

Subnational governments

# IN ACTION FOR BIODIVERSITY

Case studies



## COORDINATION AND WRITING

This publication was produced by the Direction de l'expertise en biodiversité of the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques (MDDELCC). It was produced by the Direction des communications of the MDDELCC.

## INFORMATION

For information, contact the Information Centre.

Phone: 418 521-3830  
1 800 561-1616 (toll free)  
Fax: 418 646-5974  
Form: [www.mddelcc.gouv.qc.ca/formulaires/renseignements.asp](http://www.mddelcc.gouv.qc.ca/formulaires/renseignements.asp)  
Web: [www.mddelcc.gouv.qc.ca](http://www.mddelcc.gouv.qc.ca)

## TO OBTAIN A COPY OF THE DOCUMENT:

Direction de l'expertise en biodiversité  
Ministère du Développement durable, de l'Environnement  
et de la Lutte contre les changements climatiques  
675 René-Lévesque Boulevard East, 4<sup>th</sup> Floor, Box 21  
Québec (Québec) G1R 5V7  
Phone: 418 521-3907  
Or visit our website:  
[http://www.mddelcc.gouv.qc.ca/biodiversite/inter\\_en.htm](http://www.mddelcc.gouv.qc.ca/biodiversite/inter_en.htm)

## REFERENCE TO BE CITED

MINISTÈRE DU DÉVELOPPEMENT DURABLE, DE L'ENVIRONNEMENT ET DE LA LUTTE CONTRE LES CHANGEMENTS CLIMATIQUES. *Subnational governments in action for biodiversity – Case studies*, 2016, 41 pages. [Online]. [http://www.mddelcc.gouv.qc.ca/biodiversite/inter\\_en.htm](http://www.mddelcc.gouv.qc.ca/biodiversite/inter_en.htm) (page consulted on day/month/year).

Legal deposit – Bibliothèque et Archives nationales du Québec, 2016  
ISBN 978-2-550-77188-3 (Online),  
ISBN 978-2-550-77187-6 (Print version)  
[Édition française : ISBN 978-2-550-77182-1 (PDF)  
ISBN 978-2-550-77181-4 (imprimé)]

All rights reserved for all countries.  
© Gouvernement du Québec, 2016



## Foreword from the executive secretary of the Convention on Biological Diversity, Braulio Ferreira de Souza Diás

The 20 Aichi Biodiversity Targets of the Strategic Plan for Biodiversity 2011-2020 cannot be achieved without the full contribution and participation of the different levels of government in each country. In fact, the majority of public investments related to biodiversity and ecosystem services are often the responsibility of states, provinces, regions, cities, townships or other local authorities. Subnational and local governments have been contributing directly to the Convention on Biological Diversity (CBD), a fact formally recognized since 2008, when the first decision on this issue was adopted by the Conference of the Parties to the CBD. Today, more than 30 Parties regularly update the Secretariat on their best practices and lessons learned at subnational level, and we are looking forward to the 5<sup>th</sup> biannual Summit of Subnational Governments, Cities and other Local Authorities parallel to the Convention's thirteenth meeting of the Conference of the Parties (COP 13) in Mexico at which this valuable publication will be launched.

The Secretariat of the CBD is proud to collaborate with the Government of Quebec and other subnational governments that have contributed to this publication to highlight best practices linked to the implementation of the Aichi targets. These case studies prove that subnational governments are key players to manage biodiversity and the ecosystem services it embodies. In fact, their intervention, especially in land management, has important consequences on many aspects including water management, food security, environmental footprint management, prevention of environmental disaster and risk reduction strategies. Their capacity to take informed decisions will be critical to achieve targets on the conservation and sustainable use of biological diversity related, especially, to urban development and forest and fisheries management. Their toolbox includes instruments critical for the Convention such as the creation of protected area systems and their connectivity and as capacity building to support the work of local authorities to raise awareness of citizens towards sustainable consumption and production.

The Government of Quebec, the government of Canada and the city of Montreal, our hosts, actively works together at the implementation of the Convention. To the Secretariat, this publication is an encouragement to continue to cooperate with Quebec and with the other prefectures, provinces, regions and states that shared their experiences to the publication, in order to help subnational governments, and their partners, to contribute effectively to the implementation of the Strategic Plan for Biodiversity 2011-2020, as per the mandate provided by the Parties to the Convention. We are also encouraged by the vigor and promise of the upcoming activities, projects and commitments to be announced at the fifth Summit hosted by Mexico: the initiative of the Mexican Council on Biodiversity (CONABIO) to cooperate with 22 of its States is already included in this collection of leading examples. In thanking our host province for this publication, we also invite all other subnational to be present at CBD COP 13, and to cooperate with their national governments to mainstream biodiversity for human well-being – the theme for the 2016 Conference.

**Braulio Ferreira de Souza Diás**





# Message from the Québec Minister of Sustainable Development, the Environment and the Fight against Climate Change, David Heurtel

Subnational governments are key players in biodiversity conservation. Through their legislative powers and knowledge of the territory, they have a remarkable capacity to take action that can lead to innovative solutions and contribute significantly to achieving the Aichi Targets of the Convention on Biodiversity (CBD).

The Government of Québec was therefore enthusiastic about producing this publication in collaboration with its partners, the Network of Regional Governments for Sustainable Development (nrg4SD) and the Advisory Committee of Subnational Governments on biological diversity, to present the best practices implemented by federated states and regions.

Biodiversity supports and provides a broad range of ecological services that are essential to human health, safety and well-being. Biodiversity conservation also offers many avenues for action to deal with climate change in terms of both mitigation and adaptation. In Québec, several initiatives in the 2013-2020 Climate Change Action Plan focus on designing tools for assessing, protecting and managing land and aquatic ecosystems in order to maintain their functions and the benefits they produce.

Québec has been a signatory to the CBD since 1992 and has also adopted Government Biological Diversity Guidelines as a first response to the Aichi Targets. The guidelines ensure that biodiversity is integrated and taken into account when planning and implementing the actions of government departments and public bodies. In addition, the Government of Québec has clearly indicated its commitment to devote 50% of the territory covered by the Plan Nord to non-industrial purposes. This area is equivalent in size to mainland France.

The case studies in this publication illustrate in concrete terms the importance of the biodiversity conservation action that subnational governments are taking. They also demonstrate the variety of tools our governments can utilize. Collaboration among federated states and regions has increased in recent years through the establishment of such platforms as the Advisory Committee of Subnational Governments, under the Convention, and nrg4SD. We are extremely pleased by this mobilization since we have everything to gain from such interaction.

**David Heurtel**



# Acknowledgments

We would like to thank all the subnational governments that participated to the report. Their feedbacks on the document were necessary to ensure that it stayed aligned with the objectives of the Work Plan 2013-2015 of the Advisory Committee of Sub-National Governments (AC SNG) on Biodiversity.

We also want to thank the Network of Regional Governments for Sustainable Development (nrg4SD) for helping with the collection of the case studies and the publication of the document. nrg4SD is a non-profit international organization representing some 50 subnational governments from 30 countries and 7 associations of subnational governments. Their objectives are to promote sustainable development at the level of subnational governments around the Globe, to contribute to the elaboration and implementation of responsible territorial policies, tools and resources, and to encourage expertise exchange, partnerships and projects among their members, as well as between them and other major international stakeholders. As such, nrg4SD is an important supporting partner of the AC SNG.

Finally, we want to thank the government of Québec, and particularly the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques as well as the Ministère des Relations internationales et de la Francophonie, which worked diligently in realizing the document.

# Table of contents

<b>Introduction.....</b>	<b>2</b>
Goal of this publication .....	3
Biological diversity – a planetary challenge.....	3
International context .....	3
The role of subnational authorities.....	4
Case study distribution map .....	4
<b>Case studies .....</b>	<b>5</b>
Aichi Prefecture (Japan) .....	6
Basque Country (Spain).....	10
Free and Sovereign State of Campeche (Mexico).....	13
Generalitat de Catalunya (Spain) .....	16
Fatick (Senegal) .....	20
Gangwon-do Province (South Korea) .....	23
State of Goiás (Brazil) .....	26
Provence-Alpes-Côte d’Azur (France).....	28
Québec (Canada) .....	31
Wallonia (Belgium) .....	35
<b>Conclusion .....</b>	<b>38</b>
1. Strategy and action plan at the subnational level.....	39
2. Subnational governments respond to Aichi Targets.....	39
3. Subnational governments face major challenges .....	40

# INTRODUCTION





## Goal of this publication

This publication is a compendium of best practices used by subnational governments in the protection and sustainable use of biological diversity and, as such, may serve as a tool for consideration by other subnational authorities desirous of moving forward in this direction.

This publication identifies the following:

- ▶ The various levels of specific governance and land planning assumed by subnational governments
- ▶ Opportunities for collaboration and/or complementarity between national and subnational governments on biodiversity conservation, where they exist
- ▶ The contribution of subnational governments to the conservation of biodiversity and ecological services
- ▶ The challenges and issues faced by subnational governments in incorporating the Aichi Targets into their strategic planning.

## Biological diversity - a planetary challenge

The **depletion of biological diversity**, or biodiversity, and the impairment of ecosystems are phenomena that have occurred with greater speed in the last 50 years than at any other time in human history as a consequence of changes in habitats, resource overexploitation, pollution, alien species invasion and climate change.

And yet, human welfare depends on **biological diversity**, which is the variety of life on Earth that ensures food security, human health, clean air and drinking water. Above and beyond the natural ecological services of regulation and supply provided by biodiversity, such as food, fiber, medicine, fresh water, pollination, pollutant filtration and protection from natural disasters, the sustainable management of biological diversity also contributes to sociocultural services such as the provision of spiritual and religious values, learning and teaching opportunities and recreational and esthetic values.

## International context

The **Convention on Biological Diversity** (CBD) is a legally binding international treaty that has three main objectives: 1) The conservation of biological diversity; 2) The sustainable use of its components; and 3) The fair and equitable sharing of the benefits arising out of the utilization of genetic resources. The Convention came into effect in 1993 and has so far been ratified by 196 Parties that together constitute the Conference of the Parties, which meets at two-year intervals to examine achieved progress, and to set priorities and determine work plans.

The **Strategic Plan for Biodiversity 2011-2020**, adopted in 2010 in Nagoya, Japan, is a flexible framework for determining national and regional objectives and spurring the consistent and efficient implementation of the three (3) objectives of the CBD. To accomplish this, the Strategic Plan includes a shared vision and a mission, which is to *“Take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020, ecosystems are resilient and continue to provide essential services, thereby securing the planet’s variety of life, and contributing to human well-being, and poverty eradication.”* It consists of five strategic goals, including twenty Aichi Targets, whose aim is to:

- ▶ Reduce direct pressure on biological diversity
- ▶ Restore ecosystems
- ▶ Ensure the sustainable use of biological resources and the derived fair and equitable sharing of their benefits
- ▶ Provide sufficient financial resources and strengthen biological diversity conservation stakeholder capacity
- ▶ Incorporate the consideration of biological diversity and its intrinsic value into all of government and society
- ▶ Efficiently apply appropriate biological diversity conservation policies
- ▶ Ensure that decision-making is founded on solid science and uses a precautionary approach.

## The role of subnational authorities

The Parties to the CBD acknowledged the importance of mobilizing subnational authorities when, in 2010, they adopted the **2011-2020 Plan of Action on Subnational Governments, Cities and Other Local Authorities for Biodiversity** in support of the Strategic Plan for Biodiversity 2011-2020.

The fact is that subnational authorities play a crucial role in the conservation, restoration and sustainable use of biological diversity, taking essential decisions in land designation and development. Some adopt laws and regulations for industry and have responsibility for spheres such as water management, waste management, housing, education, and public health. In addition, subnational authorities may be responsible for developing and implementing sustainable development, environmental protection and conservation strategies and policies in their respective spheres of competence.

This publication was prepared by the Advisory Committee of Sub-National Governments (AC SNG), which represents subnational governments that wish to contribute to the Strategic Plan for Biodiversity 2011-2020. Together with the Advisory Committee of Cities, the AC SNG is part of the Global Partnership on Local and Subnational Action for Biodiversity, which was established in 2008 with the goal of bringing together all the relevant networks and initiatives involved, directly or indirectly, in implementing the Convention on Biological Diversity.

The AC SNG was established in 2010 (CDB decision X/22). Convened in Barcelona (Catalonia, Spain) in 2013, its members agreed on a Work Plan 2013-2015 that included three main projects:

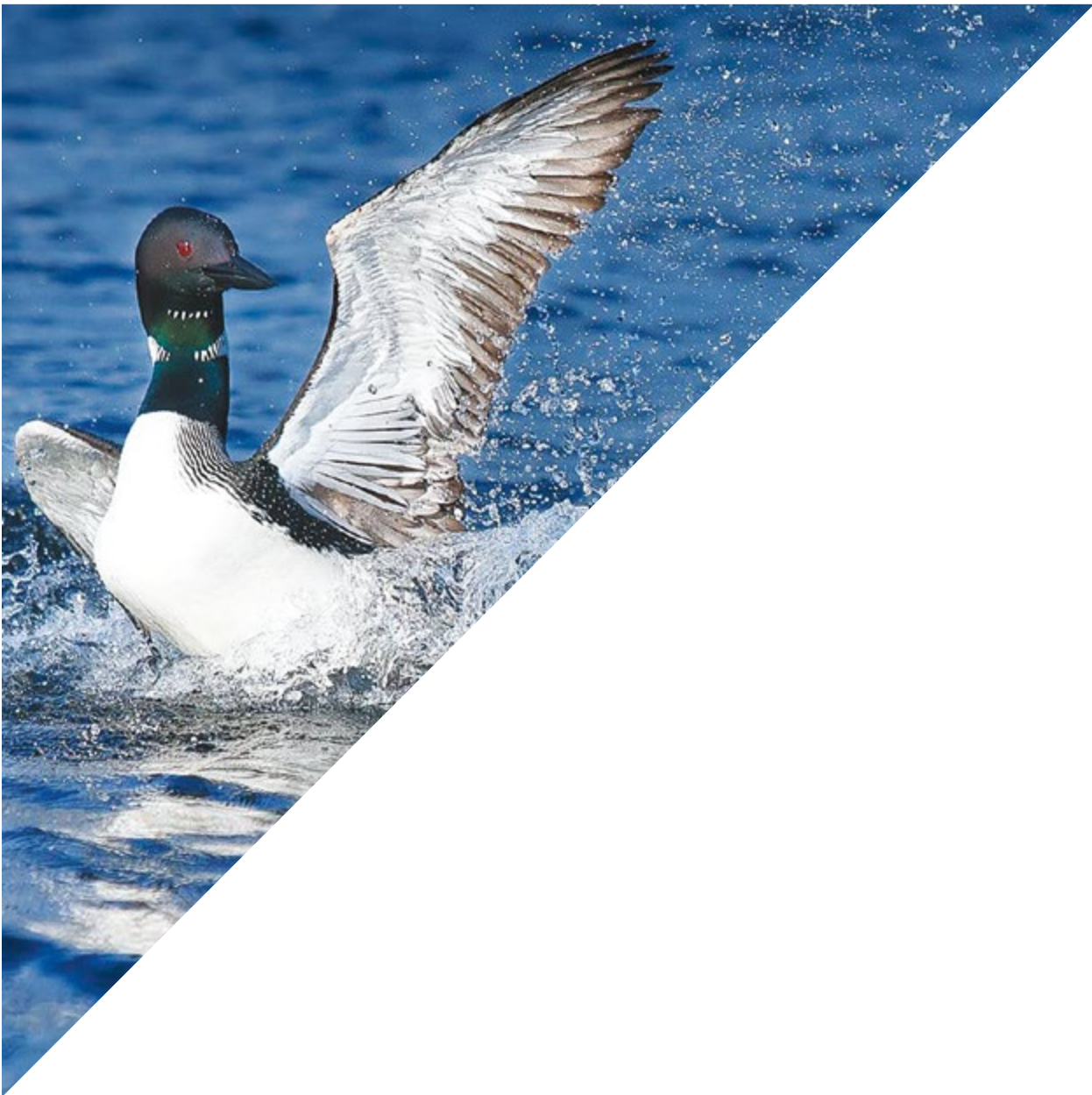
1. Integrated and aligned biodiversity planning,
2. Ecological footprint on global biodiversity,
3. Nature conservation criteria in land-use planning policies.

This report is one of the outcomes of the first project that aimed at assessing the achievement of the Aichi Targets at the subnational level.

## Case study distribution map



# CASE STUDIES





# Aichi Prefecture (Japan)

## Population:

7 500 000

## Area:

5 163 km<sup>2</sup>

## Main ecosystems:

mountains, rice fields, marshes and wetlands, satoyamas and satoumis

## Fauna and flora:

16 180 species, including 570 spiders and 590 shellfish



The Aichi Prefecture is located in central Japan, with its southern coasts facing the Pacific Ocean. Its capital (and Japan's third-largest city) Nagoya is located in the western part of the prefecture. Aichi is an industrial prefecture, with the largest industrial shipment in Japan. The prefecture is aiming for a sustainable society with harmony between the economy and the environment, taking advantage of its high level environmental technology. Aichi is also a thriving prefecture with agriculture, forestry and fishery, and most of its territory is comprised of forests (43%), housing landscapes (18%) and farmlands (15%).

## Aichi, an example of the harmonious interaction between humans and nature

The distinct characteristics of the natural environment in Aichi is the rich variety of landscapes including mountains, forests, *satoyama*, farmlands, urban areas, wetlands, marshes, rivers and coasts. An example of harmonious interactions between humans and nature can be provided by the *satoyama*. *Satoyama* landscapes – areas between mountain foothills and arable flat land – are characterized by a mosaic of land use that includes woodlands, grasslands, paddy fields, farmlands, irrigation ponds and canals, as well as human settlements. High levels of biodiversity have been maintained in this diversity of habitats that have been shaped and sustained by appropriate human management, such as cutting trees and farming.

The Aichi Prefecture also includes ecological communities of endemic and rare species. For example, small spring water wetlands unique to the Tokai region support plant species that are adapted to the oligotrophic conditions of Tokai Hill. Among such domestic plants, Shiratama-hoshikusa (*Eriocaulon nudicuspe*) and Tokai-komousengoko (*Drosera Tokaiensis*) flora are known as “Tokai Hill Land Elements,” and are only found or mainly seen on the hills and lower wetlands of the Tokai region.



However, in Aichi, like in other regions, approximately 69 000 ha of forest, wetland, tidal flats and other habitats have been altered over the last 40 years due to human activities including rapid urbanization and constructions along the industrial activities since the middle of the last century. In 2015, 685 plant and 636 animal species were listed in the “Red List of Aichi.”

## A National Biodiversity Strategy to guide actions at the subnational level

Subsequent to the Tenth Meeting of the Conference of the Parties (COP 10) in Nagoya and the March 2011 Great East Japan Earthquake, the *National Biodiversity Strategy of Japan* was formulated in September 2012 to serve as the government’s basic plan for the conservation of biodiversity and the sustainable use of its component parts. The Strategy serves as:

4. A roadmap for Japan to achieve the Aichi Biodiversity Targets
5. A suggested protocol for bringing about a “living in harmony with nature” world, taking advantage of the opportunity to reassess relationships between humans and nature in the wake of Great East Japan Earthquake
6. The basis of the *Guidelines for Formulating and Revising Regional Biodiversity Strategies*, which constitute the basic plans for the conservation of biodiversity and the sustainable use of its components in individual jurisdictions.

The *Strategy* is used by the national government of Japan to encourage individual local governments to take responsibility for formulating and implementing policies that match its own policies, as well as other conservation and sustainable use of biodiversity policies that stem from the natural and social conditions of each jurisdiction. As a consequence, prefectures and municipalities are to endeavour to establish conservation and sustainable biodiversity use basic plans within their jurisdictions, either jointly or severally, based on the *National Biodiversity Strategy*. These are referred to as “regional biodiversity strategies.”

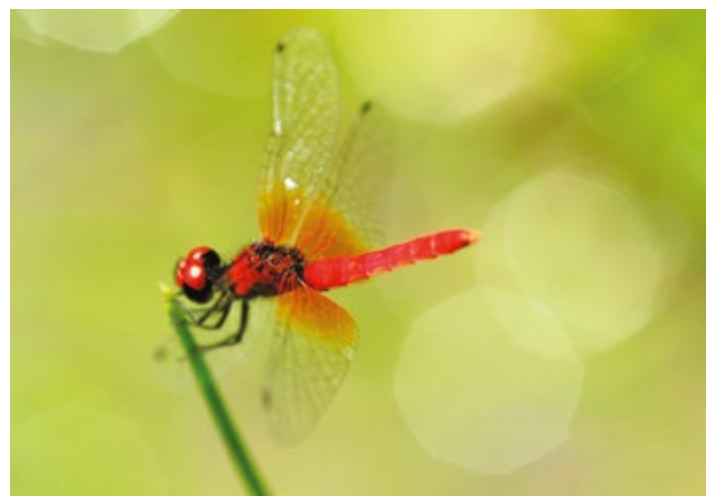
The *Guidelines for Formulating and Revising the Regional Biodiversity Strategies* were published by the Ministry of the Environment of Japan in 2014. They call on local governments—such as prefectures and municipalities—to take concrete and specific biodiversity conservation within their jurisdictions. The guidelines also reaffirm notions such as inter-regional shared responsibilities and ecological connectivity.

## The Biodiversity Strategy 2020 of Aichi

Aichi Prefecture held an EXPO in 2005 under the theme of “Nature Wisdom”, and since then Aichi has put an emphasis on policies to conserve the nature. Later, Aichi co-hosted the CBD-COP10 in 2010 and has been aiming to implement cutting-edge measures in order to contribute to achieving the Aichi Biodiversity Targets.

The Aichi government in 2013 developed its own regional biodiversity strategy called the *Biodiversity Strategy 2020 of Aichi and Action Plan: Toward achieving CBD Aichi Biodiversity Targets*. The vision of this subnational strategy is to achieve coexistence between people and nature in Aichi.

The goal is to take effective, urgent and accountable action to halt the loss of biodiversity. The mission objective is to be carried out collaboratively by various stakeholders. In order to achieve the goal, the Aichi government has set



out 214 actions and 32 numerical targets that meet the 5 mainstays of the Action Plan (see table below).

This subnational action plan is a direct response to the Aichi Targets of the CBD. For example, item A-1 (Conservation of important habitats) is directed at meeting Aichi Targets 5, 10 and 11. Item B-3 (Promoting conservation and sustainable use of biodiversity in agriculture, forestry and fishery sectors) aims at reaching Aichi Targets 4, 6, 7, 8 and 13.

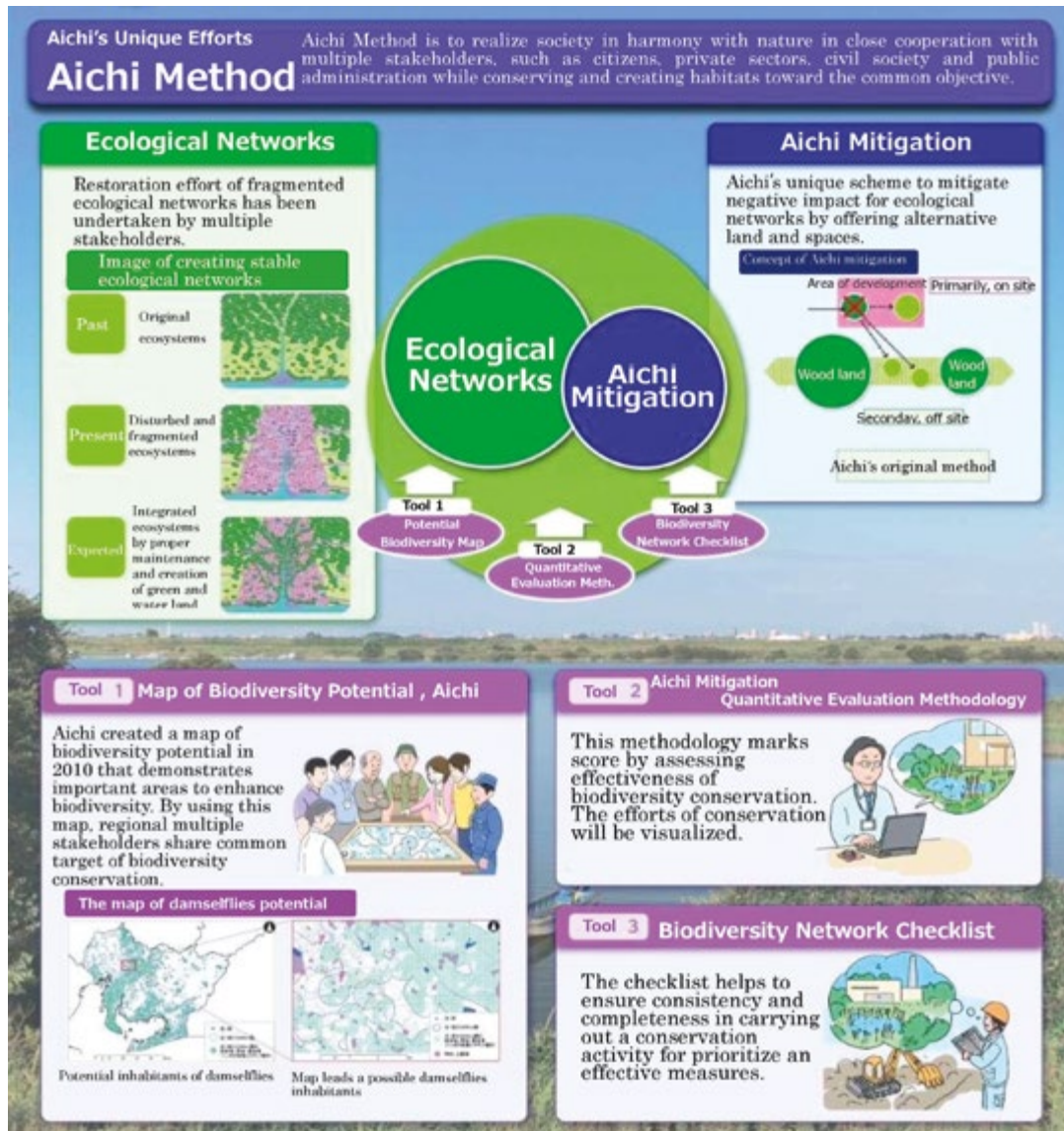
The key of this action plan is the “Aichi Method”, focused on “creation of ecological network”, to connect divided habitats with green areas and watersides, and “Aichi Mitigation”, which aims to protect and connect the nature influenced by human activities such as constructions.

## Main obstacle: sharing common understandings and targets

In the Prefecture of Aichi, the actions to protect biodiversity are to be carried out collaboratively by private citizens, companies, NPOs and local governments. The main issues lie in sharing common understanding and targets and fostering cooperation among stakeholders.

Mainstay of action plan		Major items				
A	Creating positive ecological networks	A-1	Conservation of important habitats			
		A-2	Conservation and restoration of habitats in various areas			
		A-3	Promotion to create positive ecological networks			
B	Harmonious balance between economic growth and biodiversity	B-1	Promoting Aichi mitigation			
		B-2	Promoting biodiversity conservation and sustainable use in private sector			
		B-3	Promoting conservation and sustainable use of biodiversity in agriculture, forestry and fishery sector	B-3-1	Agriculture	
				B-3-2	Forestry	
				B-3-3	Fisheries	
		B-4	Securing funds to protect blessing of nature			
B-5	Dealing with global warming					
C	Preservation and control of wildlife	C-1	Protection of rare fauna and flora			
		C-2	Enforcement of alien species control			
		C-3	Suitable conservation and proper control of wildlife			
D	Sharing the value of biodiversity	D-1	Promoting environmental education			
		D-2	Promoting investigation and research on biodiversity			
E	Participation and collaboration of various stakeholders	E-1	Promoting contact with nature			
		E-2	Promoting participation and collaboration with various stakeholders			
		E-3	Promoting comprehensive and interdisciplinary efforts			

# The Aichi Method: Aichi's unique efforts to realize the mission

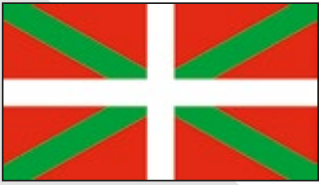


## Chita Peninsula Ecological Network Council

Ecological network council was set up to promote stable ecological networks with local university, private company, civil society and citizens. For example, in the coastal area where major industries are located, 11 companies and students publish free magazines to widely disseminate the information of conservation of ecological networks to the public.

## Owari Tobu Hills Ecological Network Council

23 of universities in this area set up lectures under the ecological networks themes in cooperation with residents, companies and public administration. In addition, restoration of this nature and habitats has been undertaken.



# Basque Country (Spain)

**Population:**  
2 000 000+

**Area:**  
7 234 km<sup>2</sup>

**Main ecosystems:**  
forests, grasslands, coasts, estuaries;  
freshwater, wetland and agricultural systems

**Fauna and flora:**  
over 3 700 species, including 2 500 vascular  
plants, 400 vertebrates and more than  
800 invertebrates



The Basque Country is located in the easternmost part of the Cantabrian coast, along the Bay of Biscay. With a density of over 300 inhabitants per km<sup>2</sup>, the Basque Country was granted the status of a nationality within Spain in 1978. The Basque Country has an autonomous parliament, and the headquarters of the Basque Government is located in Vitoria-Gasteiz, the capital. The Basque Country holds specific legislative powers in forestry, agriculture, fisheries, technical and scientific research, land planning, finances, health, environment, etc.

## Biodiversity influenced by climate

The Basque Country has three distinct areas, which are defined by the two parallel ranges of the Basque Mountains: the Atlantic basin, the Middle section and the Ebro valley (so-called *Rioja Alavesa*, known for its Rioja vineyards). The Basque mountains also define the distinct climatic areas of the Basque Country. The northern valleys, in Biscay and Gipuzkoa, are part of Green Spain, where an oceanic climate is predominant. The Middle section is influenced by the continental climate, but to a lesser degree than the northern oceanic climate. The Ebro basin has a typical Mediterranean climate, with hot and dry summers. The Basque Country's geographic location allows for a wide variety of markedly different species on its territory, ranging from Euro-Siberian species to definitively Mediterranean ones.

The Basque Country is home to several endangered species, recorded in the Basque List of threatened species and requiring specific protection measures. The freshwater blenny, sand martin, hare's-tail cottongrass and Pyrenean desman are included in this list. Some of the listed species are considered to be in danger of extinction. These include four aquatic, seven bird, eight mammal, one amphibian, three invertebrate and more than sixty vascular plant species.

Loss and degradation of biodiversity in the Basque Country stem from natural habitat loss, and from reduction or fragmentation caused mainly by artificialization and inadequate planning and infrastructure design. The introduction, presence and expansion of invasive species also constitute a major threat to biodiversity, as do inappropriate agricultural and forestry practices and pollution.





## Collaboration between national and subnational governments

The Spanish *Strategic Plan for Natural Heritage and Biodiversity 2011–2017* establishes the goals, objectives and actions needed to promote conservation, sustainable land use and the restoration of natural heritage and biodiversity. It incorporates actions that meet the objectives of the *CBD Strategic Plan on Biological Diversity 2011–2020*, including the Aichi Targets.

A full chapter in the national strategic plan deals with co-operation, collaboration and coordination among different levels of government. Given the distribution of environmental responsibility in Spain, collaboration and co-operation among public authorities is essential for ensuring the conservation and sustainable use of biodiversity, action consistency and the optimized use of available resources to achieve the Strategic Plan's objectives. To this end, the National Strategy sets out a number of common guidelines to be used by the Spanish government and the Autonomous Communities.



As the management of most of its biodiversity falls under its own jurisdiction, the Basque Country is responsible for developing its own strategy and for enacting appropriate legislation. However, a certain degree of operational coordination exists at the ministerial level (e.g., during the Environment Conferences attended by all ministers of natural resources in Spain) and through participation in national/subnational biodiversity working groups.

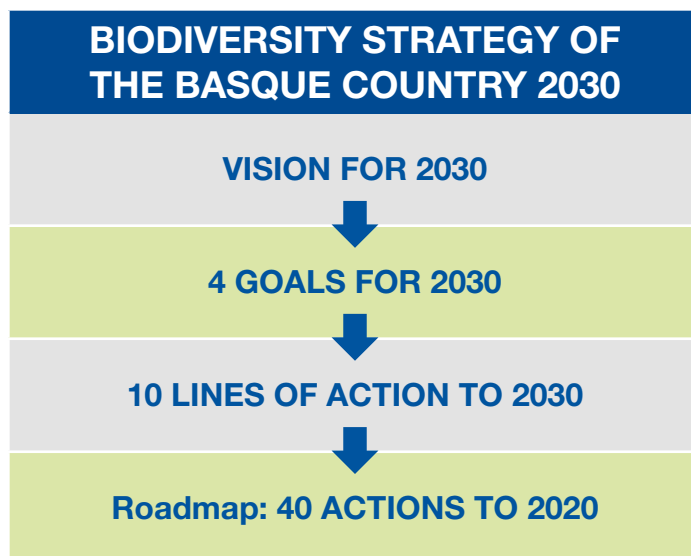
## Working on a Basque Strategy for Biodiversity

Basque environmental policies meet the needs of Basque society. Following the European Union's *Sustainable Development Strategy*, in 2002 the Basque government adopted an *Environmental Strategy for Sustainable Development 2002–2020* (ESSD) in response to current international environmental trends. Among these trends, there is a strong desire to address the problem of biodiversity loss associated with the unsustainable use of ecosystems and their resources. The ESSD sets five environmental goals to be achieved by Basque society by 2020, including goal 3: "Protection of nature and biodiversity: a unique asset to be fostered."

With this subnational strategy comes a series of quadrennial *Environment Framework Plans*, in which actions taken to further the conservation of biodiversity are included. The fourth Plan (2015–2018), approved in December 2014, includes the following biodiversity strategic goal: "To protect our natural capital, keeping the services provided by ecosystems." To this end, five operational objectives and 16 actions, aligned with the Aichi Targets, are currently put in place.

Finally, the first *Basque Strategy for Biodiversity 2030* has been approved in July 2016. This Strategy is the instrument that establishes the priorities and commitments in terms of natural heritage for the year 2030. It is an initiative with a regional application but with a global vision that is

aligned with the *Strategic Plan for Biodiversity 2011-2020*, derived from the UN Convention on Biological Diversity, the *European Community Biodiversity Strategy to 2020* and the state-level *Strategic Plan for Natural Heritage and Biodiversity 2011-2017*. It is also aligned with the UN 2030 *Agenda for Sustainable Development*, adopted in 2015, objective 15 of which is to “protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”.



## Conserving the natural and cultural heritage: the Urdaibai Biosphere Reserve Aichi Targets 4 and 14

The Urdaibai Biosphere Reserve covers 22 000 ha and is comprised of a mosaic of cliffs, mountains, beaches, rivers and natural forests, all home to an abundant biodiversity and to an irreplaceable geological heritage. In order to conserve these natural and cultural resources and promote the sustainable use of biodiversity in the region, UNESCO, in agreement with the Basque government, declared Urdaibai as a Biosphere Reserve in 1984. Various projects have been recently initiated in the reserve in co-operation with local communities. These include the recovery of the Laida beach sand dunes, the restoration of the upper estuary, and a LIFE project to recover estuarine habitats.





# Free and Sovereign State of Campeche (Mexico)

## Population:

849 617

## Area:

57 507 km<sup>2</sup>

## Main ecosystems:

rain and dry tropical forests, lagoons, mangroves, savannahs and sand dunes

## Fauna and flora:

4 379 species, including 1250 vascular plants, 489 birds and 428 fish



Calakmul (Source: Marigel Campos)

Campeche is one of the 31 states which, along with the Federal District, comprise the 32 Federal Entities of Mexico. Every state in Mexico has its own legislative and executive branches of power, as well as a Superior Court of Justice. The state of Campeche is located in southeast Mexico, on the west side of the Yucatan Peninsula, and represents 2.6% of the total area of the country.

## 3.4 million hectares of tropical forests

Campeche is a relatively flat part of Mexico, with 523 km of shoreline on the Gulf of Mexico. The state possesses a number of different ecosystems, including rainforests, savannahs and coastal and sea areas, with a total of 4 379 recorded species, including 15 types of marine mammals, 105 land mammals, 489 birds, and 99 reptiles. Campeche also boasts of 20% of the 49 types of vegetation that exist nationally in terrestrial, coastal and island environments such as tall, medium and low height rainforests, aquatic vegetation, and palm savannas, sand dunes, mangrove wetlands and hillocks.

Environmentally speaking, Campeche can be divided into four distinct regions. The coastal region consists of the entire coastline of the state, as well as a strip of shallow water just offshore with coral reefs and low islands called cays and broad expanses of mangroves that dominate the swamps. Non-swamp areas are dominated by palm trees. Major wildlife includes bird and reptile species such as storks, pelicans, ducks, seagulls, lizards, turtles and water snakes. The mountain region lies in the northeast part of the state and is characterized by two chains of low hills. This region also includes a savannah, as well as the Los Chenes area where natural wells—called *cenotes*—are common. The area is noted for its tropical hardwoods and the *chicle* or gum tree. Wildlife includes deer, armadillos, rabbits, quail, and woodpeckers. The rainforest region is located in the south-central part of the state, and hosts a wide variety of trees, including tropical hardwood such as





Mono aullador (*Alouatta pigra*). Palizada (Source: Marigel Campos)

mahogany. Many of the plants used in Campeche cuisine, such as Achiote (Annatto) peppers and tropical fruits, also originate in this region. Five of the six feline species of Mexico (jaguar, puma, ocelot, margay and jaguarundi) are found here, including the largest jaguar population in all of Mexico. The river region is located in the southwest of the state, taking its nickname from the many rivers that flow in its watershed and empty into the Laguna de Términos estuary. Its climate is the hottest and most humid in Campeche, with wildlife and vegetation that is similar to the rainforest and coastal regions.

Threats to biodiversity in Campeche are diverse and often have synergistic adverse effects for which, in most cases, it is difficult to identify unique causal relationships. Although Campeche is among the Mexican states with the lowest population density, anthropic activities have been identified as the major factor with direct or indirect adverse effects on biodiversity. The most important consequences for biodiversity in Campeche are loss of habitat, introduction of alien species, overexploitation of resources, pollution and climate change. Land preparation for cropping, forest fires and the opening of new lands for both agriculture and livestock husbandry are the main causes of habitat loss and, as such, constitute a major threat to biodiversity in Campeche.

## A National Biodiversity Strategy to guide actions at the subnational level

Planning for the conservation and sustainable use of biodiversity is a dynamic and ongoing process that must, of necessity, reflect socio-environmental changes. Strategies and action plans are important for setting fundamental goals and objectives as well as the courses of action

and allocation of resources that are required to achieve them. In this regard, the *National Biodiversity Strategy of Mexico* (NBSM - 2000) is a set of strategic guidelines and actions that can be taken by various sectors of Mexican society to implement the three objectives set out in the Convention on Biological Diversity (CBD). This strategy has not been updated since the publication of the CBD's *Strategic Plan for Biodiversity 2011–2020* and the 20 Aichi Targets. However, even though the NBSM does not directly reference the Aichi Targets, several of its specific actions in fact relate to them.

The NBSM also advocates the formulation of a *Biodiversity State Strategy* for each of Mexico's 31 states, in order to fulfill the objectives of the CBD and achieve the goals and actions of the national strategy. As a consequence, state governments, in co-operation with the National Commission for the Knowledge and Use of Biodiversity (*Comisión Nacional para el Conocimiento y Uso de la Biodiversidad—CONABIO*) and representatives of various public bodies have begun to draft state strategies on biodiversity that will take into account the cultural, geographical, social and biological specificities of each individual Mexican state.

## Toward a State Strategic Plan for Campeche

To facilitate the promotion and implementation of a Biodiversity State Strategy, states are required to apply the following procedure.

- ▶ Phase I—Initial approach: Consists of contacting various public sectors in order to synergise the development of a state strategy



Jaguar *Panthera onca* (Source: Tomadas con cámara trampa)

- ▶ Phase II—Planning: Consists of developing and publishing a study on the status of biodiversity in the jurisdiction and conducting a series of activities in order to develop and publish the state strategy
- ▶ Phase III—Implementation: Consists of promoting the actions set out in the state strategy
- ▶ Phase IV—COESBIO: Consists of creating a State Commission on Biodiversity that is responsible for enacting policies and actions that support the state strategy

The State of Campeche published its *Biodiversity State Study* in 2010 with contributions from 130 authors and more than 30 academic and public institutions. Campeche is in the process of finalizing Phase II with the publication of its Biodiversity State Strategy, which will set out specific actions to meet Aichi Targets. Campeche has also begun work on Phase III to promote the actions identified in its upcoming State Strategy. To date, only five Mexican states—Yucatan, Michoacán, Veracruz, Chiapas and Morelos—have published a Biodiversity State Strategy.

## Main obstacle: lack of local leadership

The State of Campeche will need to act quickly by decree in order to implement its COESBIO for strengthening biodiversity conservation and community participation. The commission’s highly qualified staff aims to improve biodiversity monitoring within the state and implement state policies to improve the management of biological resource use. More importantly: This state institution will be empowered to engage with technical groups and local communities, leaders and stakeholders in order to promote local leadership and community involvement.



Laughing falcon (*Herpetotheres cachinnans*) (Source: Ernesto Gómez)

## Aichi Target 11 has been met by the State of Campeche

With its 1.3 million ha of preserved rainforests, the RAMSAR Laguna de Términos site (706 148 ha of coastal lagoons and wetlands), the Biosphere Reserves and RAMSAR sites of Los Petenes and Ría Celestún (respectively 282 857 ha and 81 482.33 ha of ecological communities and wetlands), and the RAMSAR site of Playa Tortuguera Chenkán (23 km of protected beaches where two species of sea turtles lay their eggs), a full 40% of the territory of the State of Campeche is dedicated to the protection of biodiversity!



**Generalitat de Catalunya**  
Government  
of Catalonia

# Generalitat de Catalunya (Spain)

## Population:

7 508 106

## Area:

32 108 km<sup>2</sup>

## Main ecosystems:

forests and meadows (63%), crop lands (29%),  
coasts (580 km)

## Fauna and flora:

over 30 000 species, including 3 600 vascular  
plants and 41 continental fish



Catalonia, with a population density of around 240 inhabitants per km<sup>2</sup>, is a hot spot of biodiversity located in the Northwestern Mediterranean Basin. It was granted the status of a nationality within Spain in 1978. Its capital and largest city is Barcelona, which is also the second largest city in Spain. The Government of Catalonia has a wide range of powers in the area of natural heritage protection. The Ministry of Territory and Sustainability has authority and legal power over land use planning, the declaration and management of natural protected areas, biodiversity conservation and environmental assessment and climate change policies, among other relevant spheres.

## Biodiversity influenced by the geomorphology of Catalonia

The territory of Catalonia includes a wide variety of substrates, soils, climates, orientations, altitudes and distances from the sea. These combined elements provide Catalonia with great ecological diversity and a remarkable wealth of landscapes, habitats and species. There are over 600 types of natural and semi-natural habitats in Catalonia, and a high degree of natural features covers 65% of the territory. Protected natural areas represent more than 30% of the total area of Catalonia, forming an ecological network whose components are managed to varying degrees of intensity, depending on individual vulnerability or biological abundance.

There are 94 natural habitats of interest in Catalonia, 22 of which are considered to be of great importance. Some 3% of its vascular plant species are endemic, as are 24 of its 41 species of continental fish. Compared to European mean values, Catalonia is richer in vascular plant and vertebrate



Marine habitats of the Medes' islands are home to Posidonia, a seagrass species endemic to the Mediterranean Sea (Source: Arxiu del Parc Natural del Montgrí, les Illes Medes i el Baix Ter)



Lesser kestrel (*Falco namuamni*), extinct in 1986, has been recovered and its habitat is now under management to strengthen its population (Source: Manel Pomarol)

wildlife populations. The Catalanian assessment of threat levels and habitat conservation status has identified calcicolous grasslands, mixed deciduous forests on rocky slopes and pedunculate oak forests as its most vulnerable terrestrial habitats. The *Catalogue of Endangered Flora of Catalonia* lists over 325 endangered or vulnerable species whose distribution is known. This includes fungi, lichen and bryophytes. The companion *Catalogue of Endangered Fauna* is currently in the process of being approved for publication. It will include marine species such as the *Paramuricea clavata* red gorgonian, the *Corallium rubrum* red coral and the *Pinna nobilis* fan mussel.

The main threats to biodiversity in Catalonia come from human pressure and increasing demand for natural resources, with 7 million inhabitants concentrated on 30% of its total area, mainly near the coast. In addition to Catalonia's own intense agricultural and industrial activities, over 20 million tourists visit the region each year. Habitat fragmentation from urban sprawl and its infrastructures, severe water pollution caused by intensive agriculture, and the invasion of alien species due mainly to climate change and tourism are the main concerns. Catalonia's ecological footprint now exceeds the region's biocapacity, and the demand on natural resources is threatening the conservation of various (especially marine) habitats and communities.

## Collaboration between national and subnational governments

A Spanish *Strategic Plan for Natural Heritage and Biodiversity 2011–2017* was approved in September 2011, on the premises of a previous *National Strategy for the Conservation and Sustainable Use of Biodiversity* (1998),

that inspired too the National Law on Biodiversity in 2007. The current Strategic Plan establishes the goals, objectives and actions needed to promote conservation, sustainable use and the restoration of natural heritage and biodiversity. It incorporates actions that meet the objectives of the CBD *Strategic Plan on Biological Diversity 2011–2020*, even though it does not directly refer to Aichi Targets.

A chapter in the Strategic Plan deals with inter-administrative co-operation, collaboration and coordination. Given the distribution of responsibility for the environment in Spain, collaboration and co-operation between public authorities is essential for ensuring the conservation and sustainable use of biodiversity and policy action coherence, and for optimizing the use of available resources to achieve the objectives of the *Strategic Plan*. To this end, the *Plan* sets out a number of common guidelines between the Spanish government and the Autonomous Communities. However, the document does not state the need for subnational governmental to coordinate nor does it encourage the development of local biodiversity strategies and action plans.

Catalonia has the power to develop its own strategy and pass its own legislation, since the management of most of its biodiversity falls within its jurisdiction. However, a certain degree of operational coordination exists at the ministerial level (e.g., during the Environment Conferences that gather all ministers of natural resources) and through participation in national/subnational biodiversity working groups on specific issues and projects such as the Spanish Inventory of Natural Heritage and Biodiversity.

## A subnational strategy to be approved

No subnational strategy on biodiversity for Catalonia has yet been approved, although a draft version was tabled in 2009 and the capital, Barcelona, has its own "Green Infrastructure and Biodiversity Plan." Initially, the strategy was to follow the approval of a *Biodiversity Act* that included the creation of a Fund for Biodiversity Conservation. However, recent elections in Catalonia have hampered the progress of both the Act and the strategy.

In the current political context and as the drafting process of the *Biodiversity Act* may extend beyond 2016, Catalonia has decided to focus its efforts on the adoption of a Biodiversity Strategy and Action Plan as a milestone to be achieved in 2016.



The Natural Park Els Ports includes part of a limestone massif, characterised by abrupt cliff faces and karstic wetlands, which has been inhabited by humans since prehistoric times (Source: Josep M. Forcadell)

The renewed strategy will commit to achieving the Aichi Targets and the European Union Biodiversity Strategy to 2020. It will include the following policies, some of which have been in place for decades:

- ▶ Enhancement and strengthening of natural protected areas
- ▶ Support of land stewardship strategies, involving NGOs and local authorities
- ▶ Incorporation of nature conservation criteria in land use planning
- ▶ Assessment of Catalonia's external responsibilities in biodiversity conservation
- ▶ Management plans for Natura 2000 sites
- ▶ Restoration of damaged habitats
- ▶ Control of invasive species
- ▶ Protection of agro-biodiversity
- ▶ Positive subsidies for biodiversity conservation
- ▶ Planning and management of endangered species and habitats.

## A need for coordination and co-operation

There are two main obstacles to the implementation of a subnational strategy in Catalonia. Firstly: Improved coordination and guidance from the national government would be useful in encouraging proactivity by the autonomous communities and regions of Spain in regard to adopting conservation policies.

Secondly: Until very recently (2015), co-operation and consensus within Catalonia concerning the conservation

of biodiversity was problematic, mainly due to competing policy interests. Since a subnational strategy sets guidelines and actions for various types of activities, mainstreaming biodiversity conservation criteria throughout the various departments of the Catalan government has been no easy task.

In spite of these obstacles, the environmental policies undertaken by the Catalan Government have historically been successfully mainstreamed into other sectoral policies, such as land planning, and a great deal of the Aichi Targets are already addressed. Moreover, there has recently been an important engagement of social organizations that will definitely contribute to the future Biodiversity Strategy and Action Plan that the government foresees to adopt by the end of 2016:

- ▶ a report drawn by an environmental NGO (Ecologistes en Acció) measuring the achievement of Aichi Targets in Catalonia,
- ▶ an action plan for the conservation of the natural heritage in Catalonia presented by a lobby of experts (conservacio.CAT) containing 13 priority actions, 7 strategic goals and more than a 100 proposals to improve the status of biodiversity.



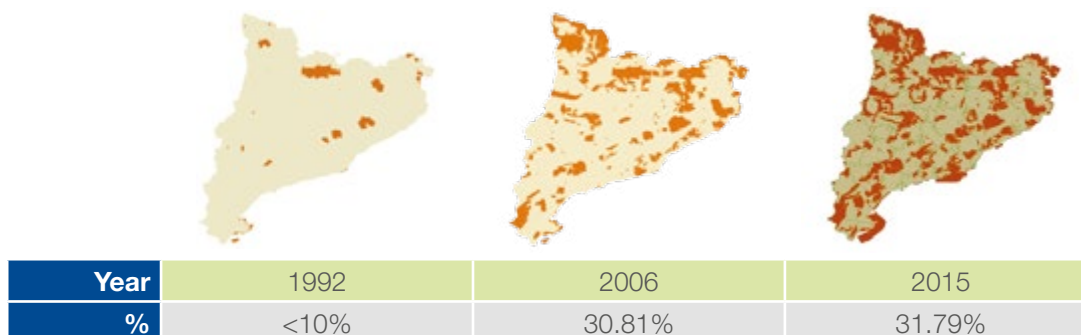


## No subnational strategy... but working actively to achieve Aichi Targets!

Catalonia is very proactive in achieving Aichi Targets and has already implemented a number of actions to meet CBD objectives. These include:

- ▶ **Public awareness of the value of biodiversity (Aichi Target 1).** Periodic surveys conducted by the Catalan Government show growing social awareness (> 66% think that the conservation of nature is a key issue)
- ▶ **Integrated land-use planning (Aichi Target 2),** with the implementation of Barcelona's metropolitan land-use plan and the Coastal System Land-use Master Plan (2005)
- ▶ **Catalan natural protected areas system (Aichi Target 11)** protects 31% of Catalonia and includes European Natura 2000 sites
- ▶ **Habitat restoration (Aichi Target 15),** which improves connectivity and restoration of degraded natural environments, especially in wetlands and coastal landscapes
- ▶ **Increasing knowledge on biodiversity (Aichi Target 19)** through the Biodiversity Conservation and Monitoring Program (2009), the Catalan Biodiversity Database that includes data on approximately 25 000 species, and long-term bird, butterfly and sea grass monitoring projects
- ▶ **Envisaging a Fund for Biodiversity Conservation (Aichi Target 20)** in the new *Law on Natural Heritage and Biodiversity*

### Evolution of the Natural Protected Areas System in Catalonia





# Fatick (Senegal)

## Population:

742 345

## Area:

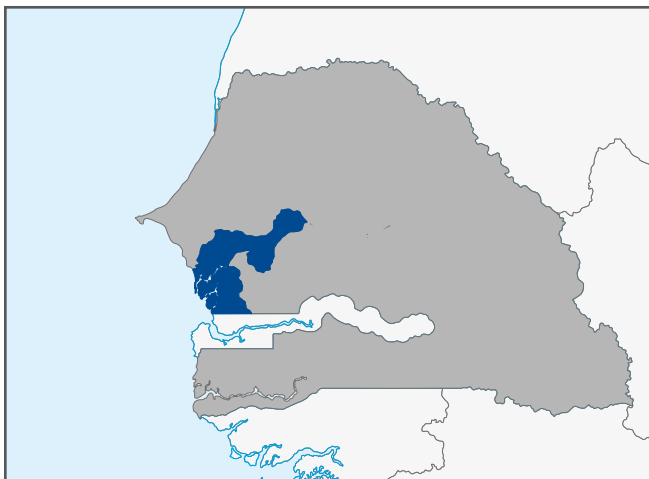
6 685 km<sup>2</sup>

## Main ecosystems:

forests, mangroves, islands and seagrass beds, coastal and ocean

## Fauna and flora:

in excess of 100 species, including protected species such as Manatee



The Fatick region was created in 1984. It includes 3 prefectures, 9 districts, 28 rural communities and 40 municipalities. The region is composed of the prefectures of Fatick, Foundiougne and Gossas, which have become local communities through the 2013 reform. Each prefecture has an assembly elected by universal suffrage and enjoys some administrative powers, mainly in nine domains of so-called transferred competence: environment and natural resource management, health, population and social action, youth, sport and recreation, culture, education and literacy, land planning and development, urbanism and habitat. Within its general socioeconomic development mandate, each prefecture also acts in the spheres of agriculture, animal husbandry, tourism and fishing.

## Fatick - a paradise for ornithologists

Located in west central Senegal's natural region of Sine Saloum, the Saloum Delta extends over an area of approximately 500 000 ha. A zone of remarkable beauty straddling the Thiès and Fatick regions, it has the characteristics of humid, marine, estuarial, lake and wetland zones. Its Parc National du Delta du Saloum (76 000 ha), created in 1976, includes three main ecological environments.

- ▶ A continental, richly forested zone bordered by mangrove and fir to the south, is the main habitat of large and medium-sized wildlife and the principal trophic source of estuarial waters and mangrove ecosystems.
- ▶ An amphibious zone comprised of three major island groups bordered by a dense network of channels that in turn are surrounded by some 60 000 ha of mangrove through which flow saltwater belongs.
- ▶ A marine zone comprising a series of islets, sand banks and extensive sea grass beds that is the principal habitat where birds breed and sea turtles feed, as well as being the convergence location of many fish species.

The Parc National du Delta du Saloum, visited each year by one-fourth of the world's population of Royal terns (*Sterna maxima albidorsalis*) is one of the premier wintering and reproductive sites of this species. The region also boasts some ten pairs of *Ardea goliath*, the Goliath Heron which is the biggest in the world. The Saloum Delta is ranked sixth worldwide in ichthyofaunal diversity and includes 114 fish species. It is also a major breeding and feeding site for rare and threatened species such as the Manatee, Humpback Dolphin, African clawless otter and three sea turtle species that are protected by the Bonn Convention and the CITES Treaty.

Because of the beauty of its landscapes, the region is nicknamed the Amazon of Senegal. However, a negative trend has been observed for all its ecosystems and for a large number of its animal and plant species. The main factors for this biodiversity impairment in the Fatick Region are many, but anthropic pressures stemming from fire, logging, poaching and urban development top the list. Climate change and its associated drop in rainfall have led to significant land, water table and channel salinization, resulting in the loss of species that abound in mangrove swamps. Marine erosion and forest fragmentation are also phenomena that threaten habitat conservation.

## Different levels of government cooperate to conserve biodiversity

Senegal began the process of updating its National Biodiversity Strategy and Action Plan (NBSAP) in September 2012. In all, the forthcoming NBSAP will define 10 objectives across 4 strategic directions. Among other things, the objectives will incorporate scientific research to improve knowledge, ethics, good governance and corporate social responsibility, improvements to how biodiversity is included in national policies and the promotion of ecosystem goods and services. The new strategy stems from a participative process and includes more national objectives than its 1998 predecessor (10 objectives instead of 4), and it will enable Senegal to make progress in the implementation of the Strategic Plan for Biodiversity 2011-2020 and meet the Aichi Targets.

Senegal is proactive in setting up conservation strategies. In recent years it has, in cooperation with its regions, created many natural parks and reserves. Since 2004, the government has focused on setting up community protected marine areas through its support for regional government initiatives, and also works collaboratively with its regions to spur programs that support the promotion of ecosystem services and the protection of coastal zones and natural habitats.

As Senegal's municipal Code des Collectivités locales has transferred environmental and natural resource management powers to the country's regions, Fatick is in charge of designing, steering and monitoring biodiversity safeguarding efforts while taking account of national policies. With the support of the Direction nationale des Aires Marines Protégées Communautaires, the prefectures of the region of Fatick have created three protected marine areas within its regional territory.



Department of Gossas, strongly marked by the aridity, but where women are brave and promote food safety

## Fatick's audacious policy for safeguarding biodiversity

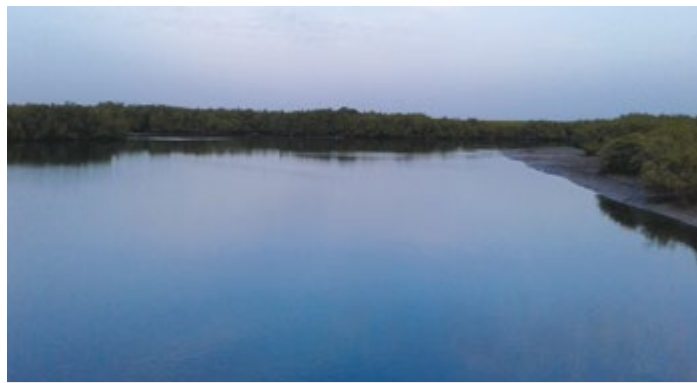
The Conseil Regional de Fatick is strongly committed to biodiversity conservation and, in cooperation with its development partners, has taken several initiatives aimed at preserving regional ecosystems. Fatick has no subnational strategy as such, but it does intend to meet the Aichi Targets by implementing its Integrated Regional Development Plan (IRDP) 2012-2018, which uses an ecosystem approach.

A large part of this plan deals with restoring the natural habitats of species and fighting coastal erosion and climate change. In particular, it has the following objectives:

- ▶ Create and promote marine protected areas in the Fatick Region
- ▶ Support the enforcement of local fishing agreements
- ▶ Monitor wildlife dynamics and encourage the creation of wildlife sanctuaries
- ▶ Develop and protect coastal and island zones

- ▶ Set up a system of informative monitoring with respect to climate change
- ▶ Promote green and decent jobs
- ▶ Support free local community access to carbon markets
- ▶ Promote sustainable energy services.

Finally, in compliance with national and international protocols, the prefectures of the region of Fatick rely on the existence of a national legal framework that is favorable to the sustainable management of natural resources and the preservation of biodiversity in order to move forward with their own commitment to biological diversity.



Sine Saloum Delta, a natural biosphere reserve

## Main obstacle: insufficient political will

Aware of the importance of slowing down the impoverishment of its biological diversity, the Fatick region is working hard to maintain the conditions in which its ecosystems can survive and thrive. However, success in setting up a subnational biodiversity strategy will depend on overcoming three major obstacles: a lack of sufficient human resources to carry out the required actions; the low level of commitment on the part of local authorities due to their ignorance of the Aichi Targets; and insufficient financial resources to take charge of biodiversity projects and programs.

## Participative forest management - Aichi Target 7

This project aims at developing 15 000 ha of forests using a flexible process that lets rural communities play the environmental management role granted to them within the country's decentralization framework. Concretely, this will mean delineating, protecting and managing regional forests in order to maintain the natural habitats of wildlife, increase the level of services provided by forest ecosystems, including the supply of food, fiber and medicine, crop pollination, photosynthesis and protection from water and wind erosion.

As of today, 33 forests are being developed and 100 villages are involved in forest management. The project has also led to a resurgence of interest in various cultural services associated with forests, such as spiritual and religious values (sacred woods, traditional pharmacopeias), opportunities for learning and education (study tours, field trips), and recreational and esthetic values. Finally, species that had disappeared from the zone, such as the hyena, have once more been observed in this zone.



# Gangwon-do Province (South Korea)

## Population:

1 551 531

## Area:

16 873 km<sup>2</sup>

## Main ecosystems:

mountains, forests, wetlands, farmlands

## Endangered fauna and flora:

132 species, including 16 mammals, 43 birds and 39 vascular plants



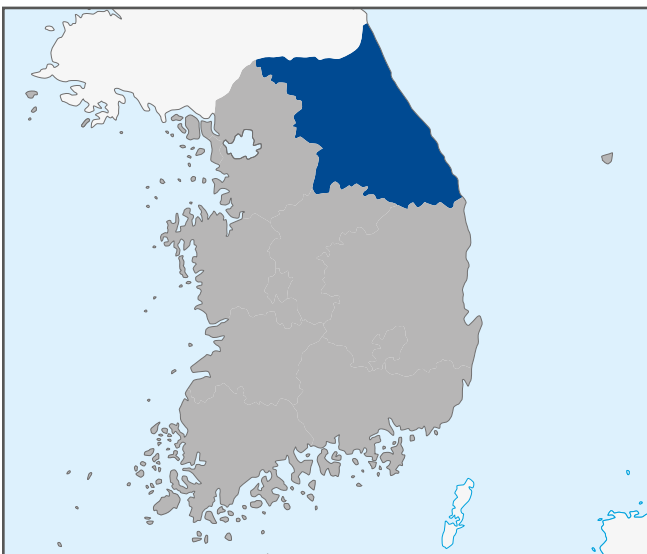
Seoraksan National Park

Gangwon-do is located in the mid-eastern part of the Korean Peninsula and is divided into two zones, Yeongdong and YeongSeo, which are separated by the Taebaek Mountain Range. Mountainous areas cover 82% of the total provincial area, with 9.9% devoted to farmland and 9.1% to other uses.

## Gangwon-do, an example of outstanding biodiversity management

The area to the east of the Taebaek Mountain Range is characterized by steep slopes and few coastal plains, while gentle slopes and mountains within the watersheds of some of Korea's largest rivers such as the Namhgang and Bukhgang predominate to the west. Lowlands (less than 100 meters in altitude) cover only 5.6% of the total area of Gangwon-do. Flat, arable paddy crop land is largely located along the eastern coastal area. Gangwon-do Province is home to three of South Korea's main ecological systems: the Baekdudaegan mountain range, the 145-km long Demilitarized Zone—commonly called the DMZ—and the island and coastal region that includes 18 lagoons along a 426-km coastline.

Most of Gangwon-do area is designated as protected and/or managed. Forests where management activities such as the harvesting of edible alpine plants and mushrooms are conducted account for 82% of the area of Gangwon-do. In all, some 24% of forest lands are recognized as ecological hot spots and, as such, are preserved. Wetlands and coastal areas are also protected. Two of the province's major wetlands have been designated as RAMSAR sites. UNESCO has designated one biosphere zone: the Seoraksan National Park. Gangwon-do also includes three national parks, three provincial parks, three county parks, two national and two provincial ecological landscape protected areas, and 29 wildlife management areas on its territory.





Cherry blossom

Even though Gangwon-do has numerous designated protected areas, biodiversity is still threatened by human activity. Poaching and traffic in rare species, urbanization, and the introduction and spread of invasive species are the main factors leading to the loss of biodiversity in Gangwon-do.

## A National Biodiversity Strategy to encourage actions at the subnational level

In co-operation with various stakeholders, including relevant ministries and NGOs, the Government of South Korea successfully rolled out its 3<sup>rd</sup> *National Biodiversity Strategies and Action Plans* in April 2014, aiming to meet Aichi Targets by implementing 6 core objectives and 18 targets. The 6 core objectives are as follows:

7. Mainstreaming biodiversity
8. Strengthening biodiversity conservation
9. Reducing factors that threaten biodiversity
10. Fostering the sustainable use of ecosystem services
11. Encouraging research on biodiversity
12. Strengthening international collaboration on biological diversity.

The Government of South Korea intends to propose policies and pragmatic guidelines related to the conservation of biodiversity based on this strategy. It also aims to subsidize local action to promote conservation, such as management of wintering sites for migratory birds, designation of protected areas and publication of management guidelines.

## Toward a subnational strategy

The province of Gangwon-do is in the process of publishing its guidelines leading to the development of its local Biodiversity Strategy and Action Plan. This subnational strategy will meet both Aichi Targets and the objectives described in the 2014 *Korean National Strategies and Action Plans*. The guidelines are expected to be finalized by September 2014.

However, policies and actions that support biodiversity conservation already exist. Gangwon-do has enacted an ordinance on environmental conservation to help manage wetlands and wildlife populations and conserve ecological landscapes of interest. The province has also published four action plans that deal with 1) The management of protected areas; 2) The management of biodiversity; 3) The sustainable use of resources; and 4) Environmental management systems. Finally, Gangwon-do has implemented a variety of institutions and projects such as the National Institute of Biological Resources and the Gangwon-do Eco Park.

## Main obstacle: public awareness of biodiversity status

In the province of Gangwon-do, the main obstacle to the implementation of a subnational strategy and related actions is the lack of public awareness on biodiversity and, especially, its value and need for conservation. A major public campaign for the local population on the importance of biodiversity is required to ensure the success of the strategy. However, such action is difficult to implement due to insufficient financial resources and lack of support for biodiversity projects.



Lotus flower

## Protecting endangered or vulnerable species - Aichi Target 12

A total of 132 wildlife species are considered endangered in Gangwon-do, accounting for 53% of the endangered animal species in South Korea as a whole. In terms of flora, Gangwon-do has 63 indigenous plant species on its territory, several of which remain to be catalogued.

In addition to implementing 29 wildlife management areas, Gangwon-do has set up various institutions to ensure the conservation of its biodiversity. These include the Endangered Artiodactyla Conservation Center in Inje, the Otter Research Center in Hwacheon, and the Insect Research Center, Korea Botanic Garden and Wildlife Rescue Center, as well as various ex-situ conservation institutions. Expert working groups have also been set up on goat and musk deer issues.



# State of Goiás (Brazil)

## Population:

6 154 996

## Area:

340 308 km<sup>2</sup>

## Main ecosystems:

Brazilian savannahs and Atlantic rainforests

## Fauna and flora:

Up to 12 000 species, including 384 reptiles and 1550 fish



Santa Barbara Waterfall - Chapada dos Veadeiros National Park

Goiás is one of the 26 states which, in conjunction with the Federal District, comprise the 27 Federal Entities of Brazil. It has legislative and executive powers in the areas of justice, agriculture, culture, education, industry, territorial planning, health, public safety and the environment.

## The Cerrado, emblem of the State of Goiás

Considered the second-largest biome in Brazil, close behind the Amazon rainforest, the Cerrado, also called the Brazilian savannah, covers most of the state. Typically, the Cerrado is known for its trees (that can grow up to 20 m in height) and scattered bushes that are sparsely distributed on grasslands. However, depending on geological and soil characteristics, a variety of landscapes occur in Goiás, ranging from grassy highlands to riparian valley forests. The “classic” savannah has low fertility soil but is rich in fruit and wildlife.

Some 11 627 species of plants have been recorded throughout the Cerrado, more than 5 000 of which are endemic, as well as 837 bird species; 161 mammal species of which 19 are endemic; 150 amphibian species of which 45 are endemic; 184 reptile species including 45 that are only found in Goiás; and around 1200 fish species. The Atlantic rainforest is also a biodiversity hot spot, with an estimated 20 000 plant, 849 bird, 370 amphibian, 200 reptile, 270 mammal and 350 fish species.

The threats to biodiversity in Goiás are multifactorial, but the main causes of habitat loss and fragmentation are land clearing for cropping, forest fires and the opening of new lands for both agriculture and animal husbandry. Most of the highlands, which were originally covered with grasses, have been transformed into soy or cane fields. Riparian valley deforestation and slash-and-burn now make way for cereal and sugar cane fields or pastures. The unprecedented



acceleration of land occupation for agriculture, which is also associated with the illegal extraction of native forest charcoal, remains the main threat to biodiversity in Goiás.

## Toward a third National Biodiversity Strategy

The Brazilian government is now working on its third National Biodiversity Strategy for 2020. In 2011, the Ministry of Environment of Brazil hosted five major consultations with business, academia, federal and state governments, indigenous peoples and traditional communities and civil society. As a result of these meetings, a draft strategy was developed that included national biodiversity objectives to meet the 20 CBD Aichi Targets. This draft national strategy proposed national targets for 2020, as well as intermediary goals for 2013, 2015 and 2017. The implementation of a National Action Plan on Biodiversity for 2015 was one of these intermediary goals. Even though some action has already been undertaken to meet Aichi Targets, the third strategy has not yet been approved by the Brazilian government.

Federal and state governments cooperate through a variety of institutions like the Environmental State Council, the Water Resources State Council and the Consultative Council of Protected Areas. They share environmental management policies, as well.

## Implementation of the national strategy in Goiás

The State of Goiás has no subnational strategy on biodiversity. For most aspects of biodiversity conservation, national policies and actions are implemented at the subnational level. However, some subnational laws have incorporated and/or supplemented national policies that deal with the protection of fish and wildlife resources and/or protected areas. As such, they provide a measure of response to several Aichi Targets. For example, Goiás has a state network of conservation units and both the legislative and executive powers to create integral protected areas where no human activities are permitted or areas where the sustainable use of biological resources is permitted, subject to legal regulations and policies (hunting, fishing, tourism, etc.).



Blue macaws (*Anodorhynchus hyacinthinus*)

## Araguaia River Biodiversity Corridor Project - Aichi Target 11

Located along one of the largest rivers in Central Brazil, this project aims to implement a biodiversity corridor that preserves the biological, cultural, social and economic riches of the Araguaia River. Arising in the Cerrado near Emas National Park in Goiás and ending in the Amazon forest, the Araguaia River spans some 1800 km. It is one of the best-preserved rivers in Brazil. Wildlife species such as the jaguar, which requires extensive habitats, live here. Cooperatively developed by the states, the Brazilian Environmental Agency and the Earthwatch Institute, the project began in early 2008. Its first phase, still under way, is to map the anthropic and environmental aspects of the corridor, including a 20 km-wide strip of land along each river bank.

Région



Provence-Alpes-Côte d'Azur

# Provence-Alpes-Côte d'Azur (France)

## Population:

4 800 000

## Area:

31 400 km<sup>2</sup>

## Main ecosystems:

forests, marshes, croplands and pastures, fresh water and coastal

## Fauna and flora species:

2 094, including 131 nesting birds, 854 insects and 113 marine species



Provence-Alpes-Côte d'Azur (PACA) is an administrative region in southeastern France that is comprised of 6 prefectures and 963 municipalities. From its Mediterranean coast through the Rhône and Durance river valleys and all the way to its alpine peaks, the PACA region features a dense abundance of geographic reliefs, geological substrates, and climates. Linking Europe with the countries of the Mediterranean basin, this region takes daily action in the areas of education, transportation, employment, economic development, culture, sport and environment that are appropriate to France's national policy guidelines.

## Geographic entities defined by socioeconomic dynamics

The PACA region is hallmarked by a great diversity of landscapes. Five major geographic entities in this region share an ecological and socioeconomic commonality.

- ▶ In the Rhône valley, geographic relief is not pronounced, and with the exception of the Camargue, which features ponds and brackish grazing land, the landscape is characterized by a high level of anthropic activity, dominated by agriculture.
- ▶ The coast, save for Camargue, is essentially rocky and especially spectacular in the Marseille inlets, called *calanques*. The highest population density of the region is found here, along with marked urbanization.
- ▶ Basse Provence lies back of the coast, and features densely wooded hills and slopes with populations of oak stands, maquis and garrigue, and a dynamic that is influenced by forest fires. This area is currently undergoing heavy urbanization due to saturation of the coastal zone.
- ▶ In Haute Provence, geographic relief is more pronounced, with softwood stand forests being the dominant feature. Population density is moderate and to a large extent concentrated in the Durance river valley
- ▶ The alpine zone is characterized by a high level of geographic relief and marked seasonal climate alternation. This is an area that features softwood forests and Alpine pastures, a low population density and an economy based on alpine tourism and pastoralism.

In PACA, the simultaneous combination of elements of Mediterranean and Alpine natural resources over a vast area has led to a remarkable specific diversity, and PACA is the richest of metropolitan France's regions in terms of the number of its indigenous species. Among the biological groups that were looked at, PACA boasts between 50 and 90% of all known species in France, with 2/3 of the



Villefranche-sur-Mer

total number of plant species and 1/3 of all insect species. The Mediterranean Sea is also one of the world's top ten biodiversity hot spots. It is host to around 10% of all aquatic species recorded worldwide, even though it only represents 1% of the total ocean surface of Earth. Some of PACA's sites are remarkable examples of this wealth in regional biodiversity. For example, 928 vascular plants (20% of all known in France) have been identified on only 100 ha of the Moyenne Tinée zone in the Alpes-Maritimes part of the region.

While exceptional natural spaces can be found throughout PACA, they are among the most fragile and threatened. It is a fact that anthropic pressure on these spaces is growing due to urbanization, pollution, infrastructure development and tourism. At the same time, local actors suffering from longstanding negative trends in available crop, forest and pasture lands have not yet found alternative solutions for managing their natural spaces. The twin forces of urban pressure and declining traditional management modes have multiple implications as regards increased human presence and the impairment of natural spaces, particularly with respect to soil artificialization and landscape closure.

## A national strategy that is consistent with regional action

As early as 2004, France demonstrated its will to include biodiversity in public policy when it adopted its National Biodiversity Strategy (NBS), whose first phase concluded in 2010. The new 2010-2020 NBS aims at achieving its objective through a higher level of stakeholder commitment at all levels, both in Metropolitan France and in the overseas territories. It is consistent with the European framework and materializes France's commitment to the CBD and the Aichi Targets.

The 2010-2020 NBS sets out a common ambition to “preserve, restore, strengthen and promote biodiversity” in order to “maintain ecosystem functionality and adaptive and evolutionary capabilities” over time, so as to ensure “sustainable and fair use.” The NBS targets “implementation not only by government but also by local communities and various actors of civil society,” and promotes “a spirit of local and global ecological solidarity and fairness and a spirit of solidarity towards current and future generations.” Six complementary guidelines and 20 objectives cover the full range of challenges for society. A guide to action was developed in 2011-2012 and was designed to assist all actors, independent of their status, size, area of activity and level of biodiversity expertise in building their voluntary commitment projects.

The adoption, by the French parliament and executive branch, of the Law on the modernisation of territorial public action and assertion of cities (*Loi de modernisation de l'action publique territoriale et d'affirmation des métropoles* – January 2014), the Law concerning the new territorial organisation of the Republic (*Loi portant sur la nouvelle organisation territoriale de la République* – August 2015) and the Law for the recovery of biodiversity, nature and landscapes (*Loi pour la reconquête de la biodiversité, de la nature et des paysages* – August 2016), renews and simplifies governance procedures for national and regional biodiversity policies within the two levels of public authority. These new laws support the PACA region in its role as leader in biodiversity conservation.

## A Global Biodiversity Strategy for the PACA region

PACA's Global Biodiversity Strategy (GBS) defines the regional biodiversity action framework and proposes thematic action plans. This process is a dynamic one, aimed

at progressively incorporating biodiversity challenge into regional and local policies. The GBS is regularly updated to adopt new action plans and respond to institutional evolution such as the NBS and the Biodiversity Law, and to regional mutations related to climate change. The subnational PACA strategy is therefore constituent with the French national strategy and with the Schéma Régional de Cohérence Écologique (regional plan for ecological consistency) and will remain so for the next six years.

The GBS is the result of a lengthy cooperative construction effort that applied to both elected officials and government service entities, and to regional actors. The policy framework proposes a series of action plans for agriculture, silviculture, aquatic and marine environments and stakeholder mobilization. In order to ensure that a positive dynamic exists in the region and that individual biodiversity actions are promoted, the charter of commitment “Agir pour la biodiversité en PACA” is available for signature by actors who are interested in mobilizing for this cause. The Comité Régional Biodiversité (biodiversity regional committee) was set up in PACA in 2012 as a platform for sharing information related to biodiversity and ecological continuity and monitoring and acknowledging commitments.

Commitments relate to five major strategic guidelines: Begin cooperative action on knowledge; Protect and promote common natural heritage through a sustainable relationship;

Commit to a balanced and consistent relationship in land development and public policy; Organize a sustainably beneficial relationship that guarantees territorial development; and Contribute on a daily basis to renewing projects and initiatives that foster biodiversity. In this regard, with its 4 national parks, 6 natural regional parks, 10 national natural reserves, 3 biosphere reserves, 2 protected marine areas and more than 130 Natura 2000 sites, PACA is the region of France with the most protected spaces.



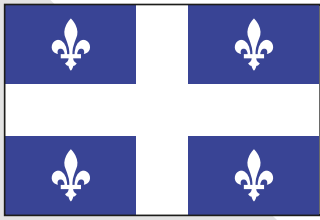
Pink flamingos (*Phoenicopterus roseus*), regional natural reserve of Camargue

## A regional biodiversity observatory - Aichi Targets 1 and 19

What is the status of biodiversity in Provence-Alpes-Côte d’Azur, and how is it evolving? What pressures weigh on it, what protection has been put in place, and what territorial uses and management techniques are favorable to it? How is society involved in protecting biodiversity?

Created in 2011, the Observatoire régional de la Biodiversité (ORB) is mandated to analyze information about the evolution of regional biodiversity reliably and to make it available for the purpose of improving public policy. The Agence Régionale pour l’Environnement is in charge of implementing and operating the observatory, in partnership with the regional government.

To answer the above questions, ORB relies on a series of numeric or cartographic indicators that are collected from its regional partners: associations of naturalists, scientists, public bodies and communities. ORB is also charged with sharing the results of its work, incentivizing knowledge improvement and assisting the region’s communities.



# Québec (Canada)

## Population:

8 214 672\*

## Area:

1 667 712 km<sup>2</sup>\*

## Main ecosystems:

forests, swamps, tundra, agricultural and pasture lands, coastal and fresh water systems

## Fauna and flora:

More than 41 367 species, including 436 bird, 217 fish and 632 moss and Sphagnum species

\*Institut de la statistique du Québec, 2014



Parc national du Mont-Tremblant

Québec is a Francophone province of Canada, a subnational state whose capital is Québec City and whose largest city is Montréal. Located in the northeast of North America, Québec is the largest Canadian province in size and is ranked second in population. In Canada, legislative, executive and judicial power is shared between the federal and provincial governments. Shared responsibility between the levels of government is entrenched in the Constitution of Canada, with the federal government having responsibility for pan-Canadian and cross-border matters. Provincial governments, including Québec, have exclusive and/or shared legislative powers in the spheres of education, health, the administration of justice, public security, land management, municipal affairs, transportation, agriculture, immigration, natural resource management and the environment.

## Biodiversity influenced by climate

Québec is characterized by its vast area—more than half of which is forested—as well as its lakes and rivers, the magnitude of its mineral resources, and the St. Lawrence River, one of the world's greatest navigable rivers, which flows through Québec over a distance of nearly 1 200 km. Québec's 4 500 rivers and 500 000 lakes contain 3% of Earth's renewable fresh water reserves.

Climate factors related to latitude largely determine the distribution of vegetation in Québec. In the St. Lawrence Lowlands, climate changes gradually from the southwest to the northeast. Soil, relief and disturbances such as forest fires, insect epidemics and logging also impact the distribution of vegetation. Québec is divided into three main vegetation zones: the temperate north, dominated by hardwood trees and mixed stands; the Boreal zone, characterized by stands of evergreen conifers; and the arctic zone, with its shrub and grass vegetation. Québec forests account for 20% of the Canadian total and 2% of the forests on Earth. They play a major role, both socioeconomically and environmentally.



Waterfall in the future parc national Uluittaniujalik (Source: MDDELCC)

Due to its geographic location and size, Québec boasts a wide range of biological diversity. In order to preserve this collective treasure, various types of areas that are representative of Québec biodiversity (national parks, aquatic parks, ecological and biodiversity reserves, etc.) benefit from protection that shields them from the commercial exploitation of natural resources and other forms of development. Québec wildlife includes nearly 786 vertebrate species and large numbers of invertebrates, including close to 30 000 insect species. In terms of floristic diversity, Québec is home to 2 881 species of vascular plants and in excess of 7 700 nonvascular plants, mushrooms and lichens. Among all these species, 38 animal and 78 plant species are designated as threatened or vulnerable in the Government of Québec's *Act Respecting Threatened or Vulnerable Species*.

In Québec, the main pressures on biodiversity and its ecological services are multifactorial, and include the transformation of ecosystems through forest fragmentation, wetland disturbance, etc., invasion of alien species, deterioration of environmental quality through pollution, water body eutrophication, soil erosion, etc., climate change (modification of northern environments, extreme climate

events, etc.) and the exploitation of natural resources, mainly in southern Québec.

## Different levels of government cooperate to implement complementary actions

The Government of Canada ratified the Convention on Biological Diversity in 1992 and immediately began to develop a biodiversity strategy. As responsibility for the conservation of biodiversity and the sustainable use of biological resources is shared between the federal, provincial and territorial governments, an intergovernmental working group was set up. A national non-governmental advisory group on biodiversity was also created to advise the working group. Its membership included representatives from regional and urban governments and business, as well as Aboriginals, academics and ecology groups.

The Canadian Biodiversity Strategy was adopted in 1995. It recognizes provincial responsibilities and powers and encourages provincial governments to pursue the strategic guidelines set out in the Strategy in accordance with their own policies, plans, priorities and financial capacity. In fact, given the breadth of their powers the provinces are in a position to implement their own biodiversity action while taking account of the federal government's Strategy and initiatives, as the case may be.

After the CBD's Strategic Plan for Biodiversity 2011-2020 was adopted in 2010 Canada developed its Biodiversity Goals and Targets for 2020, which it adopted in turn in 2015. Canada's 4 goals and 17 targets were inspired by the Aichi Targets, but adapted to Canadian realities.

While Québec took note of the Canadian Biodiversity Strategy and Canada's 2020 goals and targets, it intends to set up its own tools based on its powers, timetable and resources.



Hoverfly (syrphid fly) (Source: MDDELCC)

## Québec, committed from the start of the Convention on Biological Diversity

Declaring itself bound by the CBD in 1992, the Government of Québec stands by the principles of the Convention and has set various biodiversity safeguard goals for itself through two strategies and related action plans (1996-2000 and 2004-2007).

13. Incorporation of biological diversity into national and local strategic planning procedures
14. Implementation of efficient, participative and updated national strategies and action plans
15. Reduction in habitat impairment and fragmentation
16. Sustainable management of stocks of fish, invertebrates and aquatic plants
17. Sustainable management of areas dedicated to agriculture, aquaculture and forestry
18. Pollution reduction
19. Prevention of invasion by alien species and management of currently rooted species of this type
20. Creating ecologically representative networks and efficient management of protected areas
21. Protection of threatened and vulnerable species
22. Protection of the genetic diversity of indigenous species
23. Restoration and safeguard of ecosystems that provide essential ecological services
24. Mobilization of financial resources to support scientific projects and the acquisition of knowledge about Québec's biological diversity.

The Government of Québec is currently working to meet the objectives of the CBD's Strategic Plan for Biodiversity 2011-2020. In October 2013, it published its Government Biological Diversity Guidelines as a first step to reaching the Aichi Targets. The proposed approach was the fruit of consultations between various government departments and civil society actors and was based on three fundamental issues that simultaneously affect the three indivisible dimensions of sustainable development: environmental, economic and social. These three issues are subdivided into seven major government guidelines (see table at right), which provide a counterpart to the twenty Aichi Targets in enabling action on all target problems. The current guidelines are intended for Government of Québec ministries and other bodies and call for an inter-ministerial steering committee on biodiversity.

Issues	Guidelines
I. CONSERVATION OF BIOLOGICAL DIVERSITY AND MAINTENANCE OF ECOLOGICAL SERVICES (Environmental dimension)	1. Protect ecosystems to maintain the production of essential ecological services
	2. Restore and develop ecosystems to optimize rendered ecological services
II. DEVELOPMENT OF BIOLOGICAL DIVERSITY AND ECOLOGICAL SERVICES WITHOUT IRREPARABLE PREJUDICE (Economic dimension)	3. Develop economic tools favorable to the maintenance of biological diversity
	4. Encourage businesses to take biological diversity into account in their operations
	5. Encourage the sustainable use of biological diversity
III. ACQUISITION AND SHARING OF KNOWLEDGE ABOUT BIOLOGICAL DIVERSITY AND ECOLOGICAL SERVICES (Social dimension)	6. Acquire knowledge to support informed decision-making
	7. Sensitize, inform and educate the population about the importance of biological diversity and the value of ecological services

Since 2010, Québec has continued its efforts and numerous actions are currently under way. In particular, Québec has made ambitious commitments in the sphere of protected areas in order to meet international goals. It has committed to protect 17% of its land mass and interior fresh water areas by 2020, 20% of which is to come from the Plan Nord territory north of the 49<sup>th</sup> parallel, which accounts for nearly 1.2 million km<sup>2</sup>, as well as 10% of marine areas. The protected area percentage (as defined by the International Union for Conservation of Nature was 9.32% in March 2016. Complementary to public land efforts, 206 natural reserves covering more than 21 000 ha on private lands have also been created through the government's financial assistance program for establishing a network of protected areas in private environments and/or voluntary conservation initiatives or donations for ecological purposes.

Biodiversity issues have also been incorporated into major government strategies like the 2013-2020 Climate Change Adaptation Strategy and Climate Change Action Plan, the 2015-2020 Government Sustainable Development

Strategy, the Plan Nord for 2035, the Maritime Strategy for 2030 and 2015-2020 Action Plan and the 2015 Sustainable Forest Management Strategy.

## Multiple challenges are influenced by the economic context and by policies

Québec has been proactive since 1992 in moving to achieve the goals of the CBD. It is currently working to develop a portrait of its actions that will contribute to reaching the Aichi Targets, in order to focus on eventual gaps and propose complementary actions to enable it to actively help these international objectives to be achieved. The population of Québec is relatively well-informed about major world biodiversity conservation problems. As such, Québec is fertile land for biodiversity conservation policies. Some challenges remain along the way, however, including:

- ▶ Government stakeholder and civil society actor adherence to biological diversity policies
- ▶ Biodiversity conservation in a globalization context, which must take account of social and economic issues that are both global and local
- ▶ The awareness of the Québec population to specific Québec biodiversity conservation, protection and management realities
- ▶ The availability of human resources to implement and coordinate action in the field.

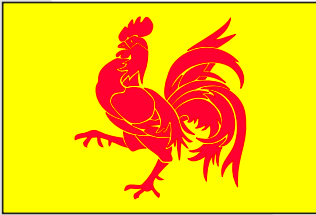


Male Pine grosbeak (*Pinicola enucleator*) (Source: MDDELCC)

## Acquisition program for Northern Québec environmental and biological knowledge, 2011-2014 Aichi Target 19

In March 2010, the Government of Québec set aside \$7.5 over three years to fund a northern environmental knowledge acquisition program to support government conservation and land management decisions. The main achievements of the program were in the spheres of land and water ecological inventories, the hydrographic network, and vegetation and surface deposit mapping. For example, more than 800 ecological reports enabled the characterization of in excess of 150 types of northern physical environments. In addition, in the course of preparing more than 840 reports on vegetation, in excess of 1550 nonvascular plant specimens were gathered in what was the most important harvest of nonvascular plants ever brought back from Northern Québec (approximately 5000 harvests). A total of 148 new occurrences of floristic species deemed threatened, vulnerable or likely to be so designated in Québec (94 vascular plants and 54 bryophytes) were discovered. Finally, in a worldwide first, a new vascular plant was discovered in the northeastern part of the Ungava Peninsula: the Puvirnituuq Mountain draba or *Draba puvirnituuqii* Mulligan & Al-Shehbaz.





# Wallonia (Belgium)

## Population:

3 600 000

## Area:

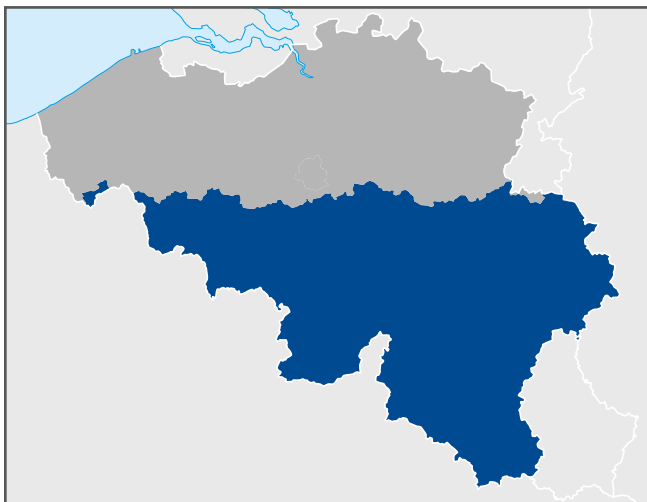
16 844 km<sup>2</sup>

## Main ecosystems:

forests, open semi-natural habitats,  
peat bogs, croplands

## Fauna and flora:

in excess of 700 animal species, including  
22 amphibians and reptiles, plus 64 butterflies  
and 41 orchids



The region of Wallonia is located in southern Belgium. It has a high level of urban population, and its main axis (also called the industrial corridor) runs east to west, passing through cities along three rivers (the Meuse, the Sambre and the Haine). To the north of this axis lie the vast expanses silty loam of Middle Belgium, where agriculture and open landscapes abound and where human habitats are largely village-based. To the south of the axis are a number of different ecological regions, including the Condroz, the Herve country—which is a transitional zone comprised of the Ardennes highlands, forest and croplands—and, finally, to the south, the Belgian Lorraine, which is a succession of three ridges separated by depressions. The Government of Wallonia enjoys numerous policy powers in spheres such as social action, transportation, agriculture, land management, finance, foreign trade, health, energy, environment, tourism and culture.

## A great diversity of habitats

Wallonia offers a great diversity of ecological and climate conditions and, as a result, a wide variety of habitats. The silty loam lands to the north of the Sambro-Mosan corridor are essentially given over to major crop production, whereas the south is characterized by a more rugged relief and thick forest cover. Wallonia boasts a large number of forest formations and semi-natural open habitats of great biological value that include dry grasslands, hayfields, heather moors and marshes that are often the result of ancient agricultural and pastoral practices. Two biogeographic regions are particularly noteworthy due to their climate characteristics, high level of ecological integrity and great landscape value. These are:

- ▶ The Ardenne Highlands, which have a net northern influence and a high level of precipitation, and include large areas of wet meadows, peat bogs and heather moors
- ▶ The area formed by the Fagne-Famenne depression and its limestone hills, home to vegetation that is much more thermophilic and dominated by oak stands, dry grasslands and hayfields of great heritage value.

A high level of biological diversity corresponds to this variety of ecological conditions. Among the 700 species of wildlife found here are ones that are emblematic, rare or threatened in Europe, such as the Black Stork, the Marsh Bat and the Marsh fritillary butterfly. The Sphagnum Orchid is also found in this area. Only one plant species, the *Sempervivum funckii* var. *aqualiense* or Joubarbe d'Aywaille houseleek is deemed endemic to Wallonia. This species is confined to a single limestone quarry in the

Amblève Valley of Liège Province. Wallonia also boasts 41 bird habitats and 65 species of community interest under the two European biodiversity conservation directives.

When all groups are combined, 31% of the studied species are threatened with disappearance in the Wallonia regions, and 9% are already gone. The status of more than half of all bat, fish, reptile, clouded yellow butterfly, dragon fly and damselfly species in the region is unfavorable, with various threats compromising the maintenance or even the survival of these populations. The threats include the deterioration of natural habitats, pollution, intensified agriculture, alien species and climate change.

## Federal and regional governments draft a national strategy

Prior to 2006, Belgium had various regional and federal plans that addressed biological diversity, but no national framework to set out plans for objectives and actions undertaken by the four levels of federal and regional power while respecting both autonomy and shared powers. Belgium's 2006-2016 national biodiversity strategy was adopted on October 26, 2006 by the country's regional and federal ministers of the environment, the federal minister of mobility and the North Sea, the state secretary of sustainable development and the federal minister of the economy and scientific policy.

This biodiversity strategy was the first to be applied by both federal and regional Belgian authorities. In order to optimize efforts at each level of power, it set out 15 key strategic objectives and, for each one, the actions that should guide implementation. The strategy also includes references to European and international biodiversity instruments, as well as to existing or forthcoming Belgian national measures. The strategy and its 15 strategic objectives were updated in 2013 to incorporate the objectives of the *EU Biodiversity Strategy to 2020* and better meet the Aichi Targets. Objective 14 of the EU strategy encourages regional involvement in its implementation.

The strategy also enumerates additional avenues for action to safeguard biodiversity that can be taken individually or jointly by the different levels of government. For example, the Government of Wallonia has full powers over the environment, water and the conservation of nature on its lands. However, some of the objectives of the national strategy, such as objectives 1) Identify and monitor the priority building blocks of biodiversity, 2) Study and monitor the effects and causes of processes and activities that are a threat to biodiversity, 3) Maintain or restore biodiversity and



Aywaille houseleek (*Sempervivum funckii* var. *aqualiense*)

ecosystem services to a positive state, and 4) Guarantee and promote the sustainable use of biodiversity building blocks, are fully entrenched in the regional strategy of Wallonia, especially in regard to the implementation of Europe's Natura 2000 policy within the region itself.

## A subnational nature conservation policy

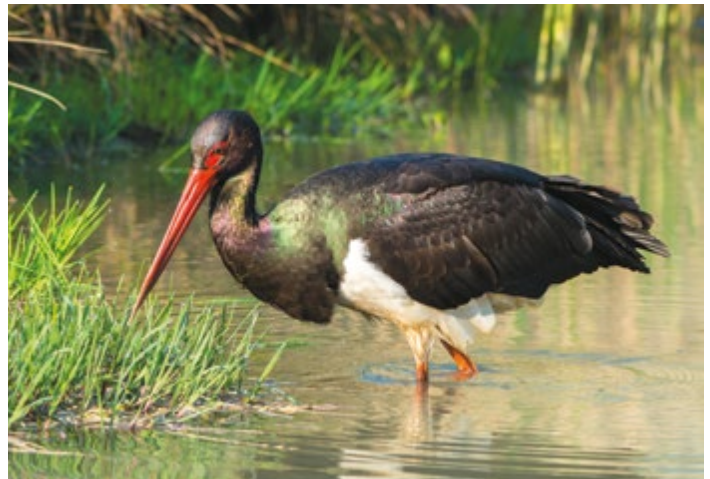
Wallonia does not have a subnational strategy as such, but it is committed to conserving its biodiversity through the active participation of local actors such as foresters, transportation infrastructure managers, quarry operators, etc. The goal is to elicit and gather initiatives into a vast nature network for the region. More particularly, in relation to the preservation of sensitive habitats and species, Wallonia's nature conservation and biodiversity protection strategy incorporates European programs and local initiatives. It is currently being updated to take account of indicators that are periodically collected for European Union reports and monitoring programs.

All stakeholders need to cooperate in order to protect nature in Wallonia. This means that farmers, foresters, fishermen, hunters, friends of nature and the public at large have to reach mutually acceptable solutions. This very broad-based public dialogue was what led to the 1995 Environmental Plan for Sustainable Development, which includes a chapter on biodiversity conservation that defines three major objectives for Wallonia:

- ▶ Maintain, restore and develop wildlife potential through the territory
- ▶ Maintain and restore the natural components of our urban and rural landscapes
- ▶ Generalize education about nature.

The Environmental Plan and other policy instruments such as regional land management and mobility plans are complementary in ensuring policy consistency.

Wallonia has also developed other instruments that contribute to biodiversity conservation by establishing protected areas. In 2013, Wallonia boasted 19 000 ha of various types of natural reserves: 8 600 ha of natural state-owned reserves, 2 900 ha of accredited natural reserves, 623 ha of forest reserves, 5538 ha of integral forest reserves, 1376 ha of wetlands of biological interest and 80 subterranean caves of scientific interest. Outside of these protected zones, concerted action has enabled a variety of actors to set up measures for the protection of nature. For example, municipal nature development plans allow for projects that promote natural heritage within their jurisdictions.



Black stork (*Ciconia nigra*)

## The challenge of conservation: incorporating all parameters

Aware of the problem of biological diversity deterioration, Wallonia needs to take account of a variety of factors when implementing its subnational biodiversity policy, including the current financial crisis that affects available funding and human resources, the need to incorporate the idea of nature conservation into its administrative services and the preservation of the region's socioeconomic interests. The context compels the region to dialogue with its development partners (associations, owners, operators, municipalities, etc.). Various initiatives have already been taken to promote biodiversity locally and to help preserve regional species and habitats.

### The community-based plan for nature development, a local participative tool - Aichi Target 17

In the wake of the 1992 Rio Earth Summit and following an initial experience spurred by the King Baudouin Foundation, Wallonia's public service began a biodiversity safeguard program for municipalities on the occasion of the 1995 European Nature Conservation Year. The plan was proposed to municipalities interested in sustainably incorporating nature into their economic and social development plans. The plan seeks to maintain, develop and/or restore biodiversity at the municipal level by involving all local actors after conducting an ecological network diagnostic and producing a joint vision of nature and its future at the local level.

# CONCLUSION



Subnational biodiversity strategies and action plans are strategic planning instruments for the concrete, hierarchical and significant implementation of the Convention on Biological Diversity. Subnational strategies and action plans can transpose national biological diversity policies and obligations by means of efficient subnational measures, acting in complementary fashion to national initiatives in areas that fall within the purview of subnational government. In this way, strategic planning contributes to the identification of regional and local measures in a framework of important biological diversity preservation initiatives that are of national importance.

A number of conclusions flow from the analysis of information in the ten case studies described in this work. However, it should be noted that the study's sampling size does not fully represent the number and variety of actions realized by the world's subnational governments, and that the observed trends are not necessarily applicable to all subnational governments or every situation.

## 1. Strategy and action plan at the subnational level

No single model exists for developing and implementing subnational biodiversity strategies and action plans. **The appropriateness of a model depends on the local context and the priorities that have been set for the area under consideration.** In many countries, under a policy of decentralization, states, provinces and regions have received broader public policy, planning, legislative and environmental regulatory powers, including statutory responsibility for the protection of biological diversity. For example, our case study review shows that subnational biodiversity strategies and action plans are directly prepared by subnational states or regions in countries that have a strong decentralization policy. In some countries, national legislation has provided legislative oversight or guidelines for the development of subnational biodiversity strategies and action plans, while in others, shared responsibility for the conservation of biological diversity is constitutionally defined.

All subnational governments that agreed to participate in this study are working in collaboration with proactive national governments in the area of biodiversity, and national biodiversity strategies are well entrenched. Moreover, the national strategies, whether drafted before or after 2010, have been or are in the process of being amended to incorporate the Aichi Targets. **In 9 cases out of 10, national governments are encouraging subnational**

**authorities to broaden the incorporation of biological diversity considerations into subnational planning efforts.** Subnational strategies are often set out to match a national strategy that clearly promotes the importance of subnational actions and policies and the need to implement them. Of the surveyed national governments, three out of ten (Aichi, Campeche, and Provence-Alpes-Côte d'Azur) also prepare policy manuals or guidelines for their subnational governments. This study does not assess the scope of such tools, but it does seem that while there is no obvious need for guidelines to trigger subnational action, subnational biodiversity strategies and/or action plans are more advanced when such guidelines exist. As such, it would appear important to create strategic links between these two levels of governance to avoid each one acting in an isolated manner.

All the same, **few subnational governments (2/10) integrally apply the national strategies and action plans that have been set up in their countries.** Most of them develop their own tools, which are better adapted to the subnational context. This does not necessarily lead to the development of formal strategies, but it often does lead to programs and to a legislative and/or institutional framework that incentivizes the priority incorporation of the conservation of the biological diversity into subnational government activities. It is also interesting to note the considerable efforts made by the subnational governments that took part in this survey to enumerate and rank their concerns and priorities in order to develop measures that are well adapted to subnational realities, and to implement them. The result of this is quite interesting: **More than half (6/10) of the subnational governments that took part in this study already possess a biological diversity strategy and/or action plan or are currently developing one or both.**

## 2. Subnational governments respond to Aichi Targets

The surveyed subnational governments that are currently developing and/or amending their subnational biodiversity strategies and action plans meet CBD recommendations, which is to say, they are developing subnational objectives that are compatible with the 20 Aichi Targets that relate to biological diversity on a world scale. All the same, **with or without action plan, these governments are proactive in taking account of Aichi Targets and incorporating them into their public policies and programmes,** even though planning government action in the sphere of biological diversity is a lengthy, cyclical and evolutionary process.

Some Aichi Targets appear to be implemented more often than others. For example, **subnational governments often emphasize knowledge about the status of biological diversity, the creation of protected areas and the protection of threatened and vulnerable species in their implementation of the 20 Aichi Targets.** Aichi Objective 11 (protected areas) is the most frequently quoted (9 out of 10 cases) as a key measure. This is certainly connected to the fact that the subnational governments consulted for this study all have conservation and land management responsibilities and legal powers. However, all subnational governments in this study are not endowed with equivalent legislative powers, and this can influence their ability to implement various Aichi Targets at the policy and administrative level, for example in regulating pollution and/or contaminant emission levels.

A total of 6 **Aichi Targets have been implemented by at least 60% of the 10 surveyed subnational governments:**



Ensure sustainable natural resource production and consumption



Sustainably manage agriculture, aquaculture and silviculture



Create networks of protected areas that are ecologically representative and well connected



Improve the conservation status of threatened species



Implement a biodiversity strategy and action plan



Improve, share, transfer and apply scientific knowledge on biological diversity

The objectives that are most “scientific” or that have more tangible targets appear to be more frequently implemented than those that are more in the realm of policy or that necessitate regulatory amendments.

However, a deeper analysis of the cases reviewed herein shows that **there are few Aichi Targets that have not been met by at least one subnational government.** In fact, of the 20 objectives, only three have not been implemented by the surveyed subnational governments. They are as follows:



Reform tax incentives, especially subsidies that are harmful to biodiversity



Enforce the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization



Increase the availability of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020

These latter objectives often fall with the framework of national government powers, where subnational governments have less leverage or where funding needs are greater.

This case study review clearly shows that subnational governments possess the tools they need to match the principles of biodiversity protection as defined by the Convention on Biological Diversity, at their own levels and in accordance with their own powers and resources. The research brings out **the importance of the role played by subnational governments in successfully incorporating biological diversity at sectoral** (i.e. strategies for the sustainable use of forests) **and intersectoral** (i.e. food security for indigenous communities) **levels.** By this very fact, **the contribution made by subnational governments to the implementation of the Strategic Plan for Biodiversity 2011-2020 is important, if not essential.**

### 3. Subnational governments face major challenges

New data, new technology, new approaches to managing biological diversity, as well as stakeholder and main actor contributions, changes in national and subnational priorities, and new conservation issues are all key aspects in biological diversity planning and constitute challenges to be overcome when the time comes to initiate a process of developing and/or implementing subnational biodiversity strategies and action plans.

Other obstacles were mentioned by some of the surveyed subnational governments:

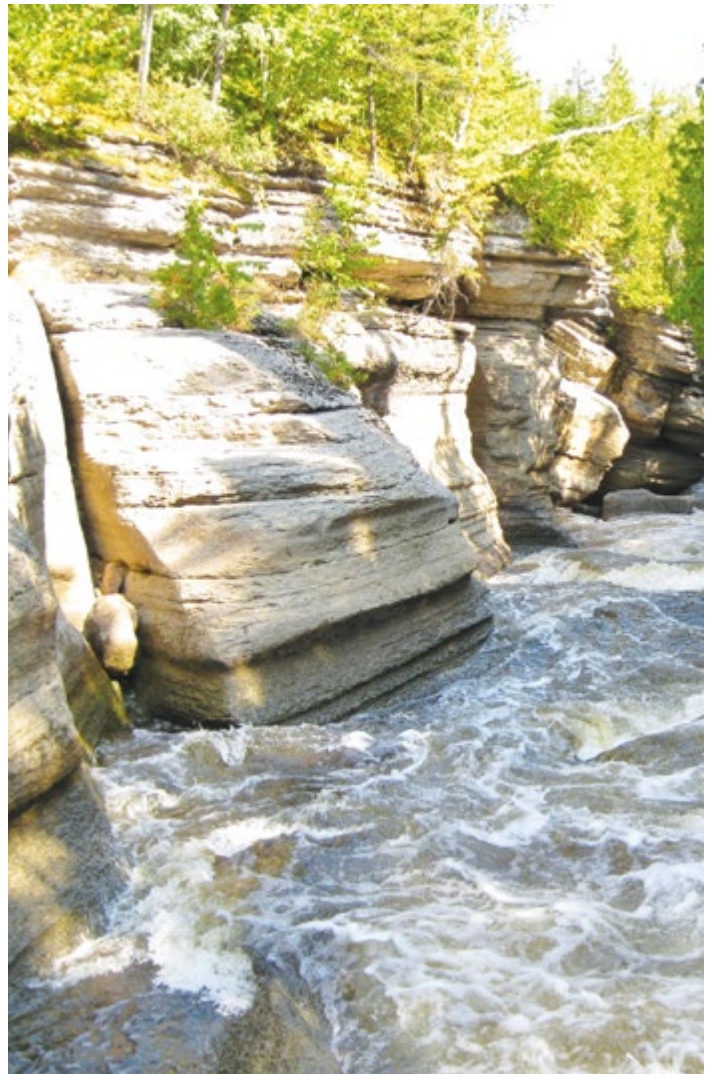
- ▶ Lack of **coordination** between national and subnational authorities
- ▶ Insufficient level of **commitment** by national authorities
- ▶ Low **stakeholder engagement** in the planning process and the difficulty of setting targets and/or determining joint action for the conservation of biological diversity
- ▶ Gaps in **public awareness** campaigns on biological diversity

- ▶ Predominance of economic considerations over the need to protect biodiversity in the context of **globalization**
- ▶ Chronic lack of subnational government **human and financial resources** to implement the actions identified in subnational strategies and action for protecting biodiversity

**The main difficulty reported by the surveyed subnational governments appears to relate to partnership issues, either between different levels of government, within various subnational government ministries and other bodies themselves, or even with citizen stakeholders.**

In order to mitigate the problem, the CBD recommends that a management team or similar body be set up and mandated to coordinate stakeholder consultation, development, and action implementation. This type of team would then be able to ensure monitoring of the state of progress of planning and implementation, identify new issues and challenges, and coordinate the application of target measures, as needed. The management team could also coordinate and harmonize stakeholder communication and awareness strategies with respect to the overall strategy and its action plans.

**It therefore seems important, in order to ensure the optimal implementation of the CBD, to foster **coordination** and **partnerships** with national governments, but with local actors as well, to ensure their maximum buy-in and **involvement** in the process of implementing biodiversity conservation measures.**



---

## A useful resource

Secretariat of the Convention on Biological Diversity: NBSAP training modules, Version 2.1, Module 8. Biodiversity planning for states, provinces, cities and other local authorities: How to develop a sub-national biodiversity strategy and action plan. Montreal, June 2011.

