

## Background of Dykelands

Dykelands were first constructed by the French settlers in the 1700's. The early settlers found it easier to build dykes than to clear the upland of trees, also this land would immediately provide them with hay crops.

The first Act relating to dykeland was made by the government of Nova Scotia in 1760. The Act provided for a group of owners to appoint commissions who would decide what work was required to arrange for labour and the raising of all costs associated with keeping the dykes in repair.

For many years the dyke system in Nova Scotia was maintained in this manner.

In the late 1940's, the Federal Government put a big emphasis on rebuilding the dykes with the passing of the Maritime Marshland Rehabilitation Act. This Act provided for the building, replacement and repair of dykes where it was deemed economically feasible. At the same time the Provincial Government and landowners were responsible for improving internal drainage of the dykelands. In 1967, the responsibility of maintenance for these dykes was turned over to the Province by the Federal Government.

At the present time, the landowners are responsible for maintenance of internal dyke roads and also the acquisition of land required for the reconstruction of dykes and aboiteaux.

The tidal ranges along the Bay of Fundy are very large, in fact are the largest in the world and can range up to 15 metres. These high tides determine the height to which dykes have to be constructed. This large tidal range is advantageous during low tides because it enables land behind the dyke to be drained through an aboiteau without the aid of pumps.

An aboiteau is basically a culvert with a flap gate on the downstream end. When water on the land side is higher than water on the tidal side, the gate opens and water will drain out. When water is higher on the tidal side, the gate closes and prevents salt water from flowing to the land side.

Dykeland soils have been formed by the deposition of marine sediments by high tides. These sediments were eroded from upland soils. The eroded sediments from these upland soils are carried to the ocean by the rivers that empty into the Bay of Fundy where they settle to the bottom. Strong tidal currents scour the bottom of the Bay picking up and suspending the sediments and re-depositing them on marshlands. The soil basically is a silty clay loam type. These soils have high levels of natural fertility, good water holding capacity, level topography and are tone free. dykeland soils are potentially some of the most productive agriculture soils in the Province, if intensively managed.

The fact that the soil is a silty clay loam, along with poor structure, accounts for the slow permeability of water through the soil. This poor drainage has limited the use of marshes in the past. In the early 1970's emphasis was placed on surface drainage of these soils. This method of drainage became known as land forming.

Land forming basically involves shaping the surface of the soil so that excess rainfall will run off into grassed waterways and ditches. This allows the soil to dry up much faster and makes it possible to grow a greater variety of crops. It is important to have the surface very smooth. Typical crops are pasture, hay, cereals, and some vegetables. during dry summers, dykeland soils do very well because they hold water very well, yet the soil surface can dry up very quickly after a rain.

As the soil in most cases is basically the same for a considerable distance down, the surface soil is not saved for later replacing on top but becomes mixed as the bulldozer moves the soil.

Two basic forms of land forming are used. The first system with ditches at each low area which in turn

drains into a main drain. The second system is with grassed waterway at the low area.

With the land forming system, slopes on land, ditch bottoms, and grassed waterways are very critical. A detailed survey is required before equipment starts working so that the equipment operator can follow grades. The grassed waterways basically only have 10 cm of drop over a 30 metre length, whereas open ditches on dykeland have only a 30 cm drop over a distance of 300 metres.

Fine grading on the remainder of the land is recommended and this is usually carried out by the farmer with a land leveller.

If you are interested in additional information on the Maritime Dykelands, you may want to check this book - [Maritime Dykelands - The 350 Year Struggle](#)