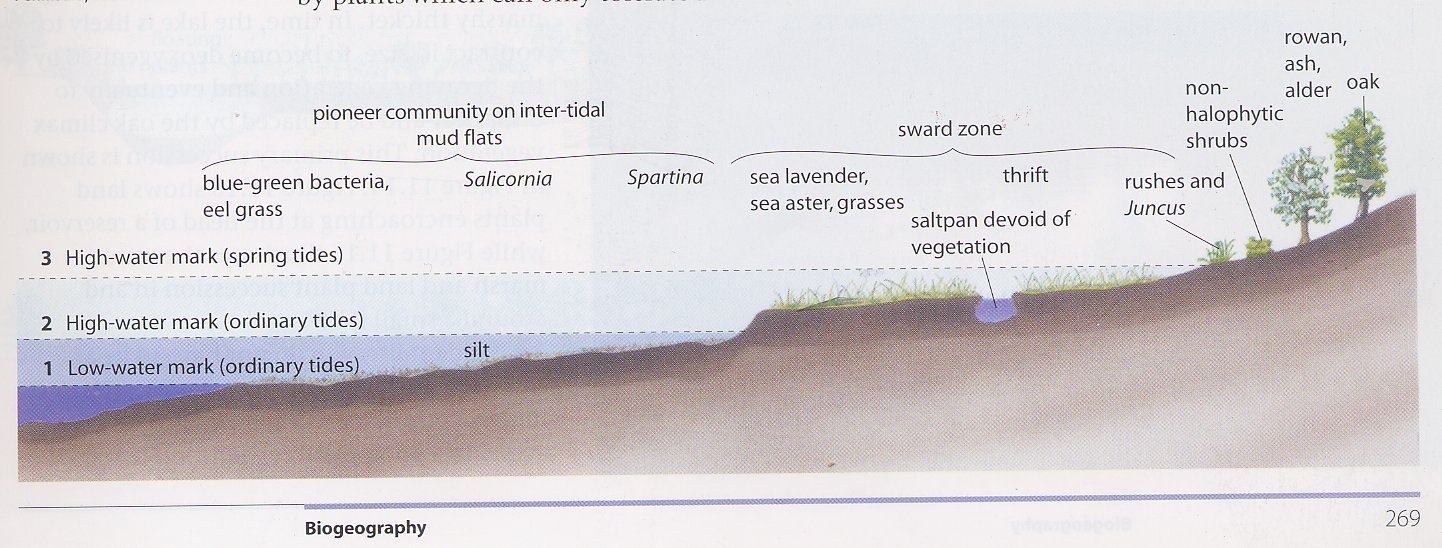
*Halosere – Plant succession in salt marshes*

What is a Halosere?

* It is a term used to describe plant succession in a saline environment ie. salt conditions. An example of a halosere would be a salt marsh.

Colonisation

The earliest pioneers are usually algae and eel grass which are able to tolerate submergence by the tide for most of the 12-hour cycle and which trap mud causing it to accumulate. Two other pioneers are salicornia and spartina which are halophytes (plants that are able to tolerate saline conditions). They grow on inter-tidal mudflats with a maximum of 4 hours and exposure to air every 12 hours.

Spartina has long roots enabling it to trap more mud than the initial colonising plants. It is estimated that Spartina can add up to 8-10cm of mud annually to a salt marsh.

Establishment

The growth of Spartina and the role it plays in trapping sediment results in mud height increase. As a consequent, the muddy shores spend more time emersed (out of water). These conditions are more suitable for other plant species to migrate to the area and begin to grow as well. The types of species that appear at this time are Puccinellia maritime (salt marsh grass) and Aster tripolium (sea aster). All species (including pioneers) grow bigger and they exist in greater abundance and therefore there is less bare ground available.

Competition

During competition, pioneer species are out-competed and replaced by species like thrift and sea purslane. Over time, these species are also replaced by other species also referred to as equilibrium species. Also during competition, when species are being out-competed, there is a change in the abiotic factors within the area. As a consequent, the more favourable abiotic conditions allow for an increase in the number of different species. Competitive exclusion also means where different species are in strong competition one will prevail at the expense of the other.

Stabilisation

At this stage of succession, the community is more balanced as a result of the assemblage of victorious species from the competition stage. Each species occupy their own niche to avoid having to compete strongly with other species. The community stabilises and remains the same for quite a while. The rate of height increase within the area is reduced and there is lower frequency of immersion. Some species that can be expected at this stage include scurvy grass and sea lavender.

Climatic Climax

This is the final stage of succession. Here there are no new species added and the community remains the same over a long period of time (theoretically forever). The vegetation is said to be in equilibrium with its environment. At the top of our salt marsh we get species like rush and sedge in damper regions and red fescue grass in dryer places. If there is any freshwater influence at the top of the marsh, the salt water marsh would probably develop into a freshwater marsh which will develop into scrub and eventually a forest. In a temperate climate, this would be a temperate deciduous forest.