

Plan Estratégico para la Conservación de la Biodiversidad: Ciudad de México, México



**Taller Regional para Mesoamérica:
Estrategias y Planes de Acción Nacionales en Biodiversidad
San José, Costa Rica**

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Director General
Zoológicos y Vida Silvestre
Ciudad de México, México
Noviembre 28, 2011**

Diversidad Biológica

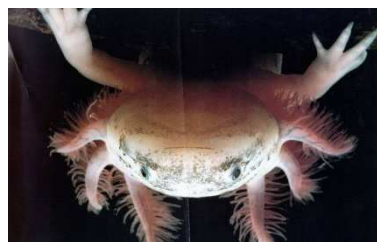


Mundial

- Rango Aceptado: 15 - 100 millones especies
- Especies Descritas: 1.8 millones especies
- Centros Biodiversidad: 70 % en 10 - 30% Superficie

Pérdida Diversidad Biológica

- Especies Listadas: 40,177
- Especies Amenazadas: 16,119
- Mamíferos Amenazados: 1,093
- Aves Amenazadas: 1,205
- Reptiles Amenazados: 341
- Anfibios Amenazados: 1,811



Especies Amenazadas

- Especies Mamíferos Amenazados: 25%
- Especies Aves Amenazadas: 12%
- Especies Reptiles Amenazados: 20%
- Especies Anfibios Amenazados: 33%



Resultados Clave (UICN)

- # Especies Amenazadas > en Grupos Taxonómicos
- > Especies Amenazadas en Regiones Tropicales
- Tasas de Extinción: 1000 – 10,000 > Tasas Extinción Natural



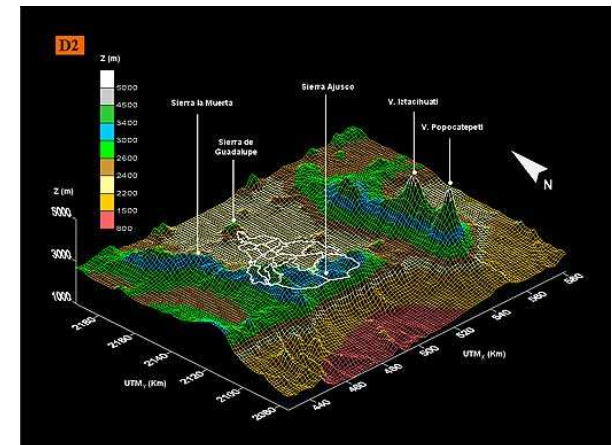
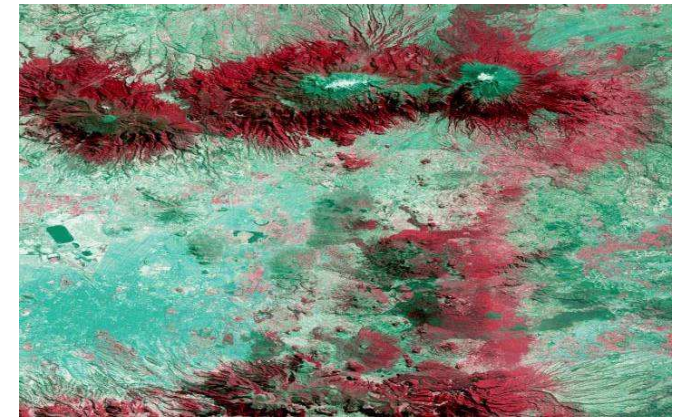
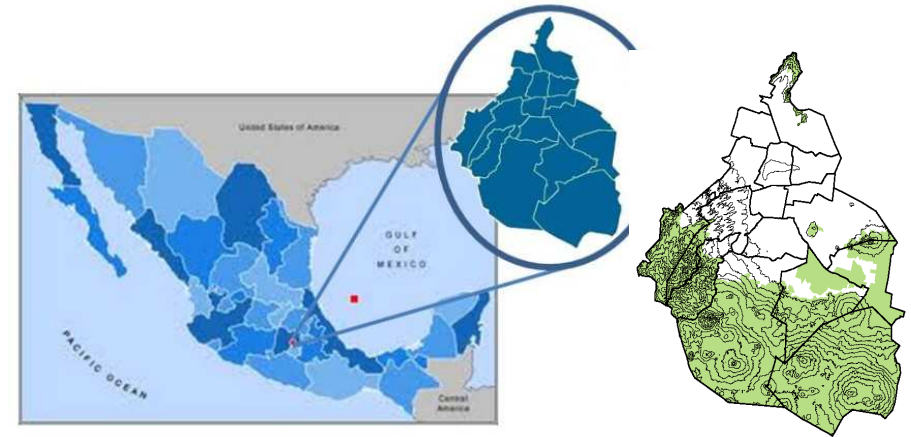
México: País Megadiverso

- 70% Diversidad Biológica Mundial
- 4 País Megadiverso
- Reptiles 717 sp (1)
- Anfibios 284 sp (4)
- Pantas vasculares, 26,000 sp (5)
- Aves 1,054 sp (11)



Ciudad de México

- Regiones Biogeográficas Neártica y Neotropical
- Cuenca Valle de México: 2% Bioiversidad Mundial
- 3,000 Especies de Plantas
- 350 Especies de Mamíferos
- 316 Especies de Aves
- 31 Especies de Reptiles
- Alto porcentaje de endemismos



Ciudad de México: Fauna



(Canis lupus baileyi)



(Canis latrans)



(Lynx rufus)



(Procyon Lotor)



(Urocyon cinereoargenteus)



(Romerolagus diazi)



(Brachypelma smithi)



(Aquila chrysaetos)



(Ambystoma mexicanum)



(Bassariscus astutus)



(Ambystoma altamirani)



(Xenospiza baileyi)



(Lithobates montezuma)



(Leptonycteris yerbabuena)



(Sialia currucoides)



(Didelphis marsupialis)



(Parabuteo unicinctus)



(Phrynosoma orbiculare)



(Picoides scalaris)



(Tyto alba)

Ciudad de México: Flora



(Amanita muscaria)



(Lactarius s almonicolor)



(Taxodium mucronatum)



(Abies religiosa)



(Pinus ayacahuite)



(Juniperus deppeana)



(Cupressus lindleyi)



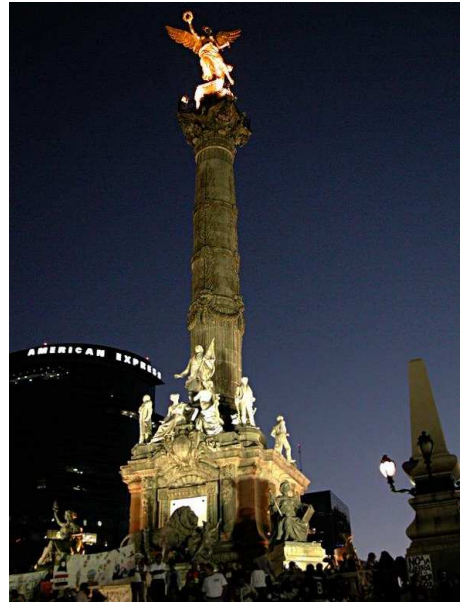
(Alnus acuminata)



(Salix bonplandiana)

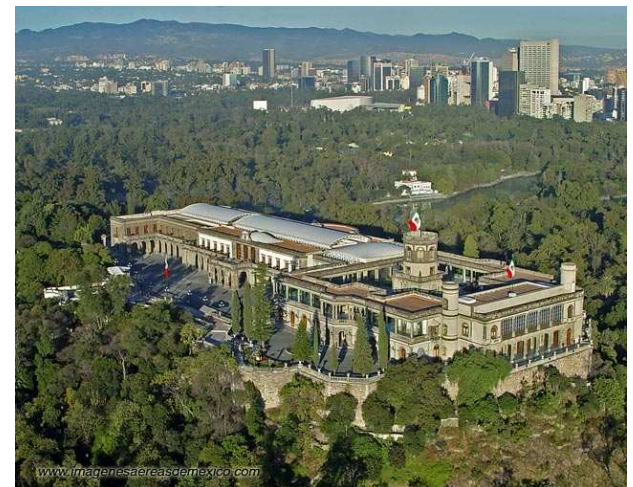


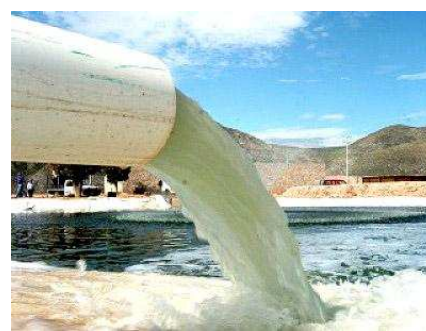
(Prunus serotina)



Ciudad de México: Información Clave

- Area: 1,484 km²
- Suelo de Conservación: 49%
- Población: 8.7 - 22 millones
- Vehículos: 2.47 millones
- Viajes Diarios: 12 millones
- Agua: 32 m³/s
- Resíduos: 12,500 cada día
- 37 millones tons de CO₂ por año

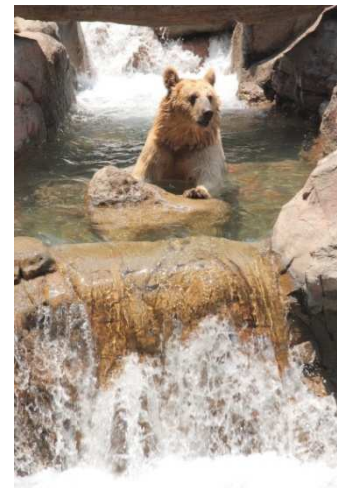




Factores Responsables de Pérdida de Biodiversidad

- El crecimiento del área urbana ha significado una profunda modificación del entorno con :
 - Deforestación
 - Denudación
 - Erosión de los suelos
 - Pérdida de hábitats terrestres y acuáticos sobreexplotación y agotamiento de acuíferos.
 - Cambios en el patrón hidrológico.
 - Contaminación de agua, suelo y aire de origen:
 - Urbano-industrial: metales pesados, nitratos, materia orgánica, fertilizantes, biocidas y
 - Contaminantes biológicos: bacterias coliformes fecales, amén del monóxido y bióxido de carbono, los óxidos de nitrógeno y azufre y el ozono.





Zoológico de Chapultepec

- ❖ Considerado como el Zoológico Nacional
- ❖ Inaugurado en 1924
- ❖ Remodelado en 1994
- ❖ Superficie de 16.4 Hectáreas
- ❖ 239 Especies de México y el Mundo
- ❖ 1329 Ejemplares de Fauna Silvestre
- ❖ 7 Millones de Visitantes al Año





Zoológico de San Juan de Aragón

- ❖ Inaugurado en 1964
- ❖ Remodelado en 2002
- ❖ Superficie de 36.7 Hectáreas
- ❖ 126 Especies de México y el Mundo
- ❖ 706 Ejemplares de Fauna Silvestre
- ❖ Más de 1 Millón de Visitantes al Año





Zoológico Los Coyotes

- ❖ Zoológico Regional
- ❖ Inaugurado en 1999
- ❖ Superficie de 11.2 Hectáreas
- ❖ 51 Especies de Fauna Nativa del Valle de México
- ❖ 295 Ejemplares de Fauna Silvestre
- ❖ Más de 2 Millones de Visitantes al Año





ZOORPRENDETE
Diviértete y Aprende

JULIO
 NO TE PIERDAS LA OPORTUNIDAD
 DE PARTICIPAR EN NUESTRO
CURZOO
 de VERANO 2011
¡INSCRÍBETE!
 MAYORES INFORMES EN EL ÁREA EDUCATIVA
ACTIVIDADES EDUCATIVAS
 VIERNES, SÁBADOS, DOMINGOS
 EN VACACIONES: MARTES A JUEVES

10:00 A 12:00
 EXPOSICIÓN:
 "Lobo mexicano: ¿Una especie tan mexicana como tú?"

10:00
 • Talleres - lúdica: "Descubre la huella"

11:00
 • Aprende jugando: "Descubre la huella"

11:00, 12:00 Y 13:00
 • Video documental: "Lobos"

12:00
 • Zoo pláticas: "La verdadera historia del lobo"

13:00
 • Zoo pláticas: "El leopardo"

14:00 Y 15:00
 • Actividades para aprender jugando:
 Cuento "Hombre, animal y planta"

UN FIN DE SEMANA CON:
 El "Cándor de California"
 17 y 18 de septiembre
 Informes en el Área Educativa

8 DE JULIO
DÍA DEL ÁRBOL
 CELEBRAMOS EL 2 Y 3 DE JULIO



Objetivos

- ❖ Recreación
- ❖ Educación Ambiental
- ❖ Conservación de Especies
- ❖ Investigación Científica



Diagnóstico y Diseño de la Estrategia del Distrito Federal para la Conservación y Uso Sustentable de la Biodiversidad

- **EL objetivo del proyecto es :**

- Obtener un reporte publicado en un libro, donde se reúna y analice datos biológicos, económicos y sociales que en su conjunto puedan constituir el marco de evaluación para el desarrollo de una Estrategia y Plan de Acción sobre la Biodiversidad del D.F., con el fin de promover tanto la protección como el manejo adecuado y sustentable de la biodiversidad de la Ciudad, entre los diferentes sectores de la sociedad en congruencia con la Estrategia Nacional de Biodiversidad (ENB) y el Convenio sobre Diversidad Biológica (CDB).

- **El proyecto consta de 3 partes:**

1. El estudio de Estado,
2. La determinación de metas y prioridades estatales vertidos en un Plan de Acción
3. La generación de la Estrategia de Biodiversidad del D.F.

- Se encuentra coordinado por la Dirección General de Zoológicos y Vida Silvestre (**DGZVS**) en conjunto con la Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (**CONABIO**).

- Cuenta con la participación de más de **60 investigadores de diferentes dependencias** como son: **UNAM, UAM, UACM, CEJA CONABIO y DGZVS entre otros.**

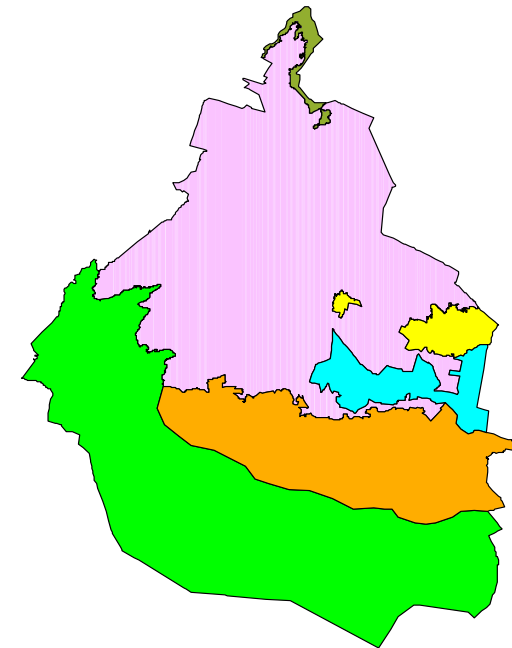


Estudio de Biodiversidad: Ciudad de México

- Preparar una lámina describiendo la estructura del Diagnóstico, los capítulos y de ser posible los subtemas.
- **El Estudio de Estado del D.F. está dividido en 5 grandes capítulos:**
 - Contexto Histórico, Físico, Social y Cultural
 - Biodiversidad genética, específica y Ecosistémica
 - Alteraciones y amenazas a la integridad funcional de los ecosistemas, bienes y servicios
 - Experiencias y oportunidades para la conservación de la Biodiversidad tanto *Ex situ* como *In situ*,
 - Marco jurídico e institucional y política pública del Distrito Federal.

• La información de los capítulos anteriores será descrita en función a **la regionalización en las que se dividió el D.F.** determinada por el grupo coordinador:

Regiones Propuestas



- Bosques y cañadas
- Humedales de Xochimilco y Tlahuac
- Parques y jardines urbanos
- Serranías de Xochimilco y Milpa Alta
- Sierra de Guadalupe
- Sierra de Santa Catarina

Cronograma

| Concepto | Jul/Ago/Sept | Oct/Nov/Dic | Ene/Feb/Mar | Ab/May/Jun | Jul/Ago/Sep | Oct/Nov/Dic |
|--|---------------------|--------------------|--------------------|-------------------|--------------------|--------------------|
| Estudio de la Biodiversidad | | | | | | |
| Recopilación de información de los capítulos que faltan por entregar | X | X | | | | |
| Reuniones de seguimiento con los coordinadores de capítulo | X | X | | | | |
| Validación de versiones finales y entrega de correcciones por parte de coordinadores | | | X | X | | |
| Corrección de estilo, Diseño y trabajo Editorial | | | X | X | X | |
| Impresión | | | | | X | |
| Elaboración documento electrónico y producción CD | | | | | X | |
| Presentación, publicación Final | | | | | X | |
| Estrategia de Biodiversidad y Plan de Acción | | | | | | |
| Reuniones de planeación, Talleres y entrevistas | | | X | X | | |
| Recopilación de información | | | | X | X | |
| Talleres de validación | | | | | X | |
| Corrección de estilo, Diseño y trabajo Editorial | | | | | X | |
| Impresión | | | | | | X |
| Elaboración documento electrónico y producción CD | | | | | | X |
| Presentación, publicación Final | | | | | | X |



Firma del Acuerdo de Durban: Ciudad de México y el ICLEI

- La Ciudad de México firmó el Acuerdo Durban en Octubre del año 2010
- El Proyecto LAB (Acción Local para la Biodiversidad) es una iniciativa global dirigida a ciudades para preservar la diversidad biológica.
- A través de esta iniciativa, las Ciudades desarrollan un Reporte de Biodiversidad y un Plan de Acción para su conservación y manejo sustentable



Estructura del Reporte de Diversidad Biológica del ICLEI

1. **MEXICO CITY GOVERNMENT STRUCTURE.**
2. **MANAGEMENT AND CONSERVATION OF BIODIVERSITY**
 - General Characteristics of Biological Mexico City
 - Mexico City Biodiversity
 - Ecosystems Description
 - Vegetation Types
 - Fauna Species Diversity
 - Genetic Biodiversity
 - Ecosystems Services
 - Threats to Biodiversity
 - Mexico's City Green Nlan
 - biodiversity vision and goals
 - *In situ* conservation
 - *Ex situ* conservation
 - Wildlife species conservation
 - Program in Mexico City zoo's
 - Bioethics, animal welfare and animal's protection programs valuation

3. **VALUATION**
4. **INTEGRATION**
 - National Entities Collaboration
 - International Collaboration in Biodiversity Projects
5. **PUBLIC AWARENESS AND PARTICIPATION**
 - Public participation
6. **LEARNED LESSONS**
7. **FINAL CONSIDERATIONS**
8. **ACKNOWLEDGEMENTS**
9. **REFERENCES**
10. **GLOSSARY**



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Reporte de Biodiversidad ICLEI: Cronograma

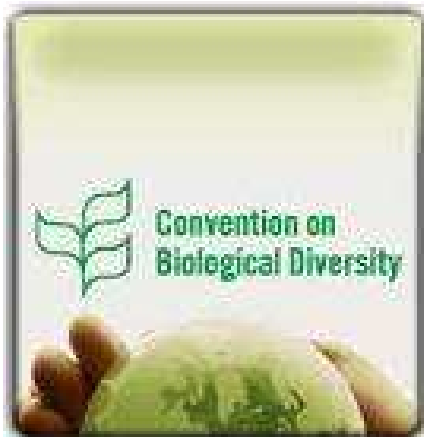
| CONCEPTO | | FECHA |
|----------------------|--|----------------------------------|
| 1er Borrador | Elaboración del documento | Junio, 2011 |
| | Revisión, propuestas y correcciones internas(DBVS - Dirección General) | Julio, 2011 |
| | Traducción | Julio, 2011 |
| | Entrega del Primer Borrador al personal de ICLEI. | JULIO, 2011 |
| 2do Borrador | Elaboración del documento y aplicación de comentarios hechos por el personal del ICLEI | Septiembre- Octubre, 2011 |
| | Revisión, propuestas y correcciones internas(DBVS - Dirección General) | Noviembre , 2011 |
| | Traducción | Noviembre , 2011 |
| | Entrega del Primer Borrador al personal de ICLEI. | NOVIEMBRE 2011 |
| Escrito Final | Elaboración del documento y aplicación de comentarios hechos por el personal del ICLEI | Diciembre, 2011 |
| | Revisión, propuestas y correcciones internas(DBVS - Dirección General) | Enero, 2011 |
| | Traducción | Enero, 2011 |
| | Entrega del Escrito Final | FEBRERO, 2012 |



Biodiversity in Cities

A Biodiversity Exhibition Project Among Leader Cities





Project Background

- Following the adoption, at the Nagoya Biodiversity Summit last October 2010, of a plan of action to involve sub-national and local governments in the implementation of the new ten-year Strategic Plan of the Convention on Biological Diversity, the first meeting on the Implementation of the Plan of Action on Sub-National Governments, Cities and other Local Authorities on Biodiversity was held at Montpellier, France, from January 17th to 19th, 2011, at the invitation of the City of Montpellier and the Government of France, with the support of the Convention of Biological Diversity (CDB).
- A total of 38 participants attended, representing more than 2,100 cities and regions all over the world, including government representatives from France, Brazil, Sweden, Portugal, Singapore and South Africa and from the cities of Mexico, Montreal, Bonn and Curitiba. This meeting was also attended by representatives from international agencies such as ICLEI UN-HABITAT and IUCN, and leading research institutions such as the Stockholm Resilience Centre.
- During the meeting, collaborative projects were defined by participants to be monitored as part of the Global Partnership's activities. One of the resulting projects was entitled "Biodiversity in Cities: A Biodiversity Exhibition Project Among Leader Cities". The main objective of this project is to create awareness about biodiversity, through an exhibition of representative wildlife species of participant cities. The following slides explain in detail its content and the proposed strategy for its implementation.

Bonn



Curitiba



Durban



Joondalup



Mexico City



Montpellier



Montreal



Nagoya



Paris



Singapore



Project Objective

- To promote public awareness of the unique biodiversity of the Cities of Bonn, Curitiba, Mexico City, Montpellier, Montreal, Nagoya, Paris, Durban, Joondalup and Singapore through the development of an exhibition of the cities most representative **species of fauna and flora.**



Project Strategy



- The exhibition will provide information regarding the *Global Partnership Committee*, the value and importance of biodiversity, the role of cities in biodiversity conservation and the key role of public awareness and direct participation.
- Each participant City will include a message from its Mayor about the City's biodiversity and images of its most representative flora and fauna, including those endemic and highly endangered species.
- Images should be accompanied by a brief text, indicating the species scientific name, and describing key information about the species in concern.
- A leader committee will integrate the images and information of participant Cities to develop a first draft of the exhibition, which will send to program participants for final review.
- The final exhibition will be sent electronically to program participants for its presentation in key public areas. The exhibition will also be presented in Mayor International Forums of CBD, ICLEI, UNEP, Cities and Biodiversity, etc.

Exhibition Design and Production

Images and Texts Characteristics:

- Images in electronic files with a minimum of 300 DPI (resolution)
- JPG or PDF format for photographs
- Texts with no more than 50 to 60 words

Printing and Mounting Characteristics:

- Dimension of Photographs: 110 x 130 cm
- Prints on satin photographic paper
- Mounting, plates and framing:
- Mounting on: acrylic, aluminum, sintra (trovicel), foam board or acid free cardboard. Plates UV protected with different calibers, with bright, matte or semi matte finish; wooden or aluminum frames.





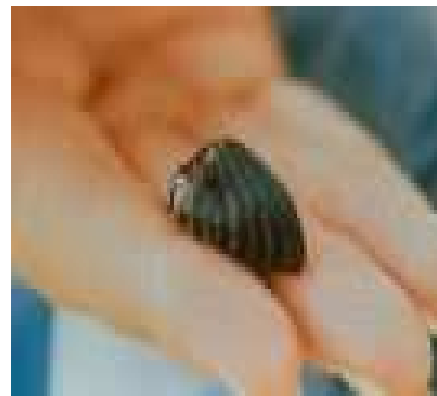
Biodiversity

Biological diversity - or biodiversity - is the term given to the variety of life on Earth and the natural patterns it forms. The biodiversity we see today is the fruit of billions of years of evolution, shaped by natural processes and, increasingly, by the influence of humans. It forms the web of life of which we are an integral part and upon which we so fully depend.

This diversity is often understood in terms of the wide variety of plants, animals and microorganisms. So far, about 1.75 million species have been identified, mostly small creatures such as insects. Scientists reckon that there are actually about 13 million species, though estimates range from three to 100 million.

Biodiversity also includes genetic differences within each species - for example, between varieties of crops and breeds of livestock. Chromosomes, genes, and DNA - the building blocks of life - determine the uniqueness of each individual and each species.

Yet another aspect of biodiversity is the variety of ecosystems such as those that occur in deserts, forests, wetlands, mountains, lakes, rivers, and agricultural landscapes. In each ecosystem, living creatures, including humans, form a community, interacting with one another and with the air, water, and soil around them.





Biodiversity in Peril

Species have been disappearing at 50-100 times the natural rate, and this is predicted to rise dramatically. Based on current trends, an estimated 34,000 plant and 5,200 animal species - including one in eight of the world's bird species - face extinction.

While the loss of individual species catches our attention, it is the fragmentation, degradation, and outright loss of forests, wetlands, coral reefs, and other ecosystems that poses the gravest threat to biological diversity.

About 45 per cent of the Earth's original forests are gone, cleared mostly during the past century. Up to 10 per cent of coral have been destroyed, and one third of the remainder face collapse over the next 10 to 20 years. Coastal mangroves, a vital nursery habitat for countless species, are also vulnerable, with half already gone.

Global atmospheric changes, such as ozone depletion and climate change, only add to the stress. Global warming is already changing habitats and the distribution of species. Scientists warn that even a one-degree increase in the average global temperature, if it comes rapidly, will push many species over the brink. Our food production systems could also be seriously disrupted.

The loss of biodiversity often reduces the productivity of ecosystems, thereby shrinking nature's basket of goods and services from which we constantly draw. It destabilizes





Importance of Conserving Biodiversity

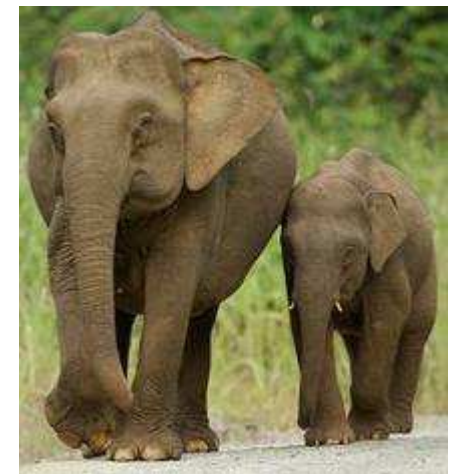
Protecting biodiversity is in our self-interest. Nature's products support such diverse industries as agriculture, cosmetics, pharmaceuticals, pulp and paper, horticulture, construction and waste treatment.

Our personal health, and the health of our economy and human society, depends on the continuous supply of various ecological services that would be extremely costly or impossible to replace.

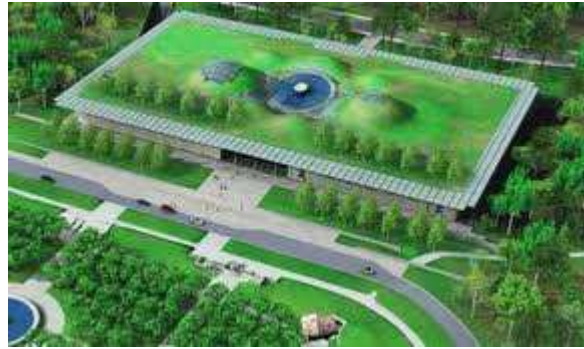


"Goods and Services" provided by ecosystems include:

- Provision of food, fuel and fiber
- Provision of shelter and building materials
- Purification of air and water
- Detoxification and decomposition of wastes
- Stabilization and moderation of the Earth's climate
- Moderation of floods, droughts, temperature extremes and wind
- Generation and renewal of soil fertility, including nutrient cycling
- Pollination of plants, including many crops
- Control of pests and diseases
- Maintenance of genetic resources as key inputs to crop varieties and livestock breeds, medicines, and other products
- Cultural and aesthetic benefits
- Ability to adapt to change



Biodiversity has also a great cultural, psychological, ethical



Cities and Biodiversity

Cities in particular are home to more than half of the world's population, and are responsible for a disproportionately large ecological footprint, which threatens the health of the planet's ecosystems. At the same time local authorities have a profound potential to affect positive change.

Biodiversity and ecosystems need to be valued and managed as part of cities' infrastructure and integrated into all aspects of local governance including urban planning, financial planning, transportation, trade and economic incentive mechanisms, procurement policies, infrastructure development and service delivery.

In order to promote biodiversity conservation, Cities should:

1. Manage the urban environment to benefit biodiversity
2. Implement strategic city and regional planning to reduce urban sprawl
3. Manage the entire landscape, through an ecosystem approach
4. Manage urban agriculture and nurture supply links to city markets
5. Facilitate sustainable consumption of resources that impact on biodiversity
6. Establish synergistic partnerships with government and the private sector
7. Raise biodiversity awareness and importance amongst the public
8. Supporting global or regional networks of cities and local authorities





Plan of Action of Subnational Governments and Local Authorities

The Plan of Action on Subnational Governments, Cities and Other Local Authorities for Biodiversity under the Convention on Biological Diversity, adopted at COP 10 in Nagoya, is intended to support Parties, their partners and local authorities in implementing the Strategic Plan for Biodiversity 2011-2020, the Aichi Biodiversity Targets and relevant decisions of the Conference of the Parties., though the following objectives:

- Increase the engagement of subnational governments and local authorities, in support of their Parties, in the successful implementation of national biodiversity strategies and action plans, the Strategic Plan for Biodiversity 2011-2020, the 2020 target and the programs of work under the CBD;
- Improve regional and global coordination and exchange of lessons learned between Parties to the Convention on Biological Diversity, regional and global organizations;
- Identify, enhance and disseminate policy tools, guidelines, and programs that facilitate local action on biodiversity and build the capacity of local authorities to support their national Governments in implementing the Convention on Biological Diversity;
- Develop awareness-raising programs on biodiversity for local residents (including major groups such as business, local administrators, non-governmental organizations, youth and



Message From the Major

Mexico City: A Biodiverse Megacity

Mexico City is located in the geographical region called "Basin of Mexico" located in the middle of the American Continent border, between the Neartic and Neotropical bioregions.

The surface of the city is 1, 479 km², 41% urban area, 59% rural area (under conservation status). It is one of the largest cities of the world with 8.8 million inhabitants in the city and around 22 million in its metropolitan area.

Mexico City hosts around the 2% of the total taxonomically classified species of the world: 3,000 species of plants, 350 species of mammals, 316 species of birds and many species of aquatic flora and fauna, from which numerous are endemic to the region.

The main threats to biodiversity are urban area expansion, deforestation for agricultural and livestock activities, air pollution, acid rain, regional and global climate change and the introduction of alien or exotic species.

A very populated and biologically rich city, with considerable challenges and successes.



Lic. Marcelo Ebrard Casaubon

Mayor of Mexico City



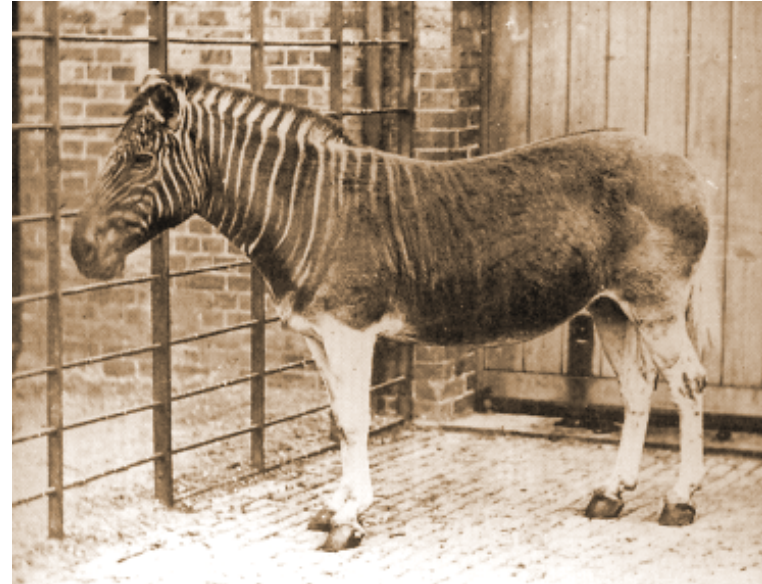


Public Participation Creating Awareness and Conservation Action

Citizens can have an active role for biodiversity by:

- Obtaining information about the biodiversity of their city.
- Understanding the responsible factors for biodiversity loss.
- Reducing consumption, reusing materials, and recycling waste.
- Avoiding the use of products harmful to the environment
- Reducing the energy and fuels use in everyday life.
- Promoting environmentally responsible productive systems.
- Communicating the value and biodiversity importance.
- Participating in activities for conservation biodiversity
- Joining national and international biodiversity organizations





Gracias Por la Atención

**La Extinción
es para siempre**

josebernalstoopen@yahoo.com

