**Processes that Affect the Characteristics of Soil**

There are a number of different processes that affect the characteristics of soil. The processes that I will be looking at are Humification, laterisation and podzilation and how they affect a range of characteristics including colour, structure, texture ph level, water retention and organic content.

**Humification**

Humification is the method in which dead organic matter is converted into humus by fungi, bacteria and other organisms in the soil. Humification is vital for releasing nutrients and making fertile soil. Climate is an important factor that affects Humification. Hot humid climates such as equatorial climates are ideal for Humification because the conditions vary the growth of fungi and bacteria, while cold climates like the Tundra have low levels of humifcation. Humification creates humus, which is a black jelly like substance. The amount of Humification taking place affects the humus in the soil which in turn affects the type of **vegetation and organic material** in an area. For examples areas with high rates of humication will produce rich soils with deciduous forests (Oak) and areas with low levels of humifcation will produce poor soils with coniferous forests (Pine). Soils that undergo humification will be a **dark colour** such as brown soils, this is due to the presence of humus, soils which has does not undergo humification will have **light colour** soils like Podzols. The humus binds the soil together and affecting the **structure** of the soil, with soils undergoing humification usually having a **crumby structure** which is well aerated and suitable for fertile soils like brown soils.

**Laterisation.**

Laterisation is a severe chemical weathering of the soil. This occurs in tropical and equatorial regions of the world where leaching, carbonation and high temperatures combine to dissolve all minerals out of the soil except iron and aluminium oxides. The oxidation of iron and aluminium gives the soil a **red colour** as the iron is the rock undergoes oxidation (rusting). A soil that is affected by Laterisation is known as a latosol. If the soil dries out, the **structure** of the soil changes and it turns into a hard laterite. Due to high rainfall and leaching the **pH is moderately acidic**. The rapid absorption of nutrients by vegetation growing in the soil helps prevent the soil becoming more acidic. However once the forest is cleared, the latosols acidity rises. Soils that undergon laterisation **lacks a clearly defined structure**. This is due to the intense chemical weathering of grains which prevents well shaped peds forming in the soil. Soils that undergo laterisation such as a latosols usually have a **low humus content**. This is due to the rapid breakdown of organic material and the quick absorption of these nutrients by plants in these climatic areas. Latosols are **wet due to high rainfall and are very permeable.**

**Podzolisation**

This is a type of leaching where rainwater is more acidic. Leaching is the removal of nutrients from the soil by water. Rainwater washes soluble substances through the pores in the soil. A certain amount of leaching is needed to wash humus into the soil but too much causes soil to become infertile. Podzols from under coniferous forests. As these forests die and decompose they add **acidity** to the groundwater. This **acidic rainwater** dissolves all soil minerals except quartz (a resistant mineral). Soils that undergo podzolisation have very low **organic content** in the soils due to the high PH levels which make it difficult for matter to survive in. The vegetation that grows in these areas are themselves acidic like pine tress who leaf litter creates acidic humus which goes into the nutrient cycle of the soil and is unproductive. Leaching is so serve with podzolisation that any **organic material** that might be present in the soil is taken from the upper horizons and can form a impermeable hard pan, which does not allow water to pass through causing the soil to become **easily water logged**, with this water having the potential to **bleach the colour of the soil** to a lighter colour. All the processes involved in podzolisation cause soils to be infertile.