Natural Resources and Their Conservation

5/5

Forest

SRI SATHYA SAI COLLEGE FOR WOMEN

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Acknowledgement

I would like to express my special thanks of gratitude to my teachers Dr. Asha Agarwal Dr. Sunita yadav and Mrs. Renu Shrivastava who gave me opportunity to do this project on the topic 'Natural resources and their conservation' (Forest), which helped me in doing a lot of Research work and i came to know about so many new things. I am really thankful to them.

- Ritu Sharma
B.Sc VI th sem
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Natural Resources & Their Conservation

Resources- Resources are defined as anything which satisfies human needs.

* Classification of Natural Resources -

A) On Basis of continual Utility

1) Renewable - Resources like water, air which can be renewed. alongwith their utilization are called Renewable Resources.

2) Non-Renewable - Petrol, Natural gasses, etc, which cannot be renewed practically.

B) On the Basis of Origin

1) Biotic - These resources obtained from biosphere i.e from living Organisms eg- Plants, Animals.

2) Abiotic - These resources composed of non-living substances. eg- Land, water, minirals.

Biodiversity - W.G Rosen 1985, coined Biodiversity which refers to variety & variability of life on Earth. It measures variations at genetic, species and ecosystem level.

There are Two main hypotheses of biodiversity -
1. Genetic diversity
2. Ecosystem diversity

* Genetic diversity - Genetic variability found b/w various individuals of same species and b/w diff species.

* Ecological diversity - The no. of species found

in any biotic community is called ecological diversity.

Conservation is to ensure the continuous production of valuable plants, animals and other useful matter and along with it, to ensure the proper conservation of the environment of high quality which may provide means of beauty and entertainment along with physical products.

Maintaing both types of diversity is nessary for the proper functing of normal process of ecosystem.

The conservation of biodiversity can be done by the following two methods:-

1. **In situ conservation** - Ideal method for conservation of genetic resources. It is ideal method for conservation of genetic resources. Include protection of different area for different purposes for the benifits of the society. eg- National park, Sanctuaries, biosphere reserves

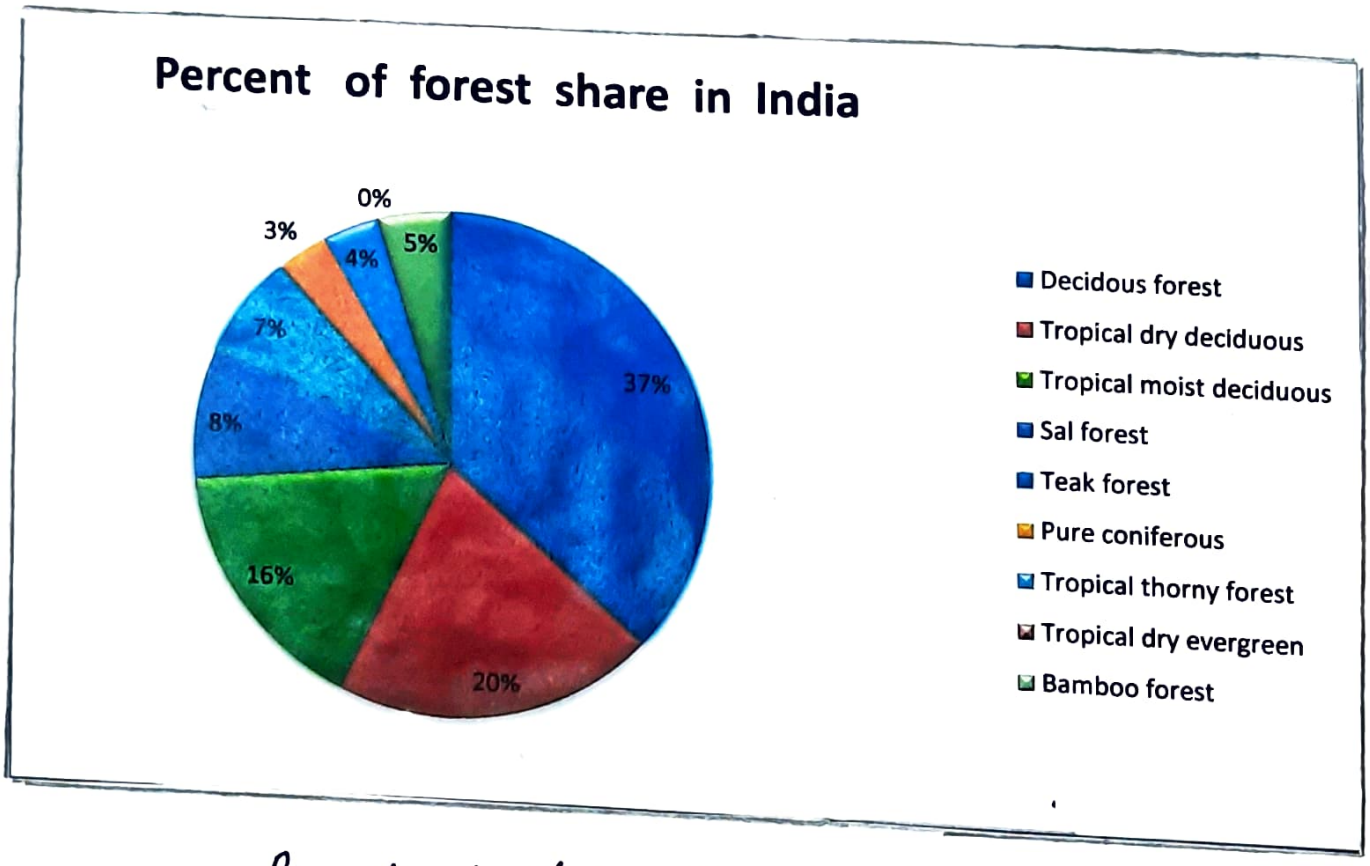
2. **Ex-situ conservation** - This is the conservation of any sample population by stabilizing them outside their natural habitat. eg. Botanical gardens, Zoological parks.

Forest

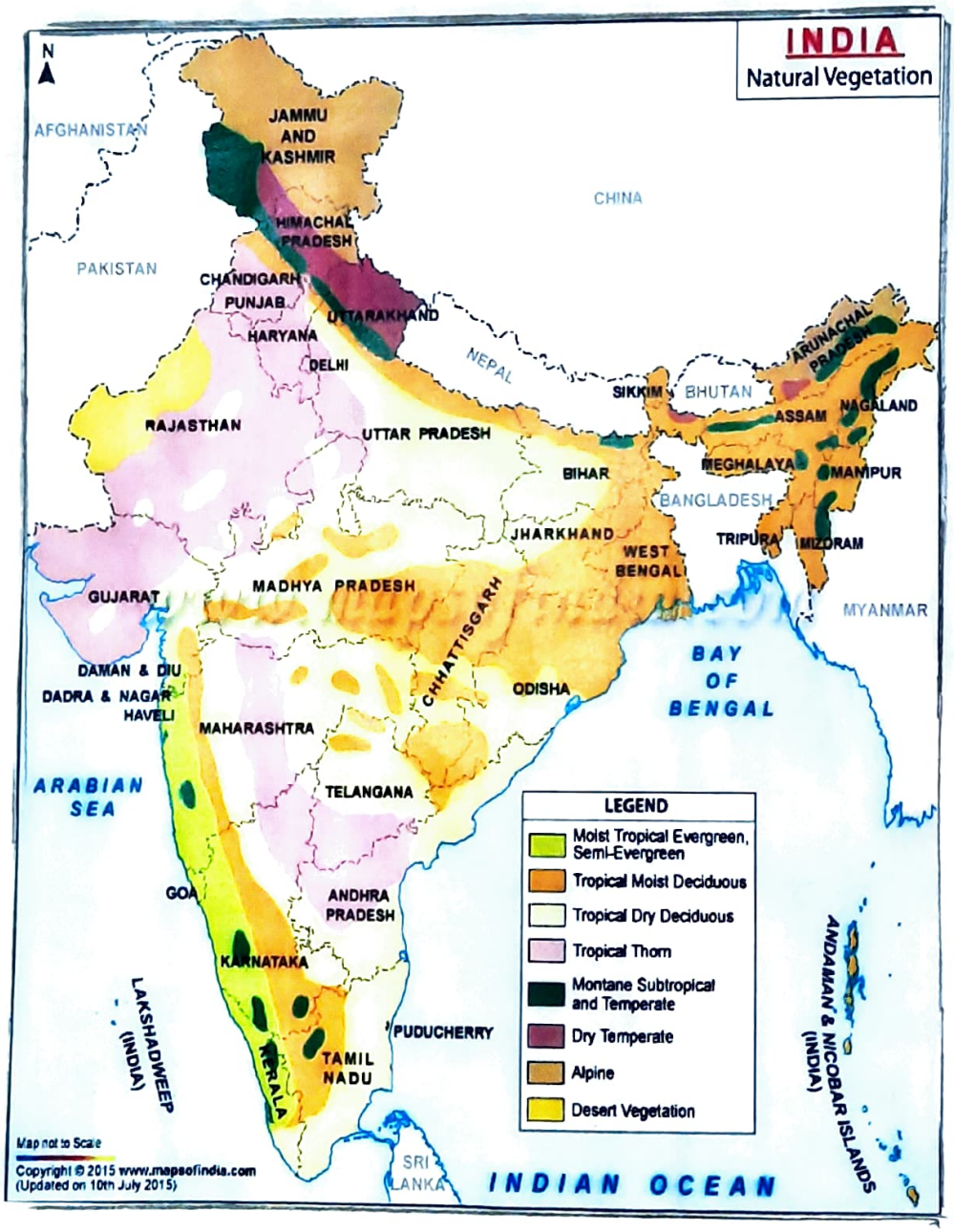
Essential for maintaing ecological balance of an area. They are important component of environment and economy of any country. Besides economy,

Major Forests of India -

S.No	Type	comments	flora
1.	Evergreen forest	• Average rainfall 200cm. • Found in western ghats assam, coastal area of odissa, Kerala, Tamilnadu	Sandalwood, magnolia, bamboo, fer
2.	Deciduous	• Average rainfall 100-200cm • Found near Mysore, Tamilnadu assam, West Bengal, UP, MP, Bihar eastern part of western ghats.	Quercus; Teak, Sein, Terminalia
3.	Beach	Found on sanday beach along the coastal line.	deciduous tre shrubs and surface creep
4.	River forest	Exist on the bank of large river where deciduous forest vegitation is abuntanty fauna.	sissoo, bab arjuna
5.	Swamp	These forests occur in wet alluvium at the head of river deltas in MP, west bengal, Tamilnadu.	Kadam, Pandamus.
6.	Himalayan	found in different zones of Himalays.	Birch, Kharsu silver fur; pi abies, picea, laurel, mag



Pie chart showing percent forest share in India.



Types of forest found in India

forest check air pollution, soil erosion, landslide and attract rainfall also.

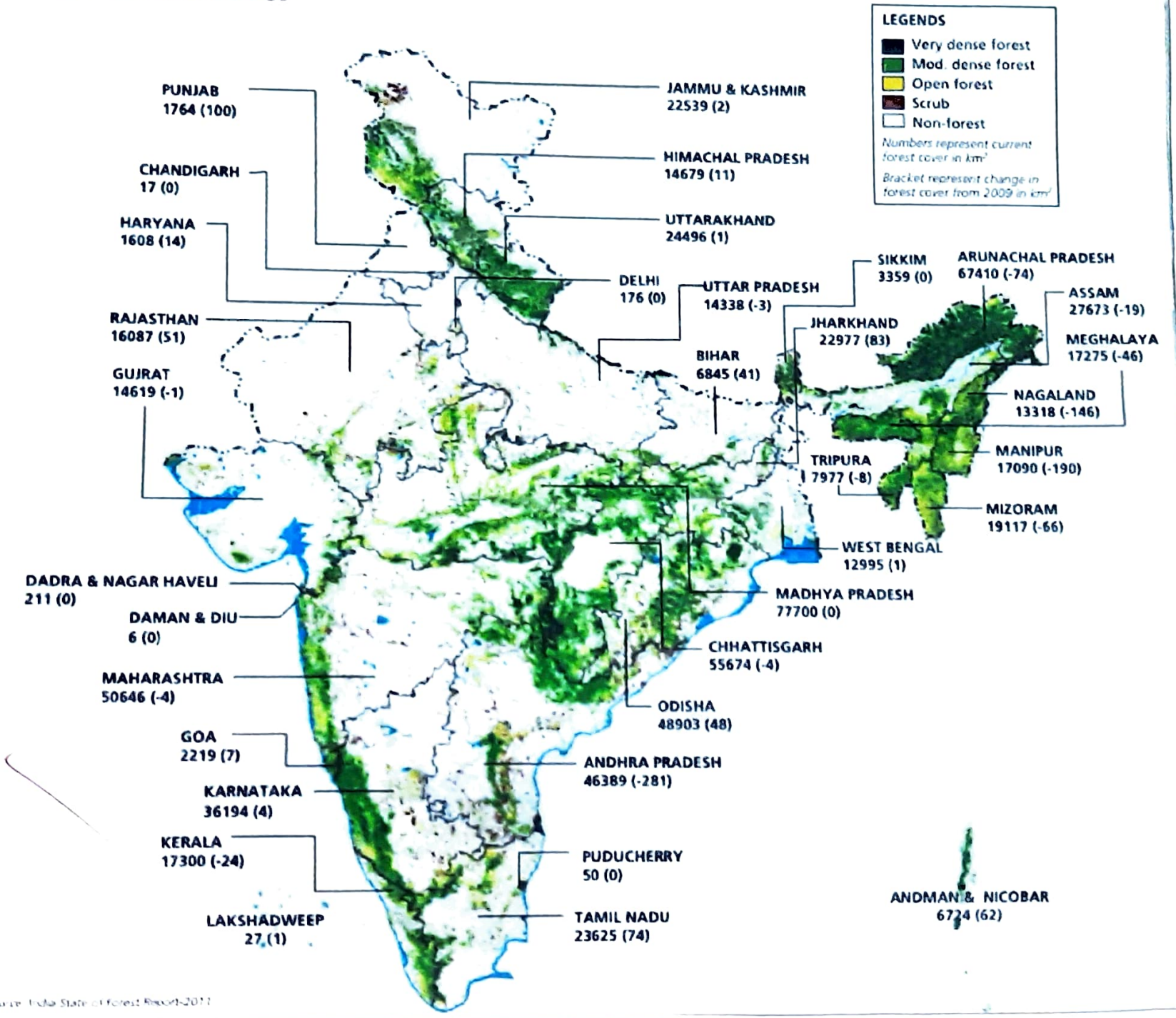
DISTRIBUTION OF FOREST

- Internationally, world has its 31%. land surface ie 4 bilion hectars, forest cover
- Ministry of environment, Forest and climate change (MoEFCC) has released India state of Forest report 201
- It has revealed that total forest and tree cover in India has increased over 8.021 sq km.
- which is 1%. increase from 2015.
- The total forest cover is 24.39 % of geographical area of country.
- India has ranked 10th in world, with 24.4 % of land under forest and tree cover.

List of Indian states for More than 75%. forest cover

1. Mezoram
2. Lakshadweep
3. Andaman & Nicobar
4. Arunanchal Pradesh
5. Nagaland
6. Meghalaya
7. Manipur.

India's forest cover



Source: India State of Forest Report-2011

Distribution of forests in Indian States

List of states having forest cover between 33% to 75%.

1. Tripura.
2. Goa
3. Sikkim
4. Kerala
5. Uttarakhand
6. Dadra & Nagar Haveli
7. Chhatisgarh
8. Assam.

Madhya Pradesh has largest forest cover of 77,414 sq km in country.

Importance of Forests-

Forests have great significance in our life. Besides providing habitat for many useful wild animals, we obtain fuel, medicinal herbs, sandal etc from forest.

1) Over 2 billion people rely on forests
Forests provide us with shelter, livelihoods, water, food and fuel security and all these activities directly or indirectly involve forest.

2) Habitats for biodiversity and livelihood
Looking at it beyond our narrow, human-not to mention urban-perspective, forests provide habitats to diverse animal species

Source: India State of Forest Report-2011

They are home to 80% of the world's terrestrial biodiversity, and they also form the source of livelihood for many different human settlements, including 60 million indigenous people.

3) Forests provide jobs for more than 13 million people across the world

In addition, 300 million people live in forests including 60 million indigenous people. Yet, we are losing them. Between 1990 and 2015, the world lost some 129 millio hectares of forest, an area the size of South Africa.

4) After oceans, forests are the world's largest storehouse of carbon.

They provide ecosystem services that are critical to human welfare.

These includes:

- Absorbing harmful greenhouse gasses that produce climate change.
- Providing clean water for drinking.
- Protecting watersheds and reducing or slowing the amount of erosion and chemicals that reach water way.
- Providing food and medicine.
- Serving as a buffer in Natural disasters.

- The canopy of trees prevent the sunrays of sun to reach soil, which keeps the surface moist.

- Forests help in large scale exchange of gasses and thence denote the level of air pollution.

- They maintain seasonal cycle. The green forests keep the seasonal cycle favourable. Besides, they control the rapid speed of wind and storm because of which, the fielal soil cannot fly with the wind to any place.

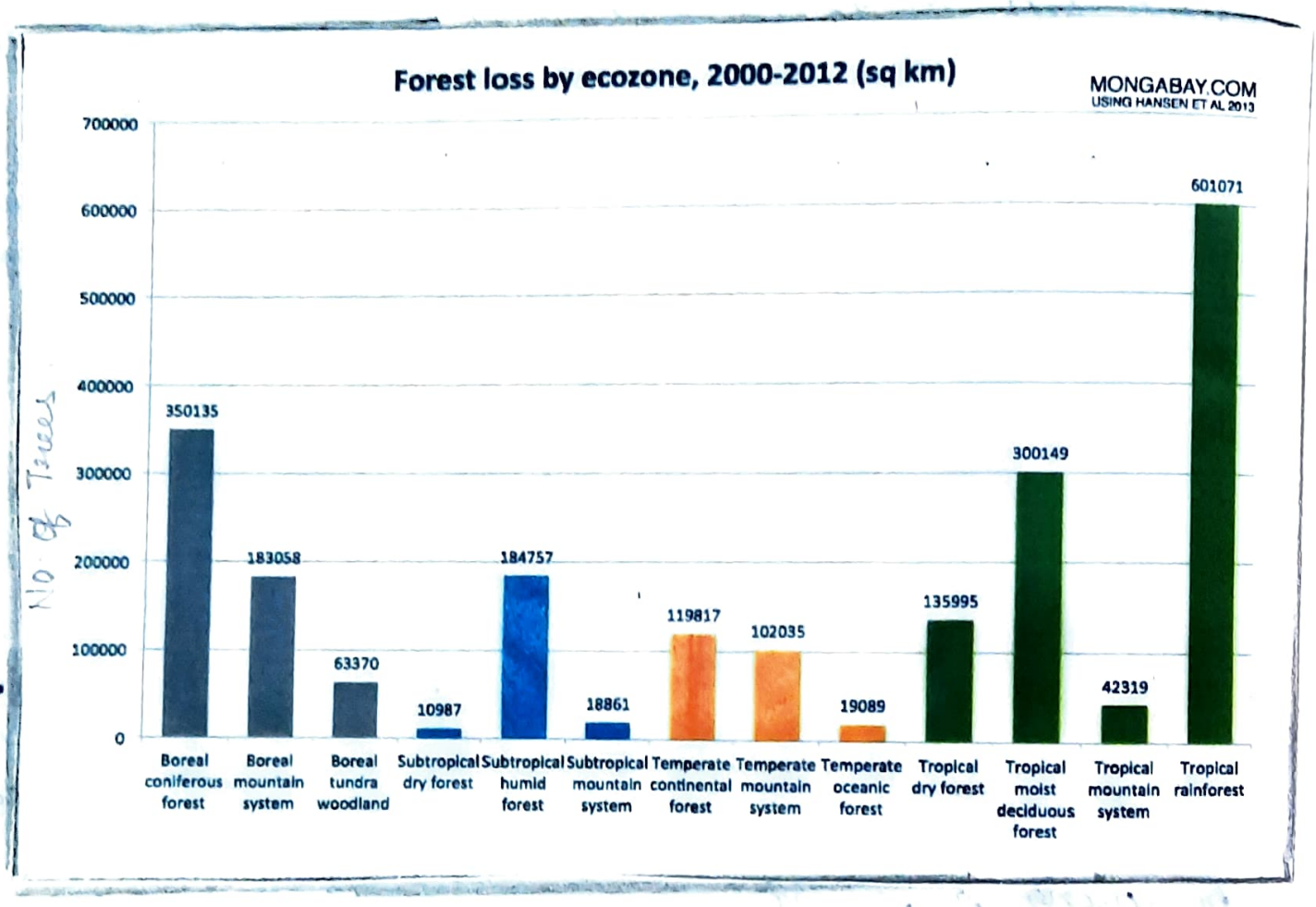
- They also control noise pollution

- Where there are more forests, the rainfall is also maximum there. The monsoon wind that blow from the Bay of Bengal fall as rain on green forest of Himalays, after becoming cold. Hence forests are essential to protect land from becoming a desert.

- They have their own tribal importance.

Deforestation

Along with the explosive increase of human and livestock population, the demand of timber, fuel and grazing also went on increasing as a result forest continued to be cut down and grazed.



Rate of deforestation at different types of forests

causes of deforestation-

1. clearing land to build houses-
Countries resort to deforestation to cope with the increasing demand for housing brought about by growing population.

2. Felling trees for wood.
Logging or simply cutting down trees for timber is one of the main cause of deforestation.

3. Aquiculture-
To provide land for food crops such as palm oil for rearing cattle, undisturbed rainforest areas end up being removed.

4. other land uses-
- Land for mining and industrial projects.
- Building dams

Short term environmental effects of Deforestation

* Increased soil erosion Since 1960 a third of world's arable land has been lost.

* Disruption of water cycle

Long term environmental effects of Deforestation

* Reduced Biodiversity and climate change

Forest conservation

Conservation is ensure the continuous production of valuable plants, animals and other useful matters and, along with it, to ensure the proper conservation of the environment of high quality, which may provide means of beauty & entertainment along with physical products.

International Union of Conservation of Natural Resources (IUCN), world wild life fund (WWF) and United Nations Environment Programme (UNEP) together prepared world conservation strategy (WCS) to protect the forests from depletion, which make sure management so as to get maximum benifits for human welfare generation after generation without causing any harm to this wealth.

The functions of world conservation strategy are -

1. To define clearly the hypothesis of environmental conservation
2. To identify and mark such regions where life is threatened.
3. To estimate the aims of conservation.
4. To mark the work areas of special priority on National & International levels.
5. To prepare the outline of national conservation policies and to execute them in different countries.

According to National Forest Policy (1952), one-third part of total geographical area of the country should be covered by forests but still there is continuous deforestation in the country for one reason or the other.

Indian government applied Forest conservation Act in 1980. Under this act -

- No forest land can be used for any purpose nor it can be deforested.
- No change of any kind can be made in forest
- It is nessary to take prior permission from Central government to do any changes in forest.
- There is also perovision under this act to ensure afforestation at another place.

The Forest Act (1980) has been re-amended in 1988. The amendments are as follows -

1. No state ~~can~~ government can allot any forest land to any particular individual, municipal corporation or any other organisation without taking prior permission from central goverment.

2. The trees of forests cannot be used for afforestati at another place without taking prior permissio of central government.

3. The cultivation of tea, coffee, rubber, palm and medicinal vegetation is included under

the limit of non-forest purposes.

Modern ecology has played an important role in inspiring people for forest conservation and development by propagating consciousness

Shri Sunder lal Bahuguna - Forest conservation in Tehri garhwal district of Uttranchal; moment called "Chipko"

Smt. Radhki - work of forest development in this region by commencing the movement "Rukh Bhaila"

Amrita devi Bishnoi - She gave her life to save a tree.

Following measures should be taken for forest conservation-

1. Blind cutting and economical exploitation of forests should be stopped with the help of effective laws & one who is violating this law should be strictly punished.

2. The establishment of modern industries in natural forest regions should be completely banned.

3. The permissions of house construction plans should not be given in the forest regions.

4. Priority should be given to the forest development programme & 'van Mahotsav'

5. The conservation and development of forest should be included as compulsory subject.

6. Forest awareness centers should be opened throughout the country.

- 21st, March is celebrated as world forest day.
- 'Appiko' movement has been introduced in the Salkani village in north Kanara district of Karnataka state.
- 'Van Mahotsav' is celebrated every year for the development and forest conservation.

List of Environmental awards in India

1. Dr. Salim Ali National Wildlife fellowship award.
2. Indira Gandhi Paryavaran Puruskar
3. Indian council of Forestry Research & Council and
4. National awards for excellence in Forestry.
5. Amrita Devi Bishnoi Wildlife Protection award.

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Ritu

CHROMOSOMAL SYNDROMES...

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SYNOPSIS...

- INTRODUCTION.
- TYPES.
- OCCURRENCE.
- SYNDROMES AND FACTS.

INTRODUCTION...

Introduction...

- Chromosomes, distinct structures made up of DNA and protein, are located in the nucleus of each cell.
- As chromosomes are the carriers of the genetic material, abnormalities in chromosome number or structure can result in disease.
- Chromosomal abnormalities typically occur due to a problem with cell division

Numerical Abnormalities

Structural Abnormalities

Balanced vs Unbalanced Structural Abnormalities

Numerical abnormalities...

- The most severe chromosome disorders are caused by the loss or gain of whole chromosomes, which can affect hundreds, or even thousands, of genes and are usually fatal.
- A few numerical abnormalities support development to term, either because the chromosome is small and/or contains relatively few genes or because there is a natural mechanism present to help adjust gene dosage.
- The major numerical abnormalities that survive to term are presented in Table 1, with Down's syndrome being the most common.

Table 1: The major numerical abnormalities that survive to term.

Syndrome	Abnormality	Incidence
Down's	Trisomy 21	
Edwards'	Trisomy 18	
Patau's	Trisomy 13	2 in 10,000
Turner	Monosomy X	2 in 10,000 (female birth)
Klinefelter's	XXY	10 in 10,000 (male birth)
XXX	XXX	10 in 10,000 (female birth)
XYY	XYY	10 in 10,000 (male birth)


Normal male
Edwards' syndrome
Klinefelter's syndrome

Structural Abnormalities

- This is when large sections of DNA? are missing from or are added to a chromosome.
- Structural abnormalities can take several forms.
- Some are described below:

Deletion

Duplication

Inversion

Translocation

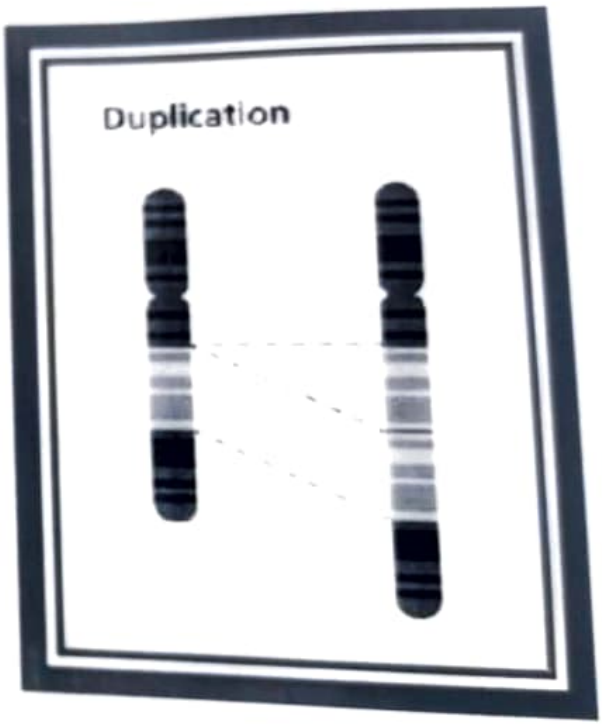
Ring

DELETION

- A mutation causing part of the chromosome to be missing.

DUPLICATION

- A mutation causing part of the chromosome to be repeated, resulting in extra genetic material.



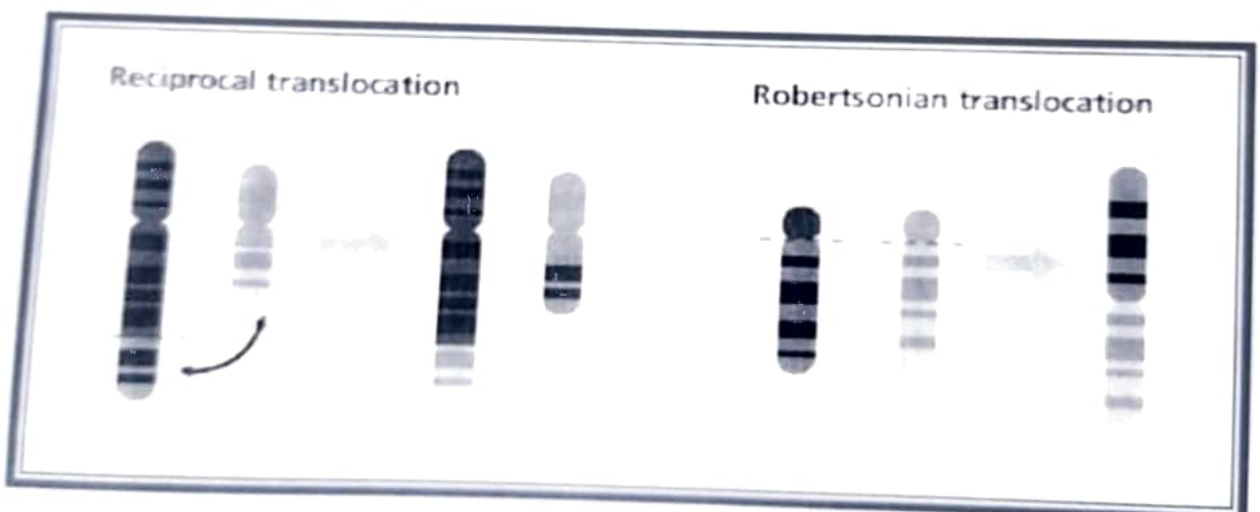
TRANSLOCATION

- A mutation causing one portion of a chromosome to be moved to a different part of the chromosome (intrachromosomal) or to a different chromosome altogether (interchromosomal).

TRANSLOCATION

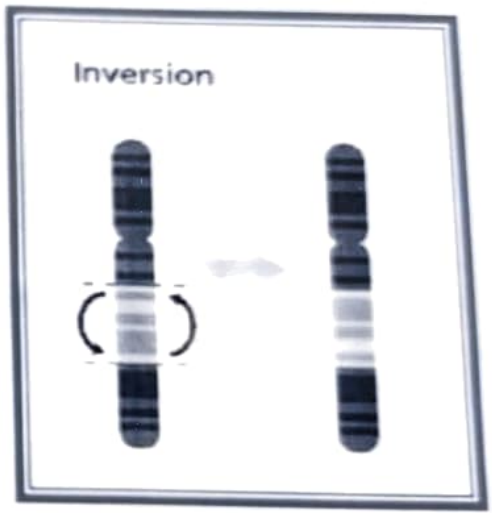
- A mutation causing one portion of a chromosome to be moved to a different part of the chromosome (intrachromosomal) or to a different chromosome altogether (interchromosomal).

- There are two key types:
  - Reciprocal: segments from two different chromosomes are exchanged
  - Robertsonian: an entire chromosome attaches to another.



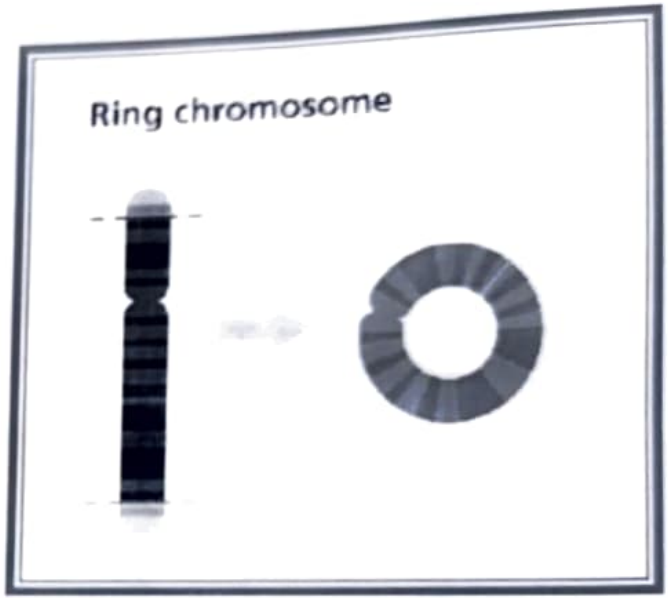
INVERSION

- A mutation resulting in a portion of a chromosome being in the opposite orientation (inverted).



RING

❖When a portion of a chromosome has broken off and formed a circle or ring.



Balanced vs Unbalanced Structural Abnormalities

- Balanced structural abnormalities involve the rearrangement of genetic material but with no overall gain or loss. For example, inversions and translocations.
- Balanced structural abnormalities can have an immediate effect, but the major consequence is the production of eggs or sperm with incomplete or partially duplicated sets of chromosomes.

- Unbalanced structural abnormalities involve genetic material being gained or lost.
- Even tiny unbalanced structural abnormalities can affect many genes and, consequently, have severe effects on the individual – as listed in the table below.

Table 2: Unbalanced structural abnormalities

Syndrome	Abnormality	Incidence
Wolf-Hirschhorn	Deletion from tip of short arm of chromosome 4	1 in 50,000
Cri-du-chat	Deletion from tip of short arm of chromosome 5	1 in 50,000
WAGR syndrome	Microdeletion from short arm of chromosome 11	1 in 500,000 to 1 million
Prader-Willi/Angelman	Microdeletion from short arm of chromosome 15	1 in 15,000
DiGeorge	Microdeletion from long arm of chromosome 22	1 in 4,000

Table 2: Unbalanced structural abnormalities

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DiGeorge	Microdeletion from long arm of chromosome 22	1 in 4,000

OCCURENCE...

- Chromosome abnormalities usually occur when there is an error in cell division resulting in cells with too few or too many copies of a chromosome.
- Most chromosome abnormalities originate in the egg or sperm (gametes) but some happen during embryo development or are inherited? from a parent.
- Chromosome abnormalities that originate in the gametes? are present in every cell of the body.
- Normally during the formation of gametes the two pairs of chromosomes separate in a process called meiosis.

CAUSES...

- When a baby is conceived, a normal egg cell and normal sperm cell start with 46 chromosomes.
- The egg and sperm cells then divide in half. The egg and sperm cells then have 23 chromosomes each.
- When a sperm with 23 chromosomes fertilizes an egg with 23 chromosomes, the baby will then have a complete set of 46 chromosomes.
- Half are from the father and half are from the mother.
- But sometimes an error occurs when the 46 chromosomes are being divided in half.
- An egg or sperm cell may keep both copies of chromosome number 21, instead of just 1 copy.

- If this egg or sperm is fertilized, then the baby will have 3 copies of chromosome number 21. This is called trisomy 21.
- Sometimes the extra number 21 chromosome or part of it is attached to another chromosome in the egg or sperm.
- This may cause translocation Down syndrome. This is the only form of Down syndrome that may be inherited from a parent.
- A rare form is called mosaic trisomy 21. This is when an error in cell division happens after the egg is fertilized.
- People with this syndrome have both normal cells and some cells with an extra chromosome number 21

- Down syndrome can also include:
  - Heart defects.
  - Intestinal problems.
  - Vision problems.
  - Hearing problems.
  - Thyroid problems.
  - Blood conditions, such as leukemia, and risk for infections.
  - Learning problems.

DIAGNOSIS...

- Chromosome problems such as Down syndrome can often be diagnosed before birth. This is done by looking at cells in the amniotic fluid or from the placenta.
- This can also be done by looking at the amount of the baby's DNA in the mother's blood. This is a noninvasive prenatal screening. These tests are very accurate.
- Fetal ultrasound during pregnancy can also show the possibility of Down syndrome. But ultrasound is not 100% accurate.
- Problems from Down syndrome may not be seen with ultrasound.

TREATMENT...

- There is no cure for Down syndrome. But a child with Down syndrome may need treatment for problems such as:
  - Heart Defects.
  - Intestinal Problems.
  - Vision Problems.
  - Hearing Loss.
  - Other Health Problems.
  - Learning Problems.

❑Heart Defects:

- About half of babies with Down syndrome have heart defects. Some defects are minor and can be treated with medicines. Others may need surgery.
- All babies with Down syndrome should be looked at by a pediatric cardiologist. This is a healthcare provider who specializes in children's heart diseases.
- Babies with Down syndrome should also have an echocardiogram. This is a test that looks at the structure and function of the heart by using sound waves.
- This exam and test should be done in the first 2 months of life. This is so that any heart defects can be treated.

❑Intestinal problems:

- Some babies with Down syndrome are born with intestinal structure problems that need surgery.

❑Vision problems:

- Common problems include crossed eyes, nearsightedness or farsightedness, and cataracts.
- Most eyesight problems can be made better with eyeglasses, surgery, or other treatments.
- Your child should see an eye doctor (pediatric ophthalmologist) before he or she turns 1 year old.

❑Hearing loss:

- This is caused by fluid in the middle ear, a nerve defect, or both.
- Your child should get regular hearing tests so any problems can be treated early, which indeed helps with language development.

❑Other health problems:

- Children with Down syndrome may have thyroid problems and leukemia.
- They also tend to have many colds, as well as bronchitis and pneumonia.
- Your child should get regular medical care and stay up to date on vaccines.

TRISOMY 13 and TRISOMY 18.

(In children)

- Trisomy 13 and trisomy 18 are genetic disorders.
- They include a combination of birth defects, includes severe learning problems and health problems that affect nearly every organ in the body.
- Most babies born with trisomy 13 or 18 die by age 1. But some babies with these disorders do survive the first year of life.
- It's hard to predict how long a child with these disorders might live.
- There are a few reports of babies with trisomy 13 or 18 surviving to their teens. But this is unusual.

- Chromosomes come in sets of 2, or pairs. Most people have 23 pairs of chromosomes in their cells.
- Trisomy means that a person has 3 of a certain chromosome instead of 2.
- Trisomy 13 means the child has 3 copies of chromosome number 13.
- Trisomy 18 means the child has 3 copies of chromosome number 18.

CAUSES...

- When a baby is conceived, a normal egg cell and normal sperm cell start with 46 chromosomes.
- The egg and sperm cells then divide in half. The egg and sperm cells then have 23 chromosomes each.
- When a sperm with 23 chromosomes fertilizes an egg with 23 chromosomes, the baby will then have a complete set of 46 chromosomes.
- Half are from the father and half are from the mother.
- But sometimes an error occurs when the 46 chromosomes are being divided in half.
- An egg or sperm cell may keep both copies of chromosome number 21, instead of just 1 copy.

- If this egg or sperm is fertilized, then the baby will have 3 copies of chromosome number 13 or 18.
- If the baby has 3 copies of chromosome number 13, this is called trisomy 13. If the baby has 3 copies of chromosome number 18, this is called trisomy 18.
- The extra copy of chromosome number 13 or number 18 is present in every cell in the body.
- Sometimes the extra number 13 or number 18 chromosome, or part of it, is attached to another chromosome in the egg or sperm. This is called a translocation. This is the only form of trisomy 13 or 18 that may be inherited from a parent. Some parents may have balanced translocation.
- This means the number 13 or 18 chromosome is attached to another chromosome. But it does not affect their own health.

- Extra fingers and toes (polydactyly).
- Feet with prominent heels.
- Heart defects.
- Kidney problems.
- Part of the belly (abdominal) organs bulging through an opening near the umbilical cord (omphalocele).
- In boy babies, testes not descended into the scrotum.
- In girl babies, a uterus that forms in 2 branches (bicornuate uterus).

- A baby with trisomy 18 may have symptoms such as:
  - Looking thin and frail.
  - Failure to thrive.
  - Problems feeding.
  - Small size, even when delivered full term.
  - Small head.
  - Low-set ears.
  - Small mouth and jaw.
  - Shortened breastbone (sternum).
  - Weak cry.
  - Problems with hearing.
  - Heart defects.
  - Can't extend fingers fully.
  - Arms and legs in a bent position (contracture).

- Feet with a curved shape, known as rocker bottom.
- Spinal cord not fully closed (spina bifida)
- Eye problems
- Cleft lip and palate
- Slow growth
- Seizures
- High blood pressure
- Kidney problems
- Curvature of the spine (scoliosis)
- In boy babies, testes not descended into the scrotum

Most babies with trisomy 18 have problems that affect all parts of the body. Heart problems, feeding problems, and infections are what most often lead to death.

TURNER SYNDROME (TS)

(In children)

- Turner syndrome (TS or monosomy X) is a genetic disorder that occurs in girls.
- It causes many traits and problems.
- Girls with TS are shorter than most girls.
- They don't go through normal puberty as they grow into adulthood.
- They may also have other health problems such as heart or kidney problems.
- The seriousness of these problems varies from girl to girl.
- Many of the health problems affecting girls with Turner syndrome can be managed or fixed with treatment.
- Turner syndrome is rare. It occurs in about 1 in 2,000 to 2,500 girl babies.

CAUSES...

- When a baby is conceived, a normal egg cell and normal sperm cell start with 46 chromosomes.
- The egg and sperm cells then divide in half. The egg and sperm cells then have 23 chromosomes each.
- When a sperm with 23 chromosomes fertilizes an egg with 23 chromosomes, the baby will then have a complete set of 46 chromosomes, or 23 pairs. Half are from the father and half are from the mother. The 23^{rd} pair is called the sex chromosomes. In females, the 23^{rd} pair is two X chromosomes. In males, the 23rd pair is one X and one Y chromosome.

- There are 2 types of Turner syndrome: monosomy X TS and mosaic TS.
- About half of all girls with Turner syndrome have a monosomy disorder.
- Monosomy means that a person is missing one chromosome in the pair. Instead of 46 chromosomes, the person has only 45 chromosomes.
- This means a girl with TS has only one X chromosome in her 23rd pair. Sometimes an error occurs when an egg or sperm cell is forming. This causes it to have a missing sex chromosome.
- But it is often an error that happened by chance when the father's sperm cell was forming.
- The missing sex chromosome error can occur in either the mother's egg cell or the father's sperm cell.

- Girls with mosaic TS have chromosome changes in only some cells, but not all cells.
- A small number of cases have the normal number of 46 chromosomes, but with part of the X chromosome missing.
- When only part of an X chromosome is missing (deletion), a girl with the syndrome will often have milder signs of TS.
- The features of TS depend on which part of the X chromosome is missing.

SYMPTOMS...

- During a pregnancy, the healthcare provider may have seen a structure called a cystic hygroma during a fetal ultrasound.
- A cystic hygroma is a fluid-filled sac at the base of the neck. It often goes away before birth.
- But sometimes the sac is there when the baby is born.

§ Girls with TS often have:

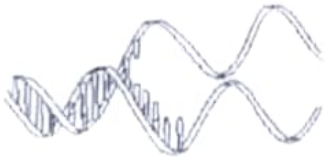
- Puffy hands and feet at birth.
- Wide neck with folds of skin down the sides of neck (webbed neck).
- Short height.
- A low hairline at the back of the neck.
- Feeding problems as a baby .
- Small differences in the shape and position of the ears.
- Broad chest with widely spaced nipples.
- More small brown moles (nevi) on the skin than normal.
- Deep-set nails .
- Small jaw.
- Narrow top of the inside of the mouth.
- Skeletal problems.
- Eye problems requiring glasses.

Mosaicism

- Mosaicism is when a person has 2 or more genetically different sets of cells in his or her body.
- Chromosomes are stick-shaped structures in the middle of each cell in the body.
- Each cell has 46 chromosomes grouped in 23 pairs. A person with mosaicism may have some cells in his or her body with 46 chromosomes.
- But other cells have 47 chromosomes. This can cause health problems in the body.

CAUSES...

- Mosaicism may be caused by an error in mitosis. Mitosis (my-TOH-sis) is the dividing of body cells. It's how a baby in the womb grows.
- Mitosis causes the number of chromosomes to double to 92, and then split in half back to 46. This process repeats constantly as the baby grows. Mitosis continues throughout your lifetime.
- It replaces skin cells, blood cells, and other types of cells that are damaged or naturally die.
- If there is an error in mitosis, a cell doesn't split evenly into 2 cells.
- The result is that some cells have the normal number of 46 chromosomes, and other cells have more (47) or fewer (45) chromosomes.



CONDITIONS CAUSES...

- *Mosaicism can cause many different kinds of disorders, such as:*

Ichthyosis with confetti:

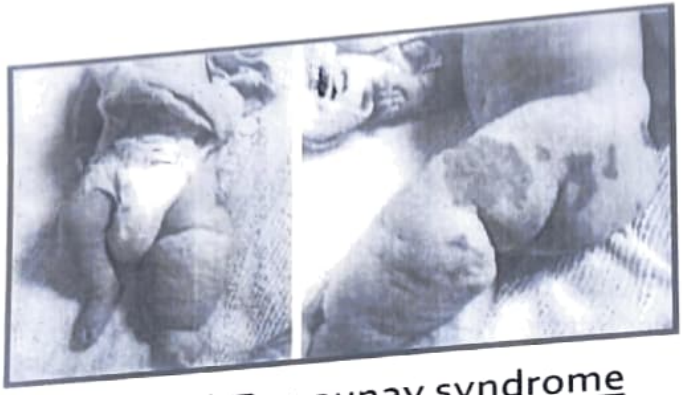
- This is a disorder that causes red, scaly skin all over the body.

Klinefelter syndrome:

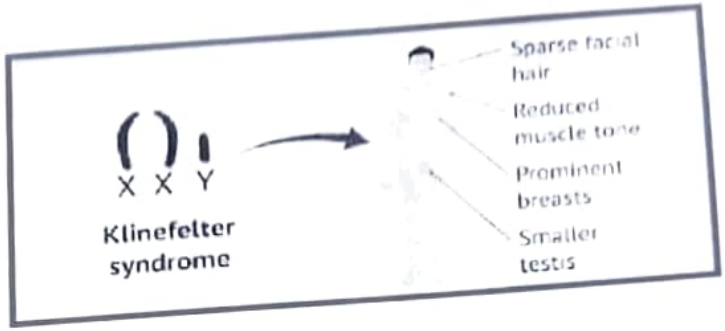
- This syndrome can cause low amounts of testosterone. This can lead to problems with sexual development, and other issues.

Klippel-Trenaunay syndrome:

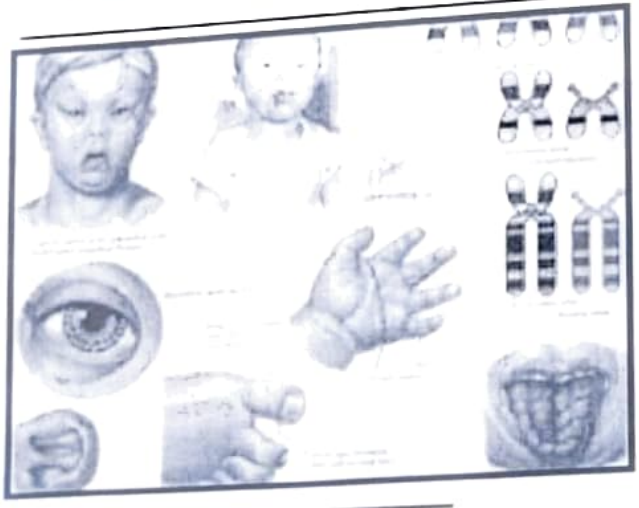
- This disorder causes a red birthmark called a port-wine stain. It also causes excess growth of soft tissues and bones, and abnormal veins.



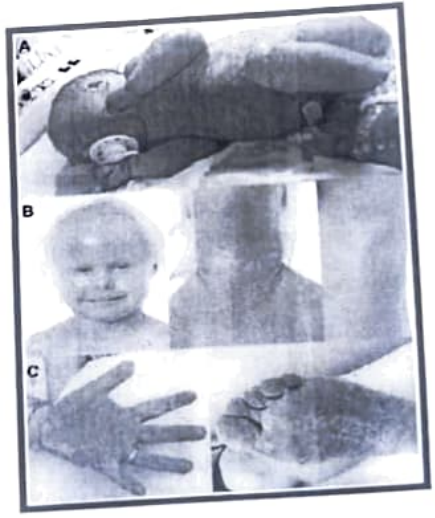
Klippel-Trenaunay syndrome



Klinefelter syndrome



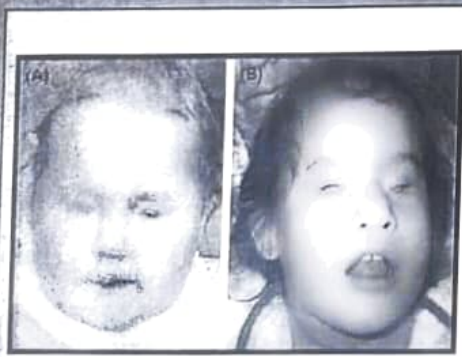
Mosaic Down syndrome



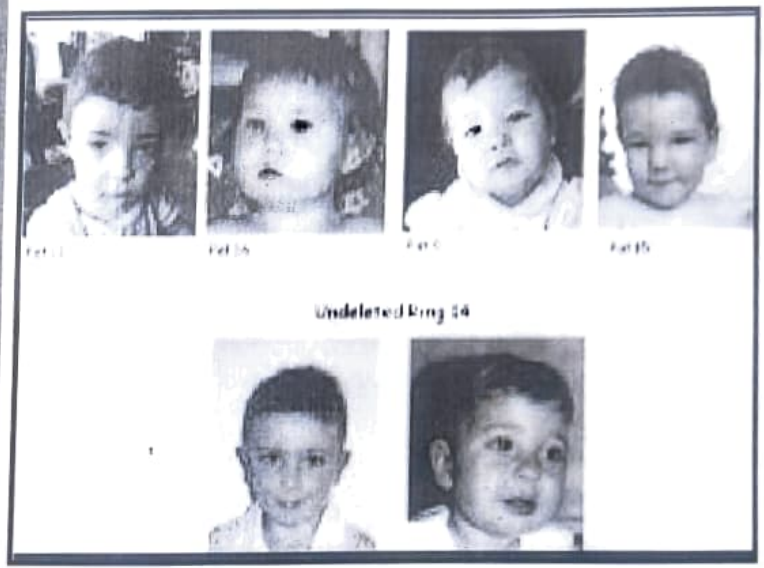
Ichthyosis with confetti

- **Mosaic Down syndrome:**
  - Down syndrome is a condition that causes intellectual disabilities and delays, weak muscles, and flat facial features.
  - It can also cause a heart defect, digestive problems, thyroid problems, and other health issues.
- **Pallister-Killian mosaic syndrome:**
  - This is a developmental disorder that causes weak muscles, intellectual disability, thin hair, patches of abnormal skin color, and other birth defects.
- **Ring chromosome 14 syndrome:**
  - This condition causes seizures, intellectual disability, and delayed speech and motor development.

Pallister-Killian mosaic syndrome



SOX2 anophthalmia syndrome



Ring chromosome 14 syndrome

Thank You!