

Bio Diversity And Its Conservation

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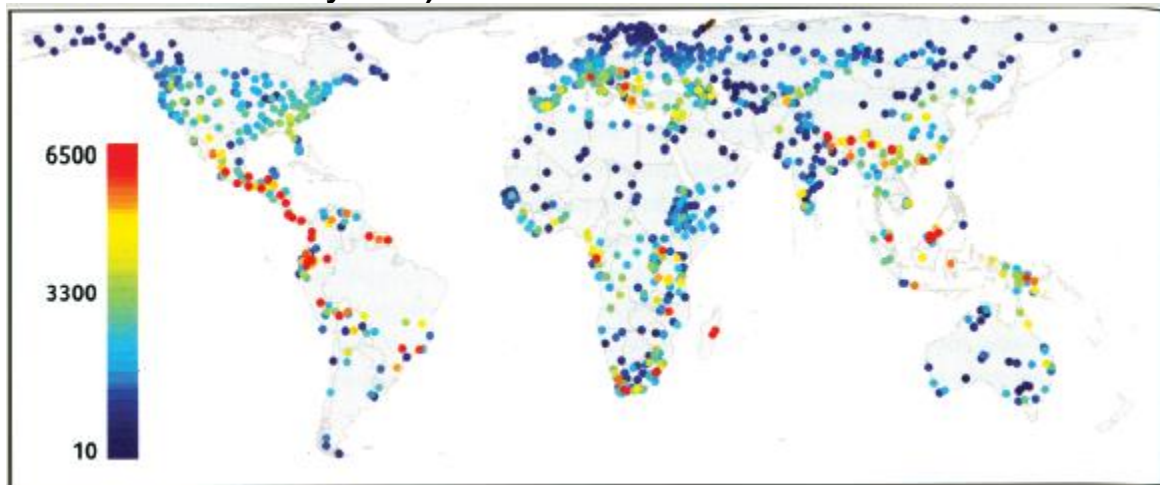
Q. 1. Read this and answer the following questions.

Biodiversity-2050.

A news item on Biodiversity discussed by Conference of parties (CoP) -2012-Hyd says in the next four decades the earth's natural resources will be limited to grass lands, mountains, ice and arid and semi-arid plains.

By 2050 the loss of Biodiversity will lead to unprecedented. Climate change would be the key factor. Nearly 1.3 million natural ecosystems will be without any original species.

(The coloured areas are indicators of biodiversity loss. The red areas show maximum biodiversity loss.)



(Courtesy CoP-2012 on biodiversity-Hyderabad)

- (a) What does the areas with colour codes indicate?
- (b) Which areas show maximum biodiversity loss?
- (c) Which areas show minimum biodiversity loss?
- (d) From 2010-2050 what difference do you find in the state of biodiversity?
- (e) So what steps would you suggest to conserve our biodiversity?

Answer : (a) The areas with colour codes indicates biodiversity loss.

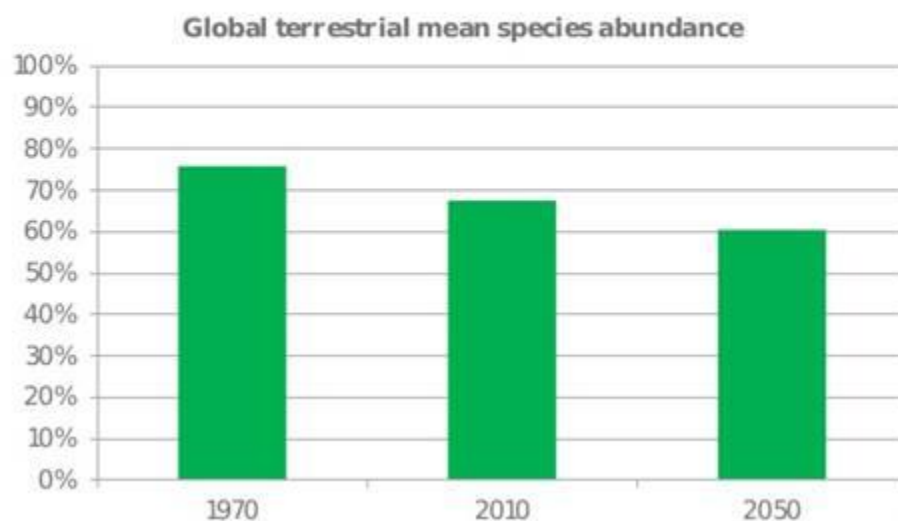
(b) Western parts of united states, mexico till equador, few northern parts of india.

(c) Western, eastern and southern parts of india,western psarts of united states, northern and western part of Asia.

- (d) 1) Loss of biodiversity is a result of human activities, represented by the disappearance of populations of original species in natural ecosystems, with an increase in the population of some opportunistic species.
- 2) As species disappear from ecosystems, they become more homogenous with a subsequent loss of biodiversity.
- 3) Biodiversity loss have changed over the years, from the overexploitation and conversion of natural habitats for agriculture in the past to the more recent trends of converting natural habitats for urban use and the introduction of invasive alien species.
- 4) By 2050, major changes will be driven by climate change and expanding urbanization.



Biodiversity is on the decline...



- (e) In our country we have forest areas demarcated as national sanctuaries reserved forests and parks to conserve different types of flora and fauna. Government of India has taken initiative to conserve wildlife by making National parks and Sanctuaries to conserve forest, flora and fauna from being destroyed.

Q. 2. How can you say that forests are biosphere reserves? Give reasons.

Answer : Forest areas and parks are created to conserve different types of flora and fauna.

- 1) Forests are biosphere reserve as numerous of plants and animals are living there without any threat to their lives.

2) Biosphere reserves are those which humans built for animals to protect them from extinction but forests are natural reserves in which animals are protected.

3) Forests help in maintaining the temperature and oxygen level of the atmosphere.

4) Plants release oxygen during photosynthesis and consume carbon dioxide. Forests being a huge reserve of plants and trees, they play a significant role in balancing oxygen level in the atmosphere.

5) Prevents global warming. Increased amount of carbon dioxide (greenhouse gas) in the atmosphere results in greenhouse effect and thus causes global warming.

Q. 3. What do you understand about the terms (a) Extinct (b) Endangered (c) Endemic. Give examples.

Answer : (a) The species which no longer exist anywhere on the earth are called extinct species. The extinct species may be of animals or plants. A type of animal which no longer exist on earth is called an extinct animals. It means that this animal has no living member on the earth.

According to noted ecologist E.O.Wilson every year nearly 10,000 species or 27 species per day become extinct throughout the world.

Few animals extinct are passenger pigeon, dodo, western black rhinosceros, quagga, Tasmanian tiger.

(b) Species which are endangered and have to be protected. Otherwise they are likely to become extinct (disappear from earth forever) in the near future. Endangered Species. W.W.F.(World Wildlife Federation) or the I.U.W.C (International Union for Wildlife Conservation) published a book containing the details of endangered and threatened species of Flora and Fauna called as RED DATA BOOK or RED LIST BOOK. Examples Lion, red fox, vulture, wild cat , black spider monkey,loris,white spotted chetal deer , few plant species are rauvolfia serpentine ,Cycas, Nepehthes.

(c) Plants or animal species found restricted to a particular area of a country are called Endemic Species. India shows a good number of endemic species. About 62% of worlds amphibians and 50% of lizards are endemic to Western Ghats of India.

Asiatic lion (gir forest), sangai deer (Loktak lake), lion tailed macaque (Western Ghats), Kashmir stag (Kashmir Valley).

Q. 4. What is the scientific reason behind bird's migration?

Answer : Other birds which don't have permanent nestlings and join into small flocks and move from one region to the other for food and shelter(nesting habits) called as 'Migration' and such birds are called as 'migratory birds'. During rainy season most of

the birds from far away places migrate to Kolleru and Pulikot lakes of our State. They build their nests on the trees in the nearby villages also. In the olden days people believed that these migrated birds are divine ones. But now a days most of the trees are getting cut down. There is hardly any place for birds to build their nests.

Q. 5. Identify the endemic and endangered species and write them against the pictures.



- Answer :** A) Tiger, Endemic species
B) The great Indian bustard, endangered species
C) Nepenthes, Endangered species
D) Lion, Endangered species
E) Peacock, Endangered species
F) Single horned rhino, endangered species

Q. 6. What is the need of conducting biodiversity meet? Collect information about these meetings when and where it was conducted and its agenda also.

Answer : The Convention on Biological Diversity (CBD), also known as the Biodiversity Convention, is a multilateral treaty.

The Convention has three main goals includes:

- 1) The conservation of biological diversity (or biodiversity)
- 2) The sustainable use of its components; and the fair and equitable sharing of benefits arising from genetic resources.
- 3) The notion of an international convention on bio-diversity diversity was started at a United Nations Environment Programme (UNEP).

Need of conducting biodiversity meet includes:

- 1) Measures the incentives for the conservation and sustainable use of biological diversity.

2) Regulated access to genetic resources and traditional knowledge,

Prior Informed Consent of the party providing resources.

3) Sharing, in a fair and equitable way, the results of research and development and the benefits arising from the commercial.

4) Other utilization of genetic resources with the Contracting Party providing such resources (governments and/or local communities that provided the traditional knowledge or biodiversity resources utilized).

5) Access to and transfer of technology, including biotechnology, to the governments and/or local communities that provided traditional knowledge and/or biodiversity resources.

1994 COP 1	The first ordinary meeting of the parties to the convention took place in November and December 1994, in Nassau, Bahamas
1995 COP 2	1996 COP 3 The third ordinary meeting of the parties to the convention took place in November 1996, in Buenos Aires, Argentina.
1998 COP 4	The fourth ordinary meeting of the parties to the convention took place in May 1998, in Bratislava, Slovakia.
1999 EXCOP 1	The First Extraordinary Meeting of the Conference of the Parties took place in February 1999, in Cartagena, Colombia.
2000 COP 5	The fifth ordinary meeting of the parties to the convention took place in May 2000, in Nairobi, Kenya.
2002 COP 6	The sixth ordinary meeting of the parties to the convention took place in April 2002, in The Hague, Netherlands.
2004 COP 7	The seventh ordinary meeting of the parties to the convention took place in February 2004, in Kuala Lumpur, Malaysia.
2012 COP 11 Main article	2012 Hyderabad Biodiversity Conference Leading up to the Conference of the Parties (COP 11) meeting on biodiversity in Hyderabad, India 2012, preparations for a World Wide Views on Biodiversity has begun,

Q. 7. Now-a-days we find animals like leopards and bears intruding into our living places. What may be the reasons for this?

Answer : Habitat loss and fragmentation are the main reason animals are losing there habitat and shelter we find animals intruding to our houses as man has made settlements by deforestation when they lost their home they come down to our living areas.

Q. 8. Make a list of animals /birds seen now and 30 years ago. Take the help of your elders. Write few reasons for their disappearance.

Answer : About 30-40 year ago variety of birds like crane, sparrow and parrot were also seen frequently. Now, only crows are found in our surrounding.

But now a days most of the trees are getting cut down. There is hardly any place for birds to build their nests. Extinction of a species may come suddenly when a healthy species is wiped out completely, toxic pollution renders its entire habitat ; or may occur gradually over thousands or millions of years, such as when a species gradually loses out in competition for food to better adapted competitors.

In modern times, commercial and industrial interests often have to contend with the effects of production on plant and animal life. However, some technologies with minimal, or no, proven harmful effects on Homo sapiens can be devastating to wildlife (for example, DDT).

Q. 9. When tree is considered as an ecosystem, record the flora and fauna connected with it.

Answer : A tree considered as an ecosystem there are varieties of fauna and flora connected with it are-

Trees are not a single habitat but dozens of habitats inhabited by thousands of different species. list of some organisms dependent on trees:

1) Birds :

Trees provide birds with a rich harvest of seeds, berries, etc to hide and nest and of course the all-important song posts.

2) Spiders and Pseudoscorpions : A huge variety of spiders are found on trees. Branches and hollows are ideal structures to situate webs.

3) Beetles: Many species are directly dependent on trees, feeding on foliage, bark, wood, roots, buds, flowers or seeds.

4) Squirrels : squirrels rely absolutely on trees for shelter and for food.

5) Flies : Flies can often be seen around all parts of a tree.

6) Slugs & Snails: This may come as a surprise to some but slugs and snails can commonly be found at the tops of trees.

7) Butterflies and Moths :

Adult butterflies and moths frequently use stubs from snapped branches or bark fissures as egg laying sites.

Q. 10. Browse through the internet or books on wild life and gather information on bird sanctuaries in India. Prepare a list of birds migrating to India.

Answer :

BIRD SANTURIES	DISTRICT	BIRDS
Atapaka Bird Sanctuary,	Andhra Pradesh	Pelicans, Asian Openbills, Painted Storks, Glossy Ibises, Black-headed Ibises, teals, Northern Pintails
Nelapattu Bird Sanctuary	Andhra Pradesh	Known as one of the largest habitats for pelicans in Southeast Asia. Spotted Belied Pelican, Spoon Bill, White Ibis, Night Heron, Open Billed Stork.
Pulicat Lake Bird Sanctuary	Tamil Nadu	100 bird species
Uppalapadu Bird Sanctuary	Andhra Pradesh	40 species of migratory birds from Siberia including pelicans and white ibis.
Najafgarh Drain Bird Sanctuary	Delhi	This area is a very significant habitat for migratory waterbirds along with important wildlife habitat.
Karnala Bird Sanctuary	Maharashtra	37 species of migratory birds among these three are rare birds and are called Ashy Minivet, Three-toed kingfisher and Malabar Trogon.

Kadalundi Bird Sanctuary	Kerala	60 species of migratory birds that include terns, gulls, herons, sandpiper and cormorant. The major attractions of the sanctuary are kingfisher, Malabar hornbills, woodpeckers, darters, plovers and brahminy kites.
Nandurmadhmeshwar Bird Sanctuary	Maharashtra	220 species of birds. 80 species of migratory birds. Black Ibis, Spot Bills, Teals, Little Grabe, Cormorants, Egrets, Herons, Stork, Kites, Vultures, Buzzards .
Jayakwadi Bird Sanctuary	Maharashtra	200 species of resident and migrant birds; out of these, 45 species are that of migratory birds. Cranes, Flamingos, Pintails, Wigeon, Shoveller, Brahmany Duck, Pochards,

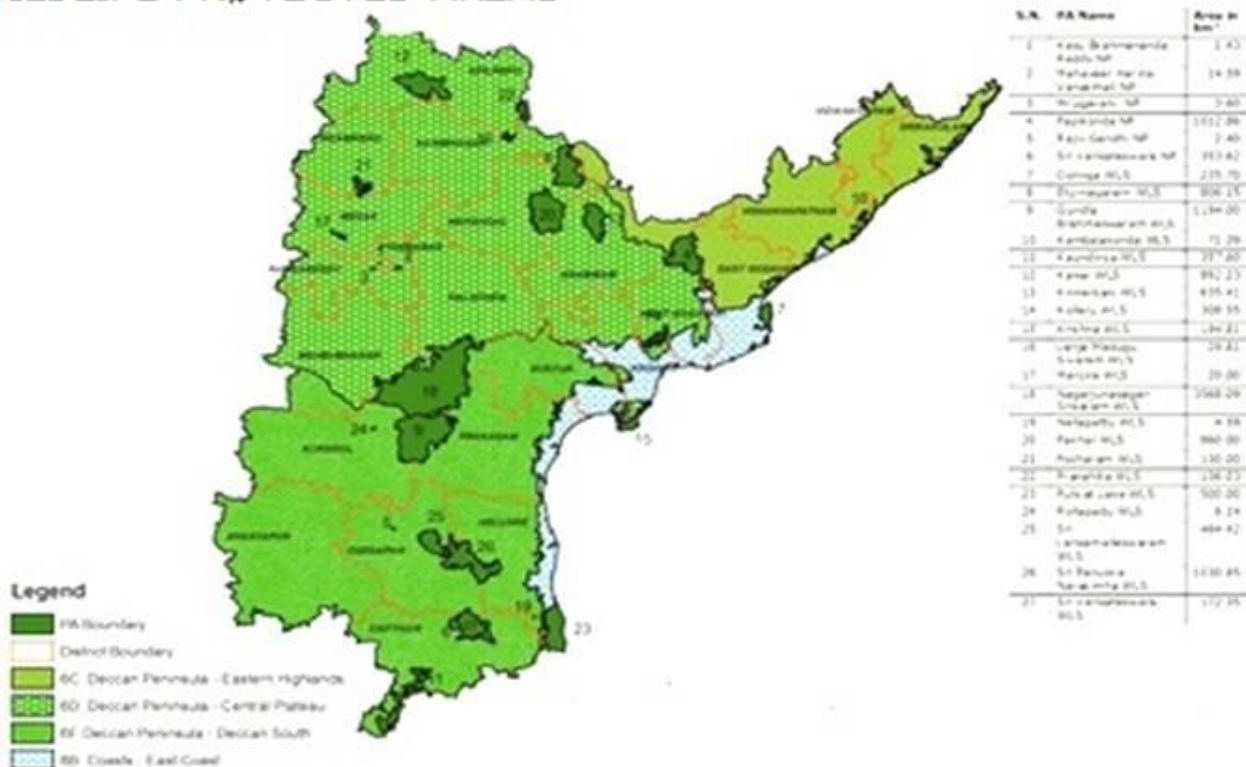
BIRD SANTURIES	MIGRATORY BIRDS
Atapaka Bird Sanctuary,	migratory birds from Australia, Siberia, Egypt and the Philippines
Uppalapadu Bird Sanctuary	40 species of migratory birds from Siberia including pelicans and white ibis.
Najafgarh Drain Bird Sanctuary	very significant habitat for migratory water birds along with important wildlife habitat.
Karnala Bird Sanctuary	37 species of migratory birds among these three are rare birds and are called Ashy Minivet, Three-toed kingfisher and Malabar Trogon. Migratory birds like the blue throat, the black headed cuckoo-shrike, the blue-headed rock-thrush, blackbird and the red breasted flycatcher flock.
Kadalundi Bird Sanctuary	60 species of migratory birds that include terns, gulls, herons, sandpiper and cormorant.
Jayakwadi Bird Sanctuary	45 species are that of migratory birds, Cranes, Flamingos, Pintails, Wigeon, Shoveller
Nandurmadhmeshwar Bird Sanctuary	80 species of migratory birds. Black Ibis, Spot Bills, Teals, Little Grabe.

Q. 11. Where do you find most of the biodiversity on the earth? Draw AP map showing maximum biodiversity areas.

Answer : Amazonia represents the quintessence of biodiversity – the richest ecosystem on earth.

The 17 megadiverse countries are: Australia, Brazil, China, Colombia, Democratic Republic of the Congo, Ecuador, India, Indonesia, Madagascar, Malaysia, Mexico, Papua, New Guinea Peru, Philippines, South Africa, United States, Venezuela

WILDLIFE PROTECTED AREAS



Q. 14. What do you understand by biodiversity? How can you say variations are present in them?

Answer : Diversity means a variety. Biodiversity means biological variety. It refers to the variety of organism (plants, animals and micro-organism) found in a particular area or habitat or the presence of a large number of organism found in a particular area is called biodiversity.

Variations are present in biodiversity at various levels to understand that biodiversity. Every species is linked with a multitude of others in an ecosystem. All animals are part of food webs that include plants and animals of other species. Minor disruptions in a particular ecosystem tend to lead to changes that eventually restore the system. But large disturbances of living populations or their environments may result in irreversible changes.

Q. 15. Most of our biodiversity is being lost due to human activities. Suggest few ways to protect them.

Answer : With a few simple habit changes and pro-active actions, you can reduce your adverse impact on the environment and encourage local biodiversity.

1) Buy organic foods. While organic certification doesn't guarantee that your food is 100% free of pesticides, organic growers are held to criteria of minimal pesticide use.

2) Reduce or eliminate pesticides and fertilizer. Consider getting rid of your lawn, especially if you live in an arid region. Instead, plant native plants that are well adapted to your area. This will reduce the need to use pesticides and fertilizers.

3) Restore habitat in your yard. If you have a yard, consider turning it into a mini-wildlife sanctuary

4) Restore habitat in your community. If you don't have a yard, consider volunteering on an ecological restoration project in your area.

5) Reduce your consumption. This is arguably the action that will have the biggest positive impact on the environment. The more we reduce our demand for new resources, the less habitat will be destroyed to get those resources or the energy to make those products, and the less waste goes into the landfill.

Q. 16. When you see a park, sanctuary or a zoo with many kinds of plants and animals, how would you express your happiness? Write a few lines on them.

Answer : I am an animal lover. I wish to see various types of animals.

The zoo, sanctuaries are places where different kinds of animals are kept most of the animals and even birds such as lions, tigers, deer, monkeys, bears, wolves, apes, chimpanzees, rhinoceroses, zebras, kangaroos, yaks, parrots, crows, sparrows, pigeons, cranes, storks, doves cuckoos, nightingales, swallows, sea-gulls, skylarks. etc.

Being a wildlife lover I fully enjoyed the dense vegetation all over.

Q. 17. Prepare an essay to give a talk on biodiversity and conservation.

Answer : Biodiversity refers to the variability and variety of different species of plants and animals on Earth. This variety contributes towards making our planet inhabitable.

The reason for unequal distribution of various organisms in different parts of the world is the varied climatic conditions. There is greater terrestrial biodiversity near the equator and this is caused due to warm climate and high primary productivity.

India shows a good number of endemic species. About 62% of worlds' amphibians and 50% of lizards are endemic to Western Ghats of India .In the list of the world's 100 most threatened species two are from Andhra Pradesh list released by International Union for Conservation of Nature and the Zoological Society of London, Gooty tarantula, a spider found in Nandyal and Giddalur areas of Kurnool and Prakasham and the Great Indian Bustard found in Rollapadu Bird Sanctuary in Kurnool are mentioned as the most threatened. Keeping track of Endangered Species W.W.F.(World Wildlife Federation) or the I.U.W.C(International Union for Wildlife Conservation) published a book containing the details of endangered and threatened species of Flora and Fauna called as **RED DATA BOOK** or RED LIST BOOK. The Red data book symbolizes a warning signal for

those species which are endangered and have to be protected. According to noted ecologist **E.O. Wilson** every year nearly 10,000 species or 27 species per day become extinct throughout the world. If this trend of extinction continues, the very existence of man will be affected.

Government of India has taken initiative to conserve wildlife by making National parks and Sanctuaries to conserve forest, flora and fauna from being destroyed. Conserving the biodiversity in a wider perspective is utilizing the forest resources judiciously without affecting the ecosystems so that we can have a sustainable development and the biodiversity can be conserved and life on earth survive forever.

It is essential to maintain rich diversity to build a harmonious environment. It enables the survival of human beings by providing them their basic needs such food, shelter, medicines, etc. However, the increasing pollution which is continually degrading the environment is also having a negative impact on biodiversity. Several species that inhabited Earth earlier are now extinct and many other are feared to be extinct in the coming years. This will further lead to environmental imbalance and can prove to be hazardous for the human species.

Q. 18. Rani said conservation of biodiversity starts from our home. Is she correct? How do you support her? What will be your action for this?

Answer : Yes, Rani is correct. For conserving biodiversity few actions that can be taken by us are:

One can restore habitat in their yard. Consider turning it into a mini-wildlife sanctuary. National Wildlife Federation has a program to help you attract wildlife whether one have a balcony or a small farm. In a world where habitat loss is the number one cause of biodiversity loss, providing wildlife with water, food, cover, and a place to raise their young can go a long way.

Buy organic foods. While organic certification doesn't guarantee that your food is 100% free of pesticides, organic growers are held to criteria of minimal pesticide use.

Consider volunteering on an ecological restoration project in your area. Good places to look for volunteer opportunities are land trusts, wildlife foundations, Native Plant Societies, government agencies (e.g. Forest Service, Fish & Wildlife), and environmental organizations. You'll spend time outdoors and learn about the native plants and animals.

Q. 19. When we take steps towards conserving the tiger, what are the other things that have to be conserved?

Answer : Various steps have been taken for conserving the tiger like Project Tiger. This project helped in increasing the number of tigers from 2000 in 1973 to 3800 today. The

success of the project was achieved by enforcement of strict anti-poaching measures and scientific conservation practices.

Similarly various other flora and fauna can be conserved through these type of steps are Lion, red fox, vulture, wild cat , black spider monkey, loris, white spotted chetal deer , few plant species are rauvolfia serpentine ,Cycas, Nepehthes.

Q. 20. Prepare some slogans or a pamphlet to make aware of people about conservation of biodiversity.

Answer : 1) The more variety, the better society

2) Biodiversity we must keep, so in the future we don't weep.

3) Truth be told, Biodiversity is worth more than gold

4) biodiversity is the way, so dont let nature go astray

5) All for one and one for all, keep Biodiversity or our future may fall

6) Biodiversity is the key so we can all live in glee.

7) We are all part of the circle of life, lets live in peace and not in strife.

8) Flora and fauna all are co related, animals and flowers need not be hated.

9) Keep our world colorful: Preserve Biodiversity

10) Biodiversity is key for more variety