LESSON NOTES

SCHOOL: SUVA SANGAM COLLEGE **YEAR/LEVEL: YEAR 11**

SUBJECT: GEOGRAPHY

STRAND	**PHYSICAL GEOGRAPHY**
SUB STRAND	**VEGETATION**
CONTENT LEARNING OUTCOME	**Investigate the existence of the types of vegetation, their distribution and the challenges associated with it.**

WEEK 1: MONDAY 05/07/21- FRIDAY 09/07/21

ACHIEVEMENT INDICATOR

- ✓ Explore and report on the different types of vegetation and its distribution.
- ✓ Describe the factors affecting vegetation and their distribution.

LESSON NOTES

Types of Vegetation

- Indigenous or native
- Exotic vegetation
- Indigenous or native vegetation
    - Indigenous vegetation of an area refers to the plants that are found in that particular place before they have been altered by people.
    - They are the result of interactions between climate, relief and soils.

Factors affecting their distribution.

Climate

- Rainfall is an important factor in determining the vegetation.
- A plant needs water to survive so different quantities of water gives rise to different types of vegetation.
- Consequently, vegetation varies as water availability changes with latitude.

- For instance, in temperate latitude, trees grow in areas with over 750mm of rain while grasses grow in areas of low rainfall.
- In tropical zones where temperatures are hotter, the trend is more marked, as tree size is also influenced by rain.
- The trends are also shown in New Zealand.
- Before settlement those areas which receive over 1000mm of rainfall per year were generally forested, while drier areas were covered with drought resistant tussock grassland.
- The biggest forest trees such as Kauri and the most rapidly growing forests were located in the warm, moist and humid northern areas of the North Island.

Relief

- Relief also influences vegetation, particularly through altitude.
- Air cools as it rises. So high areas have cold temperatures and generally thin soil.
- Consequently, these areas have sparse and short vegetation types.
- Areas of low elevation have relatively warmer climates and are characterized by taller forest trees.
- In between, trees become progressively shorter as altitude increases.
- This process is known as altitudinal zonation.

Effects of People on Vegetation

- Human Activities

- Hydro –electric power
- Tourism activities
- Generated electric powers from lake
- Extensive Pastoralism (sheep farming)
- The pattern of indigenous vegetation is often modified by people and animals.
- People when they use different level of farming.

ADDITIONAL INFORMATION RESOURCE

https://www.youtube.com/watch?v=900Qnh2uNgM

LESSON ACTIVITY

1. Differentiate between exotic and native vegetation.

2. Describe the effect of climate on vegetation.

3. Describe the effect of relief on vegetation.

WEEK 2: MONDAY 12/07/21- FRIDAY 16/07/21

ACHIEVEMENT INDICATOR:

- ✓ Identify factors affecting vegetation and their distribution
- ✓ Describe the importance of vegetation and sustainability

LESSON NOTES

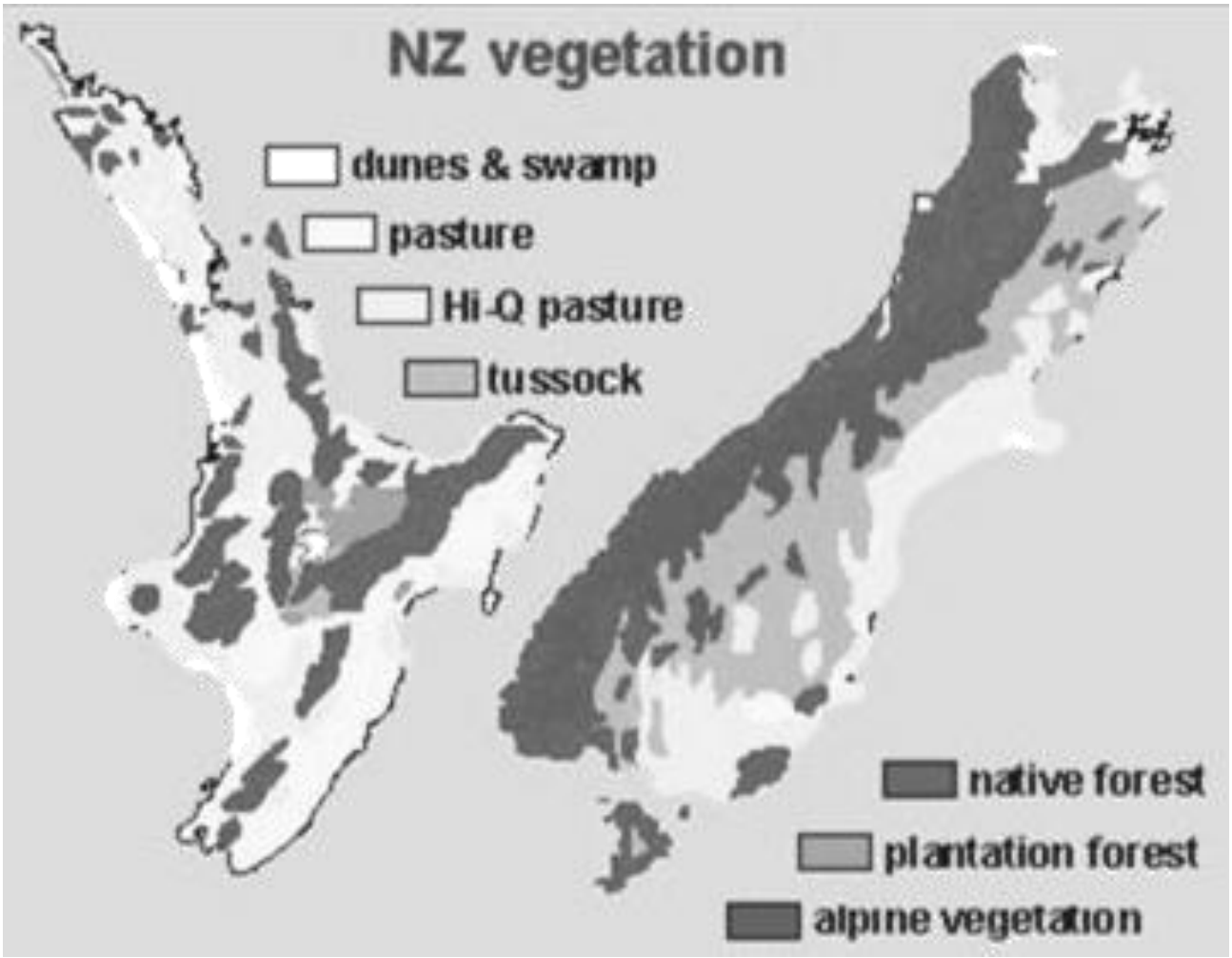
Climate

- All plants and animals have acclimatization but in New Zealand these difficulties have been largely overcome by the introduction of the development of a wide variety of plant species and animal breed which suits their varying climate conditions.
- The most common tree in New Zealand's climatic conditions is radiate pine because it grows over twice as it does in North America.
- Its fast growth rate makes radiate pine very popular with foresters because it matures and can be cut earlier than any other tree species.
- In particular, crop still cannot be grown because of an unsuitable climate other options are open such as glass houses for vegetables or irrigation, orchards and livestock.
- It may be that the climate needs only a slightly alteration such as growing a shelter belt of trees to reduce wind speed.
- Most method of climate modification is costly and is only worthwhile if the produce grown has a relatively high value.

Soil Fertility

- High fertility is particularly favorable for cropping and market gardening.

- High soil fertility can assist a farmer in overcoming disadvantages such as poor accessibility because higher yield of good quality produce will fetch better prices of the market, offsetting the extra freight charges.
- Low fertility was an important reason for the establishment of the 'man-made' forest in the central North Island.
- A soil deficiency prevented animals from being farmed but pine trees flourished.
- Poor fertility is less of a problem today than it was in earlier years.
- Scientifically –based farm management and the regular applications of artificial fertilizers allow poor soils to be improved and fertile soils to be maintained.



ADDITIONAL INFORMATION RESOURCE

https://www.youtube.com/watch?v=FCJfMHpySIY

https://www.youtube.com/watch?v=b47QcRdtiHc

LESSON ACTIVITY

1. Define:

i.Acclimatization-

ii.Tussock-

iii.Alpine vegetation-

WEEK 3: MONDAY 19/07/21- FRIDAY 23/07/21

ACHIEVEMENT INDICATOR:

- ✓ Examine and discuss the layers of the forest.
- ✓ Examine and discuss the adaptation found in tropical rain forests.

LESSON NOTES

Types of Land use

1. **Extensive pastoralism**

- Very large farm holdings
- Vast open pasture land
- Low output per hectare
- Low population density
- Poor road access to farms

2. **Intensive pastoralism**

- Farms often between 5 – 50ha
- Land is divided in to small blocks
- Excellent road access
- High rural population density

Tropical rainforests

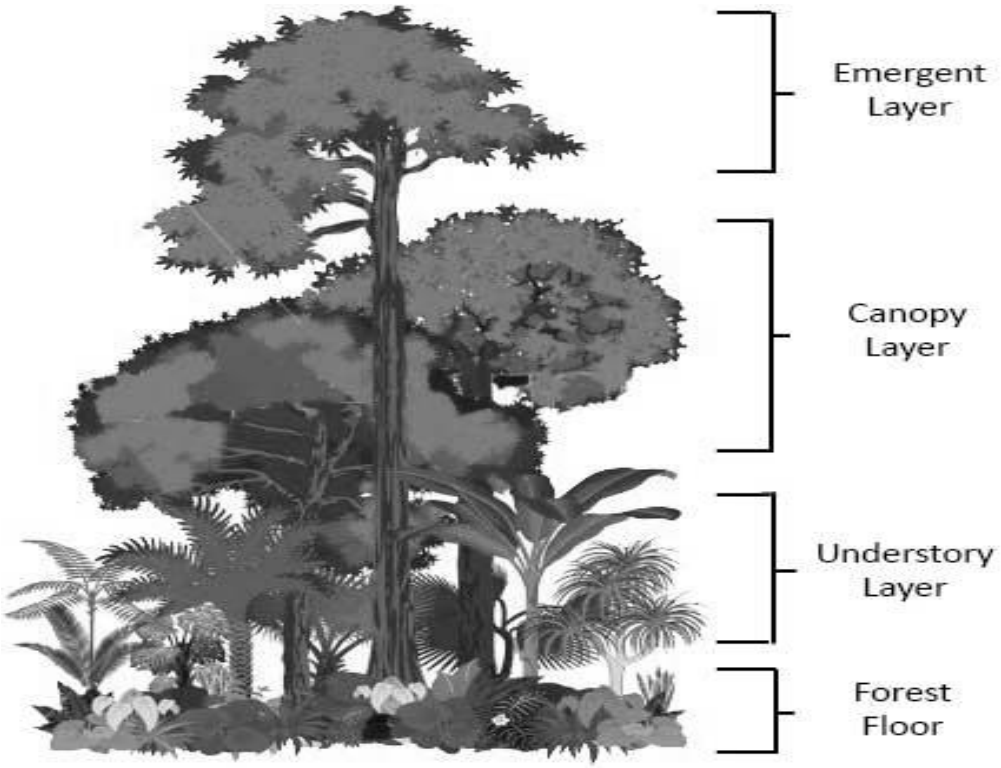
Location

- Found in the tropics within the equatorial climate belt, 5 degrees on either sides of the equator.
- It includes the Amazon and Zaire basin, the coastal land of Ecuado towards Africa and South East Asia.

Characteristics

- Rainforest needs higher solar radiation and all year growing season, heavy rainfall, a constant moisture budget surplus, a rapid decay of leaf litter and the recycling of nutrients.
- Vegetation consists of trees of many different species. Trees include, rosewood, mahogany, palm and rubber.
- Trees are mainly hardwoods and have an evergreen appearance.
- The tallest trees, emergent may reach up to 50m in height and form the habitat for numerous birds and insects. Below the emergent are the three layers all competing for sunlight.
- The top layer of canopy forms an almost continuous cover up which absorbs 70 percent of the light and intercepts 80 percent of the rainfall.
- The canopies of the underlying species protect the soils from erosion and provide a habitat for birds and animals of the rainforest.
- The second layer, the understory or under canopy consists of trees growing up to 20metres.
- The lowest or shrub layer consists of shrubs and small trees which are adapted to the shade of the taller neighbors.
- The trees grow tall to try to reach the sunlight and the tallest has buttress roots which emerge above ground level to give support.
- Tree trunks also provide support for lianas, they climb up the plant and long branches before plugging back down to the forest floor.
- Epiphytes which do not have their roots on the soil grow on trunks, branches and even on the leaves and shrubs.

LAYERS OF THE RAINFOREST



ADDITIONAL INFORMATION RESOURCE

https://www.youtube.com/watch?v=ea82OEf91C4

LESSON ACTIVITY

1. Define:

i. Evergreen -

ii. Canopy-

iii. Epiphytes-

WEEK 4: MONDAY 26/07/21- FRIDAY 30/07/21

ACHIEVEMENT INDICATOR:

- ✓ Examine and discuss the adaptation found in deciduous forests.

LESSON NOTES

ADAPTATION

- Trees of tropical rainforest tend to be broadleaved, evergreen plants which can keep most of the broadleaf all year round.
- The large surface area of the leaf allows them to collect sunlight for photosynthesis and also radiate heat during hot summer.

Temperate Deciduous Forest

Location

- Located on west coast of continent between latitude of 40 degrees and 60 degrees north and south of the equator.
- North west Europe (include great layer, the Britain), North west of the US, Britain, Columbia, Southern Chile, Tasmania and South Island of new Zealand.

Characteristics

- Deciduous trees shed their leaves during the winter season
- Leaves fall as the effect of the reduced transpiration when cooler weather reduces the effectiveness for photosynthesis and when roots find it harder to take in water and nutrients.
- Temperate deciduous forests contain few species; some stratification is evident.
- The canopy layer, the sub-canopy, the herb and shrubs layer and the ground layer of forest floor has a thick layer of leaf litter which is readily broken down by the numerous mixing agents living in the relatively warm soils.

- The leaching of humus and nutrients and the mixing of biota produce a brown colored soil in a climate with cold and sometimes dry winter keeping such leaves would cause plants to lose too much heat and water for survival.
- In such climate, broad leaved deciduous plants such as maple trees survive drought and cold by shedding their leaves and become dormant during such period.

ADDITIONAL INFORMATION RESOURCE

https://www.youtube.com/watch?v=Z1vrbYi8zuA

LESSON ACTIVITY

1. Define:

i. Deciduous trees
ii. Forest litter
iii. Biota

WEEK 5: MONDAY 02/08/21- FRIDAY 06/08/21

ACHIEVEMENT INDICATOR:

✓ Examine and discuss the adaptation found in coniferous forests.

LESSON NOTES

CONIFEROUS FOREST

Location

- Canadian Shield, St Lawrence valley, and higher parts of Rockies and Andes.

Characteristic

- The coniferous has developed distinctive adoptions which enable them to tolerate long cold winters, cool summers with a short growing season, limited precipitation and podzolic soils.
- The trees are evergreen giving them the potential for year round photosynthesis.
- The trees are softwoods.

- Conditions for photosynthesis become favorable in spring as incoming radiation increases and water becomes available from snow melt.
- The needle like leaves are small and the thick cuticles helps to reduce transpiration during times of strong winds and during the winters
- The conical shape of the tree and its downward sloping branches allow the winter snow to slide of without breaking the branches.
- The conical shape also gives stability against strong winds as the tree roots are usually shallow.
- There is usually one layer of vegetation in the coniferous forest.
- The amount of ground cover is limited due to the lack of sun's heat reaching the Plants which can survive on the forest floor include mosses and lichens.
- The cold climate and soil discourage earthworms and bacteria, needles therefore decompose very slowly.
- Most of the nutrients are held in the litter.
- Few animals are found because of lack of food.
- Forest floor which results in deep acidic layer of non-decomposed needles.

ADDITIONAL INFORMATION RESOURCE

https://www.youtube.com/watch?v=R4SJeGFAI_0

LESSON ACTIVITY

1. Define:
    i. Photosynthesis
    ii. Soft wood
2. Explain an adaptive feature of coniferous forests.