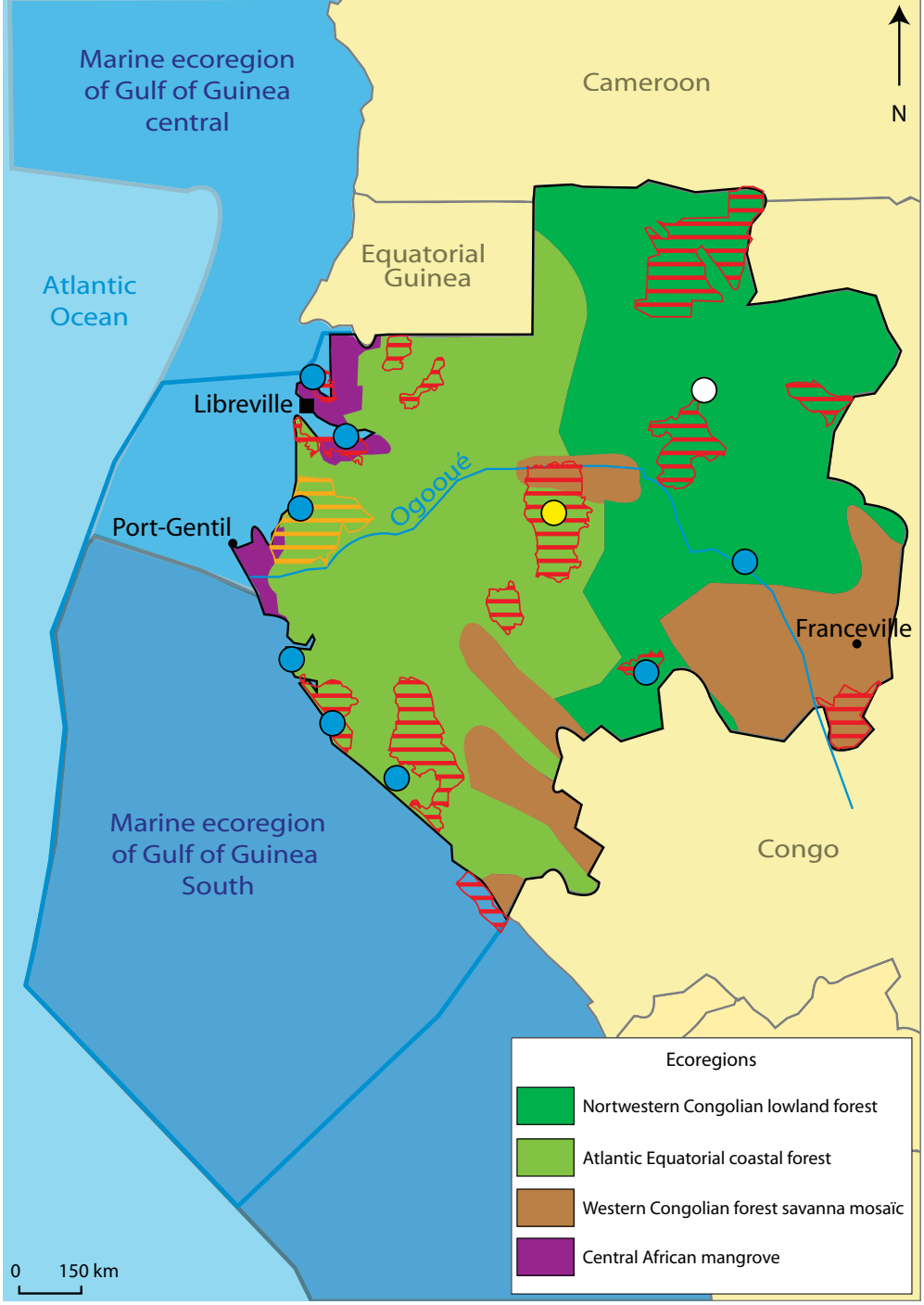
GOVERNANCE

Gabon has established the needed legal and institutional foundations for sound environmental management and has created a National Parks Agency in 2007. However, lack of staff and field resources considerably limit the effectiveness of all conservation missions.

MAIN NATURAL AREAS

The Gabonese forest is of heterogeneous types: mangroves, coastal forests, swamp forests, lowland and mountain dense forests, or forest-savanna mosaic. Each formation type has local features such as inselbergs or natural clearings. The vast river, riparian, and lagoon system covers a total area of 10,750 km^2, with over 3,000 km of watercourses, in addition to 950 km of coastline. The Ogooue Delta is one of the largest in Africa at 5,000 km^2.

In 2002, Gabon took a historical decision with the creation of a network of 13 national parks, covering a total area of 30,120 km^2 including 900 km^2 of marine habitat. There are several other natural areas, notably the Wonga Wongué Wildlife Reserve (3 800 km^2) and small sites such as the Mt. Iboundji Sanctuary. Gabon has 4 distinct ecoregions.



Surface Area
267,670 km²

EEZ
213,000 km²

Population
2007 1.4 million
2020 1.8 million

Population Density
5.2 inhab./km²

GDP per capita
in purchasing power parity
$ 14,123

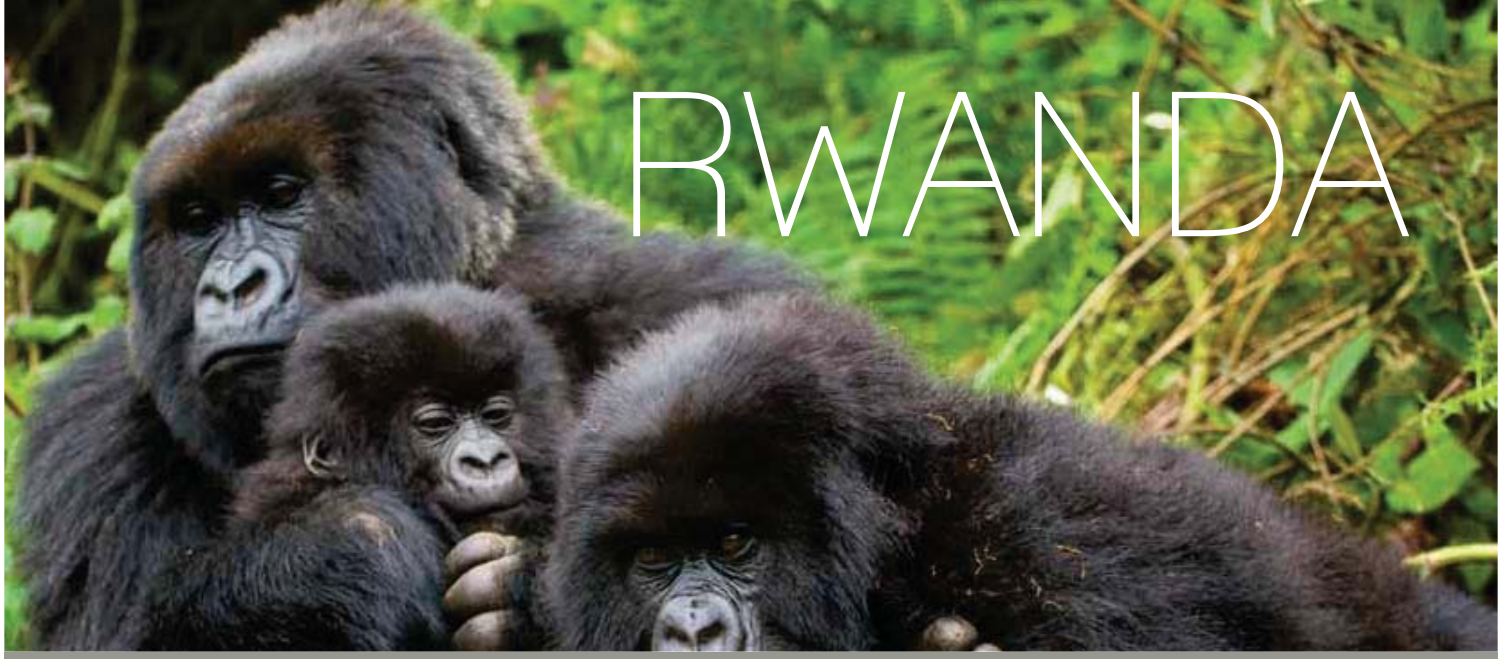
Human Development Index
0.76

FOREST COVER : 46 % of the total land area, 23 % under protection

WETLANDS : 43,188 km²

Terrestrial Protected Areas			% of land area under protection
IUCN Cat. I-II	12	29,220 km²	10.9 %
IUCN Cat. III-IV-V	1	3,800 km²	1.4 %
IUCN Cat. VI	-		
Marine Protected Areas IUCN Cat. I-II	1	900 km²	0.3 %
Ramsar Sites	9	28,185 km²	63 % under protection
Biosphere Reserves	1	150 km²	Protected
World Heritage Sites	1 mixed	4,970 km²	Protected
IBA	7	22,480 km²	94 % under protection

The 2005 Environmental Sustainability Index Report for 142 countries ranks Gabon in first place for African countries, in 12th place globally, and 4th for non OECD-members. The creation of a network of protected areas is a remarkable initiative, to be fully accomplished when the establishment of management services is finalized in the field.



RWANDA

Rwanda is located at the limit of Central and East Africa. The country is a member of COMIFAC. It includes plateaus and hills (average altitude of 1,250m) gradually rising from the south-east to the west and the north to the Congo-Nile Crest (culminating at 3,000 m) and a volcano range reaching 4,507 m. The sub-equatorial climate is tempered by altitude. The economy is mainly based on agriculture, employing 90 % of the workforce, contributing to 40 % of the GDP, and the main source of foreign exchange in the country.

One third of the world population of mountain gorillas lives on the Rwandan slopes of the Virunga Mountains, where 5 groups habituated for tourism can be observed. Dian Fossey worked 18 years on this highly threatened species. She is buried at the Karisoke Research Center, where Rwanda keeps her memory alive.

FAUNA AND FLORA

About 3,000 species of plants, 151 of mammals, 670 of birds, and 38 of amphibians are found in Rwanda. Threatened species include 3 higher plants, 11 mammals or 7 % (the last black rhinoceros of the Akagera Park disappeared in July 2006), 11 birds, and 8 amphibians. The Volcanoes National Park is home to several species of primates, among the golden monkey, endemic to the Volcanoes Range, and many mountain gorillas (30 % of the world population). Among the species found at Nyungwe National Park (including 148 species of orchids, out of which 19 are endemic and 75 species of mammals including 13 primates or 25 % of the total for the continent), many species are restricted to the Albertine Rift region; 52 species are considered threatened at the national level.

ECOSYSTEM SERVICES

The biggest issue in Rwanda is deforestation/clearing for firewood, still the main source of energy, and for agricultural lands. Excessive pasture and bad management of large marsh areas are additional threats. Direct environmental impacts worsen soil erosion and about two thirds of all cultivated lands are characterized by soil alkalinity and depletion.

GOVERNANCE

The biggest issue in Rwanda is deforestation/clearing for firewood, still the main source of energy, and for agricultural lands. Excessive pasture and bad management of large marsh areas are additional threats. Direct environmental impacts worsen soil erosion and about two thirds of all cultivated lands are characterized by soil alkalinity and depletion.

Surface Area
26,340 km²

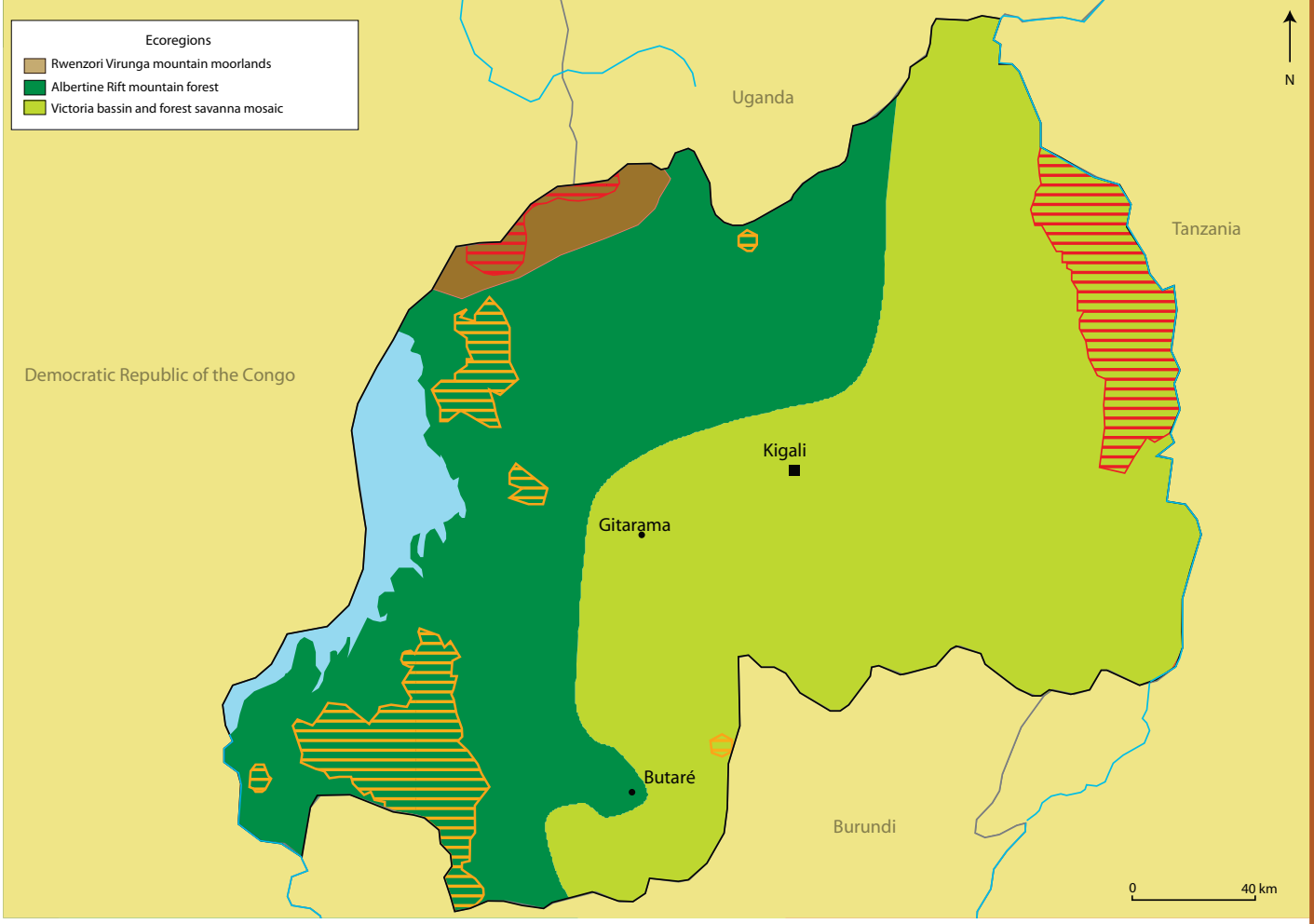
Population
2007 9.7 million
2020 13.2 million

Population Density
368 inhab./km²

GDP per capita
in purchasing power parity
$ 1,143

Human Development Index
0.460

Ecological Footprint
in global hectares per capita
0.9



MAIN NATURAL AREAS

Rwanda is bordered to the west by Lake Kivu. Several vegetation formations can be found, including montane rainforests, marshes, and various woodlands and savannas. The country has 3 ecoregions including the Albertine Rift montane forest. The Congo-Nile Crest divides the dense water system between the Upper Nile Basin (76 % of the land area) and the Congo-Nile Basin (24 % of the land area).

FOREST COVER : 3,160 km², 12 % of the land area

WETLANDS : 3,453 km²

Terrestrial Protected Areas			7.9 % of the land area
IUCN Cat. I-II	2	1,020 km²	
IUCN Cat. III-IV-V	3	1,048 km²	
Ramsar Sites	1	68 km²	-
Biosphere Reserves	1	120 km²	-
IBA	7	2,538 km²	-

Environmental protection has become a priority, if only for the importance of sustainable agriculture for the national economy or for biodiversity values, as goods and services provided annually by the Nyungwe Forest are estimated at more than 285 million dollars. “Green growth” is part of the governmental policy with, among other actions, the prohibition of plastic bags throughout the country.

SAO TOME AND PRINCIPE

The Republic of São Tomé and Príncipe is an archipelago located in the Gulf of Guinea, 350km off the coast of Central Africa. The country has an equatorial climate and includes two main islands, São Tomé (850 km²) and Principe (142 km²), and about fifteen islets. The Equator runs through the largest islet, das Rolas. The highest point is 2,024 m at Pico São Tomé. Average annual rainfall varies between 2,000 and 3,000 mm with extreme values of 900 and 6,000 mm (respectively in the north-east and the south-west of São Tomé). This ECCAS country member pins its hopes on hydrocarbons and tourism.

Young people show their ability to carry out environmental protection actions through the organized preservation of endangered animal species and protection of coasts and/or forests.

FLORA AND FAUNA

Endemism rates are high with 134 endemics out of 895 species of vascular plants, 25 endemic species out of 63 bird species, 7 endemics out of 16 reptiles, and 9 species of amphibians, all endemic to the archipelago. The country is home to 11 species of terrestrial mammals, mainly rodents. Marine mammals are represented by 3 species, including 2 critically endangered species. Out of the terrestrial mammals, 6 species were introduced but there are only 4 alien invasive species. Due to its high endemism rate for birds (over 30 %), São Tomé and Principe is the second priority area in the world for conservation of tropical forest birds, after Madagascar.

ECOSYSTEM SERVICES

The country's biological resources are a potential source of wealth, with significant benefits to the population if sustainably managed and exploited. The archipelago harbors about 300 species of medicinal plants used by indigenous communities. Unfortunately, coastal erosion and beach destruction due to sand collection, logging, uncontrolled hunting, introduction of exotic species – including pests and viral infections – are the main threats to the original biodiversity. The situation poses a threat to indigenous communities, who strongly depend on the country's natural resources.

GOVERNANCE

Under the CBD, the main objectives include improvement of *in situ* and *ex situ* conservation, valorization of biodiversity, enhancement of the legal and institutional framework, and creation of mechanisms for fair and equitable sharing of biological resources. Urgent measures should be taken to protect sea turtles on all beaches and strictly preserve the south-western forests, a crucial step to ensure the survival of unique bird species.

Surface Area
1,001 km²

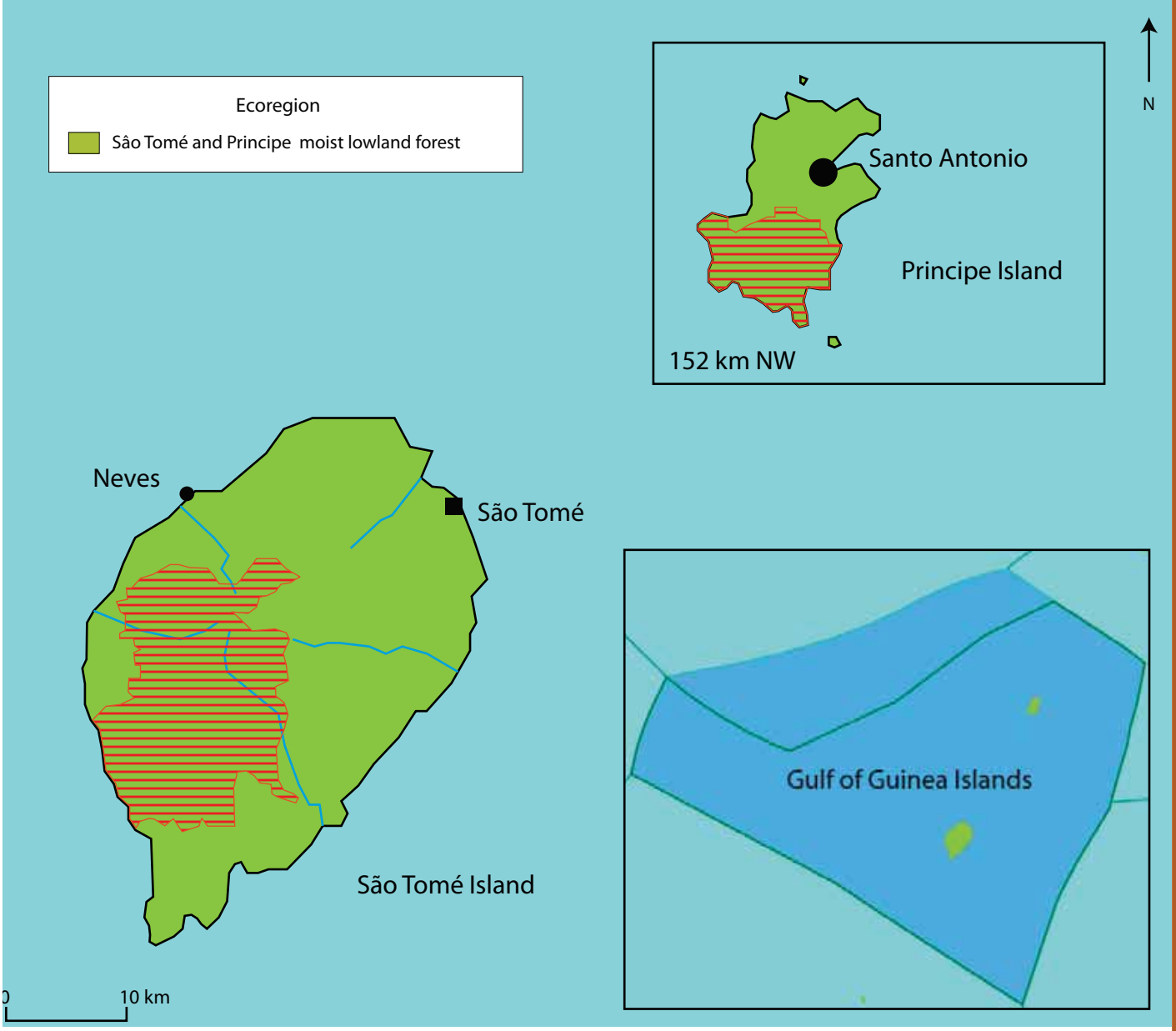
EEZ
431,660 km²

Population
2007 0.2 million
2020 0.2 million

Population Density
156 inhab./km²

GDP per capita
in purchasing power parity
1,647 $

Human Development Index
0.651



MAIN NATURAL AREAS

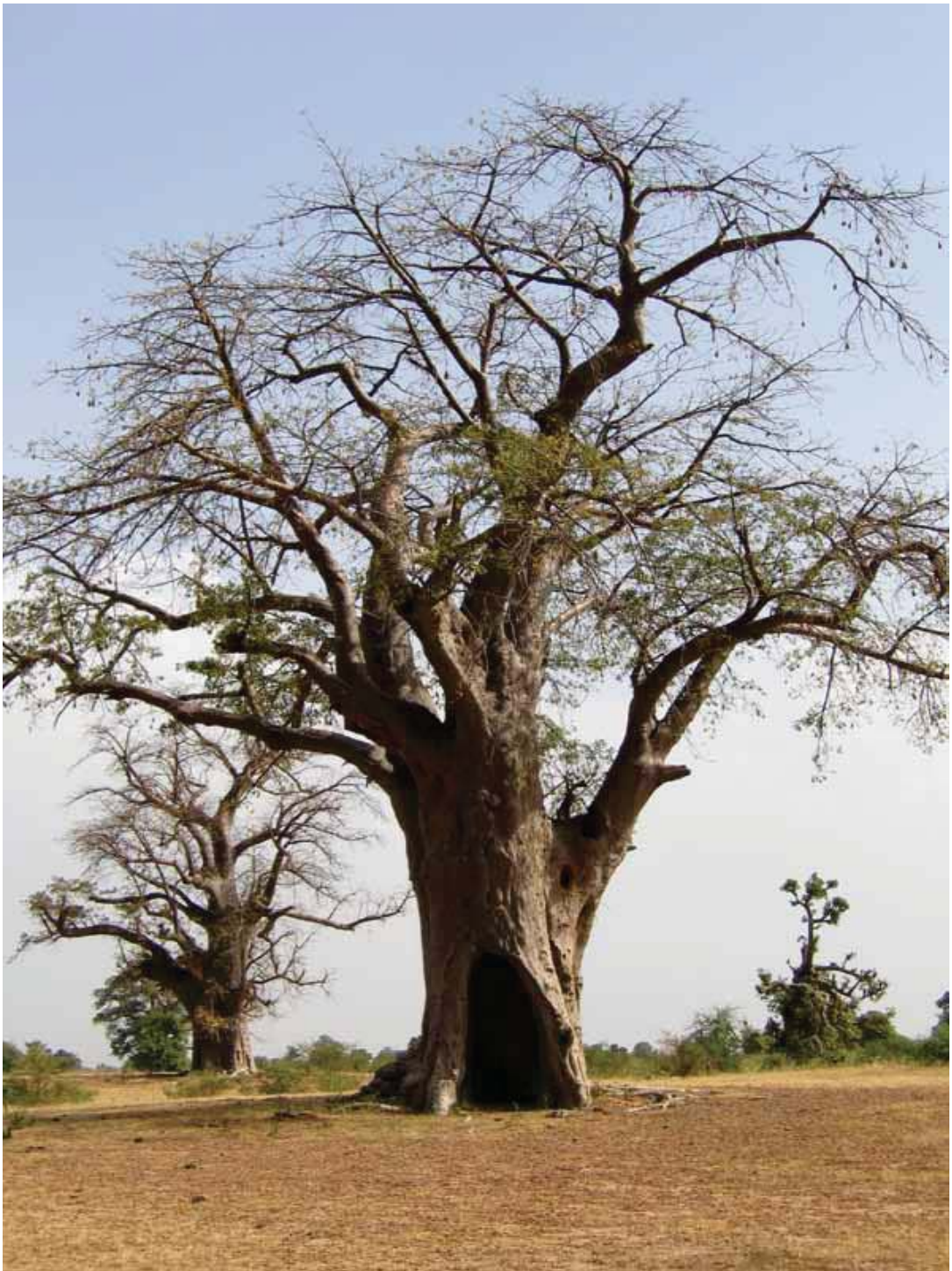
The São Tomé and Príncipe archipelago is of volcanic origin. The country has 209 km of coastline and harbors over 50 watercourses. Forest once covered 90 % of the country, with the exception of a narrow coastal strip in the north/north-east, dominated by wooded savanna. The country belongs to the Afrotropical ecoregion, characterized by tropical and subtropical moist broadleaf forests.

FOREST COVER : 610 km² or 61 % of the land area

Terrestrial Protected Areas	2	290 km²	28.97 % of the land area
IUCN Cat. I-II	1	45 km²	under protection
IUCN Cat. VI	1	245 km²	-
Ramsar Sites	1	0.23 km²	-
IBA	5	250 km²	-

Associação Monte Pico is an NGO set up under Sao Tomean law; created in 2006, it aims to protect the environment of the archipelago through tourism development and promotion of responsible tourism practices, as well as adequate management of the Obô Nature Park, in association with neighboring rural communities.

WEST AFRICA



BENIN
BURKINA FASO
CAPE VERDE
CÔTE D'IVOIRE
GAMBIA
GHANA
GUINEA
GUINEA-BISSAU
LIBERIA
MALI
MAURITANIA
NIGER
NIGERIA
SENEGAL
SIERRA LEONE
TOGO

Regional Surface Area
6,275,782 km²

Population
2007 286 million
2020 360 million

West Africa stretches on 3,510 km eastward (from Cape Verde to the eastern border of Nigeria) and 2,330 km from north to south (from the northern border of Mali to the southernmost point of the Niger Delta) and encompasses 16 countries, including 12 members or observers of the Francophonie representing about 130 million inhabitants. Integration progress is reflected by the number of existing sub-regional organizations : the Economic Community of West African States - ECOWAS (15 countries), the West African Economic and Monetary Union – UEMOA (8 countries), the Permanent Inter-State Committee for Drought Control in the Sahel – CILSS (5 countries), the Conseil de l'Entente ("Council of the Entente") (5 countries), and the Mano River Union (4 countries).
West Africa's northernmost region lies in the Sahara, the world's largest desert (8 million km²). The Sahel, "the arid shore of an abandoned sea", borders the desert in the south and covers another major part of the region – the word Sahel is derived from a medieval Arabic word for shore or border.

BIOGEOGRAPHICAL DATA

West Africa was not much impacted by the tectonic events of the beginning of the Tertiary. The region illustrates the "triumph of horizontality" as altitude here rarely exceeds 500 meters (Avenard, 1971). A few ridges and ranges break the flatness of the terrain (the Saharan Ridge from the Adrar des Ifoghas to Tibesti through the Hoggar, the Guinean Ridge from the Fouta Djallon to the Nimba Range, the Atakora Mountains in Togo, and the Jos Plateau in Nigeria).

Over three-quarter of the countries (13 out of 16) have a sea frontage coastline of about 5,000 kilometers. Forming a 4,200 km bend, the Niger Basin dominates the West African river system (its watershed covers 2.1 million km² and includes ten countries.

The regional physical environment can be illustrated as a wide peneplain structured by four axes: the Atlantic Sea coastline, the Saharan southern ridge, the Guinean Ridge and the Niger Bend.

Weather conditions are distributed along successive strips running parallel to the tropics and vary from one extreme to the other, from wet tropical or even equatorial to a desert climate. Repeated droughts in the 1970s and 1980s globally reduced isohyets by about 200 mm in thirty or some years and strongly modified vegetation landscapes across West Africa.

Vegetation distribution follows the same patterns as the climate by forming almost parallel strips from west to east: dense rainforests bordered along the coast by a broken line of mangroves, mosaics of dense forests and Guinean savannas, sub-humid savannas, dry savannas, steppe, and desert. In addition there are 6 formations cover 18 main terrestrial ecoregions. These are completed by 6 marine ecoregions characterized in the western and southern part by the coral reefs of Cape Verde, the seagrass beds of the Mauritanian shallow waters, and the upwelling of the nutrient-rich cold water of the Canary Current.

Within the West Sudanian savanna ecoregion, the W protected ecosystems, contiguous in Benin, Burkina Faso, and Niger, are the only significant transborder complex with an area of 25,000 km². Important efforts have recently been made to create marine protected areas on the western coast from Guinea Bissau to Mauritania. For many years, the only existing MPA was the marine part of the extensive Banc d'Arguin National Park (with a total area of 12,000 km² south of Cap Blanc).

Among the 200 most remarkable ecoregions, 5 are found in West Africa: 4 terrestrial ecoregions – the Western Guinean Forests ; the Eastern Guinean Forests ; the Cape Verde, Côte d'Ivoire and Guinean montane forests; the Inner Niger Delta flooded savanna – and one marine ecoregion, the Sahelian upwelling. The first 4 match the Guinean Forests Hotspot and these forests and the Cape Verde islands are also Endemic Bird Areas.

The 24 ecoregions of West Africa are under variable levels of protection, exceeding 10 % for only 3 ecoregions (The Cross-Sanaga-Bioko coastal forests, the Atlantic Coastal Desert, and the mangroves) but largely below 10 % for all others. In other words, the level of protection is largely insufficient to ensure the long-term preservation of the main regional ecosystems. Only 3 % of all lowland forests are classified as IUCN categories I to IV corresponding to national parks and reserves.

UNIQUE THREATENED BIODIVERSITY

West Africa has an exceptionally diverse fauna and flora thanks to the diversity of its ecoregions. Despite their flat terrain and a restricted area of 16,000 km² - only 10 % of the forest surface of Central Africa - West African forests are home to 750 species of butterflies (75 % of the 1,100 found in Central Africa), 200 passerine species (50 % of the 400 species of this group), and 21 species of primates (68 % of the 31 Central African species). The West African savannas have similar species diversity, particularly for ungulates. Two parks, Comoé for sites over 5,000 km², and Marahoué for those under 5,000 km², have the continent's highest rates for the number of even-toed ungulates per square kilometer.

The region still has some representatives of those wonders of evolution and adaptation to extreme conditions such as the addax, the oryx, the Dama gazelle, and the Rhim gazelle. Manatees and several species of sea turtles can also be found, as well as the southernmost population of the Mediterranean monk seal in the northern part of Mauritania, or the northernmost population of elephants in the Niger River Bend.

The marine environment contains over a thousand known fish species, ten species of dolphins including the long-beaked common dolphin and the Atlantic humpback dolphin, 11 species of whales, and 5 turtle species. Over 6 million migrating birds stay in the region's coastal waters.

Endemism is significant for both plants (1,800 species - 21 %) and animals: for mammals (67 - 21 %), including rare forest duikers, for birds (75 – 9.6 %), for reptiles (25 %), for amphibians (85 – 38 %), and for fish (143 – 28 %) - Conservation International, 2000.

Degradation rates are alarming for habitats, causing severe impacts on species: 1,212 animal species and 517 plant species are considered threatened on the IUCN Red List due to excessive anthropogenic pressure. In 50 years, the region has lost 90 % of its dense forests and harbors 26 % of the total number of the world's conservation-dependent species (49 % of the African total number).

SPECIFIC RECOMMENDATIONS

Priority enhancement of the regional approach should focus on the following areas:

- Improving knowledge on biodiversity and its current state (including exploitable assets for fisheries),
- Implementing the environmental program of the Niger Basin Authority,
- Sustaining training programs on protected areas management with involvement of local community members,
- Adopting common rules for the protection of threatened species on the IUCN Red List,
- Extending the protected area network, particularly in marine and forest areas and planning the development of biological corridors based on a participatory approach,
- Enhancing the fisheries sector by improving cooperation, either among States (particularly on negotiations of international fisheries agreements), or at national level among the ministries in charge of the environment and fisheries, with the objective, among others, of better regulating small-scale fisheries, one unsustainable activity at its current level.

The areas to be promoted also include:

- Improving the protection of marine and terrestrial protected areas,
- Reinforcing the entities in charge of conservation,
- Defining an international status for the entirety of the Mount Nimba nature reserves, shared between Côte d'Ivoire, Guinea, and Liberia, due to the exceptional biological value of this range which should be the focus of all three countries.

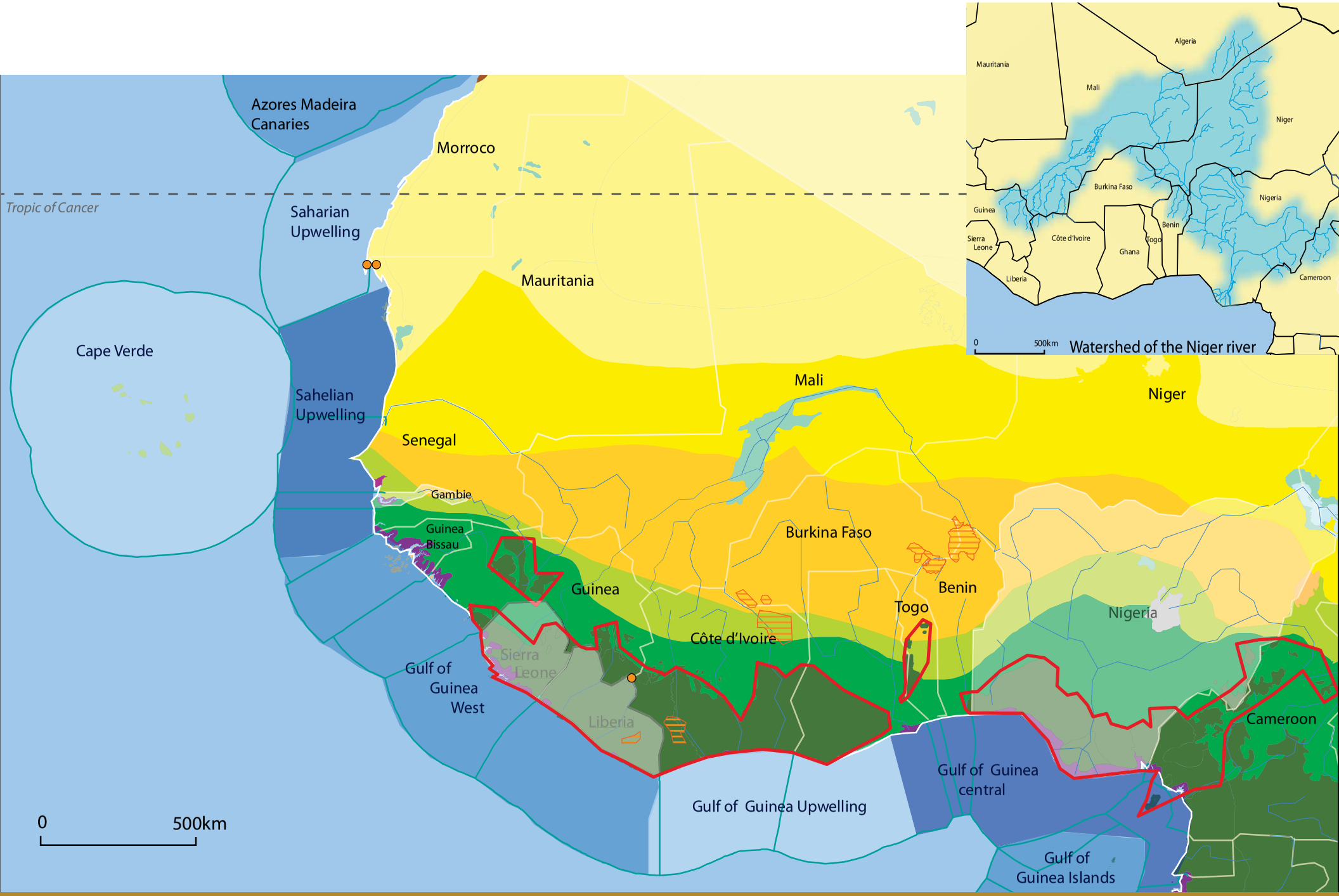
CONSERVATION STATUS OF THE SUB-REGION

Ecosystems are under numerous threats: drought, exacerbated by climate change, siltation and wind erosion, late bushfires, widespread overexploitation of resources, intensive mining (large-scale, particularly in some montane areas or small-scale for gold and diamonds), soil degradation, development of industrial agriculture, and agricultural and urban pollution. It should also be noted that with the current population growth rate, the population is expected to double around 2025. Poaching is so common that most protected areas, with rare exceptions, are experiencing an "empty forest syndrome".

Environmental cooperation structures / initiatives exist at regional level: the Sahara and Sahel Observatory, the Regional Coastal and Marine Conservation Program, the Sub-Regional Fisheries Commission, the IUCN's Protected Area Program, the Management Committee for the W Areas, the Integrated Management of Waters and Conservation of Natural Resources in the Watershed of the Fouta Djallon Highlands. Management of the Niger Basin is coordinated by the Niger Basin Authority (ABN) which includes all relevant States with the exception of Algeria. Only its hydrologic activities are underway as the ABN is still at an Integrated Water Resources Management (GIRE) project stage while an Environmental Observatory in the Niger River Basin is under implementation.

"The desert does not advance from the north; it goes up from the south" (Jean Gorse). The ecological health of the Sahelian-Saharan countries also depends on maintaining sufficient forest cover rates in coastal countries. Addressing desertification is therefore an actual regional challenge.

Land planning and creation of viable networks of national parks and reserves should be two interlinked priorities for all countries in the region.


Azores Madeira
Canaries
Morroco
Tropic of Cancer
Saharian
Upwelling
Mauritania
Cape Verde
Sahelian
Upwelling
Mali
Niger
Senegal
Gambie
Guinea
Bissau
Burkina Faso
Guinea
Benin
Togo
Nigeria
Côte d'Ivoire
Sierra
Leone
Gulf of
Guinea
West
Liberia
Cameroon
Gulf of Guinea
central
Gulf of Guinea Upwelling
Gulf of
Guinea Islands
0
500km
Algeria
Mauritania
Mali
Niger
Burkina Faso
Nigeria
Guinea
Benin
Sierra
Leone
Côte d'Ivoire
Togo
Ghana
Liberia
Cameroon
0
500km
Watershed of the Niger river

BENIN

Benin includes three climate zones: sub-equatorial in the south, Sudanian-Guinean in the center, and Sudanian in the north. The annual rainfall gradient is between 900 mm and 1,400 mm. The economy mainly depends on agriculture, and the port activities of Cotonou, the most direct sea access for both Burkina Faso and Niger. Tourism potential, advanced literacy and a dynamic higher education system are some of the development assets of the country. Benin is a member of ECOWAS, UEMOA, and the Council of the Entente.

MAIN NATURAL AREAS

The coastal area, plateaus on ferralitic soils and clay depressions are mainly covered with forest, wooded, or shrubby savannas. The other main vegetation formations include dry dense forests, woodlands, gallery forests, and mangroves. In the south, a series of lakes and lagoons complete a river network of 3,048 km. Within the 4 ecoregions of the country, the Pendjari and W National Parks and adjacent hunting areas are completed with 46 classified forests. Over 2,000 sacred forests are protected by local communities. However, the area of such forests is on average in the order of the hectare.

FLORA AND FAUNA

The total number of plant species is estimated at about 3,000 with 4 endemics. There are 4,378 documented animal species, including invertebrates, and 189 mammal species. The big fauna of West African savannas is well represented, including lions, leopards, and rare cheetahs. There are 570 bird species including some migrating Palearctic species. Fish species include 449 marine and 221 freshwater species.
Threatened species include 14 vascular plants, 10 mammals, 4 birds, 4 reptiles, and 22 fish. The bongo is now extinct and the cheetah, the wild dog, and the manatee are severely threatened.

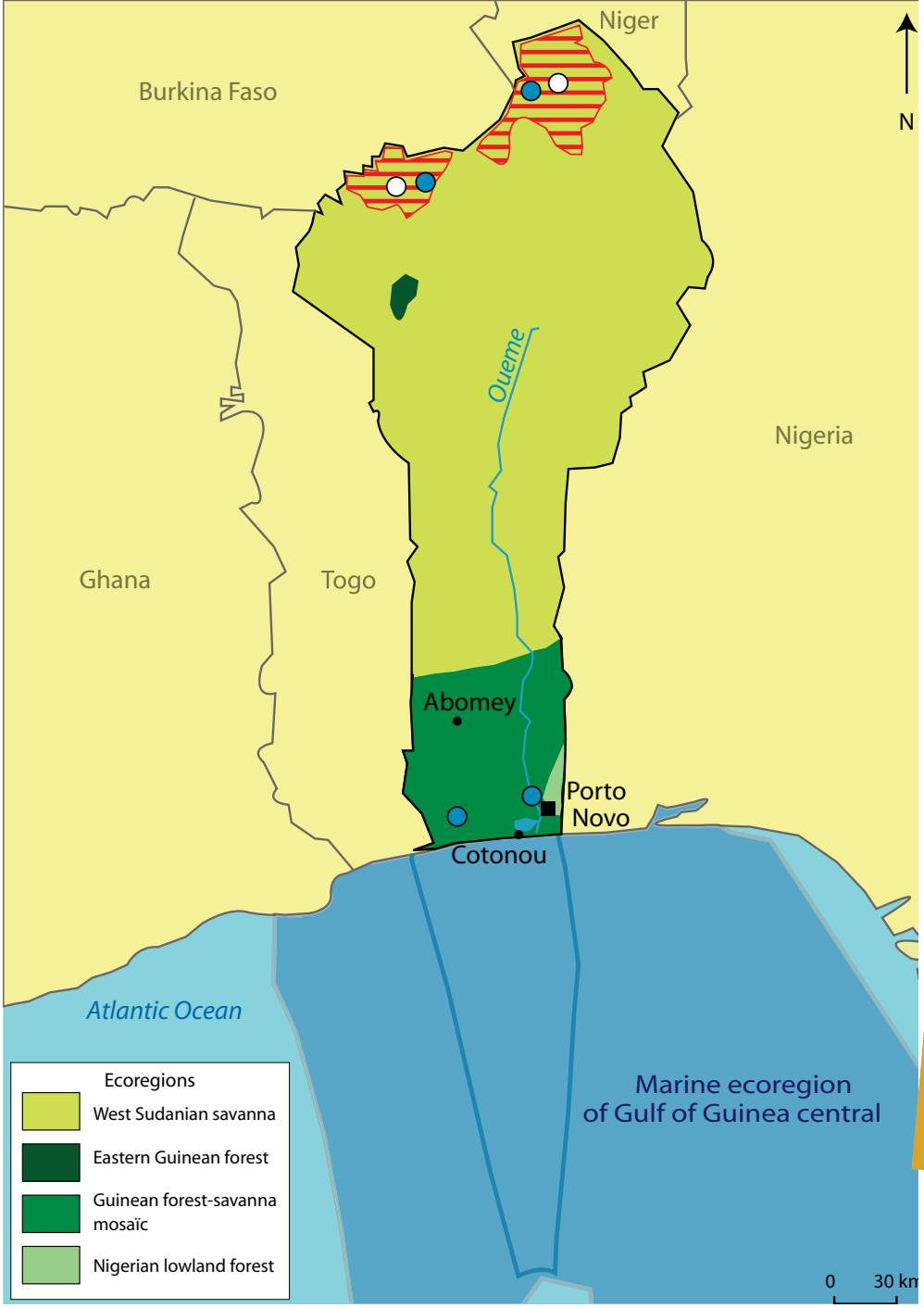
GOVERNANCE

An institutional framework exists to implement the Convention on Biological Diversity. Regulations have either been finalized or recently adopted. Created in 1996, the National Center of Management of Wildlife Reserves (CENAGREF) is in charge of managing protected areas and hunting activities. Numerous actions could improve natural resource conservation to achieve fair and equitable sharing of benefits from their use.

FOREST COVER : 23,250 km² or 20.3 % of the total land area

WETLANDS : 3,047 km²

Terrestrial Protected Areas			% of land area
IUCN Cat. I-II	3	12,795 km²	11.4 %
IUCN Cat. III-IV-V	-		
IUCN Cat. VI	2	3,630 km²	88.5 % under protection
Ramsar Sites	4	11,794 km²	-
Biosphere Reserves	1	8,800 km²	100 % under protection
World Heritage Sites	1	2.3 km²	90.9 % under protection
IBA	6	14,900 km²	



Surface Area
114,763 km²

EEZ
216 km²

Population
2007 8.4 million
2020 12.2 million

Population Density
73 inhab./km²

GDP per capita
in Purchasing Power Parity
$ 1,498

Human Development Index
0.46

Ecological Footprint
in global hectares per capita
0.84

Over-exploited for firewood and timber, *Manilkara obovata*, a tree species specific to the coastal strip is disappearing. Only several trees remain in the Ekpè village. The Lake Aziri palm swamp is also threatened by excessive felling for construction.

ECOSYSTEM SERVICES

A large part of the population (80 %) lives in rural areas and relies on the exploitation of environmental resources, notably biodiversity, for their livelihoods. Unfortunately, ecosystem degradation is increasing, and classified forests, mainly aimed at preserving some watersheds, are heavily degraded. Deforestation, fires, tree mutilation, the poaching of large mammals and intense agricultural pressure are the main causes of biodiversity loss and the over-exploitation of all natural resources.

Concerned by the preservation of the ecological balance of its lagoon network, Benin was one of the first African countries to address invasive aquatic plants. The Biological Control Centre for Africa, the International Institute of Tropical Agriculture, has its headquaters in Cotonou and has developed a program for three exotic species in West Africa: the common water hyacinth, the azolla, and the water lettuce.

BURKINA FASO

A Sudano-Sahelian country located at the heart of West Africa, Burkina Faso consists of a vast peneplain within the Niger Bend. Its highest peak is Tenakourou at 747 m. The dry and rainy seasons are marked by the shift of the intertropical front, with the average annual rainfall (750 mm) varying from 300mm in the north to 1,300mm in the south. The national economy is based on agriculture and livestock farming. Burkina Faso is a member of ECOWAS, the Council of the Entente, and UEMOA the latter headquartered in the country.

FLORA AND FAUNA

Flora includes 1,003 species of terrestrial and 185 aquatic higher plants. There are 2,394 animal species (including insects), with 665 wild terrestrial vertebrates (128 mammals, 477 birds, and 60 reptiles), in addition to 148 aquatic vertebrate species (118 fishes and 30 batrachians). There are 10 identified exotic invasive species. Based on the IUCN global Red List, 2 species of vascular plants, 8 of mammals, 5 of birds, and one reptile species are threatened.

ECOSYSTEM SERVICES

Degradation of weather conditions associated with anthropogenic pressures (excessive pasture, bushfires, firewood, extensive yam cultivation, development of the cotton agro-industry), and natural disasters such as locust swarms, leads to severe habitat degradation, including in classified areas. Several plant species play an important role both for the national economy (shea butter) and basic livelihoods of populations (wood for various uses, food for humans and livestock, traditional medicine, craft, socio-cultural aspects). In addition, Burkina Faso has good ecotourism potential.

GOVERNANCE

Under its decentralization policy, several participatory management initiatives for natural resources and fauna were launched. Biodiversity conservation depends on many players and the established National Council on Environment and Sustainable Development (CONEDD) is not able to ensure adequate coordination. The National Office for Protected Areas (OFINAP), created in 2008, has not yet received the needed allocations and resources from its regulatory authority to carry out its important mission

The Participatory Management Project of Natural Resources and Fauna (GEPRENAF), followed by the Partnership for Natural Ecosystem Management Program (PAGEN) helped Burkina Faso gain significant experience in shared governance of natural resources. Management of the Comoe-Leraba Classified forest and Partial Fauna Reserve (about one hundred thousand hectares) is under the authority of a village Association for Natural Resources and Fauna Management (AGEREF).

Surface Area
274,200 km²

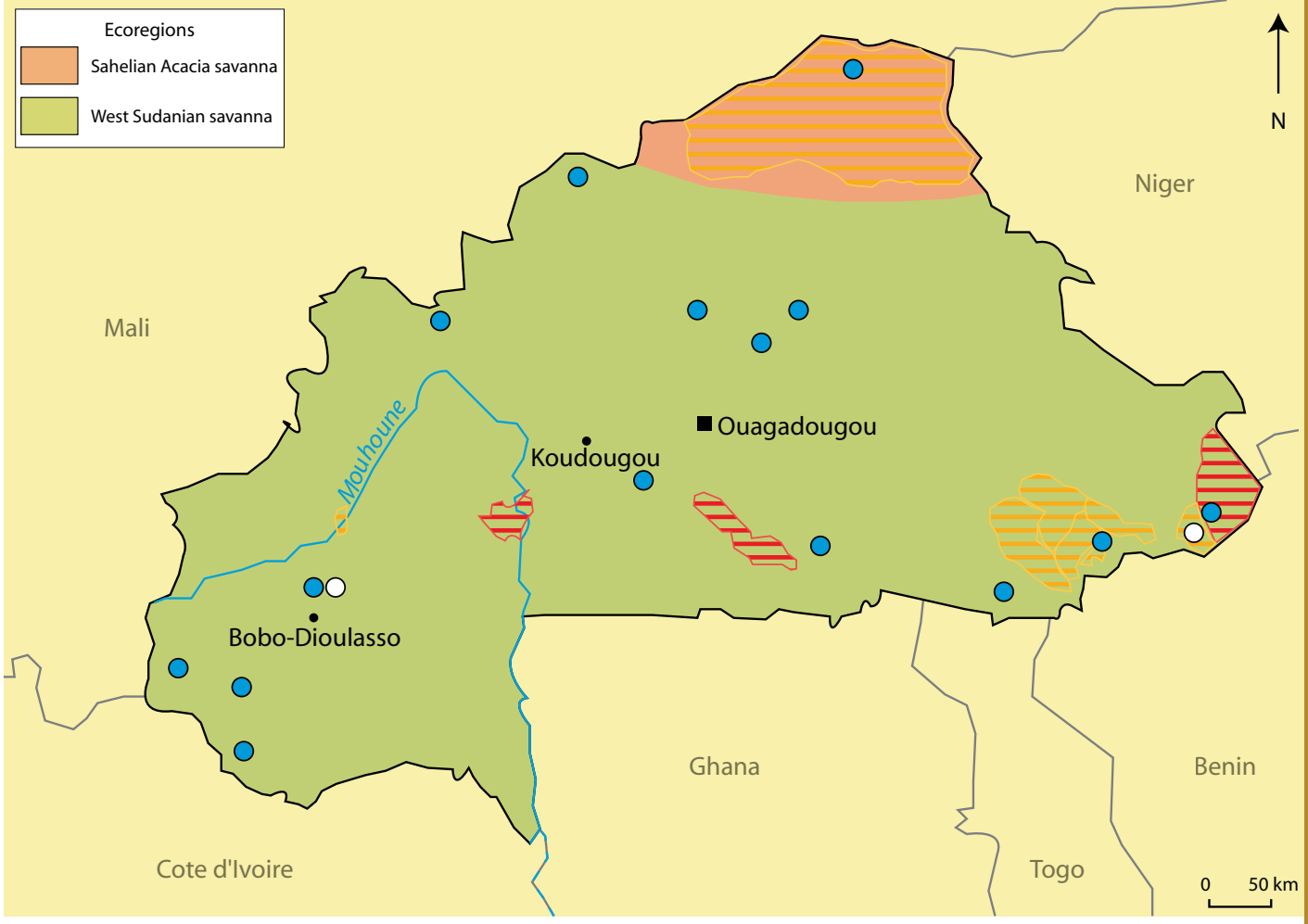
Population
2007 14.7 million
2020 21.9 million

Population Density
53.6 inhab./km²

GDP per capita
in purchasing power parity
$ 1,209

Human Development Index
0.342

Ecological Footprint
in global hectares per capita
2



MAIN NATURAL AREAS

Woody and herbaceous mixed formations, with sparse cover (steppes, savannas, and woodlands), dominate the vegetation landscape. In the southernmost part of the country, some dry dense forest stands remain. The water system includes three basins: the Volta River Basin on about half of the country, and the Comoe and Niger River Basins. The Sudanian savanna and the Sahelian Acacia savanna are the two ecoregions of the country.

FOREST COVER : 67,940 km², or 24 % of the land area

WETLANDS : 3,760 km²

Terrestrial Protected Areas			
IUCN Cat. I-II	4	8,140 km²	15.3 % of the land area under protection
IUCN Cat. III-IV-V	9	23,210 km²	
IUCN Cat. VI	63	10,730 km² *	
Ramsar Sites	15	6,525 km²	
Biosphere Reserves	1	1,860 km²	
World Heritage Sites	-	-	
IBA	10	20,260 km²	

* including 70% of all classified forests, with a significant part under customary protection as sacred forests.

The Nazinga Ranch was the only initiative aiming at producing game meat in the sub-region. While the objective was not achieved (due to the limited natural productivity in West Africa), it provided an opportunity for involvement of local populations, by adopting excellent participatory approaches. The return of megafauna was such a success that Nazinga became one of the main reserves in the country, where the observation of elephants is guaranteed within four hours of the capital city.

CAPE VERDE

The Republic of Cape Verde (Cabo Verde in Portuguese) is an archipelago, located about 600 km off Senegal, the westernmost point of Africa. Its steep terrain culminates at 2,829 m on Fogo Island. The country consists of 10 islands and 8 islets, where local populations have been able to deal with particularly arid conditions that have caused massive emigration in the past. Cape Verde is a member of ECOWAS.

Terrestrial and marine protected areas are present on nine Cape Verdean islands, and all islets are protected. Eight islands have terrestrial protected sites, the largest one being the Fogo Nature Park, including the crater of a still active volcano.

FLORA AND FAUNA

Cape Verde is home to 240 species of higher plants (with a rate of endemism of 19%), 570 fish species (70% endemic), 14 reptiles (71% endemic), and 5 out of the 7 species of sea turtles. There are about 500 observed bird species, with 41 breeding in the archipelago (5 % rate of endemism). All terrestrial mammals (vervet monkey and 5 bat species) and one amphibian species are introduced. Cape Verde is the second most important nesting site in the North Atlantic of the hawksbill turtle. Many species of whales and dolphins are found in the country's waters. The eastern part is a migration route of tuna. The pink lobster is an endemic species to Cape Verde. Based on the IUCN Red List, 4 species of mammals, 4 of birds, and 1 reptile are considered to be globally threatened. At the national level, risks of extinction are much higher with a rate of threatened species of 26 % for angiosperms, 40 % for bryophytes, 47% for birds, and 25% for reptiles.

ECOSYSTEM SERVICES

Vulnerability of natural resources related to the island nature of the country and its natural conditions is compounded by the gradual impacts of climate change. Habitats are modified by overexploitation from uncontrolled pastures, collection of firewood, fires, or increased catches of commercial marine species. Tourism expansion and coastal development put higher pressure on coastal and marine areas and increase the level of pollution in bays. Opportunities for sea turtle breeding are considerably reduced.

Surface Area
4,033 km²

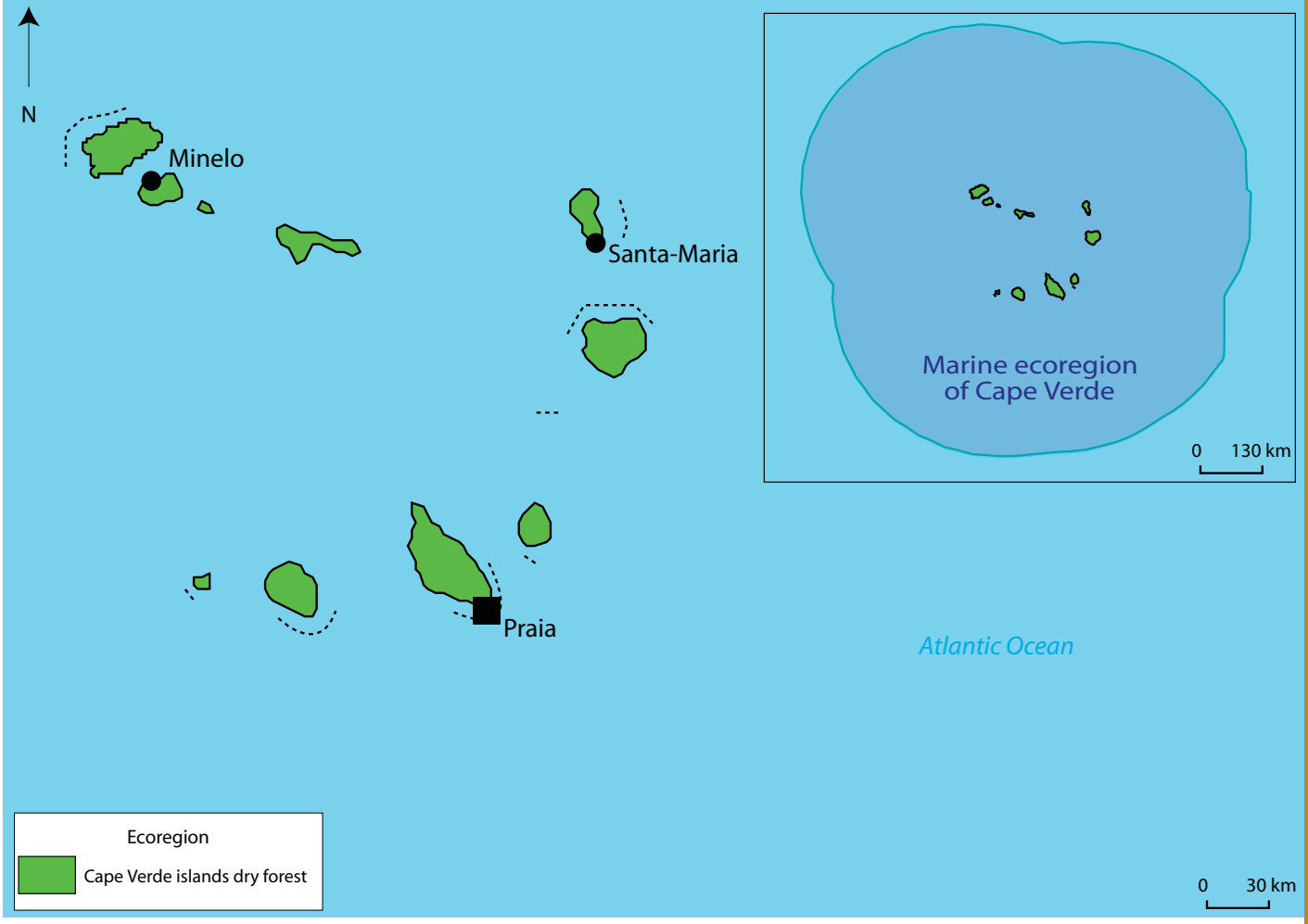
EEZ
734,265 km²

Population
2007 507,000
2020 600,000

Population Density
125.7 inhab./km²

GDP per capita
in purchasing power parity
3,504 $

Humand Development Index
0.708



MAIN NATURAL AREAS

The archipelago is of volcanic origin and is affected by major ecological changes due to recent climate change impacts to the Sahelian environment. Weather conditions only allow sparse vegetation. The landscapes change when herbaceous plants are awakened by rain. The 47 protected areas include nature reserves (21 sites), nature parks (10 sites), nature monuments (6 sites), and protected landscapes (10 sites). The country forms an ecoregion: the Cape Verde Islands Dry Forests.

GOVERNANCE

In 2002 and 2003, Cape Verde promulgated laws on the protection of natural areas, and fauna and flora species. Enhancement of the protected areas system seems to be the best way to conserve biodiversity, through implementation of site management, adaptation of the institutional and legal framework to ensure financial sustainability, and involvement of local communities in decision-making. Among all terrestrial protected areas, only three are fully operational and have approved management plans – the nature parks of Serra Malagueta on Santiago Island (774 ha), Monte Gordo on São Nicolau Island (952 ha), and Fogo on the eponymous island (8,469 ha).

FOREST COVER : 840 km², or 21 % of the land area

Terrestrial Protected Areas			17.9 % of the land area
IUCN Cat. III-IV-V	20	301 km²	under protection
Marine Protected Areas	27	421 km²	
Ramsar Sites	3	-	
IBA	12	110 km²	

The entire uninhabited Santa Luzia Island is a marine protected area, covering 3,500 ha including the terrestrial part. The Murdeira Bay Marine Nature Reserve, with an area of 2,067 ha, is the only exclusively marine area.

CÔTE D'IVOIRE

The Republic of Côte d'Ivoire has an Atlantic coastline of 550 km. Small rolling hills similar to a plain area are followed northwards by successive plateaus. Only the west part of the country has mountainous landscapes. The eastern point of the Guinean Highlands culminates at 1,752m at Mt. Richard-Molard in the Mount Nimba Strict Nature Reserve. Climate varies from humid equatorial to dry tropical, with a rainfall level between 900 and 2 300 mm. The agricultural sector has been the main driver of economic growth. Côte d'Ivoire is a member of ECOWAS, UEMOA, and the Council of the Entente, the latter being headquartered in the country.

With the Taï National Park and its neighboring classified forests, the last relicts of the old Guinean forest block, Côte d'Ivoire is home to some rare species such as *Amorphophallus staudtii* (Araceae), the pygmy hippopotamus, the Jentink's zebra, and Ogilby's duikers, or the royal antelope.

FLORA AND FAUNA

The variety of habitats is reflected by high species richness: 3,836 species of higher plants including 139 endemics to the Sassandra, 496 of fish, 76 of amphibians, 134 of reptiles, 712 of birds, and 232 of mammals. The latter include 26 endemic species to the Guinean forest block: 10 of the 17 primate species, 5 out of 19 antelope species, 1 out of the 12 chiropteran species, and 10 out of the 184 other species. A total of 14 exotic invasive species have been identified. Threatened species include 105 vascular plants, 24 mammals, 14 birds, 4 reptiles, and 13 amphibians.

ECOSYSTEM SERVICES

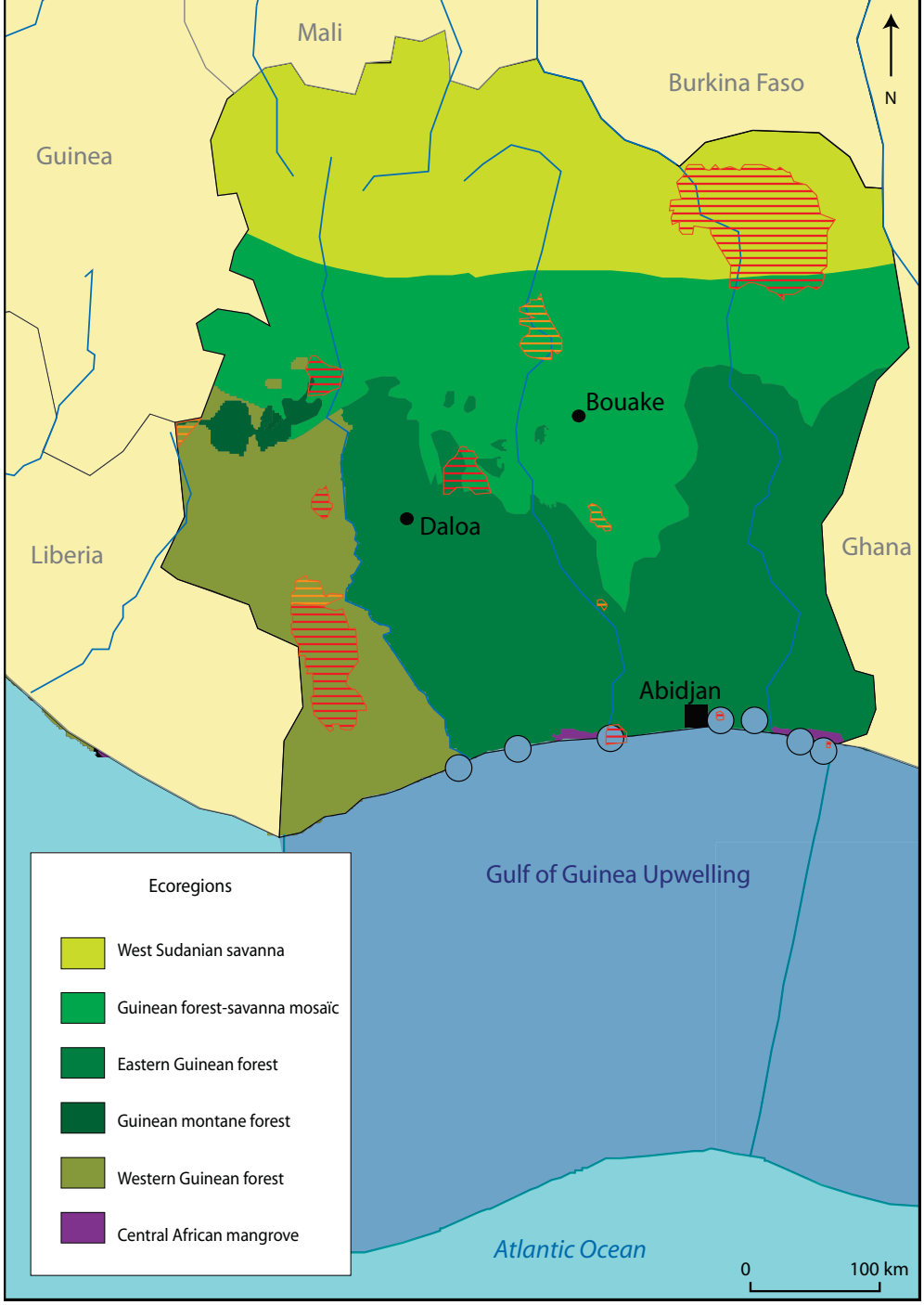
Before 1960 forests covered 46 % of the country, with a reforestation rate of 37 %. Exploitation of construction wood, trade of fuelwood and charcoal, and agricultural clearing have caused the loss of 3/4 of the forest cover while the reforestation rate has simultaneously declined to 9 %. Degradation of both vegetation formations and soils is alarming. Fauna used to play an important economic role as the annual consumption of game meat in the 1980s was estimated at FCFA 50 billion (152 million Euros), double the estimated value of livestock production.

GOVERNANCE

Creation and conservation of a network of protected areas is the result of the government's willingness to protect the environment, notably the strongly declining forest cover and some rare or threatened animal species. Studies are ongoing to create one or several marine protected areas: voluntary reserves, initiated by individuals or communities, are being examined by the regulatory ministry.

MAIN NATURAL AREAS

Vegetation formations are diverse: mangroves, lowland humid dense forests, montane forests, semi-deciduous forests, coastal savannas, Guinean forest-savanna mosaic, woodlands, and various types of Sudanian savanna. The water system includes 4 main basins (Cavally, Sassandra, Bandama, and Comoé), several small coastal rivers, and a series of lagoon complexes. Thanks to relicts of the old Guinean forest block and its mixed habitats, the entire Ivory Coast territory is a high-biodiversity area.



Surface Area
322,463 km²

EEZ
About 200,000 km²

Population
2007 20.1 million
2020 27 million

Population Density
62.33 inhab./km²

GDP per capita
in purchasing power parity
$ 1,619

Humand Development Index
0.48

Ecological Footprint
in global hectares per capita
0.9

FOREST COVER : 30,000 km², or 9.3 % of the land area

WETLANDS : 11,235 km²

Terrestrial Protected Areas			% of the land area
IUCN Cat. I-II	9	18,618 km²	7.2 % under protection
IUCN Cat. III-IV-V	4	2,420 km²	
IUCN Cat. VI	17	2,196 km²	
Ramsar Sites	6	1,273 km²	15.7 % under protection
Biosphere Reserves	2	16,040 km²	100 % under protection
World Heritage Sites	3	16,090 km²	100 % under protection
IBA	4	23,553 km²	-

During a difficult period in its history, the government of Côte d'Ivoire was able to stay on course and promulgate in 2002 a specific law on protected areas. The following year, the Office of Parks and Reserves (OIPR) and the Foundation for the Parks & Reserves of Côte d'Ivoire (FPRCI), were created, now working on the replenishment of a trust fund. Remarkably managed, the latter is one of the best guarantees for national biodiversity conservation.

GHANA

A member of ECOWAS, Ghana has been an observer member of la Francophonie since 2006. The tropical climate is favorable to agricultural production but the economy is also based on underground resources. Industrialization focuses on metallurgy, refinery, and flour-milling. Oil resources found offshore in 2007 have not yet been exploited.

Ghana's south-western forests are among the rare sanctuaries for the magnificent Miss Waldron's red colobus, which has not been observed for many years. Experts fear the species is already extinct.

FLORA AND FAUNA

The biological richness of Ghana includes 3,600 plant species, 225 mammal species with one endemic and 15 threatened species, 728 bird species including 7 threatened species, 221 amphibian and reptile species (including 4 threatened sea turtle species and 3 threatened crocodile species), 347 sea fish species and 157 freshwater fish species. Three amphibian species, one reptile, 9 freshwater fish species and 23 butterfly species are endemic. There are 21 exotic invasive species found in Ghana. Fauna numbers have significantly declined, particularly in the South, but the original species diversity remains, particularly for large mammals.

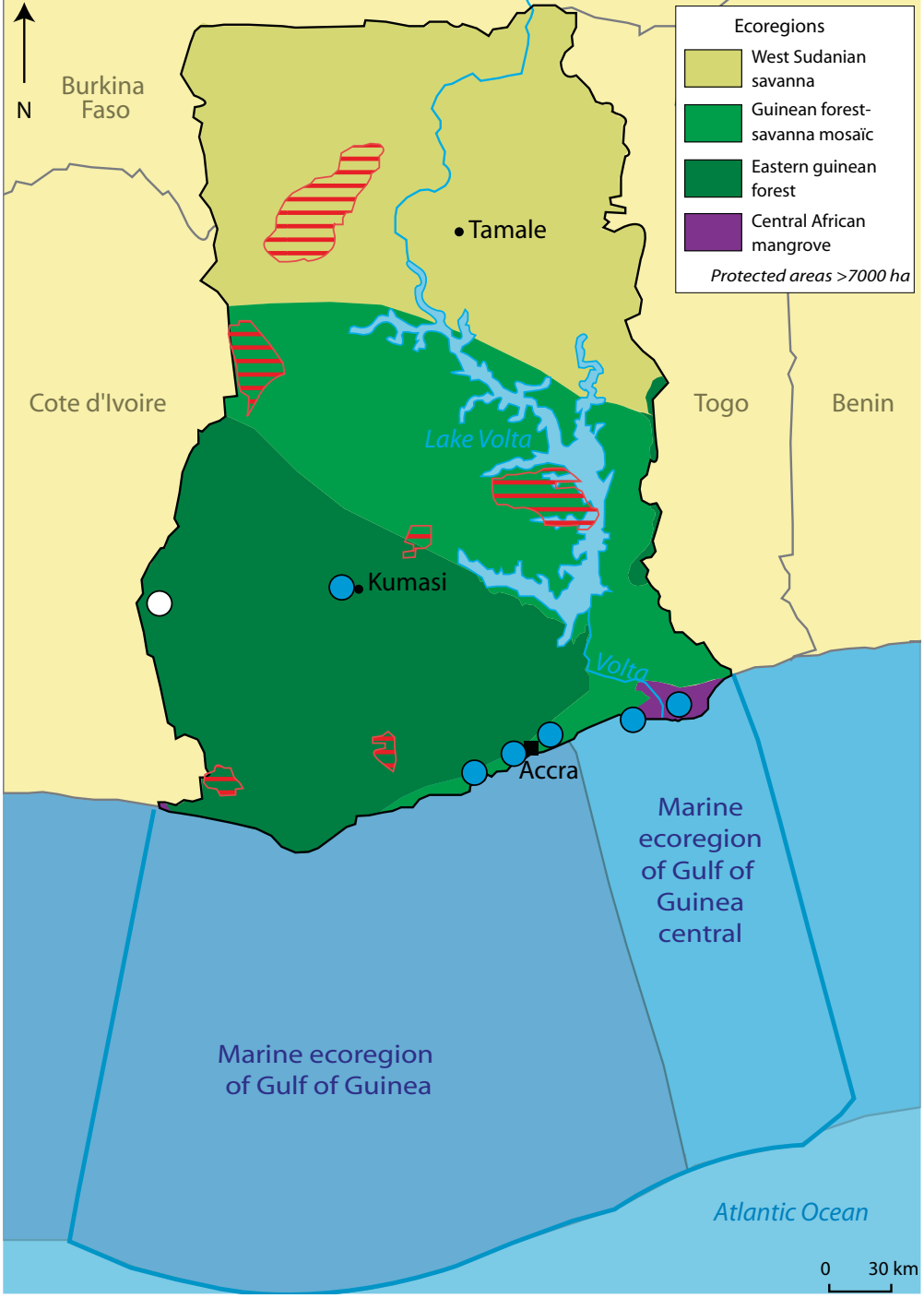
ECOSYSTEM SERVICES

Forestry has always played an important role in the Ghanaian economy, timber is the third main export product after cocoa and gold. Natural habitats have been heavily degraded and fragmented by logging and agricultural clearing. Lack of awareness on the importance of preserving biodiversity for the national economy and welfare has undoubtedly contributed to the unsustainable exploitation of natural resources.

Most existing conservation areas are too small to ensure the long-term survival of fauna and flora populations. Creating networks, and establishing biological corridors, as initiated by Ghana between the Mole National Park and reserves in southern Burkina, is urgently required.

GOVERNANCE

The government of Ghana has succeeded in restoring and conserving several mangrove areas. It has also taken the decision to create protected areas with adequate coverage in each ecological region. Most projects related to biodiversity focus on the development of the forestry sector, local participation in sustainable use of resources, and promotion of conservation of species (particularly sea turtles and coastal birds) and mangroves. Several reserves are threatened by encroaching illegal plantations, as penalties are insufficient to deter violators. This continuous encroachment, viewed as the most important cause of deforestation in forested protected areas, can only lead to irreversible ecological damage.



Surface Area
238,540 km²

EEZ
27,750 km²

Population
2007 22.9 million
2020 29.6 million

Population Density
96 inhab./km²

GDP per capita
in purchase parity prices
$ 1,634

Human Development Index
0.526

Ecological Footprint
in global hectares per inhabitant
1.6

FOREST COVER : 24,600 km² or 10.2 % of land area

WETLANDS : 16,222 km²

Terrestrial Protected Areas	16	12,734.7 km²	5.3 % of land area
IUCN Cat. I-II	8	11,313 km²	
IUCN Cat. III-IV-V	3	71 km²	
IUCN Cat. VI	5	1,352 km²	
Ramsar Sites	6	178.4 km²	
Biosphere Reserves	1	306 km²	
World Heritage Sites	3	-	
IBA	40	16,076 km²	

MAIN NATURAL AREAS

Vegetation varies from wet tropical forests in the South, with coastal grasslands, to savannas in the North, to a forest-Guinean savanna mosaic in the central part of the country. Several forests in the South-West are of crucial importance for preserving the biodiversity of the Upper Guinea Region. The country includes 4 terrestrial and 2 marine ecoregions. The hydrologic system is dominated by the Volta River.

GUINEA

The Republic of Guinea is a member of ECOWAS and is also part of the Niger Basin Authority and the Gambia River Basin Development Organization, due to its role of "water tower" for West Africa (the sources of the Niger, the Gambia, and the Senegal Rivers among others, are in Guinea). With a tropical climate and an average rainfall level of 1,650 mm, Guinea has strong agricultural potential but the economy remains highly dependent on mining.

Initiated in 2006, the process to create a marine protected area in the Tristao/Alcatraz Islands Complex led to the official recognition in December 2009 of the Alcatraz Island Strict Nature Reserve and the Tristao Islands Managed Community Nature Reserve.

FLORA AND FAUNA

Natural resources surveys have helped document 3,077 species of plants, 260 of mammals, 518 of birds, 140 of reptiles, 76 of amphibians, and 536 of marine and freshwater fish. Endemic species include 88 plants, 20 fishes, one reptile, one amphibian (the Nimba viviparous toad) and one mammal (the Nimba Otter Shrew). Globally threatened species consist of 22 vascular plants, 22 mammals, 12 birds, 3 reptiles, and 5 amphibians. A total of 11 exotic invasive species are found in Guinea.

ECOSYSTEM SERVICES

Wet dense forests have dramatically declined from 14 million hectares to 700,000 ha. Inadequate logging, mining activities, and forest clearing for intensive agriculture have contributed to further fragmentation. Over 1,200 species of plants are used for traditional medicine but are overexploited like all other natural resources due to the lack of knowledge on the environmental impacts of such practices.

GOVERNANCE

Lack of field monitoring and control on the use of biological resources endangers natural resources on which the majority of the population still depends. With 5 protected areas, only 2 out of the 5 national ecoregions are represented in sites classified under IUCN Categories I to V; 6 threatened mammal species are not included in these areas. There are 16 key biodiversity areas; 12 are classified forests, including Ziama and Diécké, respectively ranked 4th and 7th on the list of the 12 key biodiversity areas of West Africa. If both sites are designated as national parks or reserves, one additional ecoregion – the lowland dense forest, one of the most endangered formations in the sub-region- and 11 threatened fauna species will be better protected in Guinea.

Surface Area
245,857 km^2

EEZ
370 km wide

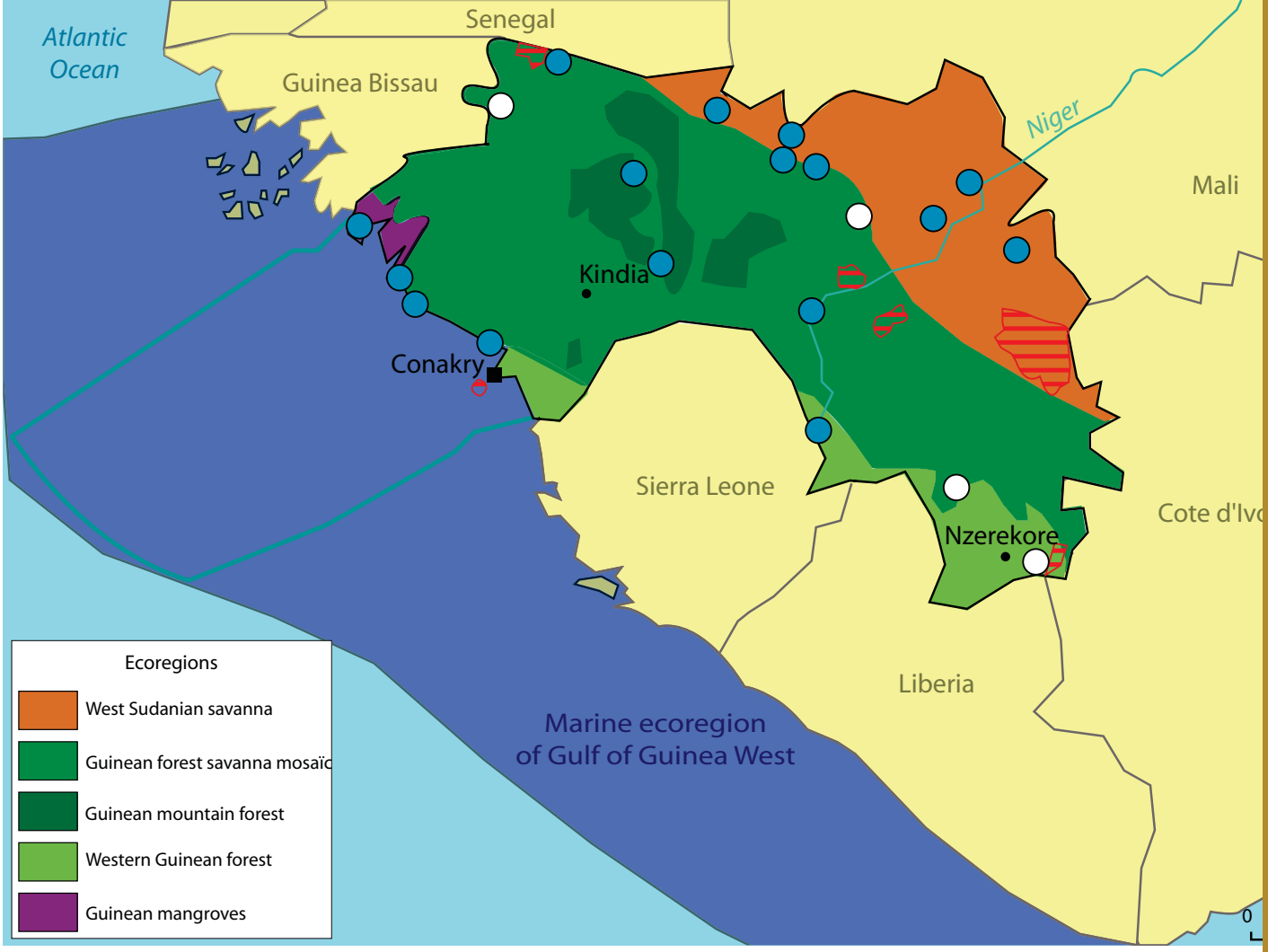
Population
2007 9.6 million
2020 13.5 million

Population Density
39 inhab./km^2

GDP per capita
in purchasing power parity
$ 1,007

Human Development Index
0.44

Ecological Footprint
in global hectares per capita
1.5



MAIN NATURAL AREAS

There are four main natural regions: (i) the coastal strip of Maritime Guinea, (ii) the highlands of Mid-Guinea including the Fouta-Djalon (750 to 1,200m of altitude), (iii) Upper-Guinea, a peneplain with an average height of 500 m in the north of the country, and (iv) in the south-west, Forested Guinea with the Nimba Mountains, culminating at 1,752 m. Natural landscapes are very diverse: wet dense forests, dry dense forests, Sudanian-Guinean savannas, altitude forests and savannas, coastal and marine habitats, and island ecosystems (Alcatraz, Naufrage, Tristao, Loos, and Moteba).

FOREST COVER : 131,890 km², 6.15 % under protection

WETLANDS : 3,160 km²

Terrestrial protected areas			
IUCN Cat. I-II	3	1,735 km²	I to V : 7,050 km² or 2.9 % of the
IUCN Cat. III-IV-V	2	5,314 km²	land area under protection
IUCN Cat. VI		9,070 km²	
Marine protected areas			
IUCN Cat. I-II		40 km²	
Ramsar Sites	16	64,224 km²	96.5 % under protection
Biosphere Reserves	2	1,294 km²	100 % under protection
World Heritage	1	130 km²	100 %under protection
IBA	1	382 km²	100 % under protection

The vast water system (1,161 watercourses, 23 river basins, including 14 international basins) starts in two mountain ranges: the Fouta-Djalon and the Guinea Highlands. Guinea is rightfully called the "water tower" of the sub-region. The Senegal River Basin covers 12 % of the land area, the Niger River Basin 39 %, and the coastal basins 49 %.

GUINEA BISSAU

Guinea-Bissau is at the crossroads of Sudanian, moist tropical, and oceanic climate influences. Its relatively flat landscape includes vast expanses of freshwater or brackish water, with large mudflats and mangroves. The rugged coast is interrupted by long estuaries and sounds going far inland. The economy and the survival of the majority of the population depend on exploitation of natural resources. Guinea-Bissau is a member of UEMOA, ECOWAS, and the Gambia River Basin Development Organization (OMVG).

In December 2004, the government of Guinea-Bissau established the Institute of Biodiversity and Protected Areas (IBAP) with the mission of ensuring participatory conservation of protected areas as well as monitoring and management of the main biodiversity assets (threatened species and habitats).

FLORA AND FAUNA

Vegetation includes 1,186 species of higher plants, including 12 endemics and representing 160 families. There are 132 species of mammals, 376 of birds, 65 of reptiles including 5 sea turtles, 13 of amphibians, and 155 of fish. Threatened species include 4 vascular plants, 11 mammals, 28 fish, 2 birds, and 3 reptiles. Several species of special interest have viable populations: the Western Red Colobus, the African Clawless Otter, the "saltwater" hippopotamus, the manatee, or the Humpback Dolphin (see Box). The Orango, Joao Viera, and Poilao marine protected areas harbour important nesting sites of green turtles and are also visited by Hawksbill and Olive Ridley turtles.

ECOSYSTEM SERVICES

Protected areas are under relatively moderate pressure, but there are great concerns regarding the rest of biodiversity due to mining and oil projects and significant threats on halieutic resources and threatened species such as sharks, dolphins, manatees, and turtles. The contribution of protected areas to populations' wellbeing is significant, thanks to sustainable use of resources (for instance, 128 species are used for traditional medicine) or their cultural value (sacred forests). Ecotourism in the Bijagos Archipelago has good development potential.

GOVERNANCE

One third of the territory is under protection, and Guinea-Bissau has created one of the first community protected areas. The main objective of this reserve is to reconcile preservation of biodiversity and ecological processes with traditional management and valorization of resources, both natural and cultural. In collaboration with NGOs, the government has initiated information and capacity-building efforts on genetic heritage conservation, food security, use of genetically modified organisms, and their influence on traditional medicine.

Surface Area
36,125 km^2

EEZ
370,400 km^2

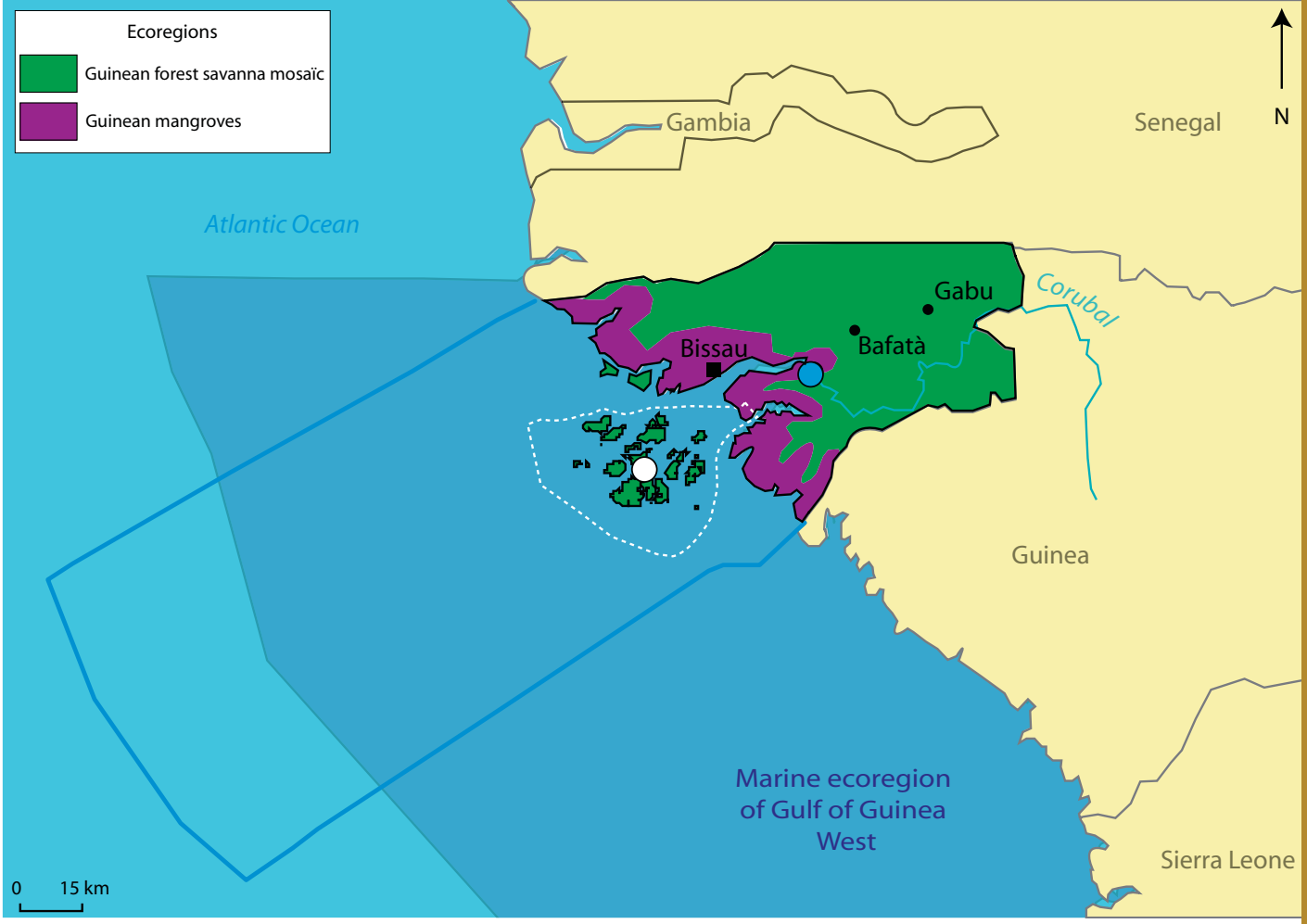
Population
2007 1.5 million
2020 2.1 million

Population Density
42 inhab./km^2

GDP per capita
in purchasing power parity
$ 754

Human Development Index
0.4

Ecological Footprint
in global hectares per capita
0.9



MAIN NATURAL AREAS

The country consists mostly of plains and large valleys, with the exception of the Boé Hills in the south-east, rising to 300m. There are two main ecoregions: mangroves and the Guinean forest-savanna mosaic. The coastal area is bordered by mangroves, of which some have been transformed into rice fields. The remaining part of the country is a mosaic of riparian marshes, gallery forests, dry dense forests, woodlands, sub-humid forests, and savannas. The coastal area includes the Bijagos Archipelago, consisting of about thirty islands and numerous islets.

FOREST COVER : 20,720 km², or 57.36 % of the land area

WETLANDS : 3,046 km²

Terrestrial Protected Areas			
IUCN Cat. I-II			
IUCN Cat. III-IV-V	1	890 km²	2.46 % of the land area
IUCN Cat. VI			
Coastal and Marine Protected Areas			
IUCN Cat. I-II	3	3,135 km²	
IUCN Cat. III-IV-V			12.4 % of the land area
IUCN Cat. VI	2	1,345 km²	
Ramsar Sites	1	890 km²	-
Biosphere Reserves	1	10,270 km²	-
IBA	8	8,735 km²	-

An important colony of the rare Humpback Dolphin is found in the waters of the Bijagos Archipelago; this is the only cetacean restricted to the coastal waters of sub-tropical West Africa, and fewer than 2,000 individuals remain. “Saltwater” hippopotamuses are also found in the waters of the archipelago. They have adapted to waters with variable salinity and can swim between islands for several kilometres.

MALI

This vast country is a member of the ECOWAS and UEMOA and extends from the heart of the Sahara to the Sudanian-Guinean savannas. Over 9/10ths of the territory is covered with extensive plains or low plateaus. The river network mainly includes the Senegal and Niger Rivers, with many branches forming an inner delta in the center of the country. The very young population includes over 70 % of people living in rural areas (more than half of the population is under 15) with uneven demographic distribution (the northern region, representing about 60 % of the country's surface, only includes 10 % of its population). Mali has initiated an ambitious decentralization policy for about fifteen years.

In the Niger Bend, the Gourma is home to the emblematic northernmost elephant population of Africa. Its survival is closely related to measures on land planning and respect of the status of the Elephants Reserve.

ECOSYSTEM SERVICES

Mali has virtually lost all assets that would have allowed the country to become the Kenya of Francophone Africa. Systematic overuse of natural resources (clearing, excessive pasture, poaching, illegal fishing), bushfires, use of pesticides, settlement of nomadic populations, and climate challenges have led to a severe degradation of habitats, compromising the future of protected areas. A sound management of natural resources in this heavily rural country is however crucial for the survival of its population.

GOVERNANCE

Poor law enforcement is a serious challenge, as indicated, among other parameters, by the very low percentage of effectively protected areas (the huge Central Delta Ramsar Site does not have any official form of protection) or felling taxes for threatened species. The insufficiency of field agents, the lack of integration of environmental protection in sectoral policies, tenure insecurity, insufficient resources to manage common use assets, and the lack of understanding of the importance of biological biodiversity require urgent measures.

Only a political commitment at the highest level would lead to new dynamics. The State should resume its crucial role on land planning and conservation of the national natural heritage.

FLORA AND FAUNA

A total of 1,739 woody species, 136 species of mammals, 640 species of birds, and 143 species of fish have been documented. Populations of some species are declining or even totally extinct; at least 5 % of large mammal species have already disappeared and experts believe that all large mammals are at risk of extinction in the country.

Surface Area
1,241,000 km²

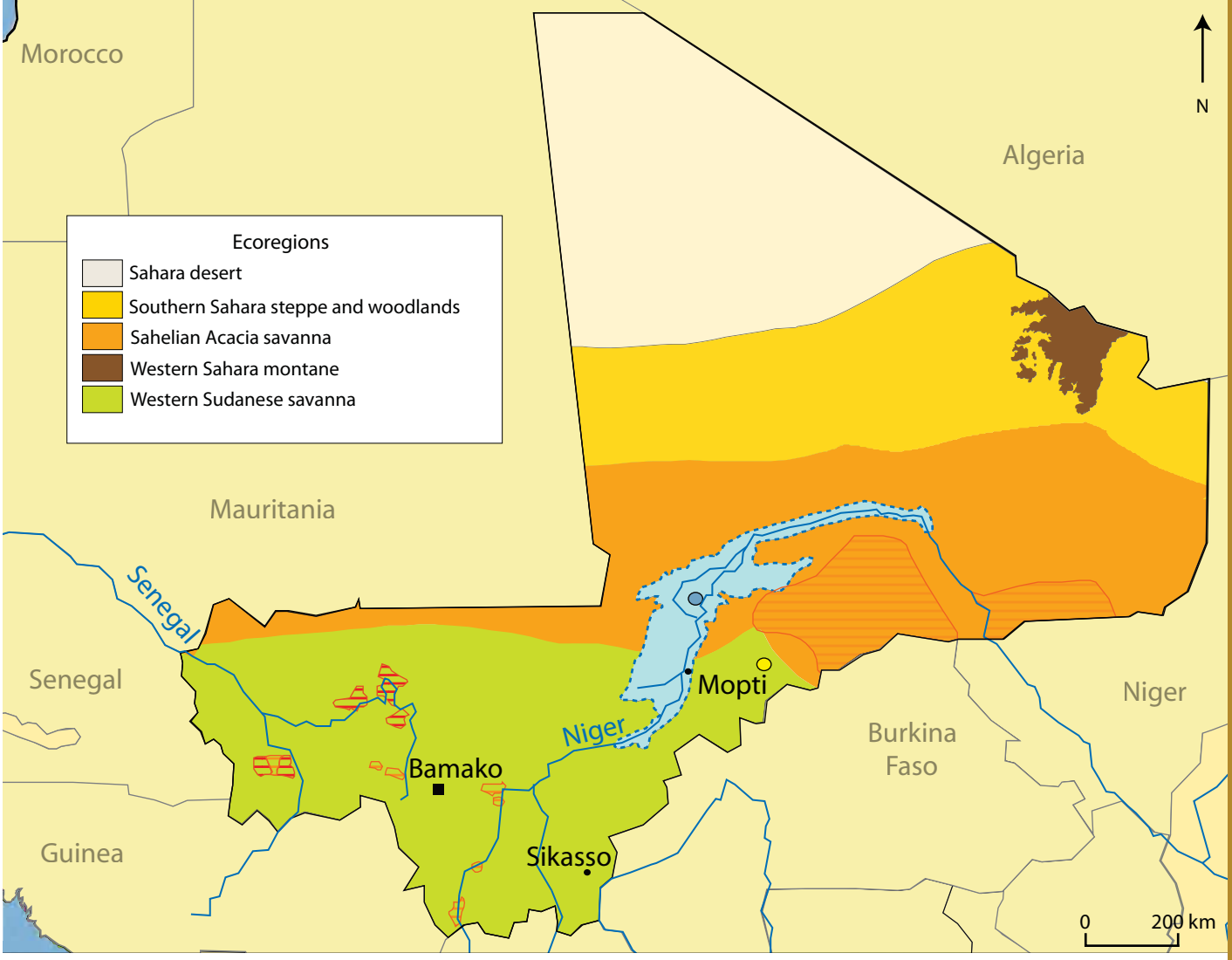
Population
2007 12.4 million
2020 16.8 million

Population Density
9.9 inhab./km²

GDP per capita
in purchasing power parity
$ 1,083

Human Development Index
0.37

Ecological Footprint
in global hectares per capita
1.9



MAIN NATURAL AREAS

Four large vegetation realms are found from north to south: Saharan, Sahelian, Sudanian, and Sudanian-Guinean, in addition to the Niger inner Delta, one of the largest river systems in Africa and a source of life for an estimated 800,000 people. Successive droughts in the 1970s and 1980s have deeply modified the vegetation landscapes.
Three national parks and nine reserves cover a total area of 38,880 km². Two of the largest reserves are only protected on paper and areas where the protection status is respected represent only 1 % of the five ecological regions in the country.

FOREST COVER : 49,640 km² including 78 % under protection

WETLANDS : 34,620 km²

Terrestrial Protected Areas			% of land area under protection
IUCN Cat. I-II	3	6,420 km²	0.5 %
IUCN Cat. III-IV-V	9	32,460 km²	2.6 %
IUCN Cat. VI			
Ramsar Sites	1	41,195 km²	Unprotected
Biosphere Reserves	1	25,000 km²	Not officially classified
World Heritage Sites	1 mixed	-	Unprotected
IBA	17	30,790 km²	11 % under protection

Safeguarding a significant portion of the exceptional biodiversity of Mali requires improving the network of protected areas and implementing adequate management structures based on a ten-year sectoral reform program.

MAURITANIA

A coastal country, the Islamic Republic of Mauritania is a member of AU and CILLS. Its altitude only exceeds 500m in some ranges (Zemmour, Kédiet ej-jill - 915 m, some parts of the Adrar and Tagant). Its Atlantic coastline stretches for 754 km and varies from rocky north of Cap Blanc, to straight and sandy southwards. The annual average rainfall can reach 600mm in the south but rarely exceeds 100mm in the north. The economy is mainly based on mining, fisheries and related industries.

The Direction of Protected Areas and Coastal Areas (DPAL) should be reinforced in its national role for conservation activity coordination and supervision. Creation of protected areas in the continental part, notably around the southern wetlands and in Guelb er Richât, dear to Pr. Théodore Monod the IFAN founder, should be promoted.

FLORA AND FAUNA

Flora includes about 1,100 species with a remarkable rate of endemism in the oceanic part of the Saharo-Sindian region. For terrestrial fauna, 107 mammal species are documented. Marine mammals are represented by 25 cetacean species and a colony of monk seals. Furthermore, 541 species of birds, 86 of reptiles, 140 of freshwater and brackish water fish have been observed, in addition to several hundred sea species that are often of high economic interest. Threatened species include 14 mammals, 8 birds, and 3 reptiles.

ECOSYSTEM SERVICES

Small-scale fishing involves thousands of fishermen in the waters of the Senegal River and several hundreds of Imraguen on the north coast. A fleet of foreign vessels participates in industrial fishing, often illegally. Intensification of capture and persistence of poor practices in product handling and trading endanger halieutic stocks. Threats to ecosystem integrity include erosion and dune progression, changes to the flood regime of the Senegal River due to dams, excessive exploitation of timber resources (fuelwood), extension of livestock farming, poaching, and the illegal trade of animal species.

GOVERNANCE

Biodiversity conservation is hampered by a lack of coordination. The legal instruments are incomplete and many laws need to be updated. Regulations on marine fisheries, the first source of foreign exchange and employment in the country, were enhanced by the establishment of access rights and allocation of fishing quotas based on annual amounts. The network of protected areas is largely inadequate for a country with one marine and 7 terrestrial ecoregions.

Surface Area
1,030,700 km²

EEZ
165,338 km²

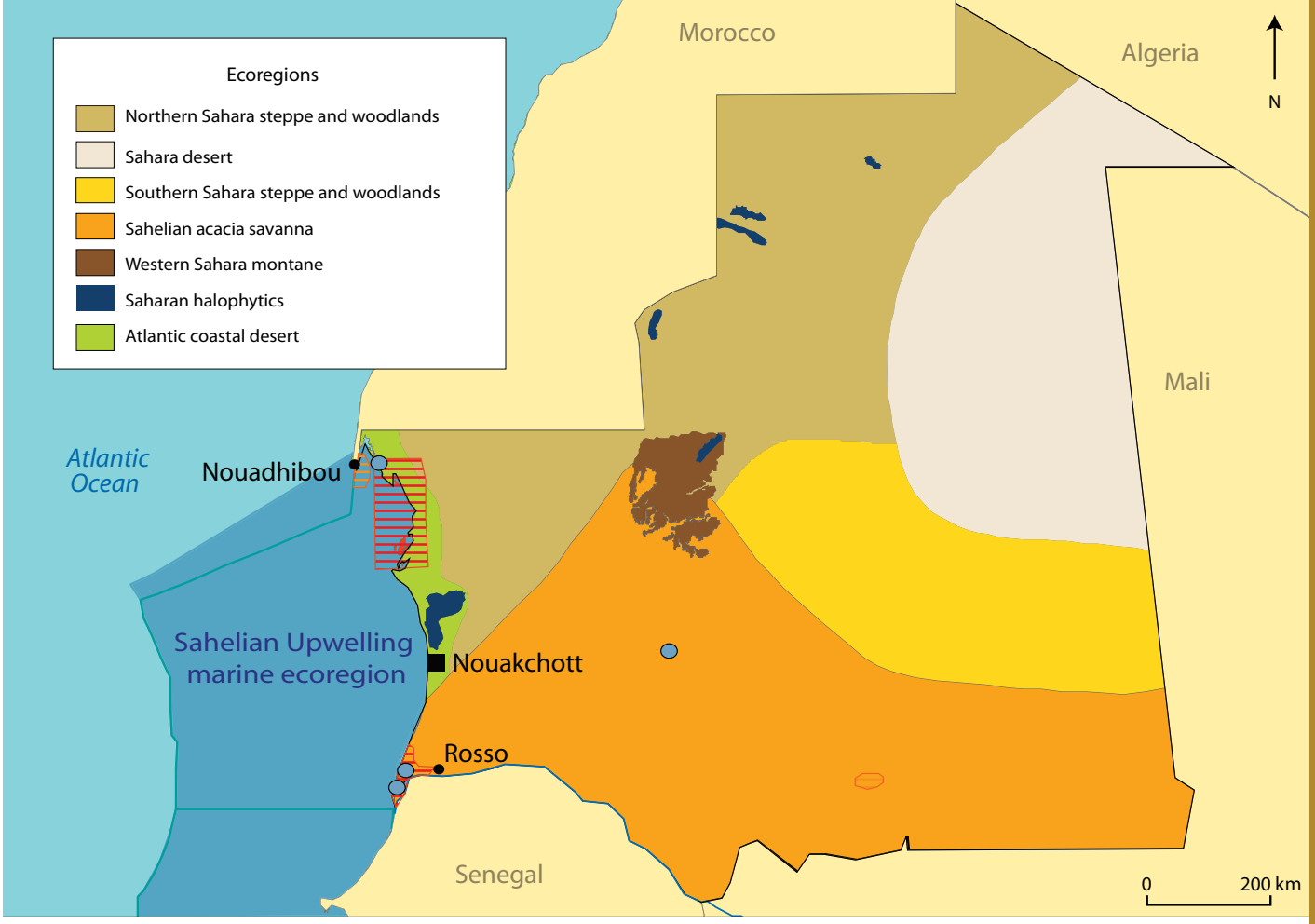
Population
2007 3.1 million
2020 4.1 million

Population Density
3 inhab./km²

GDP per capita
in purchasing power parity
$ 1,800

Human Development Index
0.52

Ecological Footprint
in global hectares per capita
3.1



MAIN NATURAL AREAS

From south to north, successive formations include the Senegal River Valley and its Acacia nilotica stands, Sahelian savannas and steppes, and the expanse of the Sahara. Saltlands, characterized by Chenopodiaceae (halophytic plants) and Tamarix clumps, form a narrow coastal strip. The Senegal River is the only permanent watercourse of the southern region. Upwelling of nutrient-rich cold waters makes the shallows and sea grass beds of the Banc d'Arguin highly productive, with large populations of invertebrates, fish, sea birds, and marine mammals.

FOREST COVER : 4.3 % of the total land area, 0.04 % under protection

WETLANDS : 9,195 km², 83.7 % under protection

Terrestrial Protected Areas			% of the land area under protection
IUCN Cat. I-II	5	14,705 km²	1.4 %
IUCN Cat. III-IV-V			
Marine Protected Areas IUCN Cat. I-II	3	15,305 km²	1.5 %
Ramsar Sites	4	12,406 km²	98 %
Biosphere Reserves	1	150 km²	Protected
World Heritage sites	2	12,075 km²	Protected
IBA	24	17,906 km²	83.7 %

The Banc d'Arguin National Park plays a crucial role for marine biodiversity preservation, and recovery of fish resources. It harbors the world's largest concentration of non-breeding wading birds. The creation of the park prevented local extinction of the flathead mullet, which used to be over-exploited for botargo production. Further north, the southernmost colony of rare Mediterranean monk seals is found below the cliffs of Cap Blanc.

NIGER

Niger is the largest West African country and a member of ECOWAS, UEMOA, and CILSS. It represents the transition between North Africa and Sub-Saharan Africa. The terrain is mainly constituted by vast plateaus, interrupted by the Aïr Mountains reaching over 2,000m in the north-east. The Niger River is the only permanent watercourse, running through the south-west of the country over 550km. The Sahara and the Sahel cover 80 % of the land area. The economy is based on agriculture, transhumant livestock farming, and mining.

Very early on Niger ratified all the main international environmental conventions and was a pioneer in this area with the 1984 Maradi Engagement on the fight against desertification.

FLORA AND FAUNA

Flora in Niger is estimated at about 1,460 species including 4 endemics. There are 160 mammal species. Sahelo-Saharan antelopes and gazelles (addax, dama gazelle, dorcas gazelle, and rhim gazelle) are part of the national heritage despite the recent extinction (in the 1990s) of the Scimitar oryx. Avian fauna includes 525 species, among which 368 are residents. There are 74 species of reptiles, 75 of amphibians, and 112 of fish. Threatened species include 2 plants, 11 mammals, and 5 birds.

ECOSYSTEM SERVICES

Unfavorable climate conditions and strong population growth have had negative impacts on the main ecosystems of Niger. Habitat degradation from inadequate agricultural practices is compounded by excessive exploitation of forest and fodder resources, poor management of fires, and poaching. Wetlands are overfished, notably the alluvial plains, and are threatened by hydrologic changes from dam construction (leading to vegetation destruction and sedimentation) and expansion of rice cultivation.

GOVERNANCE

Conservation activities are often hampered by the lack of human and financial resources, the absence of regulations, inadequate field data collection, and insufficient coordination among services. Faced with serious daily problems, the population is increasingly involved in conservation efforts. In collaboration with 13 other countries, Niger actively participates in the program to preserve Sahelo-Saharan antelopes.

Surface Area
1,267,000 km²

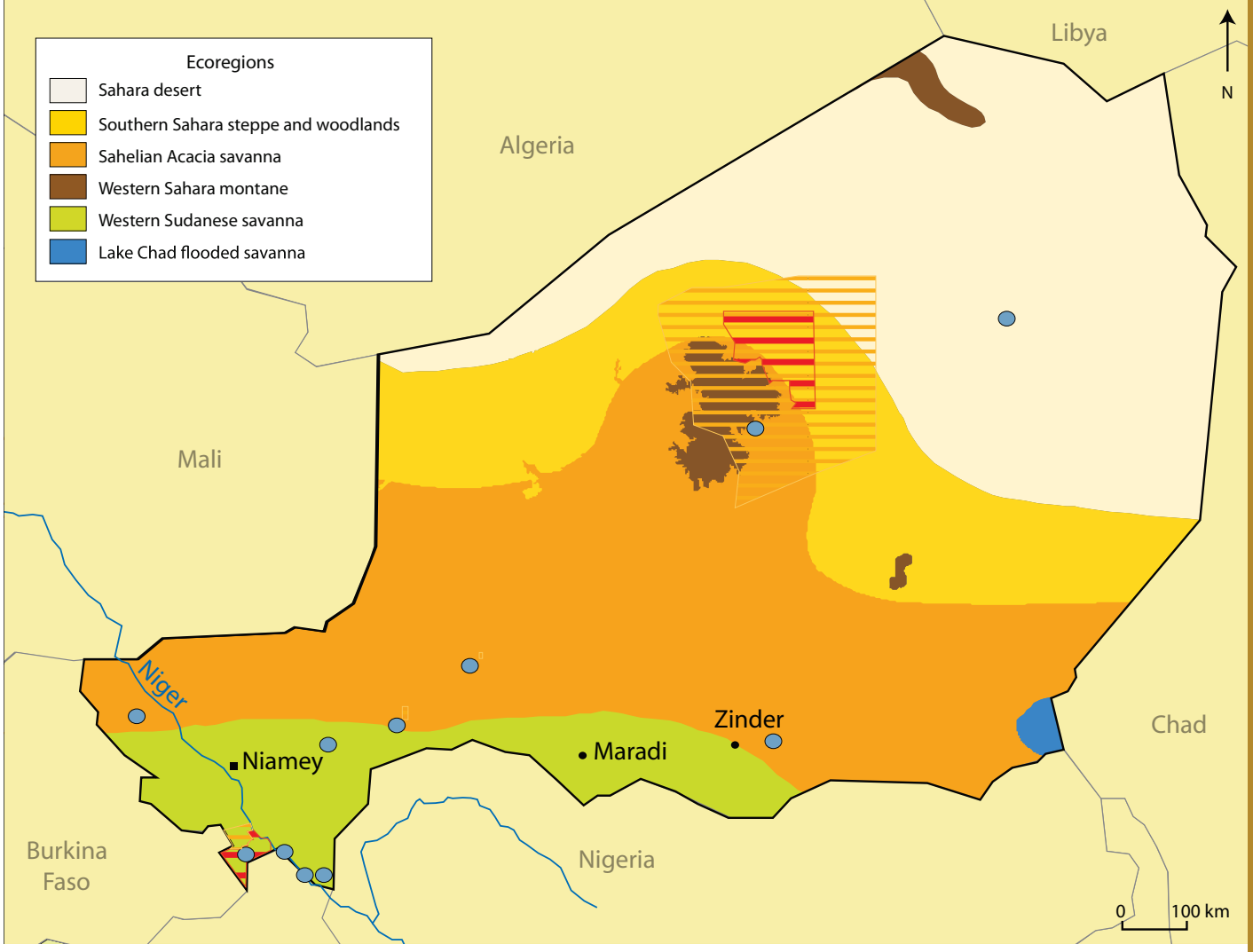
Population
2007 14.1 million
2020 22.9 million

Population Density
10 inhab./km²

GDP per capita
in purchasing power parity
$ 840

Human Development Index
0.374

Ecological Footprint
in global hectares per capita
1.7



MAIN NATURAL AREAS

The steppe and diminutive vegetation of the Saharan realm changes into shrubby to wooded steppes in the Sahelian realm, before becoming shrubby and wooded savannas in the Sudanian realm of the southernmost part of the country. The success of the W project, a vast transboundary complex, prompted the government to consider another transboundary reserve project between Niger, Mali, Lybia, and Algeria. The Termit Massif, south-east of the Aïr-Tenere Reserve, is being considered for classification to preserve numerous Sahelo-Saharan species including the addax.

FOREST COVER : 4 % of land area, 12 % under protection

WETLANDS : 17,232 km²

Terrestrial Protected Areas			
IUCN Cat. I-II	2	15,000 km²	6.7 % of the land area under protection
IUCN Cat. IV	4	69,140 km²	
			% under protection
Ramsar Sites	12	43,179 km²	79 %
Biosphere Reserves	2	275,223 km²	100 %
World Heritage sites	2	79,560 km²	100 %
IBA	15	83,231 km²	95.3 %

The Kouré and Dallol Bosso north region, near Niamey, is home to the last population of giraffes in West Africa. This is an exceptional population as it is the peralta sub-species, not found in any other African country or foreign zoological parks. Giraffes live in an unprotected natural habitat, maintaining the close link that has prevailed until recently between man and wildlife. Among other actions, improving land management and local development is crucial for their survival.

SENEGAL

The Republic of Senegal is a member of AU, ECOWAS, and CILSS. The country has a long coastline on the Atlantic Ocean (530 km), and includes the westernmost point of continental Africa. With the exception of the south-eastern hills reaching a maximum altitude of 500 m, and the Goree and la Madeleine Islands, Senegal has no other characteristic terrain. The arid climate in the north changes into tropical in the south, with rainfall varying between 300 mm to 1,200 mm.

Establishment of a National Wetlands Network (RZHS) helped develop a wetlands conservation strategy, both inside and outside of protected areas.

FLORA AND FAUNA

The country's flora includes about 2,100 species. There are 173 terrestrial mammal species and 24 cetaceans. Avifauna includes 612 bird species, including 357 resident and 207 seasonal migrating species. There are 109 species of reptiles and 23 of amphibians. In total, freshwater and brackish water fish species represent 200 species, in addition to the hundreds of marine fish species. Senegal has a significant number of threatened species: 70 plants, 14 terrestrial mammals and one cetacean, 38 reptiles, and 62 fish. There are 15 known exotic invasive species. Some aquatic species such as Typha have become a true plague, obstructing waterways, causing the decline of continental fisheries, and impeding tourism development and socioeconomic activities of neighboring populations.

ECOSYSTEM SERVICES

Rainfall deficit and widespread drought over the past decades have strongly affected ecosystems. Main threats include excessive exploitation of timber resources, poaching, uncontrolled fires, and proliferation of aquatic plants. Over-exploitation of fish resources endangers many species. Repeated drought and expansion of rice cultivation has led to severe degradation of about half of all mangroves.

GOVERNANCE

Lack of human and financial resources strongly hampers the National Parks Service. This is compounded by inadequate training of agents, particularly in areas where participatory management actions are implemented. Efforts should be made especially for the management of marine protected areas and halieutic resources. In collaboration with 13 other countries, Senegal actively participates in the preservation program of Sahelo-Saharan antelopes, notably in the Guembeul Reserve. Mitigation actions against Typha are carried out jointly with Mauritania.

Surface Area
196,722 km^2

EEZ
15,861 km^2

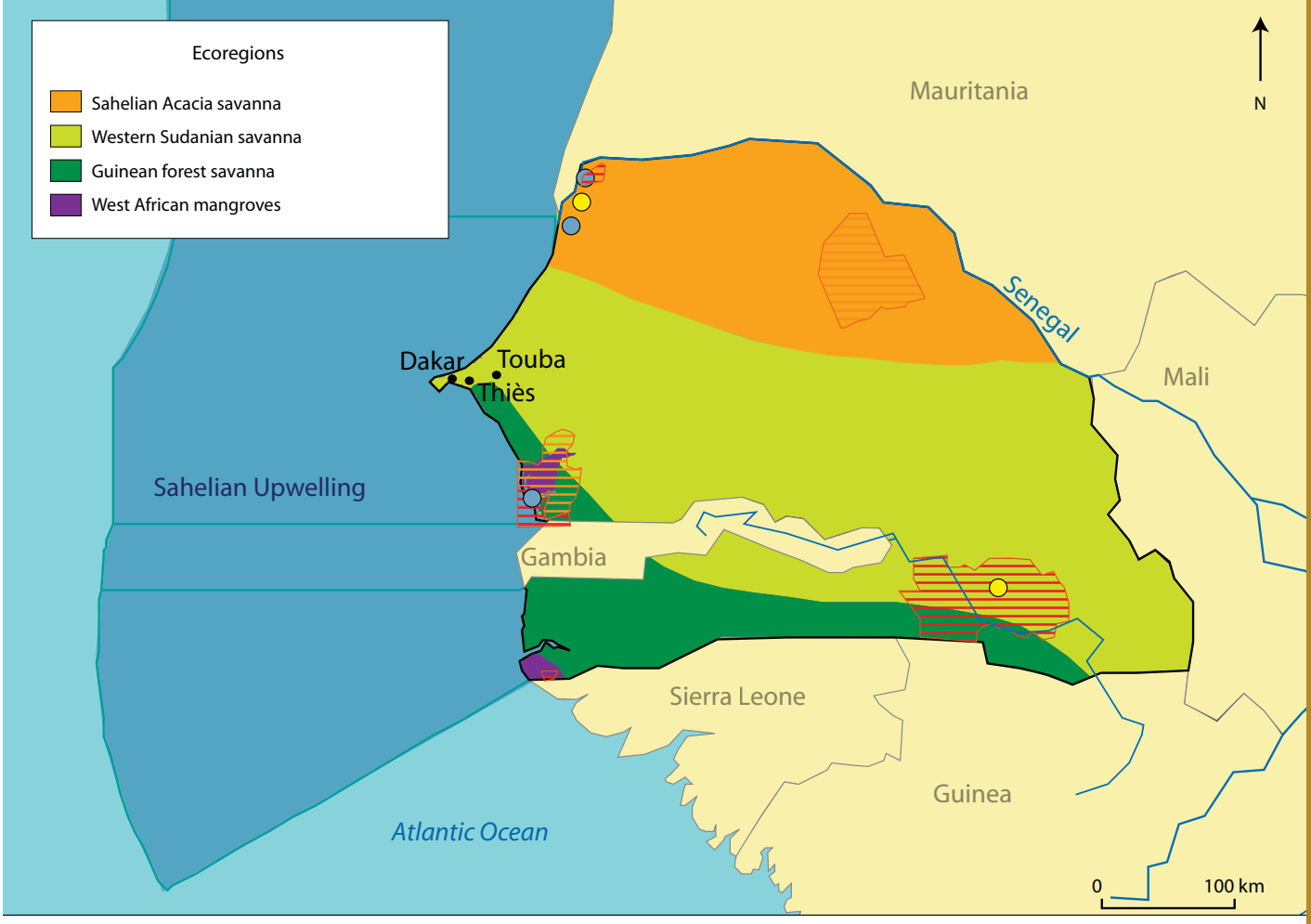
Population
12,171,265

Population Density
61.9 inhab./km^2

GDP per capita
in purchasing power parity
$ 1,800

Human Development Index
1.666

Ecological Footprint
in global hectares per capita
1.4



MAIN NATURAL AREAS

Vegetation includes Sahelian steppes, shrubby, to wooded in the north, and Sudanian woody savannas become denser towards the south. In the south-west, Casamance harbors dry dense forests and fine mangroves on the coast. The river system mainly includes the Senegal, the Gambia, the Casamance, and the Saloum Rivers.

FOREST COVER : 60 % of the total land area, 12 % under protection

WETLANDS : 11,400 km², 12.4 % under protection

Terrestrial protected areas			11.6 % of the land area under protection
IUCN Cat. I-II	6	9,860 km²	
IUCN Cat. III-IV-V	6	12,920 km²	
IUCN Cat. VI	1	7.6 km²	
Marine protected areas			0.64 % under protection
IUCN Cat. I-II	4	1,120 km²	
IUCN Cat. IV	3	82.3 km²	
Ramsar Sites	4	997.2 km²	0.51 % under protection
Biosphere reserves	4	16,318 km²	Protected
World Heritage sites	5	9,350 km²	Protected
IBA	17	25,798 km²	83 % under protection

A local initiative, with support from the national NGO Oceanium helped create the community marine protected area of Bamboung, at the heart of the Saloum Delta. From the first two years of effective protection, 23 fish species (in addition to the 51 existing species) have recovered and the proportion of large predators has increased.

TOGO

Open on the Atlantic Ocean, Togo stretches over 660 km from north to south. The terrain is relatively flat, with the exception of the Atakora Mountains (Togo Mountains) reaching their highest point at Mt. Agou (986m), wrapping the country in the south-west and the north-east, and marking the division between two series of peneplains. The climate is subtropical in the south and Sudanian in the north with an average rainfall level of 1,200 mm. The economy is mainly based on agriculture and phosphate exploitation (Togo is the 5th largest producer in the world). The country is a member of ECOWAS, UEMOA, and the Council of the Entente.

Studies on traditional practices and knowledge related to natural resource management should be carried out, focusing on threatened species and traditional medicine. Outputs will help understand the significance of biodiversity preservation and define multi-sectoral approaches to address the loss of this asset.

FLORA AND FAUNA

Flora in Togo includes 3,491 terrestrial and 261 aquatic species, with one endemic species, *Phyllanthus rouxii* (Euphorbiaceae), restricted to the ferruginous hills north of Bassar. Fauna inventory produced 3,472 species (including invertebrates), with 196 species of mammals, 630 of birds, 7 of reptiles, and 35 of amphibians including three endemics. The IUCN global Red List considers 10 species of vascular plants, 10 of mammals, 2 of birds, 3 of reptiles, and 2 of amphibians to be threatened.

ECOSYSTEM SERVICES

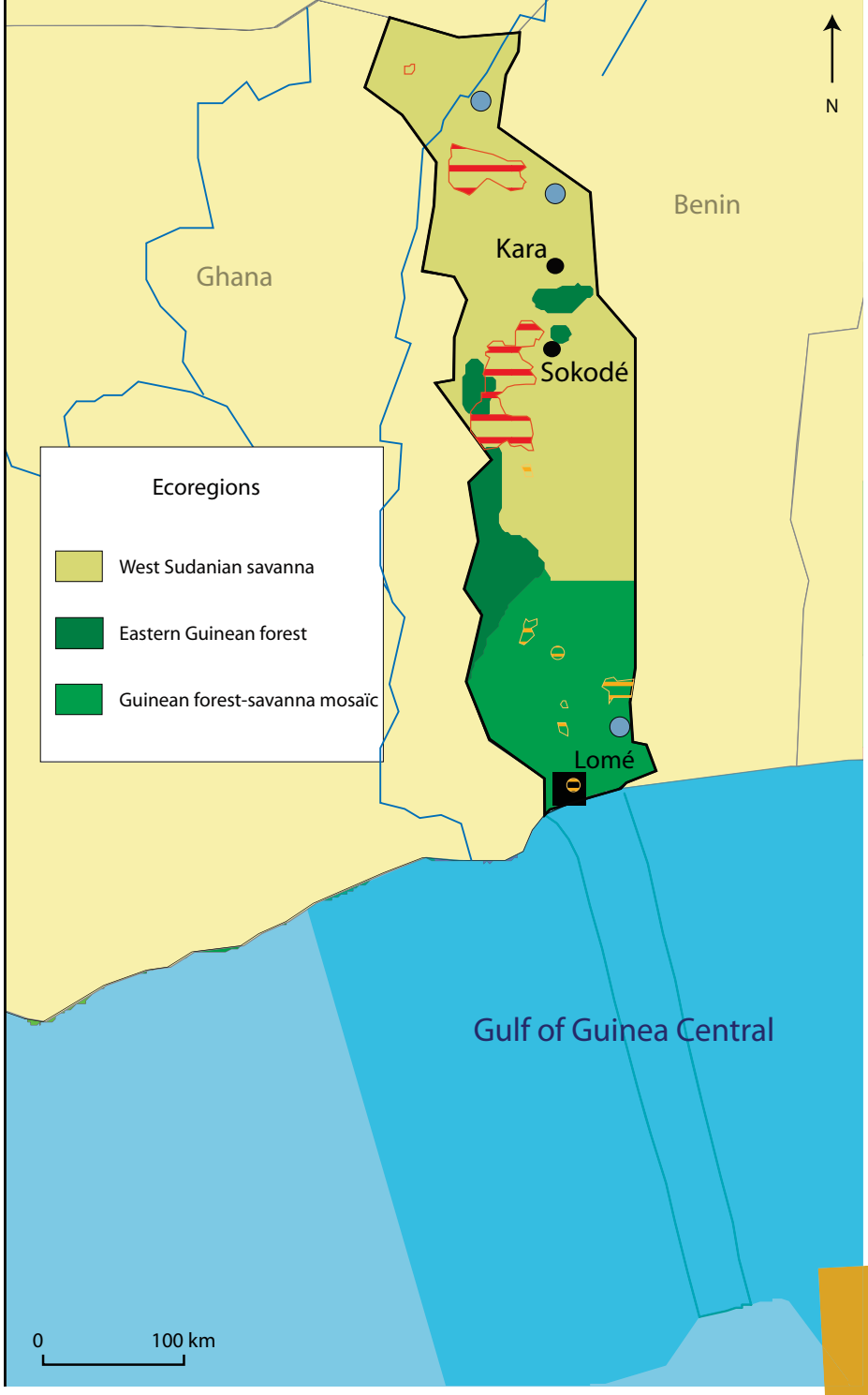
Natural habitats are under many anthropogenic pressures. Dependence on traditional sources of energy has led to significant harvesting of forest resources (notably for fuelwood). Deforestation, also due to slash-and-burn cultivation, has had serious environmental impacts and loss of soil fertility has become an issue in some areas.

GOVERNANCE

Togo quickly became aware of the environmental degradation of the country, and the associated loss of biological resources. Official regulations to improve the management of natural resources have been developed but have remained at the declaratory stage or have lacked enforcement. It would be useful to enhance the legal and institutional framework to promote biodiversity conservation in the field. However, the existence of a conservation revival program for seven priority protected areas and efforts on concerted management of international waters with neighboring countries are noteworthy.

MAIN NATURAL AREAS

Togo has diverse ecosystems, both terrestrial (mangroves, semi-deciduous forests, dry forests, woodlands, Guinean savannas, Sudanian savannas, gallery forests) and aquatic (river, lake, and marine habitats). The river system includes three main basins, the Volta (Oti, Kara, Mô) in the north-west, the Mono (Mono, Anié, Amou) in the south-east, and the Lake Togo Basin (Zio and Haho) in the south. The Togolese land area is covered by three ecoregions: Sudanian savannah, the eastern part of the Guinean forest block, and forest/savanna mosaic.



Terrestrial area
56,600 km²

EEZ
608 km²

Population
2007 6.3 million
2020 8.4 million

Population density
111 inhab./km²

GDP per capita
in purchasing power parity
$ 830

Humand Development Index
0.499

Ecological footprint
in global hectares per capita
0.8

FOREST COVER : 3,860 km² or 6.82 % of the land area

WETLANDS : 1,238 km²

Terrestrial Protected Areas			7.52% of the and area
IUCN Cat. I-II	1	280 km²	under protection
IUCN Cat. III-IV-V	7	3,974 km²	
Ramsar Sites	4	12,104 km²	-
World Heritage sites	1	500 km²	-
IBA	4	5,085 km²	-

The future of protected areas in the north of the country depends on focusing on the WAPO (W, Arly, Pendjari, Oti-Mandouri) complex, to capitalize on the transboundary synergies with Benin, Burkina Faso, and Niger: capacity-building, information/education, tourism, funding opportunities under the 9th European Development Fund, to be managed by the UEMOA Environment Direction for this sector.

ANTARCTICA AND SUBANTARCTIC ISLANDS

Terrestrial Area
outside of the Antarctic Continent
7,762 km²
Antarctic Continent (Adélie Land)
432,000 km²

EEZ (France)
1,750,000 km²

Population
No permanent population

Antarctica is located south of the 60th parallel south and is governed by the Antarctic Treaty ratified by 16 countries of the Francophonie .

The French Southern and Antarctic Lands (TAAF) are an overseas territorial collectivity and include (except for the Scattered Islands) 3 island groups in the southern part of the Indian Ocean, halfway between South Africa and Australia (Amsterdam and Saint Paul Islands, Crozet islands, Kerguelen Islands). In addition, Adélie Land, a part of the Antarctic continent, also falls under the Antarctic Treaty.
Climate varies between cold and dry polar (Adélie Land), cold hyper-oceanic (Crozet and Kerguelen) and temperate to subtropical (Amsterdam and Saint Paul).

There are no economic activities in the TAAF, with the exception of fishing in the EEZ.

FLORA AND FAUNA

Sub-Antarctic fauna is relatively poor: 24 species of vascular plants are found in Crozet and 29 in Kerguelen, mostly belonging to the biogeographic province formed by the Marion, Crozet, Kerguelen, and Heard Islands. Only *Lyallia kerguelensis* is strictly endemic to the Kerguelen Islands. Indigenous vegetation of Amsterdam (26 species of vascular plants) is of a very different type with distinct and variable biogeographic affinities.

Specific richness of indigenous invertebrate fauna is globally low (a few dozen taxa in total for the three island groups), with highly uneven richness and endemism levels between groups and islands.

The avifauna is remarkably rich and abundant: 38 breeding species for the Crozet Islands, home to the world's richest bird community, 36 species for the Kerguelen Islands, 8 species on Amsterdam and 12 on Saint-Paul, including 3 endemic species or sub-species.

Three species of pinnipeds (Elephant-seal and two species of fur seals) are breeding on the sub-Antarctic islands. There are 25 observed cetacean species (6 mysticetes, 19 odontocetes) ocuring in the TAAF waters.

According to the IUCN Red List, 7 species of sea birds in the natural reserve are considered Vulnerable, 3 are Endangered and one is Critically Endangered (Amsterdam Albatross), while one bird species is considered extinct.

GOVERNANCE

Biodiversity in Antarctica (including Adélie Land) is strictly protected under the Antarctic Treaty, the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR - 1980), and the Protocol on Environmental Protection to the Antarctic Treaty (1991).

Although located north of the 60th parallel south, other French territories are parts of the CCAMLR in their marine parts exclusively.

Terrestrial (all) and marine (partly) habitats of the TAAF have been protected through the creation of a national natural reserve (2006). Introduction of exotic species have been prohibited since 2001.
Many introduced species are problematic, including some twenty higher plants, at least 7 invertebrates, and 9 mammals accidentally or voluntarily introduced. Several eradication actions (rabbits, black rats, feral sheep, cows) have taken place with success on some smaller islands.

Over recent decades, French sub-Antarctic islands have been affected by a noticeable increase of average temperatures, especially in the Kerguelen Islands, by increasingly frequent summer droughts, with significant effects (decline of indigenous plant species, development of introduced species), leading to a standardization of terrestrial plant communities.

The French Southern Lands Natural Reserve: the largest French natural reserve with an area of 22,700 km^2 (A terrestrial area of 7,000 km^2 and a marine area of 15,700 km^2).

ECOSYSTEM SERVICES

Without a permanent population, these ecosystems are conservation sites for breeding species.

Fishing is the sole economic activity. It is strictly managed with science-based set annual quotas. However, the activity continues to have an impact on birds (fishing lines). The main target species is the Chilean sea bass *Dissostichus eleginoides*, a sought-after fish on Asian markets.

MAIN NATURAL AREAS

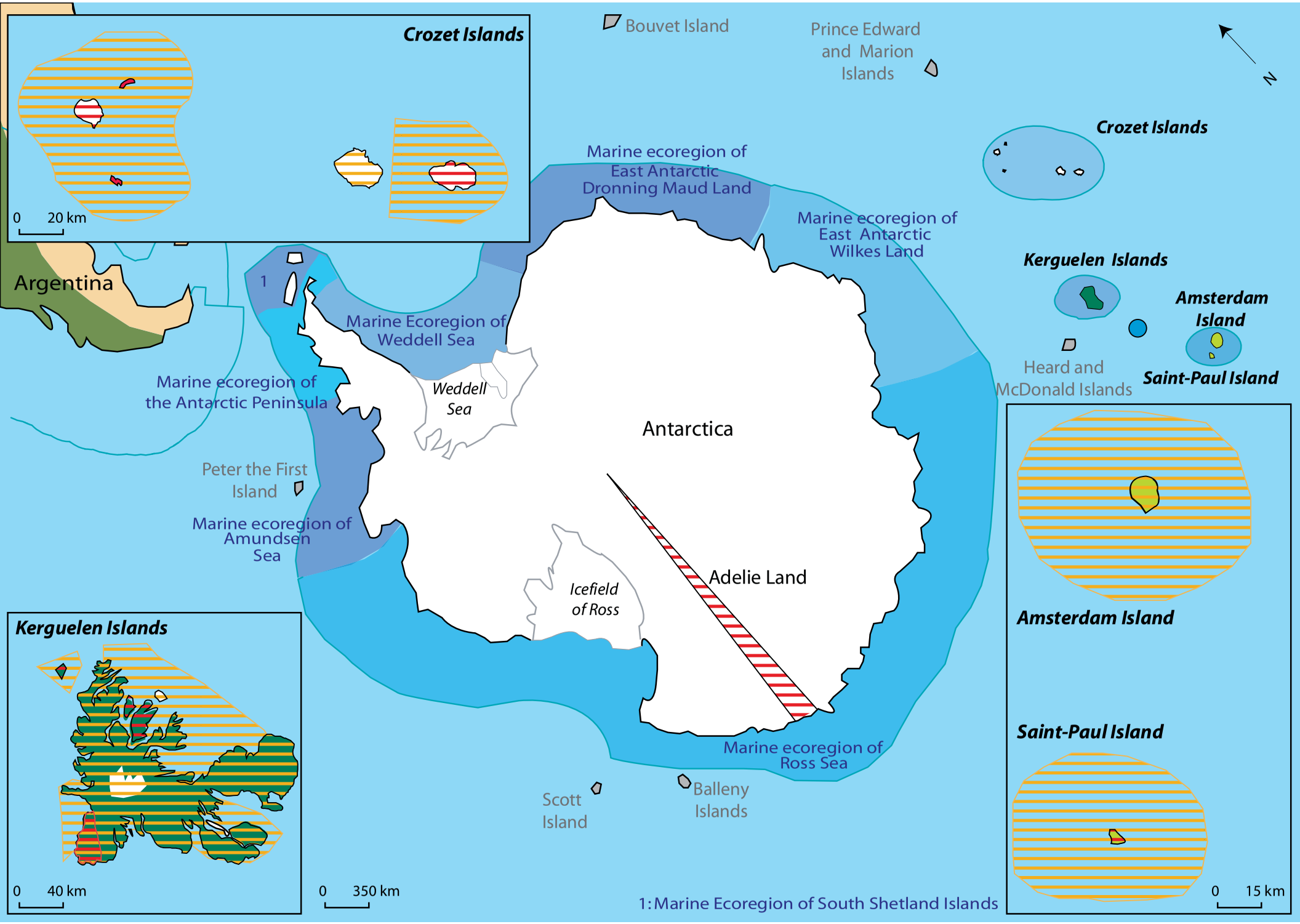
On the marine side, large Macrocystis seaweed areas in Kerguelen form a feeding and breeding site for many fish species. Off Kerguelen and Crozet Islands, the polar front is particularly rich in pelagic species (crustaceans, squids, fish), feeding in turn seabirds and pinnipeds.

Marine and terrestrial ecosystems are home to many endemic species. Created in October 2006, the French Southern Lands Natural Reserve, the largest in France, includes terrestrial and marine parts of Crozet, Kerguelen, Amsterdam, and Saint-Paul. In November 2008, France succeeded in inscribing this natural reserve on the Ramsar list of wetlands of international importance.

Crozet and Kerguelen Islands are home to the world's most diverse sea birds communities. Numbers can reach several millions, with the most important known biomasses in Crozet at 60 tons of birds by km².

WETLANDS : 7,762 km², 100% of land cover

Terrestrial Protected Areas IUCN Cat. I and IV	7,000 km²	3	French Southern Lands Natural Reserve
Marine Protected Areas	15,700 km²	5	
Ramsar Sites	7,000 km²	3	
MAB		0	
World Heritage		0	
IBA		17	


Crozet Islands
0 20 km
Bouvet Island
Prince Edward and Marion Islands
N
Crozet Islands
Marine ecoregion of East Antarctic Dronning Maud Land
Marine ecoregion of East Antarctic Wilkes Land
Kerguelen Islands
Amsterdam Island
Saint-Paul Island
Heard and McDonald Islands
Argentina
1
Marine Ecoregion of Weddell Sea
Weddell Sea
Marine ecoregion of the Antarctic Peninsula
Antarctica
Peter the First Island
Marine ecoregion of Amundsen Sea
Adelie Land
Icefield of Ross
Marine ecoregion of Ross Sea
Scott Island
Balleny Islands
Kerguelen Islands
0 40 km
0 350 km
Amsterdam Island
Saint-Paul Island
0 15 km
1: Marine Ecoregion of South Shetland Islands

BURMA (MYANMAR)
CAMBODIA
LAOS
PENINSULAR MALAYSIA
SINGAPORE
THAILAND
VIETNAM

CONTINENTAL SOUTH-EAST ASIA

Regional Surface Area
2,061,878 km²
for the 4 countries
1,261,500 km²

Population
2007 253 million
2020 288 million
for the 4 countries
2007 174 million
2020 196 million

Continental South-East Asia encompasses the vast area situated between the South China Sea and the Pacific Ocean, in a bridge-like shape towards Australia. Vietnam, Thailand, Laos, and Cambodia form an approximate 1,550 km-long by 1,100 km-wide block (1,261,500 km²). These four countries are members of the Association of Southeast Asian Nations (ASEAN), the ASEAN Regional Forum (ARF), the Mekong River Commission (MRC), the World Trade Organization (WTO) – with the exception of Laos – and the Asia-Pacific Economic Cooperation (APEC) - except Laos and Cambodia.

BIOGEOGRAPHICAL DATA

The sub-region is characterized by rugged terrain with altitudes reaching 3,200 m. The Chao Phraya in Thailand, the Mekong, and their tributaries form the main river system. The Mekong traverses China, Burma, Laos, Cambodia, Thailand, and Vietnam on 4,500 km and plays a crucial role, both ecological and economic, in the sub-region.

With the exception of Laos, all countries have a coastline on the South China Sea totaling about 6,350 km. The sub-region is under oceanic influences and is affected by monsoons, creating a tropical climate with distinctive rainy (May to October) and dry (November to April) seasons.

The natural vegetation cover is of forest type with lowland evergreen tropical forests, semi-deciduous tropical forests, and conifer and Dipterocarpaceae (Laos) forests, based on altitudinal gradients.

A total of 21 ecoregions are found in the four countries: 17 terrestrial ecoregions, including 5 wetlands, and 4 marine ecoregions. The sub-region includes 377 terrestrial protected areas totaling 204,020 km² out of which only 16.5 % benefit from a protection status pertaining to the IUCN Categories I to V; as well as 57 marine protected areas, for a surface of 8,313 km², with an even lower percentage (1.9 %) classified under these categories.

THREATENED EXCEPTIONAL BIODIVERSITY

Vietnam, Thailand, Laos, and Cambodia are included in the Indo-Burma Biodiversity Hotspot covering about 236,000 km² with 56.1 % classified as protected areas under IUCN Categories I to IV. The remarkable biological richness of the region is renowned for both its high endemism and a high number of threatened species (see Box 1).

A total of 1,149 species in Cambodia, 1,018 in Laos, 2,200 in Thailand, and 1,866 in Vietnam are considered threatened in these countries. The Asian elephant, the Javan and the Sumatran rhinoceros, the tiger, the sun bear, the gaur, the banteng, the Malayan tapir, and gibbons are among these highly-threatened species even if they are emblematic animals of the South-East Asia tropical forests.

The well-preserved Andaman marine ecoregion in Thailand harbors 210 coral species and over 100 species of coral fish. Nesting sites of several threatened marine turtle species are also found on its coasts. Over 3,000 fish species have been identified in the Vietnamese marine ecosystems compared to only 360 in Cambodia.

Biological surveys undertaken in the regional ecosystems constantly reveal the presence of new species (see Box 3).

The Indo-Burma Hotspot harbors 13,600 species of plants, 327 of mammals, 1,170 of birds, 484 of reptiles, and 202 amphibian species. Biological richness is associated with a high rate of endemism for plants (7,000 species – 51.5 %), mammals (73 – 22.2 %), birds (140 - 12 %), reptiles (201 – 41.5 %) or amphibians (114 – 56.4 %) but many endemic species are threatened, including 25 mammal species, 18 bird species, and 35 amphibian species. Experts predict an extinction of 13 to 42 % of the species of South-East Asia by 2100 due to a habitat loss of 70 to 90 %.

CONSERVATION STATUS IN THE SUB-REGION

The forests of South-East Asia remain among the most densely populated on Earth. Surface increase of protected areas should take into account the populations living in the newly protected areas. Forest cover is severely impacted by massive deforestation on mountains (an issue for the water supply of dams), development of lowland rice plantation and industrial plantations, slash-and-burn agriculture, and fires. Wildlife suffers also from the threat of poaching, habitat fragmentation, and major dams while marine ecoregions are affected by an overexploitation of their resources.

Threats to biodiversity are mainly due to socioeconomic reasons related to population growth (by an annual average rate of 1 %) and lack of human and financial resources for conservation. The ecoregions have variable protection levels which are currently insufficient to protect the main regional ecosystems, particularly marine ecoregions.

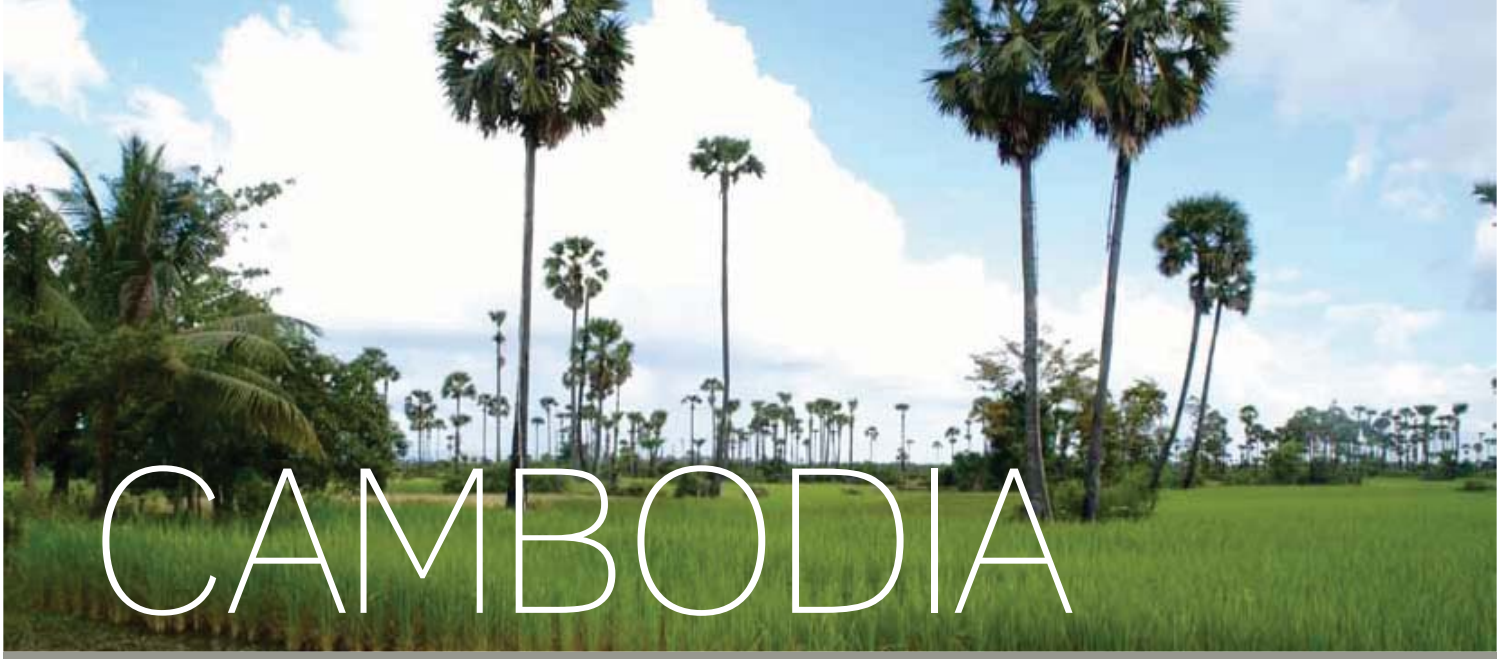
Over the last two decades, 1,068 new animal and plant species have been found in the Mekong Basin Ecoregion: plants (519), fish (279), amphibians (88), spiders (88), lizards (46), mammals (15), birds (4), turtles (4), salamanders (2), and frogs (1). The recent discovery of 5 new species of mammals, including the giant muntjack and the saola, in the humid forests of Laos and Vietnam, highlight the need for better knowledge on biodiversity, including in the even less known marine ecoregions.

SPECIFIC RECOMMENDATIONS

The exceptional biological diversity of South-East Asia remains highly vulnerable and dependent on habitat conservation both at national and regional level. At the regional level, it is specifically recommended to:

- Extend and enhance cooperation on conservation beyond the sub-region by involving China and South Korea, in order to address serious environmental issues such as dam construction and wildlife trafficking;
- Reinforce the protection status of most protected areas, including marine reserves, and facilitate the creation of transborder parks;
- Establish measures for forest sustainable management;
- Pursue studies on biodiversity in the various ecoregions and enhance research on marine ecoregions;
- Improve conservation of natural and anthropic ecosystems through public education, sustainable agriculture, conservation incentive mechanisms at village community level, and reinforcement of conservation institutions at national level;
- Mainstream the notion of ecosystem services into agricultural and land-planning policies; and
- Enhance actions against invasive alien species.

While the Mekong Basin is considered the richest in the world in terms of biodiversity, it is one of the world's five regions where biodiversity is the most threatened, particularly by deforestation, overfishing, and animal trafficking. Dams have a negative impact on the course of the Mekong River and the level of water has considerably decreased over the past decades. This is highly alarming as 16 new dams are planned or under construction (including the Xiaowan Dam in China, the world's biggest dam with a height of 300 m, to be operational at the end of 2013).



CAMBODIA

An ASEAN member country since 1999, Cambodia is biogeographically divided between the plains of the Mekong Valley and Lake Tonle Sap, the agricultural heartland, and three mountainous regions in the north, the north-west, and the south-west of the country. Agriculture represents 40 % of the total national production. Construction, tourism, and textiles are the other main economic sectors. Exploitation of hydrocarbon deposits found offshore is planned to begin in 2011.

Cambodia was the first country in the region to create a national park in 1925, the Angkor Complex. Its network of parks, reserves, and sanctuaries cover 18 % of the territory (32,200 km²); this percentage increases to 26 % when protected forests are included.

FLORA AND FAUNA

There is an estimated number of 8,000 plant species, among which 10 % might be endemic, but only 2,308 species have been formally described. Vertebrates include 123 mammal species including 11 marine species, 545 bird species, 88 reptile species, 63 amphibian species, and 843 fish species. Threatened species include 38 plant species, 39 mammal species, 36 bird species, 15 reptile species, and 22 fish species. Two remarkable mammal species (the rare kouprey and the Javan rhinoceros) and two bird species are extinct in Cambodia. Twenty-eight alien invasive species have been identified.

ECOSYSTEM SERVICES

Preserved ecosystems in Cambodia cover a relatively extensive area, but the country has lost more than a quarter of its forest cover in a few years and ranks third in the world in term of annual loss of primary forest. The main threats to biodiversity include increasing demographic pressure and over-exploitation of natural resources, lack of planning, weak law enforcement, and tenure insecurity. More direct causes include pollution, poaching, deforestation, and clearing of watersheds, resulting in siltation of watercourses and smuggling of rare species.

GOVERNANCE

A member of the Mekong River Commission, Cambodia signed the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin. Several relevant policies and legislations have been adopted at national level and their implementation has started, but privatization of natural resources has often resulted in over-exploitation.
Focus should be on a needed national biodiversity survey, the lack of protection of the marine environment (and particularly coral reefs), and the absence of an action plan against invasive species.

Surface Area
181,040 km²

EEZ
160,950 km²

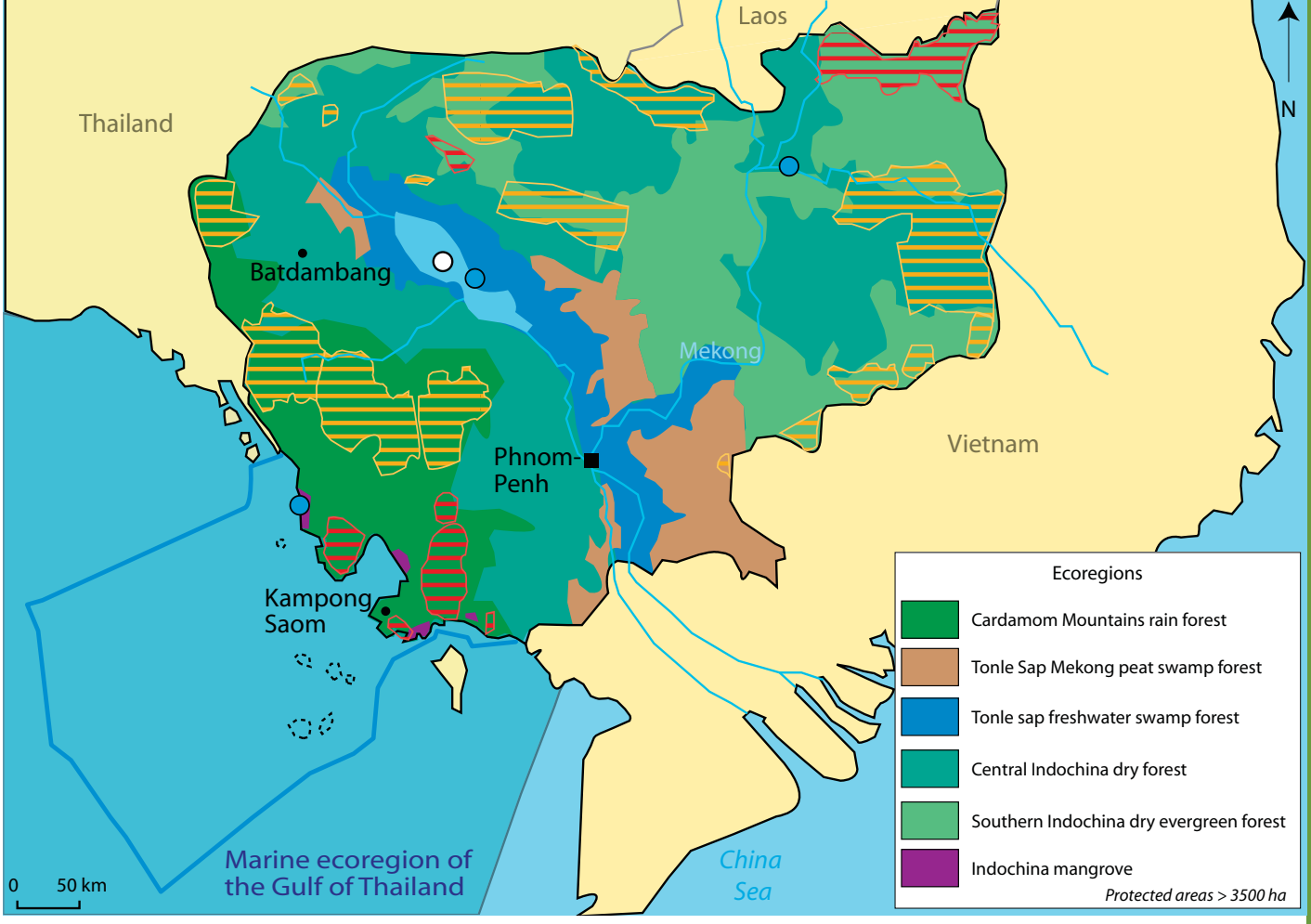
Population
2007 14.3 million
2020 17.7 million

Population Density
79 inhab./km²

GDP per capita
in purchasing power parity
$ 1,949

Human Development Index
0.59

Ecological Footprint
in global hectares per capita
0.9



MAIN NATURAL AREAS

A forest country with wetlands covering about 30% of the territory, Cambodia has a 435 km coastline, marked by a succession of beaches, mangroves, coral reefs, and seagrass beds. The Mekong watershed covers 86 % of the country while the “Great Lake” of Tonle Sap, an area of great significance for the national economy, is the largest wetland in South-East Asia.
The 29 protected areas, including 7 transboundary areas shared with Laos and Vietnam, include almost all habitat types found in the country’s 6 ecoregions. In addition, there are 14,860 km² of preserved forest areas, for a total of 47,500 km² of protected (26 % of the territory).

Land- use planning has started to integrate biodiversity conservation, through the establishment of the first biodiversity corridor in the south of the Cardamom Mountains, mainly for elephants.

FOREST COVER: 104,470 km², 57 % of total land area

WETLANDS : 21,800 km²

Terrestrial Protected Areas			% of total land area
IUCN Cat. I-II	7	7,422 km²	4.1 %
IUCN Cat. III-V	16	35,160 km²	19.4 %
IUCN Cat. VI	3	4,039 km²	2.2 %
Marin Protected Areas IUCN Cat. I-II	1	900 km²	0.5 %
Ramsar Sites	3	546 km²	0.3 % under protection
Biosphere Reserves	1	3.162 km²	-

LAOS

The Lao People's Democratic Republic lies at the heart of Southeast Asia, stretching a thousand kilometers from north to south from the Chinese to the Cambodian border. The country is a member of the ASEAN. The rugged terrain includes mountain ranges and high plateaus on 70 % of the country, with the highest peaks of the Annamite Chain (Mount Rao Co at 2,286 m) at the border of Vietnam. Laos has a tropical climate with two seasons. The economy is mainly based on agriculture but logging, electric power generation, and tourism are the other main economic sectors.

The only existing biodiversity conservation areas are under low levels of protection (IUCN Cat. VI). Creation of strict reserves, national parks, and specific reserves is highly recommended as over a quarter of all mammal species present in Laos are threatened.

FLORA AND FAUNA

Due to its low population density and basic communication network, Laos is probably the Asian country with the most abundant and diversified fauna. However, wildlife remains poorly documented. There are 178 known mammal species. About 700 bird species and about 600 fish species can be found. 70 snake species have been identified. The flora of Laos includes 5,000 vascular plant species with many endemics (13 invasive alien species have been found in the country). Globally threatened species include 21 plant species, 46 mammal species, 21 bird species, 11 reptile species, and 5 amphibian species.

ECOSYSTEM SERVICES

Deforestation and illegal timber trade are the main threats as forest cover does not exceed 40% of the country. Intensive deforestation on mountains will jeopardize water supply to dams, with inevitable effects on hydropower production. Expanding agricultural areas (80 % between 1995 and 2005) contribute to soil degradation from erosion and shortening of fallow periods. The rich wildlife is threatened by poaching, degradation and fragmentation of natural habitats, forest pastures, and aquaculture.

GOVERNANCE

There is a significant gap between continually evolving formal laws and local social practices for access to lands. Implementation of tenure allocation systems based on individual land-usage rights has disrupted existing traditional practices by denying their efficiency and traditional tenure control by communities. It has contributed to continued and even increasing land clearing. Local communities are the first to be affected by acute social and environmental crises generated by globalization policies and depletion of natural resources.

Terrestrial Area
236,800 km^2

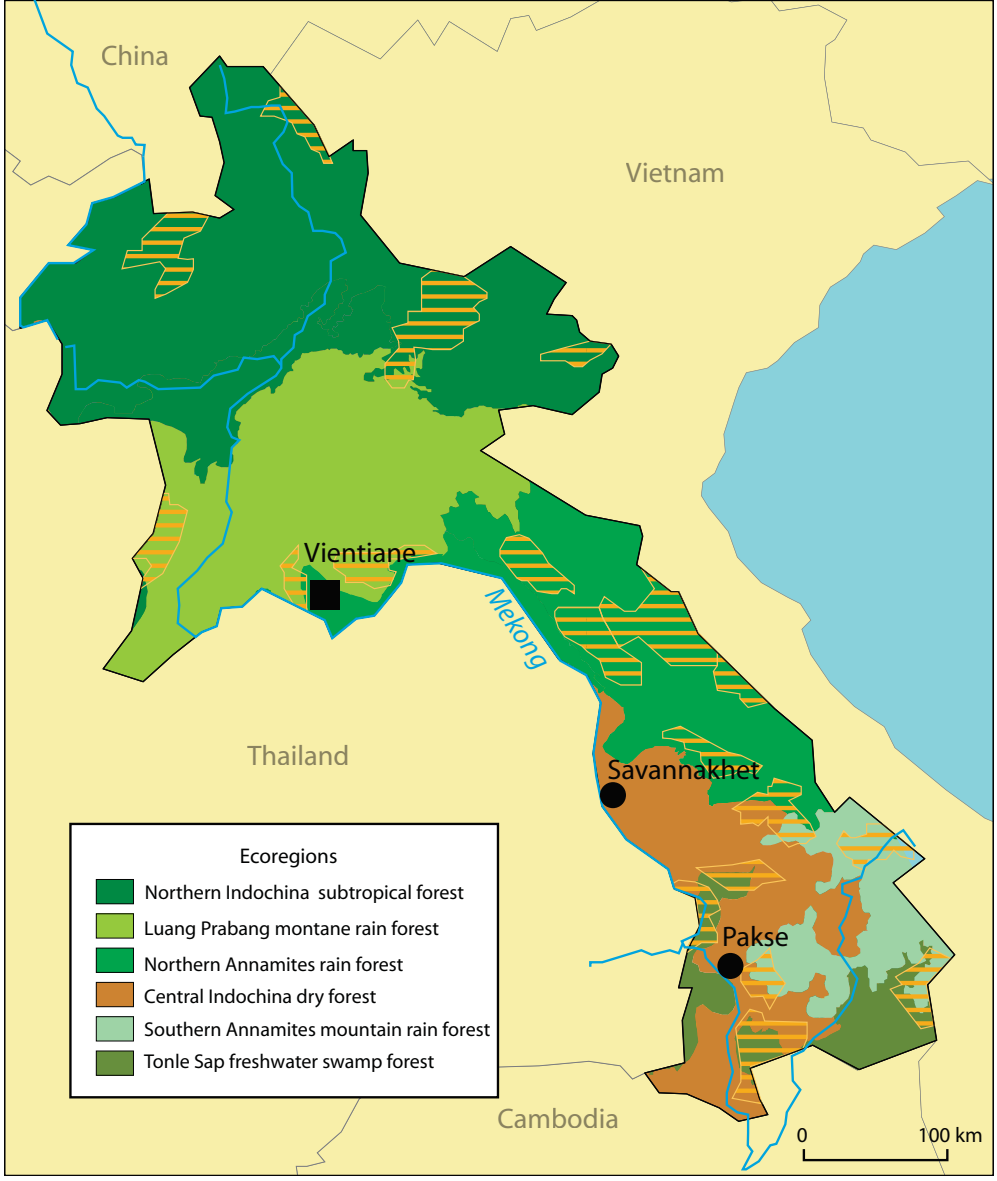
Population
2007 6.1 million
2020 7.7 million

Population Density
25.8 inhab./km^2

GDP per capita
In Purchasing Power Parity
$ 2,100

Human Development Index
0.62

Ecological Footprint
in global hectares per capita
0.9



MAIN NATURAL AREAS

Natural vegetation types following an altitudinal distribution include Dipterocarpaceae dry forests, evergreen dry forests, semi-deciduous mixed forests, and coniferous forests sometimes associated with leafy trees. The Mekong, forming part of the border with Thailand, is the main watercourse. Few wetlands can be found in Laos but the banks of the Mekong River and its tributaries are suitable habitats for important bird communities.

FOREST COVER : 115,000 km² 48 % of land area, 70 % under protection

WETLANDS : 1,510 km²

Terrestrial Protected Areas			
IUCN Cat. VI	29	50,088 km²	21.2 % of land area*
World Heritage Sites	2	390 km²	100 % protected
IBA	27	23,850 km²	84.7 % under protection

* including 14 % of national biodiversity conservation areas and 8.2 % of protected areas at provinces and districts levels.

The mountainous region at the border between Laos and Vietnam is a biodiversity hotspot. Two new species of mammals, the saola and the giant muntjack were recently discovered, and the Vietnam warty pig Sus bucculentes, considered extinct since 1982, was observed there.

THAILAND

Thailand marks the transition between the Asian continent and the Malay Peninsula and is bordered at its southern part by a 2,640 km coastline. Thailand has a tropical climate with two seasons, and an average annual rainfall ranging from 1,500 to 4,000 mm. A member country of ASEAN and APEC, Thailand has an economy based on agriculture, exploitation of precious woods, and shrimp farming. Other dynamic sectors include tourism and the computer industry. Coal and oil exploitation cover a large part of the energy production.

Despite Thailand's long history with the elephant, a symbol of the country, protected areas harboring wild elephants are mere fragments, with only several dozen individuals per site, a population number below the survival threshold. In close collaboration with the National Parks Service, the National Elephant Institute has been created to support the protection of the last wild elephants and their habitat.

FLORA AND FAUNA

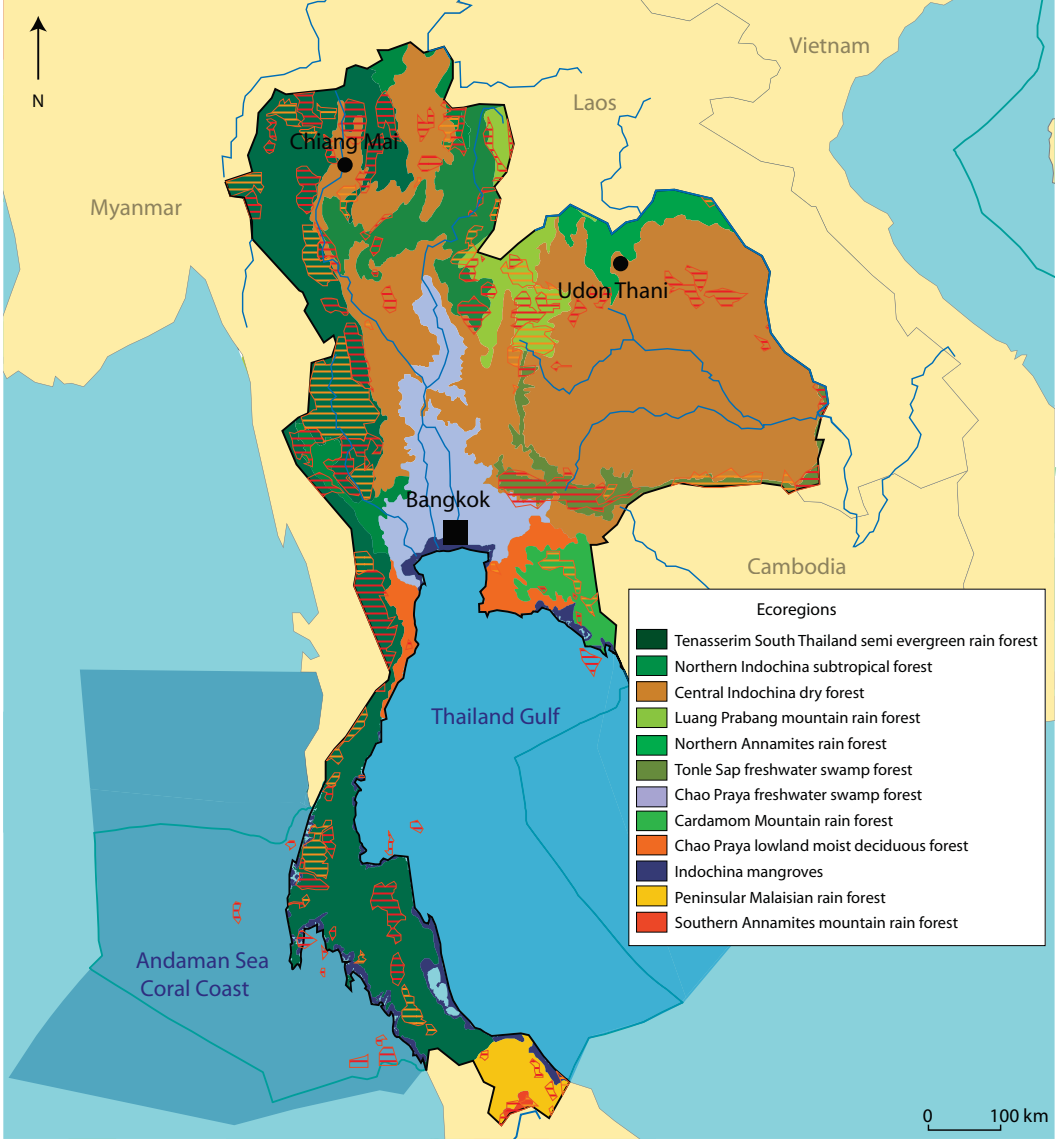
Thailand has an exceptionally rich flora with about 27,000 species. There are 265 mammal species including 7 endemics. A total of 955 bird species, both resident and migrant, are known. There are 313 reptile species and 107 amphibian species. The sea waters and coral reefs of Thailand harbor thousands of species.
Threatened species include 86 vascular plants, 57 mammal species - the most famous being the elephant, the tiger, the leopard, the Asian black bear, the gaur, the banteng, and the Malayan tapir - 45 bird species, 22 reptile species, and 4 amphibian species. Out of the 62 important bird areas, 50 harbor threatened species. Thailand faces a worrying number of invasive alien species (53).

ECOSYSTEM SERVICES

About a third of the Thai population use medicinal plants. Main threats to ecosystems and biodiversity include agricultural intensification, logging, and poaching. Large infrastructure construction (bridges), aquaculture development, and expansion of rice cultivation are taking a toll on wetlands and mangroves. Tourism development, blast fishing, and pollution pose severe threats to coral reefs and their rich biodiversity.

GOVERNANCE

While the creation of the Royal Forest Department dates back to 1896, drafting of laws pertaining to fauna protection and creation of national parks or forest reserves did not really happen before the 1960s. Twenty years later, in the aftermath of severe environmental damage, a policy of natural ecosystem preservation was implemented. The objective over the 1997-2016 timeframe is to achieve a forest cover equivalent to 50 % of the country's surface area, including half in protected forests. There are 40 planned sites to be designated as national parks.



Surface Area
514,000 km²

EEZ
316,000 km²

Population
2007 67 million
2020 71.4 million

Population Density
130 inhab./km²

GDP per capita
in purchasing power parity
$ 8,500

Human Development Index
0.79

Ecological Footprint
in global hectares per capita
1.4

MAIN NATURAL AREAS

The central region is dominated by the large alluvial plain of the Chao Phraya, the chief river of Thailand. Mountain ranges, not exceeding 2,600 m in altitude, stretch west of this basin while the arid Khorat plateau is found on the eastern part along the Mekong Valley. Forests are the main component of the natural vegetation: hygrophilous or tropical monsoon forests, and secondarily, temperate and subtropical montane forests, and swamp or mangrove forests. The country has 12 distinct ecoregions.

FOREST COVER : 128,500 km², 25 % under protection

WETLANDS : 24,770 km²

Terrestrial protected areas			% of land cover
IUCN Cat. II	69	41,680 km²	8.1 %
IUCN Cat. III	8	1,283 km²	2.5 %
IUCN Cat. IV	32	22,601 km²	4.4 %
Marine Protected Areas			
IUCN Cat. II	8	2,400 km²	0.5 % under a form of protection
Ramsar Sites	13	3,706 km²	68.6 % under a form of protection
Biosphere Reserves	5	1,850 km²	14.1 % under a form of protection
World Heritage Sites	5	5,775 km²	100 % protected
IBA	62	36,405 km²	86 % under a form of protection

Thailand might harbor 6 % of the world's vascular plants, 10 % of all fish species, 10 % of all bird species, 5 % of all reptiles, and 3 % of the world's amphibian species.

VIETNAM

Vietnam has a 3,260 km coastline bordering the East Sea (Bien Dong in Vietnamese), the Gulf of Tonkin, and the Gulf of Thailand. The climate is tropical in the South and sub-tropical in the North and varies based on sea proximity or altitude. The average rainfall exhibits a similar fluctuation pattern from 1,200 to 3,000 mm. Large areas of forests and grasslands have been converted for agricultural purposes. A member of the ASEAN and APEC, Vietnam has an economy based on mining, agriculture, and a steadily growing tourism sector.

A list of protected areas, labeled the "2010 List", gathering 112 sites proposed for creation or extension, has been approved at provincial level, and subsequently by the Prime Minister. Implementation would double the total surface of sites under protection.

FAUNA AND FLORA

The very rich and diverse flora and fauna remain imperfectly documented. There are many endemic species (over 10 % for plants, mammals, and birds). Flora might include over 15,000 species, among which 7,000 have been identified, representing about 200 families. There are 288 mammal species and sub-species, including 12 cetacean species. There are 826 bird species, 180 reptile species, 153 amphibian species, and about 5,000 fish species. About 300 species are threatened: 147 plants, 54 mammals (19 %), 37 birds (5 %), 27 reptiles (15 %), and 16 amphibians (11 %). A total of 38 exotic invasive species have been identified.

ECOSYSTEM SERVICES

Conflicts involving the massive use of defoliants and demand for land, associated with high population growth, have reduced natural habitats. Deforestation contributes to flooding, causing soil erosion and the siltation of rivers and lakes. Deforestation also destroys natural habitats of fauna, which are also affected by illegal trade. Industrial and urban pollution (oil, sewage), in the context of rapid urban spread, have an impact on the fauna and flora of marine and river ecosystems, as well as on tourism.

GOVERNANCE

Vietnam has declared the objective of restoring its forest cover back to its 1950 level and has engaged in three priority areas: enforcement of tenure and mining laws, mitigation of industrial pollution, and protection of water resources. A project on environmental services development has been planned, at national, provincial, and local levels. Resources allocated to conservation authorities are largely inadequate, even to ensure biodiversity monitoring at national level.

Surface Area
329,660 km²

EEZ
110 000 km²

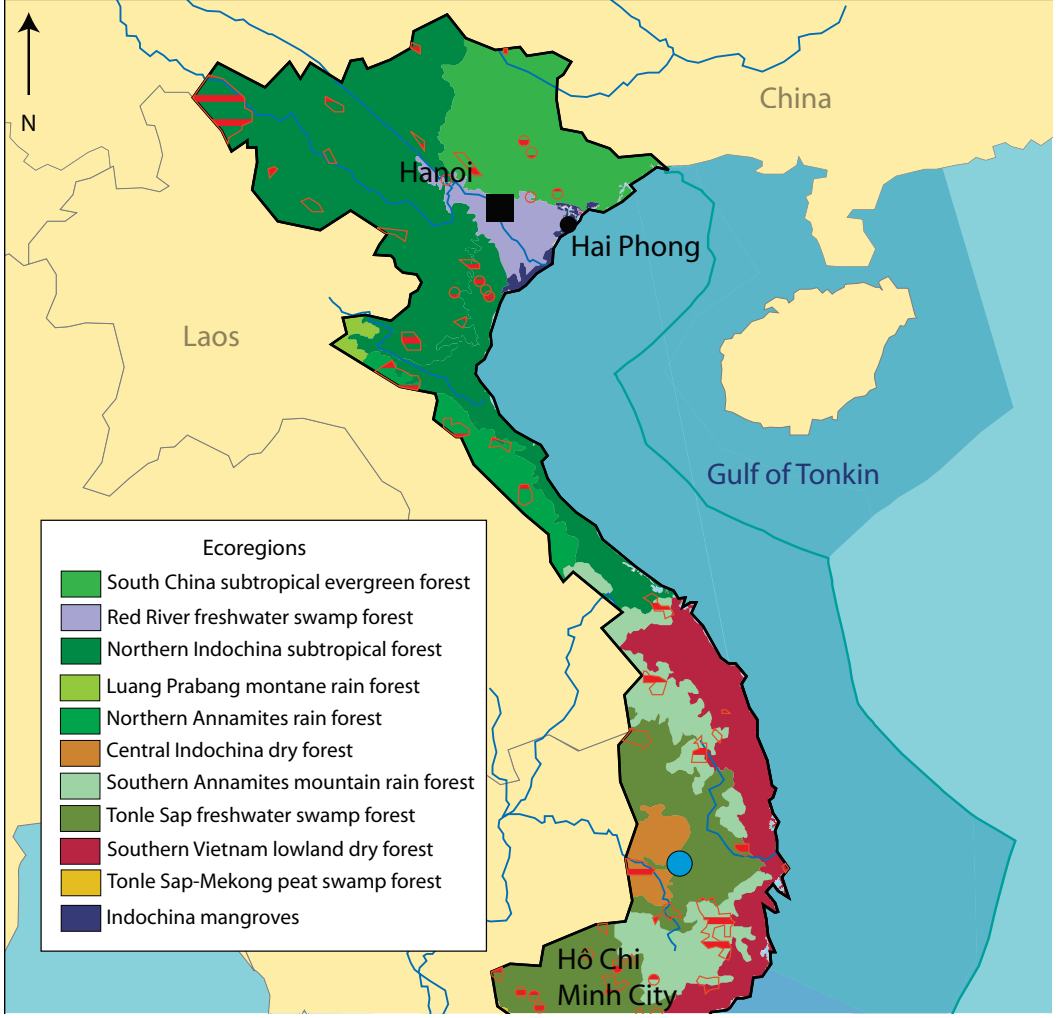
Population
2007 86 million
2020 98 million

Population Density
260 inhab./km²

GDP per capita
in purchasing power parity
$ 1,052

Human Development Index
0.73

Ecological Footprint
in global hectares per capita
1



MAIN NATURAL AREAS

Mountainous areas (rising to 3,143 m) and high plateaus represent 2/3 of the territory. Vegetation mainly includes evergreen lowland and montane forests as well as dense dry forests. Huge mangrove areas are characteristic of the coastal habitats. Distributed along the coasts, coral reefs are more abundant in the South of the country. Since 1960, Vietnam has established a large network of 128 protected areas that continues to extend despite the fact that the forest areas of South-East Asia have the highest population densities in the world. Among the 14 ecoregions, including 3 marine ones, 5 are considered of global priority.

FOREST COVER : 131,188 km², 38.7 % under protection

Terrestrial Protected Areas			4.8 % of land cover
IUCN Cat. II	15	4,813 km²	1.5 %
IUCN Cat. III-IV-V	40	10,322 km²	3.3%
Marine Protected Areas			
IUCN Cat. II	2	497 km²	0.5 % of the EEZ
IUCN Cat. III-IV-V	31	1,117 km²	
Ramsar Sites	2	258 km²	100 % under protection
Biosphere Reserves	8	33,226 km²	5 % under protection
World Heritage Sites	2	-	100 % protected
IBA	63	16,900 km²	46 % under a form of protection

New species have been recently discovered, including the saola, the giant muntjac, and the black gibbon. During the 1990s, new discoveries for science constituted a total of 13 genera and 222 plant species (there were 3 new genera and 62 new species for the orchid family alone), 4 new species of large mammals, 4 of small mammals, 3 birds, and many reptiles and amphibians.

STATES AND TERRITORIES

ALBANIA
ALGERIA
BOSNIA AND HERZEGOVINA
CYPRUS
CROATIA
EGYPT
SPAIN
FRANCE
GIBRALTAR (UK)
GREECE
ISRAEL
ITALY
LEBANON
LYBIA
MALTA
MOROCCO
MONACO
MONTENEGRO
SLOVENIA
SYRIA
THE PALESTINIAN TERRITORIES
(THE GAZA STRIP)
TUNISIA
TURKEY

MEDITERRANEAN BASIN

Number of countries
23 States and Territories

Regional Surface Area
8,380,024 km²

Population
2008 460 million

Density
55 inhab./km²

Population change
2000-2006 1.26 %

The Mediterranean Sea covers an area of 2.51 million km² between the north of Africa, the south of Europe and the Middle-East. Almost land-locked, this sea communicates with the Atlantic Ocean and the Black and Red Seas.

Its climate influence zone roughly coincides with the distribution range of the olive tree and forms the Mediterranean Basin.

Cooperation in the Mediterranean Region is regulated by several regional agreements, including :

- The Convention for the Protection of The Mediterranean Sea Against Pollution (Barcelona Convention) – 1976, revised in 1995 as the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, along with an Action Plan (MAP Phase II); it includes a number of protocols such as the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (Signed: 10/06/1995)
- The General Fisheries Commission for the Mediterranean (GFCM)
- The ACCOBAMS Agreement (Entered into Force: 01/10/2001)
- The Barcelona Process: the Euro-Mediterranean Partnership (1995) and the Union for the Mediterranean (2008)

BIOGEOGRAPHICAL DATA

The Mediterranean Basin overlaps with the Mediterranean biogeographical region but included countries extend beyond this region. The region is characterized by summer drought and heavy winter rainfall. It is highly vulnerable to forest fires and erosion, and therefore to the risks of climate change. However, the region is very important for agriculture (cereals, olive trees, vineyards, greenhouse cultivation) and is the world's first touristic destination (31% of the world's tourism). 40% of the coastline is artificialised. The Mediterranean Sea is saltier and poorer in nutrients than the Atlantic Ocean. It is highly exploited for fisheries, leading to alarming declines of stocks of some commercial species (tuna, swordfish) and management problems for others (hake, red mullets, sardine, pink shrimp).

SPECIES DIVERSITY

The region is home to 10% of all terrestrial higher plants and 7 to 8% of marine species (about 12,000 species). Based on the Red Lists, 16% of terrestrial mammals, 30% of freshwater fish (North Africa), 43% of cartilaginous fish, and 8.5% of marine fish species are considered threatened, the most endangered being the monk seal and the cartilaginous fish group.
The region also has 745 marine alien species, among which 52% are increasing in numbers.

CONSERVATION STATUS IN THE REGION

The entire Mediterranean region is a Biodiversity Hotspot due to its specific diversity and the significant threats it is faced with. The management of natural habitats has improved thanks to activities developed under regional environmental conventions and agreements. For instance, the SPA/BD Protocol identified 104 endangered or threatened species, some of which are included in the Annexes of the Protocol and others in national lists. Furthermore, seven regional action plans on the Mediterranean heritage species helped take into account some key species or habitats and develop ecosystem approaches. Finally, the General Fisheries Commission for the Mediterranean (GFCM) has implemented some fisheries control measures.

The Mediterranean, an area of active regional cooperation for the protection of marine and coastal habitats.

SPECIFIC RECOMMENDATIONS

Documents published under the Blue Plan (2009) highlight several recommendations:

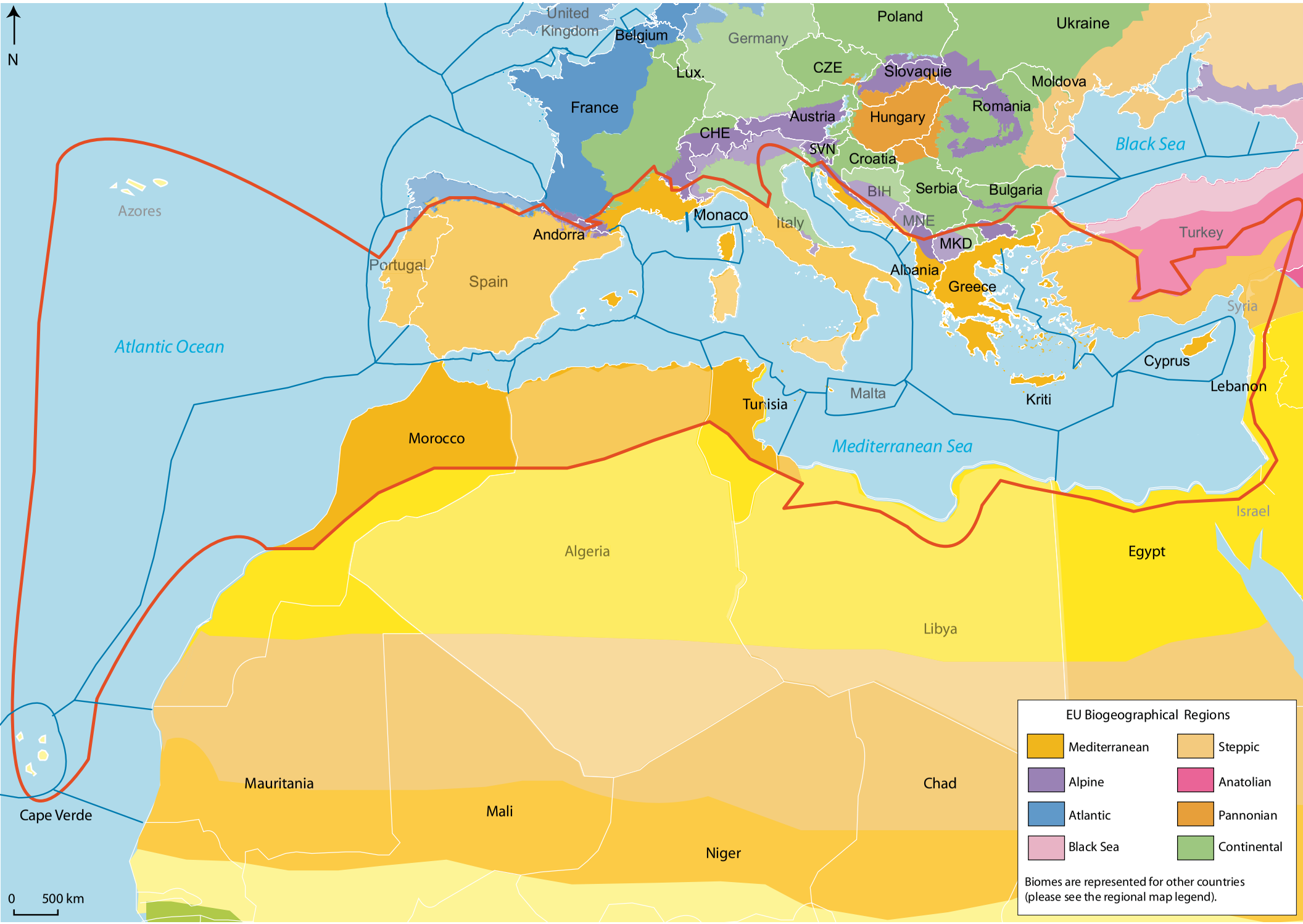
- Enhance efforts to anticipate the effects of climate change, carefully manage rare natural resources such as water or energy, curb biodiversity loss, preserve coveted areas such as coastal zones, or promote more sustainable production or consumption;
- Improve knowledge on habitats and their status;
- Identify sites to create marine protected areas outside national jurisdictions to achieve the international objective of protecting 10 % of marine ecosystems by 2012.

Other recommendations from the RAC/SPA and other organizations focus on improving the network of marine and coastal protected areas in waters under national jurisdiction.

The Mediterranean Basin :

- an exceptional homogeneity, covering a single biogeographic region that coincides with the range of the olive tree;

- an area of extreme fragility: erosion, marine pollution, over-fishing... accentuated by climate change.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United Kingdom
Belgium
Germany
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Croatia
Black Sea
BIH
Serbia
Bulgaria
Azores
Monaco
Italy
MNE
Turkey
Andorra
MKD
Portugal
Spain
Albania
Greece
Syria
Atlantic Ocean
Cyprus
Lebanon
Malta
Kriti
Tunisia
Morocco
Mediterranean Sea
Israel
Algeria
Egypt
Libya
Mauritania
Chad
Cape Verde
Mali
Niger
0
500 km
EU Biogeographical Regions
Mediterranean
Steppic
Alpine
Anatolian
Atlantic
Pannonian
Black Sea
Continental
Biomes are represented for other countries
(please see the regional map legend).

CYPRUS

Located in the north-eastern part of the Mediterranean Basin, the island of Cyprus includes a vast central plain, surrounded by the Troodos Mountains in the West (rising at 1,951 m at Mount Olympus or Chionistra) and the Kyrenia Range in the North-East (about 1,000 meters). The climate is typically Mediterranean (dry). The Republic of Cyprus has been a member of the EU since 2004. The north of the island is occupied by the self-proclaimed Turkish Republic of Northern Cyprus while two British military enclaves (Akrotiri and Dhekelia) cover an area of 254 km Agricultural production is still considered an economic sector less important than in the past, depends on annual rainfall variations.

The Lara/Toxeftra turtle reserve on the Akamas Peninsula, at the north-westernmost point of Cyprus, is a nesting site for Loggerhead Turtles and Green Turtles. Similar to the rest of the peninsula, the reserve is exceptional in terms of flora (39 endemic species) and unspoiled beaches, but is unfortunately threatened by hotel development and related services.

FAUNA AND FLORA

The island of Cyprus has 1,682 vascular plant species with a 7% rate of endemism (141 species). Cyprus Cedar and Golden Oak forests are well managed and protected. Out of the 90 nesting bird species (residents, summer visitors and occasional nesting birds), 3 are considered threatened. The island is a major transit area on bird migration routes between Africa and Europe. Out of the 32 existing mammal species, 5 are threatened. A total of 24 invasive alien species (flora and fauna) have been documented.

ECOSYSTEM SERVICES

Natural habitats are essential for the island's water supply as well as tourism development. Forest fires, such as the 1995 fires in the Pentadaktylos Mountains, have significant impacts on soil conservation and water management. Water is an issue for the country due to the lack of natural reservoirs, irregular rains, and aquifer salinity caused by excessive pumping. Brine disposal from desalination plants is a new threat to the ecological stability of coastal waters.

GOVERNANCE

With 8.3 % of its territory under protection, Cyprus is close to reaching its CBD commitments. Since the country's accession to the European Union, the government of Cyprus has developed its Natura 2000 network and greatly adapted its environmental laws to comply with European standards. Due to the observed impacts of tourism on natural habitats over the last thirty years, it would be important for the Ministry of Agriculture, Natural Resources, and Environment to have a say in any tourism-related decision.

Surface Area
9,250 km²

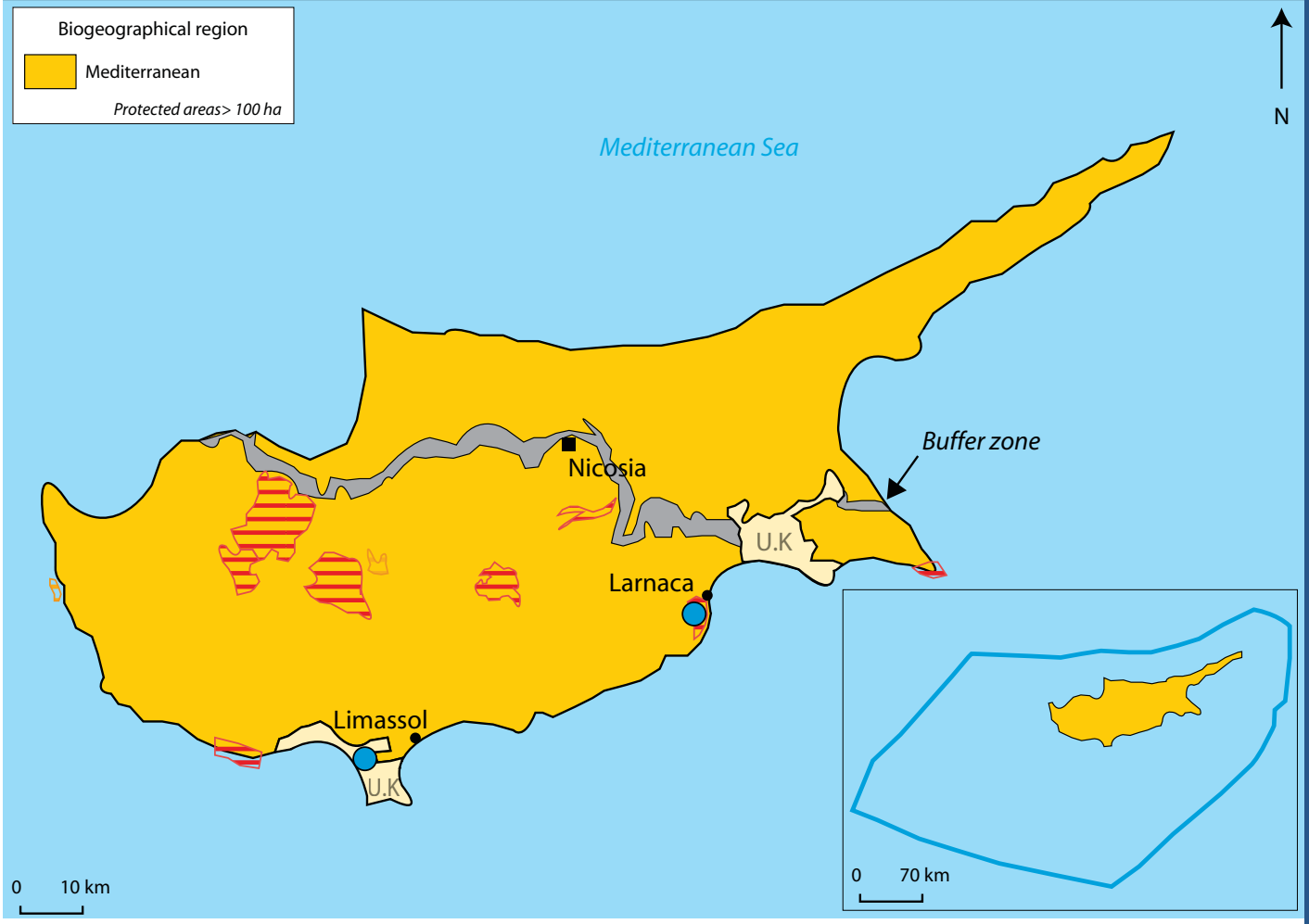
Exclusive Economic Zone
98,550 km²

Population
2007 0.9 million
2020 1 million

Population Density
97 inhab./km²

GDP per capita
In Purchasing Power Parity
$ 29,898

Human Development Index
0.91



MAIN NATURAL AREAS

Cyprus is part of the Mediterranean Basin biodiversity hotspot. Humans have been present on the island for a long time, significantly changing its vegetation since ancient times. Natural habitats (pine forests, cypresses, cedars, and scrublands) only remain on 18 % of the island. None of the 14 main rivers, originating in the Troodos Mountains, is permanent. Cyprus' coastal waters are naturally poor in nutrients (ultra-oligotrophic), compounding the impacts of human-induced eutrophication.

FOREST COVER : 1,728.58 km², 18.6 % of land cover

WETLANDS : 107.31 km², 1.16 % of land cover

Terrestrial Protected Areas			% of land area
IUCN Cat. I-II	10	90 km²	
IUCN Cat. III-IV-V	8	680 km²	8.3 %
Marine Protected Areas	1	20 km²	
Natura 2000 - SPA	29	1,593 km²	25.9 %
Natura 2000 - SCI	40	883 km²	13.1 %
Ramsar Sites	2	21.11 km²	*(salt lakes of Akrotiri and Alykes Larnakas)*
IBA	19	1,641.55 km²	

The Troodos National Forest Park, located in the central region, covers an area of 93 km², ranging from 700 m (Moni Forest) to the peak of Mount Olympus (1,952 m). This area of volcanic rocks is the world's best-preserved ophiolithic site (rich in ophiolites – pieces of oceanic plates found in mountains); studies on the area have helped improve knowledge on the formation of the oceanic crust. About 750 plant species are found in the park, including 72 species endemic to Cyprus, and 12 local endemics found only in the park.

EGYPT

A member of the CEN-SAD and the COMESA, Egypt is at the crossroads of Asia and Africa. Its civilization has been a tremendous contribution to our world cultural heritage. The Nile River is the main source of life, traversing the country from south to north on 1,500 kilometers. The Nile valley ends with a large delta reaching 200 km in width and covering 4 % of the territory. The rest of the country is arid. The only regions favorable to agriculture are the Nile Valley, the delta, and some oases in the Libyan Desert; 99 % of the Egyptian population lives on less than 5 % of the territory. Essentially based on agriculture, economy has been diversified through tourism, mining, and industrialization.

The Red Sea, one of the most saline seas in the world has a wealth of islands, coral heads, and "undersea gardens." Its marine life makes it a true natural wonder, often called a "life-size aquarium" for its richness in alcyonarians, gorgonians, or madrepores.

FAUNA AND FLORA

Egypt has at least 3,000 plant species (62 endemic and 2 threatened species), 116 mammal species (13 threatened), 447 bird species (14 threatened), 109 reptile species (6 threatened), 9 amphibian species and over a thousand fish species. Invertebrates are very diverse, including more than 200 coral species, 800 mollusks and over a thousand crustaceans. There are 25 invasive exotic species. Opening on two seas has resulted in a rich marine biodiversity. The extensive shallow waters of the Red Sea are notably famous for their marine life, including fish and corals, with an estimated rate of endemism of 8 and 17% respectively.

ECOSYSTEM SERVICES

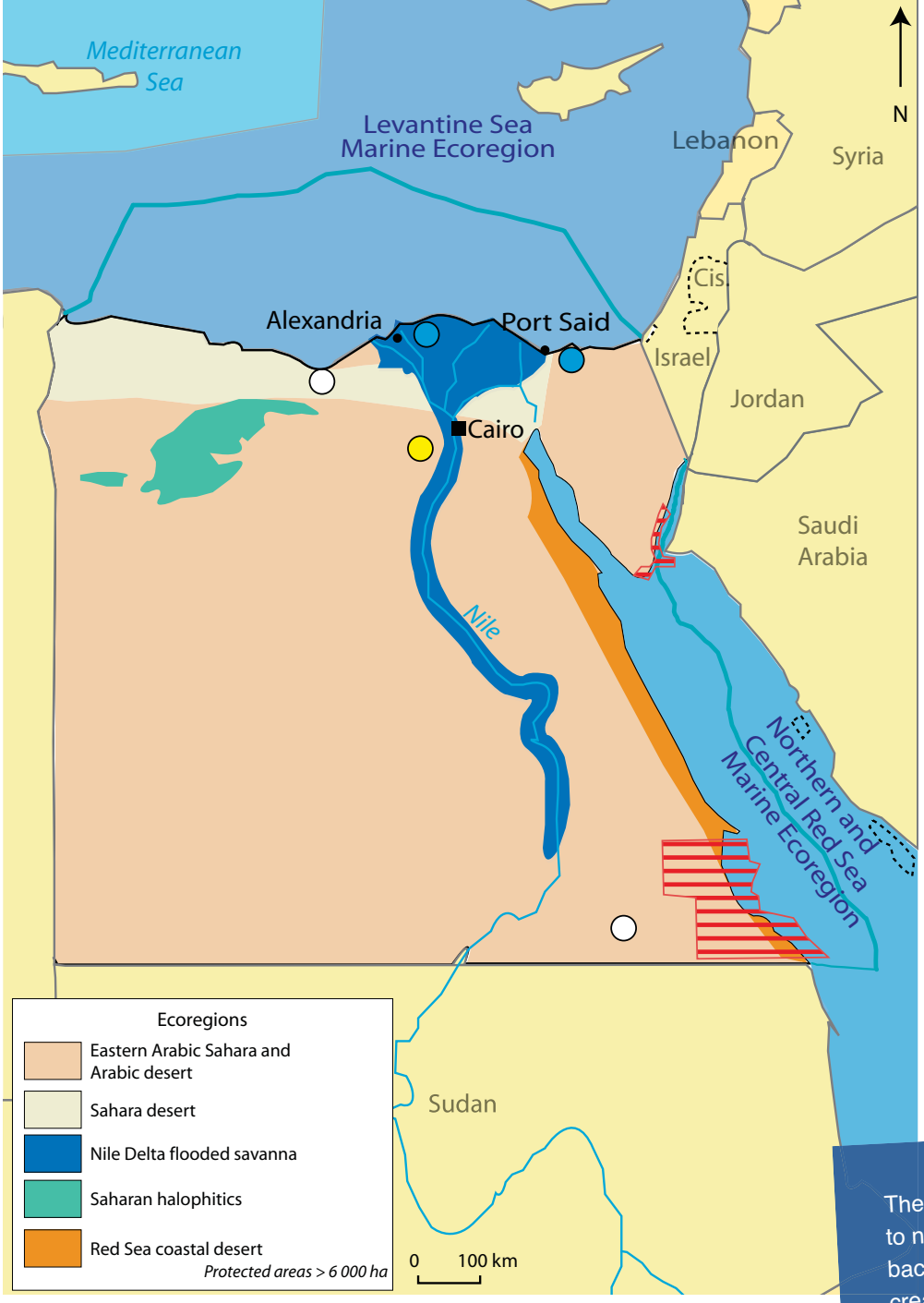
The large mammals (Oryx, felids) have been decimated by overhunting. Population growth and degradation of habitats from pollution and unsustainable use threaten the preservation of biodiversity. Many plant and animal species are at the edge of survival, notably coral reefs and mangroves. Development of scuba diving tourism in the Red Sea, one of the world's most sought-after sites, and its impacts on a rich but vulnerable marine environment, have become a concern for the Egyptian government. Consequently, the Ras Mohamed Peninsula was designated as the country's first national park in 1983.

GOVERNANCE

Each protected area is managed by an entity with a board including representatives of the Egyptian Environmental Affairs Agency (EEAA), the Egyptian Wildlife Service (EWS), and other governmental bodies.
Through inclusion of many experts, in consultation with NGOs, various institutions, and the scientific community, Egypt seeks to protect the highest-priority biodiversity areas. The country targets to increase its protected areas to 40, or 17% of the territory, by 2017.

MAIN NATURAL AREAS

At the junction of three large biogeographic regions (Western Palearctic, Eastern Palearctic, and Afrotropical), Egypt includes 5 terrestrial and 2 marine ecoregions. The country has 2,450 km of coastlines on two seas, the Mediterranean Sea and the Red Sea. The Nile, the world's longest river, (6,671 km), created a valley and a delta, the most extensive known oasis. The highest points are in the Sinai, with Mt. Catherine reaching 2,642 m.



Surface Area
997,730 km²

EEZ
370 km wide

Population
2007 80.1 million
2020 98.6 million

Population density
80 inhab./km²

GDP per capita
In Purchasing Power Parity
2010 $ 6,394

Human Development Index
0.703

Ecological Footprint
In global hectares per capita
1.4

The first Egyptian law pertaining to nature conservation dates back to 1900, to mark the creation of the Wadi Rishrash Royal Reserve. Some traditional nature conservation practices still exist in some areas viewed as sacred according to Bedouin traditional laws. This is the case in Mount Sinai where hunting is forbidden or in Gebel Elba where nomadic communities restrict exploitation of natural resources, observing tribal and religious precepts.

FOREST COVER : 670 km², 9.8 % under protection

WETLANDS : 49,888 km²

Terrestrial Protected Areas	21		5.6 % of land area
IUCN Cat. I-II		3,130 km²	
IUCN Cat. III-IV-V		42,230 km²	
IUCN Cat. VI		10,620 km²	
Marine Protected Areas			
IUCN Cat. I-II	6	38,648 km²	
Ramsar Sites	2	1,057 km²	100 % under protection
Biosphere Reserves	2	24,560 km²	100 % under protection
IBA	3		

LEBANON

Located in the eastern part of the Mediterranean, the Republic of Lebanon is a mountainous country reaching 3,089 m at Qurnat as Sawdā. The climate is Mediterranean, with montane, continental, and arid (towards the Syrian Desert) variations. Agriculture and livestock farming are the main sources of revenue in rural habitats. A member of LEA and UM, Lebanon is a signatory of the Euro-Mediterranean Partnership Agreement and participates in the Council of Arab Ministers Responsible for the Environment, the Mediterranean Action Plan, and the Mediterranean component of the EU Water Initiative.

Local initiatives focus on biodiversity restoration in the Beqaa plain, such as the Aamiq Voluntary Reserve, with the objective of restoring a natural marsh on private property located on a major bird migration corridor. Such initiatives from civil society are increasingly frequent in Lebanon and should be acknowledged.

FLORA AND FAUNA

Lebanon has 2,598 plant species and 55 species of mammals, 394 of birds, 54 of reptiles, 7 of amphibians, and about a thousand fish species (610 freshwater and 367 marine species). For plants, species from the Mediterranean Basin, the Caucasus, and even North India, coexist, with 8.5 % of species endemic to Lebanon, Syria, and Palestine and 3.5 % to Lebanon only. The country is the southernmost limit of the distribution range of species such as the Lebanon cedar, the Cilician fir, juniper trees, and several deciduous trees. Other species are restricted to the eastern part of the Mediterranean Basin such as the two most common oaks in Lebanon: the Palestine oak and the pubescent oak, in addition to the Lebanon cedar and the Cilician fir. Globally threatened species include 10 mammals, 6 birds, 6 reptiles. There are 10 known exotic invasive species.

ECOSYSTEM SERVICES

Urbanization, deforestation, promotion of monocultures, and excessive pasture have led to fragmentation and degradation of natural habitats and the decline of biological diversity. Cedar stands only exist as natural historical monuments (often mixed with deciduous trees), and are not able to play the role of forest ecosystems with their own dynamics. Marine habitats are impacted by coastal urbanization and have been affected by the ecological disaster caused by the leakage of 15,000 tons of oil during the tragic events of the summer of 2006.

GOVERNANCE

A plant genetic bank is being created at Beirut University and Lebanon participates in the Millennium Seed Bank. Efforts should be pursued to fulfill the country's commitments to the CBD. Management of protected areas created by the State is placed under the authority of Government Appointed Committees, including representatives of national services, local associations, municipalities, and resources people. Such committees employ permanent staff thanks to an annual grant and to NGO support.

Surface Area
10,452 km^2

EEZ
370 km wide

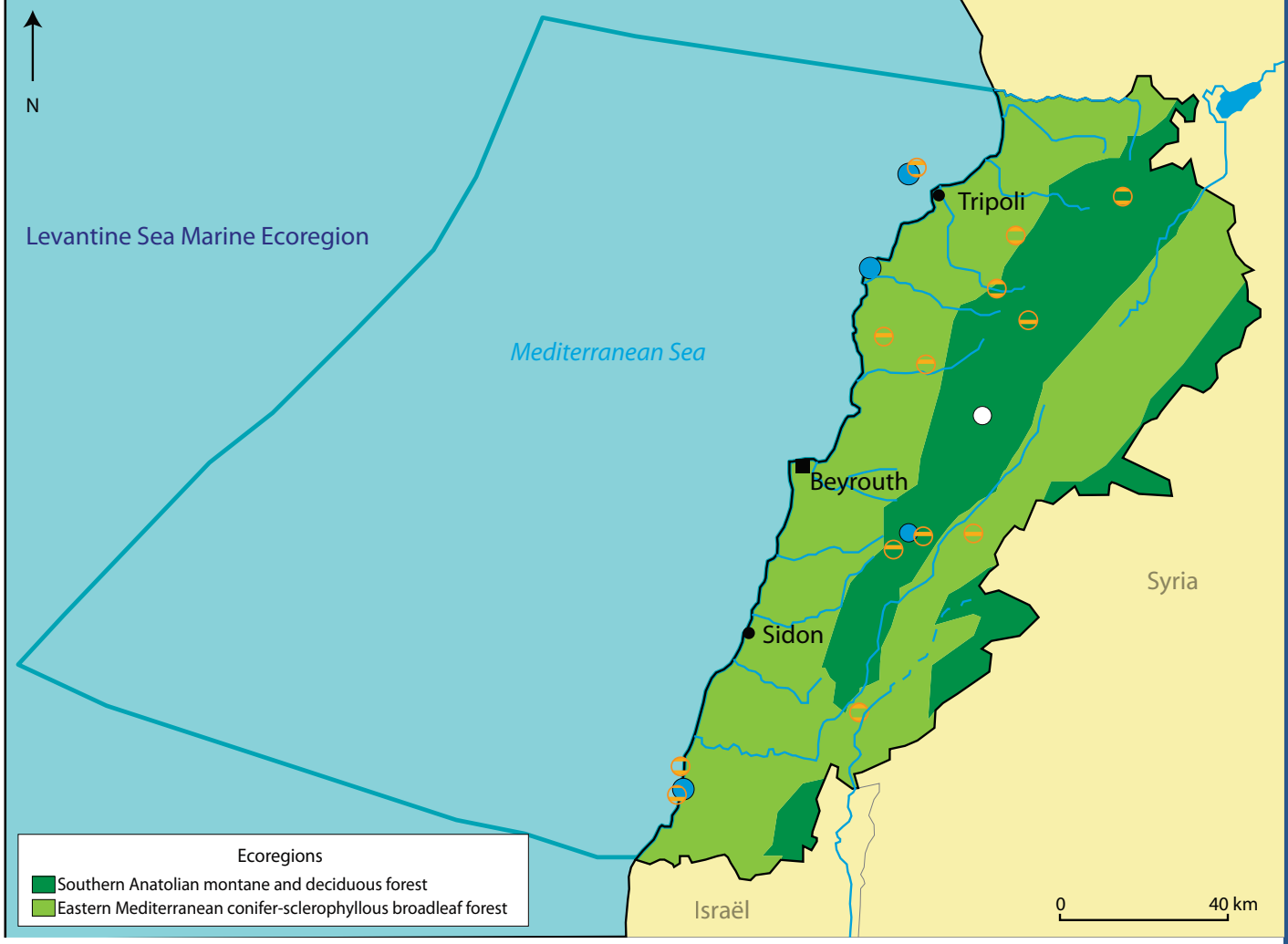
Population
2007 4.2 million
2020 4.6 million

Population Density
402 inhab./km^2

GDP per capita
in purchasing power parity
$ 14,543

Human Development Index
0.803

Ecological Footprint
in global hectares per capita
2.1



MAIN NATURAL AREAS

Various successive landscapes are found from west to east along a north-south axis parallel to the coastline, with a narrow coastal plain, the Lebanese mountain range, and the Anti-Lebanon separated by the high Beqaa Valley. The distribution range of the cedar, the national emblem, corresponds to the transition zone between the Mediterranean climate and the continental climate of inner Anatolia (Asia Minor). The country has two terrestrial and one marine ecoregions.

FOREST COVER : 1,300 km², 12.4 % of the land area

WETLANDS : 18 km²

Terrestrial Protected Areas			
IUCN Cat. III-IV-V	7	200 km²	1.9 % of the total area
Ramsar Sites	4	10.75 km²	-
Biosphere Reserves	3	-	-
World Heritage sites	5	-	-
IBA	15	497.5 km²	-

The National Emblem

Very light and rot-proof, the Lebanon cedar had been exploited for thousands of years, including for the construction of the famous Phoenician boats. Only some isolated cedar stands remain, notably in the Chouf Mountains, but the cedar is still a strong cultural symbol. To prevent genetic pollution, import of any grain or seeds of plants of the Cedrus genus is prohibited and reforestation programs are ongoing.

MOROCCO

The Kingdom of Morocco occupies the entire north-western part of the African continent. There are two major ranges: the Rif Mountains in the north; and further south the Middle Atlas (the “water tower” of Morocco), the High Atlas (with the highest point of Morocco and North Africa - Jbel Toubkal, 4,167 m), and the Anti-Atlas Mountains. Climate varies among regions based on oceanic, Mediterranean, montane, continental, and Saharan influences. A member of the CEN-SAD, UMA, UPM, and the North-South Center of the Council of Europe, Morocco has a diverse economy in constant progress.

Morocco works actively in conserving its biodiversity riches. The Mediterranean monk seal being one of the 12 most threatened species in the world, a National Committee for the Protection of the Monk Seal was created as early as 1995. Since 2009, Morocco has also participated in the safeguard campaign for marine mammals, under the Delphis Project of the Union for the Mediterranean.

FLORA AND FAUNA

Morocco is at the biological junction of Europe and Africa. Its wealth of species is not surprising. Natural habitats are very diverse and are home to 6,930 species of plants, 105 of mammals, 449 of birds, 92 of reptiles, 11 of amphibians, 1,189 of fish, and 15 293 of invertebrates. Exotic invasive species amount to 26. The most famous endemic species are the Mediterranean monk seal and the northern bald ibis (both critically endangered) and the emblematic argan tree. The global Red List includes 18 species of threatened mammals, 10 birds, 11 reptiles, and 2 amphibians.

ECOSYSTEM SERVICES

Morocco faces environmental problems derived from economic development and urbanization, as well as from inadequate agricultural practices and over-exploitation of natural resources, particularly halieutic reserves. There are several examples of sustainable management of natural resources (sometimes leading to high added value products such as argan oil and agar-agar). Morocco also has high development potential for sustainable and lucrative activities, notably thanks to its numerous algae species. With the presence of upwelling areas of nutrient-rich cold waters, Moroccan waters are among the world’s richest in fish.

GOVERNANCE

Since the 1930s, Morocco has developed laws on national parks and improved its legal instruments for natural habitat conservation. In 1996, a national study helped define a network of protected areas and draft management plans for national parks. In addition to existing protected areas, 154 sites of ecological and biological importance (SIBE) were identified, covering a total area of 25,000 km². Measures are also implemented to address the introduction or invasion of exotic species.

Surface Area
710,850 km²

EEZ
1,200,000 km²

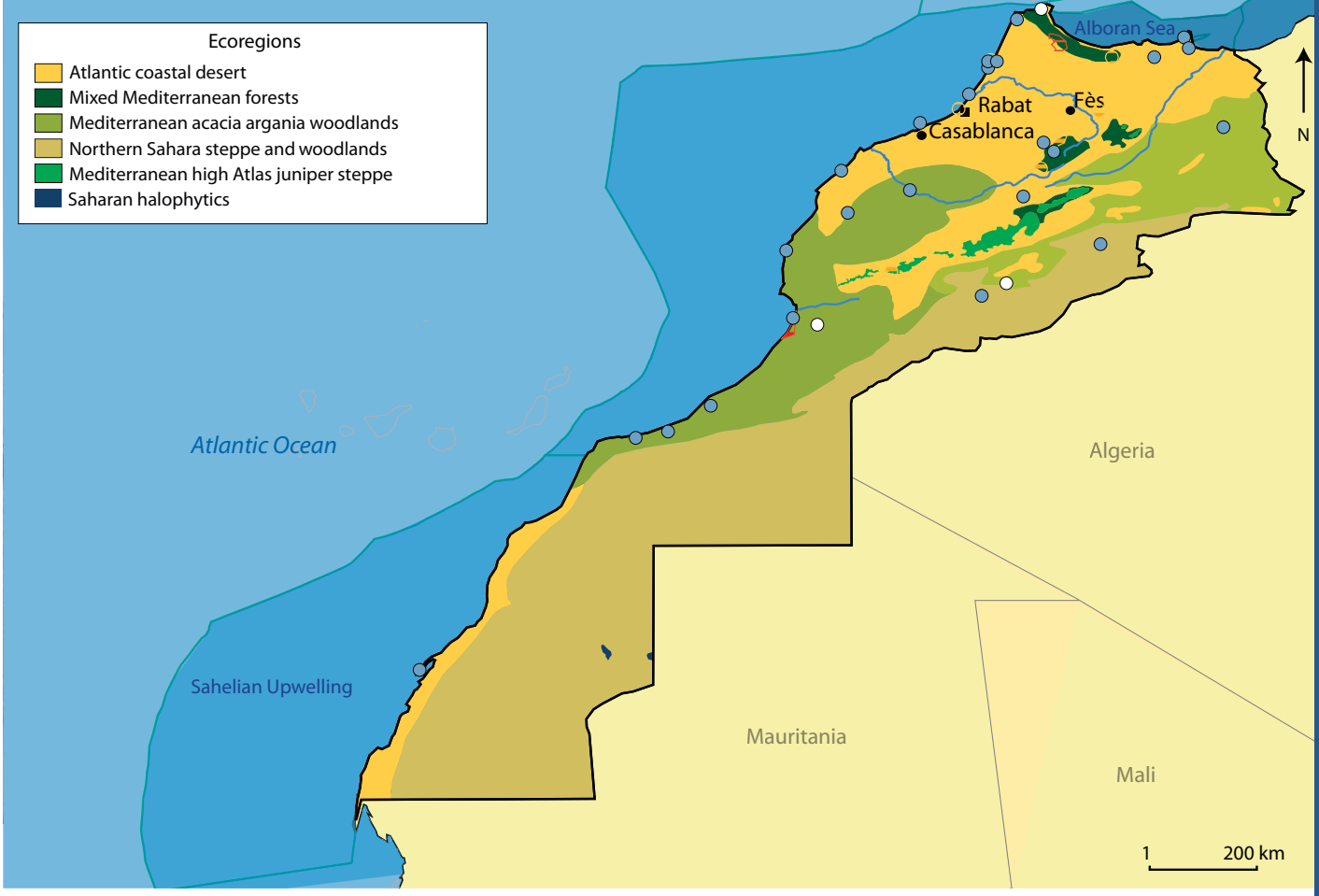
Population
2007 31.2 million
2020 36.2 million

Population Density
44 inhab./km²

GDP per capita
in purchasing power parity
$ 4,741

Human Development Index
0.654

Ecological Footprint
in global hectares per capita
1.3



MAIN NATURAL AREAS

With a wealth of lagoons, estuaries, and bays, the Moroccan coastline stretches 3,450 km along the Atlantic Ocean and the Mediterranean Sea. Morocco includes 6 terrestrial and 2 marine ecoregions. Landscape diversity is reflected by a succession of holm oak, cork oak, cedar, or Aleppo pine forests (Morocco is the most wooded country of the Maghreb), scrublands, alfa steppes, and desert habitats. Crater lakes are an indication of ancient volcanic activity. The Atlas Mountains are the source of numerous rivers.

FOREST COVER : 43,762 km² or 9.8 % of the land area, 2,6 % under protection

WETLANDS : 1,384 km², 5 % under protection

Terrestrial Protected Areas			
IUCN Cat. I-II	14	3,910 km²	0.9 % land area
IUCN Cat. III-IV-V	8	2,491 km²	
IUCN Cat. VI	7	78 km²	
Marine Protected Areas			
IUCN Cat. I-II	1	196 km²	100 % under protection
Mixed Protected Areas	10	1,500 km²	-
Ramsar Sites	24	2,720 km²	-
Biosphere Reserves	3	97,000 km²	-
IBA	2	346.6 km²	100 % under protection

The argan tree (Sapotacea family) is both an endemic and emblematic tree of south-west Morocco. Also called ironwood for its hardness, perfectly adapted to dry conditions, the argan tree lives to 200 years and is valuable for many reasons: to fight against desert extension, for firewood, fodder, and above all, for argan oil. This oil is internationally reputed for food and cosmetics. Research is still being done to identify its potential anti-microbial and anti-oxidant properties.

TUNISIA

Located at the north-eastern point of the African continent, the Tunisian Republic has a Mediterranean climate in its northern part and along the coasts. The average annual rainfall varies between 600 mm in the north and below 100 mm in the extreme south-west. The Sahara Desert covers over 30 % of the land area in addition to montane regions and fertile plains. The Tunisian Ridge, an extension of the Atlas Mountains, reaches 1,544 m at Djebel Chambi. A member of UMA, LAS, and CSSS, Tunisia successfully continues its structural economic changes.

MAIN NATURAL AREAS

The country has highly diverse habitats: mountains in the north and the west, central steppes continuing eastwards to the Tunisian Sahel, vast plains of the coastal areas, oases and the Sahara expanse, salt efflorescence whitened depressions (chotts), the salted Lake Shat El-Jarid at 15 m below sea level, lagoons and coastal strips or bars (tombolos) scattered on the 1,298km coastline, and coral ecosystems. The 5 terrestrial ecoregions of the country includes cork oak and Aleppo pine forests, grasslands, scrublands, alfa steppes. There are also 2 marine ecoregions.

FLORA AND FAUNA

The Tunisian flora includes 3,573 plant species and 2,244 terrestrial animal species with 84 mammals, 362 birds, and 63 reptiles. Based on the global Red List, threatened species include 14 mammals, 8 birds, and 5 reptiles; 101 plant species are considered nationally threatened and 19 exotic invasive species have been identified. The marine habitat is poorly known but 1,077 marine plant species and 2,386 marine animal species (including numerous mollusks and crustaceans and 59 species of cartilaginous fish and 227 bony fishes) are currently known.

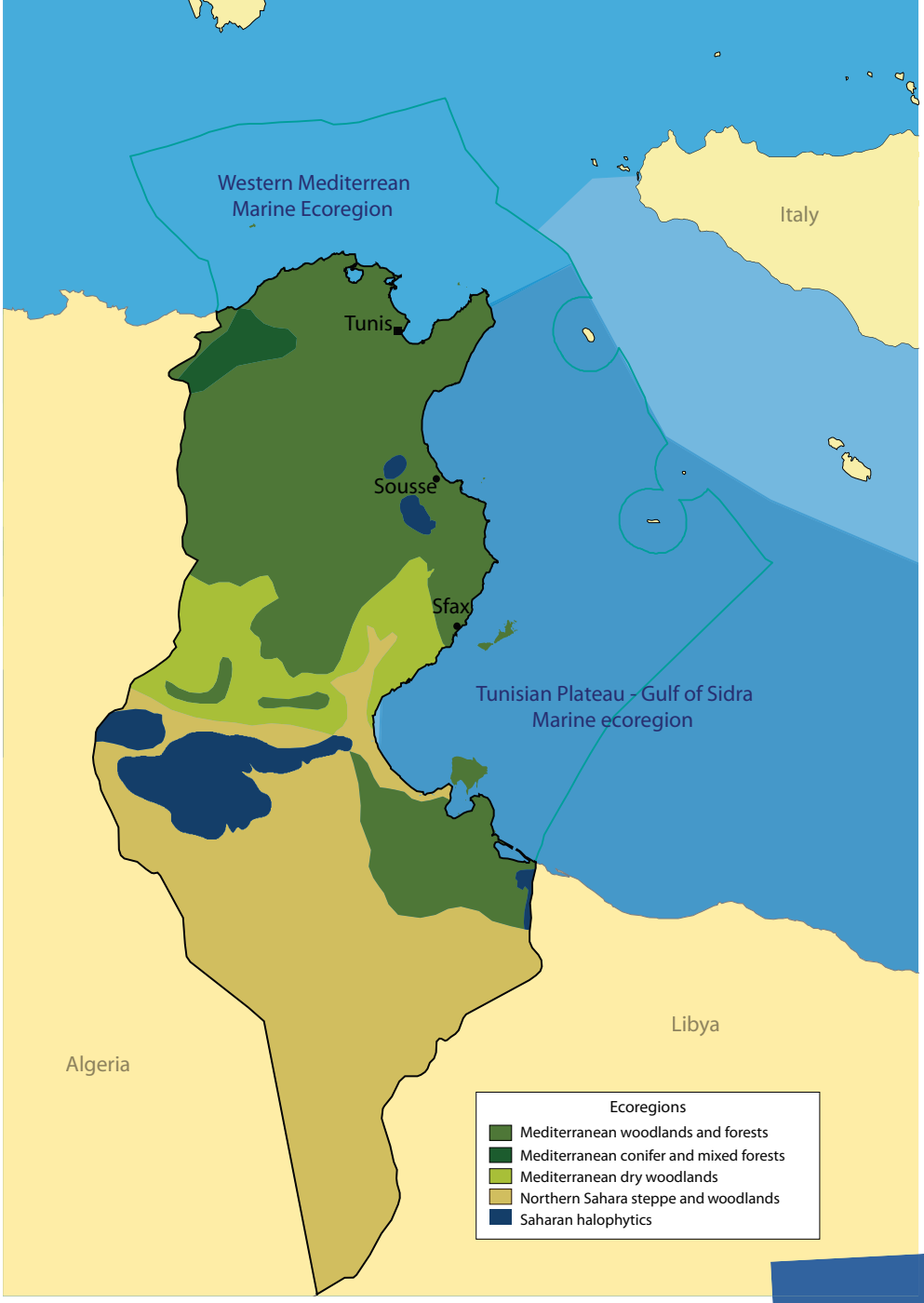
ECOSYSTEM SERVICES

Environmental issues are occurring notably in the coastal area due to population concentration and related economic activities: soil degradation, over-exploitation of halieutic resources, shortage of water resources, pollution, and the introduction of foreign species threatening biodiversity. However, the great potential of natural resources leaves hope for the development of “green tourism”.

Biological agriculture is increasingly developing in Tunisia. The sector receives significant governmental support, with the objective of doubling the areas under biological cultivation to reach 500,000 ha in 2014.

GOVERNANCE

A policy on reforestation and fight against erosion and desertification has been developed as early as the 1960s, including the creation of several protected areas. The “National Strategy for Biological Diversity 2020” includes 12 regional programs against desertification with protective measures against soil erosion and for preservation of water resources. Knowledge on wetlands and marine habitats, as well as coordination of environmental actions should be improved.



Surface Area
162,155 km²

EEZ
370 km wide

Population
2007 10.1 million
2020 11.4 million

Population Density
62 inhab./km²

GDP per capita
in purchasing power parity
$ 7,561

Human Development Index
0.769

Ecological Footprint
in global hectares per capita
1.9

FOREST COVER : 12.6 %, 2.5 % under protection

WETLANDS : 25,942 km²

			% of land area under protection
Terrestrial Protected Areas	24		
IUCN Cat. I-II	8	4,054 km²	2,5 %
IUCN Cat. III-IV-V	16		
IUCN Cat. VI			
Ramsar Sites	20	7,265.41 km²	-
Biosphere Reserves	4	-	-
World Heritage Sites	8	-	-
IBA	45	-	-

Tunisia is on the major Central Mediterranean Corridor for Western Palearctic birds during their migration to Africa. Lake Ichkeul, not far from Bizerte, receives tens of thousands of wintering birds representing 180 species. Further south, in a sub-desert habitat, the Bou Hedma National Park has allowed the successful reintroduction of the ostrich, the addax, the Scimitar Oryx and the dama gazelle, along with the Barbary sheep and the Cuvier's gazelle.

CARIBBEAN AND GUIANA SHIELD

ANGUILLA (GB)
ANTIGUA AND BARBUDA
ARUBA (NL)
BAHAMAS
BARBADOS
BRITISH VIRGIN ISLANDS (GB)
CUBA
DOMINICA
DOMINICAN REPUBLIC
GRENADA
GUADELOUPE (FR)
HAITI
JAMAICA
MARTINIQUE (FR)
MONTSERRAT (GB)
NETHERLANDS ANTILLES (NL)
PUERTO RICO (US)

CARIBBEAN

14 States and 14 dependent territories

Regional Surface Area
235,000 km²

EEZ
3,150,670 km²

Population
Antilles 41,964,775 inhabitants

Density
176 inhab./km²
from 22 inhab./km² in the Bahamas to 656 inhab./km² in Barbados

Population change
2025 46 million
2050 49 million

SAINT BARTHELEMY (FR)
SAINT KITTS AND NEVIS
SAINT LUCIA
SAINT MARTIN (FR)
SAINT VINCENT AND THE GRENADINES
TRINIDAD AND TOBAGO
TURKS AND CAICOS ISLANDS (GB)
UNDITED STATES VIRGIN ISLANDS (US)

GUIANA SHIELD

GUIANA SHIELD
4 States - 1 territory

Surface area
2,500,000 km²

Population
between 1.5 and 2 million

Density
between 0.6 and 0.8 inhab./ km²

BRAZIL
GUYANA
FRENCH GUIANA (FR)
SURINAME
VENEZUELA

Over 100 Amerindian communities

The Caribbean region consists of the Lesser Antilles, a string of more than 50 mostly volcanic islands, the Greater Antilles with 4 older large islands making up 90 % of the land area, and the Bahamas Archipelago.

A Precambrian geological formation, the Guiana Shield reaches 3,040m at Pico da Neblina. Divided between 5 countries between the Amazon and the Orinoco Rivers, it includes typical altitude plateaus (tepuys) with some spectacular waterfalls, including the world's highest (Salto Angel – 980m.). About 10 to 15 % of the world's freshwater stocks are found here.

The main economic activities of the Caribbean are agriculture and tourism, with an important oil production in the south. Some islands are vulnerable due to high population density associated with harsh living conditions.

Threats on the Guiana Shield are mainly related to mining and fragmentation of the forest range.

The main regional cooperation bodies are CARICOM (Caribbean Community), the Association of Caribbean States (ACS), and the Organization of Eastern Caribbean States (OECS). For environment and biodiversity, the main regional collaboration instrument is the Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region or Cartagena Convention (1981) and the SPAW Protocol.

BIOGEOGRAPHICAL DATA

The Caribbean and the Guiana Shield belong to the Neotropic terrestrial ecoregion and to the Western Tropical Atlantic marine ecoregion. The region is at the heart of the inter-tropical convergence zone. Climate varies based on the islands' location and creates a great diversity of ecosystems, from the arid scrublands of Barbados, Guyana savannas, to the wet sub-tropical/tropical forests of Haiti or Guyanese mangroves. Marine ecoregions are fed by the Amazon and Orinoco Deltas and benefit from the proximity of the Gulf Stream. The Caribbean Region is a Biodiversity Hotspot.

CONSERVATION STATUS IN THE SUB-REGION

In the Caribbean, about 28,138 km² of all terrestrial habitats (12 % of the total) including 604 sites are protected as well as 81,727 km² of marine habitats (2 % of the EEZ) divided in 645 sites. The Guiana Shield natural habitats are significantly protected at about 24 %, including the Canaima (30,000 km²) and the Parima Tapirapecó National Parks in Venezuela, the Guiana Amazonian Park (20,300 km²), and the Montanhas do Tumucumaque National Park (38,670 km²) in Brazil.
The main threats include invasive species, residential development (related to tourism), population growth, and over-exploitation of agricultural and mining resources.

Caribbean

All islands are facing several types of natural disasters (hurricanes, earthquakes, landslides) that might get worse in the future due to climate change. They are also exposed to significant population growth and the impact of introduced species on endemic flora and fauna.
It is important to enhance regional cooperation on all these issues.

Guiana Shield

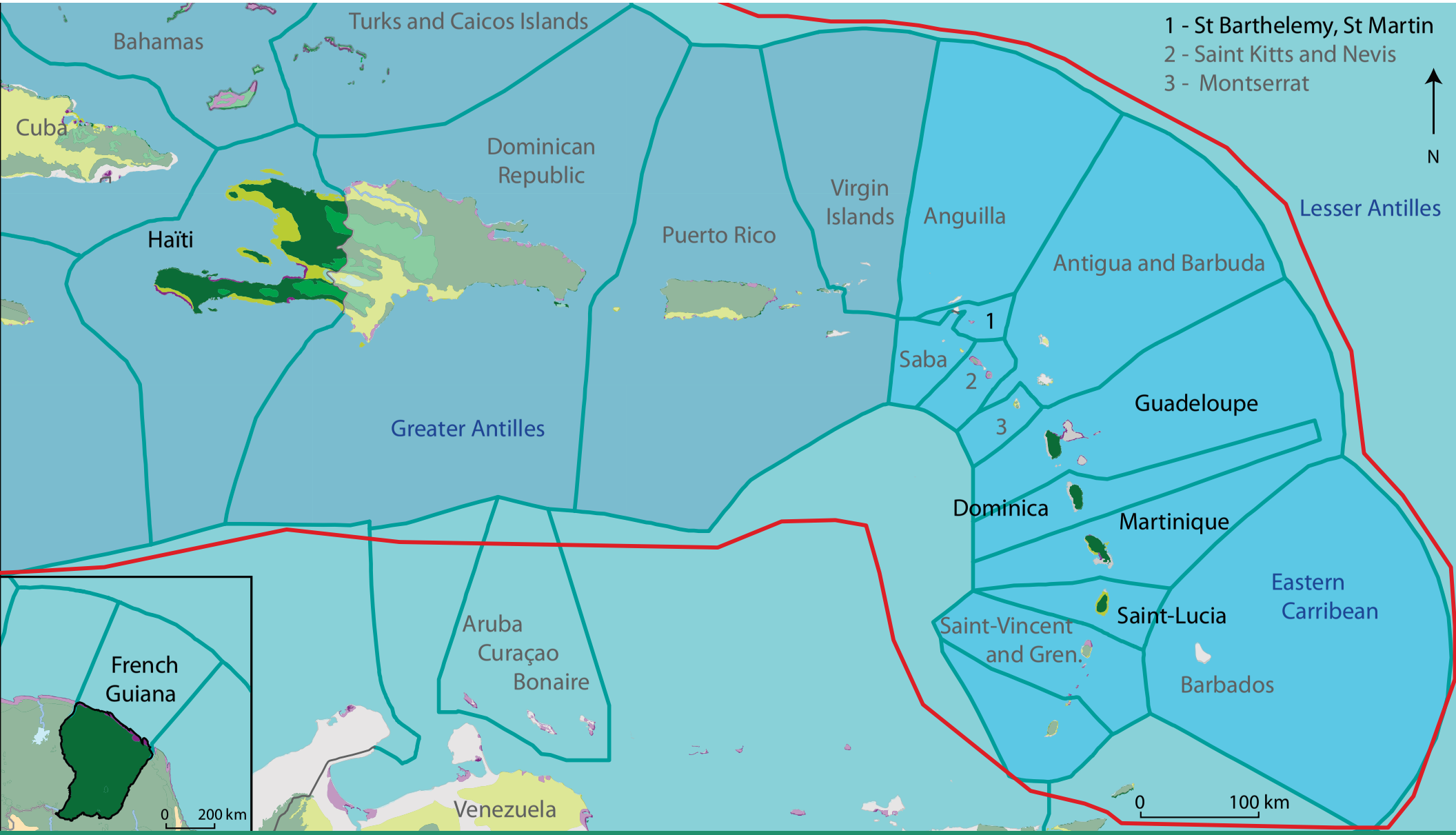
In this sparsely populated forest region, the main threats, especially for indigenous peoples, include deforestation and mining (water turbidity, mercury contamination, oil leakage, etc.).
Existing regional cooperation should be improved to globally prevent such risks and ensure that the livelihoods of local communities are sustainably enhanced.

SPECIES DIVERSITY

The Andros Barrier Reef is the third largest in the world (225 km²). The Antilles Islands have high terrestrial and marine endemism rates, with 100 % of amphibians, 95 % of reptiles, 74 % of mammals, and 72 % of plants endemic to the region. Between 8 to 35 % of the world's marine taxa are considered endemic to the Caribbean.

Threatened species include 438 out of 11,000 plant species (4 %), and 265 out of 1,509 animal species (17.6 %). The most endangered species are amphibians (77 %) and mammals (39 %). Furthermore, some critical sites are the only known habitats of some endangered species (the Massif de la Hotte in Haiti is home to 13 endangered species).

The Guyanese freshwater habitats harbour the largest concentrations of biodiversity on Earth for this type of habitat. The Tepuys also have a remarkable rate of endemism due to their altitudinal remoteness and extreme edaphic conditions. The Guiana Shield contains 20,000 species of vascular plants, among which 35 % are endemic, and 4,011 fauna species with a 27 % rate of endemism, the highest rates of endemism being for amphibians (47 %) and freshwater fish (32 %). The Guiana Shield is covered by 25 % of the world's tropical rainforests.


Bahamas
Turks and Caicos Islands
Cuba
Dominican Republic
Haïti
Puerto Rico
Virgin Islands
Anguilla
Lesser Antilles
Antigua and Barbuda
1
Saba
2
3
Guadeloupe
Greater Antilles
Dominica
Martinique
Eastern Carribean
Saint-Lucia
Saint-Vincent and Gren.
Barbados
Aruba
Curaçao
Bonaire
French Guiana
Venezuela
1 - St Barthelemy, St Martin
2 - Saint Kitts and Nevis
3 - Montserrat
N
0 200 km
0 100 km

DOMINICA

Located in the Caribbean Archipelago, the “island of 365 rivers” is 47 kilometres in length and 22 kilometres in width. The Commonwealth of Dominica has a humid tropical climate. Its nine active volcanoes, forming a hilly landscape, offer a diversity of habitats and are the highest peaks in the Lesser Antilles. Precipitation varies from 2,000 mm on the western coast to more than 7,000 mm inland. The economy, particularly vulnerable to external shocks, depends mostly on tourism and agricultural exports.

The critically endangered *Leptodactylus fallax*, one of the world’s largest amphibians, is now confined to Montserrat and Dominica. Its range is restricted to the west of the island. Its population has strongly declined since 2002 due to the spread of a fungal disease, but it is still heavily hunted for food.

FAUNA AND FLORA

There are about 1,230 documented plant species, including about twenty endemics. About 175 bird species can be found on the island, including 2 endemic amazons. The marine habitat is home to numerous species of interest, such as seahorses, frogfish, and crater or tube sponges. The island is also an important nesting site for the endangered leatherback turtles.

ECOSYSTEM SERVICES

Local fisheries are affected by the degradation of marine ecosystems from mining effluents, with notable impacts on the remaining coral reefs. Three new mining sites have started exploitation in the south of the island, an area that has been relatively well preserved until now.

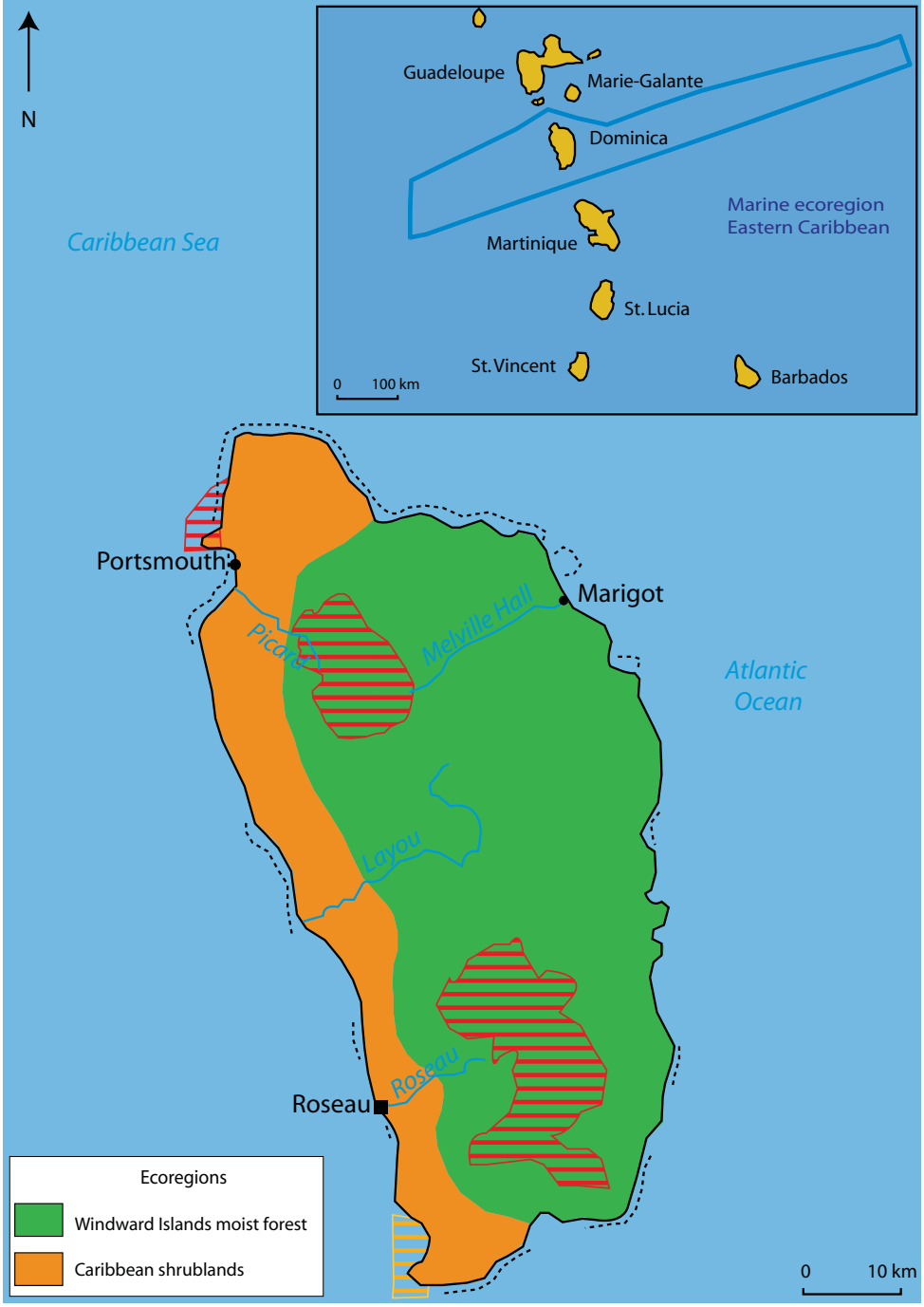
GOVERNANCE

Dominica strictly protects about 15% of its territory and has adopted a range of legislative texts and regulations for the control of fishing and the protection of forests, birds, and corals. Legislation on land-use planning (Physical Planning Act – 2001) is also in place, while a National Land Use Plan (NLUP) is under preparation to respond to the growing pressure of tourism and the progressive conversion of banana fields, following the new trade agreements with the EU.
The private sector protects an increasing number of biologically important sites, often for tourism purposes.

MAIN NATURAL AREAS

The island can be divided in two distinct ecoregions: xerophile shrubs along the drier western coast and tropical forest on the rest of the island. Both formations are typical of the Caribbean Leeward Islands. The majority of the population and activities (agriculture and mining operations) are located on the western coast, resulting in a high level of degradation of this area’s natural habitats.
Most of the remarkably rich forest has been preserved due to its location on slopes inadequate for agriculture and its inclusion in a dense network of protected areas.

Dominica is known for its volcanic features and its famous 63-metre wide Boiling Lake (in fact, a huge fumarole) is one of the island’s attractions.



Surface Area
751 km²

EEZ
28,985 km²

Population
100,000

Population Density
91 inhab./km²

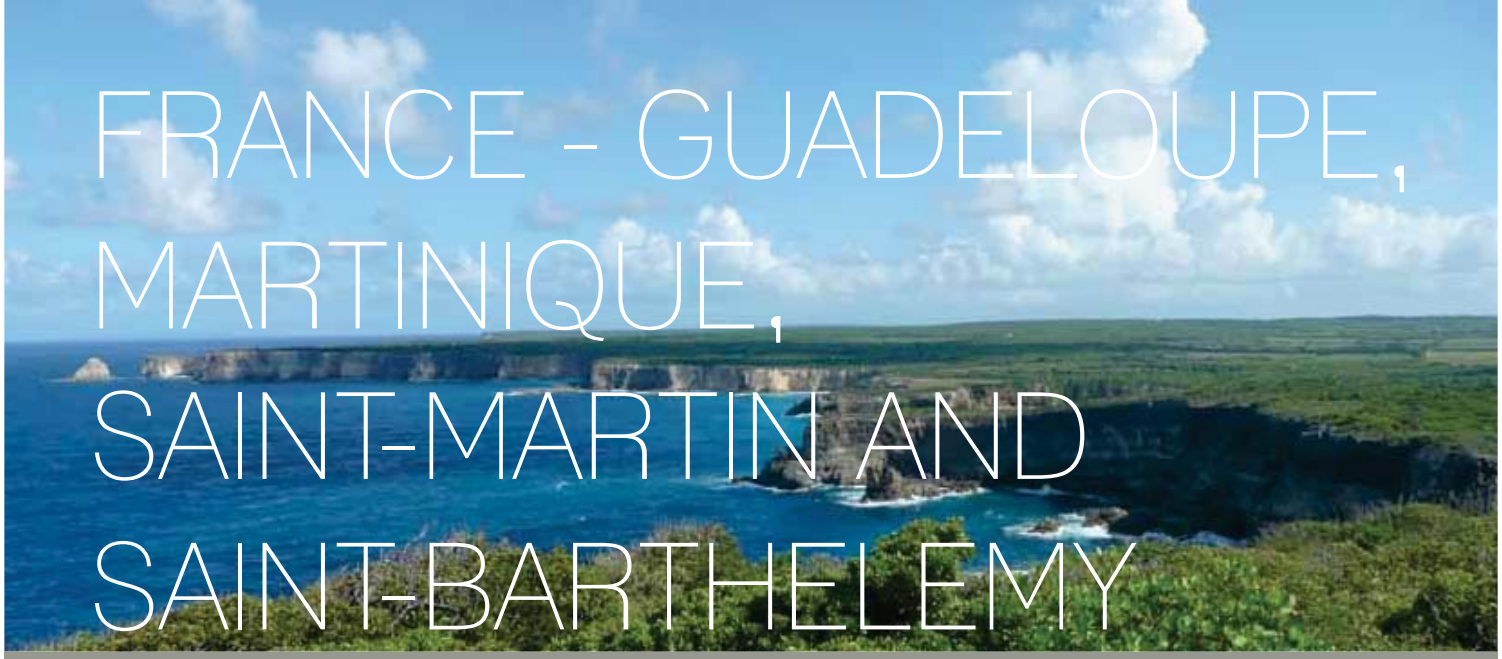
GDP per capita
In Purchasing Power Parity
$ 10,404

Human Development Index
0.81

WETLANDS : 0.9 km², 0.11 % protected

Terrestrial Protected Areas			% of land area
IUCN Cat. I-II	2	108.53 km²	14.4 %
IUCN Cat. VI	6	98.06 km²	
Marine protected areas			
IUCN Cat. III-IV-V	1	-	
World Heritage Sites	1	68.57 km²	
IBA	4	106.7 km²	

In 2005, Dominica received the Green Globe 21, an international label awarded to tourism operators seeking to improve the environmental and social management of their activities. The ecotourism project Waitikubuli National Trail, crossing the island from north to south, seeks to regulate, in collaboration with local communities, the impact of tourism within nature reserves.



FRANCE - GUADELOUPE, MARTINIQUE, SAINT-MARTIN AND SAINT-BARTHELEMY

These 4 islands are part of the archipelago of the Lesser Antilles and include steep volcanic islands (with an altitude of about 1,500 m in Martinique and part of Guadeloupe) and lower limestone islands. Some are French overseas departments and regions (Guadeloupe and Martinique) and others are overseas collectivities. The main economic activities, agriculture (mainly banana and sugarcane) and tourism strongly affect natural habitats. They lead to habitat destruction and fragmentation, and soil and water pollution from waste or agricultural inputs such as chlordecone.

A wetland of international importance: Grand Cul-de-Sac Marin - Guadeloupe. Inscribed by France in 1993 as a Ramsar Site, this natural reserve has a total surface of 24,150 ha (26 % terrestrial and 74 % marine).

FLORA AND FAUNA

Despite a long human presence and introduction of numerous species, these islands still have a high local or regional (Lesser Antilles) level of endemism, particularly for vascular plants (1,863 indigenous species – 13% regional endemism), fungi, and fauna, notably for reptiles (30% local endemism) and chiropterans (30 to 40% regional endemism). Finally, 17 cetacean species and 3 turtle species have also been documented here.

Based on the IUCN Red List, 4 plant species and 8 vertebrate species are considered extinct, while 38 plant species, 6 vertebrate species, one mollusk and 260 to 270 vascular plant species are threatened.

ECOSYSTEM SERVICES

They mainly include water provision, coastal fisheries, and tourism development.
Such services are impacted by excessive pressure on certain marine species (lobster, white urchin, conch) from tourism and industrial infrastructure development on the coasts (particularly high pressure on mangroves) as well as the fragmentation of degraded forest habitats (Guadeloupe).

GOVERNANCE

The baseline document for the entire region is the 1983 Cartagena Convention. Many indigenous terrestrial fauna and flora species are protected by ministerial decree.

The level of protection (13.7 % of the territory) is globally satisfactory in Guadeloupe with the Guadeloupe National Park (1989) and the Grand Cul-de-Sac Marin Nature Reserve. Conservation is clearly worse in Martinique (1.5 % of the territory is protected) as the Regional Natural Park does not provide adequate protection. The terrestrial habitats of Saint-Martin and Saint-Barthélémy are under strong tenure pressure.

Eradication efforts to promote understanding and control of some invasive species have been carried out (Ile Fajou: black rat and mongoose) or are underway.

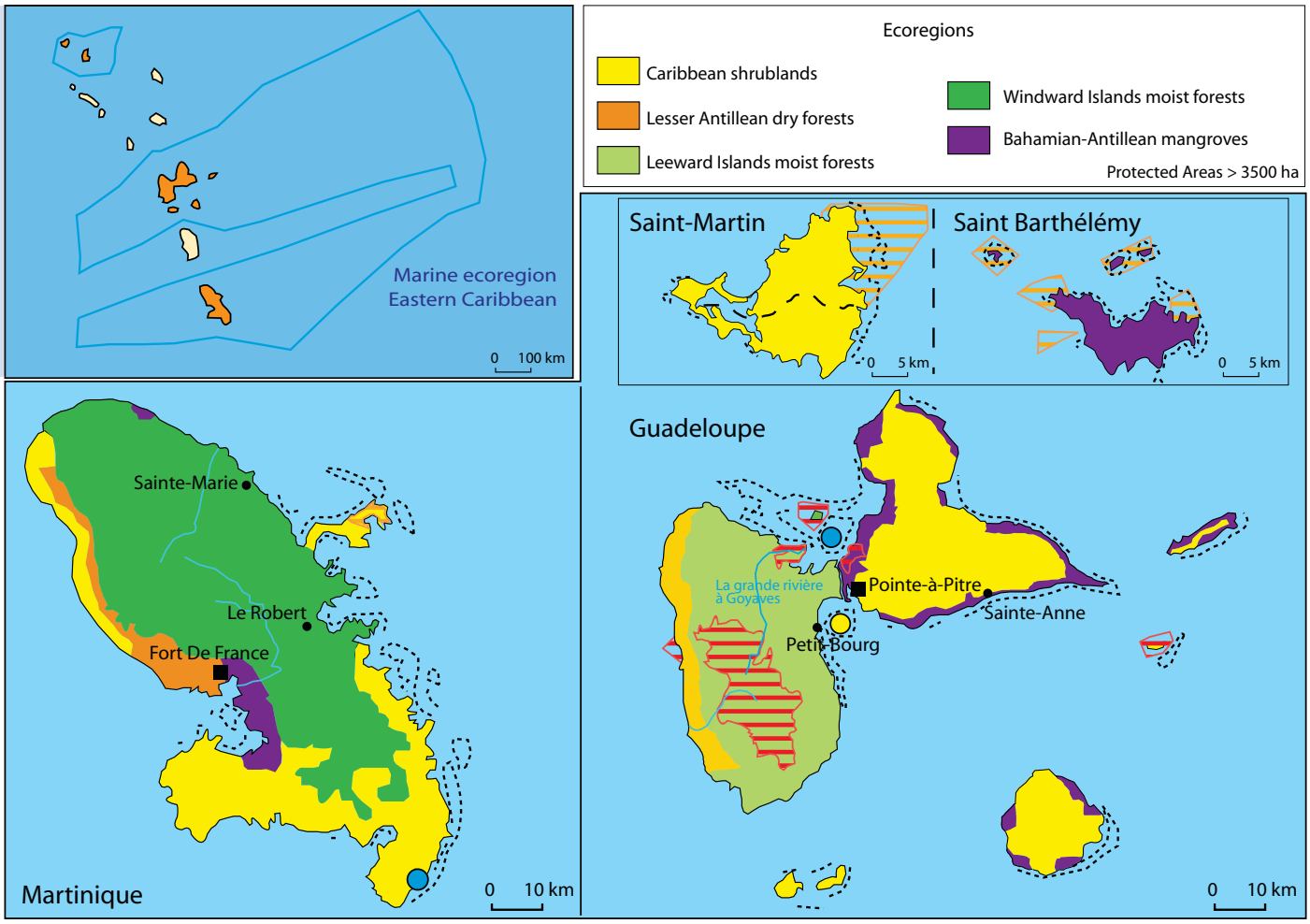
Surface Area
Guadeloupe* 1,634 km²
Martinique 1,108 km²
Saint-Martin 50 km²
Saint-Barthelemy 21 km²

EEZ
Guadeloupe 86,000 km²
Martinique 47,000 km²
Saint-Martin 1,000 km²
Saint-Barthelemy 4,000 km²

Population
Guadeloupe* (2007) 405,500
Martinique (2007) 403,688
Saint-Martin 36,000
Saint-Barthelemy 8,400

Population Density
Guadeloupe 248 inhab./km²
Martinique 364 inhab./km²
Saint-Martin 720 inhab./km²
Saint-Barthelemy 400 inhab./km²

** including Marie -Galante, les Saintes, la Désirade, Petite Terre, Fajou, Ilet à Kahouanne, and Tête à l'Anglais*



MAIN NATURAL AREAS

These islands have a variable altitudinal zonation, with tropical cloud moist forests above 600m that are still well preserved in Guadeloupe and Martinique. Below this level, forest cover is still at 26 % in Martinique but only found as fragments in Guadeloupe. Coral reefs are very degraded and impacted by climate change (coral bleaching of 70 % in 2005). There are remaining mangroves (52 km²) and sea grass meadows (167 km²).
The Grand Cul-de-sac Marin was listed as a Ramsar Site in 1993 and part of Guadeloupe has been granted the Biosphere Reserve status since 1992.

FOREST COVER : Guadeloupe 822.7 km² (48.2%), Martinique 465 km² (41.2%)

WETLANDS (MANGROVES) : Guadeloupe 74.5 km² (4.4%), Martinique 18.4 km² (1.7%), Saint-Martin 0.75 km², Saint Barthelemy 0 km²

Terrestrial Protected Areas			% of land area
Guadeloupe			
IUCN Cat. II		210 km²	12.3 %
IUCN Cat. IV/V		23.7 km²	1.4 %
Martinique			
IUCN Cat. IV/V		16.4 km²	1.5 %
IUCN Cat. VI		627.25 km²	56.6 %
Saint-Martin			
IUCN Cat. IV		0.0016 km²	
Marine Protected Areas			
Guadeloupe		1,363 km²	
Martinique		0 km²	
Saint-Martin		0.029 km²	
Saint-Barthelemy		0.012 km²	
Ramsar Sites Guadeloupe	1	241.5 km²	
Guadeloupe Biosphere Reserve	1	697.1 km²	
World Heritage	0		
IBA Guadeloupe et Martinique	25		

Reptiles of the French Antilles have an exceptional rate of endemism (30 %) and should be carefully preserved.

FRENCH GUIANA

French Guiana is part of the Guyana Shield and is located between the Orinoco and the Amazon River basins. The country is relatively flat (A maximum of 700 to 800 m) and its population is concentrated on the coast. It is home to many indigenous communities living in forest areas and along the rivers. Its population growth rate (birth rate: 3.1 %) is very high. Nature-related economic activities are not significant: small-scale agriculture and fruit production (H'mong community), industrial fisheries of shrimps and snappers, and some ecotourism.

A remarkable achievement: Guiana Amazonian Park
A decisive tool for the conservation of the Guiana Shield forest and for the livelihood of Amerindian indigenous communities.

FLORA AND FAUNA

Knowledge is fragmented and incomplete, yet 5,120 species of higher plants (endemism: 3.5 %), 480 species of freshwater fish (endemism: 35 to 40 %), and 100 species of bats have been identified. The Endemism level is at 5 to 10 % for the other vertebrate groups. There are black caimans and there is an important breeding site for seabirds (Grand Connétable Island).

Coral reefs are absent as the presence of shifting sediment creates an unstable coastline. Biodiversity is important: 650 species of seaweeds, 450 of mollusks, and 146 of crustaceans have been identified. The presence of 5 cetacean species, the American manatee and nesting sites of 5 marine turtle species should also be noted.

The Red List does not include any extinct species but 114 plants, 8 mammals and 2 reptile species are considered to be threatened.

ECOSYSTEM SERVICES

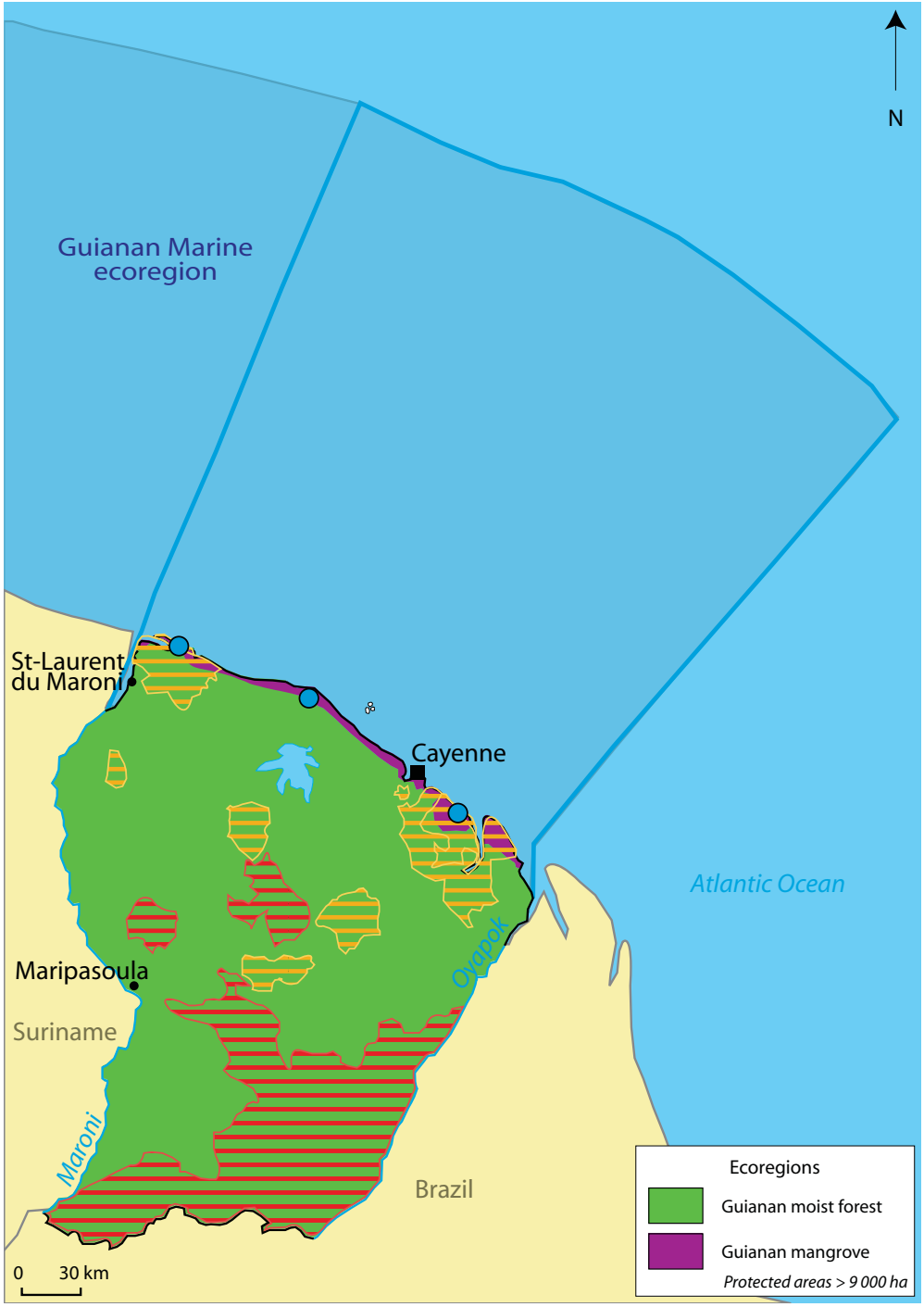
These services (hunting, fisheries, and firewood among others) are essential for Amerindian and Noirs Marrons communities living in forests or along rivers. Wood for construction is exploited at a small scale due to the lack of accessibility. The main threats are related to gold washing in forest habitat (forest destruction, poaching, and water contamination by mercury and mud) and poaching on the coasts.

Awala-Yalimapo Beach: a site of global interest for the breeding of the largest marine turtle, the leatherback turtle.

GOVERNANCE

Many fauna and flora species are protected by ministerial decree but there are no laws pertaining to hunting.

Some introduced species (particularly tilapias) compete with indigenous species.
Protection measures are very intensive with 30 % of the territory protected, especially with the creation of the Guiana Amazonian Park in 2007 and protection of the Kaw Marsh Ramsar Site (National Natural Reserve).



Surface Area
83,846 km²

EEZ
130,000 km²

Population
2007 215,036

Population Density
2.56 inhab./km²

FOREST : 80,492 km² (96 %)

WETLANDS : 700 km² (0.8 %)

Terrestrial Protected Areas			
IUCN Cat. I-II	20,300 km²	1	24.2%
IUCN Cat. IV-V	5,043 km²	8	6%
IUCN Cat. VI	13,600 km²	1	16.9%
Marine Protected Areas		0	
Ramsar Sites	1,960 km²	2	
Biosphere Reserve		0	
World Heritage		0	
IBA		12	

MAIN NATURAL AREAS

They include the coastal strip, including mainly mangroves, swamps, savannas (75,000 ha) and white-sand forests (30,000 ha) and the interior part, covered by primary equatorial forest with some mountain formations and inselbergs.
The very dense river network supports an exceptional level of biodiversity.
Guiana has two Ramsar Sites inscribed in1992: the Kaw Marsh and the lower Mana.
Thanks to the low human pressure outside of the coastal area, natural habitats are in good state.

HAITI

The Republic of Haiti includes the western part of Hispaniola Island in the Greater Antilles and several islands. It is dominated by a series of mountain ranges on 75 % of the land area, reaching 2,674 m at the Massif de la Selle. The climate is tropical in lowlands and subtropical in altitude. A large part of the population depends on subsistence agriculture and industrial activities are very limited. Haiti is particularly vulnerable to natural disasters due to frequent hurricanes and the seismic activity in the region. The recent earthquake of January 12, 2010, the worst in the country's history, killed 300,000 people, destroyed infrastructures, and increased pressure on natural resources.

A dozen civil society organizations from Haiti have recently formed a network, Rézo-Ekolo, to enhance collaboration. To contribute to reconstruction after the January 12, 2010 earthquake, the network participates in reconstruction and development planning and ensures mainstreaming of biodiversity and natural resources management issues.

ECOSYSTEM SERVICES

Deforestation, associated with significant rainfall, has led to strong erosion and soil exhaustion, and hence to a reduction of soil fertility and decline of agricultural yields. Due to torrential rain, deforestation also causes deadly mudslides and landslides. Rain sweeps large volumes of sediments with lasting impacts on already overexploited coastal and marine habitats. Once focused on export, agriculture is now restricted to subsistence and is not adapted to such constraints. Soil depletion continuously leads to more clearing on increasingly steeper slopes.
Remaining forest ranges, notably the Massif de la Hotte and the Massif de la Selle, play an important role for the hydrology of the South and South-East Provinces and for the water supply of Port-au-Prince, the capital, and several other cities.

GOVERNANCE

With the support of the United Nations Development Program (UNDP), Haiti is currently establishing a National Protected Areas System (SNAP). The National Protected Areas Agency (ANAP) will be in charge of coordination. Several civil society organizations work on biodiversity management, including the Audubon Society and two associations, the Seguin Foundation and the Macaya Foundation, working in the main protected areas (Macaya National Park and La Visite National Park). Several bilateral and multilateral agencies, as well as associations such as BirdLife International, provide technical and financial support for protected areas and watershed management. In the aftermath of the January 12, 2010 earthquake, a National Reconstruction and Development Plan has been drafted, and placed under the coordination of an Interim Commission for the Reconstruction of Haiti.

Surface Area
27,750 km²

EEZ
112,025 km²

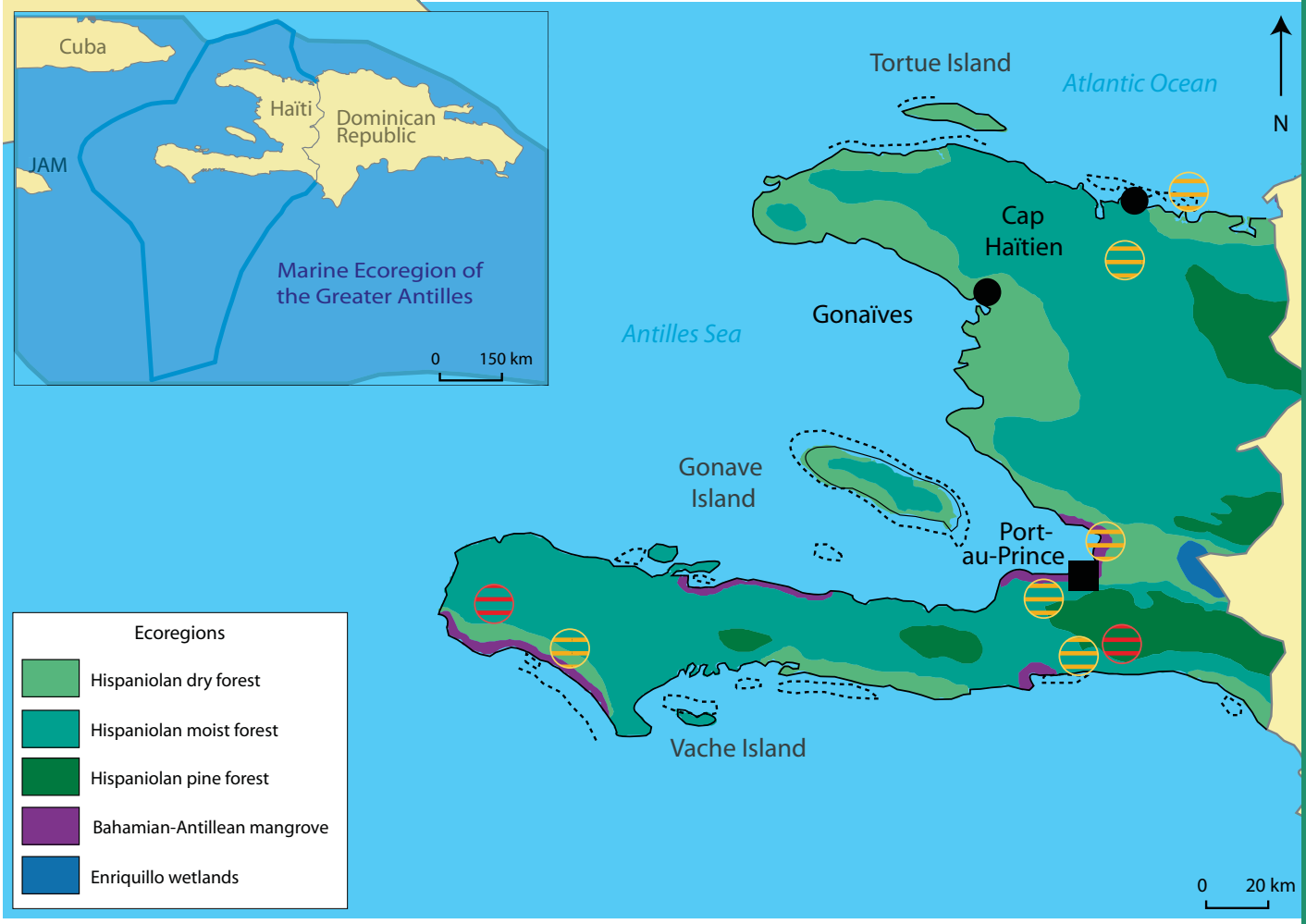
Population
2007 9.7 million
2020 11.7 million

Population Density
349 inhab./km²

GDP per capita
in purchasing power parity
$ 1,340

Human Development Index
0.53

Ecological Footprint
in global hectares per capita
0.5



MAIN NATURAL AREAS

Haiti is divided into 5 ecoregions: dry forests, wet forests, Hispaniolan pine forests, Bahamas and Antilles mangroves, and the Enriquillo wetlands. The island used to be entirely covered with forests but they have slowly disappeared due to successive plantations (coffee, tobacco, sugarcane, cocoa), land-use concentration in lowlands leading to population and agricultural pressure in montane areas, and charcoal production. Steep slopes (higher than 20%) vulnerable to erosion are found on 70% of the country. Sedimentation, due to soil erosion aggravated by deforestation, impacts coral reefs, often affected by stress or necrosis, and phanerogamic sea grass beds.
Coral reefs cover an area of 450 km² but are not protected. Mangroves are found on 134.57 km². The level of protection is very low for mangroves. They are also under strong pressure, particularly due to wood demand from urban markets.

FLORA AND FAUNA

The flora of Haiti is exceptional. There are 5,242 species of vascular plants and 31 % are endemic to the island. The 76 indigenous trees are all threatened and some are only found in the Dominican Republic. In total, 474 vertebrate species have been documented, and 25 % are endangered. Out of the 28 indigenous terrestrial mammals, only 2 have survived and they are currently threatened. Among the 50 existing amphibian species, 27 are endemic but only 4 are not threatened. There are 27 alien invasive species threatening the Haitian ecosystems, including the brown rat and the small Indian mongoose.

FOREST COVER : 1-3 % of the land area

WETLANDS : 1,129 km², 4.07 % of the land area

Terrestrial Protected Areas		% of the total land area
IUCN Cat. I-II	49.95 km²	0.3 %
IUCN Cat. II-III-IV	22.2 km²	
IBA	10	

Hispanolan pine forests used to cover about 15 % of the island but they have virtually disappeared from Haiti. Remaining forests are under high pressure, with a significant population living inside the areas. The altitude ecoregion (above 850 m) used to play a crucial role for water management and preservation of the rugged soil. Several restoration projects are being implemented, including a programme to preserve and valorize high-altitude biodiversity.

SAINT LUCIA

Part of the Lesser Antilles, Saint Lucia is a volcanic island of mountainous topography, dominated by a central ridge that traverses the country from north to south. Most of the island's interior is uninhabited, with most economic activities concentrated along a narrow coastal strip. Saint Lucia has shifted to a services economy, with tourism becoming the largest economic sector. The country is a member of CARICOM and the OECS.

The Pitons Management Area covers 2,900 hectares on the island's southwestern coast and is a World Heritage site. It comprises two cone-shaped mountains of volcanic origin, rising side by side from the sea, and includes the Soufriere Marine Management Area, created in 1992 after an intensive process of participative planning. Many of Saint Lucia's endemic and rare species thrive in the Pitons. Healthy coral reefs cover almost 60% of the site's marine area. A survey of the area's marine ecosystems revealed 168 species of finfish, 60 species of cnidaria, 8 molluscs, 14 sponges, and 11 echinoderms. Whale sharks and short-finned pilot whales can also be found offshore.

FLORA AND FAUNA

Species diversity is high in Saint Lucia, with over 1,300 known vascular plant species, including nine endemics, and over 150 species of birds, 6 of which are endemic. About 250 reef fish species and 50 coral species have been recorded. The island's known biodiversity also includes 17 species of reptiles (7 endemic) and 4 of amphibians (3 endemic). Over 200 endemic beetles are found on the island, currently under study. Among the vertebrates assessed for the Red List, 2% of bird species (5 species), all reptiles (5 species), 34% of fish (17 species) and 7% of mammals (2 species) are globally threatened.

ECOSYSTEM SERVICES

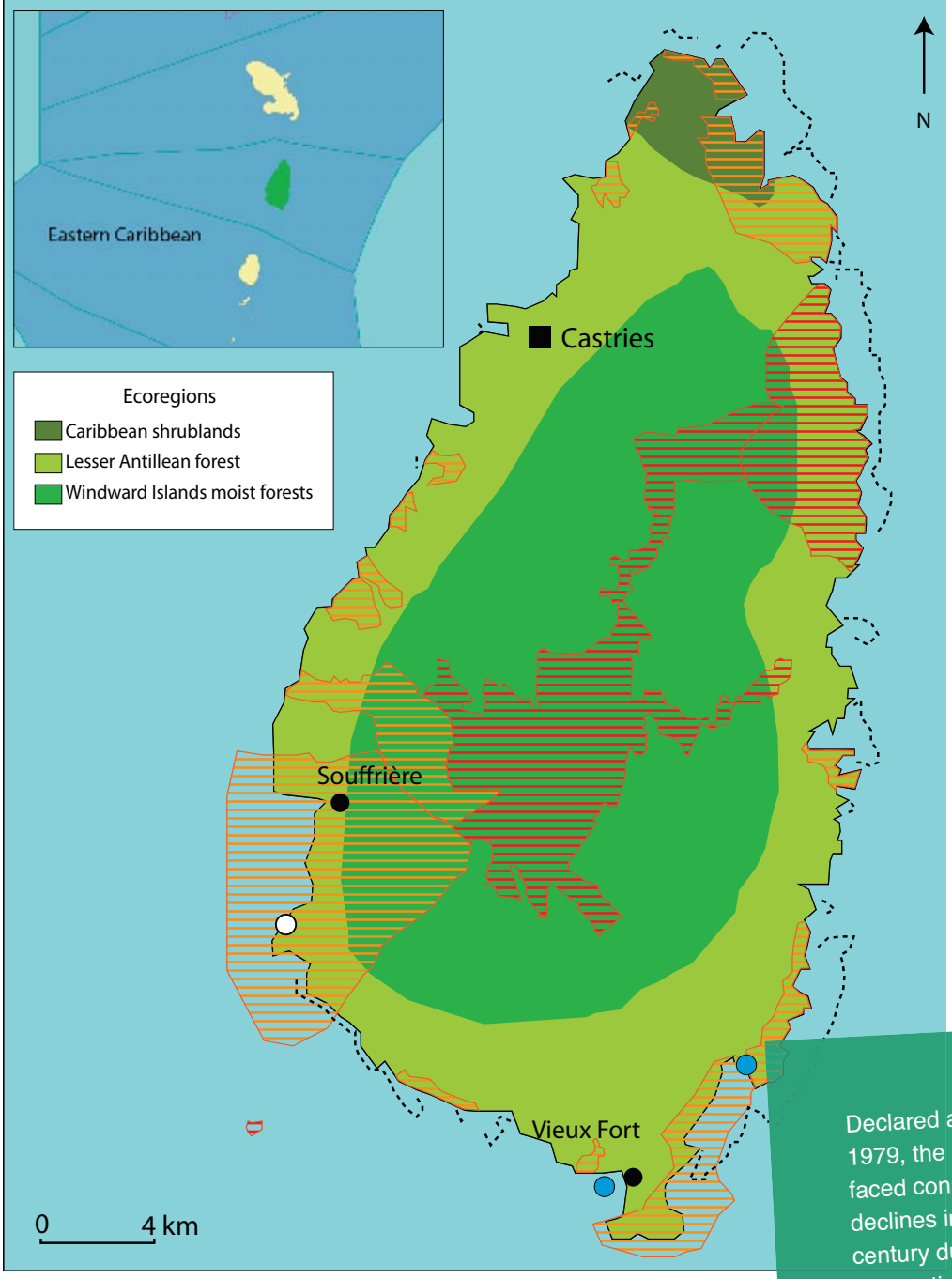
The contribution of reef-associated tourism and recreation to the local economy was estimated at US $160 - 194 million by the WRI in 2006. The value of shoreline protection services provided by coral reefs (potentially avoided erosion and storm damage) amounted to US$ 28 - 50 million in 2007. Reef-associated fisheries were found to have a direct economic impact of US$ 0.4 - 0.7 million annually, in addition to their high cultural value.

Forest cover plays a key role in the protection of soils, hydrology, and endemic and threatened species.

GOVERNANCE

A number of protected areas are in place, managed by the forestry or fisheries department or by the Saint Lucia National Trust. The protected areas network is currently under review through the OECS Protected Areas and Associated Livelihoods Project.

Biodiversity conservation measures underway include the establishment of a pilot turtle monitoring programme, the monitoring of fish catches and coral reefs, and the establishment of an iguana conservation and research project. Only three protected areas have a management plan in place: Soufriere Marine Management Area, Piton Management Area, and Pointe Sable Protected Area. A new forest policy and management plan aimed at reducing habitat loss and degradation was adopted in 2006. A UNEP-funded project to help reduce the threat of invasive alien species is currently underway and due to be completed by 2013.



Surface Area
616 km²

EEZ
15,484 km²

Population
2007 168,000
2020 190,000

Population Density
273 inhab/.km²

GDP per capita
In Purchasing Power Parity
$ 10,547

Human Development Index
0.82

MAIN NATURE AREAS

Vegetation ranges from xeric littoral shrublands and mangroves on the coast to lush rainforest on mountain peaks. Coral reefs surround approximately 44% of Saint Lucia's coastline. Half of the island's wetlands have been converted for agriculture and 22.5% of its forest lost between 1977 and 1989. The growing pace of coastal development and the pollution of coastal waters are two of the greatest threats to the island's biodiversity.

FOREST COVER : 121 km², 19.6 % of land cover
(Central Statistical Office, 2001)

WETLANDS : 3.16 km², 0.5 % of total area

Terrestrial Protected Areas			% of land area
IUCN Cat. I	12	-	-
IUCN Cat. II et V	38	approx. 100 km²	16.2 %
Marine Protected Areas	24	-	
Ramsar Sites	2	0.85 km²	
World Heritage Sites	1	29.09 km²	
IBA	5		

Declared as National Bird in 1979, the Saint Lucia Parrot faced considerable population declines in the twentieth century due to hunting, habitat destruction and illegal trade. By the mid-1970s, the emblematic species faced extinction. Habitat conservation, an interdiction on trade of Saint Lucia Parrot specimens under CITES, and a moratorium on hunting in forest reserves succeeded in reversing this trend. The parrot's population is currently estimated at c.800 individuals but remains vulnerable due to its small size and narrow range on a single island.

NORTHERN AMERICA - CANADA

Canada, including the provinces of Quebec and New Brunswick, which are also members of the Organisation internationale de la Francophonie (OIF), occupies most of the northern portion of North America and is geographically associated with the French overseas community of Saint-Pierre and Miquelon. Canada is also member of the Organization of American States and the Arctic Council, where it is a key player in the management of biodiversity in the Arctic through its participation in the Conservation of Arctic Flora and Fauna Working Group.

Canada is recognized for its great ecological, geographical, climatic and cultural diversity. The second-largest nation in the world, it is bordered by three oceans with 243,000 kilometres of coastline. Overall, 8.9 percent of Canada's surface is covered by freshwater and Canada has six clearly defined landform regions that include: Cordillera, Interior Plains, Canadian Shield, Great Lakes and St. Lawrence lowlands, the Appalachians and the Arctic. Additionally, biodiversity is a keystone of the Canadian economy for both traditional natural resources sectors and emerging sectors such as ecotourism, biotechnology and pharmaceuticals.

Regional Surface Area
9,980,000 km²

EEZ
2,755,564 km²

Population
2007 32.9 million
2020 37.1 million

Population density
3.3 inhab./km²

Gross Domestic Product
in purchasing power parity per capita
$ 35 812

Human Development Index
0.966

Ecological Footprint
in global hectares per capita
7.1

MAJOR NATURAL ENVIRONMENTS

Canada is a steward of large areas of the world's tundra, boreal and temperate forests, aquatic ecosystems and smaller tracts of grassland and polar desert ecosystems. Approximately 45 percent of Canada's land comprises of forest and woodland, which represents about 10 percent of the world's total forest cover. The Canadian Arctic forms roughly 20 percent of the world's circumpolar area.

In total, 1,004,234 km² (9.93%) of Canada's land area is protected. Canada has nearly doubled its protected areas since 1992, with significant additions in the past few years such as the expansion of Nahanni National Park to over 30,000 km², three new National Wildlife Areas on Baffin Island in the North, as well as other areas such as Labrador's Mealy Mountains, and the Mackenzie Mountains in the Sahtu Settlement Area of the Northwest Territories.

In total, existing marine protected areas cover over 56,000 km² of Canada's oceans and Great Lakes, for example work is being undertaken to create the Gwaii Haanas National Marine Conservation Area Reserve and Haida Heritage Site.

FOREST COVER : 45 % of the land mass, 8 % under protected status

WETLANDS : 14 % of the land mass

Protected Areas	5,371		% of land
IUCN Cat. I-II		858,707 km²	8.50 %
IUCN Cat. III-IV-V		96,166 km²	0.95 %
IUCN Cat. VI		25,470 km²	0.25 %
Ramsar Sites	37	130,666 km²	Partially protected*
Biosphere Reserves	15	10,224 km²	Partially protected
World Heritage	9	176,027 km²	Partially protected
IBA	592	448,299 km²	Partially protected

* Includes officially designated protected areas (included above) and others areas that are not protected.

Given the particular situation of the governments of Canada members of the Francophonie, this national sheet serves as a regional sheet and therefore does not contain recommendations at the regional level.

FLORA AND FAUNA

There are more than 70,000 species in Canada's various ecosystems, and it is believed that there are as many more to be identified. While Canada has a diversity of ecosystems, species diversity is limited and few species are endemic. The reason is that 10,000 years ago Canada was covered in ice and also because few species have the physiological ability to adapt to Canada's long cold winters.

Canada is home to some of the world's largest wild caribou herds and significant populations of wild bears (such as grizzly, black, brown and polar bears), wolves, martens, beavers, lynxes and over 200 other species of mammals. Over 300 species of North America's migratory birds spend spring and summer in Canada. Canada has an estimated 54 species of vascular plants, mammals, fish and freshwater molluscs recognized as endemic.

A wildlife status assessment conducted in 2005 determined that 70 percent of the species under study were "not a risk," while 17 percent were "at risk" or "possibly at risk." The greatest number of species at risk are found in southern Ontario, Quebec and British Columbia. These areas have the highest levels of regional biodiversity and the most intense levels of human activity. Canada's four ocean is regions, especially the Eastern Arctic, also have relatively high percentages of species at risk.

The main threats to Canadian wildlife are habitat loss, fragmentation and degradation, pollution and contamination, overexploitation, invasive species (especially in the Great Lakes), disease, bycatch and climate change. Habitat loss and fragmentation are very significant in agricultural and densely populated areas. Another example where wildlife and habitat are being threatened is in the Arctic where increasing fragmentation and loss of sea ice resulting from climate change are affecting polar bears.

LOSS OF SERVICES PROVIDED BY ECOSYSTEMS

Canada is one of the last remaining countries in the world that maintains large and relatively unfragmented ecosystems that harbour ongoing natural processes. Nevertheless, according to conservative estimates, the combined economic losses and direct costs of the only 16 invasive alien species in Canada currently amounts to $5.5 billion annually.

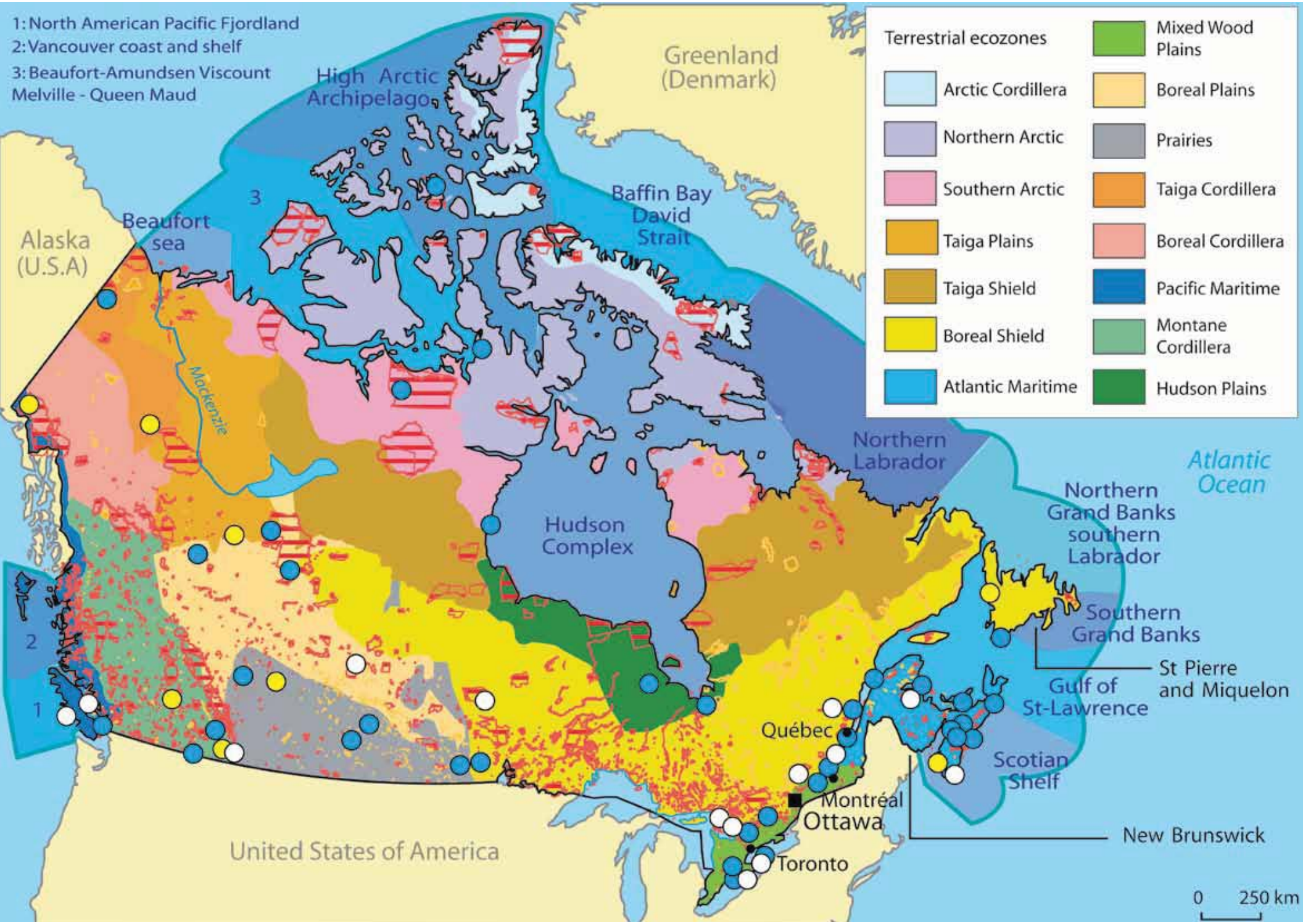
The services of the Canadian boreal forest alone have been estimated at some $93 billion per year, which is 2.5 times higher than the net market value of the capital extracted from the Canadian boreal forest. Canada's forests also play an important role in carbon sequestration.

GOVERNANCE

Canada is a signatory to the United Nations Convention on Biological Diversity (CBD), for which it hosts the Secretariat, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Wetlands of International Importance, especially as waterfowl habitat (known as the Ramsar Convention) and the International Agreement on the Conservation of Polar Bears. In 2006, the ministers of the federal, provincial and territorial governments approved the Biodiversity Outcomes Framework for Canada. The most important results of this framework that have been achieved include the integration of initiatives based on ecosystems, significant additions to Canada's protected area networks, restoration of degraded ecosystems, laws for the protection of endangered species, habitat stewardship programs, programs to combat invasive alien species, sustainable resource management and a variety of research and assessment initiatives involving ecosystems, species and genetics. In addition, the federal, provincial and territorial governments have adopted strategies, plans and indicators that target biodiversity.

As Canada's first inhabitants, Aboriginal peoples have a unique relationship with Canada's ecosystems, species and resources. This relationship is reflected in their cultural and spiritual practices, as well as their direct participation in traditional activities such as hunting and fishing. Thus, a cornerstone of Canada's ability to achieve its biodiversity objectives is the meaningful engagement of Aboriginal communities in biodiversity initiatives.

It has been estimated that Canada has 25% of the world's wetlands, which occupy about 14% the country's land mass. Canada also has the largest bogs in the world and is therefore one of the world's major land carbon sinks.


1: North American Pacific Fjordland
2: Vancouver coast and shelf
3: Beaufort-Amundsen Viscount Melville - Queen Maud
Terrestrial ecozones
Arctic Cordillera
Northern Arctic
Southern Arctic
Taiga Plains
Taiga Shield
Boreal Shield
Atlantic Maritime
Mixed Wood Plains
Boreal Plains
Prairies
Taiga Cordillera
Boreal Cordillera
Pacific Maritime
Montane Cordillera
Hudson Plains
High Arctic Archipelago
Greenland (Denmark)
Baffin Bay
David Strait
Alaska (U.S.A)
Beaufort sea
Mackenzie
Northern Labrador
Atlantic Ocean
Northern Grand Banks southern Labrador
Hudson Complex
Southern Grand Banks
St Pierre and Miquelon
Gulf of St-Lawrence
Québec
Scotian Shelf
Montréal
Ottawa
Toronto
New Brunswick
United States of America
0 250 km

CANADA
NEW-BRUNSWICK

New Brunswick, one of Canada's three Maritime provinces, is located between Chaleur Bay, the Gulf of St. Lawrence, the Bay of Fundy and the continent, and has a humid continental climate. Situated on the Appalachian mountain belt, the province has a very undulating relief from the Northwest Highlands, where Mount Carleton rises to 820 metres, to the Southwest Uplands and the Southeast Plain. The Saint John River, 673 km long, is the main watercourse in the region and the second largest watershed on the Atlantic coast of North America.

FLORA AND FAUNA

According to COSEWIC and the New Brunswick Department of Natural Resources, 20 bird species, of the 432 assessed, are endangered, possibly endangered or vulnerable, as well as 5 mammals, 11 vascular plants, 2 reptiles, and 20 species of fish. Bird populations can vary considerably with the seasons, as the province is on the Atlantic Flyway migration corridor.

The Maritime Ringlet Butterfly is a species endemic to New Brunswick and Quebec, found in the salt marshes of Chaleur Bay. Once the nymph hatches, the adult butterfly lives for only a week. Classified as endangered in 1996, the Maritime Ringlet has benefited from a recovery plan since 2005

LOSS OF ECOSYSTEM SERVICES

Ecosystem services provided by the Saint John River were important in New Brunswick's history. But the watershed is threatened by hydroelectric facilities – 11 dams – and the impacts are felt all the way to the river's estuary and the Bay of Fundy. Atlantic salmon is particularly threatened in this watershed.

GOVERNANCE

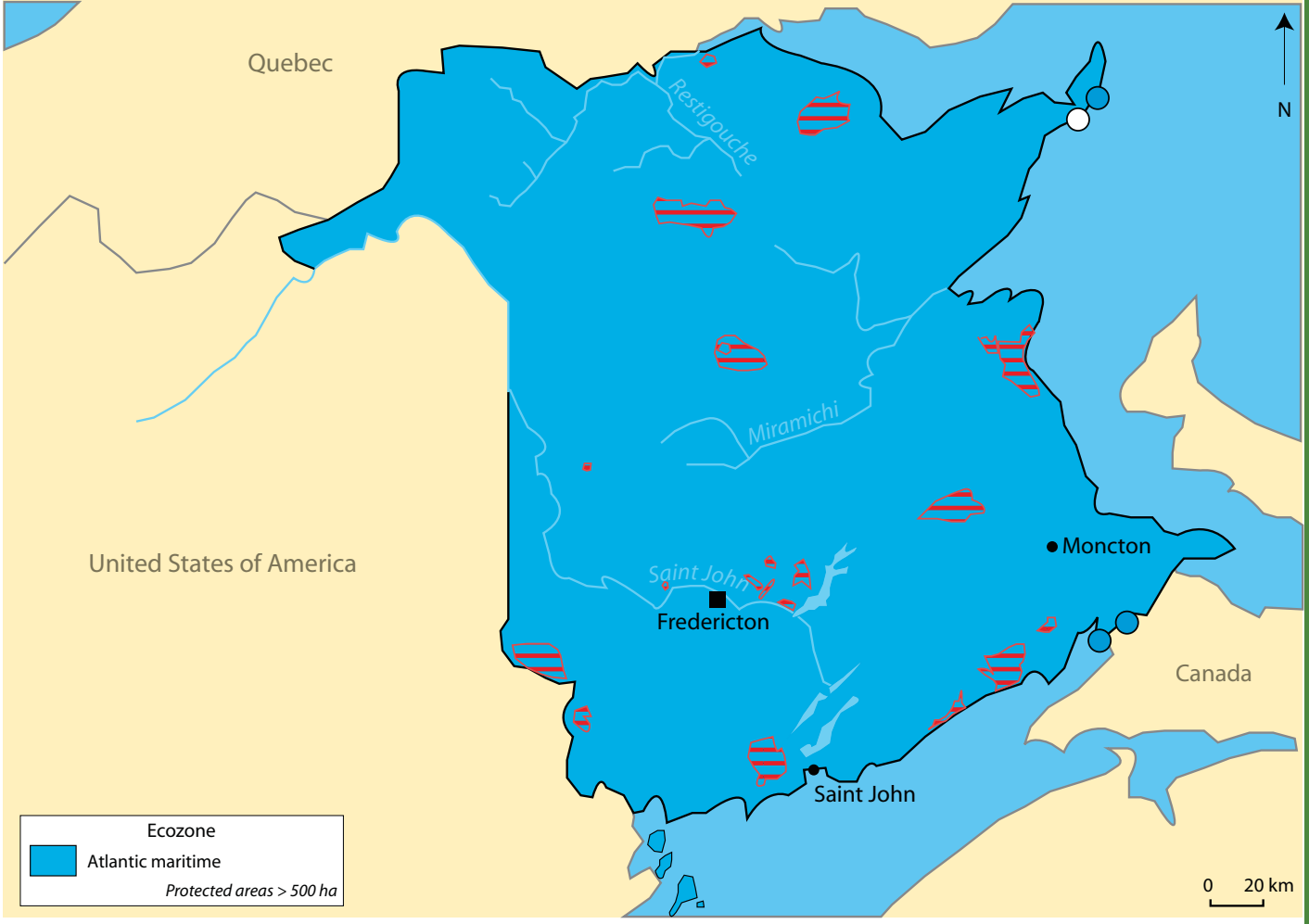
Natural resources are managed by either the federal government or the provinces. The federal government is responsible for fisheries, migratory birds, and the northern territories (Yukon, Northwest Territories, and Nunavut). The provinces manage most of the public lands inside their borders and are responsible for air, water and environment quality. With respect to protected areas, federal responsibility includes National Parks and National Wildlife Reserves, whereas New Brunswick is responsible for Provincial Parks and Protected Natural Areas.

The Province took a step towards including an awareness of biodiversity into all aspects of the lives of its citizens with the release of its Biodiversity Strategy in 2009. The strategy encourages the development and use of the province's biological resources in a way that permits its citizens to live off of nature's interest without depleting its capital.

Surface Area
73 440 km^2

Population
2007 749 468

Population Density
10,2 inhabitants/km^2



MAIN NATURAL AREAS

New Brunswick belongs to the Atlantic Maritime ecozone. The landscape varies considerably in the east, where it fronts the Atlantic and its steep cliffs. The Bay of Fundy records the highest tides in the world, up to 16.1 metres. The province is almost completely covered with forests through which many watercourses flow. The main industrial activity is forestry, which presents a challenge to the conservation of forest biodiversity.

FOREST COVER : 62 424 km², 85 %, of which 11 % is protected

WETLANDS : 3 690 km², 5 %, of which 14 % are protected

Protected Areas			% of land area
IUCN Cat. I-II		2 280 km²	3,1 %
IUCN Cat. III-IV-V	78	6 024 km²	8,2 %
IUCN Cat. VI		0 km²	0 %
			% under protection
Ramsar Sites	3	184 km²	0,2 %
Biosphere Reserves	1	4 423 km²	6 %
Important Bird Areas	11	2 620 km²	3,6 %

Shepody Bay, in the northern end of the Bay of Fundy, covers 12,200 ha. It includes 7,700 ha of open water, 4,000 ha of mudflats, 800 ha of salt marshes, and 100 ha of beach. It provides a temporary home to large numbers of shore birds such as the semipalmated sandpiper, whose population sometimes exceeds 400,000 birds. They are attracted by the Corophium volutator, a crustacean on which they feed. Shepody Bay has 3 Important Bird Areas and is part of the Fundy Biosphere Reserve.

CANADA
QUÉBEC

Enjoying the largest land mass of Canada's ten provinces, Québec shares land and sea borders with Ontario, Nunavut, the four Atlantic provinces to the east and northeastern states of the U.S.A. Its territory is characterized by the notable presence of the St. Lawrence River, with its estuary and gulf, the St. Lawrence lowlands, the Appalachian Mountains and the Canadian Shield. Its highest peak, at 1,652 metres, is Mont d'Iberville, located in the Torngat chain in northeastern Québec. Its four types of climate, the maritime, continental humid, subarctic and arctic, benefit a great variety of plant and animal species. Québec forms part of the nearctic ecological zone.

ECOSYSTEM SERVICES

Cradle of development for Québec and Canada, the St. Lawrence River valley where almost 60% of Québec's population lives generates a wide variety of ecological benefits: fresh water, fish and game, aquaculture, tourism and marine transportation. Beginning in the 1970s, much effort has been expended, with success, to improve water quality of the St. Lawrence and its tributaries.

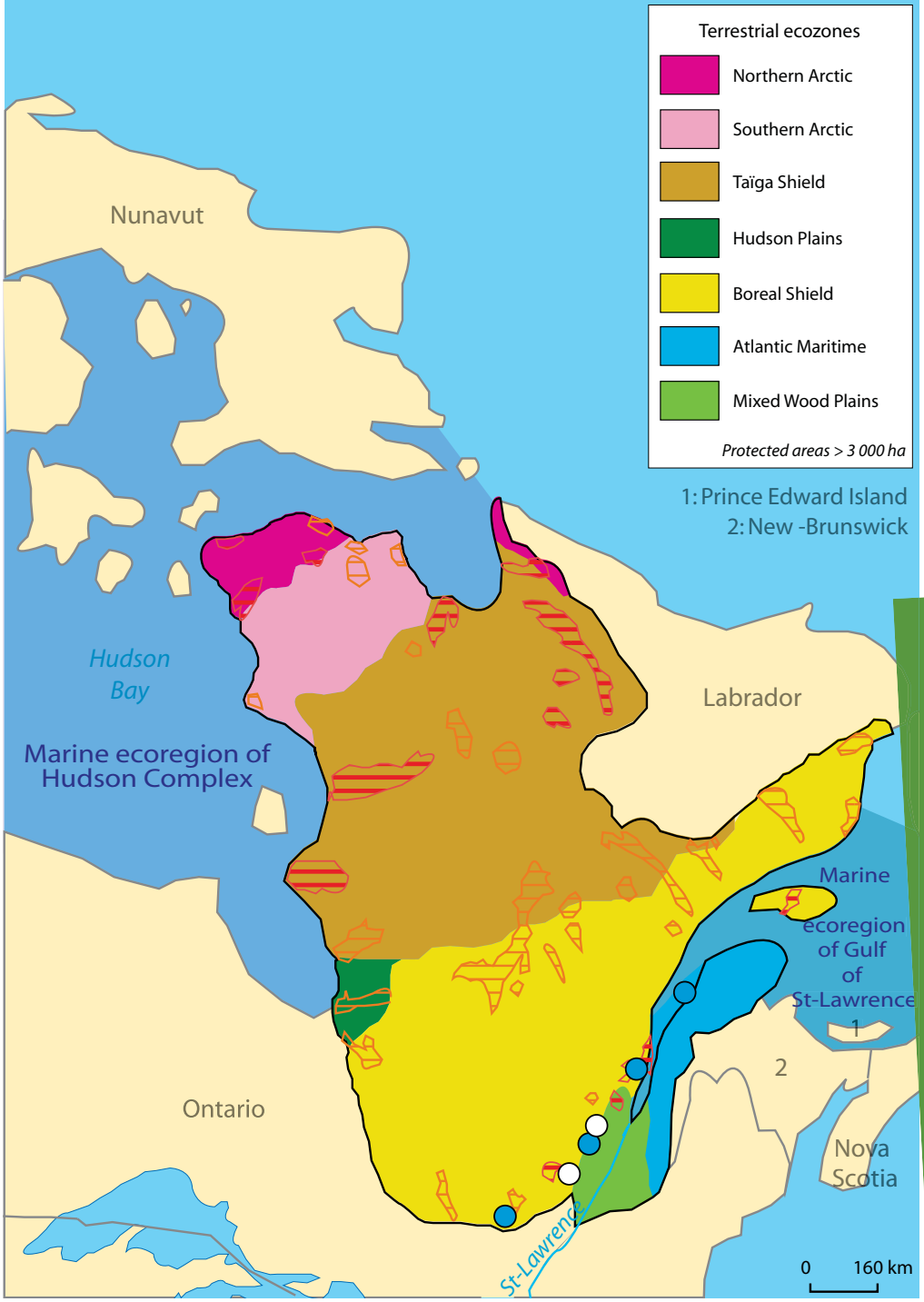
GOVERNANCE

An umbrella of legislative and institutional instruments ensures good protection and sustainable management of Québec's biological diversity. As member of the panamerican NatureServe Network, the Centre de données sur le patrimoine naturel du Québec, which is under the responsibility of the Ministère du Développement durable, de l'Environnement et des Parcs and the Ministère des Ressources Naturelles et de la Faune, gathers the data vital to the protection of species and ecosystems. It is a crucial tool in implementing the Act respecting threatened or vulnerable species.
In terms of regional governance, Québec is active in several transborder organizations involving federated states, particularly in the battle against invasive exotic species, and exercising a role on the major environmental issues attendant to one of the largest basins in the world comprised of the Great Lakes and the St. Lawrence River, which holds one-fifth of the world's fresh water.

Québec has significantly enlarged protected areas during the recent past, going from an initial coverage of 48,060 km^2 in 2002 to 135,764 km^2 in 2010, an increase of 1 282 protected areas in eight years to cover 8.14% of its territory. Québec has set a goal of including 12% of its territory in protected areas by 2015, which will cover about 200,000 km^2.

FLORA AND FAUNA

Data gathered by the Centre de données sur le patrimoine naturel du Québec (CDPNQ) shows that 392 species of flowers out of 2,800 are at risk, of which 18 are vulnerable and 50 threatened with extinction. As for wildlife, 150 species out of 650 are also considered to be at risk, of which 18 are vulnerable and 20 threatened . Among those species, birds are the most endangered (6 vulnerable and 8 threatened). The fresh water estuary of the St. Lawrence, the Chics Chocs mountains and the Mingan archipelago are hot spots of biodiversity because of their many endemic species that are threatened.
The diversity of flora and fauna is well represented in Québec's network of protected areas. Out of 36 endemic species, 34 can be found in at least one protected area, which shelters more than two-thirds of threatened or vulnerable species.
Québec ranks second as home to freshwater fish in Canada with 117 species. The Atlantic coast is the richest with its 835 marine species.



Surface Area
1,667,441 km²

Population
2009 7,828,879

Population Density
4.97 inhab./km²

GDP per capita
in Purchasing Power Parity
$ 31,675

Human Development Index
-

Ecological Footprint
in hectares per inhabitant
6

The caribou's presence in Québec is represented by three sub-species, two of which are considered at risk. The woodland caribou, *Rangifer tarandus*, has been designated a vulnerable species. It travels in herds and requires a foraging range that can vary from 32 to 1,470 km². Forestry operations have had an enormous impact on the woodland caribou, such that a recovery plan has been in effect since 2005 .

MAIN NATURAL AREAS

Close to 4,500 rivers course through its territory, fed by some one-half million lakes that cover 12% of Québec's area. These are distributed among 430 large basins, 100 of which make up a surface area of over 4,000 km². Québec must account for the ecological integrity of a coastline of roughly 14,000 km and 153,562 km² of seabed, among the most extensive in the world of which a federated state is given responsibility. The land area is divided into ten bioclimatic domains: three of tundra, two of spruce forests, two of fir forests and three of maple groves.

FOREST COVER : 761,000 km², 46 %

WETLANDS : 170,000 km², 10 %

Protected Areas			% of land area
IUCN Cat. I-II	201	42,062 km²	
IUCN Cat. III-IV-V	1,036	71,106 km²	8.14 %
IUCN Cat. VI	1,097	4,085 km²	
No category	62	18,510 km²	
Total	2,396	135,764 km²	
Ramsar Sites	4	188 km²	
Biosphere Reserves	4	69,724 km²	
World Heritage Sites	2	2.15 km²	
IBA	96	5,824.7 km²	

FRANCE SAINT PIERRE AND MIQUELON

The Saint Pierre and Miquelon Archipelago is a French territorial collectivity located 25 km south of Newfoundland (Canada). The climate is subpolar oceanic. Based on arbitration with the Canadian government, its Exclusive Economic Zone is a 200 by 10 mile- corridor. Fishing is the main economic activity (4,311 tons in 2004).

FAUNA AND FLORA

The relatively rich flora includes 446 vascular plant species, among which 44 % are introduced and at least 50 % are aquatic or semi-aquatic. Terrestrial fauna is poor and entirely exotic.

Migrating avifauna is remarkable with 87 nesting species.
On the marine side, numerous mammals are regularly observed: humpback whales, blue whales, white-beaked dolphins, pilot whales, etc. and seal colonies are found on the coast.

Leatherback turtles are sometimes present in the summer.

Four plants and one bird are found on the Red List.
Global warming might extend the spatial distribution of invasive species.

ECOSYSTEM SERVICES

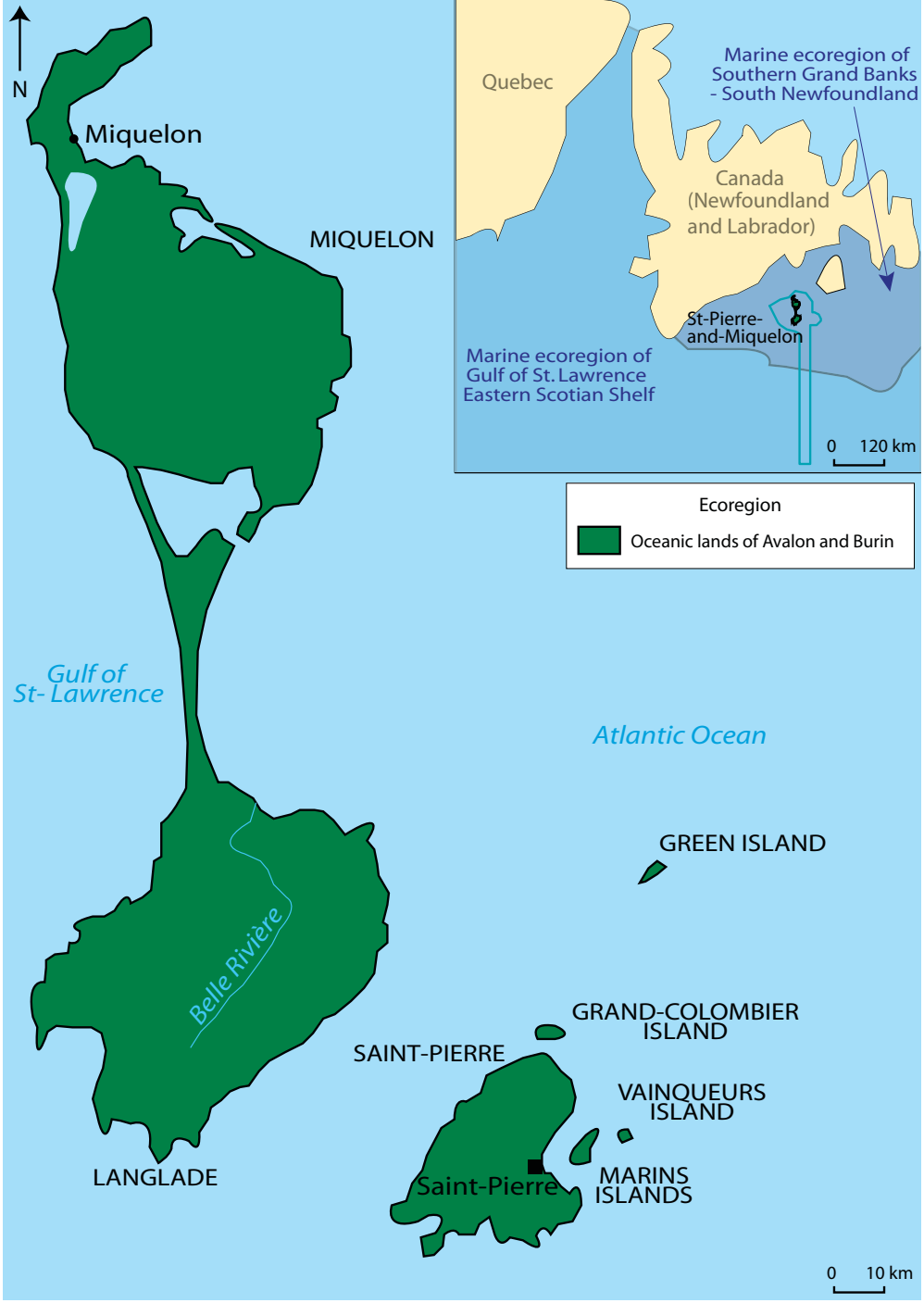
One of the crucial marine ecosystem services (cod shoals) has practically disappeared due to overfishing. Alternative products (lobster, lumpfish, snow crab) still represent 10 % of the archipelago's trade balance. The local economy now focuses on ecotourism and cultural tourism.

There is active hunting of migrating species and some introduced species (Snowshoe hare - *Lepus americanus*, white-tailed deer - *Odocoileus virginianus*, and arctic hare - *Lepus arcticus)*.

GOVERNANCE

Generally, biodiversity is well preserved despite some existing threats: urbanization, construction of airport infrastructure, all-terrain vehicles, speedboat traffic, and excessive hunting pressure.
Regulation is in line with French laws. Natural habitats are partially protected by a hunting ban in 4 reserves. Implementation of the 2007-2010 Biodiversity Action Plan is underway.

Saint Pierre and Miquelon plays an important role for the breeding of sea- and land birds (87 nesting species) and for the conservation of marine mammals, particularly harbor seals (*Phoca vitulina*, about 1,000) and gray seals (*Halichoerus grypus*).



Surface Area
242 km²

EEZ
6,860 km²

Population
2007 6,318

Population Density
26.1 inhab./km²

Cod is an exceptional marine resource depleted by overfishing: 99% of its reserves disappeared between 1950 and 1992.

FOREST COVER : 60 km², 24.8 %

WETLANDS : 21.2 km², 8.8 %

Terrestrial Protected Areas IUCN Cat. I and VI	30,35.km²	6
Marine Protected Areas		0
Ramsar Sites	10 km²	1
Biosphere Reserves		0
World Heritage		0
IBA		2

MAIN NATURAL AREAS

Despite its small size, the archipelago contains various habitats with high oceanic influence on the entire ecology: sandy beaches, dunes and coastal grasslands, cliffs, bare peaks and valleys with streams flowing to the sea and generally covered by a relict boreal forest.

The Grand Barachois lagoon is on the list of wetlands to be potentially designated as a Ramsar Site, as it is home to threatened bird species. The archipelago has two IBAs: Grand Colombier Island and Miquelon Island.

THE EUROPEAN CONTINENT

ALBANIA
ANDORRA
ARMENIA
AUSTRIA
AZERBAIJAN
BELARUS
BELGIUM
BOSNIA-HERZEGOVINA
BULGARIA
CROATIA
CYPRUS
CZECH REPUBLIC
DENMARK
ESTONIA
FINLAND
FRANCE
GEORGIA
GERMANY
GREECE

HUNGARY
ICELAND
IRELAND
ITALY
KAZAKHSTAN
LATVIA
LIECHTENSTEIN
LITHUANIA
LUXEMBOURG
MALTA
MOLDOVA
MONACO
MONTENEGRO
NETHERLANDS
NORWAY
POLAND
PORTUGAL
ROMANIA
RUSSIA (EUROPEAN PART)
SAINT-MARIN
SERBIA
SLOVAKIA
SLOVENIA
SPAIN
SWEDEN
SWITZERLAND
THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA
TURKEY (EUROPEAN PART)
UKRAINE
UNITED KINGDOM
VATICAN

Number of countries
50 independent states

Regional Surface Area
10,180,000 km²
including the European parts of Russia and Turkey

Population
2009 731,000,000

Population density
72 inhab./km²

Europe forms the western part of the Eurasian Continent, bordered to the west by the Atlantic Ocean, to the north by the Arctic Ocean, to the south successively by the Mediterranean Sea, the Black Sea, and the Caspian Sea, and to the east by the Ural Range, then by the Ural River, flowing into the Caspian Sea. The highest point is Mt Elbrouz in the Caucasus at 5,642 m.
Climate varies with latitude: to the west, the Atlantic Ocean and the Mediterranean Sea contribute to the mild climate of Western Europe, while the central and western regions have a continental climate or even an arctic climate in the far north.

BIOGEOGRAPHICAL DATA

The European continent includes a series of large watersheds, draining vast areas and feeding numerous bordering seas and oceans. Several mountain ranges mark the landscape, the most well-known being the Alps, the Pyrenees, the Carpathians, the Caucasus, and the Scandinavian Alps. Wide plains, strongly influenced by a long human presence, are still mostly covered by forests, including relic forests in some Central European countries. The seas and oceans surrounding the sub-continent are of remarkable richness, but affected by human activities, such as overfishing and high nitrate and phosphate discharges. Three Biodiversity Hotspots are present in the region: the Caucasus, the Irano-Anatolian, and the Mediterranean Basin.

SUB-REGIONAL ORGANISATIONS

The Council of Europe, the European Union, and the Commonwealth of Independent States are the most well-known sub-regional organisations. A series of biodiversity-related conventions and organizations contribute to the European integration, including the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), the European Landscape Convention, the Convention on the Protection of the Alps, the Carpathian Convention, the Barcelona Convention for the Protection of the Mediterranean Sea, the Convention on the Protection of the Marine Environment of the Baltic Sea Area (managed by the Helsinki Commission, HELCOM), the Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), the Convention on the Protection of the Black Sea, and the International Commission for the Protection of the Danube River (ICPDR).

CONSERVATION STATUS IN THE SUB-REGION

Adopted in 1995 by the Council of Europe, the Pan-European Biological and Landscape Diversity Strategy has the objective of supporting the implementation of the CBD in the region. The strategy aims to promote more concerted and hence more effective implementation of policies, initiatives, mechanisms, funds, and research programmes to protect and enhance Europe's biological and landscape diversity. The Pan-European Ecological Network is a major tool for achieving the strategy's objectives that the States have committed to create by 2015. The network relies mainly on Natura 2000 sites of the EU and the Emerald Network under the Bern Convention.
The Natura 2000 network has been created by the 27 Member States of the EU to protect identified sites of community importance under the European Birds and Habitats Directives. Covering 18% of the EU surface area, with an incentive budget for the managers of these areas, it is the most important concerted action for sustainable management of natural habitats ever implemented.
Overall, although significant progress has been made to extend the Pan-European Ecological Network, many of its core areas remain inadequately protected. In 2008, only 17% of all species and habitats of community interest were deemed to have a favourable conservation status in the EU. The European Strategy on Invasive Alien Species has only been implemented by one third of European states.

SPECIES DIVERSITY

The species diversity of the European Continent is very important at a global level. While the northern part is relatively poor in species due to the last glaciations, many biologically important areas are concentrated at its southern edge, under the Mediterranean influence.
The continent's flora and fauna are under significant threat. Among the species present on the European Red List, 35 mammals (15%), 19 amphibians (23%), 27 reptiles (19%), 37 butterflies (8.5 %), 21 species and sub-species of dragonflies (15 %) and 46 saproxylic coleopterans (11%) are threatened. Habitat loss, degradation, and fragmentation are the primary drivers of biodiversity loss in Europe. Numerous invasive species also pose a threat to Europe's biological diversity: the DAISIE project has identified 10,822 exotic species in Europe, of which 10 to 15% have potential adverse ecological or economic impacts.

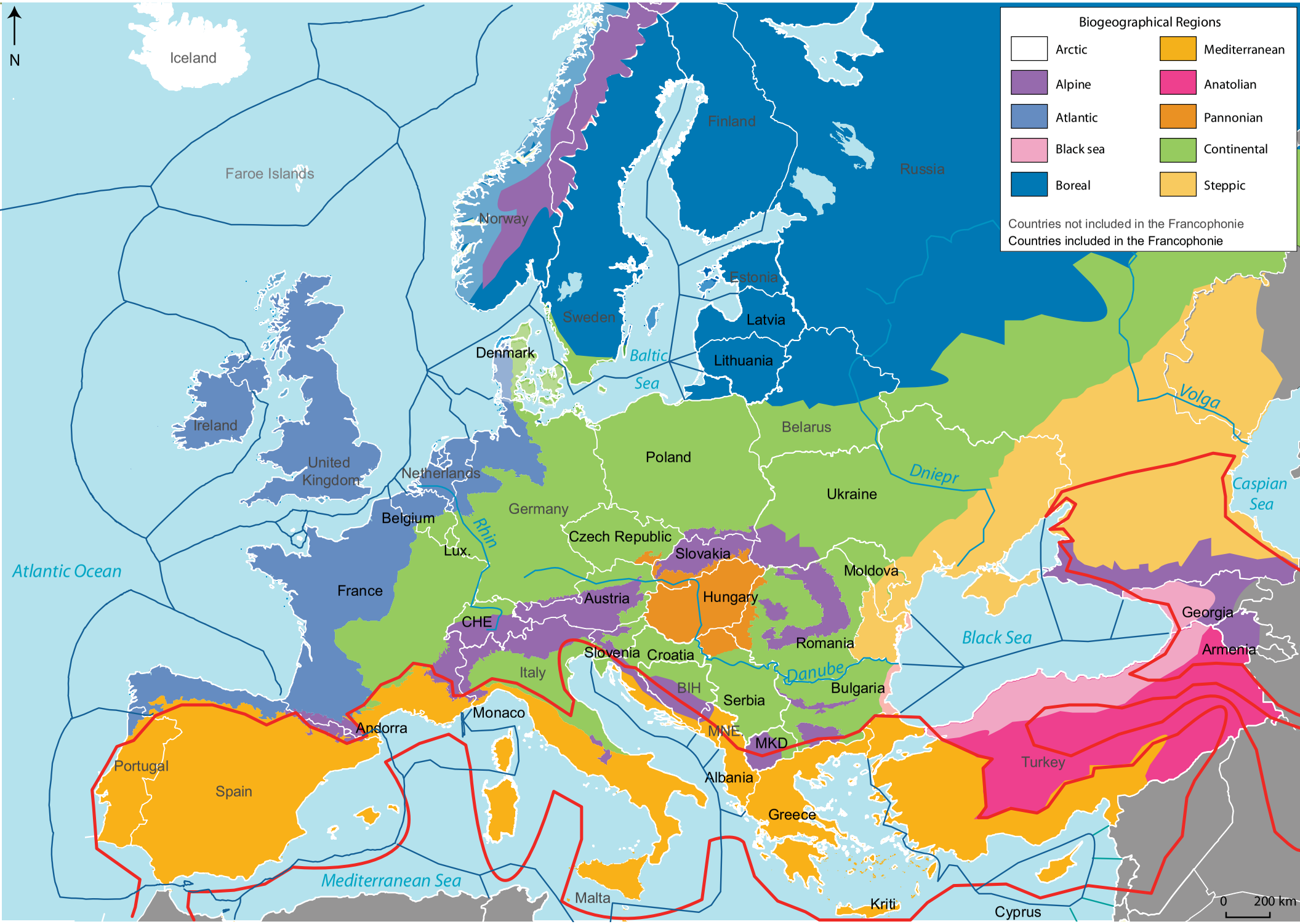
SPECIFIC RECOMMENDATIONS

- Develop the Pan-European ecological network, based on the Natura 2000 network model, and extend it to the entire continent;

- Improve cooperation for the Danube watershed to ensure sustainable protection of its aquatic habitats, particularly of its exceptional delta;

- Strengthen policies against invasive exotic species:

  - At EU level, through adoption of a new legal instrument on such species or revision of the existing legal framework;
  - At the Pan-European level, through implementation of the European Strategy on Invasive Alien Species developed under the Bern Convention and by establishing a Pan-European early warning system, such as the EWRR proposed by the European Environment Agency.


N
Biogeographical Regions
Arctic
Alpine
Atlantic
Black sea
Boreal
Mediterranean
Anatolian
Pannonian
Continental
Steppic
Countries not included in the Francophonie
Countries included in the Francophonie
Iceland
Faroe Islands
Norway
Finland
Russia
Estonia
Latvia
Lithuania
Sweden
Denmark
Baltic
Sea
Ireland
United Kingdom
Netherlands
Belgium
Lux.
France
Germany
Poland
Belarus
Ukraine
Volga
Dniepr
Caspian Sea
Rhin
Czech Republic
Slovakia
Moldova
Austria
Hungary
CHE
Slovenia
Croatia
Romania
Georgia
Armenia
Black Sea
Danube
Bulgaria
Italy
BIH
Serbia
MNE
MKD
Monaco
Andorra
Portugal
Spain
Albania
Greece
Turkey
Atlantic Ocean
Mediterranean Sea
Malta
Kriti
Cyprus
0
200 km

ALBANIA

Albania, a predominantly mountainous state, is divided between narrow plains bordering the Adriatic and Ionian Seas and the Balkan mountain range. Its climate is Mediterranean along the coastline and continental inland. A step towards potential accession to the EU, the Stabilization and Association Agreement between the EU and Albania has recently entered into force. Agriculture, mainly for subsistence, employs about half of the population and accounts for 20 % of GDP.

FAUNA AND FLORA

Albania has over 3,300 vascular plant species, about 30 % of the European flora; 20 % of these species are endemic to the Balkans. Albania's altitude forests are home to large-mammal communities, such as wolves, bears, lynxes, and wild goats. The populations of over 120 vertebrate species have, however, decreased by more than 50 % in the last 25 years.

ECOSYSTEM SERVICES

Natural habitats support subsistence agriculture, a major component of the Albanian economy. The conservation of forests, already highly degraded, is crucial for preserving water reserves in a country of predominantly rugged terrain. It should be noted that electricity is produced primarily from hydroelectric dams; however, these dams can no longer meet current demand and the production of thermal electricity is under development.

GOVERNANCE

Albania participates in several regional projects on protected area networks pertaining to management of the Prespa Park, conservation of Lake Ohrid, and integrated management of Lake Shkodra. Only three protected areas have management plans in place. Illegal logging, including within some national parks, has already destroyed large forest areas. Albania is one of the few countries in the world without treatment of sewage waters, resulting in a strong deterioration of freshwater and sea water quality.

The 60 km^2 Karavasta Lagoon, located within a Ramsar site and a national park, harbours one of the largest European colonies of Dalmatian pelicans. The species can reach a wingspan of 3 metres and weigh up to a dozen kilograms.

Surface Area
28,750 km²

Economic Exclusive Zone
11,138 km²

Population
2007 3.1 million
2020 3.3 million

Population Density
108 inhab./km²

GDP per capita
In Purchasing Power Parity
$ 7,019

Human Development Index
0.82

Ecological Footprint
In global hectares per capita
2.6

Lake Ohrid, one of Europe's oldest and deepest lakes, harbours an important bird fauna and its clear waters are home to 7 endemic fish species. Negotiations are ongoing for the inclusion of the entire park, and not only its Macedonian component, on the World Heritage List.

FOREST COVER : 4,711 km² of which 3 % are under a form of protection

WETLANDS : 602.15 km², 2.1% of land cover

Terrestrial Protected Areas			
IUCN Cat. I-II	17	1,031.15 km²	
IUCN Cat. III-IV-V	776*	1,397.91 km²	9.08 % of land cover
IUCN Cat. VI	4	182 km²	
Marine Protected Areas	1	125.7 km²	
Ramsar Sites	3	830.62 km²	
IBA	15		

* including 746 natural monuments representing only 34.9 km², 25 nature reserves covering 636.63 km² and 5 protected landscapes with a total surface of 726.38 km²

MAIN NATURAL AREAS

Situated at the edge of the Mediterranean and Central European regions, the country enjoys a great diversity of habitats and ecosystems thanks to its predominantly mountainous and rugged terrain. It provides ideal conditions for the maintenance of relict species and, regarding flora, significant speciation and range extension of certain species from the Balkan Peninsula.

ANDORRA

The Principality of Andorra, a sovereign parliamentary democracy since 1993, is a state in the eastern Pyrenees, bordered by France and Spain. Tourism is the mainstay of Andorra's economy (approximately 80% of GDP). High mountain peaks and river valleys dominate the country's landscape, with an average elevation of 1,996 metres. The climate is predominantly temperate, but varies greatly with altitude. Most of Andorra's population is concentrated in and around the capital, Andorra la Vella.

Andorra's diversity of butterflies is remarkable for a country of only 468 km², with 156 species recorded, including globally threatened or near-threatened ones, such as the Apollo Butterfly, the Cinquefoil Skipper, the Woodland Grayling, and the Mountain Clouded Yellow. The use of butterflies as bio-indicators has recently been initiated in Andorra. The Butterfly Monitoring Scheme gathers information on the population dynamics of Andorra's butterflies and provides, by correlating such data with environmental variables, an indication of the state of the environment.

FLORA AND FAUNA

Andorra's wildlife is characteristic of the Pyrenees, including many species endemic to the mountain range: Aurelio's Rock Lizard, the Pyrenean Chamois, Pyrenean Brook Salamander, Pyrenean Gentian, Pyrenean Lily. Out of the plant species assessed for the national Red List, 59 are critically endangered. Andorra is also home to two globally threatened mammals inscribed on the IUCN Red List, the Pyrenean Desman and the Long-fingered Bat.

ECOSYSTEM SERVICES

Andorra's natural habitats are under growing pressure from tourism and urbanization. Water ecosystems are particularly at risk, as the production of artificial snow leads to the draining of uphill catchment areas. Most of the lower parts of rivers are being channelized.

GOVERNANCE

Most of Andorra's vertebrates are protected by law and action plans are in place for certain species. Andorra also cooperates with its two neighbours in the implementation of species conservation measures, such as the Bearded Vulture action plan or the Brown Bear reintroduction programme. There is currently no national framework or action plan for the management of invasive species, but measures are implemented on a case by case basis. In addition to the two Natural Parks, a series of hunting reserves have been established by the central government, for the recovery of game species populations. Andorra is not a party to the Convention on Biological Diversity but has observer status to the United Nations Framework Convention on Climate Change.

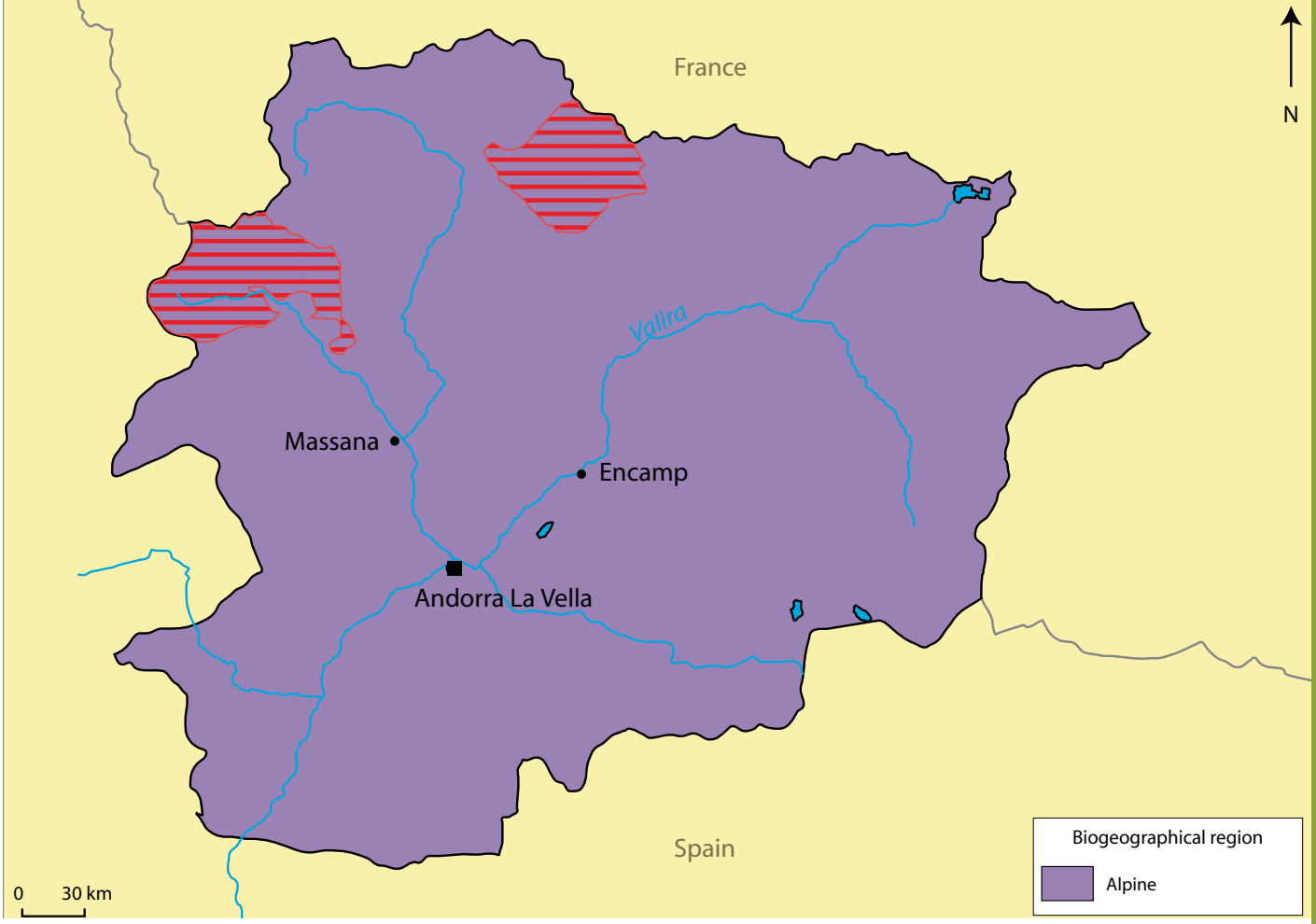
Surface Area
468 km²

Population
2007 75,000
2020 100,000

Population Density
115 inhab./km²

GDP per capita
in Purchasing Power Parity
$ 44,900

Human Development Index
0.934



MAIN NATURE AREAS

Andorra's rugged mountains are home to a variety of alpine and sub-alpine ecosystems: mountain pine forests *Pinus uncinata*, meadows, alpine pastures, and thicket vegetation such as rhododendrons and juniper, among others. Human settlements have traditionally been located in valleys; as a consequence, river bank vegetation has greatly diminished. Urban development and tourism – notably, the development of ski resorts – are the main pressures on Andorra's biodiversity. Protected areas have not been established and managed at national level, but two local authorities - the parishes of Ordino and La Massana - have set up the Natural Parks of Sorteny Valley and Coma Pedrosa, respectively.

Terrestrial Protected Areas			
IUCN Cat. I-II	2	26.2 km²	4 % of land area
World Heritage Sites	1	42.5 km²	
IBA	1		

At risk from habitat encroachment by the continual expansion of ski areas and overhead collision with power lines, the Bearded Vulture has been, since 1999, the object of a conservation plan, including regular monitoring of the species and public awareness campaigns. Conservation measures implemented during the last decade have allowed the species to breed in Andorra for the first time.

ARMENIA

Located in the heights of the Caucasus, under a continental climate, between the Black and Caspian Seas and at the boundaries of Asia and Europe, Armenia is a mountainous country rising to 4,095 metres at Mount Aragats. Economic activity, formerly based primarily on industry, also relies today on irrigated agriculture and livestock. Armenia is a member of many international organizations including the Council of Europe.

Thanks to Armenia's active participation in the Ecoregional Biodiversity Conservation Plan for Caucasus, highly threatened populations of Persian leopards, Armenian mouflons, and wild goats have been stabilized.

FLORA AND FAUNA

Armenia is one of the reservoirs of wild varieties of many species cultivated in Europe. The level of endemism reaches 3.5% for the 3,600 vascular plants recorded, and 4% for the 535 known vertebrate species. The Pan-European Strategy on Invasive Species has not been implemented but a first inventory has identified 42 over-represented native species and 8 alien invasive species.
Based on the national Red List, 35 plant species and 19 mammal species are considered extinct, including Dahl's jird and the Pallas's cat. According to the IUCN global Red List, 20% of the 21 fish species, 15% of the 91 mammal species, 3% of the 291 bird species, and over 20% of the 31 reptile species are threatened.

ECOSYSTEM SERVICES

The national water supply, strongly reliant on Lake Sevan, is increasingly contaminated by nitrate and pesticide effluents from agriculture. The current boost in agricultural activities could have a severe impact on natural habitats, as 20,000 hectares of wetlands have already been drained. Mining wastewater discharges pose another threat to the natural environment, as they are seldom treated.

GOVERNANCE

About 10% of the territory, harbouring over 60% of all flora and fauna species, is under protection, allowing Armenia to fulfill its commitments to the CBD. In addition, a sanctuary and 6 new national parks are under development. Armenia does not have a national strategy pertaining to agricultural biodiversity and conservation of wild varieties of many cultivated species.
The country has not ratified the Convention on the Protection and Use of Transboundary Watercourses and International Lakes. Armenia does not have a forestry management plan, despite the decrease of illegal logging.

Surface Area
29,800 km²

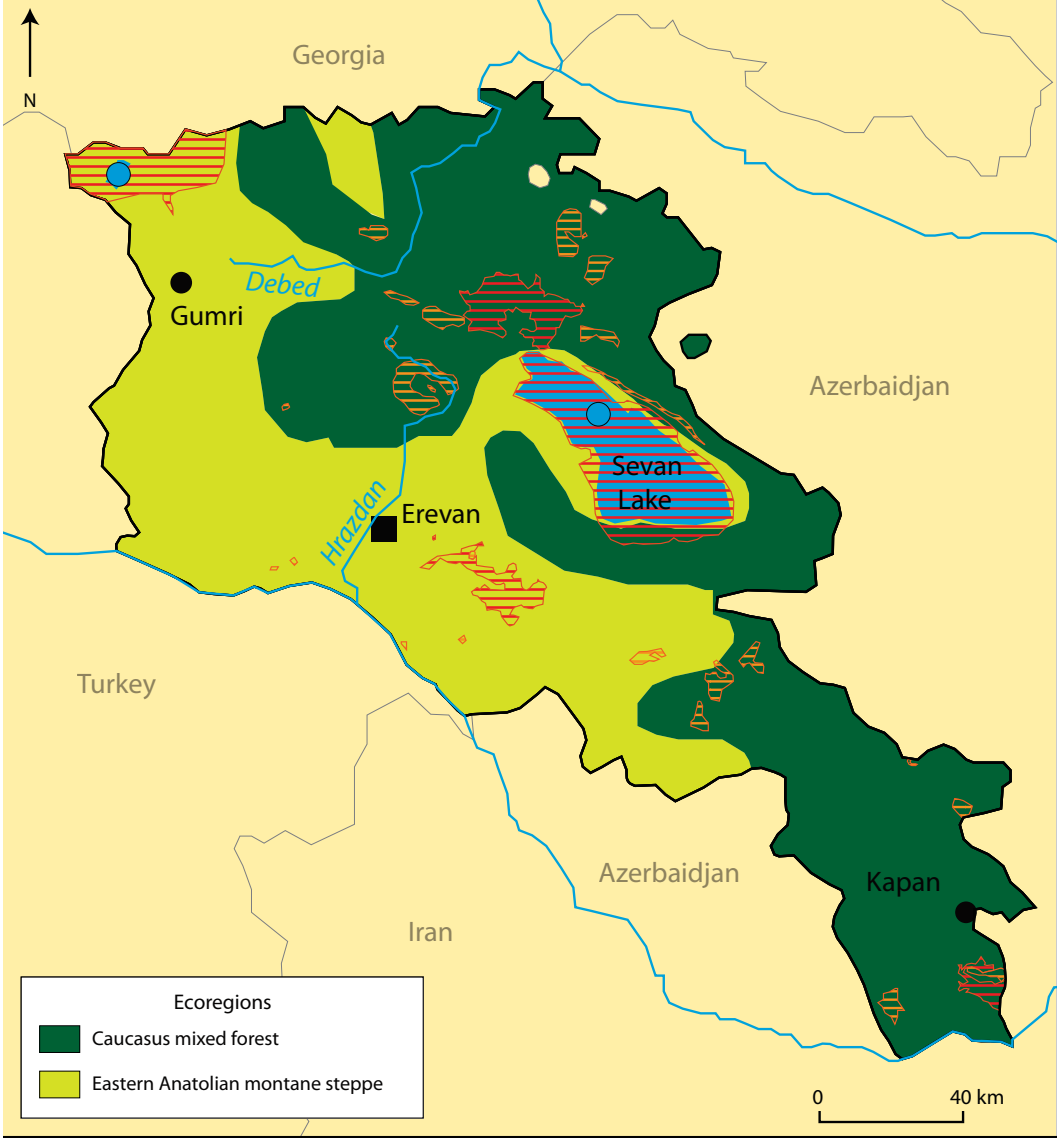
Population
2007 3.1 million
2020 3.2 million

Population Density
79 inhab./km²

GDP per capita
In Purchasing Power Parity
$ 4,966

Human Development Index
0.8

Ecological Footprint
In global hectares per capita
1.5



MAIN NATURAL AREAS

Armenia has an exceptional biodiversity due to its varied landscapes spread along several altitudinal gradients, from desert areas to alpine grasslands to forests interspersed with many lakes, including Lake Sevan (1,400 km² at 1,900 m), the country's main freshwater reservoir. Armenia is divided into two ecoregions each of which is a biodiversity hotspot (Caucasus and Irano-Anatolian).

FOREST COVER : 2,830 km² (2005), 9.5 % of land cover, of which 59 % are under a form of protection

WETLANDS : 1,838 km², 6.17 % of land cover (dominated by Lake Sevan)

Terrestrial Protected Areas			% of land cover
IUCN Cat. I-II	5	2,011 km²	6.75 %
IUCN Cat. III-IV-V	25	895 km²	3 %
IUCN Cat. VI	230	-	
Ramsar Sites	2	4,922.39 km²	30 % under a form of protection
IBA	18		

The projected Lake Arpi National Park, including the eponymous Ramsar site, will protect a nesting and resting area for migratory birds; it will also protect 25 plant species and 30 animal species present on the national Red List, the largest colony of Armenian gulls, and the country's only nesting site of the Dalmatian pelican.

AUSTRIA

A Central European state, member of the EU, Austria is composed of 9 federal states (*Bundesländer*). Mountains dominate the country's topography, culminating at 3,797 metres. The Alps give way to part of the Pannonian plain in the east, while a lower mountain range, Böhmerwald, lies north of the Danube. Austria has a temperate and alpine climate.

The Natural Forest Reserve Programme is a contractual forest protection tool whereby forest owners, on a voluntary basis and in exchange for a fee, agree to allow the natural development of the forest ecosystems, unhindered by human interventions. Forest utilisation, logging of dead wood and artificial regeneration are prohibited in the reserves. The selected plots are representative of all forest communities in Austria and serve for research purposes.

FLORA AND FAUNA

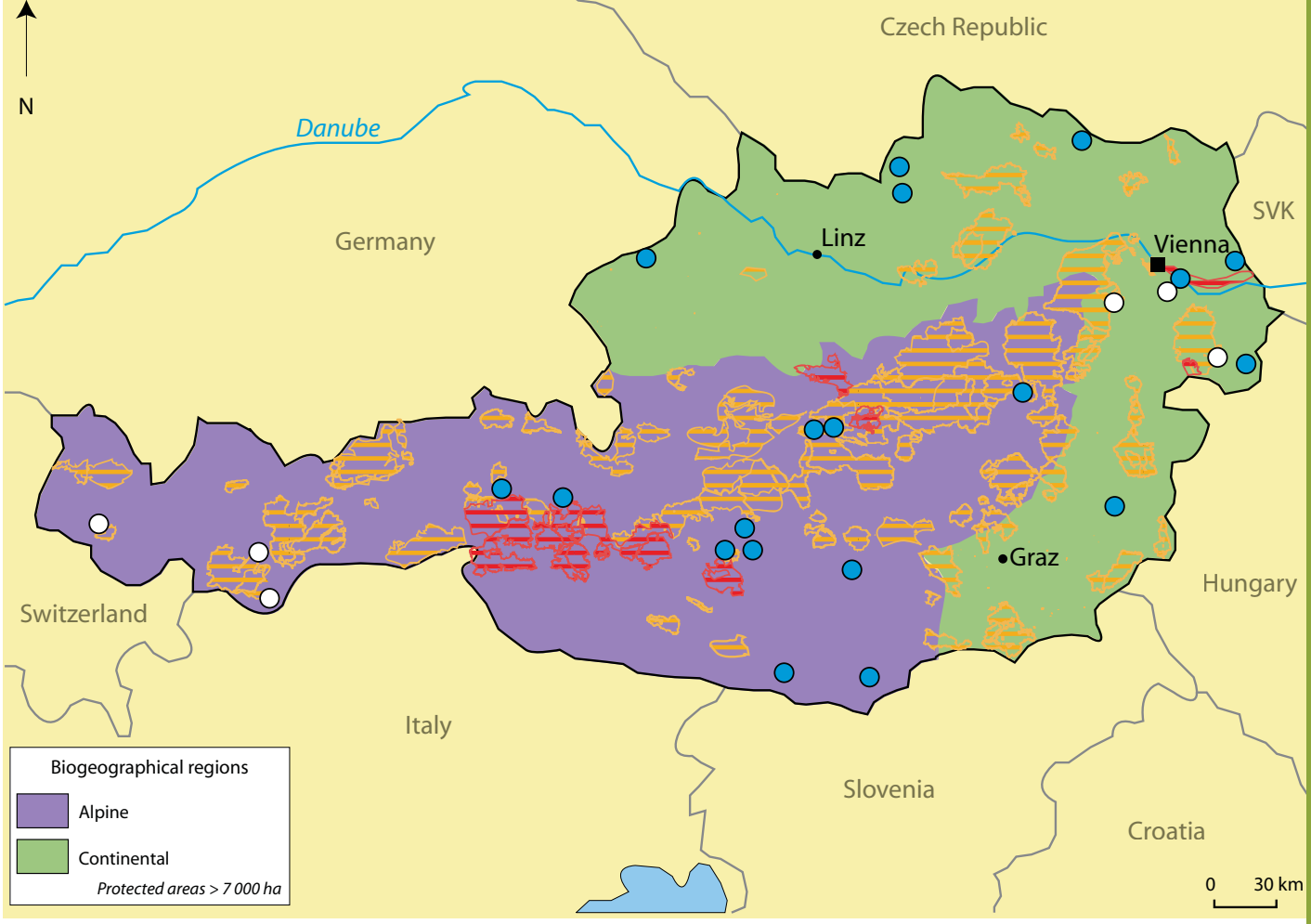
Nearly 3,000 vascular plants and 45,000 animal species (of which 82% are insects) have been described, but a considerable proportion is threatened (33.4% of ferns and flowering plants) or critically endangered (10% of vertebrates) at national level. Out of the species assessed for the global Red List, a third of mammals, 3% of birds, 9% of reptiles and 14-18% of fish species are threatened. The threat situation of some species, such as the Eagle Owl, European Otter, Peregrine Falcon, and Black Stork, has improved considerably, partly due to conservation programmes. Other species - for example, the Great Bustard and European Roller - have persisted at very low population levels, dependent on conservation measures. 23 alien species are considered invasive.

ECOSYSTEM SERVICES

Forests play a key role in preventing erosion, landslides, floods and avalanches. The Forest Act, amended in 2002, reinforces the sustainable, multifunctional management of natural resources. Both growing stock and the surface area of forest cover have been increasing in the last decades. Tourism accounts for about 18% of GDP and is largely dependent on the natural environment and landscape, but constitutes one of the main pressures on biodiversity; mountainous regions are the most sensitive.

GOVERNANCE

The constitution delegates almost exclusive authority for nature conservation to the nine Bundesländer. It is the competence of the provincial governments to promulgate ordinances placing rare or endangered species under strict or partial protection, as well as to designate protected areas. Conservation programmes for certain endangered species are underway. Set up in 1996, a National Biodiversity Commission – composed of representatives of Federal Ministries and Provincial authorities, NGOs and the scientific community – coordinates conservation activities and promotes information exchange. Transboundary cooperation in the field of nature conservation has been strengthened and a National Action Plan on Invasive Alien Species was adopted in 2004.



FOREST : 58,553 km², 69.8 % (GLC 2000), 38,620 km² (FAO 2005)

WETLAND : 3,860 km², 4.6 % of land cover

Terrestrial Protected Areas			% of land area
IUCN Cat. I-II	6	2,426 km²	2.9 %
IUCN Cat. III-IV-V	1,072	22,071 km²	26.3 %
Natura 2000 - SPA	96	9,869 km²	11.8 %
Natura 2000 - SIC	168	8,978 km²	10.7 %
Ramsar Sites	19	1,357.62 km²	
Biosphere Reserves	6	528.37 km²	
IBA	55		

MAIN NATURE AREAS

Austria is characterized by a high diversity of landscapes, ranging from Pannonian plains to high alpine regions, from wetlands to forest habitats. Grasslands are particularly diverse: 61 types are found in Austria, ranging from wet meadows to xeric grasslands, and including several types of fens, transition mires and bogs. Slightly more than one million hectares of forest are found within protected areas. In 2008, the conservation status of 73% of habitats of European interest was judged unfavourable.

Surface Area
83,871 km²

Population
2007 8.3 million
2020 8.5 million

Population Density
99 inhab./km²

GDP per capita
in Purchasing Power Parity
$ 38,839

Human Development Index
0.96

Ecological Footprint
in global hectares per inhabitant
4.9

The Great Bustard, the world's heaviest flying bird, is one of the globally threatened species present in Austria. After a dramatic decline in the entire west-pannonian population, Great Bustard numbers have begun to increase in Austria due to extensive habitat management measures implemented in the last ten years. A LIFE project is underway to address the threat of collision with overhead power lines, the main mortality factor for Austria's Great Bustard population.

BELGIUM

Belgium is located in Western Europe and has a relatively flat terrain (highest point: 694 m.). Bordered in the north-east by the North Sea, it has a dense network of rivers, mostly linked to the watersheds of the Meuse and Escaut, two tributaries of the Rhine. The climate is humid temperate. Cereal agriculture, cattle rearing and forestry remain significant economic activities. Due to the federal organization of the country, most nature protection responsibilities pertain to regional authorities while the federal level manages the marine habitat.

The Hautes Fagnes Nature Reserve, a Ramsar site, covers an area of more than 42 km² and is mainly composed of peat bogs, moorlands, and forests, with an exceptional flora and fauna. The Hautes Fagnes – Eifel Nature Park is shared with Germany and covers over 700 km² in Belgium.

FAUNA AND FLORA

As of 2003, 36,300 species were identified in Belgium, but species richness is estimated to be 50% higher. In Flanders, 7% of recorded species are locally extinct and 47% are threatened. In the Walloon Region, 40% to 80% of species are threatened, depending on the taxonomic group. In the Brussels-Capital Region, a densely populated city-region, 80 species of higher plants, 12 of birds, and 3 of amphibians are locally extinct. The national surveillance system of invasive species lists 90 exotic species, including 40 on the black list, 31 on the watch list, and 16 on the alert list. One of these species is the Asian lady beetle, imported to control pests.

ECOSYSTEM SERVICES

While water resources are abundant, supply of drinking water to large cities is becoming an issue. Massive use of nitrates and phosphates since the 1960s-1970s for intensive agriculture has contaminated most surface waters and an increasing part of groundwater.

GOVERNANCE

With about 11% of its territory protected, Belgium complies with its commitment to the CBD. Furthermore, the Natura 2000 network covers about 12.6% of national land area and 12% of territorial waters. However, Belgian waters will not achieve good ecological status by 2015, despite progress in the development of purification stations. Two important associations (Natuurpunt in Flanders and Natagora in Wallonia) are involved in nature conservation.

Surface Area
30,530 km²

EEZ
3,453 km²

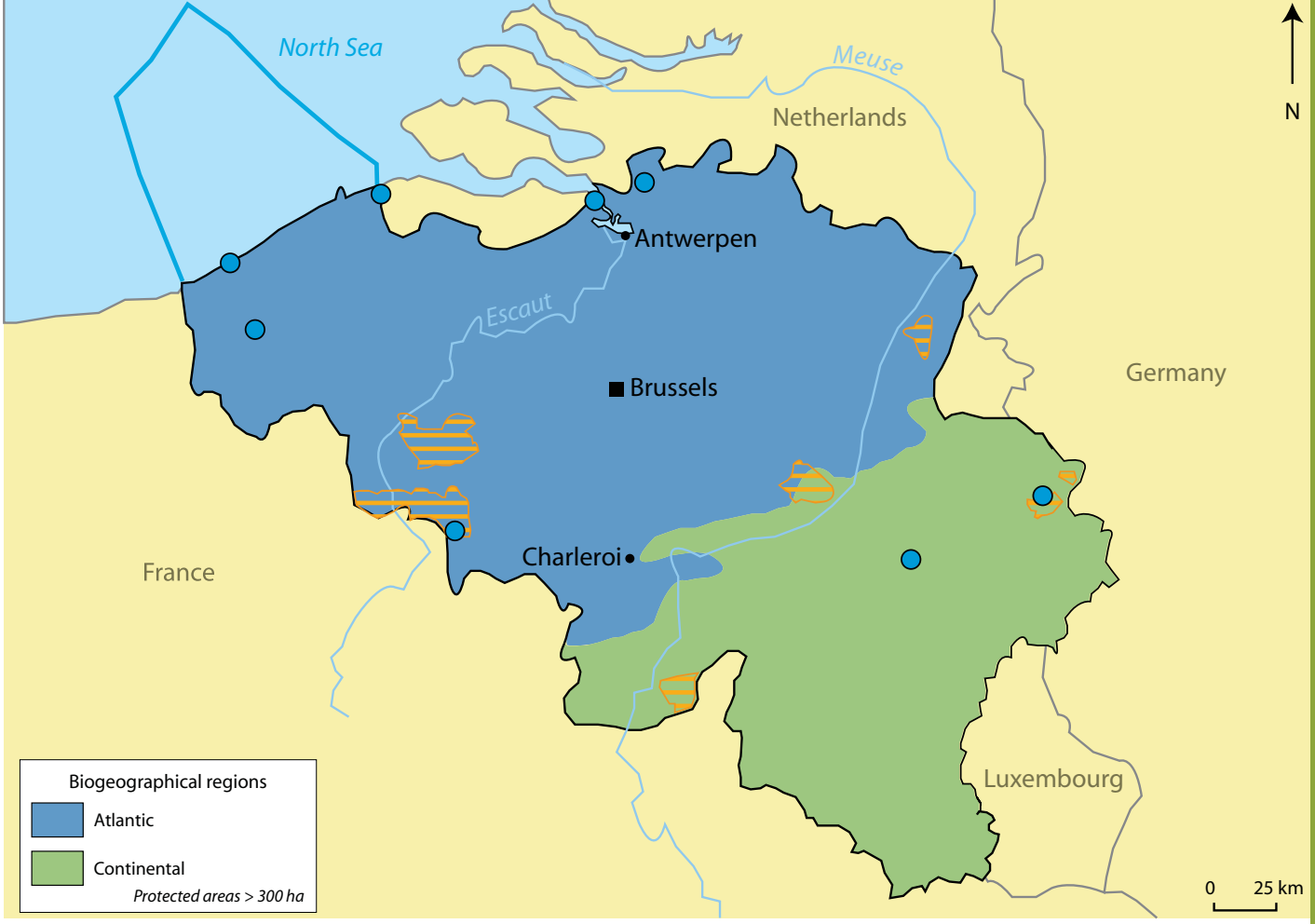
Population
2007 10.5 million
2020 11 million

Population Density
344 inhab./km²

GDP per capita
in Purchasing Power Parity
$ 35,683

Human Development Index
0.95

Ecological Footprint
in global hectares per capita
5.7



MAIN NATURAL AREAS

The country is divided into two biogeographical regions by the Sambre-Meuse line: the Atlantic region in the north-west, and the hillier Continental region in the south-east. Current habitats have all been strongly shaped by man through agricultural practices developed since the Neolithic. In the past, the most fertile soils were covered with extended wooded areas, but have now been cleared for agriculture, livestock rearing, or forestry. The current landscape combines cultivated fields, grasslands, moorlands, and forests, interspersed with industrial and urban areas.

FOREST COVER : 21 % of the total land area

WETLANDS : 452 km² with 95 % under protection

Terrestrial Protected Areas			% of land area
IUCN Cat. III-IV-V	10	3,121.67 km²	11.7 %
IUCN Cat. VI	1,283	471.16	
Marine Protected Areas	1	0.5 km²	
Natura 2000 - SPA	234	3,281.62 km²	
Natura 2000 - SCI	280	3,268.99 km²	
Ramsar Sites	9	429.38 km²	
IBA	48		

The Zwin Nature Reserve along the Belgian Coast and near the Dutch border includes mudflats and salt flats. The reserve is the first private protected area of Belgium and a wetland of international importance covering about 5.3 km². It is also an important bird refuge, a place for abundant food and tranquility.

BELGIUM BRUSSELS-CAPITAL REGION

The Brussels-Capital Region is located in the centre of Belgium and covers an area of approximately 160 km². Climate is humid temperate. Although densely urbanized, the region remains very green with almost 50% of areas without any construction. Agriculture is marginal and forests (all public) cover 11% of the land area.

The large Soignes Forest Range (16.50 km² in the Brussels Region, 50 km² spread over the 3 regions of the country) is characterized by old stands of beech trees on soils that have never been modified or cleared. Oak and conifer stands are also found here.

FAUNA AND FLORA

The Brussels-Capital Region is home to 793 species of higher plants (or half of Belgian flora), 92 of nesting birds, 45 of mammals (including 17 species of chiropterans), and 9 species of amphibians and reptiles.
Invasive plant species in the Region mainly include the giant hogweed, the Japanese knotweed, the black cherry, the South-African ragwort, and the giant and Canadian goldenrods. The Canada goose, the Egyptian goose, and the rose-ringed parakeet are particularly invasive birds with various degrees of nuisance.

ECOSYSTEM SERVICES

Continuous urbanization and densification gradually reduce areas without construction and disturb the ecological network, although this trend has slowed down thanks to more proactive land-use planning and nature conservation policies.
Non-wooded “open” areas (grasslands, moorlands, fallow lands, or cultivated lands) have been the most affected by urbanization.
In addition, lack of management of the remaining open areas (non public) at several locations has led to degradation, reforestation, and colonization by invasive species, reducing their specific interest and diversity.

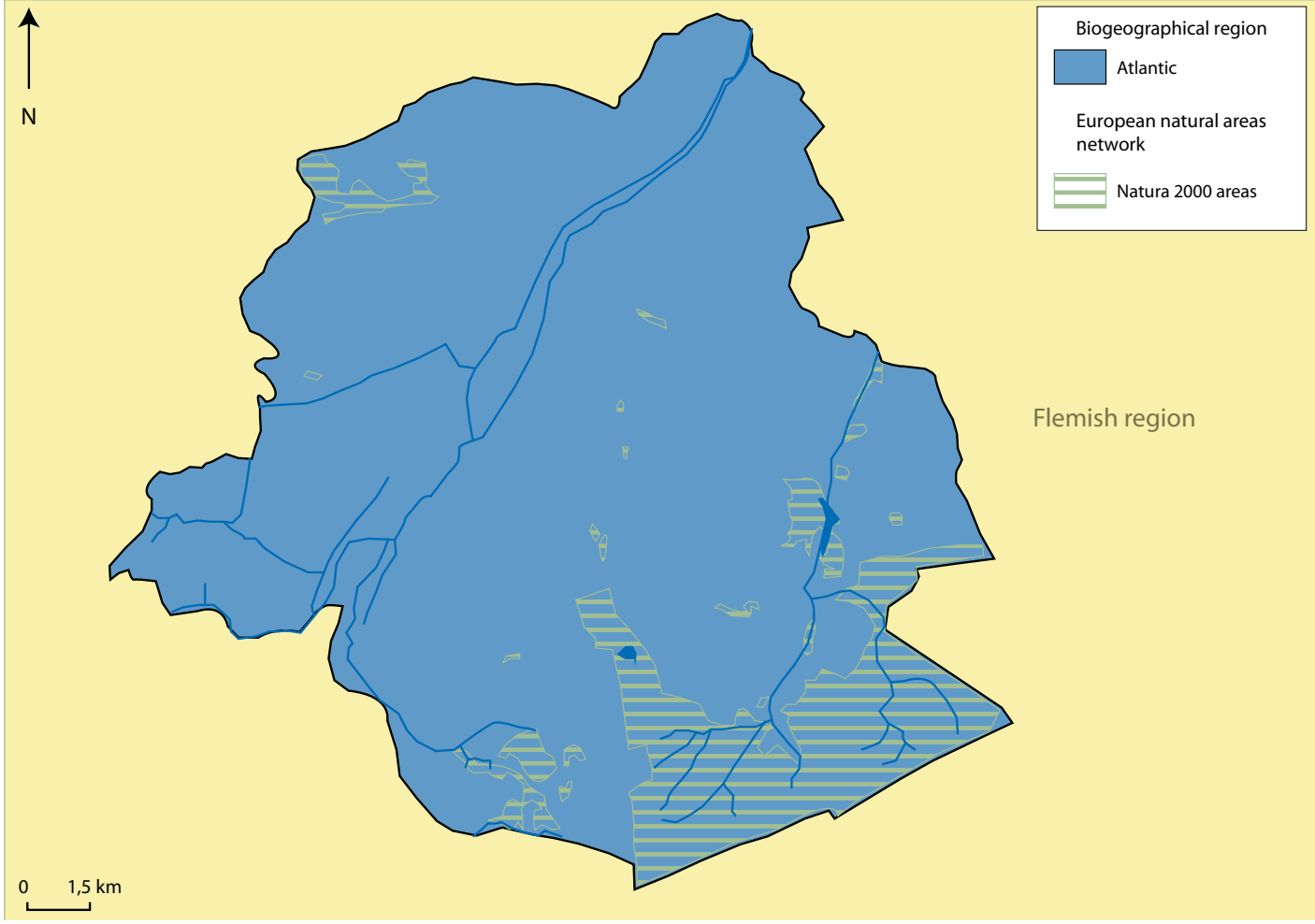
GOVERNANCE

With over 14% of the area designated under Natura 2000, the Brussels-Capital Region largely complies with its commitment to Directive 92/43/EU, subject to implementation of management plans for the various sites.
Development of a new law on nature conservation should give the Region the needed tools to halt biodiversity loss.
Several species, in decline at national or even European level, are still found in the Brussels-Capital Region but are not under specific protection: the common house martin, the wood warbler, the common whitethroat, the common lizard, the hare, several species of orchids, etc.

Surface Area
161.4 km²

Population
2008 1,048,491

Population Density
6,496.9 inhab./km²



MAIN NATURAL AREAS

The region is hemmed in the silt area of the country and belongs to the Escaut watershed. The landscape is relatively hilly as the Senne River and some tributaries like the Molenbeek and the Woluwe have carved the geologic sand and sandstone Tertiary formations. The Region includes over 60 km² of unevenly distributed public parks and gardens. Once swampy, the region still has visible wet valleys and numerous ponds in its parks. The Region also includes high-biodiversity value areas covering 20% of the land area and parklands with a total area of 39.73 km².

FOREST COVER : 11 % of the national land area

Terrestrial Protected Areas			% of land area
Cat. UICN III-IV-V	16	2.42 km²	11.7 %
Natura 2000 - SCI	3 (48 sites)	23.34 km²	

The various natural areas are linked by a more or less structured and continuous green corridor including shoulders of railways or roads, planted avenues, and private gardens. This corridor continues at the outskirts of the region at the edge of 2 other regions. Valleys, with their remaining wetlands, ponds, and watercourses form the structure of a blue corridor, joined by part of the green corridor structure.

BELGIUM WALLONIA

Wallonia is one of the three regions of Belgium, a member state of the EU. The region has a relatively flat terrain (highest point: 694 m) and a dense river network, mostly linked to the watersheds of the Meuse and Escaut Rivers. The climate is humid temperate. Agricultural lands and woodlands are the main land uses. Cereal agriculture, cattle rearing, and forestry remain significant economic activities.

The galleries of Saint Peter's Mountain at Bassenge and Visé stretch over tens of kilometers. One of the largest wintering populations of bats of the north of Western Europe, including over 5,000 individuals representing 12 different species, is found here.

FLORA AND FAUNA

Wallonia is home to 71 species of mammals (including 7 recently introduced), 172 of nesting birds, 7 of reptiles, 14 of amphibians, 50 of fish (including 10 non indigenous), 66 of odonates (including 7 non indigenous), and 114 species of diurnal butterflies. In total, 31% of documented species are threatened in Wallonia and about 9% have already disappeared from the region. Over half of the species of bats, fish, reptiles, diurnal butterflies, dragonflies, and damselflies are in an unfavourable state. As for invasive exotic species, about 300 species of ornamental plants and 30 vertebrate species of exotic origin are now naturalized in the Walloon Region.

ECOSYSTEM SERVICES

There is an ongoing federal project (BEES, Belgium Ecosystem Service) including 4 clusters until 2011.

GOVERNANCE

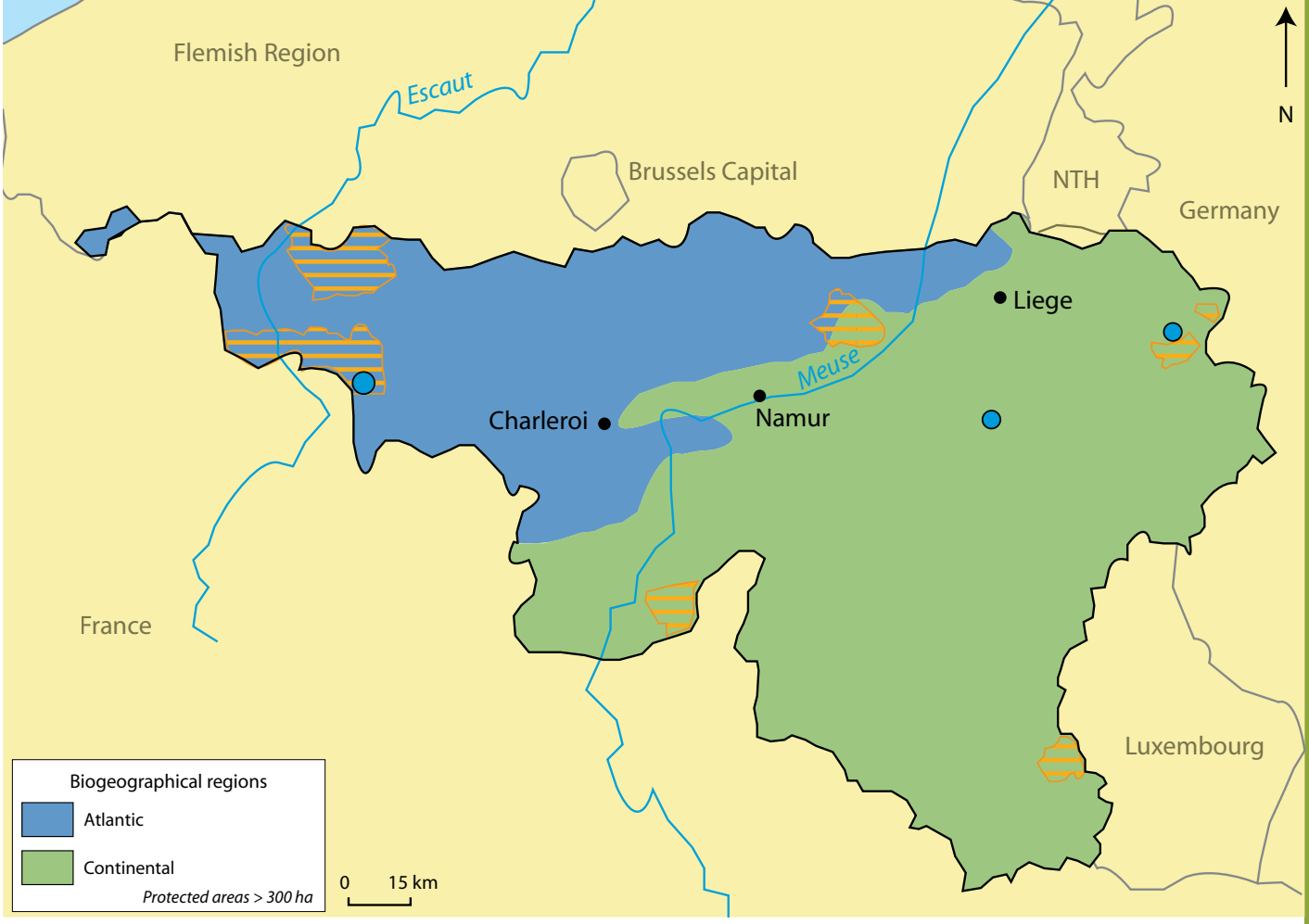
The principal ecological structure (SEP) of Wallonia covers about 18% of the territory. Natura 2000 sites represent three quarters of the SEP or 13% of the territory. Nature sites under strong legal protection only cover 0.65% of the land area. An estimated 55% of surface waters could achieve the good ecological status required by Directive 2000/60/EC, if all measures set out in the management plans are applied. Dozens of non-governmental associations are working on nature conservation.

Surface Area
16,844 km^2

Population
2008 3.5 million
2020 3.6 million

Population Density
2008 205 inhab.km^2

GDP per capita
in Purchasing Power Parity
$ 22,662



MAIN NATURAL AREAS

The various existing habitats have all been relatively shaped by man through agricultural practices developed since the Neolithic. Covering about a third of the land area, forest formations are a significant component of rural areas and landscapes. Sites of interest include open habitats such as moorlands, peat bogs, calcareous and dry grasslands, reed beds, marshes or meadows maintained through pasture or mowing. Such areas are interspersed with cultivated fields and industrial and urban areas. Urban areas (+ 20% in 21 years) cover 14% of the land area.

The Harchies Marshes were designated as a Ramsar Site in 1986. Covering about 5.50 km², they include a mosaic of dry and wet habitats and are home to a diverse avifauna of more than 260 species, all statuses taken together.

FOREST COVER : 33 % of the regional territory

PERCENTAGE OF CERTIFIED FORESTS : 52 %

Terrestrial Protected Areas			% of land area
IUCN Cat. III-IV-V	19	784.54 km²	4.66 %
IUCN Cat. VI	13	-	
Natura 2000 - SPA	116	1,987.96 km²	
Natura 2000 - SCI	126	1,998.73 km²	
Ramsar Sites	4	355.28 km²	
IBA	19		

BULGARIA

Located in south-eastern Europe and member of the EU since 2007, Bulgaria has an opening to the Black Sea. Due to its varied climatic, geologic, and topographic conditions, Bulgaria enjoys a rich diversity of species, communities and habitats, most of them of high conservation value. The Danubian Plain in the north and the Upper Thracian Plain in the south flank the Balkan Mountains stretching from west to centre. Mountain ranges also cover south-western Bulgaria. The country lies between the Continental and Mediterranean climatic zones.

A freshwater lake supplied by seasonal floods from the Danube, Srebarna Nature Reserve is an important refuge for 12 internationally and 57 nationally threatened species. It is also the breeding ground of 99 bird species, including the Black Cormorant, Ferruginous Duck, Night Heron, Glossy Ibis, corncrake and Great Bustard. The only Bulgarian colonies of Dalmatian Pelican and Great Egret can also be found here. Habitat degradation in the second half of the twentieth century led to the decline and disappearance of many bird species. Growing awareness of the threats and recent conservation efforts succeeded in restoring the site's condition.

FLORA AND FAUNA

More than 3,900 vascular plants and around 30,000 invertebrates have been recorded. Bulgaria's invertebrate cave fauna is particularly diverse. Vertebrate fauna comprises 97 mammal, 428 bird, 37 reptile, 18 amphibian, and 210 fish species. Approximately 5% of vascular plants and 8.8% of vertebrates are endemic. Moreover, many Balkan endemic plants are thought to have originated in Bulgaria's mountains. Out of the species assessed for the IUCN global Red List, 7-9% of mammal species, 4% of birds, 10% of reptiles, and 15-23% of fish are threatened.

ECOSYSTEM SERVICES

Bulgaria is exceptionally rich in wild-growing medicinal plants; about 770 species have been described to date, a third of which are currently in use by the pharmaceutical and cosmetics industry. Illegal logging poses a threat to Bulgaria's forests.

GOVERNANCE

Three main acts regulate biodiversity conservation: the Biological Diversity Act (2002), the Protected Areas Act (1998), and the Medicinal Plants Act (2000). 574 plant and 483 animal species are strictly protected, while another 60 plant groups and species and 54 animal species are under a regime of regulated use. Action plans are developed for species threatened at global level or whose conservation status is unfavourable in Bulgaria. The protected areas network covers 5.1% of the territory. In 2008, Bulgaria finalized the process of identifying and establishing the Natura 2000 network.

Surface Area
110,912 km²

EEZ
35,156 km²

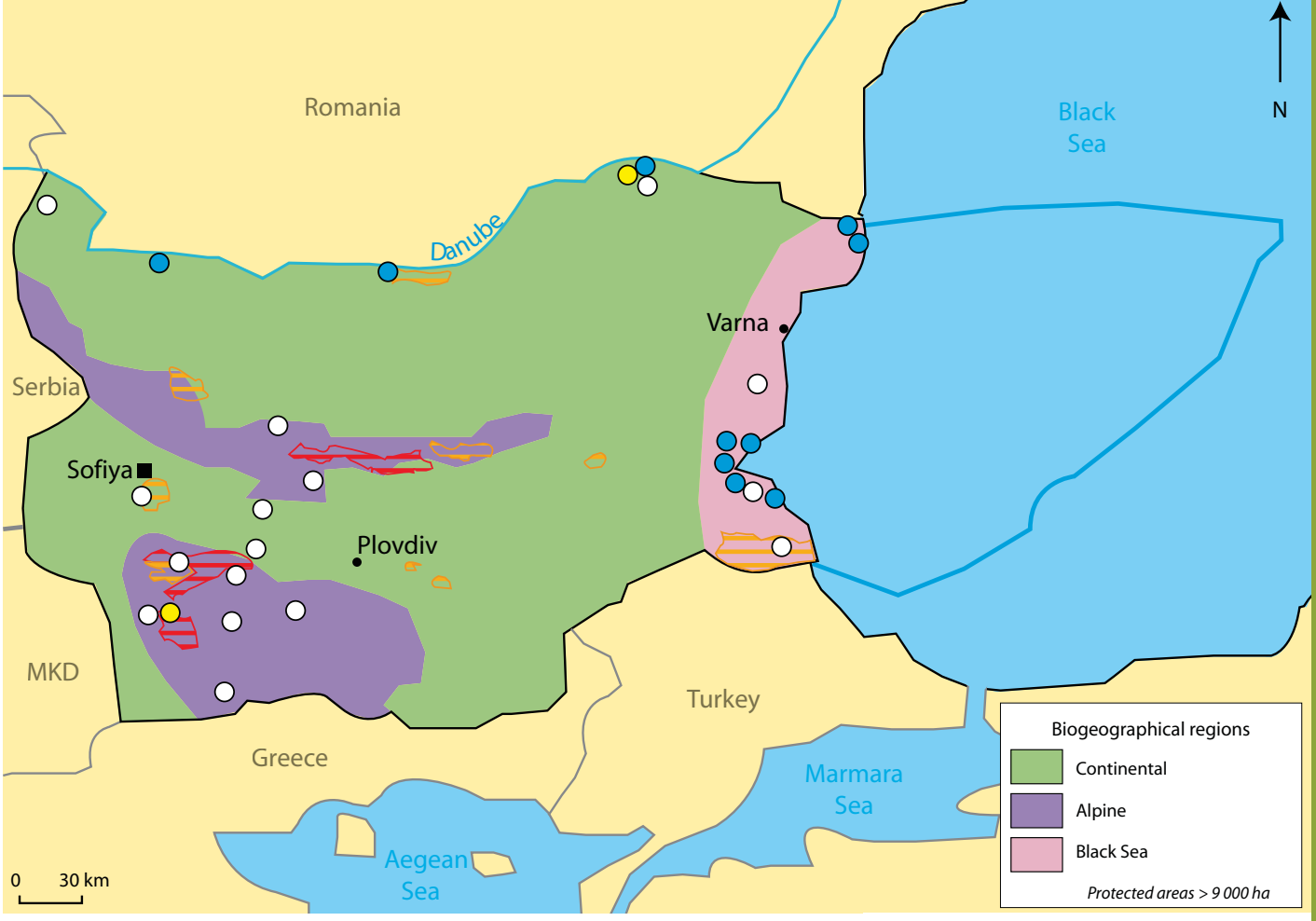
Population
2007 7.6 million
2020 7 million

Population Density
69 inhab./km²

GDP per capita
in purchasing power parity
$ 11,900

Human Development Index
0.84

Ecological Footprint
in global hectares per inhabitant
2.7



MAIN NATURE AREAS

Many unique and valuable ecosystems are present in Bulgaria: alpine and subalpine coniferous forests, meadows, wetlands, oak woodlands, caves and mountain gorges, steppe grasslands, and the marine habitats of the Black Sea. Over 60% of forested land is included in Bulgaria's nature reserves but 90% of wetlands have been lost in the last century. Threats to biodiversity include habitat loss and degradation, pollution, and the over-exploitation of economically valuable species. Pressure from tourism and invasive species are also of growing concern.

FOREST COVER : 35,181 km² , 31.7 % of land area (GLC 2000)

WETLANDS : 2,372.45 km², 2.1 %

Terrestrial Protected Areas			% of land area
IUCN Cat. I-II	58	2,273.83 km²	2 %
IUCN Cat. III-IV-V	984	3,546.92 km²	3.2 %
IUCN Cat. VI	430	436.58 km²	0.5 %
Natura 2000 - SPA	114	23,217 km²	20.4 %
Natura 2000 - SCI	228	33,430 km²	29.6 %
Ramsar Sites	10	203.06 km²	
Biosphere Reserves	16	377.78 km²	
World Heritage Sites	2	406.98 km²	
IBA	114		

In 2000, the Environment Ministers of Bulgaria, Romania, Moldova and Ukraine signed the Lower Danube Green Corridor Declaration, recognizing the need to protect the river's ecosystems. The target to effectively protect one million hectares of wetland in the region has been reached and restoration of natural floodplains is underway. Highlights specific to Bulgaria include the restoration of meanders on the Danube's tributaries and of natural oak forests on Bulgaria's Danube islands.

CROATIA

Located in Southeastern Europe, Croatia is home to diverse and exceptional ecosystems on a relatively small land area. Karst, a geological surface formed by limestone sediments, covers 54% of the territory. The Dinaric Alps, unique subterranean karst habitats, and over one thousand islands off the Adriatic Sea coast support a wide range of species, many of which are endemic. Croatia benefits from a combination of mild Mediterranean climate in its islands and coastal areas and temperate-continental climate inland. Accession negotiations with the European Union started in 2005.

Renowned for its subterranean biodiversity, Croatia hosts over 7000 known caves. Karst habitats are home to an ever-increasing list of endemic species, including the only known Cave Sponge, Cave Clam, and Cave Polychaete Worm. 70% of the 500 registered cave invertebrates are endemic to the country.

FAUNA AND FLORA

The number of known species in Croatia is around 38,000, but the estimated number is far higher, 50,000 to over 100,000. With 152 known species of freshwater fish, of which 16 are endemic to karst areas, Croatia ranks second in Europe in terms of ichtyofauna diversity. 5.7% of known plant species are endemic. Of the taxonomy groups assessed for the national Red List, 4% of known vascular plants are threatened (223 species), as are 25% of birds (95 species), 8% of mammals (8 species), 37% of reptiles (8 species), 35% of amphibians (7 species), 13% of marine fish (59 species) and 51% of freshwater fish (78 species). About 8% of the mammal species assessed, 3% of birds, 7% of reptiles, 10% of amphibians and 35-43% of fish species are globally threatened. 17 invasive alien species have been recorded by the GISD.

ECOSYSTEM SERVICES

Nature-based tourism, a key sector for Croatia's economic growth, contributes to the erosion of the natural resource base upon which it depends. Human activity contributes to the destruction of Posidonia beds, meadows of marine grass that provide food and shelter to many economically-important organisms.
Pursuant to the Nature Protection Act, the use of natural resources is governed by management plans, taking into consideration the conservation of biological and landscape diversity.

GOVERNANCE

The State Institute for Nature Protection carries out expert tasks related to biodiversity (inventories and monitoring) and operates a Nature Protection Information System. The Nature Protection Act of 2005 provides the general framework for the management of biodiversity. A Regulation on the conservation of threatened and rare habitat types was adopted in 2006. All endangered species are protected by an ordinance updated in 2009. To date, 1,682 strictly protected and 4,630 protected taxa have been registered. Provisions to prevent the expansion of invasive alien species are included in acts regulating hunting, fisheries, island management, and animal protection.

Surface Area
56,594 km²

Claimed EEZ
59,032 km²

Population
2007 4.4 million
2020 4.3 million

Population density
78 inhab./km²

GDP per capita
In Purchasing Power Parity
$ 17,703

Human Development Index
0.87

Ecological Footprint
In global hectares per inhabitant
3.2

MAIN NATURE AREAS

The Adriatic Sea coast and islands are included in the Mediterranean Basin biodiversity hotspot. The National Ecological Network proclaimed in 2007 – a system of functionally interconnected sites of importance for the conservation of threatened species and habitat types – covers 47% of Croatia's terrestrial area and 39% of the marine territory. Drivers of biodiversity loss include over-exploitation of natural resources, infrastructure development leading to habitat loss, agricultural activities, invasive alien species, pollution, and global climate change. Intensified tourism constitutes one of the main pressures on Croatia's ecosystems, especially in coastal areas.

FOREST COVER : 21,275 km² (GLC 2000), 20,730 km² (FAO 2005) ; 19,200 km² (national statistics)

WETLANDS : 3,904.98 km², 6.9 %

Terrestrial Protected Areas			
IUCN Cat. I-II	90	1,270.74 km²	2.25 % of land cover
IUCN Cat. III-IV-V	250	5,687.48 km²	10 %
Marine Protected Areas	6	410.25 km²	0.7 % of the EEZ
Ramsar Sites	4	865.79 km²	
Biosphere Reserves	1	2 000 km²	
World Heritage	1	294.82 km²	
IBA	21		

The Karst Ecosystem Conservation Project, implemented in the Dinarid Mountain range with GEF assistance, sought to strengthen national capacity and community-based mechanisms for biodiversity conservation and sustainable resource use. Key outputs include the Karst Ecosystem Biodiversity Database, enhanced knowledge of endemic/endangered species and habitats, and mapping of all known caves and the biodiversity therein.

CZECH REPUBLIC

A landlocked country in Central Europe, the Czech Republic joined the European Union in 2004. Under a temperate continental climate, the Czech terrain consists of rolling hills and plateaus surrounded by low mountains in Bohemia to the West, hilly country in Moravia to the East, and lowland areas in the centre and South of the country. Krkonoše, the highest mountain range, provides a natural border with Poland.

Part of the Sudeten Mountain chain, Krkonoše National Park shelters a vast array of species and habitats: stands of Sudetic Dwarf Mountain Pine, subarctic peatbogs, glacial corries, alpine meadows, glacial relics and many rare and endemic plants.

FLORA AND FAUNA

Out of the 3569 vascular plants recorded in the country, almost one third are threatened at national level: 471 are critically endangered, 352 endangered, and 326 vulnerable. Out of the 395 vertebrate taxa assessed for the national Red List, 45% of cyclostomata and fish, 59% of amphibians, 61% of reptiles, 52% of birds, and 19% of mammal species are threatened. Among the vertebrates included in the global Red List, 2 species of mammals, 6 bird species and 2 species of fish found in the Czech Republic are globally threatened. There are 35 invasive alien species according to the GISD and 1934 species are classified as alien under DAISIE.

ECOSYSTEM SERVICES

Ground-level ozone is the most significant stressing factor for forest ecosystems in the Czech Republic. The country faces the highest rate in Europe of defoliation damage caused by pollutant emissions. Although water quality has improved dramatically since 1990 following a substantial reduction in industrial and agricultural pollution, the present state of water courses is still unsatisfactory. While nature-based tourism is one of the main sources of income for inhabitants of the Krkonoše region, it also represents one of the main pressures on mountain wildlife.

GOVERNANCE

Two types of species protection are laid down in the 1992 Act on the Protection of Nature and Landscape. All species are protected from damage, collection or capture which might lead to the species' endangerment or the destruction of their ecosystem. Endangered, rare, and scientifically or culturally significant species are subject to a stricter regime, including a requirement to develop survival or recovery programmes for the critically endangered. 71% of forests are under a forest certification system. All Ramsar wetlands are protected by law. A national Biodiversity Research Strategy was adopted. Management plans for major alien species exist, but only at regional level or within specific protected areas. A national strategy on invasive species is planned to be developed by 2010.

Surface Area
77,247 km^2

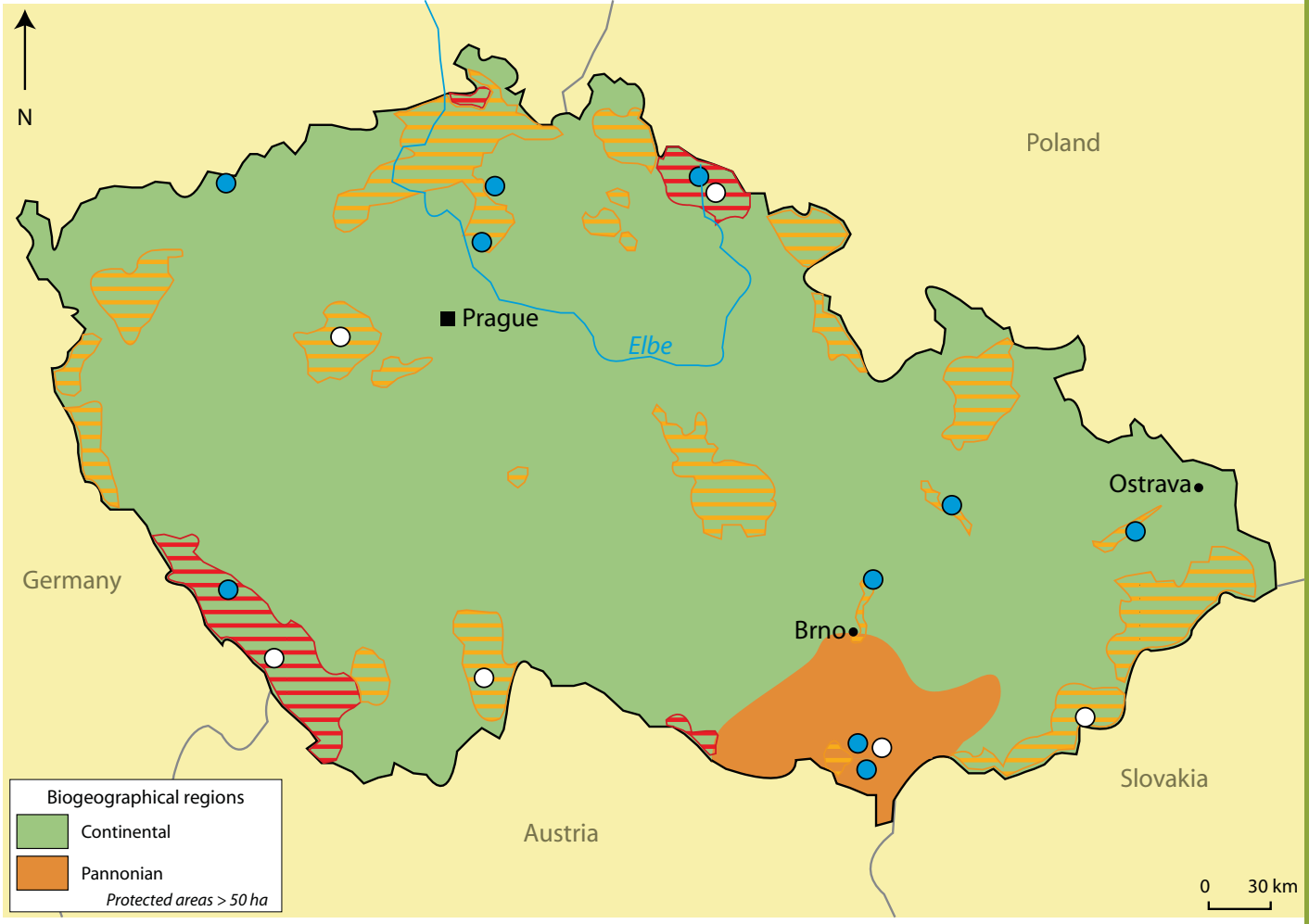
Population
2007 10.3 million
2020 10.6 million

Population Density
131 inhab./km^2

GDP per capita
In Purchasing Power Parity
$ 24,093

Human Development Index
0.903

Ecological Footprint
In global hectares per inhabitant
5.3



MAIN NATURE AREAS

The area of arable land has been decreasing during the last decade, while the opposite trend is observed for permanent grass cover and forested land. Forest composition is also changing, with a gradual increase in the proportion of deciduous species and a decline in spruce and pine. Air and water pollution constitute the main threat to biodiversity in the area, despite recent improvements. Approximately 16% of national territory is under a form of protection. Only 12% of the Czech Republic's habitats of Community Interest were assessed as having a favourable conservation status in 2008.

A novel system of experts to assess the impact of proposed projects on habitats and species in Natura 2000 sites has been enshrined in national law. Following a special national exam, qualified ecologists become part of a group of experts available to give advice to both project applicants and authorities. For each proposed project, one expert is hired by the applicant and one by the relevant authority, to work independently, advise each interested side, and draw conclusions on the project's impact.

FOREST COVER : 31,396.5 km² (GLC, 2000); 26,480 km² (FAO,2005)

WETLANDS : 1,169.87 km², 1.51 % of land cover

Terrestrial Protected Areas			% of land area
IUCN Cat. I-II	4	1,194.89 km²	1.55 %
IUCN Cat. III-IV-V	2,231	11,293.91 km²	14.62 %
Natura 2000 - SPA	39	9,684 km²	12.3 %
Natura 2000 - SCI	1,082	7,854 km²	10 %
Ramsar Sites	12	585.37 km²	
Biosphere Reserves	6	4,505.25 km²	
IBA	16		

THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

A mountainous state in the centre of the Balkan Peninsula, the former Yugoslav Republic of Macedonia lies in a transitional zone between Mediterranean and continental climates. More than a half of Macedonia's land area is in agricultural use, while forests cover approximately two thirds of the territory. Macedonia has been a candidate to the EU since 2005.

A World Heritage site since 1980, Lake Ohrid harbours 146 endemic species, including the emblematic Ohrid Trout, *Ohrid Belvica*, numerous endemic crustaceans, molluscs, sponges and planarians. The reed beds on the lake's shores provide critical habitat for hundreds of thousands of wintering water birds, including the globally threatened Dalmatian Pelican, Spotted Eagle, Eastern Imperial Eagle and Ferruginous Duck.

FLORA AND FAUNA

Despite its relatively small size, Macedonia is exceptionally rich in endemic and relict species. 3,700 higher plants have been described in Macedonia, of which 117 endemic. Macedonia's known fauna covers 9,339 species, including 602 endemic species and 72 endemic subspecies. Vertebrate wildlife comprises 49 freshwater fish species, 15 amphibians, 32 reptiles, 307 birds and 82 mammals. Insect diversity is particularly high, with 4,665 species described to date, including 2,295 butterflies. 280-300 species of angiosperms, 7 gymnosperms, 30 fish species, 66 birds and 16 mammals are threatened rationally. Out of the species assessed for the IUCN global Red List, 6-9% of Macedonia's mammals, 3% of its birds, 10% of its reptiles, and 15-27% of its fish are threatened.

ECOSYSTEM SERVICES

The overuse of fertilizers, pesticides and herbicides has had a negative impact on lake habitats. Waste-water pollution and introduced species are adversely affecting the endemic fish populations of Lake Ohrid, in particular the Ohrid Trout. Forest fires have become an acute problem in recent years; in 2000, fires destroyed an estimated 5% of existing forest stocks.

GOVERNANCE

The legal basis for biodiversity conservation has been strengthened in recent years, with the adoption of the Law on Nature Conservation and regulations for Environmental Impact Assessment. The Law on Hunting places 127 game species under protection. A national strategy to control the threat of invasive alien species is yet to be developed. The National Biodiversity Strategy and Action Plan set the goal of extending the network of protected areas to 11.5% of national territory by 2024.

Surface Area
25,713 km²

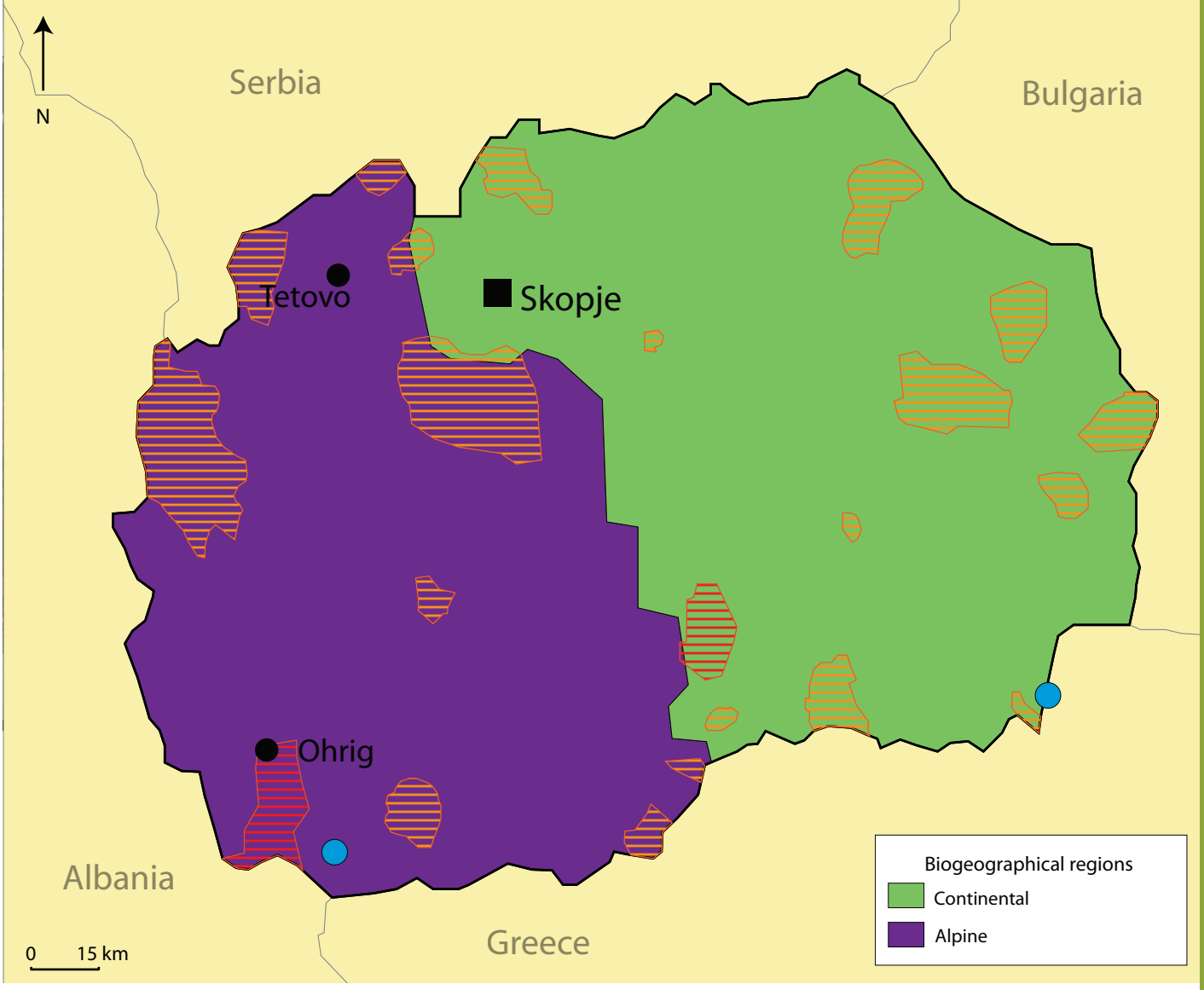
Population
2007 2 million
2020 2 million

Population Density
78 inhab./km²

GDP per capita
In Purchasing Power Parity
$ 9,171

Human Development Index
0.82

Ecological Footprint
In global hectares per inhabitant
4.6



MAIN NATURE AREAS

Extensive forest areas, pastures, unique mountain habitats, and a variety of wetlands contribute to Macedonia's rich diversity of ecosystems. Habitat loss and fragmentation, the draining of wetlands, illegal fishing, uncontrolled harvesting of medicinal plants, air pollution and industrial waste-water discharges are the main threats to Macedonia's biological resources. Macedonia's three large lakes are protected as natural monuments. In addition to National Parks and Natural Reserves, 14 small-scale reserves have been established for the protection of individual species of special interest.

FOREST COVER : 8,078 km², 31.4 % of land cover (GLC 2000)

WETLANDS : 475.30 km², 1.8 % of land cover

Terrestrial Protected Areas			% of land area
IUCN Cat. I-II	5	1,211.18 km²	4.7 %
IUCN Cat. III-IV-V	64	630.69 km²	2.5 %
Ramsar Sites	2	216.16 km²	
World Heritage	1	380 km²	
IBA	7		

A collection of unique biotopes and rare, endemic or globally endangered species, the Prespa Lakes basin is under pressure from pollution, land erosion and loss of forest cover. The three states sharing the lake – Macedonia, Greece and Albania – have joined forces to protect the biological diversity of the area, with the aid of the UNDP. A recently launched project aims to improve the conservation of priority habitats, mitigate pollution, and establish a joint database on priority ecosystem and species health parameters. A trilateral Eco-tourism Strategy and Management Plan for the region will also be adopted.

FRANCE

Located in Western Europe and member of the EU, France has a significant presence in the world thanks to its overseas departments and territories. The latter will be described under their respective geographic region. The metropolitan territory offers a great diversity of climates with its four sea fronts (the Mediterranean Sea, the Atlantic Ocean, the English Channel, and the North Sea) and its mountainous terrain (the Pyrenees, the Alps, and the Massif Central), from temperate oceanic to alpine at high altitudes or typically Mediterranean on the southern coast and in Corsica.

The Camargue, formed by the Rhone Delta flowing into the Mediterranean Sea, is one of Europe's most important coastal wetlands, threatened by increasing salinization of the delta. It is a UNESCO Biosphere Reserve, a Ramsar wetland, and comprises a Regional Nature Park and two important nature reserves. Its population of pink flamingoes is one of the largest in the world.

FLORA AND FAUNA

With its extended surface and great variety of habitats, Metropolitan France is home to about 40% of all European species of higher plants, 55% of amphibians, and 58% of nesting birds. However, many species are threatened: out of the 889 species on the IUCN global Red List present in France, 14% are considered threatened. Based on the first national Red List published in 2008, 20% of reptiles and amphibians, 25% of nesting birds, and 10% of mammals risk disappearing from the French territory.

ECOSYSTEM SERVICES

Water: The SDAGE and programmes adopted at the end of 2009 will help achieve the objective of good ecological status in 2015 for 2/3 of waters (Grenelle 1 law). In addition, a national action plan to address pollution of aquatic habitats by micro-pollutants has been developed.
Fishery resources: Although the number of fishermen and boats has decreased since the 1970s, the catch volume, set under the EU Common Fisheries Policy remained constant. Renewal of stocks is not guaranteed for some species. Under the reform of the Common Fisheries Policy, France has proposed strict implementation of Maximum Sustainable Yields, set by European and international scientific entities.

GOVERNANCE

France has established several management networks for natural areas, bringing together the State, local collectivities, and nature protection associations. Nature sustainable management should improve in the coming years through the implementation of measures planned under the environmental Grenelle I and II and the marine Grenelle. Today, out of the 218 types of habitats of community importance in the EU, 132 are found in France, with only 18% considered in favourable conservation status. France prohibits by law the voluntary introduction of some non-indigenous species into natural habitats, as well as their trade and transportation.

Surface Area
549,190 km²

EEZ
340,000 km²

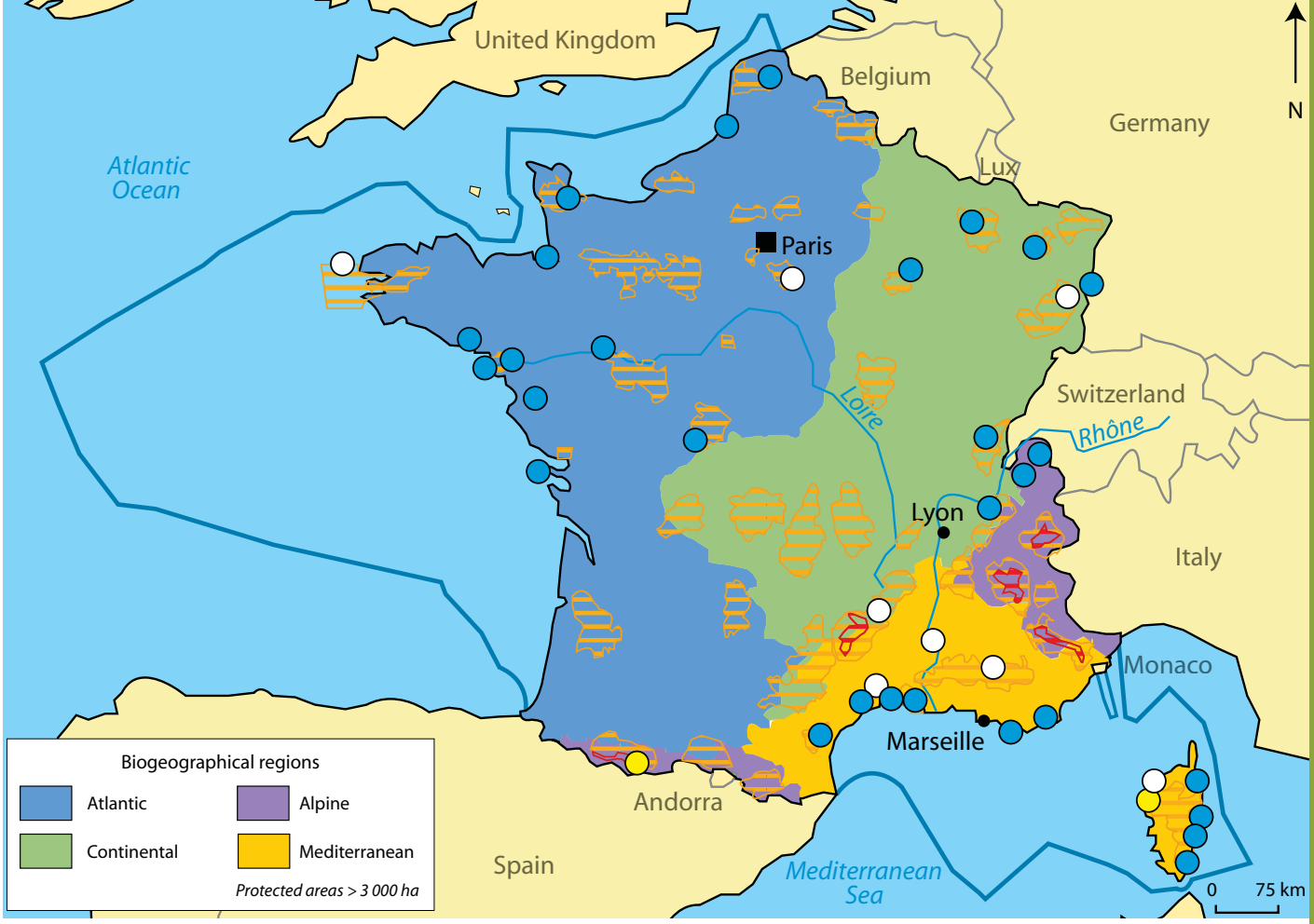
Population
2007 61.7 million
2020 64.9 million

Population Density
112.2 inhab./km²

GDP per capita
in purchasing power parity
$ 33,744

Human Development Index
0.96

Ecological Footprint
in global hectares per capita
4.6



MAIN NATURAL AREAS

Metropolitan France is located on part of the Mediterranean Basin Biodiversity Hotspot. The metropolitan territory stretches over four biogeographic regions: Atlantic, continental, Mediterranean, and alpine.
Agricultural lands represent 54% of land cover. Forest ecosystems, dominated by oak-beech and pine (maritime in moorlands and Scots in mountains) are in good conservation status, but their distribution areas might significantly change due to global warming. Peat bogs, humid grasslands, and humid moorlands are under severe decline and continuous degradation and are affected by invasive species. In the marine realm, cold water coral reefs recently discovered off the French coasts triggered a debate on the means to preserve them at European level, under Community regulations concerning deep-sea fisheries and UN resolution 61/105.

Two successful reintroduction operations over 20 years : the griffon vulture (800 couples) and the cinereous vulture (about 20 couples).

FOREST COVER : 157,100 km², 28.6% of the national land area

WETLANDS : 24,116 km², with 58.6% under protection

Terrestrial Protected Areas			
IUCN Cat. I-II		2,668 km²	2.4 % of the total area
IUCN Cat. III-IV-V		109,865 km²	97.6 % of the total area
Marine Protected Areas		42,310 km²	3.66 % of waters under french jurisdiction
Natura 2000 - SPA	381	76,297 km²	
Natura 2000 - SCI	1,366	72,418 km²	
Ramsar Sites	21	7,260 km²	
MAB	8	10,740 km²	
World Heritage Natural Sites	2	424.39 km²	
IBA	277		

GEORGIA

Georgia is located on the southern slopes of the Greater Caucasus mountain range. Two-thirds of its territory is mountainous, with an average altitude of 1,200 m and reaching 5,068 m at Mount Shkhara, the country's highest peak. Georgia has a coastline bordering the Black Sea. In the central region, the Likhi Range separates two regions: one to the west, where climate varies from alpine to wet subtropical, the other to the east, of dry subtropical climate. Georgia is a member of the Black Sea Economic Cooperation.

The Borjomi-Kharagauli National Park was created in 1995 and, together with Borjomi Strict Nature Reserve, covers 76,055 ha protecting a remarkable area of mountain forests and alpine and subalpine grasslands. In the event of a leak, the new Baku-Tbilisi-Ceyhan pipeline would create a significant pollution threat to the park and its numerous mineral springs.

FLORA AND FAUNA

Georgia has an exceptional flora: out of the 4,100 documented vascular plant species, 14,6% are endemic to the Caucasus and 7.3 % are endemic to the country. Georgia is part of the area of origin of many cultivated species, including barley, wheat, and fruit-trees. Fauna includes 109 mammal species, 300 bird species, 52 reptile species, 12 amphibian species, and 84 freshwater fish species. Endemic to the Caucasus are 19 mammal species (all threatened with extinction), 3 bird species, 15 reptile species, and 3 amphibian species. The issue of invasive species is weakly regulated. A preliminary inventory has identified 16 alien plant species threatening the native flora. Populations of freshwater fish species have declined due to illegal fishing practices and the pollution of some rivers.

ECOSYSTEM SERVICES

The Black Sea coast has long been a well-known holiday spot, but degradation of water quality from urban pollution has been harmful to tourism development.
The forests of Georgia, including 400 distinct tree species, out of which 26 % are endemic to the Caucasus, provide essential services such as regulation of the water cycle and quality, soil protection, climate regulation, etc. However, the management of these state-owned forests is weak and inventories have not been carried out in the last 20 years. There is a poor monitoring and evaluation system in place, despite ongoing illegal logging and significant pest damage to some species (e.g. chestnuts).

GOVERNANCE

The network of protected areas represents 7.16 % of the country. Georgia has therefore not fulfilled its commitments to the CBD. Most of these areas are managed with the financial support of external entities. Rare, endemic and threatened species are listed in the Red List of Georgia and protected.
Existing legislation regulates the collection of only 3 species of non-timber plants. Despite the observed decline of freshwater fish stocks, relevant populations have not been subject to specific monitoring.

Surface Area
69,700 km²

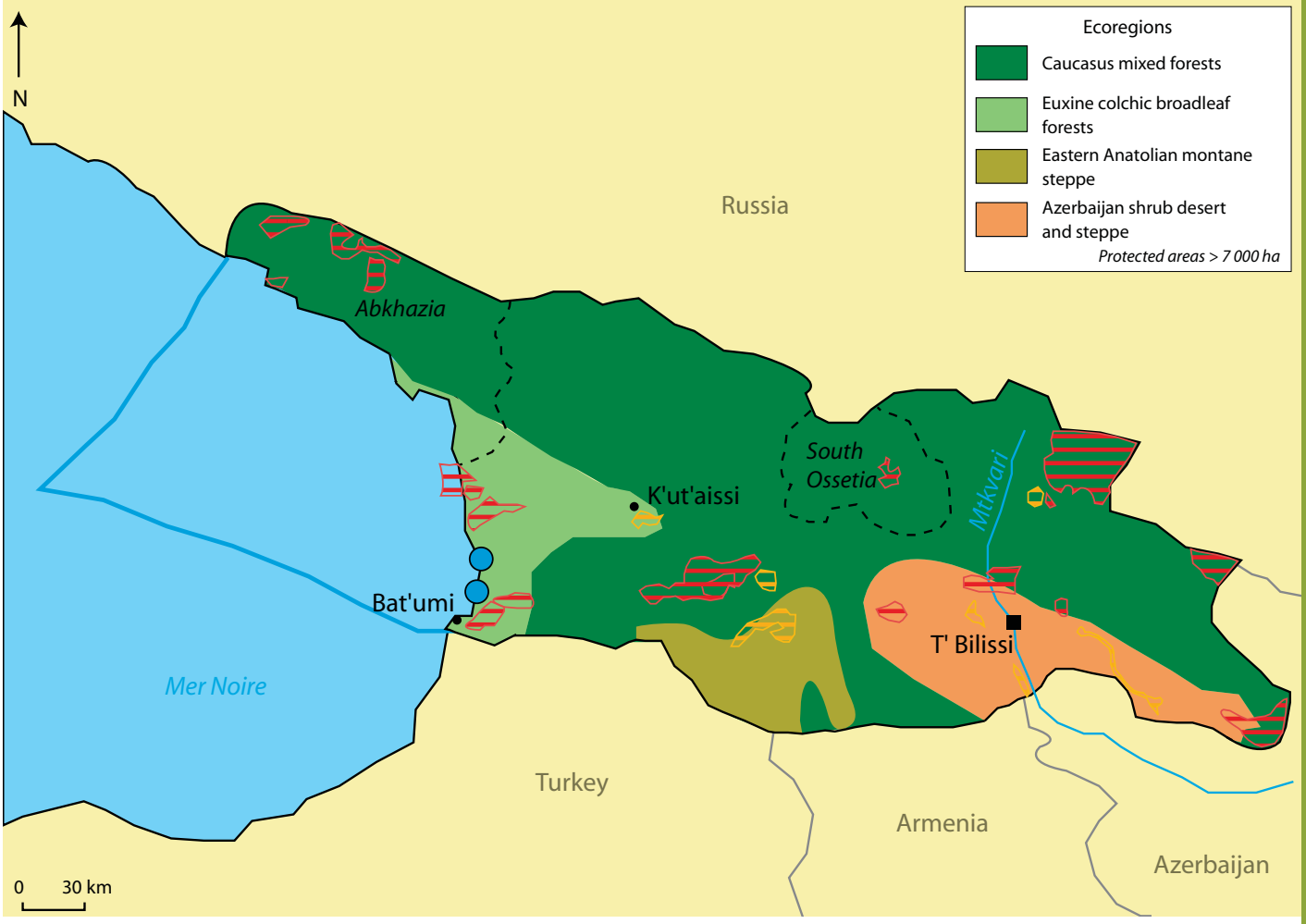
EEZ
7,628.4 km²

Population
2007 4,4 million
2020 4 million

Population Density
63 inhab./km²

GDP per capita
In Purchasing Power Parity
$ 4,757

Human Development Index
0.78



MAIN NATURAL AREAS

Georgia is divided in 4 ecoregions: Caucasus mixed forests, Eastern Anatolian montane steppes, Azerbaijan shrub desert, and Euxine-Colchic deciduous forests. Due to its high rate of endemism and the state of environmental degradation, the country has been included in two biodiversity hotspots (Caucasus and Irano-Anatolian).
Georgia also contains 30% of the Caucasus Range glaciers and the world's deepest cave (Voronya, at -2,140 m).

FOREST COVER : 40 % of land cover of which 10 % in protected areas and the rest under protection of the Forest Department

WETLANDS : 2,201 km² (3.15 % of land cover)

Terrestrial Protected Areas			% of land cover
IUCN Cat. I-II	22	4,031.61 km²	
IUCN Cat. III-IV-V	28	957.77 km²	7.16 %
IUCN Cat. VI	5	-	
Marine Protected Areas		157.43 km²	
Ramsar Sites	2	344.8 km²	
IBA	31		

Galantamine was extracted for the first time from the green snowdrop, a CITES-listed threatened species, and is now used for treatment of Alzheimer's disease. The plant is exported for trade and its population is being monitored; control and evaluation tools for its exploitation and measures to promote cultivation have been developed.

GREECE

Situated at the southern end of the Balkan Peninsula, Greece is divided into a continental part, the Peloponnesus Peninsula, and over 1,500 islands including Crete and Euboea. Greece has one the world's longest coastlines. More than 80% of the country is mountainous (Mount Olympus is the highest peak at 2,917 m), but no point in the country is located more than 130 km from the Aegean Sea or the Ionian Sea. The climate is Mediterranean, with temperate and alpine weather components inland. The main economic sectors are services, agriculture, shipping and tourism.

Aegean archipelago

Nearly 23,000 km2 of heavily fragmented land is scattered in the 240,000 km2 marine area of the Aegean Sea. The Aegean archipelago comprises 1,362 islands and islets larger than 0.03 ha, forming a coastline of 9.500 km2. Among them, only 96 are inhabited by people. Aegean islands are characterized by a great per area species diversity and, in many cases, by exceptionally high endemism (10-60%) within most of the existing plant and animal classes except birds. The Aegean islands serve as crucial reproductive sites for species of high European importance for conservation (e.g. Mediterranean monk seal, Eleonora's falcon). Due to its geologic, paleo-geographic and cultural history, the Aegean archipelago is unique in the Mediterranean and Europe and one of the most interesting archipelagos in the world.

FLORA AND FAUNA

More than 6,000 species of phanerogams have been documented in Greece, out of which 15% are endemic. A total of 894 species are listed as "Threatened" in the University of Athens Chloris Database. About 30,000 animal species have been recognized in Greece and 17.1% are endemic. Based on the Greek Red Data Book of Threatened Fauna, out of the 115 existing mammal species (not including domestic ones), 29 are threatened at national level, while 10 are globally threatened. 62 bird species out of the 442 observed in Greece are nationally threatened, while 3 of the 242 nesting bird species are globally threatened. There is no national mechanism in place to assess the threat of invasive species. Alien species have been mainly reported through scientific publications and reports. Invasive marine species are better documented than terrestrial ones. The DAISIE project database reports 188 invasive marine species.

GOVERNANCE

The Greek Constitution provides specifically for the protection of the environment, giving particular emphasis to forest protection, considering it both a responsibility of the state and a right of the citizen.

The Natura 2000 network is considered almost complete, covering 27.9% of the terrestrial area and 6.12% of territorial waters. The country is currently in the process of designating marine Natura 2000 sites. However, national measures to protect biodiversity remain weak; more than 70% of the Natura 2000 network is not institutionally registered as nationally protected, while few management and protection measures are being implemented.

Many decades of inconsistent and weak environmental policy, inadequate environmental structures, inefficient mechanisms and lack of funding, staff and capacity have led to poor implementation of nature legislation. Greece has the world's largest merchant fleet but has not yet ratified the ballast water Convention. The recent mobilization of the Greek public resulted in a gradual shift of the political environment. A new Ministry of Environment, Energy and Climate Change was first instituted in October 2009. Under its auspices, a new biodiversity law is being drafted and the National Biodiversity Strategy and Action Plan are being prepared.

MAIN NATURAL AREAS

Due to the country's geographic location, at the crossing of three continents, its topographic diversity and its varied climate conditions, Greece hosts a significant number of species, many of which are endemic. Natural areas range from the semiarid habitats in Crete to alpine forests in Northern Greece and coastal wetlands. 85 habitat types listed in Annex I of the EU Habitats Directive are present in Greece, and 17 are considered as priorities for conservation. The Pindus Range occupies the central region as the country's backbone. The country also has a significant number of wetlands: there are around 378 large ones including some wetland complexes, as well as 806 small island wetlands. The geological history of Greece has produced karstic formations, including gorges, caves, potholes, dolines and poljes.

Surface Area
131,960 km²

Population
2007 11.1 million
2020 11.3 million

Population Density
84 inhab./km²

GDP per capita
In Purchase Parity Prices
$ 30,856

Human Development Index
0.94

Ecological Footprint
In global hectares per inhabitant
5.4 (2010 Living Planet Report)

ECOSYSTEM SERVICES

The coastal zone of Greece hosts valuable natural ecosystems as well as agricultural plains including High Nature Farmlands. Most of the industrial, tourist and productive (agriculture, fisheries, aquaculture, etc) sectors are concentrated along this relatively narrow strip of land, which also gathers most of the country's infrastructure. In addition, more than a third of the country's population lives on the coastline. However, studies estimate that more than 30% of the country's coastline is threatened by erosion. This threat is additional to the development pressures and the over-concentration of activities that already have had a heavy toll on the important habitats and many species that are the building blocks of Greece's coastal ecosystems.

FOREST COVER : 34,790 km² (natural forests) - 26,4 % of land cover (2000)

WETLANDS : 6,600 km² (5 % of land cover - 2000)

Terrestrial Protected Areas			% of land cover
IUCN Cat. I-II	21	778.40 km²	0.6
IUCN Cat. III-IV-V	70	483.44 km²	0.4
IUCN Cat. VI	621	10,935.44 km²	8.3
Marine Protected Areas	2	2,610 km²	
Natura 2000 - SPA	202	29,532.30 km²	
Natura 2000 - SCI	241	28,075.12 km²	
Ramsar Sites	10	1,635.01 km²	
Biosphere Reserves	2	88.50 km²	
World Heritage Sites	2	349.26 km²	
IBA	196	32,181.8 km²	

Greece, Albania and the Former Yugoslav Republic of Macedonia have come together to create the transboundary Prespa Park. In 2010 the three countries and the European Commission signed a binding agreement committing to joint conservation of the region. The Prespa region hosts the world's largest Dalmatian Pelican colony, with more than 1,100 pairs. Part of the Prespa Park is already nationally designated as protected area in the three littoral countries. On the Greek side of the lake, management measures, such as the reintroduction of the Water Buffalo, have been successful in increasing wet meadows and, thus, contribute to the provision of critical habitat to many fish and bird species of Prespa.

HUNGARY

A member of the European Union since 2004, Hungary is a Central European country with an elevation of less than 200 metres throughout most of its territory. The highest peak, of 1,014 metres, is found in the Carpathians, a wide mountainous band along the Slovakian border. Located in the Pannonian biogeographical region, Hungary's territory is the meeting point of two major vegetation zones – broadleaved forests and forest-steppes.

The Nature Conservation Information System (NCIS) aims to provide national park directorates and environmental authorities with an up-to-date, unified database of information on protected sites. In addition to supporting strategic conservation planning and executive decisions, the NCIS also aims to contribute to general-public awareness of the current state of protected areas.

FAUNA AND FLORA

According to the IUCN global Red List, 21 of Hungary's vertebrate species are threatened: 2.5% of mammals (2 species are threatened, but 3 data-deficient), 3.5% of birds (10 species),10% of reptiles (1 species), and 12% of fish (8 species threatened, but one data-deficient). Hungary enjoys a high level of plant endemism. Legal protection has been extended to 720 plant species and 997 animal species, with 71 plant and 137 animal species strictly protected. The proportion of endangered vascular plants has increased considerably during the last three decades, reaching 27%. Action plans for 23 animal and 20 plant species have been in place since 2004. There are 32 invasive alien species in Hungary according to the GISD and 1,062 species are classified as alien under DAISIE.

ECOSYSTEM SERVICES

The use of biomass as a source of renewable energy has developed rapidly in recent years. Wood extraction for energy purposes is, however, exerting pressure on Hungary's forest ecosystems, even though the overall intensity of forest use has decreased in the last decade. The ecological condition of Hungary's large lakes has improved due to reduced nutrient loading, following a significant drop in the use of fertilisers.

GOVERNANCE

The nature conservation law of 1996 provides the general regulatory framework for the protection of biodiversity. Ten national park directorates oversee conservation activities. By 2009, 46 protected areas had management plans in place. The elaboration of management plans for Natura 2000 sites is also underway. Biodiversity considerations have been included into several sectoral development plans. A national strategy on invasive alien species is under development.

Surface Area
93,030 km^2

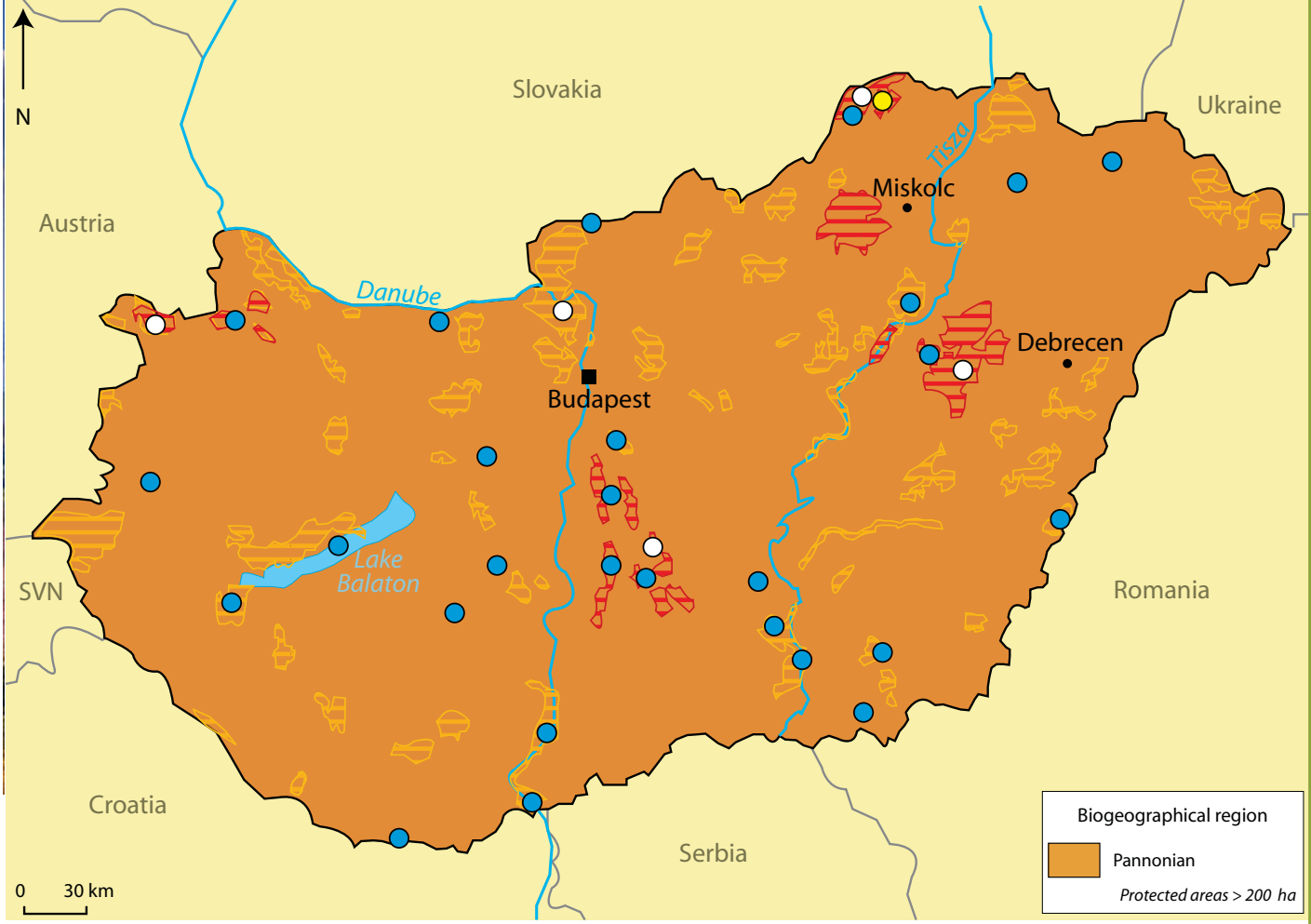
Population
2007 10 million
2020 9.8 million

Population Density
108 inhab./km^2

GDP per capita
In Purchasing Power Parity
$ 18,567

Human Development Index
0.88

Ecological Footprint
In global hectares per inhabitant
3.5



MAIN NATURAL AREAS

Hungary displays a great diversity of grasslands covering 11% of the country. About 25% of the country consists of floodplains. Approximately 9% of Hungarian territory is protected by national law. Special Protection Areas and proposed Sites of Community Importance designated to date within the Natura 2000 framework show a 38% overlap with the protected areas of national relevance. All Ramsar sites have been included in the Natura 2000 network. 87% of Hungarian habitats of Community interest were assessed as having an unfavourable conservation status in 2008.

FOREST COVER : 14,223 km² (GLC 2000); 14,310 km² (FAO 2005), 15 % of land cover

WETLANDS : 1,847 km², 1,98 % of land cover

Terrestrial Protected Areas			% of land area
IUCN Cat. I-II	4	2,004.2 km²	2.15 %
IUCN Cat. III-IV-V	205	6,468.3 km²	6.95 %
Natura 2000 - SPA	55	13,512 km²	14.5 %
Natura 2000 - SCI	467	13,973 km²	15 %
Ramsar Sites	28	2,224.16 km²	
Biosphere Reserves	5	1,288.84 km²	
World Heritage	1	55.02 km²	
IBA	35		

Formerly widespread on the Hungarian Plain, the Hungarian Meadow Viper is now confined to only three locations, one in Romania, two in Hungary. With an estimated population of only 500 individuals, the subspecies is Europe's most endangered snake. The species' decline has largely been caused by habitat destruction and fragmentation. Lowland populations have been particularly affected by agricultural reclamation of their steppe habitats. Recent conservation measures – a captive breeding programme and habitat restoration – are already showing positive results. A project aiming to reintroduce into the wild 400 vipers bred in captivity started in 2009.

LATVIA

Located in Northern Europe, on the eastern shore of the Baltic Sea, Latvia occupies the Boreal biogeographic region. Its terrain is predominantly flat, with a highest point of 312 metres. A dense network of rivers and streams crosses the country. Typical vegetation cover includes forests, marshlands, and meadows. The climate is temperate continental, but humid. Latvia is home to many species that have become rare or endangered in other parts of Europe, such as the Black Stork, the corncrake, the Lesser-Spotted Eagle, and the Eurasian Otter.

Seven marine Natura 2000 sites have been proposed in Latvia as part of the LIFE Project "Marine Protected Areas in the Eastern Baltic Sea". Management plans were elaborated with stakeholder involvement for two of the sites. The project also highlighted the need for further investigation of the marine environment, especially beyond the 12 nautical miles offshore; the nature values of Latvia's EEZ are little researched at present.

FLORA AND FAUNA

Latvia's known biodiversity consists of over 27,440 species: 18,047 animal species, including 62 mammal species and 223 nesting bird species, 5,396 higher plant and approximately 4,000 fungi species. Out of the species assessed for the global Red List, one mammal (1.5%), 3 bird (1%), and 5 fish species (9%-14%, 3 species data-deficient) are threatened. There are 19 invasive alien species in Latvia according to the GISD and 876 species are classified as alien under DAISIE.

ECOSYSTEM SERVICES

Although pollution remains one of the main stressing factors to Latvia's ecosystems, the amount of pollution from stationary sources has decreased by 46% since 1990.
Intensive pearl diving and river pollution have affected the freshwater Pearl Mussel in the entire Baltic area. Only five beds of river Pearl Mussels are currently known in Latvia; their number has decreased fivefold during the past 100 years.

GOVERNANCE

Nature protection is regulated by two main laws: the Law on Species and Habitats Protection and the Law on Specially Protected Nature Territories. To date, 723 species and 93 biotopes have been included in the national lists of specially protected species and habitats. In addition to the protected areas network, 1,050 micro-reserves have been established for the protection of rare and valuable species and habitats. By 2009, 160 Natura 2000 sites had management plans approved. More than half of Latvia's forests are certified according to the FSC. Latvia has implemented legislation covering the export and import, intentional introduction and control of invasive alien species, but existing information is limited to few invasive species and an eradication strategy is in place only for hogweed.

Surface Area
64,588 km^2

EEZ
32,021 km^2

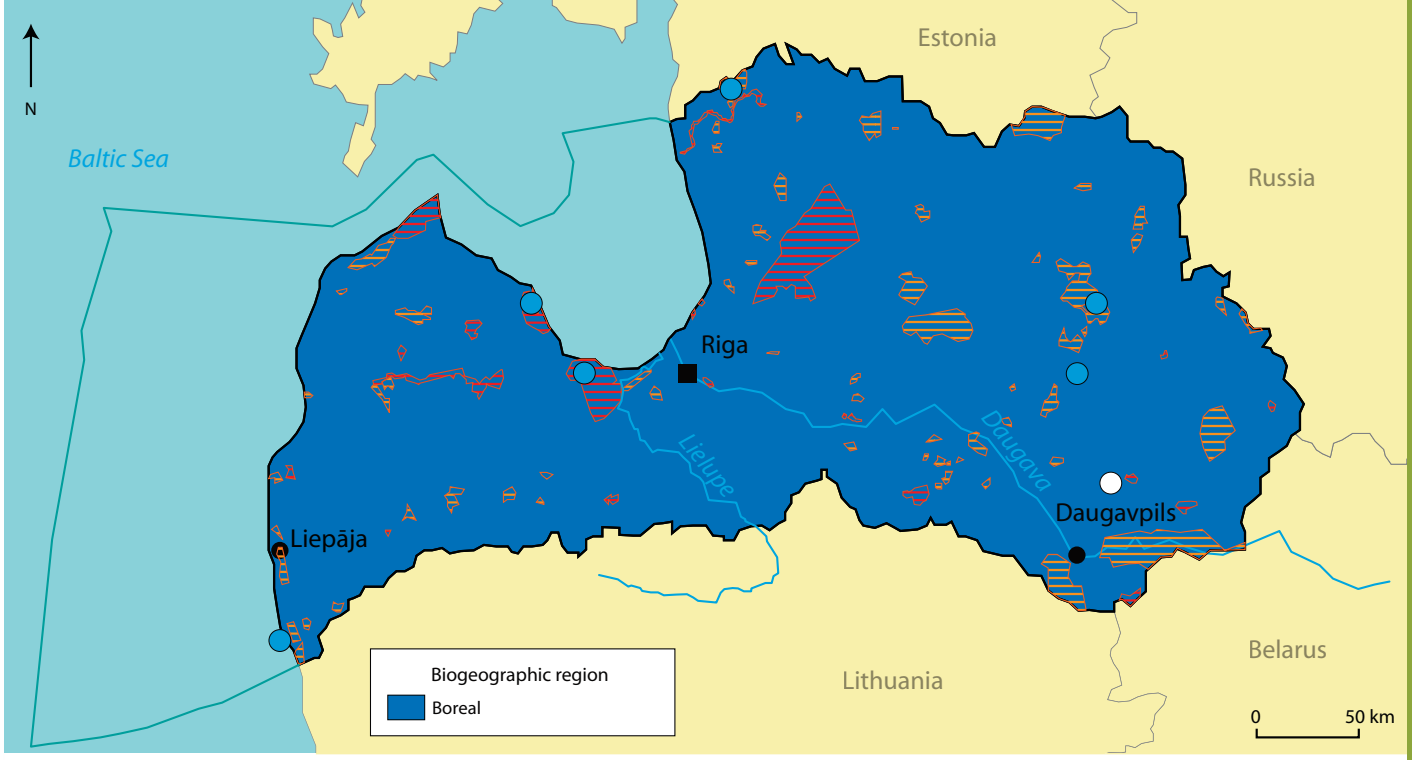
Population
2007 2.3 million
2020 2.2 million

Population Density
35 inhab./km^2

GDP per capita
In Purchasing Power Parity
$ 14,255

Human Development Index
0.87

Ecological Footprint
In global hectares per inhabitant
4.6



MAIN NATURAL AREAS

Natural grasslands are among Latvia's most biologically rich ecosystems, home to a third of the country's flora and 40% of protected plant species. This form of vegetation covered 13% of Latvia in the mid-twentieth century, but has been reduced to only 0.3% of land cover. Latvia's forests – primarily spruce, pine and birch – provide nesting areas for 5% of the world population of Black Stork. A great diversity of species and ecosystems can be found along Latvia's 496 km coastline, including 23 coastal habitats of European importance. Peat extraction, hydro-electric power stations, eutrophication, and the expansion of invasive species are some of the main pressures on Latvia's biodiversity. 77% of habitats of Community importance were found in an unfavourable conservation status in 2008, but the state of all Latvian Baltic Marine environments was assessed as favourable.

FOREST COVER : 24,539 km², 38 % of land cover (GLC 2000); 29 400 km² (FAO 2005)

WETLANDS : 13,340 km², 20.65 % of land cover

Terrestrial Protected Areas			% of land cover
IUCN Cat. I-II	50	3,693.18 km²	5.7 %
IUCN Cat. III-IV-V	624	8,195.11 km²	12.7 %
Marine Protected Areas	7	4,365.82 km²	13.6 % of EEZ
Natura 2000 - SPA	95	6,999 km²	10 %
Natura 2000 – SCI	324	7,856 km²	11.3 %
Ramsar Sites	6	1,491.58 km²	
Biosphere Reserves	1	4,744.47 km²	
IBA	71		

With a body length of 130–150 cm and 50–60 kg in weight, the Baltic Ringed Seal is the smallest in the world. Historically an abundant species, its numbers were drastically reduced by hunting and pollution throughout the 20th century. Hunting of this species is currently prohibited, but their survival depends on climate conditions and the presence of ice cover in early spring, essential for the seal's breeding. The Gulf of Riga alone is home to almost a quarter (1,400 specimens) of all Baltic Ringed Seals.

LITHUANIA

The largest of the Baltic states, Lithuania is located in Northern Europe and acceded to the EU in 2004. Lowlands and rolling hills characterize the landscape, with an elevation below 300 metres throughout the country. Lithuania lies in a transition zone of maritime and continental climate. Mixed forests, primarily made up of pine, spruce and birch cover a quarter of Lithuania. Numerous small lakes and wetlands contribute to the country's biological richness.

The LIFE project "Natura 2000 Site Conservation and Management on the Lithuanian Coast" succeeded in restoring over 500 hectares of Natura 2000 habitats on the verge of extinction. Protection measures were introduced in the Curonian Lagoon for the preservation of various fish populations and spawning grounds, as well as to reduce by-catch. Nature management plans for the Curonian Spit National Park, Curonian Lagoon and Seaside Regional Park were developed and approved.

FLORA AND FAUNA

Lithuania's known biodiversity comprises more than 20,000 invertebrates, including about 15,000 insects, 536 vertebrates, over 6,500 fungi and 1,796 vascular plant species. The proportion of threatened species is high, with one third of mammals (23 species), 23% of birds (80 species), 29% of reptiles (2 species), 38% of amphibians (5 species), 8% of fish (8 species), and 19% of vascular plants listed as threatened in the 2007 national Red Data Book. Out of the species assessed for the IUCN global Red List, 5% of mammals, 4% of birds, 14% of reptiles, and 15% of fish species are threatened. There are 20 invasive alien species according to the GISD, while 740 alien species have been inventoried by DAISIE.

ECOSYSTEM SERVICES

Both freshwater and marine fish resources have significantly decreased in recent years. Forest resources such as edible mushrooms and berries are also in decline as a result of intensive forestry and habitat deterioration.

GOVERNANCE

Eight Regional Nature Protection Departments under the umbrella of the Environment Ministry oversee the management of protected areas. Administrations are in place for all four National Parks, Zuvintas Biosphere Reserve, three Strict Nature Reserves and 30 Regional Parks. The majority of state forests are certified by the Forest Stewardship Council, but the private sector is only at the beginning of this process. 253 animal, 221 plant and 112 fungi species are protected by law, with recovery plans implemented for selected species. A programme for the control and elimination of invasive species was approved in 2002. Management plans for selected alien invasive species are under preparation.

Surface Area
65,300 km²

EEZ
6,104 km²

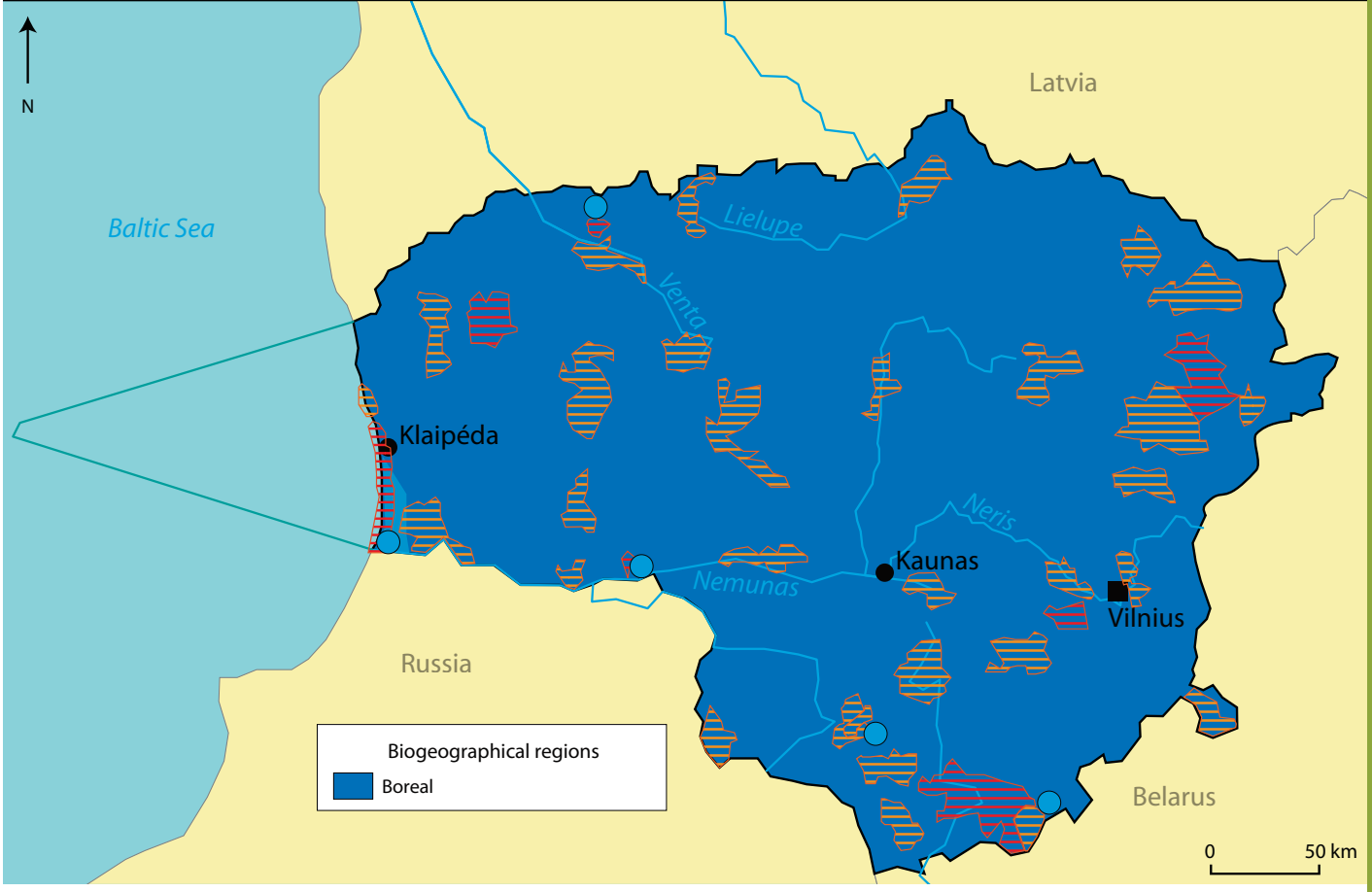
Population
2007 3.4 million
2020 3.1 million

Population Density
52 inhab./km²

GDP per capita
In Purchasing Power Parity
$ 16,542

Human Development Index
0.87

Ecological Footprint
In global hectares per inhabitant
3.3



MAIN NATURAL AREAS

The country's most valuable ecosystems include bogs, reeds and flooded meadows, the large oak woods of the Lithuanian Central Plain, and hornbeam forests. Habitat loss and fragmentation is the main cause of biodiversity loss. Drainage and peat extraction during the Soviet period led to the loss of 70% of wetlands. Marine and coastal ecosystems are under pressure from tourism, eutrophication and industrial pollution, but Lithuania's participation in HELCOM facilitates their conservation. Despite recent progress in nature protection, 77% of Lithuanian habitats of community interest were found to have an unfavourable conservation status in 2008.

Lithuania's coastal wetland complex – stretching over the Curonian Lagoon, Curonian Spit, and the Nemunas River delta - is of crucial importance for the maintenance of biodiversity in the Eastern Baltic Region. Rare European habitats such as active raised bogs, deciduous swamp woods, bog woodland and alluvial forests distinguish the site.
The complex is an important stopover and wintering site for water birds in Europe and a key breeding area of rare and endangered bird species.

FOREST COVER: 15,096 km², 23 % of land cover (GLC 2000); 19,580 km² (FAO 2005)

WETLANDS : 5,933 km², 9.1 % of land cover

Terrestrial Protected Areas			% of land cover
IUCN Cat. I-II	12	1,817.28 km²	2.78 %
IUCN Cat. III-IV-V	397	6,027.25 km²	9.23 %
Marine Protected Areas	3	295.32 km²	4.8 % of EEZ
Natura 2000 - SPA	88	6,449 km²	9.6 %
Natura 2000 - SCI	382	9,254 km²	13.5 %
Ramsar Sites	5	504.5 km²	
IBA	44		

GRAND DUCHY OF LUXEMBOURG

A founding member of the EU, NATO and the OECD, the Grand Duchy of Luxembourg is located at the heart of Western Europe. This country with gentle hills can be divided into two regions, the Oesling in the north, rather rural and unpopulated, and the Gutland around the capital city, the headquarters of numerous European institutions and the administrative, financial, and economic centre of the country. The climate is oceanic temperate with an average temperature of 9°C and a rainfall level of around 800mm. The main biodiversity-related economic activities include agriculture, livestock rearing, forestry, and tourism.

FLORA AND FAUNA

Luxembourg has no endemic species. However, it is home to remarkable biodiversity, with 1,323 species of vascular plants and significant populations of rare animal species such as the Black Stork, the Great Grey Shrike, and the Greater Horseshoe Bat. Due to the small surface of the country, the risk of extinction of species found in Luxembourg is heightened. The percentage of threatened species is 54.8% for mammals, 41.5% for birds, 33% for reptiles, 71.4% for amphibians, and 62% for fish.

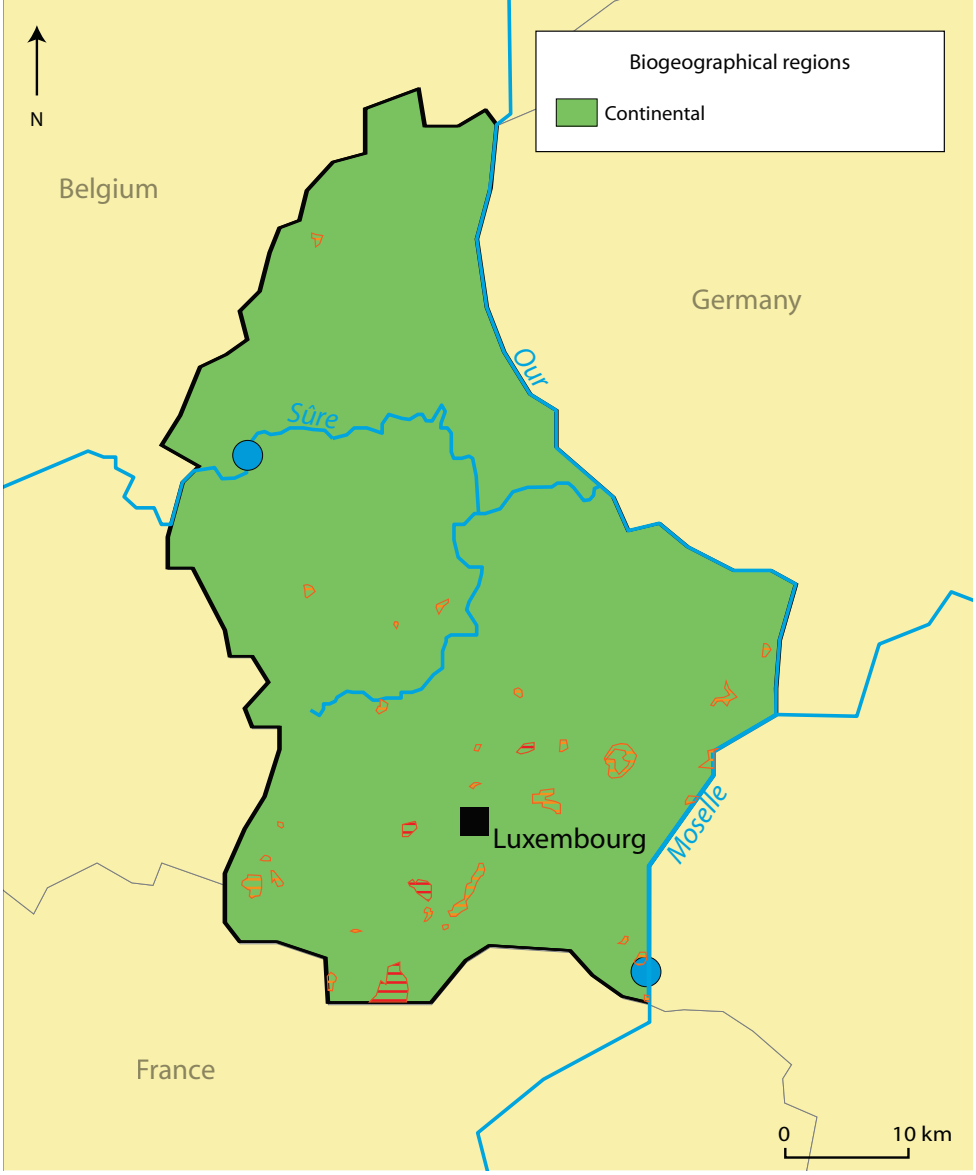
The greater horseshoe bat is a very rare insectivore bat with a wingspan of up to 30 cm. The Grand Duchy has the last viable population in the entire Benelux.

ECOSYSTEM SERVICES

Water storage, filtering, and regulation are certainly the most valued ecosystem services in Luxembourg. Ecotourism is relatively developed in the natural habitats of the Oesling, the Luxembourg Sandstone landscapes of Luxembourg's Little Switzerland, as well as in the Moselle Valley.

GOVERNANCE

The Ministry for Sustainable Development and Infrastructure and the Administration for Nature and Forests are in charge of coordinating and implementing nature conservation policies. Communes are essential partners. The National Plan for Nature Conservation was adopted in 2007 to halt biodiversity loss or restore ecosystem services. The main flagship measures include implementation of species and habitat action plans, creation of a network of strict forest reserves, development of 70% of management plans for Natura 2000 sites, certification of 40% of forest areas, development of a national registry of protected biotopes or faster designation of protected areas (1.4% of the total land area to date).



Surface Area
2,586 km²

Population
2010 502,066

Population Density
188.3 inhab./km²

GDP per capita
in Purchasing Power Parity
$ 82,440

Human Development Index
0.96

Ecological Footprint
in global hectares per capita
11.82

Half of all Luxembourgish communes belong to an inter-communal syndicate, including a biological station working on nature protection. The Government aims to ensure complete national coverage.

MAIN NATURAL AREAS

Despite being a land-locked and small-sized country, Luxembourg is very rich in fauna and flora, geology, and landscapes. The North is marked by high forest cover and deep valleys. In the mining basin, old open-pit mines are a testimony that nature is bouncing back. The Gutland has spectacular Luxembourg sandstone rock formations. However, agricultural intensification, urban development and the subsequent increase of transport infrastructure have led to a decline of natural habitats, both terrestrial and aquatic, and to advanced fragmentation. Between 1962 and 1999, over 80% of wetlands, about 60% of orchards, and 35% of dry grasslands have disappeared. Forest cover remains significant (over one third of the land area).

FOREST COVER : 900 km² or 35% of the total land area (40 % under certified sustainable management)

WESTLANDS : 18 km², 0,70% of land area

Terrestrial Protected Areas			
Cat. IUCN III-IV-V	37	37.34 km²	1.4 %
Cat. IUCN VI	2	489 km²	19 %
Natura 2000 - SPA	12	139.03 km²	5.4 %
Natura 2000 - SCI	47	383.24 km²	14.8 %

MOLDOVA

Located in Southeastern Europe, Moldova occupies a relatively flat territory, characterized by a gradually sloping hilly plain, with altitudes varying between 5 and 429 metres. Moldova's economy is heavily dependent on agriculture, with roughly 73% of the country's surface devoted to this sector. The country's climate is continental, with arid tendencies in the South.

An extensive woodland near the river Prut, Balatina has been recognized as an IBA, home to several globally threatened species: the Red-footed Falcon, Ferruginous Duck, European Roller, Corncrake. Breeding visitors and residents also include the Great Egret, the Lesser-Spotted Eagle and the Booted Eagle. The site is part of the Pădurea Domnească Scientific Reserve that supports other rare species of global interest.

FAUNA AND FLORA

Out of the 1,989 higher plants and 461 vertebrate fauna species reported in Moldova, 90 species of flowering plants, 14 mammals, 39 birds, 8 reptiles, 12 fish, and 36 insect species have been assessed as threatened in the 2001 National Red Book. Revised, up-to-date assessments are needed. The diversity of plant species is particularly rich in forest and steppe ecosystems. Approximately 460 invasive alien plant species have been identified at national level and 286 alien species are catalogued by DAISIE.

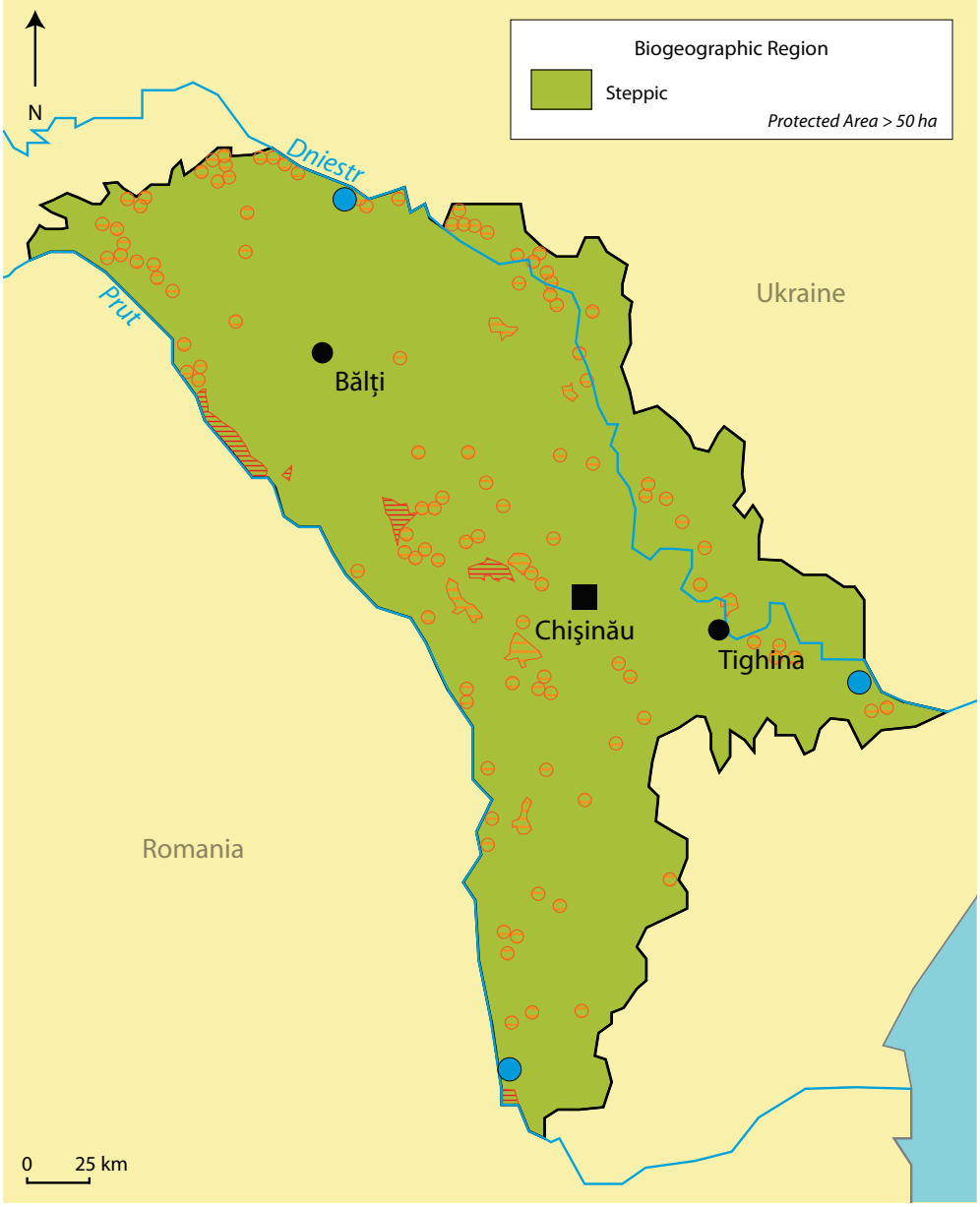
ECOSYSTEM SERVICES

An underdeveloped market leads to poor farm practices and improper grazing that continue to cause soil erosion and desertification.

Moldova's sturgeons are endangered and rarely reproduce in the wild. One main cause has been the construction of two large hydropower dams on the Dniester in 1954 and 1981, interrupting several species' migration corridors. Illegal fishing is another threat to Moldova's threatened species. Water pollution, including heavy metals and persistent organic pollutants, continue to have serious adverse effects on aquatic biodiversity, especially in the Dniester.

GOVERNANCE

The establishment of a National Ecological Network is at an incipient stage, but efforts have accelerated. 269 plant species and 220 animal species, including 89 mammals, enjoy formal state protection. Lack of funding and the shortage of skilled personnel in the field of nature conservation are a major challenge. Although funding for biodiversity research has quadrupled in recent years, it still falls short of present needs. Nature conservation legislation is not fully observed and sanctions for committed violations are largely inefficient. Public awareness of biodiversity and conservation issues is low.



Surface Area
33,851 km²

Population
2007 3.6 million
2020 3.4 million

Population Density
105 inhab./km²

GDP per capita
In Purchasing Power Parity
$ 2 843

Human Development Index
0.72

Ecological Footprint
In global hectares per inhabitant
1.7

MAIN NATURE AREAS

Agricultural lands dominate the landscape. Native steppe and steppe-associated wet meadows have been systematically converted to cropland and pastures. Less than 1% remains of some types of steppe and wet meadow ecosystems that were once common in Moldova. Only a third of wetlands existing in 1960 have survived to date. Moldova's forests are composed primarily of deciduous species. While current forest coverage is low, the CBD National Strategy and Action Plan set a target of reforesting 130,000 hectares of land. Agriculture, fragmentation and the intensive exploitation of natural resources are the main pressures on Moldova's biodiversity.

FOREST COVER: 3,280 km² (FAO, 2005);
4,234 km² (National Cadastre), 9.7 to 12.51 % of land cover

WETLANDS : 2 500 km²

Terrestrial Protected Areas			% of land area
IUCN Cat. I-II	5	193.78 km²	0.57 %
IUCN Cat. III-IV-V	58	279.51 km²	0.83 %
Ramsar Sites	3	947 km²	
IBA	12		

A project implemented by a national NGO - Biotica Ecological Society - and IUCN will develop the National Ecological Network of Moldova by 2013. Emphasis has been placed on transboundary cooperation and the compatibility of Moldova's environment policy with European instruments for the conservation of biological and landscape diversity. An inventory of Moldova's biodiversity is underway, in order to develop the digital (GIS) basis for mapping the Ecological Network. Major ecological corridors have also been planned.

POLAND

Member of the European Union since 2004, Poland stretches from the Baltic Sea in the North to the Carpathian mountain chain in the South. The climate is predominantly temperate throughout the country, with oceanic influences in the North and West. The country's relatively unspoiled woodlands are home to species that have become extinct in other parts of Europe, such as the bison, brown bear, and Eurasian lynx.

FLORA AND FAUNA

Poland's known biodiversity includes 2,900 species of higher plants, 105 mammals, 435 birds, 18 amphibians, 9 reptiles and 129 fish species. Of the 2,769 species inscribed on the national red list (2002), 27% of invertebrate species are extinct, critically endangered, or strongly endangered, while 41% of vertebrates are endangered. Out of the vertebrate species inscribed on the Global Red List, 5% of mammals (5 species), 2% of birds (6 species), and 7%-11% of fish (6 species threatened, 3 data-deficient) are threatened. There are relatively few endemic plant species in Poland, but numerous relics of the Pleistocene period. 744 species are classified as alien according to DAISIE; 45 invasive alien species are listed on the GISD.

ECOSYSTEM SERVICES

In the last decade, forest resources have been used at a rate below their capacity of self-recovery; wood resources are therefore increasing. There are, however, concerns that the recently growing demand for wood production from various industries may reverse this positive trend.

GOVERNANCE

A National Strategy and Action Plan for the Protection of Wetlands was adopted in 2006. Approximately 60% of species listed on the national Red List are protected, and restitution or reintroduction programmes have been implemented for a number of endangered species. 387 plant species and 228 animal species are under strict legal protection. Although a legal framework regulating the introduction of invasive alien species is in place, implementing measures are yet to be developed. Many protected areas lack management plans, while some areas of high natural value lie outside the system of protected areas.

The Aquatic Warbler, Europe's rarest songbird, is being preserved in Poland and Germany with the aid of LIFE funding. Once widespread on the marshes and bogs of all of continental Europe, the species' range has become limited to a few sites in Eastern Europe following loss of habitat due to drainage and agriculture. The project aims to enlarge the bird's range, improve breeding areas and implement management plans for habitat areas, while focusing the attention of authorities and stakeholders on the need for the species' protection.

Surface Area
304,255 km²

EEZ
31,600 km²

Population
2007 38.1 million
2020 37.5 million

Population Density
122 inhab./km²

GDP per capita
In Purchasing Power Parity
$ 18,072

Human Development Index
0.88

Ecological Footprint
In global hectares per inhabitant
4.0

MAIN NATURE AREAS

Characteristic natural habitats include thicket and forests, grasslands, peat bogs, costal dunes, and submarine meadows. Out of the 218 natural habitat types of Community Importance defined by the Habitats Directive, 80 are found in Poland, but only 21% were found to have a favourable conservation status in 2008. Pollution, land-use change and invasive species are some of the main threats. The degradation of marine environments persists in some areas of the Baltic Sea coast. The network of protected areas covers a third of the country, but the effectiveness of legal protection needs to be strengthened. Two national parks and two landscape parks have been included in the Baltic Sea Protected Areas system.

Straddling the border between Poland and Belarus, Bialowieza forest is Europe's last remaining primeval woodland and home to the Continent's largest bison population. The forest was designated as a biosphere reserve in 1977 and as a transboundary World Heritage site in 1979.

FOREST COVER : 79,991.5 km² (GLC, 2000); 91,600 km² (FAO,2005), 23 % to 30 % of land cover

WETLANDS : 43,400 km², 13 %

Terrestrial Protected Areas			% of land area
IUCN Cat. I-II	23	3,174.05 km²	1.04 %
IUCN Cat. III-IV-V	2,162	98,270.27 km²	32.3 %
Marine Protected Areas	2	150.64 km²	0.5 % of EEZ
Natura 2000 - SPA	141	55,228 km²	16.6 %
Natura 2000 - SCI	823	38,003 km²	11 %
Ramsar Sites	13	1,257.6 km²	
Biosphere Reserves	9	3,980.07 km²	
World Heritage	1	55.02 km²	
IBA	140		

MONACO

Situated on the Mediterranean coast, the Principality of Monaco is the world's most densely populated country. Its highest point is 163 metres above sea level, on the southern slopes of Mont Agel. Although highly urbanised, Monaco's territory comprises, under a Mediterranean climate, areas of biological importance such as calcareous cliffs, Posidonia beds and coralligene communities.

Designated in 2002 by a trilateral agreement between Monaco, France and Italy, the PELAGOS Sanctuary aims to protect Cetaceans and their habitats. Over 8,500 macroscopic animal species have been recorded in the area, amounting to 4 to 18% of the world's marine species in only 0.024% of the world's marine surface. The agreement seeks concerted action by the three states and a harmonized approach to nature conservation in the sanctuary. A management plan for the area was adopted in 2004.

FAUNA AND FLORA

Mediterranean vegetation dominates Monaco's flora, which includes 346 species and sub-species of vascular plants. 6 plant species endemic to the maritime and Ligurian Alps are found here, including a very rare snowdrop, Acis nicaeensis, found only between Vence and Grimaldi. Recent inventories revealed a high entomologic diversity, with about 200 species recorded on the territory, as well as numerous species of the Chiroptera order. In terms of avifauna, the presence of Common Kestrel and nesting Peregrine Falcon is noteworthy.

The Principality is also rich in marine fauna, with 224 species of fish. Many of the Mediterranean's emblematic species – the Sea Urchin, Noble Pen Shell, the Dusky Grouper, Red Coral and large sea fan colonies – inhabit Monaco's waters. Out of the 36 mammal and 34 fish species included on the global Red List, 2 and 9 species, respectively, are threatened. Invasive alien species are a growing concern; the exotic alga *Caulerpa taxifolia* is the best known example, but various species of Coleoptera also occupy the same ecological niche as indigenous species.

ECOSYSTEM SERVICES

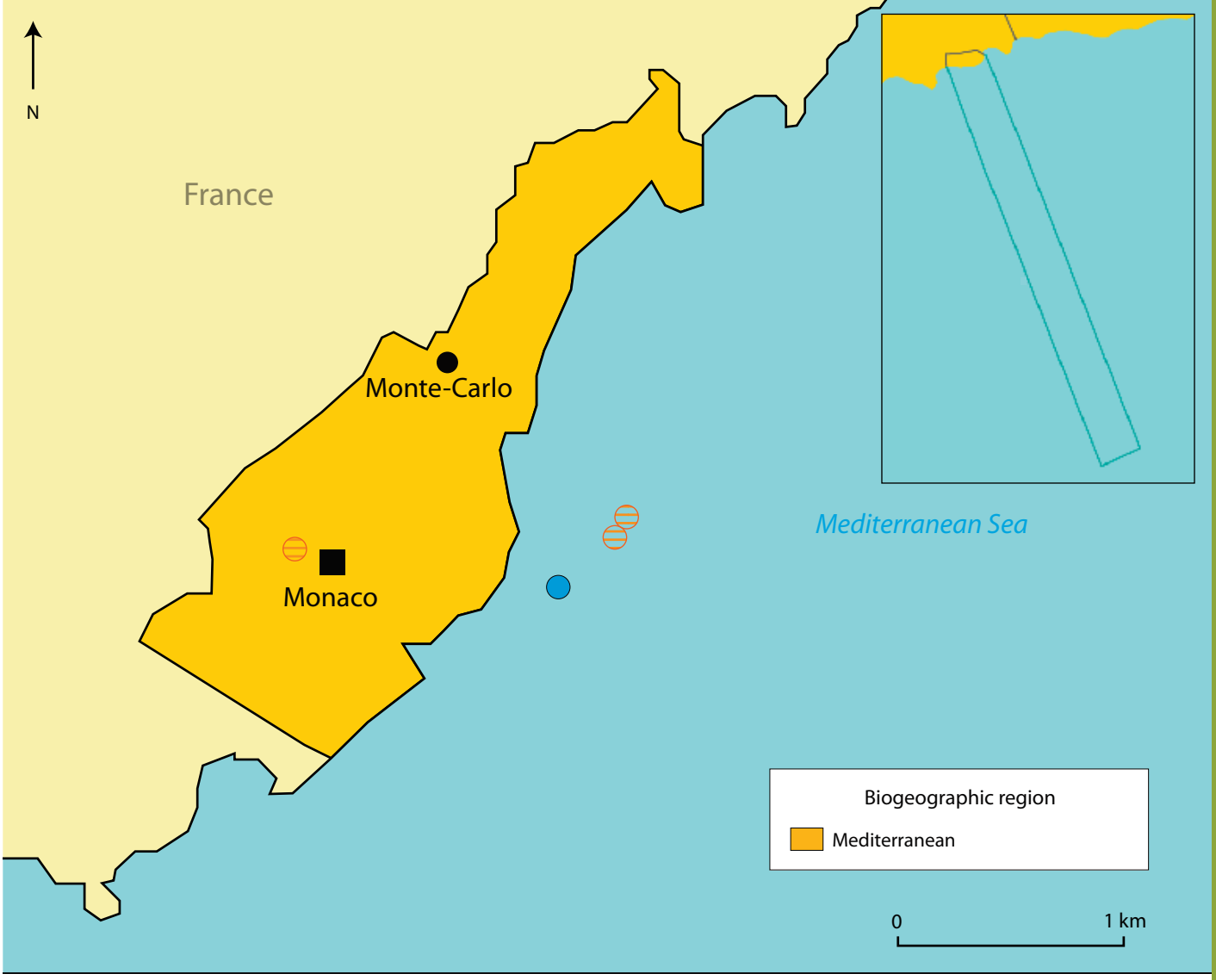
Recent monitoring of the Posidonia beds in Larvotto Reserve shows its limits have remained stable, indicating that the marine ecosystem is in good health. Coralline habitats that provide food and shelter to numerous fish communities are also in good condition.

Surface Area
1.95 km²

Population
2007 31,100
2020 34,000

Population Density
15,949 inhab./km²

GDP per capita (2006)
In Purchasing Power Parity
$ 30,000



GOVERNANCE

Monaco has long been particularly interested in the study and protection of marine ecosystems, with efforts recently extended to all environmental sectors.
Monaco's government wished to adopt a framework law on the environment, that would reflect the Principality's sustainable development ambitions and transpose into national law Monaco's obligations derived from international conventions. The Environment Code is currently awaiting the National Council's vote, before promulgation by H.S.H. Prince Albert II.
Two marine protected areas have been declared to date; fishing and other activities that may pose a threat to biodiversity are forbidden therein. The entirety of the Principality's territorial sea is included in the PELAGOS marine sanctuary
Moreover, the Foundation Prince Albert II of Monaco facilitates the implementation of environmental projects throughout the globe, with a particular focus on climate change, biodiversity, and water management.

MAIN NATURE AREAS

Monaco lies in the Mediterranean Basin biodiversity hotspot. Five of the habitat types identified by the EU as habitats of Community importance are found in Monaco. Urbanisation and invasive species are the main threats to the country's ecosystems. Species sensitive to temperature variations, such as the Red Coral and large sea fans are also threatened by climate change.

Marine Protected Areas	2	0,32 km²	-
Ramsar Sites	1	0,01 km²	-

A globally endangered emblematic species, the Dusky Grouper is protected in Monaco and under moratorium in France since 1993. Over-fishing led to the species' severe decline in the North Mediterranean, but stocks have increased considerably in Monaco's waters since 1997, thanks to its protection.

ROMANIA

Member of the European Union since 2007, Romania is located in the lower basin of the Danube and has an opening to the Black Sea. The temperate continental climate and varied relief – from the sea-level Danube Delta to the Carpathian mountain chain – have resulted in high ecosystem and species diversity. Romania's vast tracts of forest are home to Europe's most important population of large carnivores: 40% of all brown bears, 30% of wolves, and 25-30% of lynx.

Two LIFE projects implemented since 2002 have helped improve protection of large carnivores – bear, wolf, and lynx – in the Vrancea mountains, by correlating the local protection network with the Natura 2000 network. Actions included monitoring, enhanced habitat protection, and the development of management plans for some of the protected sites.

FLORA AND FAUNA

About 3,700 vascular plant and 33,800 animal species have been recorded, with endemism levels of 4% and 3%, respectively. There are 717 known vertebrate species: 102 mammals, 364 bird species, 23 reptiles, 20 amphibians and 211 species of fish. Out of the animal species assessed for the global Red List, 38 species of vertebrates are threatened: 7%-8% of mammals (6 species threatened, one data-deficient), 4% of birds (12 species), 14% of reptiles (2 species), and 15%-21% of fish (17 species threatened, 7 data-deficient). Species assessed as nationally endangered include 29 bird species, 10 mammals, 9 reptiles, 3 amphibians, and 17 fish species. There are 651 species classified as alien according to DAISIE; 27 invasive species are listed on the GISD.

ECOSYSTEM SERVICES

In addition to being a major reservoir of European wildlife and source of revenue for local populations, the Danube Delta acts as a biological filtering system for water flowing into the Black Sea. The status of the delta's ecosystems has improved in recent years. Habitat loss and degradation as a result of hydrological works and eutrophication, combined with poaching, have led to the depletion of fish stocks; 17 of Romania's 211 fish species are endangered, including all native sturgeons.

GOVERNANCE

The need to harmonize Romanian legislation with EU environmental norms has been the main driver for improved nature conservation. Management plans for several protected areas are yet to be developed, while financial resources deployed to this sector remain low. Remaining problems include unclear landownership within and near protected areas, insufficient park administration staff, and lack of comprehensive knowledge about the territorial distribution of endangered species. The Danube Delta Biosphere Reserve Authority is the only protected area administration under the umbrella of the Ministry of Environment and Forestry, while other protected areas are administered on the basis of contracts between the Ministry and different stakeholders. Although invasive alien species constitute a major problem in some forest areas and the Danube Delta, no coherent action plan against this threat exists.

Surface Area
238,391 km²

EEZ
23,627 km²

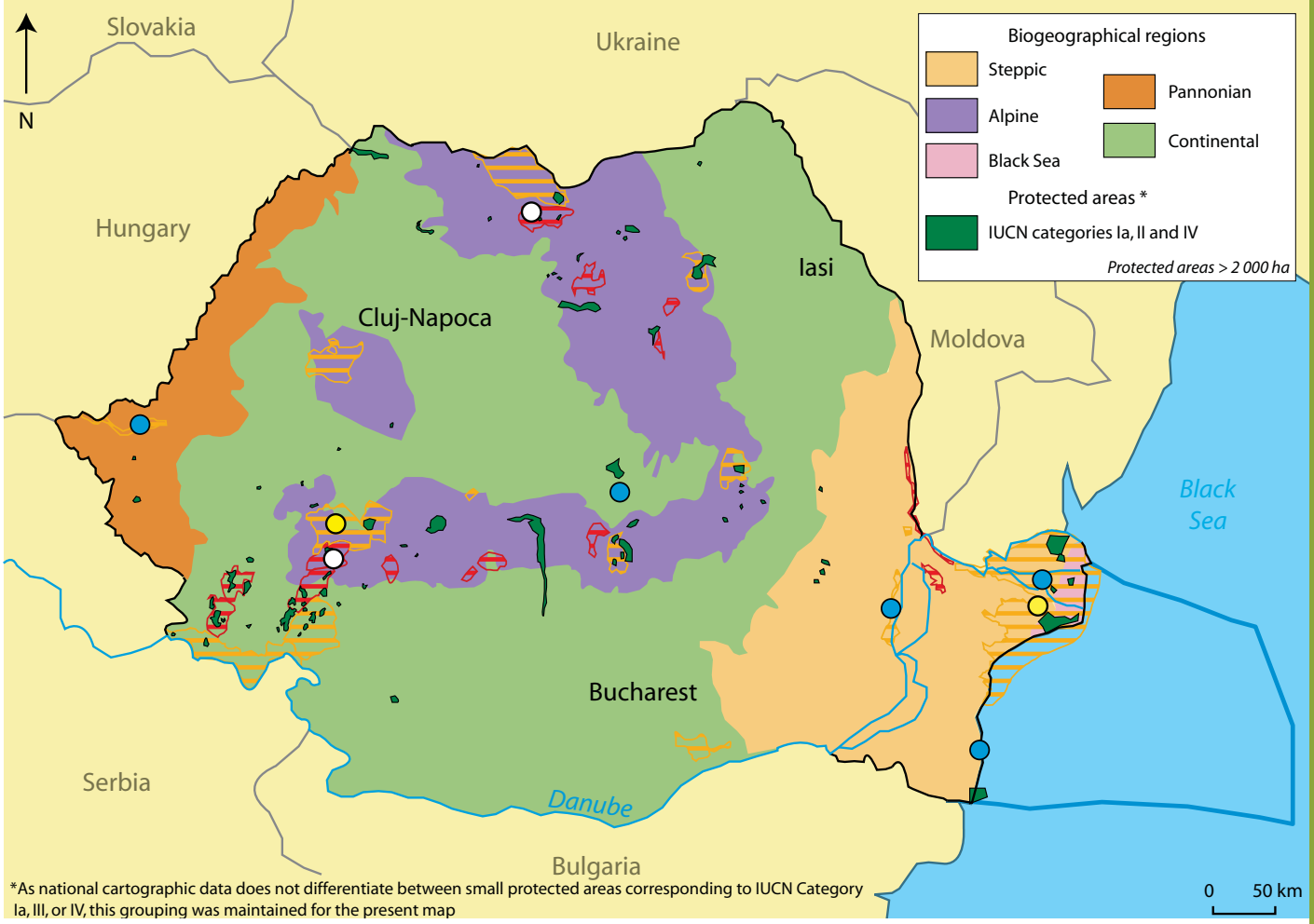
Population
2007 21.5 million
2020 20.4 million

Population Density
90 inhab./km²

GDP per capita
In Purchasing Power Parity
$ 11,917

Human Development Index
0.837

Ecological Footprint
In global hectares per inhabitant
2.9



*As national cartographic data does not differentiate between small protected areas corresponding to IUCN Category Ia, III, or IV, this grouping was maintained for the present map

The management of the Danube Delta Biospere Reserve corresponds to IUCN Category V, but the area is not designated as such at national level

MAIN NATURE AREAS

Romania spans over 5 of the 9 biogeographical regions recognized by the EU. As almost half of forests have been managed for watershed conservation rather than timber production, Romania enjoys one of the largest areas of untouched forest in Europe. Broad-leaved forests predominate in humid regions of low altitude, while steppe grasslands cover areas of drier climate. Coniferous forests and shrubs dominate the Carpathian region. Agricultural development has been a main driver of habitat change; less than 10% remains of some types of grassland and shallow marsh ecosystems that were once common in Romania. Aquatic biodiversity is under pressure from pollution associated with agriculture and wastewater discharges.

FOREST COVER : 83,113.4 km², 34.9 % (GLC, 2000);
62,720 km², 26.31 % of land area (Statistical Yearbook 2008)

WETLANDS : 4,102 km², 1.72 % of land area

Terrestrial Protected Areas			% of land area
IUCN Cat. I-II	92	4,164.31 km²	1.75 %
IUCN Cat. III-IV-V	875	8,921.94 km²	3.74 %
Marine Protected Areas	1	55.6 km²	0.24 % of EEZ
Natura 2000 - SPA	108	28,368.53 km²	11.9 %
Natura 2000 - SCI	273	32,832.57 km²	13.2 %
Ramsar Sites	5	6,836.28 km²	10 %
Biosphere Reserves	3	6,620.47 km²	
World Heritage	1	3,124.4 km²	
IBA	130		

A labyrinth of water and land

The Danube Delta, Europe's largest wetland, is home to more than 5,400 species. Designated as MAB Reserve, World Heritage and Ramsar site, the delta is one of the few remaining refuges of the European mink, the wildcat and the freshwater otter. The delta is a wintering and feeding habitat for over a million migrating birds each year. Notwithstanding the negative impact of human activity in the past, the delta remains one of Europe's most biologically rich areas. National and multilateral efforts towards ecosystem restoration and conservation have gained momentum in the last decade.

SERBIA

Serbia is geographically divided between the Pannonian Plain traversed by the Danube in the North, and a more mountainous region of the Balkans in the South, rising to 2,656 m. Several major tributaries join the Danube in Serbia, including Sava (originating in Slovenia), Tisa (originating in Ukraine), Drina, and Morava, forming a dense river network. Serbia has a mild continental climate with several microclimates, making the country one of the first producers of fresh fruit in Europe.

FLORA AND FAUNA

A total of about 3,660 vascular plant species have been documented, including 287 species endemic to the Balkans and 59 to Serbia. Species found here represent 40% of the total of vascular plant species known in Europe. About 15% are considered threatened.
Documented animal species include 94 mammal species, of which nearly 15% are threatened, about 240 nesting bird, 25 reptile, 21 amphibian, and 110 fish species. The total of threatened animal species is estimated at 270, or over 20 % of all documented species.

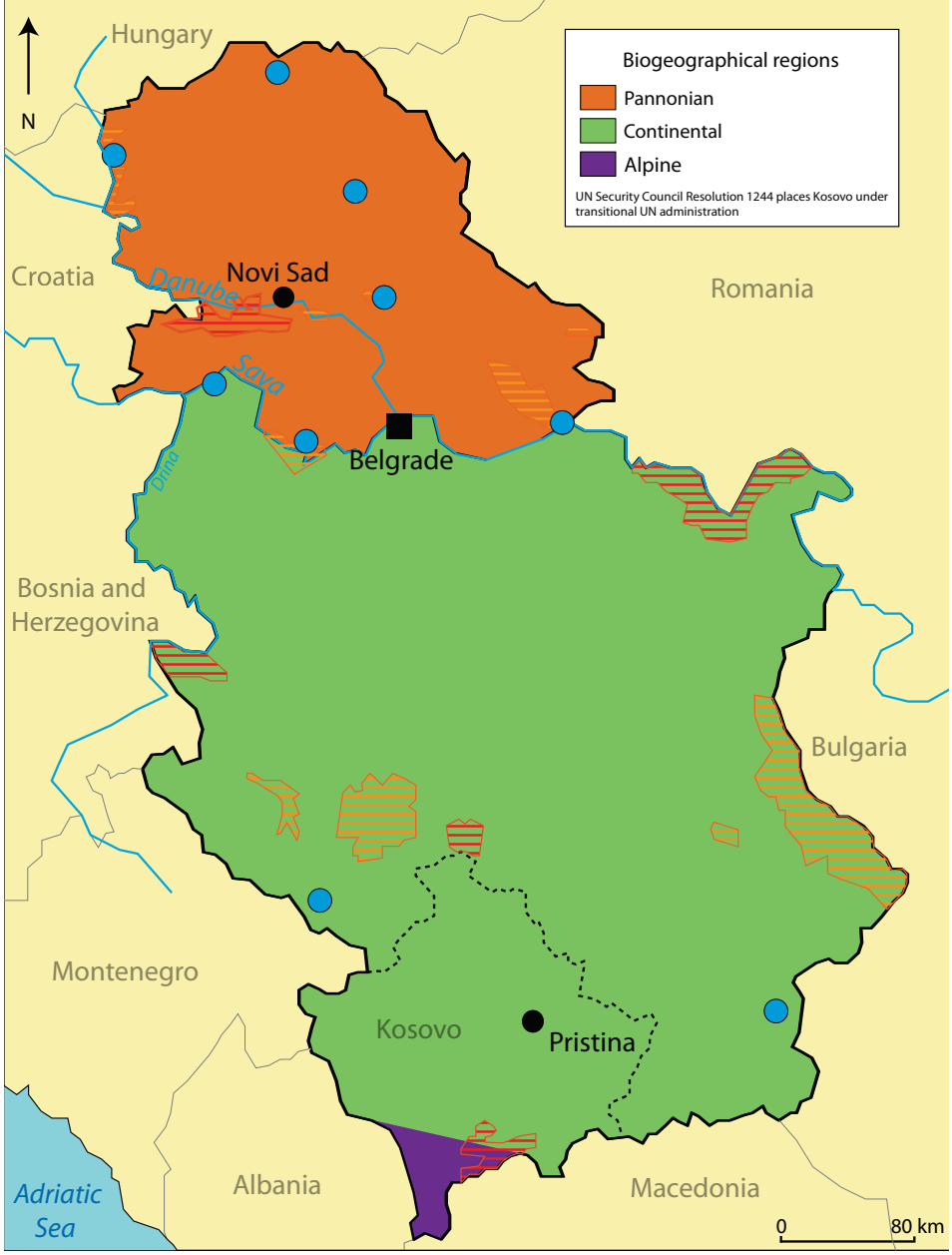
ECOSYSTEM SERVICES

Mining, specifically for coal, has degraded over 100 km² of fertile lands, notably in the very productive agricultural region of Stig. Forests are to a large extent overexploited and sustainable management plans are lacking, therefore impeding their regeneration capacity.

GOVERNANCE

The national protected areas network only covers 5.8% of the country, which is largely insufficient to comply with CBD requirements.
There is a lack of proper governance structures for protected areas that are to a large extent managed by forest companies.
Most of the national parks, notably the Kopaonik National Park, are threatened by uncontrolled urbanization, partly as a result of pressure from tourism.

The Deliblato Sands, a nature reserve since 1965, on the national tentative list of UNESCO World Heritage List candidates, is renowned as the oldest and largest desert in Europe, originating from the withdrawal of the Pannonian Sea. The reserve shelters numerous large mammals, including a small population of grey wolves, and is also an Important Bird Area. It was selected as part of the NATREG transboundary pilot project on integrated management of protected areas, involving Italy, Austria, Slovenia, Croatia, and Serbia.



Surface Area
88,361 km²

Population
2007 9.8 million
2020 9.8 million

Population Density
111 inhab./km²

GDP per capita
In Purchase Parity Prices
$ 10,635

Human Development Index
0.83

Ecological Footprint
In global hectares per capita
--

MAIN NATURE AREAS

Serbia is divided into two main biogeographic areas:

- North of the Danube, the Pannonian region encompasses the Autonomous Province of Vojvodina, characterized by a very productive agricultural plain.
- South of the Danube, a continental and more mountainous region harbours forests dominated by beech and oak trees. At the southern end, a more mountainous region belongs to the alpine biogeographic zone.

FOREST COVER : 28 % of land cover

Terrestrial Protected Areas			% of land cover
IUCN Cat. I-II	21	3,722.89 km²	4.2 %
IUCN Cat. III-IV-V	399	1,438.83 km²	1.6 %
Ramsar Sites	9	556.27 km²	
Biosphere Reserves	1	538.04 km²	
World Heritage Sites	0	-	
IBA	35		

The Golija-Studenica Biosphere Reserve, situated in southwestern Serbia at the fringes of the Dinaric mountain chain, contains a mosaic of various exceptional ecosystems, a result of the diverse terrain and the well-preserved forest cover. Plants found in the reserve represent over 25% of the Serbian flora. Mount Golija is also a refuge for many large mammals such as wolves and brown bears.

SLOVAKIA

Member of the EU since 2004, Slovakia lies on the boundary between the western Carpathian arch and Pannonian lowland areas in Central Europe. Altitude varies from 94 m to 2,655 m and the climate is temperate continental. Forests make up half of Slovakia's land cover, while the remaining territory consists mainly of agricultural land.

Karst topography, canyons and waterfalls, a dwarf pine belt, alpine meadows and lakes lie within the Tatra Biosphere Reserve, shared by Slovakia and Poland. The reserve includes Slovakia's oldest National Park, established in 1949. The area is renowned for its diverse flora and fauna, including 40 endemic plant species and the emblematic Tatra chamois and Tatra marmot.

FLORA AND FAUNA

Slovakia's identified biodiversity includes 12,618 plant species (3,352 higher plants) and over 24,500 animal species. Of the species assessed to date, 81 molluscs (59%), 16 fish (36%), 8 amphibians (44%), 5 reptiles (45%), 49 birds (40%), and 20 mammals (29%) are threatened at national level. Among the vertebrates included in the IUCN global Red List, 3.5% to 4.5% of Slovakia's mammals, 2% of birds, and 7% to 9% of fish are threatened. There are 18 invasive alien species according to the GISD and 994 species are classified as alien under DAISIE.

ECOSYSTEM SERVICES

Increased logging in recent years is a main threat to Slovakia's forests. In addition, forest health monitoring carried out by a state enterprise in 2007 found that up to 26% of trees were damaged.
Whereas the excessive use of biological resources was a main driver of biodiversity loss in the past, the decline of agriculture and land abandonment presently puts habitats of some rare species at risk, particularly in meadows.

GOVERNANCE

All protected sites have administrations in place. Management plans for Ramsar sites have been elaborated, but are yet to be approved. All endangered plant species on the national Red List of Plants are legally protected in situ. 771 animal species are also protected. Measures to address the threat of invasive species (616 identified taxa) are in progress. Specific eradication obligations have been adopted by ministerial decree for seven of these species, but management plans are yet to be developed. Since 1992, official cooperation between Slovakia, Hungary and Poland with regard to border protected areas, transboundary biosphere reserves and Ramsar sites has been established.

Surface Area
49,036 km^2

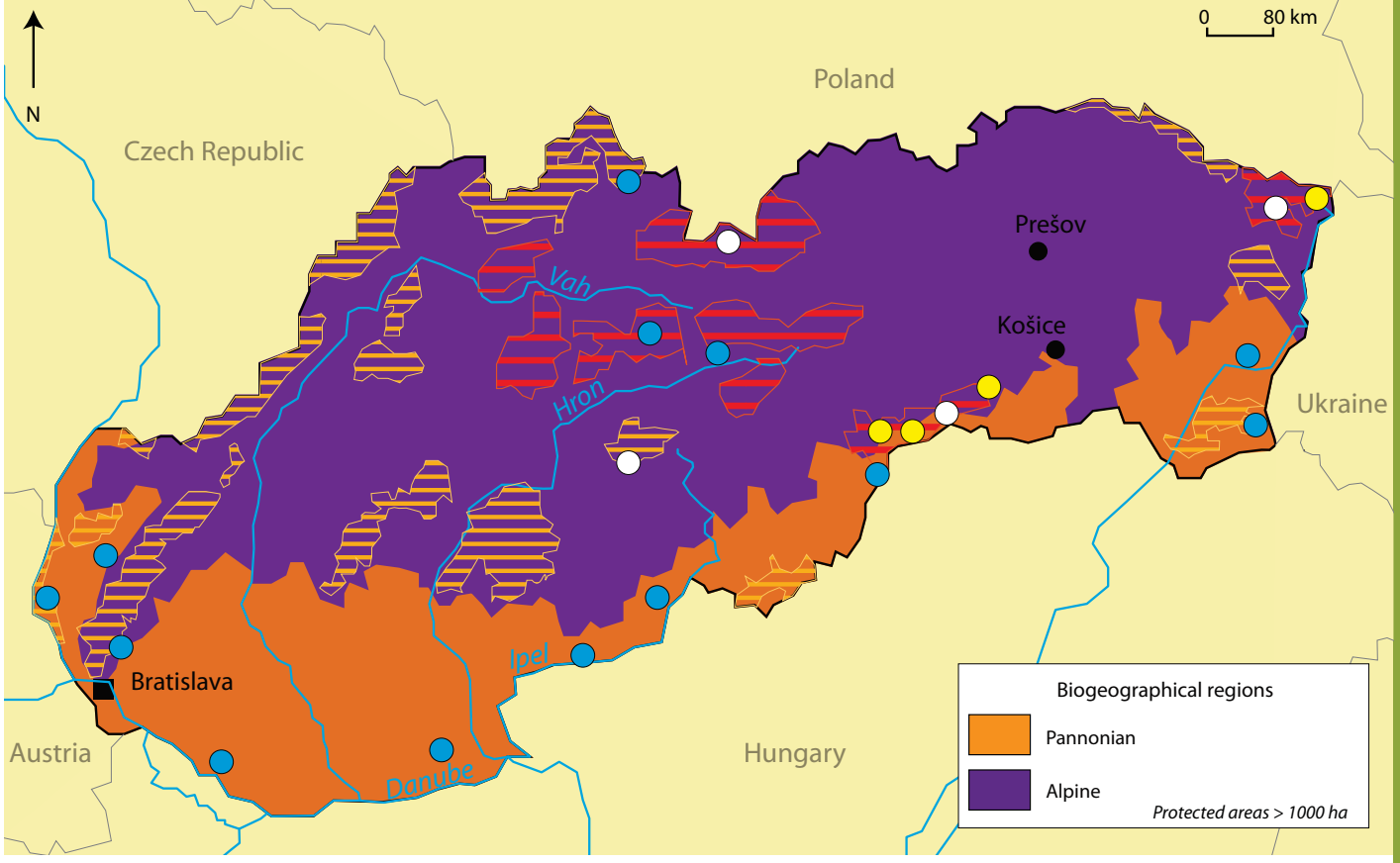
Population
2007 5.4 million
2020 5.4 million

Population Density
110 inhab./km^2

GDP per capita
In Purchasing Power Parity
$ 21,245

Human Development Index
0.88

Ecological Footprint
In global hectares per inhabitant
4.9



MAIN NATURE AREAS

The landscape is characterized by rugged mountains in northern and central Slovakia and lowlands in the south. Caves, wetlands, and a dense river network contribute to the country's ecosystem richness. 23 large-scale protected areas have been established. Habitat fragmentation caused by infrastructure development - in particular, recent expansion of the road network - is a main pressure on biodiversity. Aquatic and wetland ecosystems are among the most endangered, as a result of drainage, dams, industrial pollution and agricultural runoff. The contribution of agriculture to pollution has, however, decreased sharply in recent years.

A LIFE project carried out from 2003 to 2007 helped preserve the last remaining natural floodplain forests in the Slovakian part of the Danube floodplain, introducing sustainable forest management in the area. The forest habitats – made up predominantly of Common alder and European ash – are home to over 100 species of molluscs, 1,800 beetle species, the black stork and white-tailed eagle. The area was under threat from excessive cutting and degraded by unsustainable practices, pollution and eutrophication. Forest management plans were improved and nature reserves created or enlarged.

FOREST COVER: 25,208.38 km², 51.4 % of land cover (GLC, 2000); 19,100 km² (FAO, 2005)

WETLANDS : 1,987.90 km², 4.05 % of land cover

Terrestrial Protected Areas			% of land area
IUCN Cat. I-II	395	3,308.89 km²	6.75 %
IUCN Cat. III-IV-V	469	6,083.97 km²	12.4 %
Natura 2000 - SPA	38	12,236 km²	25.1 %
Natura 2000 - SCI	382	5,739 km²	11.7 %
Ramsar Sites	14	407.86 km²	
Biosphere Reserves	4	2,119.44 km²	
World Heritage	2	308.49 km²	*core zone*
		591.38 km²	*buffer zone*
IBA	40		

SLOVENIA

Located in Central Europe and member of the EU, Slovenia is divided into the Pre-Alps, the Dinarides, the Pannonian Plain, and the Mediterranean region. The country is predominantly hilly or mountainous. Mount Triglav is the country's highest peak, reaching 2,864 metres. The climate is Mediterranean along the coast and continental inland. Slovenia's economy is mainly based on industry, tourism and agriculture.

The Skocjan Caves, a UNESCO World Heritage Site, consist of an exceptional system of limestone caves, including collapsed sinkholes and around 6 km of galleries more than 200 metres deep, many cascades, and one of the largest known underground caverns. The site lies in the Kras region and is one of the world's most famous sites for the study of karst phenomena. It is also the world's largest underground Ramsar site and a remarkable aquifer for drinking water.

FLORA AND FAUNA

Over 22,000 plant and animal species have been documented in Slovenia. Unfortunately, 10% of all ferns and higher plants and 56% of all vertebrate species are threatened. The percentage even reaches 64% for the country's 81 freshwater fish species. In addition, 17 invasive alien species are found, some of which were voluntarily introduced for hunting or fishing. Slovenia is known for its underground fauna, unfortunately locally under threat from pollution.

ECOSYSTEM SERVICES

Many regions in Slovenia have been preserved and are suitable for ecotourism development. In the Sečovlje salt pans along the Adriatic coast, entirely protected as a natural park, salt continues to be manually exploited and the site is of interest for tourism.

GOVERNANCE

Slovenia has an important protected areas network covering almost 13% of the country. The equally developed Natura 2000 network, covering 36% of the country, has been created after Slovenia's accession to the EU. There is a long tradition of management planning, especially for forestry, which greatly contributes to the preservation of biodiversity. However, despite the country's species richness, there is a lack of taxonomic experts and of knowledge about several taxonomic groups. Furthermore, funds allocated to taxonomic research are insufficient and in decline.

Surface Area
20,274 km^2

EEZ
186 km^2

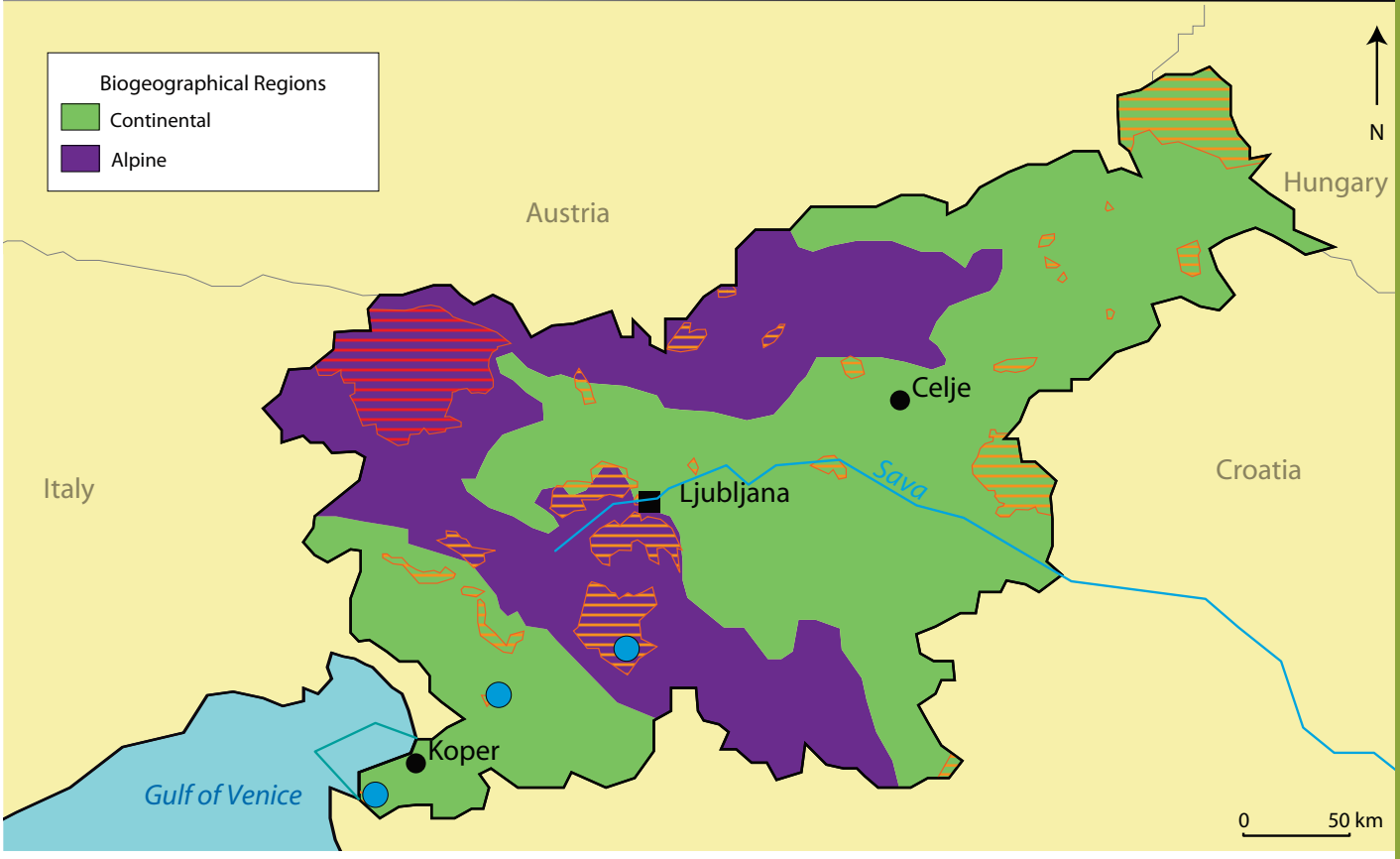
Population
2007 2 million
2020 2.1 million

Population Density
99 inhab./km^2

GDP per capita
In Purchasing Power Parity
$ 27,654

Human Development Index
0.93

Ecological Footprint
In global hectares per capita
3.9



MAIN NATURE AREAS

Slovenia is divided into two biogeographic regions: alpine and continental. Natural areas are characterized by a great diversity of landscapes fragmented in small units: coastal, marine, and forest ecosystems; numerous swamps and peat bogs; and a succession of several alpine zones. Slovenia is also famous for its karst habitats, covering over 40% of the country and including one of the world's major cave systems, which has been protected since 1922 for its exceptional value. Slovenian forests cover about 60% of the country and are home to large mammals such as the bear and lynx.

The olm *Proteus anguinus* is an extraordinary Slovenian species. This cave-dwelling urodele amphibian is highly adapted to its habitat : its skin lacks pigment, its atrophied eyes leave it blind and it retains its gills into adulthood.

FOREST COVER : 59.8% of land cover

WETLANDS : 1,200 km², 5.92% of land cover

Terrestrial Protected Areas			% of land area
IUCN Cat. I-V	479	2,649.19 km²	13 %
Marine Protected Areas	1	1.6 km²	0.9 % of the EEZ
Natura 2000 - SPA	26	4,618 km²	
Natura 2000 - SCI	260	6,397 km²	
Ramsar Sites	3	82.05 km²	
Biosphere Reserves	2	2,559.16 km²	
World Heritage Sites	1	4.13 km²	
IBA	26		

SWITZERLAND

The Swiss Confederation is a member of the United Nations and hosts numerous international institutions, including one of the two European offices of the United Nations, the Secretariats of the Ramsar and CITES Conventions, and the headquarters of two major nature conservation NGOs: IUCN and WWF. At the regional level, collaboration between Switzerland and the EU is regulated by several bilateral agreements. Switzerland became a member of the European Environment Agency (EEA).
Switzerland is located at the heart of Europe. About two thirds of its land area is covered by the Jura and the Alps, culminating at Dufourspitze at 4,634m. The climate is temperate in a transition zone, with an average temperature of 9°C and a rainfall level of 1,456 mm, a level that is much higher than in the rest of the European continent. While Swiss environmental policy has been successful in many areas, biodiversity is still endangered: 30 to 50% of all indigenous species are threatened. Landscape parceling and fragmentation of habitats continue.

Beaver reintroduction has been a true success. About 1,600 beavers can be found in the country today. However, the landscape has been completely transformed by man. There are frequent conflicts with human activities, mainly due to lack of space for aquatic habitats.

FLORA AND FAUNA

Relatively to its size, Switzerland is home to numerous species (19,000 plants and mushrooms, 40,000 animal species), thanks to its many altitudinal habitats. The percentage of threatened species is significant, for ferns and flowering plants (31% of 2,554 species), mosses (42% of 994), nesting birds (39% of 199), fish (58% of 55), reptiles (79% of 19), or amphibians (78% of 18). There are at least 60 globally threatened species in Switzerland (Endangered or Vulnerable according to IUCN) such as the lynx (reintroduced in 1971), the brown bear, and the wolf (natural return), the beaver, and many bat species. This figure has remained unchanged for the past 15 years. A report on alien biological organisms in Switzerland identifies about 800 non-indigenous and 107 invasive species: 5 mammals, 4 birds, one reptile, 3 amphibians, 7 fish species, 4 mollusks, 16 insects, 6 crustaceans, 3 spiders, 2 worms, 7 mushrooms, one bacteria, and 48 plants .

GOVERNANCE

Switzerland developed the Swiss Landscape Concept (1997) in view of fulfilling Switzerland's international obligations under the UN Convention on Biological Diversity. Further instruments and tools were put in place in order to address and implement the provisions of the Convention, including a comprehensive legal framework, cross-sectoral and sectoral strategic and programmatic baselines, the Biodiversity Monitoring Programme as well as a new instrument for financial equalization and division of tasks between the Confederation and the cantons.
In September 2008, the Federal Parliament, therefore, mandated the Swiss Federal Office for the Environment to elaborate a new and overarching National Biodiversity Strategy. The biodiversity strategy will orient biodiversity conservation over the next decades. Thanks to this strategy, the resilience of ecosystems will be strengthened, the provision of ecosystem services secured, and the mainstreaming of biodiversity into all relevant sectors fostered.

Surface Area
41,290 km²

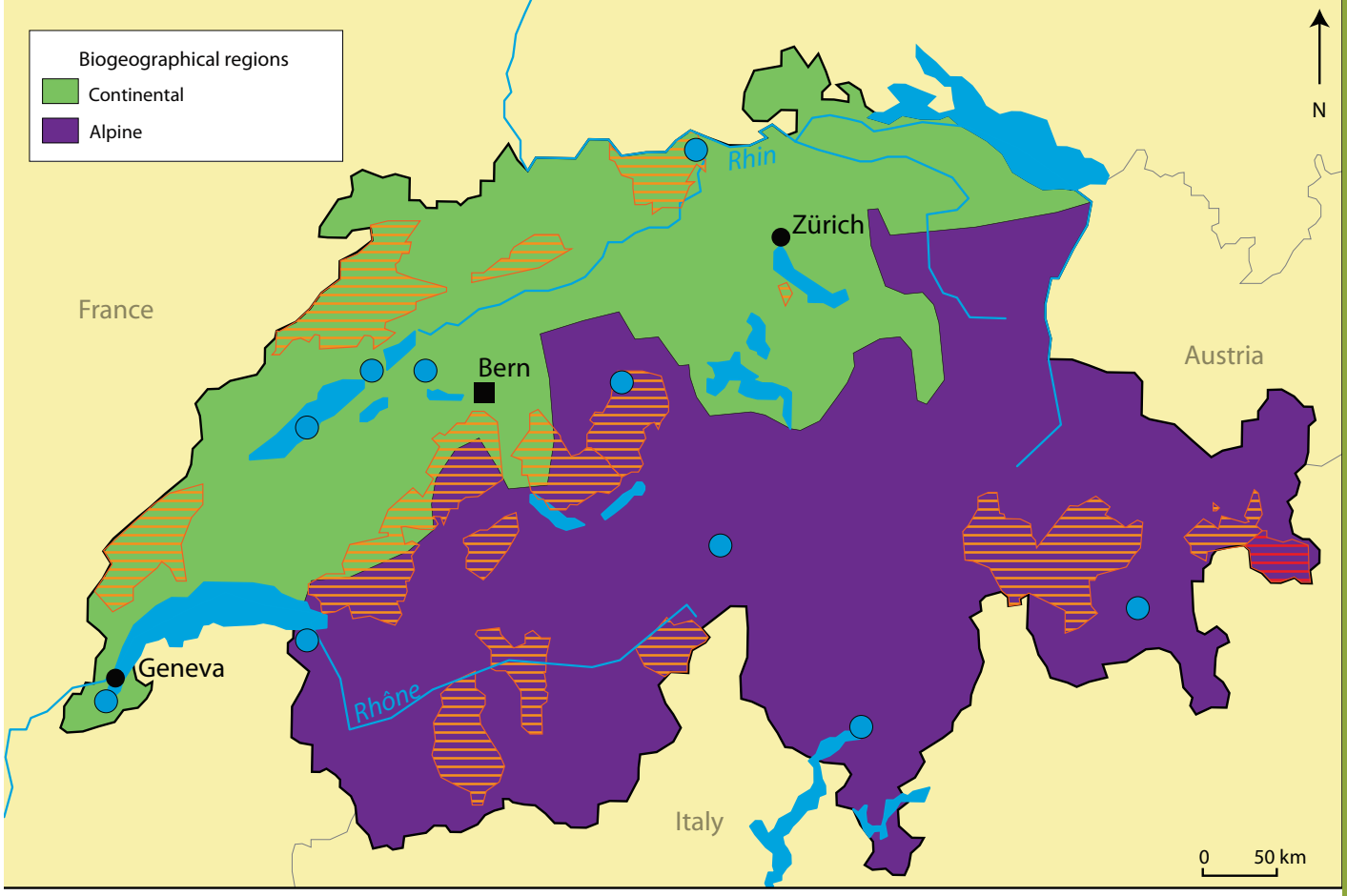
Population
2007 7.593 million
2020 7.9 million

Population Density
185 inhab./km²

GDP per capita
in purchasing power parity
$ 42,536

Human Development Index
0.96

Ecological Footprint
in global hectares per capita
5.6



MAIN NATURAL AREAS

Switzerland is divided into two biogeographic areas: continental and alpine. Natural habitats are very fragmented and are becoming increasingly artificial. Ecosystems of high ecological value, such as marshes, dry grasslands, or alluvial areas, have strongly declined due to land and water use.
Protected areas established for the purpose of biodiversity conservation (i.e. the National Park and Biotopes of national importance) are limited to 2.19 % of the territory, with another 4 % devoted to the conservation of selected animal groups (i.e. reserves for water birds and migrants, as well as federal hunting reserves). Additional protected areas are created at cantonal and communal level.

ECOSYSTEM SERVICES

Swiss forests produce 5 million cubic meters of wood and can receive up to 240,000 visitors each year. The value of Swiss forests for leisure and recreation is estimated at CHF 10 billion per year. About 40% of wooded areas provide effective protection against natural dangers such as avalanches, falling rocks, landslides, torrential flood, and floods. Forests contain 46% of all areas protecting groundwater.

FOREST COVER: 31 % of the national land area

WETLANDS : about 2,268 km² including 35 % under Cat. IV protection

Terrestrial Protected Areas			% of the land area
IUCN Cat. I-II	1	170 km²	0.41 %
IUCN Cat. I-V	5,837	2,398 km²	5.78 %
Ramsar Sites	11	86.76 km²	90 % under Cat. IV protection
Biosphere Reserves	2	566.89 km²	
World Heritage sites	1*	824 km²	

* 2 additional sites with geological formations are not included in this table (Monte San Giorgio and The Swiss Tectonic Arena Sardona).

The “Swiss Alps Jungrau-Aletsch” is a UNESCO World Heritage site, covering a high-altitude area of 824 km². It is located in the Berne and Valais cantons. It includes the Aletsch Glacier, the largest in Europe and three major peaks: the Eiger, the Mönch, and the Jungfrau. Over 1,800 species of vascular plants, 700 mosses, and 42 mammals have been documented in the park.

UKRAINE

The second largest country in Europe, Ukraine has a relatively flat landscape. The mountain ranges of Central Europe and the Mediterranean end here, to the west (where the Carpathians reach 2,061 m at Mount Hoverla) and on part of the Crimean Peninsula. Ukraine has a significant river network, including the Dnipro, the Dniester and the Danube, whose delta is shared with Romania. Climate is mainly continental but with a Mediterranean component in Crimea. Agriculture still covers 71% of the territory, particularly on the fertile lands of the country's central plains, but accounts for only 8 % of GDP.

In recent years, Ukraine has placed a strong emphasis on environmental education, especially for children, with the support of around 200 nature centers scattered throughout the country.

FLORA AND FAUNA

Flora is extremely diversified, with a total of 5,100 vascular plant species, over 15,000 fungi and Myxomyceta species, more than 1,200 lichen species, over 800 moss species, and 5,000 algae species. Fauna includes 108 species of mammals, 425 of birds, 233 of fish, 19 of amphibians, 21 reptile species, and over 40,000 invertebrates including 35,000 insect species.
In 2009, the Red Data Book of Ukraine listed as vulnerable or threatened 612 vascular plants and 542 vertebrates: 69 fish species, 8 amphibians, 11 reptiles, 87 birds and 68 mammals.

ECOSYSTEM SERVICES

Local economy still largely depends on agriculture. Coastal tourism is also significant in Crimea. Local ecosystems provide a number of services, such as forest products, medicinal plants, and fish. Fish catch over the last five years varied from 53 to 82 thousand tons. Some About 100 species of vascular plants are used for medicinal, food and technical purposes.
An example of sustainable use of biological resources is reed harvesting, an important component of the local economy in Ukraine's southern regions.
The rearing of local cattle breeds is a traditional activity in the floodplains of the Danube delta.

GOVERNANCE

Action plans for the conservation of Brown Bear and European Bison are set out in the State Programme of the National Ecological Network Development of Ukraine (2000-2015).
The national network of protected areas only covers 5.4% of the country, which is insufficient to comply with CBD commitments. Ukraine is involved in several transboundary conservation projects: Shatsky and Poleski National Parks (with Poland), East Carpathian Biosphere Reserve (with Poland and Slovakia), Danube Delta Biosphere Reserve (with Romania), Transboundary Reserve Desnyanske Polissya (with Russia).

Surface Area
603,628 km²

EEZ
72,000 km²

Population
2009 45.96 million
2020 46.3 million

Population Density
76 inhab./km²

GDP per capita
In Purchasing Power Parity
$ 6,339

Human Development Index
0.8

Ecological Footprint
In global hectares per inhabitant
2.7

MAIN NATURAL AREAS

The country is divided into four biogeographic regions: Continental in the north, Steppes in the south and east and Alpine and Pannonian at the western end. Natural and semi-natural vegetation covers 29% of the landscape, mainly including forests, grasslands, wetlands, steppes, and saline habitats. About a quarter of the Danube Delta, a wetland of international importance, lies in Ukraine.

The Biodiversity Conservation Project in the Azov-Black Sea Corridor was launched in 2003, in collaboration with the Global Environment Facility. The project aims at preserving coastal biodiversity by strengthening the networks of protected areas and the management of connecting agricultural lands.

FOREST COVER : 97,000 km², 15.7% of land cover

WETLANDS : 34,026 km², 23.5% under a form of protection

Terrestrial Protected Areas			
IUCN Cat. I-II	70	16,720 km²	
IUCN Cat. III-IV-V	6,912	20,205 km²	5.4 % of land cover
Marine Protected Areas	1	4,025 km²	
Ramsar Sites	33	6,762.51 km²	55 % under a form of protection
Biosphere Reserves	7	4,522.61 km²	70 % under a form of protection
World Heritage Sites	1	582.57 km²	100 % under a form of protection
IBA	141		

CONTINENTAL STATES
IRAQ
KUWAIT
BAHRAIN
QATAR
SAUDI ARABIA
OMAN
YEMEN
INDIA
BANGLADESH
MYANMAR
THAILAND
SINGAPORE
MALAYSIA
INDONESIA
PAKISTAN
EGYPT
SUDAN
ERITREA

INDIAN OCEAN

DJIBOUTI
SOMALIA
KENYA
TANZANIA
MOZAMBIQUE
SOUTH AFRICA
AUSTRALIA

ISLAND STATES
MADAGASCAR
COMOROS
ARCHIPELAGO
SEYCHELLES
MAURITIUS ISLAND
MALDIVES
SRI LANKA

DEPENDENT TERRITORIES
MAYOTTE (F)
REUNION ISLAND (F)
RODRIGUES (MAURITIUS)
ANDAMAN AND NICOBAR ISLANDS
(UNION TERRITORIES OF INDIA)
CHRISTMAS ISLAND (AUSTRALIA)
COCOS ISLANDS (AUSTRALIA)
INDONESIAN ISLANDS OF
SUMATRA AND JAVA
ZANZIBAR
FRENCH SOUTHERN AND
ANTARCTIC ISLANDS (F)

Number of countries
31 independent States
10 dependent territories

The Indian Ocean stretches on 75 million km² between Africa, the south of Asia, Australia, and the 60th parallel south marking the separation with the Southern Ocean. The corresponding region includes both continental countries and island states and dependent territories. Island states and territories members of the Francophonie are concentrated in the south-western part of the Indian Ocean. The main marine routes between the Middle East, East Africa, South Asia and Europe and America are found here. In addition, 40% of the world's offshore oil is produced in the region. Seaside tourism is well developed.

There are 3 regional cooperation organizations: the Common Market for Eastern and Southern Africa (COMESA – 1994), the Indian Ocean Commission (IOC - 1982) gathering island States, and the Intergovernmental Authority on Development (IGAD – 1996) including countries from the Horn of Africa. IOC and IGAD have environmental and biodiversity policies, leading to the development of an important cooperation program with the European Union under the 10th EDF.

BIOGEOGRAPHICAL DATA

Island States and territories members of the Francophonie cover 9 marine ecoregions divided between the Western Indo-Pacific and the Temperate Southern Africa biogeographic regions and 27 terrestrial ecoregions included in the Afrotropical biogeographic region.

Due to the warm temperature of its waters, phytoplankton production is low and halieutic resources are limited.

STATUS OF CONSERVATION IN THE REGION

Appropriate measures for the protection of terrestrial nature areas are in place, but pressures related to population growth, urbanization and coastal tourism constitute a major challenge for the future. Marine environments are insufficiently protected, with a few exceptions (such as the French Southern and Antarctic Lands).

The Indian Ocean: A region of high endemism, home to the Coclacanthe, lemurs, the world's largest land turtles, the 'Cocoama' palm tree, numerous amphibians and reptiles. But this endemism is highly threatened, given its insular nature.

SPECIFIC RECOMMENDATIONS

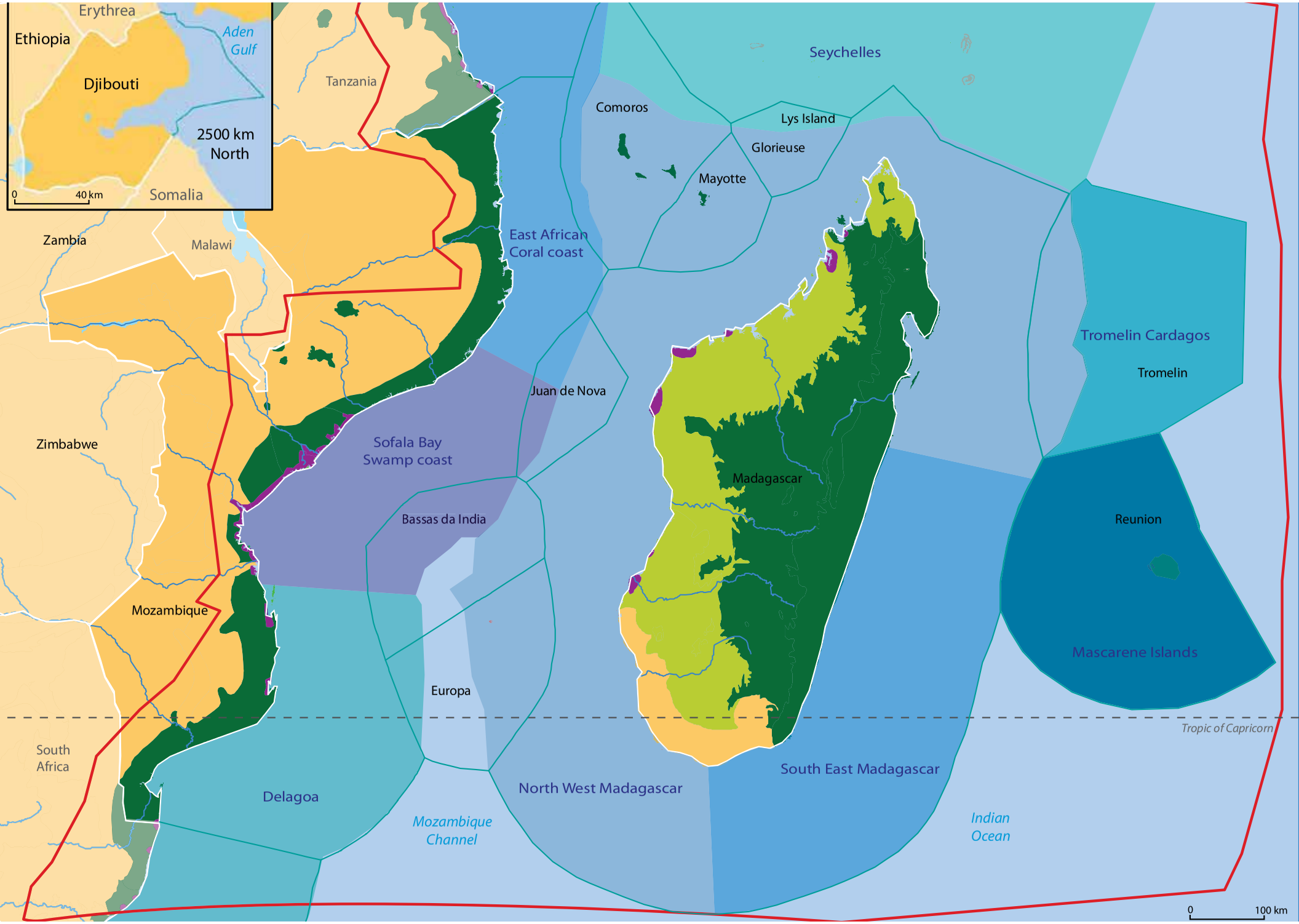
Regional cooperation (IOC, IGAD) already focuses on sustainable management of natural habitats. The cooperation agreements with the European Union should be used to reinforce regional cooperation and establish a network of marine protected areas.

SPECIES DIVERSITY

The Indian Ocean has remarkable terrestrial and marine biodiversity, with a very high level of island endemism, as symbolized by Madagascar.

There are 7 biodiversity hotspots in the Indian Ocean, out of which 2 include member states of the Francophonie: the Horn of Africa (Djibouti), Coastal Forests of Eastern Africa (Mozambique) and one hotspot including only Francophonie States and territories: Madagascar and the Indian Ocean Islands (Comoros, Madagascar, Mauritius, Seychelles, Mayotte, Reunion, Scattered Islands). This highlights both the exceptional biodiversity of this area and its high vulnerability due to the loss of forest cover and pollution risks from hydrocarbons.

Protection of the marine environment: a key priority for the coming decade.


Erythrea
Ethiopia
Aden Gulf
Djibouti
2500 km North
0
40 km
Somalia
Tanzania
Seychelles
Comoros
Lys Island
Glorieuse
Mayotte
Zambia
Malawi
East African Coral coast
Tromelin Cardagos
Tromelin
Juan de Nova
Zimbabwe
Sofala Bay Swamp coast
Madagascar
Bassas da India
Reunion
Mozambique
Mascarene Islands
Europa
Tropic of Capricorn
South Africa
South East Madagascar
North West Madagascar
Delagoa
Mozambique Channel
Indian Ocean
0
100 km

COMOROS

A member of COMESA, the Union of the Comoros is an archipelago of three islands: Grande Comore (N'Gazidja), Mohéli (Mwali), and Anjouan (N'Dzouani). It is located at the north entrance of the Mozambique Canal. The highest points are 2,361m on Grande Comore (Mt. Karthala – a still active Strombolian volcano), 1,595m on Anjouan (Mt. N'Tingui), and 765m on Mohéli (Mt. Kibouana). The climate is wet tropical and annual rainfall varies between 1,200 mm to 5,800 mm based on altitude and orientation. The economy is mainly based on agriculture and fishing.

FLORA AND FAUNA

The number of vascular plant species is estimated at about 2,000 with 350 aromatic and medicinal plant species. There are few mammals (28 species including the dugong and 12 cetacean species). In addition, the country has 101 species of birds, 25 of reptiles including 4 sea turtles, 16 of freshwater fish, 820 of marine fish with the exceptional coelacanth, a still poorly known relict taxon. There are 14 threatened species (higher plants: 4, mammals: 5, birds: 8, and reptiles: 2). There are many endemic species, for plants (over one hundred among the 600 known local species, including 43 orchids), mammals (2 species and 3 sub-species), birds (14 species and 35 sub-species), and reptiles (11 species - 45 %).

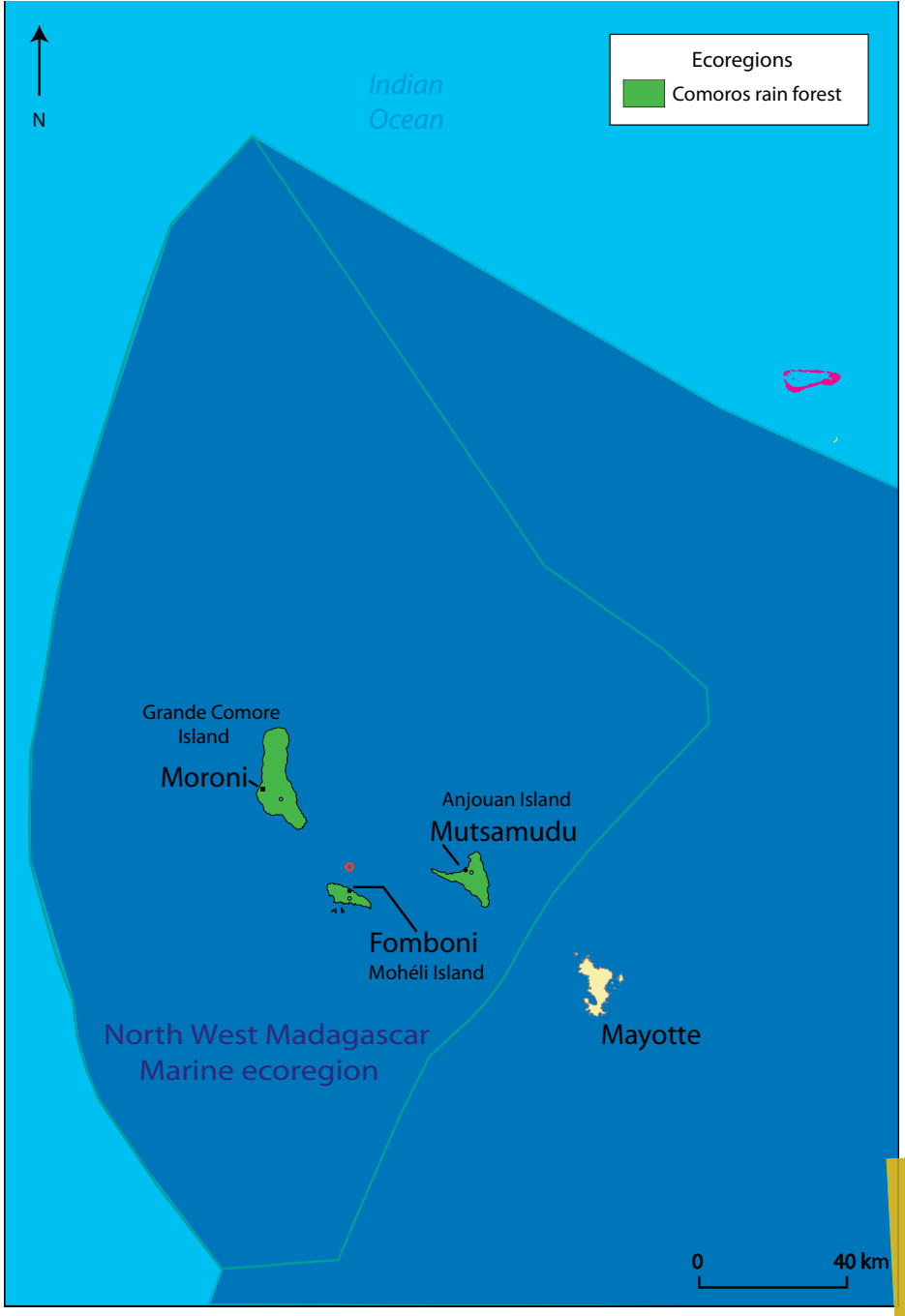
To reduce tree felling for fuelwood, kerosene is subsidized and there are ongoing efforts to reduce forest cover loss due to the distillation of ylang ylang for perfume.

ECOSYSTEM SERVICES

Biodiversity is severely impacted by habitat degradation. If deforestation continues at the current rate, all primary forests might disappear by 2020. Disappearance of surface water due to clearing and erosion constitutes a serious issue. Use of illegal fishing techniques (toxins, dynamite) is extremely harmful for marine ecosystems: it contributes to the destruction of coral reefs and overfishing along the coasts, notably for Holothuroidea or "sea cucumbers".

GOVERNANCE

Several biodiversity assets of the Union of the Comoros are of global importance but knowledge is still lacking, hampering management. Because of the lack of information, the population has little knowledge of the 2001 decree on flora and fauna protection. A Mohéli Marine Park was created. Priority sites to be designated as protected areas have been identified (the Karthala Range, the coelacanth marine area, Mt. N'Tingui, Bimbini Peninsula, the South Mwali watershed). No mechanism exists to encourage and promote effective participation of local communities in natural resource conservation activities.



Surface Area
1,862 km²

EEZ
370 km wide

Population
2007 0.6 million
2020 0.8 million

Population Density
322 inhab./km²

GDP per capita
in purchasing power parity
$ 1,173

Human Development Index
0.58

The Union of the Comoros has numerous globally threatened marine species: coelacanths, humpback whales, dugongs, and sea turtles. Territorial waters are visited by cetaceans and Mohéli is the largest nesting site for sea turtles in the Indian Ocean.

MAIN NATURAL AREAS

Of volcanic origin, the islands are surrounded by several coral reefs. Landscape formations and the island nature of the country create micro-climates and a great diversity of terrestrial and marine habitats: pioneer vegetation on lava flow, alpine moorlands, rainforests, xerophile forests, grasslands and shrubby savannas, mangroves, coral reefs, rocky, sandy, or muddy coastal areas, lagoons, shallows with sea grass beds, and several thousand-metre deep sea trenches. Despite the great variety of habitats, the Comoros only have one marine protected area covering a single ecoregion.

FOREST COVER : 118.92 km², 9 % under protection

Marine Protected Areas			
IUCN Cat. I-II	1	404 km²	0.2 % under protection
Ramsar Sites	3	160 km²	

DJIBOUTI

The Republic of Djibouti has a coastal front of 372 km, from the Red Sea to the Gulf of Aden in the Indian Ocean. It has a strategic position, notably at the Bab el Mandeb Strait. With an arid tropical climate (the average annual rainfall is 150 mm) Djibouti is under environmental constraints and at risk of natural disasters due to the presence of a seismic zone with volcanic activity. The highest point is Mt. Moussa Ali (2,000 m) while Lake Assal is 155 m below sea level. With small-scale fisheries and nomadic farming, the tertiary sector represents over 80 % of the GDP. The country is a member of CEN-SAD and COMESA.

Djibouti has two endemic birds strictly restricted to the country (Goda and Mabla Regions): the Djibouti Francolin and the Melba Finch.

FLORA AND FAUNA

Terrestrial fauna and flora have diversified to develop resistance capacities to drought. Marine life includes over 400 coral species (including 3 species of black corals) and 1,500 species of fish. For both marine and terrestrial habitats, Djibouti has documented to date 826 species of plants and 1,417 species of animals (mammals: 66 including 11 cetaceans, birds: 360, reptiles: 40, amphibians: 3, fish: 455, invertebrates: 493). 22 species are globally threatened: 4 tree species from mountain ranges, 8 mammals, 6 birds, and 4 sea turtles. Djibouti is a major site for bird migration on the north to south trans-continental routes with the passage of up to one million birds per year.

ECOSYSTEM SERVICES

The major causes of resource decline include habitat degradation due to settlement and excessive pasture, and poaching and capture for trade of many terrestrial and marine species. Development of port activities could also become a local threat to the exceptional biological richness of the Red Sea, one of the world's most renowned diving sites.

GOVERNANCE

Environmental concerns are integrated in some sectoral activities such as fisheries. There are programs promoting resource conservation. Since 2000, potential new areas for protection have been identified. However, the collection of corals and other protected species continues in classified marine areas due to a lack of enforcement. For instance, killing of sharks for fin trade leads to the disappearance of the stocks while capture of sea turtles and egg collection are still common activities.

Surface Area
23,000 km²

EEZ
7,190 km²

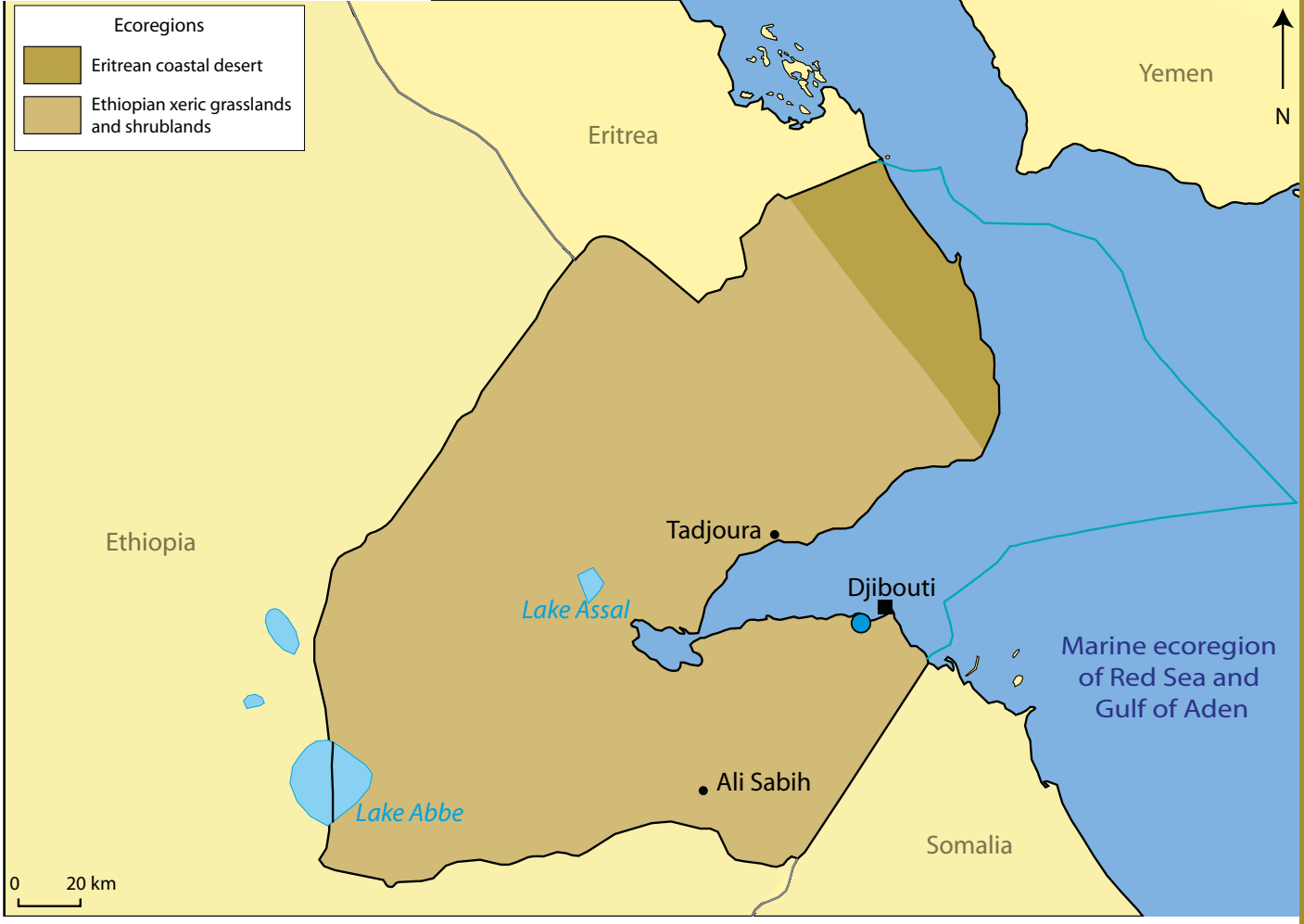
Population
2007 0.8 million
2020 1 million

Population Density
34.5 inhab./km²

GDP per capita
in purchasing power parity
$ 2,605

Human Development Index
0.52

Ecological Footprint
in global hectares per capita
0.9



MAIN NATURAL AREAS

Natural landscapes are diverse, from mountains in the north, to semi-arid or desert plain areas, to plateaus and depressions, Lakes (Assal and Abbe), and lagoons. The Red Sea, one of the most saline in the world, has numerous islands, coral reefs, and undersea gardens. There are 4 terrestrial protected areas and 3 marine protected areas in Djibouti. The country is included in 2 terrestrial ecoregions with 4 xerophile formations and the larger ecoregion of the Red Sea and the Gulf of Aden.

Djibouti is known for its rich ichtyological fauna in coral reefs (134 species including 22 endemics) including highly demanded ornamental fish. Because these fish eat starfish larvae, their over-exploitation leads to a proliferation of this species, compounding the negative effects of excessive anthropogenic pressures.

FOREST COVER : 2,200 km², 15 % under protection

WETLANDS : 892 km², 10 % under protection

Terrestrial Protected Areas			
IUCN Cat. III-IV-V	4	2,389.96 km²	10.3 % of land area
Marine Protected Areas			
IUCN Cat. III-IV-V	3	444 km²	6.2 % of the EEZ
Ramsar Sites	1	30 km²	-
IBA	1	410 km²	10 % under protection

FRANCE REUNION, MAYOTTE, SCATTERED ISLANDS

Reunion
Overseas region and department of volcanic origin, with a maximum altitude of 3,609 m. Economic sectors related to natural resources include agriculture (sugarcane) and tourism

Mayotte Islands
Overseas collectivity of volcanic origin with a wet tropical climate, located in the Comoros Archipelago. Economic activities related to natural resources: small-scale agriculture and fisheries, aquaculture, and tourism

Scattered Islands
Very low-altitude coral islands; three of the islands are found in the Mozambique Canal and the last one north-east of Reunion. No permanent inhabitants except for some representatives of TAAF

FAUNA AND FLORA

Reunion
The level of terrestrial endemism is high (34% of flowering plants, 47% of coleopterans, 33% of butterflies, 20% of birds), but numerous species have been introduced. The marine realm has a lower rate of endemism (10% of mollusks and fish).
According to the Red List, 12 plant and 22 animal species have gone extinct, while 98 plants and 28 animal species are threatened. The Great-winged Petrel is critically endangered.

Mayotte
The level of endemism varies greatly, from low for plants and vertebrates to very high for insects and mollusks (about 35%). Marine and reef specific diversity is very important (particularly for corals).

Scattered Islands
There is a very low level of terrestrial endemism but some very important sea birds colonies are found here. In addition, Europa and Tromelin include significant nesting sites of green turtles. Marine habitats remain undocumented.

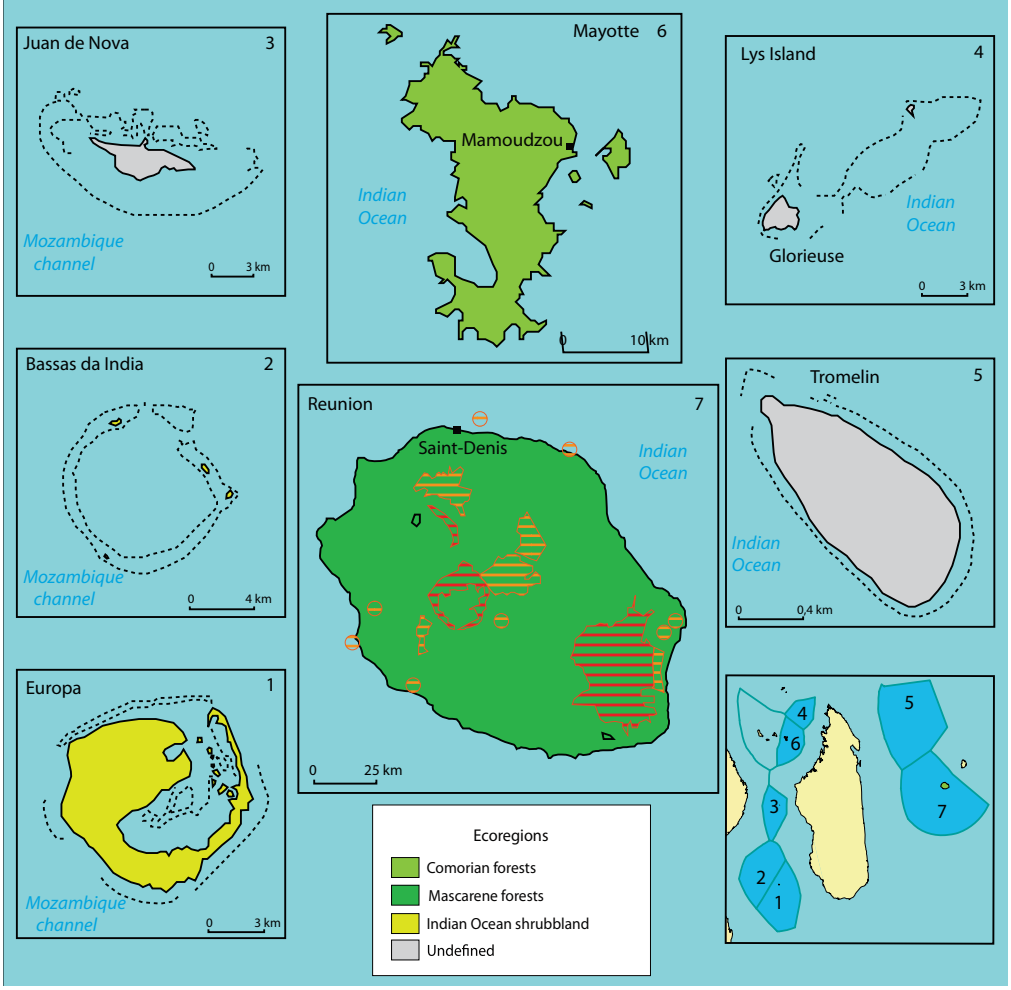
GOVERNANCE

The reference text for the region is the 1985 Nairobi Convention.
Terrestrial indigenous flora and fauna are protected on Reunion Island. This is also the case for some marine species on Mayotte.
Main protection measures include the creation of Les Hauts National park in Reunion (designated World Heritage Site in 2010) and of the Mayotte Marine Park (2010).
Many species were introduced and some are problematic, including the giant bramble in Reunion. Action programs are underway but there are no regulations pertaining to introductions of alien species.

Mayotte :
One of the world's most important reef-lagoon complexes.

ECOSYSTEM SERVICES

On islands where human populations are present, marine resources are overexploited and forest cover is degraded by agricultural activities and infrastructures. The lagoon in Mayotte is threatened by terrigenous sediments and pollution related economic activities, coral bleaching events due to ocean warming and predation by the starfish *Acanthaster planti*. Coastal urbanization reduces the ability of ecosystems to protect populations against natural disasters such as hurricanes or tsunamis (buffer zone).



Surface Area
Reunion 2,512 km²
Mayotte 374 km²
Scattered Islands 44 km²

EEZ
Reunion 322,000 km²
Mayotte 62,000 km²
Scattered Islands 640,400 km²

Population
Reunion (2007) 802,993
Mayotte (2007) 186,500

Population Density
Reunion 320 inhab./km²
Mayotte 499 inhab./km²

MAIN NATURE AREAS

Reunion
The Mascarene Islands including Reunion form a special biogeographic unit with a very high level of endemism also accentuated by the landscape. However, the low-altitude climax forest has disappeared. Marine biocenoses are poorly known and coral reefs are highly restricted on the western part of the island.

Mayotte
The climax forest has entirely disappeared and natural vegetation cover represents only 3 % of the island. The reef-lagoon complex, covering about 1,500 km², is the most significant in this part of the Indian Ocean. Mangrove is found at the end of most bays (30 % of the coastline), covering about 720 ha.

Scattered Islands
These very small islands mostly contain shrub formations and grasslands as original forests (e.g. on Glorioso Islands) have disappeared. Mangrove is mostly found on Europa Island. Despite its richness, marine biodiversity remains poorly known.

Europa and Tromelin: islands of exceptional significance for global biodiversity:
- Breeding sites for green turtles and numerous sea birds
- Many endemic plant, mollusk, insect, and bird species

Europa could become an indicator on the effects of climate change.

FOREST COVER : Reunion 910 km² (36 %), Mayotte 159 km² (42,5 %)

Terrestrial Protected Areas			
Reunion IUCN Cat. II	1,000 km²	1	42 %
Reunion IUCN Cat. IV	202 km²	17	8 %
Mayotte IUCN Cat. II	5.8 km²	1	1,5 %
Mayotte IUCN Cat. IV	6.4 km²	4	1,7 %
Scattered Islands			
Marine Protected Areas			
Reunion IUCN Cat. IV	25 km²	1	
Mayotte IUCN Cat. V/VI	700 km²		
Mayotte IUCN Cat. II	41.8 km²	1	
Mayotte IUCN Cat. IV	10.83 km²	1	
Scattered Islands			
MAB		0	
World Heritage		1	
IBA		4	

MADAGASCAR

An “island continent”, the Republic of Madagascar is the 4th largest island in the world (1,580 km from north to south and 500 km from west to east, with a coastline of 4,828 km). Its highest point is Maromokotra (2,876 m), and the rugged terrain is marked by an east-west asymmetry and a highlands/coastlands contrast. The climate, with two seasons, is tropical in the north/north-west, with moister variations on the eastern coast, subtropical/temperate in the center, and semi-arid in the southernmost part of the country. The economy of the “Great Island” is mainly based on agriculture, tourism, and exploitation of its many mineral assets. Madagascar is a member of COMESA.

The National Association for the Management of Protected Areas (ANGAP), now Madagascar National Parks, is a recognized public interest entity created in 1990. Since 2005, it has received the support of the Madagascar Foundation for Protected Areas and Biodiversity (FAPBM), also a private and recognized public interest body.

FLORA AND FAUNA

Relatively to the country’s surface area, the rate of endemism of the Madagascar flora is unique (90% of all species). Fauna is highly diverse with an equally important rate of endemism (80 % of species and 70 % of all genera). The large herbivores and predators of the neighbouring continent are not found here, with the exception of the bush pig, but there are 155 species of mammals with 142 endemics. Bird fauna includes 283 species and 116 endemics, and there are 244 amphibian species (with a rate of endemism of 99 %), and 370 reptile species (92 % endemic). Marine fauna is also diverse, although still poorly known. There are 43 exotic invasive species. According to the IUCN Red List, 276 species of vascular plants, 63 of mammals, 35 of birds, 20 of reptiles, and 67 amphibians are threatened.

GOVERNANCE

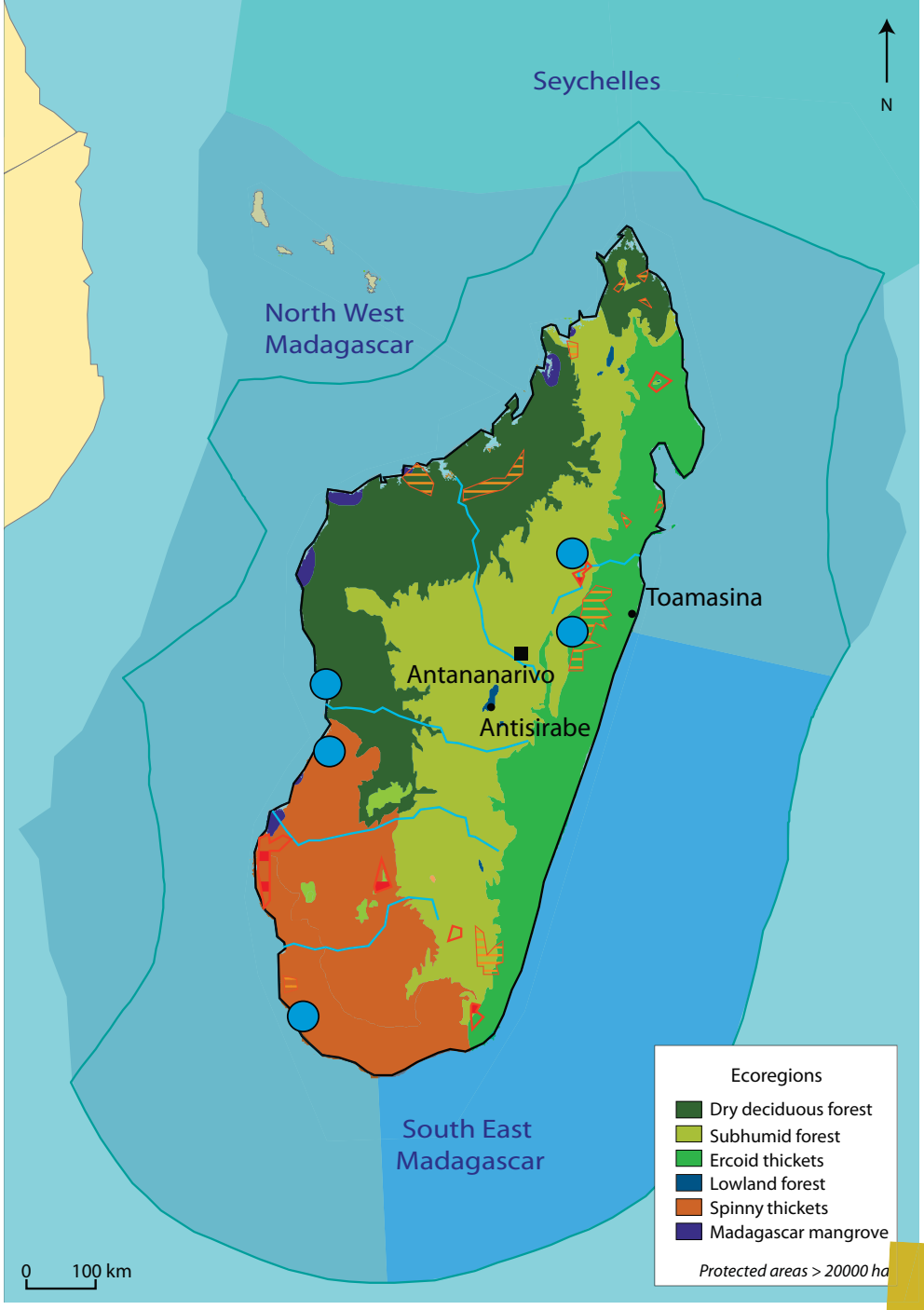
As early as the end of the 1980s, Madagascar was strongly involved in environmental protection. While implemented measures have not fulfilled all expectations, efforts to prevent environmental degradation and loss of biodiversity have been encouraging. In 2003, the government announced the tripling of the surface of protected areas to reach 6 million hectares. As of December 2005, one million hectares of new protected areas had been designated. However, as demonstrated by the current serious issue of illegal logging and export of precious woods, these gains are not fully guaranteed.

ECOSYSTEM SERVICES

The exceptional biological diversity of Madagascar is under pressure from the tavy cultivation practice, or slash-and-burn, associated with strong degradation of the forest cover. Soil erosion from deforestation and excessive pasture leads to desertification. The annual costs of environmental degradation are estimated at 80 to 250 million Euros.

MAIN NATURAL AREAS

The Highlands, running along a north-south axis, cover part of the island and create diverse vegetation landscapes: rainforests on the eastern flank, dry forest/savannas in the west, and xerophile bushes with spiny and succulent plants in the south-west, wetlands, mangroves, beaches, lagoons, and coral reefs. The diversity of habitats enables great fauna diversity, making Madagascar one of the world’s symbols for biodiversity.



Surface Area
587,295 km²

EEZ
1,140,000 km²

Population
2007 18.6 million
2020 25.7 million

Population Density
32 inhab./km²

GDP per capita
in purchasing power parity
$ 970

Human Development Index
0.543

Ecological Footprint
in global hectares per capita
1.2

FOREST COVER : 92,942 km², or 15.8 % of the land area, 9.15 % under protection

WETLANDS : 9,689 km², 78 % under protection

Terrestrial Protected Areas	75	45,478 km²	7.74 % of the land area
IUCN Cat. I-II	28	21,853 km²	
IUCN Cat. III-IV-V	39	10,361 km²	
IUCN Cat. VI	9	13,264 km²	
Marine Protected Areas	4	138 km²	0.02 % of the land area
Ramsar Sites	7	11,445 km²	-
Biosphere Reserves	2	1,660 km²	-
World Heritage Sites	2	632 km²	-
IBA	84	-	

The Great Island is one of the world's priority areas for primate conservation, with a high level of diversity (4 families, 15 genera, over 100 species but 41 % are threatened) and an unparalleled level of endemism. The high rate of endemism for all groups is also reflected by the rate for amphibians (99 %) including one of the most famous species, the tiny and bright orange *Mantella aurantiaca*.

MAURITIUS

The Republic of Mauritius is located in the Mascarene Archipelago. It mainly includes Mauritius Island (91 % of the land area), reaching 828 m at Piton de la Petite Rivière Noire, and several islets and reefs (the Rodrigues, Cargados Carajos, and Agalega Islands). The climate is tropical with two seasons and is tempered by south-east trade winds. A member of COMESA, SADC, IOR- ARC, and IOC, the country has a continuously developing economy.

The dodo has "survived" its extinction. An emblem of Mauritius, this flightless bird which stood about a meter high and weighed about 20kg, has become a world symbol for the fight against the extinction of species. Another sub-regional emblematic bird, the elegant white-tailed tropicbird, adorns the wings of the national airline.

FLORA AND FAUNA

The original flora mainly included large stands of ebony. Some are still remaining in the south-west of Mauritius Island. About 80% of the flora is considered to be threatened, and more than 100 species are represented by fewer than 10 individuals in the wild. Similarly, fauna has been deeply affected by natural habitat changes, over-exploitation, and the introduction of exotic species such as the cattley guava forming dense and impenetrable shrubs. Threatened species include 2 mammals, 11 birds, and 7 reptiles. Chiropterans are the only remaining indigenous mammals (the Rodrigues flying fox endemic to Rodrigues Island and the Mauritian flying fox). There are 1,700 identified marine species, including 786 fish species.

ECOSYSTEM SERVICES

The major part of the landscape consists of large expanses of sugarcane plantations. Natural habitats are seriously degraded. Mauritius is one of the most densely populated countries, with a population growth rate now stabilized around 1 %. This strong anthropogenic pressure requires specific attention to water and waste management, marine pollution, coastal management, overfishing, and urbanization. The latter factor might impact potential areas of interest for tourism.

GOVERNANCE

The network of conservation areas is developing, with a well defined legal framework to address environmental issues, particularly for marine habitats. The terrestrial biodiversity of Rodrigues Island is highly threatened but its coral reefs are among the best preserved in the Western Indian Ocean. The "Mauritius Environment" Charter establishes a platform of civil society groups working on environmental protection. Several species preservation and reintroduction programs are ongoing, in collaboration with NGOs such as the Mauritius Wildlife Foundation. There has been remarkable success in the conservation of many bird species (Mauritius Kestrel, Pink Pigeon, Mauritian Fody, Echo Parakeet). Integrated coastal zone management remains a national challenge.

Surface Area
2,040 km²

EEZ
1,900,000 km²

Population
2007 1.3 million
2020 1.4 million

Population Density
637 inhab./km²

GDP per capita
in purchasing power parity
$ 12,300

Human Development Index
0.804

Ecological Footprint
in global hectares per capita
1.9

A genetic bank including 20 plant species, represented by fewer than 50 individuals in the wild, was created and a seed bank project on 300 indigenous species has just been launched.

FOREST COVER : 500 km² or 25 % of the total land area

WETLANDS : 20 km²

Terrestrial Protected Areas	7	148.54 km²	7.3 % of the land area under protection
IUCN Cat. I-II	1	65.74 km²	-
IUCN Cat. III-IV-V	6	82.80 km²	-
IUCN Cat. VI	-	-	-
Marine Protected Areas		72.16 km²	3.5 % of the EEZ
IUCN Cat. I-II	2	8.38 km²	
IUCN Cat. III-IV-V	-	-	
IUCN Cat. VI	6	63.78 km²	
Ramsar Sites	2	3.79 km²	-
World Heritage Sites	2	3.5 km²	-
IBA	16	445.07 km²	-

MAIN NATURAL AREAS

Mauritius Island was covered with forests until the 17th century. Development of sugarcane plantations has deeply modified the landscape. Today, the island has only a few remaining primary forests, mainly in the south-west, representing 2 % of the original cover and partially protected in the Black River Gorges National Park. Mauritius belongs to the Mascarene Forests ecoregion, characterized by moist broadleaf tropical and subtropical forests. The marine environment is very diverse with several types of coral reefs, isolated or in banks, barriers, platforms, or atolls.

MOZAMBIQUE

Widely open to the Indian Ocean with a coastline of over 2,000 km, Mozambique is traversed by two of the greatest southern African rivers: the Zambezi and the Limpopo. Under a climate varying from tropical to subtropical, the economy has for a long time relied on agriculture (exports of cotton, sugar, copra and cashew nut) and on fisheries, notably a strong shrimp production. Today, development has shifted to tourism and mining in this member country of the SADC.

Increasing protected areas in marine and coastal ecosystems, participation of the private sector, and development of community management projects should be encouraged to better take into account the neglected biodiversity.

FLORA AND FAUNA

Mozambique harbors about 5,500 plant species, 581 bird species, and 205 mammal species. Sea waters are well-stocked with lobsters, shrimp, crabs, octopus, sharks, tuna, and sardines. Populations of large mammals used to be numerous in national parks, but they have been decimated during the historical events that have affected the country. About 10 % of all vertebrate species are threatened, including 11 mammal species (5 %), 22 bird species (4 %), and 5 reptile species (42 %). There are 37 reported invasive species, including 12 exotic species.

ECOSYSTEM SERVICES

Population growth and weak livelihoods have increased pressure on natural habitats. The launching in 2007 of large underground exploitation projects (mineral sands, coal, gold, bauxite, and tantalum), uncontrolled logging, and bushfires have contributed to ecosystem degradation. Two decades of conflict had led to a deficit of knowledge. New scientific expeditions should help reassess ecosystem values in a country where medicinal plants are thought to be used by 80 % of the population.

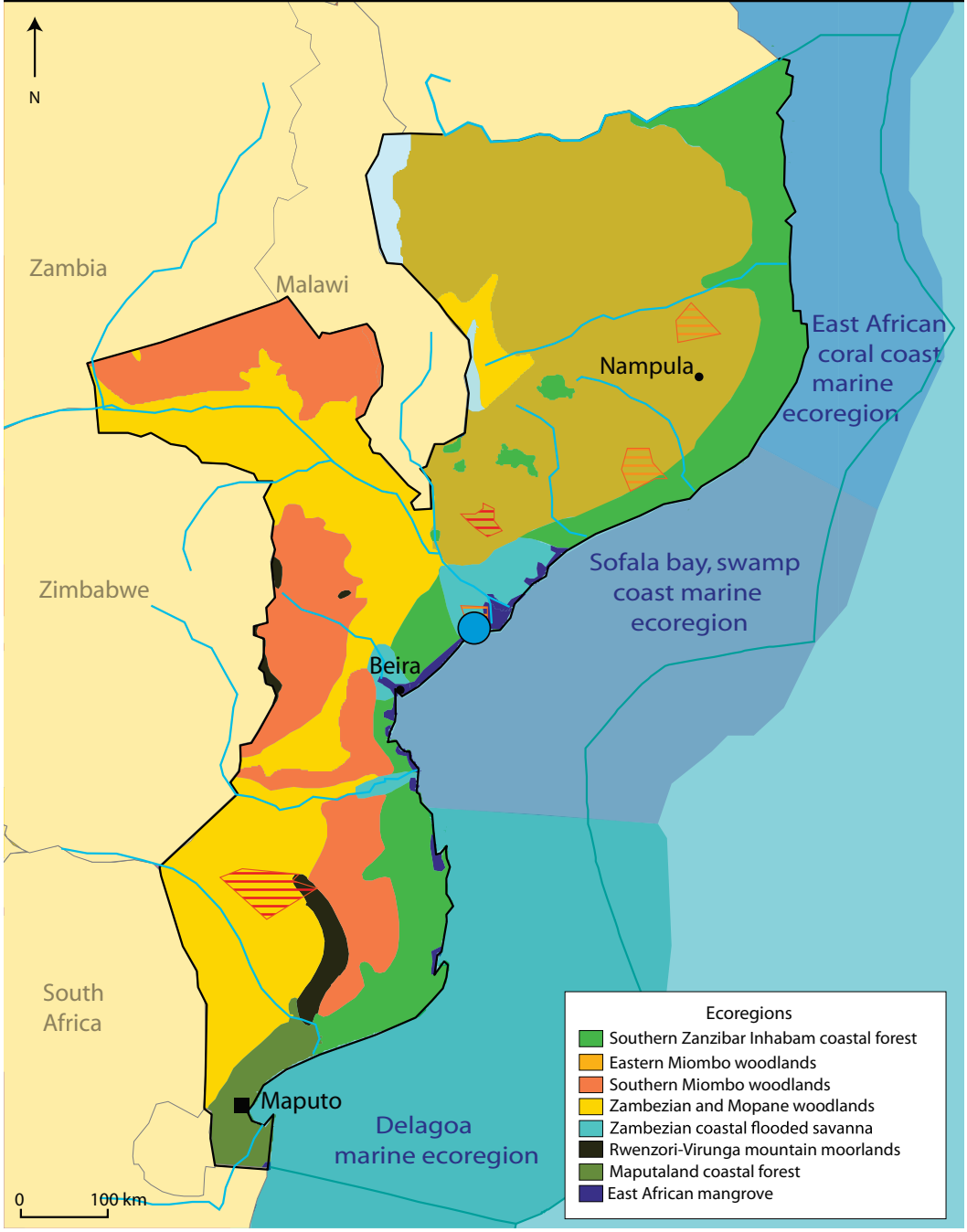
FOREST COVER : 19,000 km² or 2.36 % of land area

WETLANDS : 23,967 km²

Terrestrial Protected Area	43	86,220 km²	11 % of total land area
IUCN Cat. I-II	4	16,950 km²	
IUCN Cat. III-IV-V	9	18,328 km²	
IUCN Cat. VI	2	2,003 km²	
Ramsar Sites	1	6,880 km²	Not protected
World Heritage Sites	1	-	-
IBA	16	16,240 km²	-

GOVERNANCE

Mozambique has made significant progress in encouraging the various stakeholders to apply national strategies related to biodiversity, the environment, and sustainable development. The government has also taken measures to enhance the role of the private sector and NGOs on natural resource conservation. Nevertheless, Mozambique remains one of the countries with the highest level of threat to biodiversity. Authorities encourage further research on neglected biodiversity (invertebrates, plants, fungi), which represent 95% of all species and play a crucial role in ecosystem balance.



Surface Area
803,000 km²

EEZ
578,136 km²

Population
2007 21.9 million
2020 28.5 million

Population Density
25 inhab./km²

GDP per capita
in purchase parity prices
$ 982

Human Development Index
0.402

Ecological Footprint
in global hectares per capita
0.7

MAIN NATURAL AREAS

Most of Mozambique is occupied by a peneplain covered with savannas, but an equatorial-type forest has developed in the North-East, near Tanzania, and a stretch of dry forest lines the coast. The Chimanimani Range, near the Zimbabwean border, is the main mountain formation reaching 2,436 m at Mt. Binga. The central part of the country has a series of mangrove-rich estuaries. Mozambique includes 11 ecoregions, 8 terrestrial and 3 marine, and has 11 national parks, including one transnational park and one marine park. Sites such as the Gorongosa Mountain, the Great Inselberg Archipelago of Quirimbas in the North and the Chimanimani Range are of great importance for the regional biodiversity.

Along with South Africa, and Zimbabwe, the country has engaged in the remarkable project of creating the Great Limpopo Peace Park (35,000 km²) which links the Limpopo National Park (Mozambique), Kruger National Park (South Africa), Gonarezhou National Park, Manjinji Pan Sanctuary, and Malipati Safari Area (Zimbabwe), as well as the area between Kruger and Gonarezhou parks, the Sengwe communal land (Zimbabwe), and the Makuleke region (South Africa)

SEYCHELLES

The Republic of Seychelles is an archipelago of 115 islands in the Indian Ocean, divided into two groups: the inner islands with a granitic base and the flatter coral “far islands”. The archipelago has a humid tropical climate. The literacy rate is very high (over 90 % of the population) in this highly touristic country, a member of COMESA. The main economic sectors are real estate and industrial fisheries, notably for tuna.

Civil society is very involved, with the Seychelles Islands Foundation, Nature Seychelles, and the Island Conservation Society closely participating in managing protected sites.

FLORA AND FAUNA

The granitic islands harbor about 900 species of flowering plants, including 80 endemic species, while the coral islands harbor 260 plant species with 33 endemics. A thousand species of marine fish are found in the Seychelles. There are 245 resident or migrating bird species (with 13 endemic species and 17 endemic sub-species), with a unique mix of terrestrial birds from Africa, Asia, and Madagascar. The Seychelles waters are home to 21 species of marine mammals, while bats are the only indigenous terrestrial mammals (5 species including 2 endemics). Endemic species are also found among amphibians (11), snakes (2), and freshwater fish (1). There are several rare species such as the jellyfish tree (only 8 samples survive on the heights of Mahe), 2 of the rarest bird species in the world (the Seychelles magpie robin and the Seychelles warbler), and flagship species: butterflyfish, dolphins, groupers, gray reef sharks, manta rays, 4 species of sea turtles, all strictly protected. There are 32 exotic invasive species. Threatened species include 44 vascular plants, 5 mammals, 10 birds, 10 reptiles, and 6 amphibians.

ECOSYSTEM SERVICES

The economy of the Seychelles closely depends on sound natural resource management as fisheries represent 58 % of the global annual revenues and tourism 26 %. Threats to original biodiversity are strongly related to infrastructure and transportation development.

GOVERNANCE

Environmental rights are part of the Seychelles Charter of Fundamental Human Rights. The legal framework constitutes a strong foundation for biodiversity conservation. Efforts should be made to improve integrated management of coastal areas. Tourism is remarkably well designed with units limited in size to reduce their ecological impact. Numerous actions, carried out within 38 projects, have been developed for biodiversity conservation.

Surface Area
455 km²

EEZ
1,900,000 km²

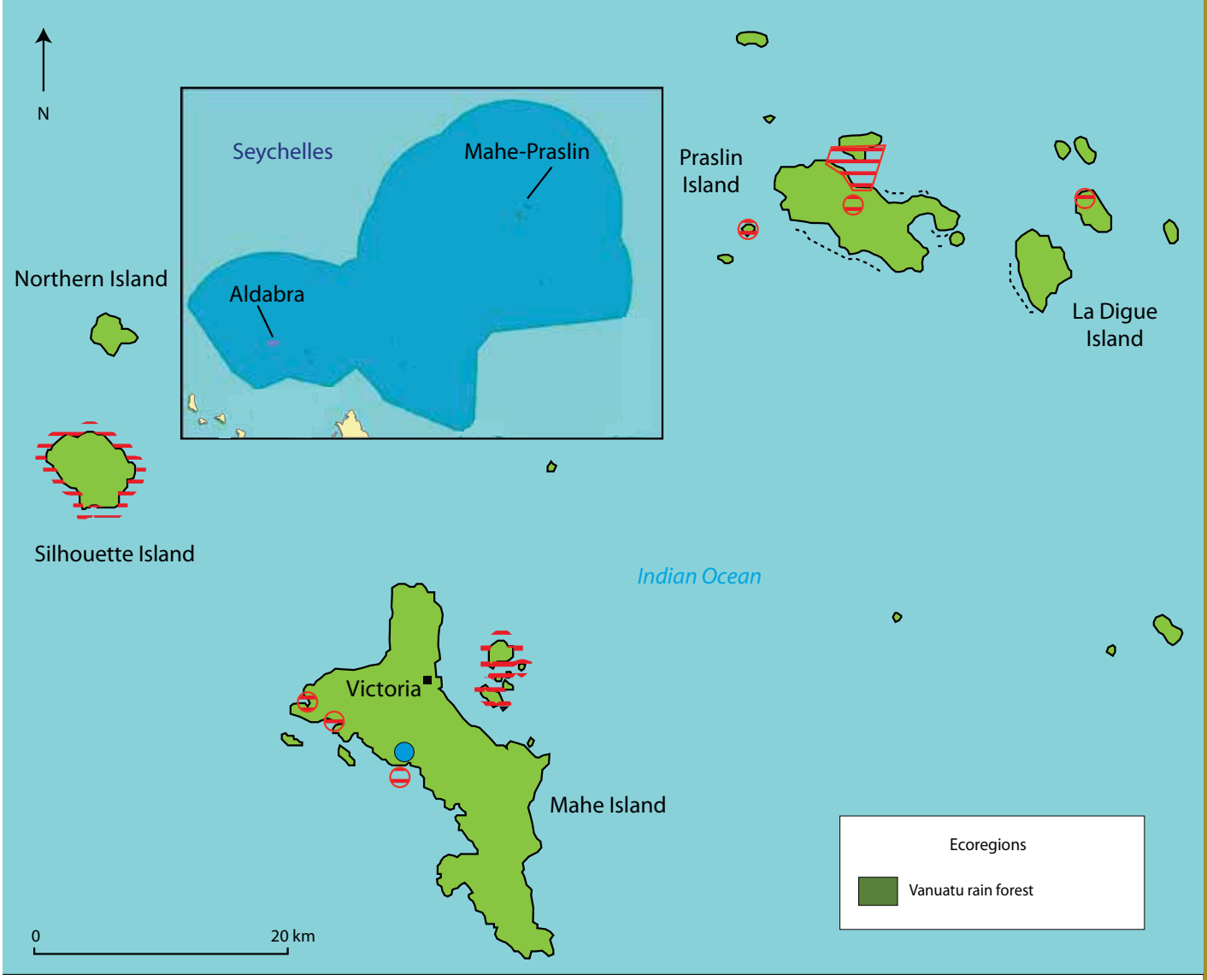
Population
2007 84,000
2020 100,000

Population Density
185 inhab./km²

GDP per capita
in purchasing power parity
$ 20,827

Human Development Index
0.845

Ecological Footprint
in global hectares per capita
1.9



MAIN NATURAL AREAS

The archipelago extends over 30,000 km² of shallow marine areas (less than 60 meters), forming the north-west part of the Mascarene Plateau. The inner islands are known for their landscapes including forests and beaches with big colored and naturally polished boulders. About half of the country is protected within nature reserves, home to unique endemic species. The “coco-de-mer” palm tree grows in the May Valley on Praslin Island.

FOREST COVER : 78 % *, 50 % under protection
* on the main islands of Mahe, Praslin, Curieuse, La Digue, and Silhouette

Terrestrial Protected Areas			8 % of the land area under protection
IUCN Cat. I-II	9	38.2 km²	
IUCN Cat. III-IV-V	3	37.28 km²	0.02 % of the EEZ
IUCN Cat. VI	6	0.92 km²	
Marine Protected Areas	13	419.06 km²	
Ramsar Sites	3	440.21 km²	-
World Heritage Sites	2	155.2 km²	-

The Aldabra Giant Tortoise is the world’s largest tortoise. With a maximum weight of 500 kg, with a length of up to 1.5m and a height of up to 1 m, this tortoise can live for three centuries. Aldabra, the world’s biggest raised atoll is home of the largest population with 152,000 individuals. The Aldabra Atoll also harbors the second largest colony of lesser frigatebirds and great frigatebirds, as well as the white-throated rail, the last flightless species of the Western Indian Ocean.

OCEANIA

INDEPENDENT STATES

AUSTRALIA

COOK ISLANDS

FIJI

KIRIBATI

MARSHALL ISLANDS

MICRONESIA

NAURU

NIUE

NEW ZEALAND

PALAU

PAPUA NEW GUINEA

SOLOMON ISLANDS

SAMOA

TONGA

TUVALU

VANUATU

NON-INDEPENDENT COUNTRIES OR TERRITORIES

GUAM (USA)

NORTHERN MARIANA ISLANDS (USA)

NORFOLK ISLAND (AUSTRALIA)

NEW CALEDONIA (FRANCE)

EASTER ISLAND (CHILE)

PITCAIRN ISLAND (UK)

FRENCH POLYNESIA (FRANCE)

AMERICAN SAMOA (USA)

TOKELAU (NEW ZEALAND)

WALLIS AND FUTUNA (FRANCE)

WAKE ISLAND (USA)

HAWAII (USA)

WEST PAPUA (INDONESIA)

PAPUA (INDONESIA)

JOHNSTON ATOLL (USA)

MIDWAY ATOLL (USA)

Number of countries
15 Independent States
15 Dependent territories

Regional Surface Area
9,037,695 km²
(1,350,845 km not including Australia)

EEZ
about 44,000,000 km²

Population
2007 34,500,000 inhab.
(13,600,000 hab. not including Australia)

Density
3.8 inhab./km²
(10 inhab/km not including Australia)

Population Growth Rate
2007-2020 +1.3 %/year

Oceania is considered a continent, including both large or very large islands and more than 25,000 small islands scattered over the Pacific Ocean and distributed in Melanesia, Micronesia, and Polynesia.

These islands vary from volcanic islands with hilly landscapes, to coral atolls with very limited resources, or to complex formations with richer sub-soils and soils (e.g. New Caledonia).

The island part of Oceania is very remote and suffers from gradual economic marginalization. Agriculture, the main source of employment, fisheries often licensed to foreign companies, and tourism are important sources of foreign exchange.

The main regional cooperation organisations are the Secretariat of the Pacific Community (CPS -1947) and the Pacific Islands Forum Secretariat (PIFS - 1971), together with the Secretariat of the Pacific Regional Environmental Program (SPREP), and the Pacific Islands Applied Geosciences Commission (SOPAC).

BIOGEOGRAPHICAL DATA

Oceania is divided into two biogeographic regions: Oceanian (24 terrestrial ecoregions), including French Polynesia and Wallis and Futuna, and Australasian (83 terrestrial ecoregions), including Vanuatu and New Caledonia.

These French countries and territories form marine ecoregions on their own (Vanuatu, New Caledonia, Clipperton), can be divided into several ecoregions such as French Polynesia (Society Islands, Tuamotu, Southern Cook – Austral Islands, Marquesas, Rapa-Pitcairn), or are part of an ecoregion (Wallis and Futuna: Samoa Islands).

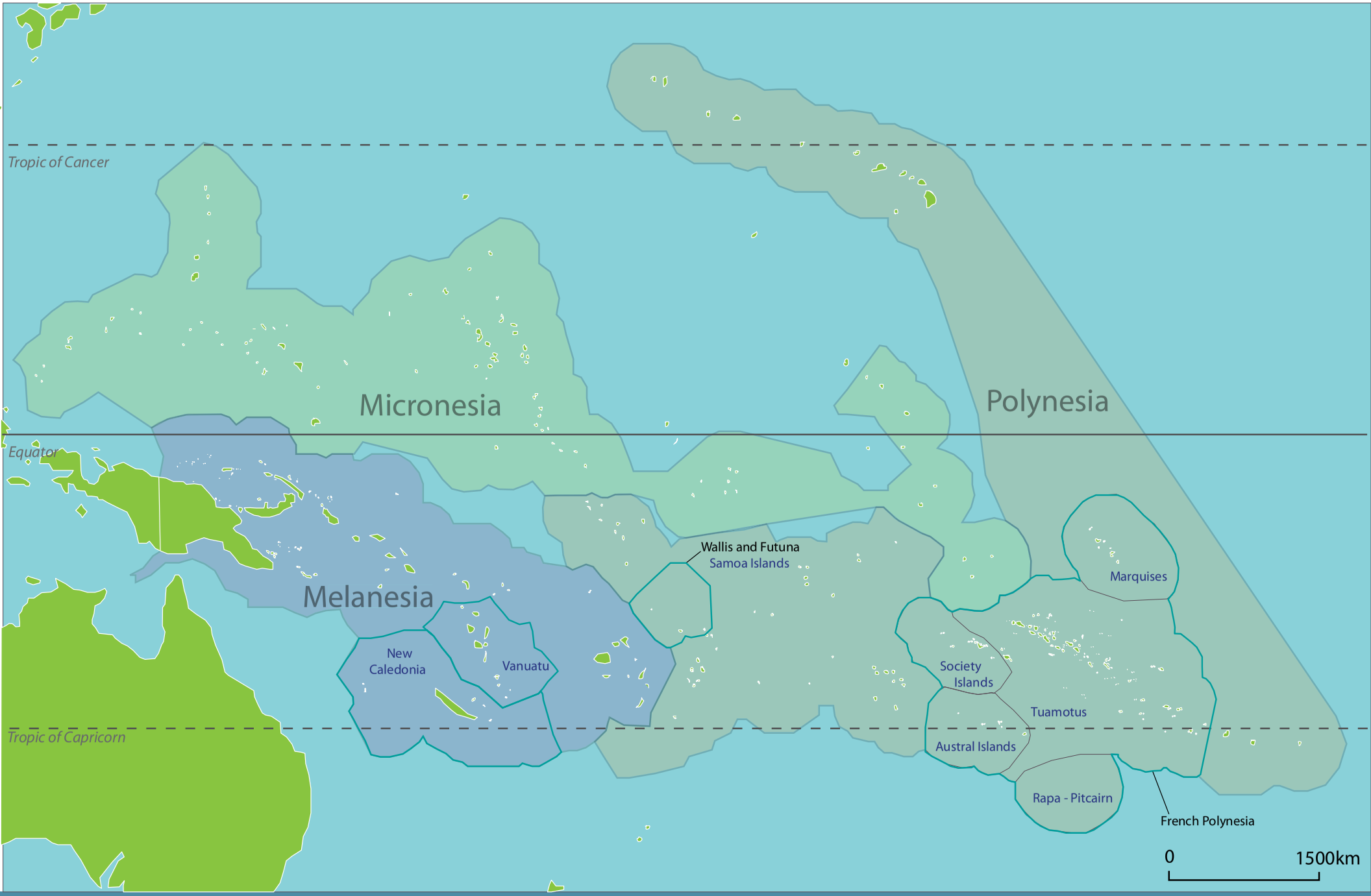
CONSERVATION STATUS IN THE SUB-REGION

Oceania contains the world's main reef formations, with the two greatest ones in Australian (Great Barrier Reef) and French (New Caledonia) waters. The current state of these formations is satisfactory but they potentially face devastating impacts from climate change (sea level rise, increase in temperature, and ocean acidification). The level of protection in the French part of the sub-region is insufficient.

SPECIES DIVERSITY

These remote islands have a very high level of terrestrial endemism and rich marine biodiversity due to the presence of significant coral reefs and huge EEZs. The current main threats to this remarkable biodiversity are invasive introduced species, global warming (coral bleaching), and anthropogenic pressure on natural resources due to considerable population growth and coastal development. Marine biodiversity is mainly endangered by overexploitation of halieutic resources.

The presence of a regional coordination structure on environment (SPREP) is a significant asset and helps the development of a true regional policy on nature conservation. It is important that all countries in the region actively participate in these efforts.


Tropic of Cancer
Micronesia
Polynesia
Equator
Wallis and Futuna
Samoa Islands
Marquises
Melanesia
New Caledonia
Vanuatu
Society Islands
Tuamotus
Tropic of Capricorn
Austral Islands
Rapa - Pitcairn
French Polynesia
0
1500km

FRANCE
NEW CALEDONIA
WALLIS AND FUTUNA

New Caledonia
New Caledonia includes the mountainous Grande Terre, characterized by a strong weather gradient from east to west and the coral Loyalty Islands archipelago, with a less marked tabular formation. New Caledonia has a special status, is divided into three provinces and has an autonomous government. The main island contains important mineral deposits (nickel, cobalt, and chromium).

Wallis and Futuna
This three-island archipelago (Uvea, Futuna, and Alofi) is an overseas collectivity with a status of overseas territory since 1961. It is located south-west of Samoa and north-east of Fiji. Its economy is mainly based on agriculture, livestock, and subsistence fisheries.

In New Caledonia, the world's second largest barrier reef (1,600 km) protects a 21,896 km² lagoon, one of UNESCO's World Heritage Sites, an essential asset for tourism development.

FLORA AND FAUNA

New Caledonia
Terrestrial endemism is high for vascular plants (74% of 3,261 species), mollusks (95%), insects, freshwater fish (36%), reptiles (88%), birds (20%), and chiropterans (66%). The entire New Caledonian region was declared an Endemic Bird Area.
Marine biodiversity is very important but with a low rate of endemism. Dugongs, 4 species of marine turtles, different Delphinidae and 6 species of baleen whales are present.
The Red List mentions 9 extinct species and 22% of the world's threatened plants, as well as 7 threatened marine species.

Wallis and Futuna
Biodiversity is relatively limited with a very low rate of endemism (11 mollusks and 7 plants for instance). One plant species and one bird species are considered threatened on the IUCN Red List.

ECOSYSTEM SERVICES

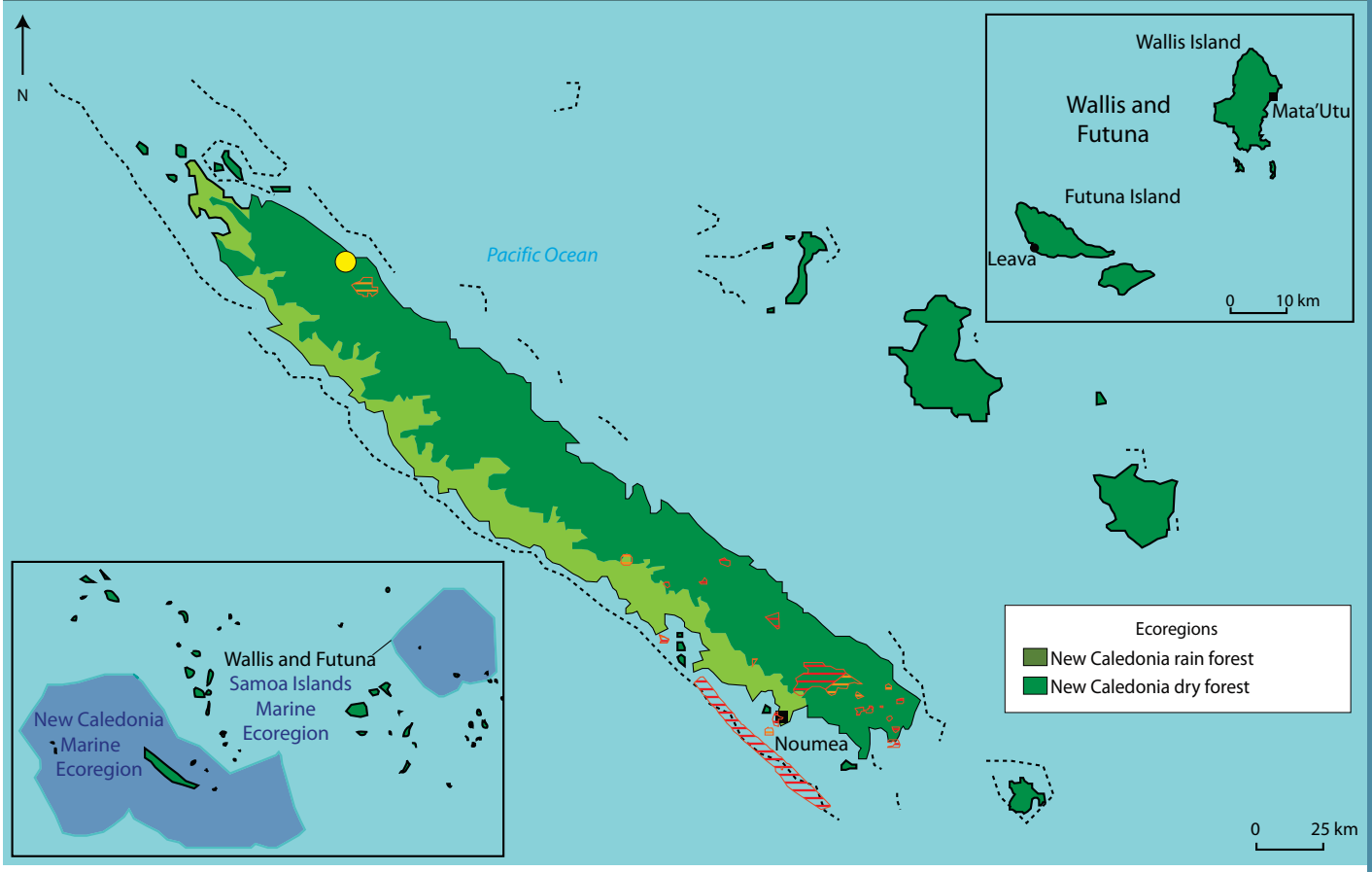
New Caledonia
Natural habitats support livestock, agriculture, fisheries, hunting, and tourism activities. These services are threatened by bushfires, extension of open pit mining, destruction of mangroves, poaching of marine species (for sale), and urbanization (lack of waste and sewage treatment).

Wallis and Futuna
The population's livelihoods depend on natural habitats, with medium-term threats related to deforestation, slash-and-burn, and invasive species.

GOVERNANCE

New Caledonia
Provincial authorities are in charge of environmental management. Protected areas as well as regional lists of protected species exist. Province Sud published its new environmental code in 2009 while Province North is developing the section on fisheries, which is being finalized.
Over 20% of coastal marine areas are protected.
Numerous introduced fauna and flora species are now invasive.

Wallis and Futuna
An environmental territorial service was created in 1997 and an environmental code published in 2007, but there are currently no protected areas or species.



MAIN NATURAL AREAS

New Caledonia

Vegetation is divided into 4 formations based on altitude and rainfall: two forest formations (moist or sclerophyllous) and two types of scrublands with wetlands and mangroves on the western coast.
On the marine side, an important barrier reef forms a reef-lagoon complex of 35,873 km².

Wallis and Futuna

The most remarkable areas include the moist dense forest, with only less than 10 % (3,000 ha) remaining and a reef-lagoon complex of 220 km².
The pseudo-karsts of the Plaine des Lacs magmatic formations, home to many endemic species are exceptional areas threatened by degradation from mining projects.
New Caledonia is a Biodiversity Hotspot : two thirds of the original cover has disappeared and only 1% of the dry forest remains.

Lake Lalolalo (Uvea Island, Wallis and Futuna): a spectacular crater lake with an evergreen dense moist forest fragment.

Surface Area
New Caledonia 18,576 km²
Wallis and Futuna 142 km²

EEZ
New Caledonia 1,368,588 km²
Wallis and Futuna 266,000 km²

Population (2008)
New Caledonia 224,824
Wallis and Futuna 13,445

Population Density
New Caledonia 12 inhab./km²
Wallis and Futuna 105 inhab./km²

FOREST COVER			
New Caledonia	4,045 km²		22%
Wallis and Futuna	27.4 km²		10%
WETLANDS			
New Caledonia			
Mangroves	150-200 km²		A
Terrestrial Protected Areas			
New Caledonia Cat. I-II	161.3 km²	5	0.9%
New Caledonia Cat. IV-V	509.5 km²	16	2.7%
Wallis and Futuna Cat. I-II	0		
Wallis and Futuna Cat. IV-V	0		
Marine Protected Areas			
New Caledonia	420 km²	22	
Wallis and Futuna	2		
World Heritage	15,743 km²	1	New Caledonia Lagoon
IBA		32	

FRANCE
FRENCH POLYNESIA
CLIPPERTON ISLAND

An overseas French collectivity with a status of internal autonomy since 1984, French Polynesia includes about 120 high volcanic islands and low coral islands divided into 5 archipelagos (Austral, Gambier, Marquesas, Society, and Tuamotu) characterized by their extreme remoteness in the Pacific Ocean.
Population is mainly concentrated (57 %) on Tahiti, the main island, with an annual growth rate of 2%.
The main economic activities are nature-related: pearl culture (80 % of exportation), coconut plantations, fisheries, and tourism with the latter representing 20 to 25 % of the territorial GDP.
Clipperton Island is a small 1.7 km² atoll located 1,280 km off Mexican shores. The highest point is at 29 m and it has no permanent human inhabitant. The island is under a status of public estate of the French State.

FLORA AND FAUNA

French Polynesia
Endemism is particularly high for many terrestrial groups: vascular plants (850 species, 60 % of endemism), mollusks (over 320 species, 100 % of endemism), insects (over 500 species with dramatic adaptive radiations), fish (37 indigenous species including 14 endemics), and birds (36 terrestrial species including 30 endemics and 27 marine species).
Marine and coral habitats have a relatively low endemism rate but an exceptional biodiversity : 425 seaweeds, 176 corals, 1,024 fish species, 15,000 mollusk species, 978 species of crabs, 16 cetacean species, and 3 marine turtles.
There are 118 threatened species on the Red List (Plants: 47, mollusks: 17, birds: 30, reptiles: 3, and cetaceans: 1). One bird, the Polynesian ground dove is critically endangered.

Clipperton
Flora and fauna, both terrestrial and marine, have a very low level of diversity and endemism: an important population of land crabs, 13 species of breeding birds including 11 seabirds (notably over 100,000 masked boobys), and several species of cetaceans.

A dramatic population of land crabs *Geocarcinus planatus* on Clipperton Island: 11 million crabs on 2 km²!

ECOSYSTEM SERVICES

Coral ecosystems provide Polynesian traditional food while reefs protect coastal areas where infrastructure and human populations are largely present. They also form an emblematic element for tourism.
The EEZ is an important resource area for tuna fishing and offers an unquestionable opportunity to France to fulfill its international commitments on marine protected areas (50 %).

GOVERNANCE

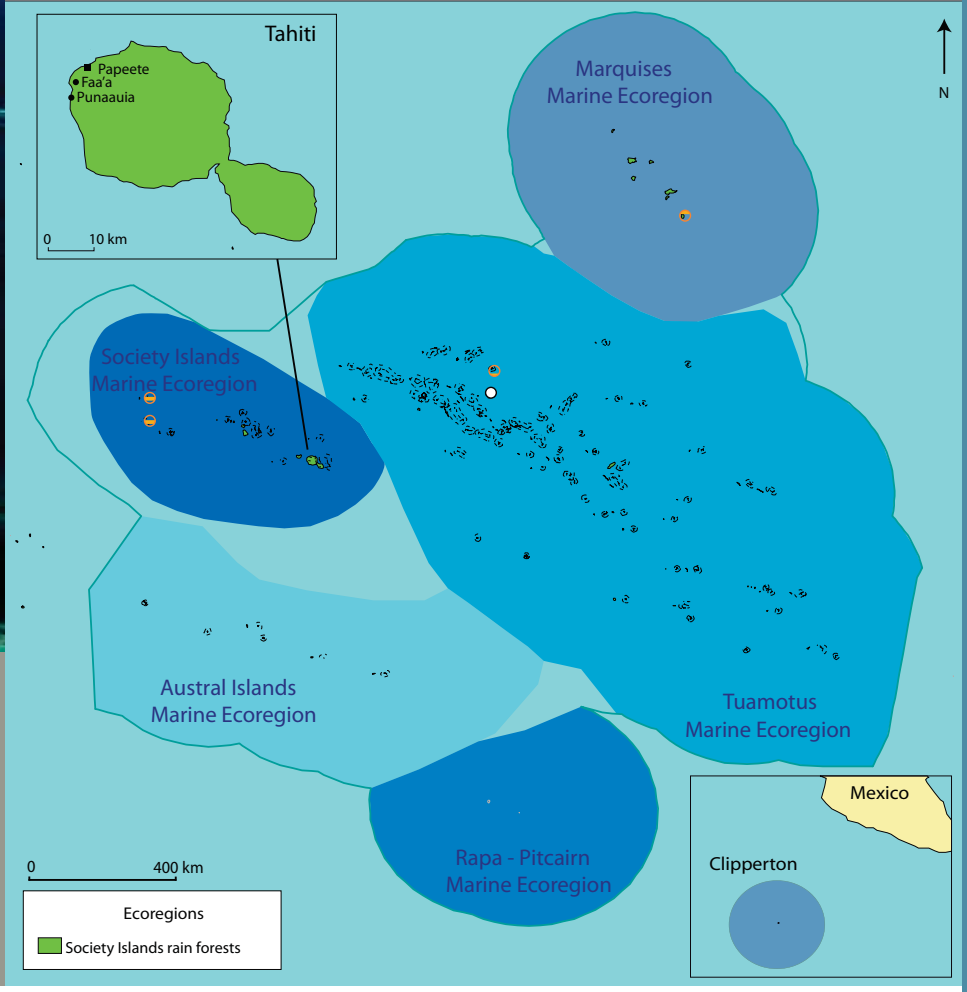
French Polynesia has developed nature protection regulations since 1996 and an Environmental Code since 2000. A biodiversity strategy was published in 2006. The territory has the full authority on environmental issues and has a Maritime Area Management Plan (PGEM).

Surface Area
French Polynesia 3,660 km²
Clipperton 11 km²

EEZ
French Polynesia 4,804,000 km²
Clipperton 435,000 km²

Population (2008)
French Polynesia 283,000

Population Density
French Polynesia 77.3 inhab./km²



MAIN NATURAL AREAS

French Polynesia

Each volcanic area includes an often heavily urbanized coastal area, narrow agricultural coastal lowlands, moist valley forests and dryer forests on hills and gentle slopes and altitude rainforests or cloud forests, home to most endemic plants and animals (notably insects and mollusks). A subalpine vegetation remains on Tahiti's highest peaks.

Coral islands (particularly Tuamotu) are poor in species as natural Puatea and Pandanus forests have been replaced by coconut plantations. However, they contain 12.800 km² of atoll lagoon, or 20 % of the world's atolls.

Clipperton

This typical atoll with closed lagoon without access to the sea only contains a very poor terrestrial and marine grass vegetation as the habitat suffers from eutrophication by guano, with an estimated yearly volume of 650 tons.

Forests French Polynesia	1,400 km²		40 %
including natural forests			14 %
Wallis and Futuna	27.4 km²		10 %
Terrestrial Protected Areas French Polynesia Cat. I à V	114.2 km²	6	3,1 %
Marine Protected Areas French Polynesia	143.6 km²	3	
Ramsar Sites (Moorea Lagoon)	50 km²	1	
MAB Sites (Fakarava Biosphere Reserve)	2,800 km²	1	
IBA		4	

A global center for the study of coral reef formations on Moorea Island, thanks to two institutions:

- The Moorea Insular Research Center and Environment Observatory (CRIOBE) of the EPHE (Practical School of Advanced Studies), linked to CNRS (USR 3278 and its Institute for Pacific Coral Reefs, and
- The Berkely University GUMP Station, Moorea.

Both centers join their efforts within the Moorea Ecostation. The ambitious Moorea Biocode Project aims at defining the genetic code of all non-microbial species.

VANUATU

An archipelago of over 80 islands and atolls in the South Pacific, stretching 1,300 kilometres from North to South, Vanuatu is rich in sea life and tropical forests. Most of the islands are mountainous and of volcanic origin, and have a tropical or sub-tropical climate. About 80% of Vanuatu's population live in rural areas. Vanuatu is a member of the Pacific Islands Forum, the South Pacific Regional Environment Programme, and the Pacific Community.

FLORA AND FAUNA

Vanuatu's known flora includes 1000 vascular plant species, of which 150 endemic. 158 species of orchid and 21 palm trees have been inventoried. There are 121 known bird species, including 7 endemics, and 80 species of butterfly. 12 species of bats represent the country's only native mammals. Isolated sea mounts and volcanoes, likely to host numerous unknown species, remain under-explored. Vanuatu is the easternmost limit of the range of the saltwater crocodile, the world's largest living reptile, and home to the endangered Fiji banded iguana. Globally threatened species include 8 mammals (32% of the species assessed, but another 7 species are data-deficient), 7 birds (8.2%), and 14 fish species (20%, 16 data-deficient).

ECOSYSTEM SERVICES

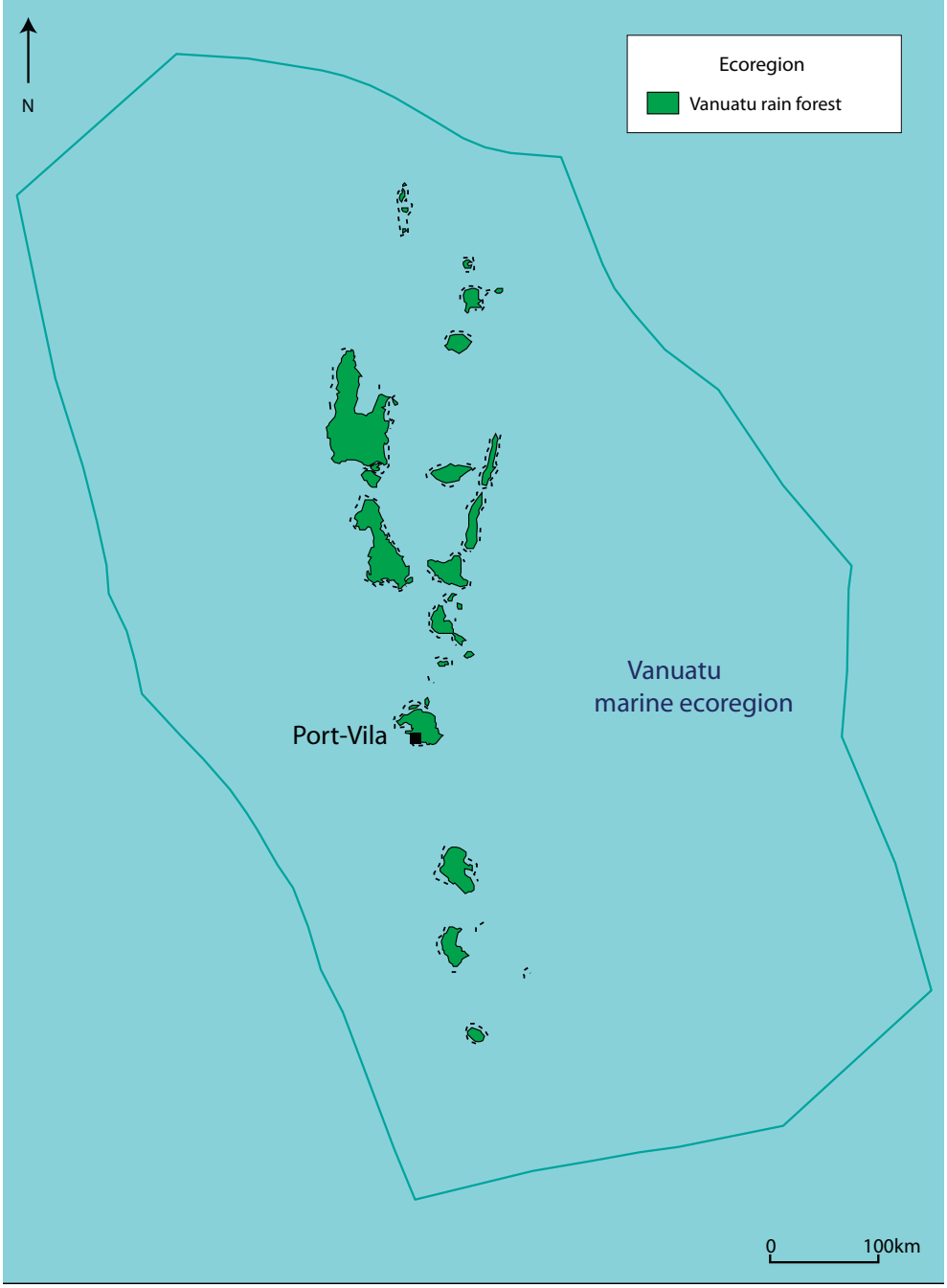
Rural communities depend on their immediate environment for most resources used for their subsistence and income generation. Vanuatu's coral reefs are particularly important in this respect, and their degradation is of growing concern. Threats to biodiversity vary from island to island and include invasive species, land-based pollution of marine environments, land use activities and clearing in freshwater catchments.

Enhancing community management of marine resources

Vanuatu's coral reef is vital for 80% of the population. A GEF small-grants project will train 17 local communities on 10 islands in monitoring coral reef ecosystems within their area, to improve protected areas management decisions and implementation. Monitoring results will contribute to the National Reef Monitoring Database that reports to the Global Reef Monitoring Data system.

GOVERNANCE

Vanuatu's constitution provides for inalienable traditional tenure of land and associated resources. Community or chief-imposed restrictions (taboos) on the use of specific resources and a large number of small locally-managed protected areas characterize Vanuatu's nature conservation system. The Environment Management and Conservation Act (2003) sets the legal framework for species protection and the registration of conservation areas. Fisheries regulations were amended in 2005, aiming to reduce the decline of economically-valuable species. A database of invasive species has been developed. Vanuatu's new Biosecurity Policy regulates the introduction of living organisms, but the capacity to monitor and control the spread of invasive species post-entry remains limited.



Surface Area
12,189 km²

EEZ
530,162 km²

Population
2009 243,304
2020 307,000

Population Density
19,7 inhab./km²

GDP per capita
In Purchasing Power Parity
$ 4,737

Human Development Index
0.69

MAIN NATURE AREAS

The Vanuatu rain forests, which characterize the larger islands, make up a terrestrial ecoregion. Fringing coral reefs encircle most of the islands. Human settlements are concentrated on the coastal lowlands of larger islands, with the rugged mountainous interiors remaining relatively untouched. Biodiversity is therefore most at risk in lowland areas. The archipelago lies entirely within the East Melanesian Islands Biodiversity Hotspot.

FOREST COVER : 3,644 km², 30 % of land cover (FAO, 2005)

WETLANDS : 64.38 km², 0.5 % of land cover

Terrestrial Protected Areas			% of land area
IUCN Cat. VI	2	66.77 km²	0.55 %
Marine Protected Areas	16	-	

Vanuatu's largest island, Espiritu Santo, is home to all of Vanuatu's endemic bird species, including the vulnerable Santo Mountain Starling, found nowhere beyond the island. Santo has a great expanse of original rainforest and harbours a diverse range of butterflies and orchids. Vanuatu's largest in-situ national conservation site, Vatthe (literally, 'eye of the sea') Conservation Area, lies on the island's Northern coast. More than 260 plants with traditional uses have been identified in Vatthe, used for custom ceremony, as building materials, and medicine.

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Global Environment Facility

GEF is an independent international financial mechanism providing grants to developing countries and countries with economies in transition for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.

GEF unites 181 countries within a unique partnership of international institutions, NGOs and the private sector to address global environmental issues. To date, GEF has allocated $8.7 billion in grants to fund more than 2,400 environmental projects in 165 developing countries and countries with economies in transition. On May 12, 2010, in Paris, more than thirty donor countries jointly pledged $4.25 billion for the next four years for the Global Environment Facility. This fifth replenishment, GEF-5, represents an increase in contributions of more than 50%.

During GEF-4 (2006-2010), several reforms helped revitalize GEF and improve its effectiveness (organization restructuring, simplified project cycle, resource allocation framework, strengthened communication). During GEF-5, reforms will aim at 1) pursuing its transformation for higher effectiveness, 2) enhancing countries' ownership of GEF, and 3) reinforcing relationships with International Conventions.

GEF'S BEST PRACTICES

DEVELOPMENT OF CONSERVATION TRUST FUNDS

The first GEF-supported trust fund was the Bhutan Trust Fund for Environmental Conservation (GEF: $10 million; co-financing $7.57 million). The objective was to propose a long-term funding mechanism for protected areas and biodiversity conservation in general. The project has benefited from a partnership between the World Bank, the United Nations Development Program, the World Wildlife Fund, several NGOs, and from the financial support of several European countries.

The Fund helps generate about $1.5 million each year to cover operational costs of protected area management and various conservation initiatives. Based on the Fund creation agreement, Bhutan also pledged to protect 60% of its forests, or about 3 million hectares protected. The Fund has financed the development of management plans, training of local communities involved in conservation initiatives, biodiversity monitoring and research, institutional support required to define community management systems, and public awareness and education.

GEF SUPPORT IN GUINEA BISSAU : ADDITIONAL, PARTNERSHIP-ORIENTED, AND FLEXIBLE

GEF funding is most effective when it takes place under a long-term strategy and partnership framework to build a country's capacities. GEF support to Guinea Bissau over the last 10 years is interesting in this regard. In the 1990s, the government of Guinea Bissau recognized the importance of natural resources and biodiversity and developed a vision to build a protected area network. IUCN and the Swiss Cooperation led the way in supporting the efforts of the national authorities, quickly followed by other donors and partners. At the end of the 1990s and beginning of the 2000s, GEF had financed several capacity-building activities. GEF, the World Bank and the European Commission initiated the Coastal and Marine Biodiversity Management Project in March 2005 to strengthen the Institute for Biodiversity and Protected Areas (IBAP) and establish a fund for local environmental initiatives. IBAP was able to consolidate its presence and extend the protected area network to 5 national parks. Based on these promising results, the approach has been extended to forest areas, notably to the Dulombe-Boe Complex, through a GEF project prepared by the United Nations Development Program. GEF is also supporting the establishment of the Bio-Guiné Foundation and agreed to a flexible use of its funds between the trust fund and the park management based on the situation in the field. The trust fund could be endowed with revenues generated by a national program on Reduction of Deforestation and Forest Degradation.

AN INCENTIVE FUND FOR FOREST PROTECTION AND SUSTAINABLE MANAGEMENT : THE CASE OF THE CONGO BASIN

At the December 2007 Climate Convention in Bali, GEF's Chairperson announced a special initiative: the Tropical Forest Account (TFA). This incentive fund helped develop a programmatic approach for the sustainable management of the Congo Basin forests, while no project had been approved over the two first years of the GEF's 4th cycle. In less than eight months, a program was defined by the relevant countries and approved by the GEF Council along three strategy components on conservation of biodiversity areas, sustainable forest use, and capacity-building, particularly in regards to innovative funding mechanisms. In less than a year, all project concepts had been technically approved: 13 regional, transborder, or national projects are being gradually implemented with $55 million from GEF and $167 million in co-financing. For GEF-5, the principle of incentive funding has been enhanced for the entire forest program to raise up to one billion in GEF grants and three to four times more in co-financing.

GEF SMALL GRANTS PROGRAM

The GEF Small Grants Program (SGP) was launched in 1992 and developed by the United Nations Development Program. SGP supports small projects to generate global environmental benefits through projects presented by actors from the civil society - associations, community groups, indigenous groups, etc. Since its inception, the SGP has invested more than $400 million to fund 12,000 projects in 122 countries in the areas of biodiversity conservation, climate change mitigation and adaptation, sustainable land management, elimination of some chemical pollutants (persistent organic pollutants), and international waters.

For example, in the southwestern part of Sri Lanka, in the Kalutara District, the SGP supported a local initiative to reestablish traditional rice cultivation practices and preserve traditional landscapes combining rice fields, gardens, wetlands, and reed beds. This biodiversity-friendly landscape had almost disappeared due to intensive agriculture and overuse of pesticides. This mosaic of habitats also promotes various additional revenue-generating activities, particularly for women (craft, weaving, gardening, etc.). Women have organized themselves to professionalize and develop their practices: professional training, market channels, participation in competitions, etc.

Planet Action

Planet Action works with the International Union for Conservation of Nature (IUCN) on a number of practical initiatives, including the World Atlas of Biodiversity (French-speaking countries) and support for projects on the ground.
For example, Planet Action supports the Oceanium Mangrove Restoration project, conducted with IUCN and IUCN's French Committee. Oceanium is an NGO founded in Senegal in 1984 and which has many years of experience in environmental conservation. The project is being conducted in conjunction with local communities and has received funding from the Danone environment foundation. Its goal is to restore the degraded wetlands of the Sine Saloum and Casamance delta regions through mangrove reforestation. SPOT satellite imagery is used to identify changes over time and update the relevant maps.

AREAS OF ACTION

Education and awareness I Forests and deforestation I Drought and desertification I Biodiversity and conservation I Human activity I Water resources I Snow and glaciers

KEEPING TRACK OF BIODIVERSITY FROM SPACE

Satellite imagery and GIS technology (geographic information systems) offer reliable and objective data for observing the planet's surface, establishing "ground truth" and tracking changes over time.

The purpose of Planet Action is to provide Earth observation technologies to combat climate change and help protect biodiversity at the local level.

The use of satellite images and GIS technology allows scientists and local communities to measure the effects of human activity and climate on protected areas and to monitor such phenomena as forest loss, falling water levels in lakes or the rate of ice melt.

Support projects focused on these issues, share their findings and raise public awareness —these are the key objectives of Planet Action.

SUPPORT FOR NON-PROFIT PROJECTS

Planet Action supports NGOs, universities, public bodies and research laboratories involved in projects to combat climate change by providing Earth observation imagery, GIS data and image-processing systems free of charge. In three years, Planet Action has helped over 300 projects around the world.

EDUCATION AND AWARENESS

Biodiversity, deforestation, reforestation, water resources, sustainable development — each project that Planet Action supports tells a story. Planet Action's outreach initiatives aim to inform the public about the causes of climate change, its impact and the solutions that can help communities to adapt.

A65 Motorway ecological offsetting : serving biodiversity

The EIFFAGE Group, aware of the environmental impacts linked to its construction and operation activities, have a proactive policy in favour of biodiversity, which is formalized by the ambitious guidelines that cover each of its worksites.

EIFFAGE

The particular case of the A65 French motorway (150 km between Pau and Langon) embodies in many respects an emblematic example of biodiversity protection with regards to the construction and operating of linear infrastructures. It is the first motorway built in accordance with the regulatory measures of the Grenelle environmental summit.

Considering the right-of-way of the highway and the quality of crossed habitats, biodiversity preservation is a serious issue. It is taken into account by respecting the three following steps:

First, impact prevention measures are taken along the pre-determined route until the final route is finalised and reduced. Plant and animal species inventories, which are increasingly more precise and abundant, help to avoid remarkable habitats by reducing the right-of-way or bypassing them entirely.

Nevertheless, prevention measures are not enough to eliminate every impact on these fragile environments, so mitigation measures are also employed. These consist of: singling out some constructive solutions, such as choosing a better suited sizing of some construction works, which for instance, favour wildlife crossings; or the setting up of avoidance devices such as preventing clearings to ensure bat protection.

However it was not possible to entirely avoid some natural habitats or protected species along the A65. So for these “residual impacts” ecological offsetting targets were conducted in partnership with CDC Biodiversité, (a subsidiary of the Caisse des Dépôts, in mission for A’liénor concessionaire whose EIFFAGE hold 65%). These targets, set by July 2008 administrative decrees, define an ecological debt for each of the impacted species, and are assessed in hectares of natural habitats for which are needed:

- A land safeguarding of 1,372 hectares, chosen for ecological qualities, in the framework of an amicable agreement (purchase, rent, agreement with local land-users and owners);
- Appropriate conservation management practices, suitable for the re-establishment of protected plant and animal species;
- A scientific monitoring of offsetting measures throughout the duration of the concession, ensured by a committee presided over by the regional prefect, and including government services, local authorities and the regional naturalist community.

Time, space and means never formed such a combination so favourable to the success of such a project. About 150 M€ will have been spent for prevention, mitigation and ecological offsetting measures. Thus, EIFFAGE and the A65 show the way for new practices in the public works area regarding biodiversity preservation.

The local government services (DREAL Aquitaine) are in charge of following up on the offsetting mission implementation, and have set up a system to check the key steps of the process: the ecological eligibility of proposed sites, the safeguarded areas for each species and the suggested orientations of conservation management.

The operator CDC Biodiversité asks the local naturalist community strongly involved in the project, for their expertise on the ecological diagnosis, and solicits for the sites management local organisations which are conversant with the issues.

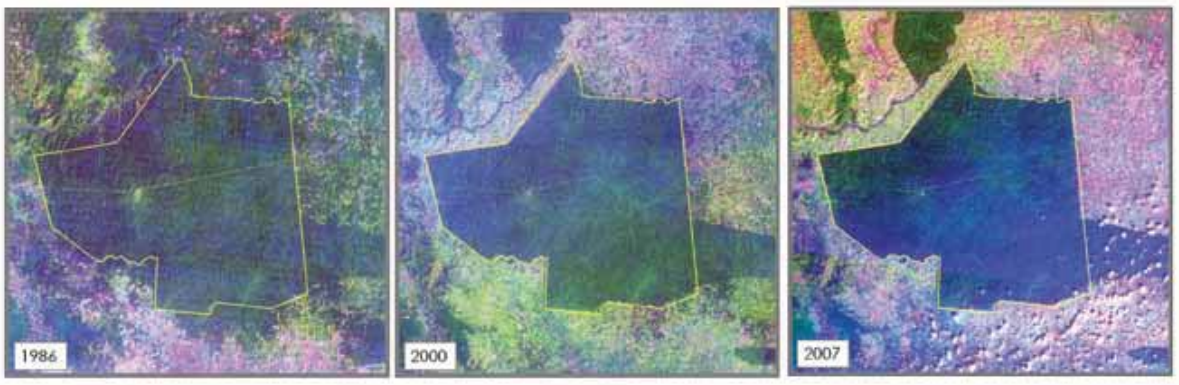
For each potential intervention sector, identified and approved by the state, a consultation is conducted to fit the ecological offsetting program to the development program, carried out by local authorities and associations, so as to become a full part of it.

JOINT RESEARCH CENTRE (JRC)

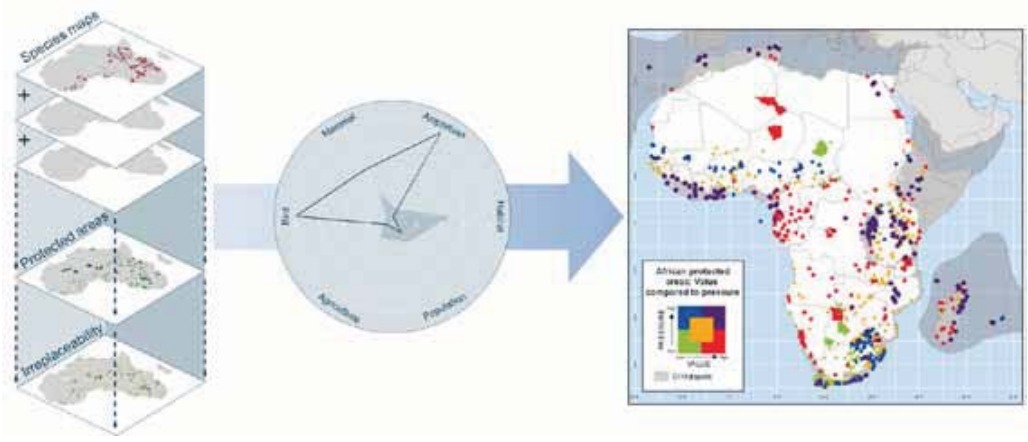
A DIGITAL OBSERVATORY FOR PROTECTED AREAS (DOPA)

The Global Environment Monitoring Unit (GEM) of the Institute for Environment and Sustainability (IES) of the European Commission's Joint Research Centre (JRC) provides scientific and technical support to the European Union's policies for the protection and sustainable development of the global environment. In particular, the MONDE (Monitoring Natural Resources for Development) group in GEM delivers products and services derived from the analysis of satellite remote sensing data (Fig. 1.) for assessing, monitoring and forecasting natural resources, with an emphasis on protected areas in the African, Caribbean and Pacific (ACP) Group of States.

As part of an effort to characterise biodiversity value, ecosystems and threats, combined with country level indicators, MONDE is developing a Digital Observatory for Protected Areas (DOPA) using web mapping applications and services in view to inform users, mainly policy makers, about the status of, and pressures on protected areas (Fig.2). For Africa, these efforts are made in constant collaboration with African partners.



In Ankasa river national park (Ghana)
arable agriculture that appears in pink on the 3 images, has clearly expanded around the park between 1986 and 2007.
The forests (in dark green) have considerably been cleared. However, the boundary of the protected area remains intact.



Protected areas can be ranked according to the threats they are exposed to and their biodiversity value.

THE OBSERVATORY FOR CENTRAL AFRICAN FORESTS

The Observatory for Central African Forests (OFAC for the French acronym), an initiative of the Congo Basin Forest Partnership, aims to pool the knowledge and available data necessary to monitor the ecological, environmental, and social aspects of Central Africa's forests. The European Commission funds the main activities on the period 2007-2013 and ensures the scientific supervision (Joint Research Centre)

The approach adopted for the creation of OFAC, which relies on human resources in the region, makes the development of OFAC a true exercise in capacity building at both the national and regional level. The information produced by OFAC relies on satellite data, geographical information systems and databases.

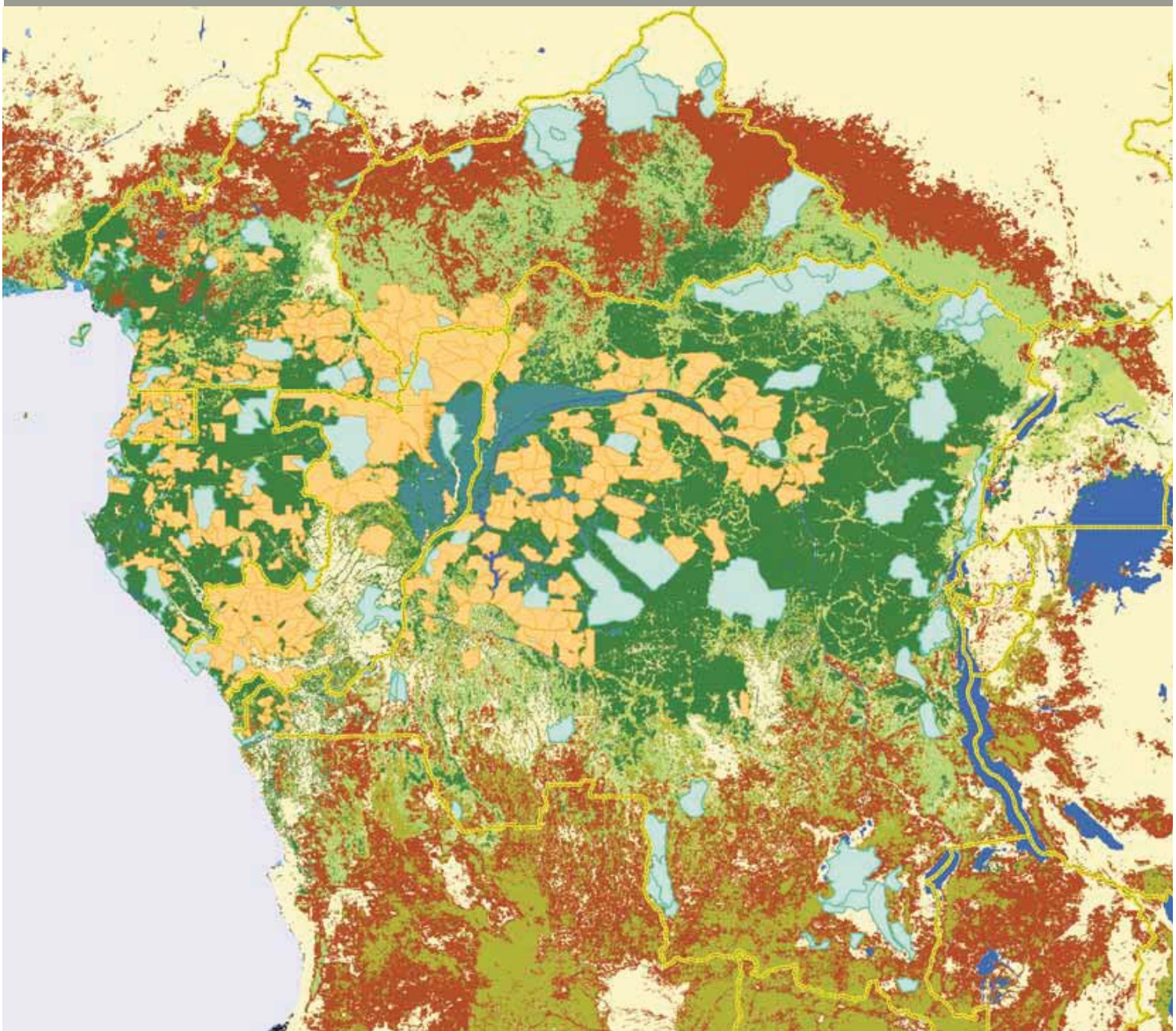
The main OFAC activities are:

a) The establishment of biophysical and socio-economic databases on the Congo Basin forests

b) Monitoring systems for deforestation, forest management and forest biodiversity based on naational and local (logging concession, protected area) indicators.

c) The setup of a regional mechanism of Observatory

Map of the forests of the Congo Basin
(forests in green) with management territorial units (protected areas in turquoise and logging concessions in orange)



GoodPlanet

« IT IS TOO LATE TO BE A PESSIMIST »

Yann Arthus-Bertrand

The GoodPlanet Association was created in 2005 by Yann Arthus-Bertrand with the objectives of environmental awareness and education to "bring ecology into the heart of people's consciences". It became an officially recognized non-profit foundation in 2009 – a status that helps sustain its activities.

The GoodPlanet Foundation invites one to live in a way that is more respectful of the Earth and its inhabitants. It proposes realistic and optimistic solutions and encourages each and everyone to act for the planet through a series of programs:

6 BILLION OTHERS

A video exhibit, the result of 5 years of filming in 78 countries, presents over 5000 testimonies of men and women all over the world on their fears, their dreams, their challenges, and their hopes, presenting a rich and sensitive image of humanity at the beginning of the 21st century.
http://www.6milliardsdautres.org/

ACTION CARBONE

Measure, decrease, and compensate our greenhouse gas emissions to reduce our impacts on climate: in 4 years, Action Carbone has compensated over 150,000 tons of CO_2 through renewable energy and sustainable waste management projects. Action Carbone funds community and association projects to reduce emissions in the South.
www.actioncarbone.org

GOODPLANET INFO

An information website on environmental news and challenges. Over 2,500 pages of news, thematic files, debates and editorials by the best experts, videos, and an interactive atlas. In French and English.
www.goodplanet.info

GOODPLANET JUNIOR

Offering summer holiday camps to disadvantaged children for nature discovery and experimentation of eco-citizenship in daily life, in collaboration with the Ligue de l'enseignement.

"WHY SUSTAINABLE DEVELOPMENT?"

Series of educational posters on humans and the environment are distributed for free to 12 million children and their teachers, with the support of the Ministries of National Education and Sustainable Development.
www.ledeveloppementdurable.fr/

10 :10 « AGIR REND HEUREUX »

10:10 is an international campaign based on voluntary commitment. It invites any individual, company, group, or organization to reduce its greenhouse gas emissions by 10% over a 12- month period, starting in 2010. In operation in 41 countries, the 10:10 Campaign already gathers over 2,600 companies including in France Danone, L'Oréal, JCDecaux, Cortal, and Aviva, and 1,700 groups and organizations including the cities of Paris, Bordeaux, Lyon, and Lille, as well as 80,000 individuals.
www.1010.fr

La Fondation de la faune du Québec

Nature and wildlife in Quebec represent an important part of its heritage and a socioeconomic development factor amounting annually to billions of dollars. The most recent official data show that 3,400,000 people or one out of two Québécois enjoy and practice wildlife and nature-related activities in the different regions of Quebec. Nature and wildlife valorization produces an annual amount of 1.4 billion dollars in added value, thanks to expenditures by enthusiasts for fishing, hunting, outdoors and non extractive wildlife-related activities. In addition, such activities help recruit and maintain 31,000 employees each year.

Such figures are impressive but not enough to counter the development mechanism impacting Quebec: urbanization, industrialization, agriculture, forestry, mining, energy sourcing and even ecotourism are among the threats affecting the health of our habitats.

In this context, a large network of organizations strives to protect and restore the wildlife habitats of Quebec: wildlife habitats managers, associations of hunters and fishermen, conservation groups, agro-environmental clubs, forest management agencies, etc.

The Fondation de la faune du Québec supported the creation and the development of this network. The Foundation addresses the lack of funding faced by these organizations. The Foundation was created by the Government of Quebec to promote the conservation and valorization of wildlife and habitats. Since its creation in 1987, it has invested about 65 million dollars in around 6,000 wildlife-related projects. The Foundation also produces fauna initiatives.

UNUSUAL FUNDING

The Fondation de la faune relies on several funding sources, the main source being a mandatory fee paid by hunters, fishermen, and trappers to buy their activity permit. This funding mechanism is facilitated by the close relationship between the Foundation and the Government of Quebec: this mechanism is reliable, recurrent, easy to implement and largely accepted by wildlife users who see a potential return on investment. Other financing and fund-raising tools allow individuals and private companies to voluntarily contribute to biodiversity conservation. Development of business partnerships with large companies has significantly progressed in recent years: while increasing financial capacities, it has improved the dialogue between the private sector and the conservation community.

AN EFFECTIVE FUND ALLOCATION STRATEGY

From the beginning, the Foundation has opted for a fund allocation strategy instead of the usual practice within large environmental organizations. While its budget would have allowed for its own conservation, valorization, or education projects, the Foundation has selected to rely on, and even stimulate the dynamics of local organizations and redistribute its funds.

To this effect, the Foundation has implemented financial support programs focusing on specific areas: improvement of aquatic habitats, integrated management of forest resources, biodiversity restoration in agricultural areas, preservation of threatened species and habitats, etc. Most programs were supported through the publication of popularized technical guidance. Support by these programs is available to any organization willing to work on wildlife habitat. The best projects are selected and project developers are invited to use the financial assistance of the Foundation as leverage. Over 200 projects are supported each year. The number and interest of local developers for such initiatives are increasing each year.

This strategy has multiplied the number of projects, covered the entire territory of Quebec and included all species and ecosystems. Furthermore, this strategy has promoted the emergence of conservation leaders and involved an increasing number of people in biodiversity conservation in Quebec.

Beyond the applied techniques and mechanisms, one should focus on the Foundation's philosophy. ACT TOGETHER! Together with the State of Quebec, together with the business community, together with the wildlife organizations, together with the biodiversity conservation groups.

Afrique Nature International

OUR MISSION

- Contribute to protection and sustainable valorization of flora, fauna, and natural habitats of Africa

OUR OBJECTIVES

- Enhance the network of national parks and nature reserves
- Preserve species of special interest and their habitats
- Sustainably manage natural resources
- Develop a wider conservation vision at regional level

OUR PRINCIPLES OF ACTION

- Base our work on scientific data
- At each level, collaborate with village communities, national structures, and regional organizations
- Cooperate and share experiences
- Open doors to private sector partnerships

An ethical and active approach to conservation in Africa

Glossary

Agro-forestry : A land use system in which woody perennials are grown for wood production with agricultural crops, with or without animal production

Aquaculture : Several management procedures, design to increase the production of live aquatic organisms, to level of above those normally obtained from normal fish captures.

Biocenose : All the interacting organisms living together in a specific habitat

Biodiversity : The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

Biodiversity hotspot : Area of the world that holds especially high numbers of endemic species and face extreme threats. It entails at least 1,500 species of endemic vascular plants, and must have lost at least 70 percents of its original habitat

Biomass : The total weight, volume or quantity of organisms in a given area. (Saumures)

Biome : Major ecological community, a division of the world's vegetation that corresponds to a particular climate and is characterized by certain types of plants and animals, for example, tropical rain forest or desert.

Biosphere : The total range of living beings and their environment that comprises the lithosphere (surface of the earth), the hydrosphere (earth waters) and the atmosphere, which is almost 15 km thick from the surface of the earth.

Biosphere Reserve : Area of terrestrial and coastal ecosystems promoting solutions to reconcile the conservation of biodiversity with its sustainable use. They are internationally recognized by the UNESCO.

Biogeographical Region : An area of animal and plant distribution having similar or shared characteristics throughout.

Chlordecone : An organochlorine insecticide, which is possibly carcinogenic for humans.

Conservation : The protection, care, management and maintenance of ecosystems, habitats, wildlife species and populations, within or outside of their natural environments, in order to safeguard the natural conditions for their long-term permanence.

Ecological footprint : A measure of how much biologically productive land and water an individual, population or activity requires to produce all the resources it consumes and to absorb the waste it generates using prevailing technology and resource management practices. The WWF method is used in this Atlas to calculate it.

Ecosystem : A community of plants, animals and smaller organisms that live, feed, reproduce and interact in the same area or environment. Ecosystems have no fixed boundaries; a single lake, a watershed, or an entire region could be considered an ecosystem

Ecosystem services : The goods and services provided by healthy ecosystems, including medicinal plants, clean water and air, and protection from extreme natural events.

Endemic : Restricted to a particular area. Used to describe a species or organism that is confined to a particular geographical region, for example, an island or river basin.

Endemism : the ecological state of being unique to a particular geographic location, such as a specific island, habitat type, nation or other defined zone. To be endemic to a place or area means that it is found only in that part of the world and nowhere else

Eustatism : Worldwide change in sea level such as that caused by tectonic movements or by the growth or decay of glaciers.

Evergreen plant : A plant that has leaves in all seasons

Important Bird Area : Important Bird Areas are key sites for conservation of birds– small enough to be conserved in their entirety and often already part of a protected-area network – that do one of three things. They either have significant numbers of one or more globally threatened species, or are one of a set of sites that together hold a suite of restricted-range species or biome-restricted species, or they have exceptionally large numbers of migratory or congregatory species. IBAs are a BirdLife International initiative.

Glossary

Invasive Alien Species : A species introduced outside its normal distribution. Its establishment and spread modify ecosystems, habitats, or species.

Land cover : The physical coverage of land, usually expressed in terms of vegetation cover or lack of it. The human use of a piece of land for a certain purpose (such as irrigated agriculture or recreation) influences land cover.

Marine Protected Area : A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. MPAs can offer a spectrum of management strategies ranging from full protection, or no-entry areas, to multiple-use areas which prohibit limited activities. No-take MPAs are spatial closures that prohibit all forms of resource extraction, especially fishing. Limited take MPAs include those MPAs with mixed harvest or restricted harvest prohibition areas.

Natura 2000 : A coherent European ecological network of special areas of conservation; shall enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range

Oligotrophic : Nutrient-poor environment.

Ophiolithic site : Rich in ophiolites – pieces of oceanic plates found in mountains

Potected Area : An area of land and/or sea especially dedicated to the protection of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means

Relict forest : A forest that at an earlier time was abundant in a large area but due to some major changes (such as climatic or land use) is now occurring at only one or a few small areas.

Saproxylic : Wood-inhabiting species, that make up a significant portion of the species richness in forests and facilitate a key ecosystem function through wood decomposition and nutrient recycling.

Sassandrian : Dense evergreen forests of western Ivory Coast dominated by water-demanding species such as ebony (Diospyros spp.) and Mapania spp. Here are located numerous endemic species, especially in the lower Cavally Valley and the Meno and Hana depressions near Mont Niénokoué.

Site of Community Importance : A site which contributes significantly to the maintenance or restoration at a favourable conservation status of a natural habitat type or of a specie, and may also contribute significantly to the coherence of Natura 2000, and/or to the maintenance of biological diversity (Natura 2000)

Spawning ground : A place where fish leave their eggs for fertilization.

Special Area of Conservation : A site of Community importance designated by the Member States through a statutory, administrative and/or contractual act where the necessary conservation measures are applied for the maintenance or restoration, at a favourable conservation status, of the natural habitats and/or the populations of the species for which the site is designated

Special Protection Area : A Special Protection Area is a site classified by Member States for the protection of Birds listed under Annex I of the Birds Directive or migratory birds, taking into account their protection requirements in the geographical sea and land area where this directive **applies**

Taxon : Category of organisms, any of the groups to which organisms are assigned according to the principles of taxonomy, including subspecies, species, genus, family, order, class, and phylum.

Taxonomy : Refers to the system that classifies all worldwide species including plants, animals and microorganisms

Topography : The configuation of the surface of land, including the position of natural objects.
Watershed: An area of a land that feeds water to a river, draining through the landscape into tributaries and main river channels

Wetland : A transitional area between terrestrial and aquatic systems in which the water table is usually at or near the surface or the land is covered by shallow water. Under the Ramsar Convention, wetlands can include tidal mudflats, natural ponds, marshes, potholes, wet meadows, bogs, peatlands, freshwater swamps, mangroves, lakes, rivers and even some coral reefs.

World Heritage : A UNESCO World Heritage Site is a place (such as a forest, mountain, lake, desert, monument, building, complex, or city) that is listed by UNESCO as of special cultural or physical significance.

Xerophilous : Thriving in dry habitats

Scientific Names Index

Northern America - Canada

Balaenoptera musculus : Grand rorqual / Blue Whale

Calidris pusilla : Bécasseau semipalmé / Semipalmated Sandriper

Canis lupus : Loup / Wolf

Castor canadensis : Castor / North American Beaver

Coenonympha nipisiquit : Satyre fauve des maritimes / Maritime Ringlet

Corophium volutator : Crevette grise / Mud Shrimp

Globicéphala : Baleines-pilotes / Pilot Whale

Halichoerus grypus : Phoque gris / Gray Seal

Lagenorhynchus albirostris : Dauphin à bec blanc / White-beaked Dolphin

Lepus americanus : Lièvre d'Amérique / Snowshoe Hare

Lepus arcticus : Lièvre arctique / Arctic Hare

Martes americana : Martres / American Marten

Odocoileus virginianus : Cerf de Virginie / White-tailed Deer

Phoca vitulina : Veau marin / Harbor Seal

Rangifer tarandus : Caribou / Reindeer (Caribou)

Salmo salar : Saumon atlantique / Atlantic Salmon

Ursus arctos horribilis : Grizzli / Grizzly Bear

Ursus americanus : Ours Noir / American Black Bear

Ursus maritimus : Ours blanc / Polar bear

Megaptera novaeangliae : Baleine à bosse / Humpback Whale

Caribbean and Guiana Shield

Amazona versicolor : Amazone de Sainte-Lucie / St. Lucia Amazon

Antennariidae : Poisson-crapaud / Frogfish

Cinnamomum elongatum : Camphrier/ Camphor-Tree

Cnemidophorus vanzoi : Lézard de Sainte Lucie / Vanzo' Whiptail

Hippocampus : Hippocampe / Seahorse

Juniperus barbadensis : Genévrier des Barbades / Barbades' Juniper

Leptodactylus fallax : Poulet des montagnes / (Moutain Chicken) Giant Ditch Frog

Melanosuchus niger : Caïman noir / Black Caimans

Porifera : Eponges / Sponges

Ramphocinclus brachyurus : Moqueur gorge-blanche / White-breasted Thrasher

Strombus gigas : Lambi / Queen Conch

Trichechus manatus : Lamantin d'Amérique / American Manatee

Oceania

Acanthaster planci : Acanthaster pourpre / Crown-of-thorns Starfish

Aplonis santovestris : Stourne d'Espiritu Santo / Santo Mountain Starling

Balaenoptera musculus : Baleine bleue / Blue Whale

Brachylophus fasciatus : Iguane à Bande des fidji / Fiji banded Iguana

Crocodylus porosus : Crocodile marin / Saltwater Crocodile

Dugong dugon : Dugong / Dugong

Gallicolumba erythroptera : Gallicolombe des Tuamotu / Polynesian Ground Dove

Geocarcinus planatus : Crabe de Clipperton / Socorro Island Red Land Crab

Miconia calvescens : Cancer Vert / Velvet Tree

Pisonia grandis : Mapou / Grand's Devil's claws

Pterodroma macroptera : Pétrel noir / Great-winged Petrel

Sula dactylatra : Fou masqué / Masked Boobys

Scientific Names Index

European Continent

Acantholingua ohridana : Belvica / Ohrid belvica

Acipenser sturio : European Sea Sturgeon

Acis nicaeensis : Nivéole de Nice

Acrocephalus paludicola : Phragmite aquatique / Aquatic Warbler

Aegypius monachus : Vautour moine / Cinereous Vulture

Alopochen aegyptiacus : Ouette d'Egypte / Egyptian Goose

Aquila clanga : Aigle criard / Spotted Eagle

Aquila heliaca : Aigle imperial / Eastern Imperial Eagle

Aquila pomarina : Aigle pomarin / Lesser-spotted Eagle

Ardea alba : Grande aigrette / Great Egret

Aythya nyroca: Fuligule nyroca / Ferruginous Duck

Bison bonasus : Bison d'Europe / European Bison

Branta canadensis : Bernache du Canada(Outarde) / Canada Goose

Bubalus bubalis : Buffle d'eau / Water Buffalo

Bubo bubo : Grand-duc d'Europe / Eagle Owl

Capra aegagrus : Chèvre aégagre / Wild Goat

Cedrus brevifolia : Cèdre de Chypre / Cyprus Cedar

Caretta caretta : Tortue carette ou Caouanne / Loggerhead Turtle

Chelonia mydas : Tortue verte / Green Turtle

Ciconia nigra : Cigogne noire /Black Stork

Castor fiber : Castor / European beaver

Canis lupus : Loup / Wolf

Carterocephalus palaemon : Hespérie du brome / Chequered Skipper

Colias phicomone : Candide / Moutain Clouded Yellow

Ciconia nigra : Cigogne noire / Black Stork

Coracias garrulus : Rollier d'Europe / European Roller

Crex crex : Râle des genets / Corncrake

Campanula bomemical : Campanule de Karkonosze/ Karkonosze bellflower

Coracias garrulus : Rollier d'Europe/ European Roller

Crex crex : Râle des genêts / Corncrake

Corallium rubrul : Corail rouge/ Red Coral

Centrostephanus longispinus : Oursin diadème / Sea urchin

Caulerpa taxifoliai : Algue exotique / Exotic Alga

Delichon urbicum : Hirondelle de fenêtre / Common House Martin

Egretta alba : Grande aigrette / Great Egret

Epinephelus marginatus : Mérou brun / Dusky Grouper

Euproctus asper : Euprocte des Pyrénées / Pyrenean Brook Salamander

Falco peregrinus : Faucon pèlerin / Peregrine Falcon

Falco tinnunculus : Faucon crécerelle / Common Kestrel

Falco vespertinus: Faucon kobez / Red-footed Falcon

Fallopia japonica : Renouée du Japon / Japanese Knotweed

Galanthus woronowii : Perce-neige de Colchide / Green Snowdrop

Galemys pyrenaicus : Desman des Pyrénées / Pyrenean Desman

Gentiana pyrenaica : Gentiane des Pyrénées / Pyrenean Gentian

Gypaetus barbatus : Gypaète barbu / Bearded Vulture

Gyps fulvus : Vautour fauve / Griffon Vulture

Haliaeetus albicilla : Pygargue à queue blanche / White-tailed eagle

Harmonia axyridis : Coccinelle asiatique / Asian Lady Beetle

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Heracleum mantegazzianum : Berce du Caucase / Giant Hogweed

Herpestes javanicus : Petite mangouste indienne / Small Indian Mongoose

Hieraaetus pennatus : Aigle botté / Booted Eagle

Hipparchia fagi : Sylvandre / Woodland Grayling

Iberolacerta aurelioi : Lézard pyrénéen d'Aurelio / Aurelio's Rock Lizard

Lanius excubitor : Pie-grièche grise / Great Grey Shrike

Lepus sp. : Lièvre / Hare

Lutra lutra : Loutre d'Eurasie / Eurasian Otter

Lynx lynx : Lynx boréal / Eurasian Lynx

Margaritifera margaritifera : Moule perlière / Freshwater Pearl Mussel

Mamota marmota tatrica : Marmotte des Tatras / Tatra beaver

Meriones dahli : Mérione de Dahl / Dahl's Jird

Myotis bechsteinii : Vespertilion de Bechstein / Bechstein's Bat

Myotis capaccinii : Murin de Capaccini / Long-fingered Bat

Neophron percnopterus : Vautour percnoptère / Egyptian Vulture

Nycticorax nycticorax : Bihoreau gris / Night Heron

Otocolobus manul : Chat de Pallas (Manul) / Palla's Cat

Otis tarda : Grande outarde / Great Bustard

Ovis aries orientalis : Mouflon arménien / Armenian Mouflon

Parnassius apollo : Apollon / Apollo

Pelecanus crispus : Pélicans frisés / Dalmatian Pelican

Phalacrocorax carbo : Grand cormoran / Black Cormorant

Panthera pardus : Panthère / Leopard

Phoca hispida botnica : Phoque de la Baltique / Baltic ringed seal

Phoenicopterus roseus : Flamants roses / Greater Flamingo

Phylloscopus sibilatrix : Pouillot siffleur / Wood Warbler

Pimpinella saxifraga rupestris : Boucage saxifrage / Burnet Saxifrage

Pinetum mughi Sudeticum : Pins nains des Sudètes / Sudetic Dwarf Mountain Pine

Pinna nobilis : Grande Nacre / Noble Pen Shell

Pinus mugo : Pins nains / Dwarf Pine

Plegadis falcinellus : Ibis falcinelle / Glossy Ibis

Posidonia oceanica : Posidonie de méditerranée / Mediterranean tapeweed

Proteus anguinus : Protée anguillard / Olm

Prunus serotina : Cerisier tardif / Black Cherry

Psittacula krameri : Perruche à collier / Rose-ringed Parakeet

Quercus alnifolia : Chêne de Chypre / Golden Oak

Rattus norvegicus : Rat brun / Brown Rat

Rhinolophus ferrumequinum : Grand Rinolophe / Greater Horseshoe Bat

Rubus chamaemorus : Plaquebière / Cloudberry

Rupicapra pyrenaica : Isard / Pyrenean Chamois

Rupicapra rupicapra : Chamois / Chamois

Rupicapra rupicapra tatrica : Chamois des Tatras / Tatra Chamois

Salmo letnica : Truite d'Ohrid / Ohrid trout

Saxifraga moschata ssp. Basaltica : Saxifrage de Lamotte / Mossy Saxifrage

Senecio inaequidens : Séneçon sud-africain / Narrow-leaved Ragwort

Solidago : Solidages / Goldenrods

Sorbus sudetica : Sorbier des Sudètes / Krkonoše Rowan

Sylvia communis : Fauvette grisette / Whitethroat

Troglochaetus beranecki : Ver polychète de grotte / Cave Polychaete Worm

Scientific Names Index

Ursus arctos : Ours brun / Brown Bear

Venerupis decussata : Palourde de grotte / Cave Clam

Vipera ursinii rakosiensis : Vipère d'Orsini hongroise / Hungarian Meadow Viper

Zootoca vivipara : Lézard vivipare / Viviparous Lizard

Mediterranean Basin

Acanthaster planci : Etoile de mer / Crown-of-thorns Starfish

Argania spinosa (L.) Skeels : Arganier / Argan

Carcharhinus amblyrhynchos : Requin gris de récif / Grey Reef Shark

Caretta caretta : Tortue cearette ou caouanne / Loggerhead Turtle

Cedrus brevifolia : Cèdre de Chypre / Cyprus Cedar

Cedrus libani : Cèdre du Liban / Lebanon Cedar

Chelonia mydas : Tortue verte / Green Turtle

Francolinus ochropectus : Francolin de Djibouti (ou de Day) / Djibouti Francolin

Merlucciidae : Merlu / Hake

Monachus monachus : Phoque moine / Mediterranean Monk Seal

Mullus barbatus : Rouget barbet / Red Mullet

Neophron percnopterus : Vautour percnoptère / Egyptian Vulture

Palaemon sp. : Crevette rose / Shrimp

Pytilia melba : Beaumarquet melba / Green-winged Pytilia

Quercus alnifolia : Chêne de Chypre / Golden Oak

Sardina pilchardus : Sardine / Pilchards

Stenella coeruleoalba : Dauphin bleu et blanc / Striped Dolphin

West Africa

Addax nasomaculatus : Addax / Addax

Aonyx capensis : Loutre à joues blanches / African Clawless Otter

Cephalophus jentinki : Céphalophe de Jentink / Jentink's Duiker

Cephalophus ogilbyi : Céphalophe d'Ogilby / Ogilby's Duiker

Cephalophus zebra : Céphalophe zébré / Zebra Duiker

Cercopithecus aethiops : Singe vert / Vervet Monkey

Colobus (Piliocolobus) badius temmincki : Colobe bai d'Afrique occidentale / Western Red Colobus

Colobus (Piliocolobus) badius waldroni : Colobe rouge de Miss Waldron / Miss Waldron's Red Colobus

Eichhornia crassipes : Jacinthe d'eau / Common Water Hyacinth

Globicephala macrorhynchus : Globicéphale tropical / Short-finned Pilot Whale

Micropotamogale lamottei : Micropotamogale / Nimba Otter Shrew

Nectophrynoides occidentalis : Crapaud vivipare du Nimba / Mountain Viviparous Toad

Neotragus pygmaeus : Antilope royale / Royal Antelope

Oryx dammah : Oryx algazelle / Scimitar-Horned Oryx

Palinurus charlestoni : Langouste rose / Cape Verde Spiny Lobster

Pistia stratiotes : Laitue d'eau Water / Cabbage or Water Lettuce

Rhincodon typus : Requin-baleine / Whale Shark

Salvinia molesta : Azolla / Giant Salvinia or Kariba Weed

Sousa teuszii : Dauphin à bosse / Atlantic Hump-backed Dolphin

Trichechus senegalensis : Lamantin d'Afrique / African Manatee

Typha domingensis : Typha / Southern Cattail

Central Africa

Aonyx capensis : Loutre à joues blanches / African Clawless Otter

Caretta caretta : Carette ou Tortue caouanne / Loggerhead Sea Turtle

Cercopithecus mitis kantdi : Cercopithèque doré / Golden Monkey

Scientific Names Index

Chelonia mydas : Tortue verte / Green Sea Turtle

Choeropsis liberiensis ou *Hexaprotodon liberiensis* : Hippopotame pygmée / Pygmy hippopotamus

Conraua goliath : Grenouille géante / Goliath Frog

Dermochelys coriacea : Tortue luth / Leatherback Turtle

Diceros bicornis : Rhinocéros noir Black / Rhinoceros or Hook-lipped Rhinoceros

Eichhornia crassipes : Jacinthe d'eau / Common Water Hyacinth

Eretmochelys imbricata : Tortue imbriquée / Hawksbill Turtle

Erica johnstoni : Bruyère arborescente / Giant Groundsel

Gorilla gorilla beringei : Gorille de montagne / Mountain Gorilla

Lepidochelys olivacea : Tortue olivâtre ou Tortue de Ridley / Olive Ridley

Pistia stratiotes : Laitue d'eau Water / Cabbage or Water Lettuce

Rhincodon typus : Requin-baleine / Whale Shark

Salvinia molesta : Azolla / Giant Salvinia or Kariba Weed

Typha domingensis : Typha / Southern Cattail

indian Ocean

Acanthaster planci : Acanthaster pourpre / Crown-of-thorns Starfish

Acrocephalus seychellensis : Fauvette des Seychelles / Seychelles Warbler

Carcharhinus amblyrhynchos : Requin gris de récif / Grey Reef Shark

Chelonia mydas : Tortue verte / Green Sea Turtle

Copsychus sechellarum :Shama des Seychelles / Seychelles Magpie Robin

Dipsochelys elephantina : Tortue géante des Seychelles, Tortue éléphantine ou d'Aldabra / Seychelles Giant Tortoise or Elephantine Tortoise or Aldabra Giant Tortoise

Dryolimnas cuvieri : Râle de Cuvier / White-throated Rail

Falco punctatus : Crécerelle de Maurice / Mauritius Kestrel

Foudia rubra : Cardinal de Maurice / Mauritian Fody

Fregata ariel iredalei : Frégate Ariel (sous-espèce) / Mascarene Least Frigatebird

Fregata minor : Frégate du Pacifique / Great Frigatebird

Latimeria chalumnae : Cœlacanthe / West Indian Ocean Coelacanth

Lodoicea maldivica : Palmier "Coco de mer" / Coco de mer

Nesoenas mayeri : Pigeon rose / Pink Pigeon

Otus insularis : Petit-duc scieur / Seychelles scops-owl

Psidum cattleianum : Goyavier-fraise / Strawberry guava

Psittacula eques echo : Perruche de la Réunion / Echo Parakeet

Pterodroma macroptera : Pétrel noir /Great-winged Petrel

Pteropus rodricensis : Roussette dorée ou Roussette de Rodrigues / Rodrigues flying fox

Pteropus niger : Roussette noire / Mauritian Flying Fox or Greater Mascarene Flying Fox or Mauritus Fruit Bat

Raphus cucullatus : Dronte de Maurice ou Dodo / Dodo

Rhincodon typus : Requin-baleine / Whale Shark

Rubus alceifolius : Vigne marronne/Giant Bramble

Terpsiphone corvina : Tchitrec des Seychelles / Seychelles paradise-flycatcher

Tridacna sp. : Bénitiers / Tridacna Clams

Antarctique et Sub-Antarctique

Dermochelys coriacea : Tortue luth / Leatherback Turtle

Dissostichus eleginoides : Légine australe / Patagonian Toothfish

Lyallia kerguelensis : Lyallia / Lyallia

Macrocystis pyrifera : Algues marine géante Macrocystis / Giant Kelp

Continental South-East Asia

Bos gaurus : Gaur / Gaur

Bos javanicus : Banteng / Banteng

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Bos sauveli : Kouprey / Kouprey

Elephas maximus : Eléphant d'Asie / Asian Elephant

Megamuntiacus vuquangensis : Muntjack géant / Giant muntjac

Nomascus concolor : Gibbon noir / Black Crested Gibbon

Panthera pardus : Panthère / Leopard

Panthera tigris : Tigre / Tiger

Pseudoryx nghetinhensis : Sao La ou Saola / Saola or Vu Quang Ox

Rhinoceros sondaicus : Rhinoceros de java / Javan Rhinoceros, Lesser one-horned Rhinoceros

Tapirus indicus : Tapir de Malaisie / Malayan Tapir

Ursus thibetanus : Ours noir d'Asie / Asian Black Bear

Acronyms

ACCOBAMS : Accord sur la conservation des cétacés de la Mer noire, de la Méditerranée et de la zone atlantique adjacente / Agreement on the Conservation of Cetaceans In the Black Sea, Mediterranean Sea and contiguous Atlantic area
AEC/ACS : Association des Etats des Caraïbes / Association of Caribbean States
AEE/EEA : Agence Européenne de l'Environnement / European Environmental Agency
AESM/EMSA : Agence européenne pour la sécurité maritime / European Maritime Safety Agency
AP/PA : Aires Protégées / Protected Areas
APA/ABS : Accès et Partage des Avantages/ Access and Benefits Sharing
APEC/CEAP : Asia Pacific Economic Cooperation / Coopération Economique Asie Pacifique
ASA/SAA : Accord de Stabilisation et d'Association (Politique européenne de voisinage) / Stabilisation and Association Agreement (European Neighbourhood Policy)
ASP-DB/SPA-DB : Aires Spécialement Protégées et Diversité Biologique en Méditerranée / Specially Protected Areas and Biological Diversity in the Mediterranean

BEES : Belgium Ecosystem Services (Project)
BES : Biotica Ecological Society - Moldavie

CANARI : Caribbean Natural Resources Institute
CAR-ASP/RAC-SPA : Centre d'Activité Régional pour les Aires Spécialement Protégées / Regional Activity Center for Specially Protected Area
CARICOM : Caribbean Community /Communauté Caribéenne
CBLT : Commission du Bassin du Lac Tchad
CCAMLR : The Convention on the Conservation of Antarctic Marine Living Resources / Convention sur la conservation de la faune et de la flore marines de l'Antarctique (1980)
CCR/JRC : Centre Commun de Recherche – Commission européenne / Joint Research Center – European Commission
CDB/CBD : Convention sur la Diversité Biologique / Convention on Biological Diversity
CEDEAO : Communauté Economique des Etats d'Afrique de l'Ouest
CEEAC : Communauté Economique des Etats de l'AfriqueCentrale
CEEW : Cellule Etat de l'Environnement Wallon
CEMAC : Communauté Economique et Monétaire d'Afrique Centrale
CESS/CEN-SAD : Communauté des Etats Sahélo-Sahariens / Community of Sahel-Saharan States
CGPM/GFCM : Commission Générale des Pêches pour la Méditerranée / General Fisheries Commission for the Mediterranean Sea
CILSS : Comité Inter-Etats de Lutte contre la Sécheresse au Sahel
CIRAD : Centre de Coopération Internationale en Recherche Agronomique pour le Développement/ International Cooperation Center of Agricultural Research for Development
CITES : Convention on International Trade in Endangered Species / Convention sur le commerce international des espèces de faune et de flore sauvages menacées d'extinction.
CMI/IJC : Commission mixte internationale / International Joint Commission
COI / IOC : Commission de l'Océan Indien / Indian Ocean Commission
COMESA : Common Market for Eastern and Southern Africa / Marché commun de l'Afrique orientale et australe
COMIFAC : Commission des Forêts d'Afrique Centrale
COSEPAC/COSEWIC : Comité sur la situation des espèces en péril au Canada / Committee on the Status of Endangered Wildlife in Canada
CPS/SPC : Secrétariat général de la Communauté du Pacifique / Secretariat of the Pacific Community
CPS/SLC : Conception "Paysage suisse" / Swiss Landscape Concept
CRIOBE : Centre de Recherche Insulaire et Observatoire de l'Environnement / Insular Research Center and Environment Observatory – Moorea

DAISIE : Delivering Alien Invasive Species Inventories for Europe
DOM/ROM/COM : Département/Région/Collectivité d'Outre Mer - France

ECOWAS : Economic Community of West African States
ECP/PRC : Ecoregional Conservation Plan / Plan Ecorégional de Conservation
EBCD : European Bureau for Conservation and Developement
EFSA : European Food Safety Authority / Autorité européenne de sécurité des Aliments
ELNAIS : Ellenic Network on Aquatic Invasive Species
ENRIN : Environment and Natural Resources Information Network
EWRR : Early Warning Rapid Response / Système rapide d'alerte précoce

FAO/OAA : UN Food and Agriculture Organization / Organisation des Nations Unies pour l'Alimentation et l'Agriculture
FEM/GEF : Fonds pour l'Environnement mondial / Global Environment Facility
FFEM : Fonds français pour l'environnement mondial
FSC : Forest Stewardship Council

GAC : Government Appointed Committees / Comités nommés par le Gouvernement
GBIF : Global Biodiversity Information Facility
GIRE : Gestion intégrée des ressources en eau
GISD : Global Invasive Species Database
GLC : Global Land Cover
GTI : Global Taxonomy Initiative

HELCOM : Commission d'Helsinki
HIC/HCI : Habitat d'Intérêt Communautaire / Habitat of Community Interest

IBGE : Institut Bruxellois de Gestion de l'Environnement / Brussels' Institute for Management of the Environment
ICPDR : International Commission for the Protection of the Danube River / Commission Internationale pour la Protection du Danube

Acronyms

IDH/HDI : Index de développement humain / Human Development Index
IEPF : Institut de l'énergie et de l'environnement de la francophonie
IFAN : Institut Fondamental d'Afrique Noire
IGAD : Intergovernmental Authority on Development / Autorité Intergouvernementale pour le Développement
IOR-ARC : Indian Ocean Rim - Association for Regional Cooperation
IRSB : Institut Royal des Sciences Naturelles – Belgique

LEA : Ligue des Etats Arabes

MAB : Man and Biosphere Reserve / Réserve de la Biosphere
MAEE : Ministère des Affaires Etrangères et Européennes, France
MDDEP : Ministère du Développement Durable, de l'Environnement et des Parcs, Québec
MNHN : Museum National d'Histoire Naturelle, France
MRN/DNR : Ministère des Ressources Naturelles / Department of Natural Ressources – Nouveau-Brunswick

NCIS : Nature Conservation Information System / Système d'information sur la conservation de la nature - Hongrie

OCDE/OECD : Organisation de coopération et de développement économique / Organisation of Economical Cooperation and Development
OECS : Organisation of Eastern Caribbean States
OECEMN/BSECO : Organisation de Coopération Economique de la Mer Noire / Black Sea Economic Cooperation Organization
OEPP/EPPO : Organisation européenne et méditerranéenne pour la protection des plantes / European and Mediterranean Plant Protection Organization
OGM / GMO : Organisme génétiquement modifié / Genetically Modified Organism
OIEau / IOWater : Organisation Internationale de l'Eau / International Office for Water
OIF : Organisation Internationale de la Francophonie
OMD/MDG : Objectifs du millénaire pour le développement / Millenium Development Goals
OMPO : Oiseaux Migrateurs du Paléarctique Occidental / Migratory Birds of Occidental Palearctic
OTAN/NATO : Organisation du Traité de l'Atlantique Nord / North-Atlantic Treaty Organisation
OSPAR : Commission pour la protection du milieu marin de l'Atlantique du Nord-Est / The Convention for the Protection of the Marine Environment of the North-East Atlantic

APJC/PACJA : Alliance Panafricaine pour la Justice Climatique / Panafrican Climate Justice Alliance
PAM : Plan d'Action pour la Méditerranée
PEFC : Pan-European Forest Certification / Programme de Reconnaissance des Certifications Forestières
PGEM : Plan de Gestion de l'Espace Maritime / Marine Area Management Plan
PIB/GDP : Produit Intérieur Brut / Gross Domestic Product
PIBSE/IPBES : Plate-forme intergouvernementale sur la biodiversité et les services rendus par les écosystèmes / International Platform on Biodiversity and Ecosystem Services
PIFS : Pacific Islands Forum Secretariat / Secrétariat du Forum des îles du Pacifique
PNUD/UNDP : Programme des Nations-Unies pour le développement / United Nations Development Programme
PNUE/UNEP : Programme des Nations Unies pour l'environnement / United Nations Environmental Programme
PSE/ PES : Paiement pour services environnementaux / Payment for Ecosystem Services

RIOB/INBO : Réseau international des organismes de Bassin / International Network of Basin Organization

SADC : Southern African Development Community / Communauté de développement d'Afrique australe
SOPAC : Commission de géoscience appliquée des îles du Pacifique / Pacific Islands Applied Geoscience Commission
SEBI : Streamlining European Biodiversity Indicators
SEP : Structure Ecologique Principale
SIG/GIS: Système d'information géographique / Geographical Information System
SNAP/PACS : Système National des Aires Protégées / Protected Area Country Strategy
SOER : European Environment State and Outlook Report / Rapport sur l'environnement en Europe : Etat et perspectives
SPAW : Special Protected Areas and Wildlife
SPDBP/PEBLDS : Stratégie paneuropéenne de la diversité biologique et paysagère / Pan-European Biological and Landscape Diversity Strategy
SPREP : South- Pacific Regional Environmental Programme / Programme régional pour l'environnement du Pacifique Sud

TAAF : Terres Australes et Antarctiques Francaises
TNC : The Nature Conservancy

UE/EU : Union européenne / European Union
UEMOA : Union Economique et Monétaire Ouest-Africaine
UNESCO : Organisation des Nations-Unies pour l'Education, la Science et la Culture / United Nations Educational, Scientific and Cultural organisation
UICN/IUCN : Union internationale pour la conservation de la nature / International Union for Conservation of Nature
UMA : Union du Maghreb Arabe
UPM : Union pour la Méditerranée

WH : World Heritage Sites / Sites du Patrimoine Mondial (UNESCO)
WRI : World Resources Institute
WWF : World Wildlife Fund for Nature / Fonds mondial pour la nature.

ZEA/EBA : Zone d'Endémisme pour les Oiseaux / Endemic Bird Area
ZEE/EEZ : Zone Economique Exclusive / Exclusive Economic Zone
ZICO/IBA : Zone Importante pour la Conservation des Oiseaux / Important Bird Area
ZPS/SPA : Zone de Protection Spéciale / Special Protection Area
ZSC/SCA : Zone Spéciale de Conservation / Special Conservation Area

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Birdlife International database: http://www.birdlife.org/datazone/sites/index.html?action=SitHTMFind.asp&INam=&Reg=7

Convention on Biological Diversity. Country Profiles: http://www.cbd.int/countries/

DAISIE European Invasive Alien Species Gateway: http://www.europe-aliens.org/

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LEGEND
Country Maps

Protected Areas

- IUCN Categories I and II
- IUCN Categories III, IV and V

International Labels

- RAMSAR sites
- Biosphere reserves
- World Heritage sites

Marine Areas

- Exclusive Economic Zone
- Marine ecoregions
- Hight Artic Archipelag — Name of marine ecoregions
- Coral reefs area

Terrestrial Areas

- Country borders
- Bordering countries
- Main watercourses
- Capital
- Other main cities

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Regional Maps

Biomes

Tropical Areas

- Moist forest
- Dry forest
- Coniferous forest
- Highland grassland
- Tropical savanna
- Mangrove

Temperate Areas

- Coniferous forest
- Broadleaf and mixed forests
- Mediterranean scrub
- Grassland savannas and shrubland

Arctic and Sub-Arctic Areas

- Tundra
- Taiga
- Snow, ice and rock

Arid Areas

- Desert
- Sahel

Marine Areas

- Exclusive Economic Zone
- Marine Ecoregions
- Hight Artic Archipelag — Name of marine ecoregions

Terrestrial Areas

- Country borders
- Countries not included in the Francophonie
- Main watercourses

Polar bears, gorillas, lemurs, sea turtles and large tortoises, marine birds, corals, etc. the list of threatened or endemic species in Francophone countries is extensive.

Present on all continents and seas on Earth, home to some 25 % of all wetlands, coral reefs and atolls, and the last forest block of Africa, the Francophonie has a major role to play for the future of biodiversity, and beyond, for the services it provides to the 900 million people in the Francophone world and to all humankind.