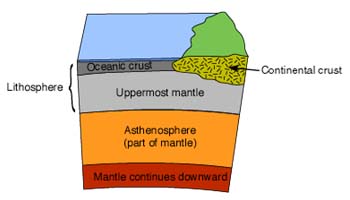
**Lithosphere Succession**

The lithosphere is the uppermost layer of rock on the mantle.

The lithosphere is the bare rock on which succession first starts. The first phase of this type of plant succession, like all others starts with Pioneers.

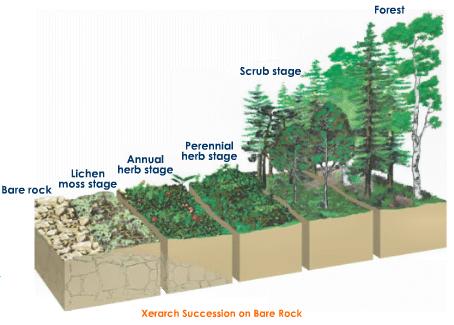
The pioneer species, such as Lichen – species including Graphis and Lacanora colonise the area first as they are able to tolerate the conditions; for example desiccation as there is full sun exposure and little water supply. Lichens produce organic acids which corrode the bare rock surface, causing the rock to begin to break up and release minerals to allow for further growth of the lichens. As the rock begins to break up, foliose lichens are able to grow; as these are able to retain more water as well as being able to accumulate more soil particles a finer layer of soil develops.

The second phase is the Moss Stage, as soil and humus accumulates, due to the lichens beginning to die, the growth of mosses then begins. Moss species such as Polytrichum and Grimmia begin the process and over time more soil and organic matter builds up, allowing the growth of the mosses which prefer more moist conditions, such as Bryum to grow.

The third stage is the Herb Stage; the death and decay off the mosses produces a layer of organic matter on the rock / soil surface which helps the germination of grasses such as Poa and Eleusin. Some animals are able to live in these grasses.

The fourth stage, the shrub stage occurs due to further weathering of the rock which allows the shrub roots to grow further into the rock layer, shrubs such as Rhus and Caparis begin to grow. Through the growth of these species, the rock become more weathered as the roots break up the lock layer and develop the soil layer.

The fifth and final stage of the plant succession on the lithosphere is the forest stage. Many trees begin to grow; these trees are light demanding and usually quite small. After time, the vegetation becomes mesophytic (only needing a small amount of water) Finally, a dynamic equilibrium between the abiotic and biotic factors is reaches.

The climax community in a temperate area would be a temperate deciduous forest.