



TRƯỜNG ĐẠI HỌC HÀNG HẢI VIỆT NAM  
**VIỆN MÔI TRƯỜNG**

# ENVIRONMENTAL LAW AND POLICY

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## Lecture 5. BIOLOGICAL DIVERSITY

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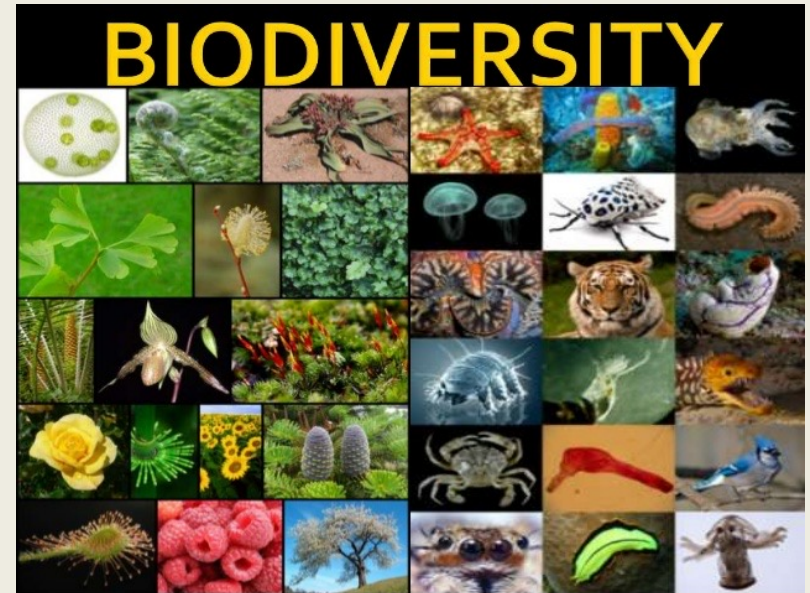
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# What is Biodiversity?

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The Convention on Biological Diversity defines **BIODIVERSITY** as: "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems."



# Biodiversity is more than just Species

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## Genetic Biodiversity

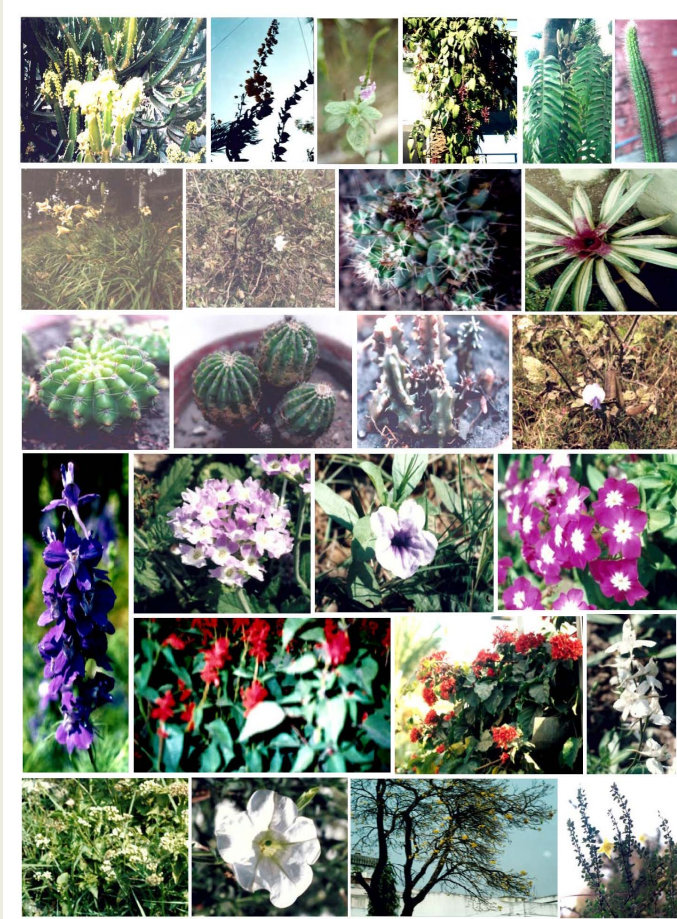
- ... is the variation in genes that exists within a species.
  - A helpful way to understand genetic diversity is to think about dogs.
  - All dogs are part of the same species, but their genes can dictate whether they are Chihuahua or a Great Dane.
- There can be a lot of variation in genes – just think about all the colors, sizes, and shapes that make up the genetic diversity of dogs.

## Ecological Biodiversity

- ... is the diversity of ecosystems, natural communities and habitats.
- In essence, it's the variety of ways that species interact with each other and their environment.
  - The forests of Maine differ from the forests of Colorado by the types of species found in both ecosystems, as well as the temperature and rainfall.
  - These two seemingly similar ecosystems have a lot of differences that make them both special.

# The importance of Biodiversity

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- Providing an array of foods and materials contributing to the economy.
- Most medical discoveries to cure diseases and lengthen life spans were made because of research into plant and animal biology and genetics.
- An important part of ecological services (cleaning water and absorbing chemicals, providing oxygen, etc.).
- Biodiversity allows for ecosystems to adjust to disturbances.
- Genetic diversity prevents diseases and helps species adjust to changes in their environment.
- Its own beauty.



- Habitat loss/ degradation
- Over exploitation (such as overfishing)
- Spread of Non-native Species/ Diseases
- Climate change
- Pollution

According to the International Union for Conservation of Nature (IUCN), globally about one third of all known species are threatened with extinction. That includes 29% of all amphibians, 21% of all mammals and 12% of all birds.



## Threats to Biodiversity

Rusty crayfish are crustaceans that grow up to 5 inches long. They are native to the Ohio River basin.

Rusty crayfish are aggressive invaders. They can harm native fish communities by feeding on their eggs and young, drive out or hybridize with native crayfish, and eliminate aquatic vegetation.



**Rusty crayfish – Aggressive invader**



**Means of spread:** They likely spread through dumping of bait buckets and aquariums, and activities of commercial aquaculture.



**Rusty crayfish – Aggressive invader**

Rusty crayfish is a regulated invasive species (DNR), which means release into the wild is illegal. Licensed anglers may collect any crayfish for use as bait on the same waterbody. They can also harvest up to 25 pounds of any crayfish for personal consumption. Selling live crayfish for bait or aquarium use is illegal.



**Rusty crayfish – Aggressive invader**



# CONVENTION ON BIOLOGICAL DIVERSITY (CBD)

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Category: International Treaty

Opened for signatures: 1992

Ratified: 1993

# History of the Convention

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- In November 1988, the United Nations Environment Programme (UNEP) convened the Ad-hoc Working Group of Experts on Biological Diversity to explore the need for an international convention on biological diversity.
- In May 1989, it established the Ad Hoc Working Group of Technical and Legal Experts to prepare an international legal instrument for the conservation and sustainable use of biological diversity. The experts were to take into account "the need to share costs and benefits between developed and developing countries" as well as "ways and means to support innovation by local people".
- By February 1991, the Ad Hoc Working Group had become known as the Intergovernmental Negotiating Committee. Its work culminated on 22 May 1992 with the Nairobi Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity.

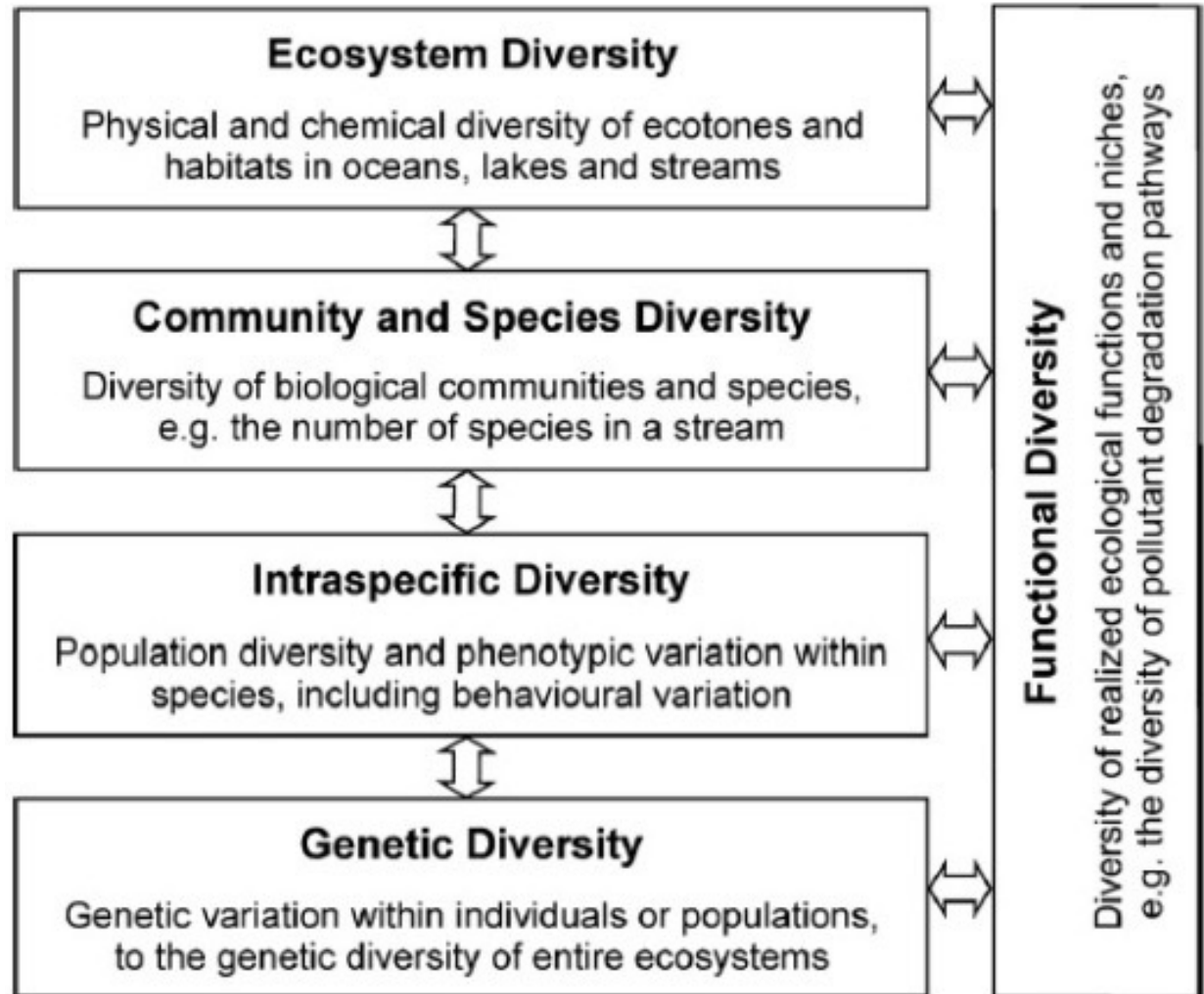
# History of the Convention

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- The Convention was opened for signature on 5 June 1992 at the United Nations Conference on Environment and Development (the Rio "Earth Summit").
  - It remained open for signature until 4 June 1993, by which time it had received 168 signatures.
  - The Convention entered into force on 29 December 1993, which was 90 days after the 30th ratification.
  - The first session of the Conference of the Parties was scheduled for 28 November – 9 December 1994 in the Bahamas.
- The Convention on Biological Diversity was inspired by the world community's growing commitment to sustainable development. It represents a dramatic step forward in the **conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources.**

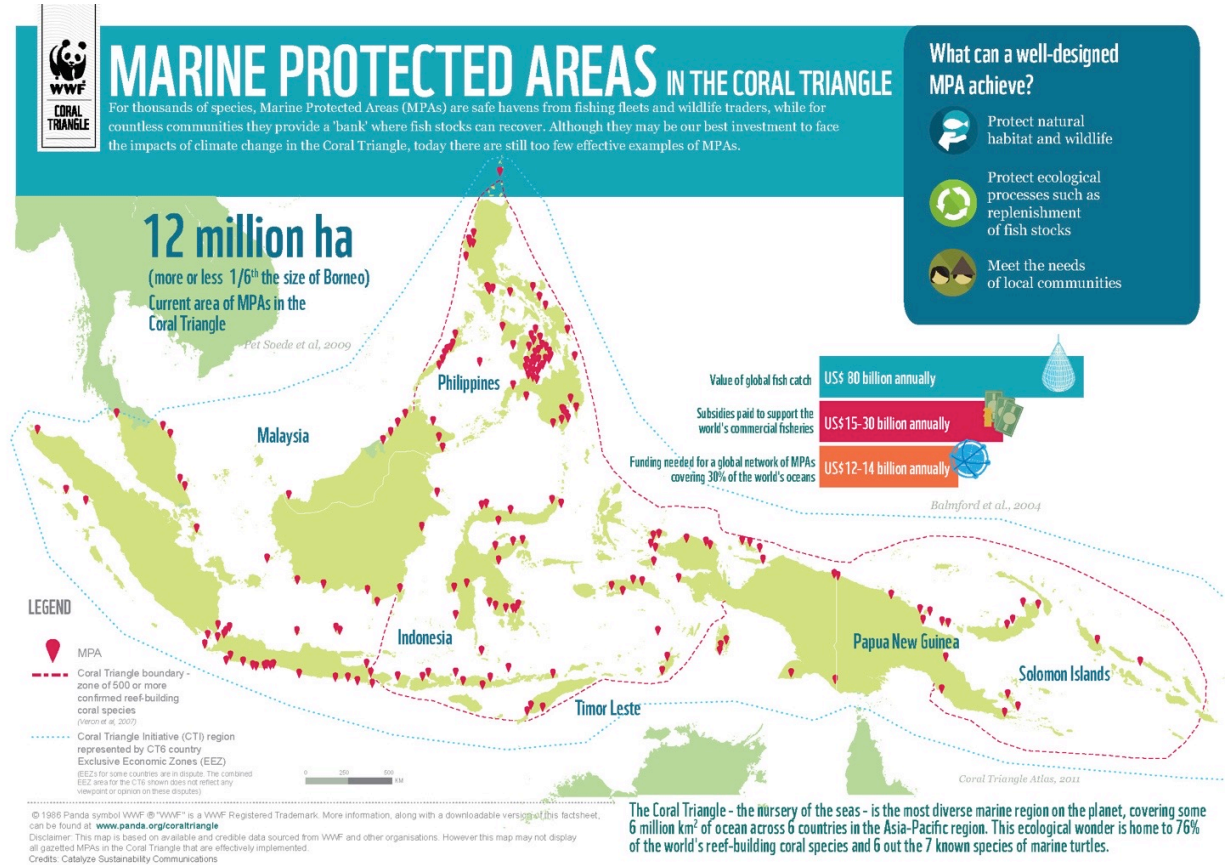


- ❖ Conservation of biological diversity,
- ❖ Sustainable use of its components,
- ❖ Fair and equitable sharing of the benefits arising out of the utilization of genetic resources.



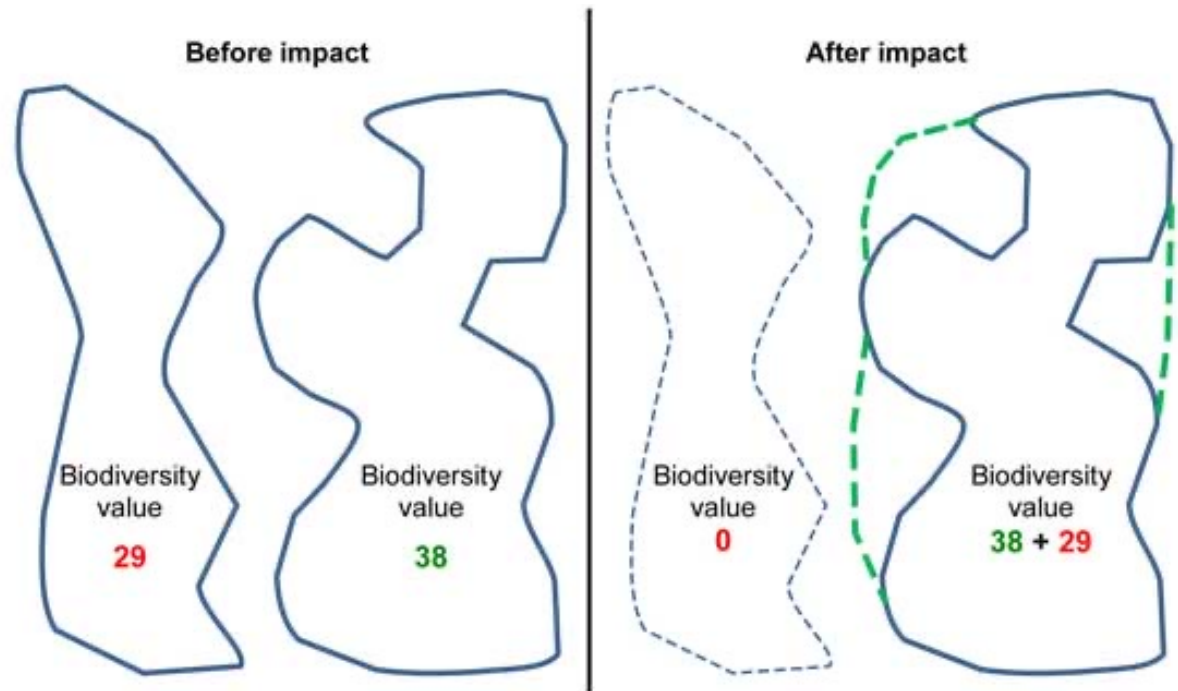
**Overall objectives**

- ❖ conservation and sustainable use the biological diversity within its own nation.
- ❖ manage their national processes and activities which may threaten biological diversity, regardless of where their effects occur.
- ❖ co-operate in the implementation of the Convention, particularly on matters of mutual interest, for example the high seas.



## Responsibilities of signatories

- ❖ Through national strategies, plans and programs,
- ❖ Through plans, programs and policies for sectors (agriculture, fisheries and forestry) and for cross-sectorial matters (land use planning and decision making).



**National action**



## IDENTIFY AND MONITOR:

- ❖ important ecosystems,
- ❖ species and genetic components of biological diversity,
- ❖ processes and activities that have or are likely to have significant adverse impacts on biological diversity.

→ determine their priorities with regard to conservation and sustainable use measures.

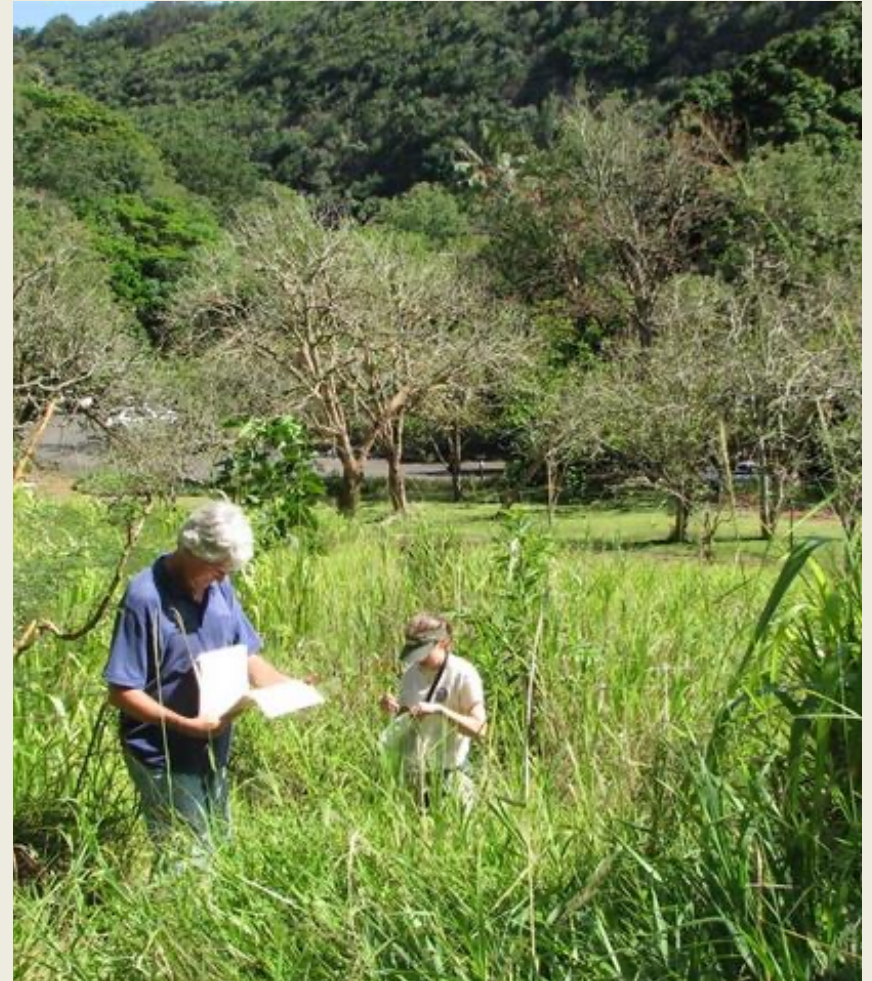


## Identification and monitoring

# In-situ conservation

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- Establishment and management of protected areas;
- Conservation and sustainable use within and outside protected areas; and in areas adjacent to protected areas;
- Rehabilitation and restoration of degraded ecosystems;
- Control of alien species and genetically modified organisms;
- Protection of threatened species and populations;
- Regulation of damaging processes and activities.





- ❖ Ex-situ conservation means conservation outside natural habitats, for example in zoos, botanic gardens and seed banks.
- ❖ Parties are to take ex-*situ* measures, while ensuring that ecosystems and natural populations of species are not threatened.



**Ex-situ conservation**



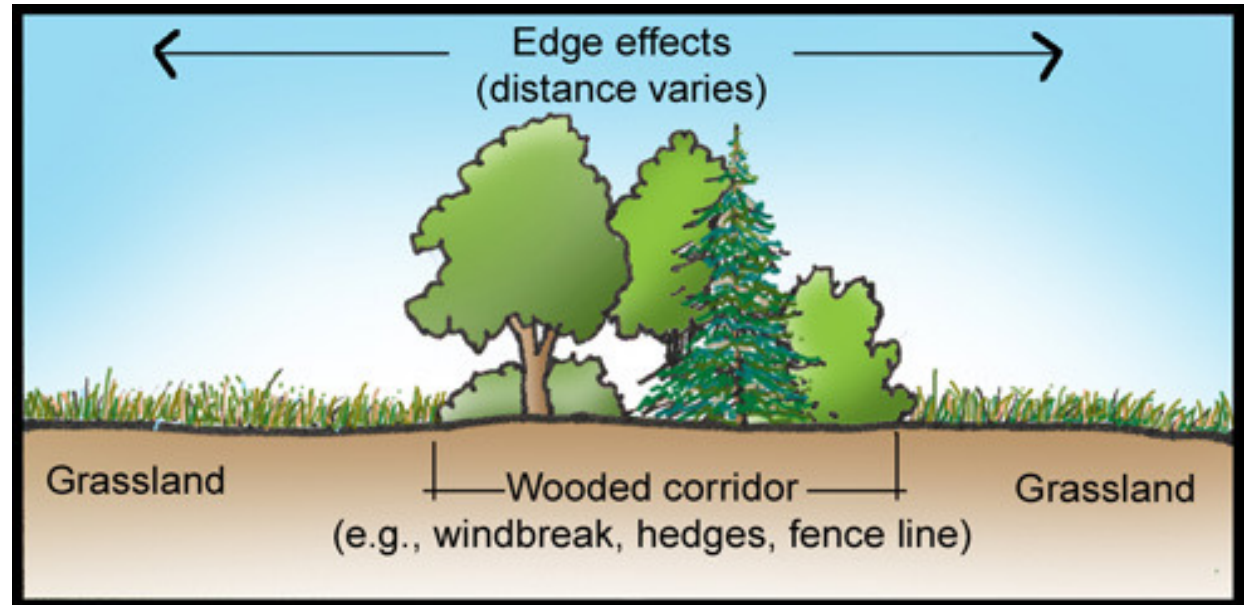
- ❖ Integrating consideration into national decision-making;
- ❖ Adopting measures which avoid or minimize adverse impacts;
- ❖ Supporting local populations to develop remedial action in degraded areas;
- ❖ Encouraging co-operation between governmental authorities and the private sector.



## Sustainable use

Signatories must introduce appropriate procedures for environmental impact assessment of projects, programs and policies that are likely to have significant adverse effects on biological diversity.

The Convention also provides for the notification of activities which are likely to significantly damage biological diversity and the promotion of emergency response arrangements.



**Minimizing adverse impacts**

- ❖ Particularly in developing countries.
- ❖ Through human resource development and institution building.
- ❖ Provisions for encouraging public understanding of the significance of biological diversity and the measures required for its conservation.
- ❖ Technology transfer and other pertinent information.



## Capacity building



- ❖ The Conference of the Parties is the key decision-making body responsible for monitoring the implementation of the Convention and has a major role in funding matters.
- ❖ Signatories are required to submit reports on measures taken for the implementation of the Convention and their effectiveness in meeting the objectives of the Convention.



## Institutional arrangements

- ❖ The Subsidiary Body on Scientific, Technical and Technological Advice is to provide the Conference of the Parties with advice relating to the implementation of the Convention, including the status of biological diversity and the effectiveness of measures taken to give effect to the Convention.
- ❖ It also has a major role in identifying technologies for the conservation and sustainable use of biological diversity suitable for transfer to developing countries.



## Institutional arrangements



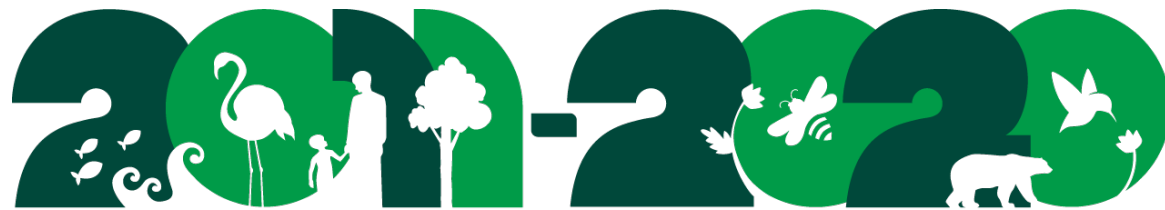


INTERNATIONAL  
— *day* —  
*for* BIOLOGICAL  
DIVERSITY

*May 22*

# Thanks for your listening

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**United Nations Decade on Biodiversity**