Glossary of useful Fenland IDB Land Drainage Terms 2013

Martin Redding - Lincolnshire Association of Drainage Authorities
With images courtesy of M. Redding, Andy Carrott, Andy Clark at Witham 4th IDB, Cliff Carson of Middle Level Commissioners and Charlie Kitchen RSPB

Adventurers – the name given to people who originally undertook to drain the Fens properly in the 17th century. (Duke of Bedford & King James etc).

Berm – a low level platform normally found on larger watercourses to allow heavy plant access for routine maintenance. Nowadays, smaller watercourses occasionally have a narrow berm to increase flow capacity and benefit biodiversity. Berms tend to be colonised by wetland plants and form important habitat corridors.


Byelaws – IDBs and the Environment Agency (EA) have strict byelaws that govern what you can and cannot do to a watercourse or flood defence. This is why it is essential to consult early on any proposals you might have as it may or may not be viable.

Cill – the hardwood or concrete/stone base of an outfall structure (sluice, pumping station or pointing doors) over which water flows.

Cleansing, slubbing or mudding – same as dredging ~ see below.

Coastal flood defences – the EA is responsible for maintaining the outer main tidal flood defence wall while riparian owners are responsible for the secondary and tertiary defences. Many of these are rich grass sward covered banks are private droves or public footpaths that act as linear corridors for wildlife that break up the intensively farmed landscape, and provide plentiful food and shelter for birds and animals etc.


Court of Sewers – IDB's are seen as a local authorities whose legacy stems from the formation of the Courts and Commissioners of Sewers in the mid 13th century. In essence, this was a medieval formalisation of a process already in place in England on a localised level to ensure drainage and sea

defences were maintained and in good order; not many local authorities can boast they have managed and continue to manage waterways within their districts for more than 700 years!

Cradge – a temporary trench to contain dredged wet material to allow it to dry before being landscaped back into a flood defence bank.

Cradge bank – a permanent bank which is constructed at a lower level to the main flood banks of and which would be overtopped before the main defence banks.

Cumec – cubic metre of water per second.

Culvert – a watercourse channelled through a length of pipe.

Cusecs – cubic feet of water per second.

Design Water Level – the calculated water within a watercourse for a particular reach.

Ditch – see Sewer below.

Drain – an artificial watercourse larger than a typical agricultural field ditch which can become quite large. Deliberately designed for land drainage and flood defence purposes only, they are not meant to emulate natural rivers. They are the arteries of the fens.

Dredging – removal of sediment/mud from a channel. Also referred to as 'mudding' or 'slubbing'.

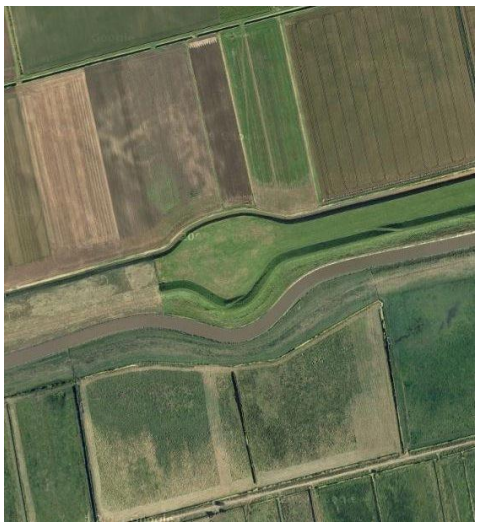
Faggotting – placing layered hawthorn bundles to stabilise unstable soils along waterway banks. The hawthorn is often sourced from local landowner hedges on rotation or from hedges on drain and river banks. Faggott = a bundle of hawthorns.

Freeboard – a safety factor used in the design of river and drainage management and directly associated with Water Level Management Plans (WLMP's). It defines the water depth between the water level design for a catchment and any associated infrastructure relating to it and provides a margin of operation whether in drought or in flood. Typically, this can be anywhere between 1 and 2 metres or in the case of Middle Level Commissioners, only 300mm due to the navigation infrastructure and bridge heights.

Fretting – the erosion and undercutting of banks due to wave action, the most frequent cause being boat wash on navigations caused by folk travelling too fast.

Gravity drainage – water flows under its own weight without the need for pumping.

Gull – A deliberately engineered shimmy in a watercourse to overcome unstable soil conditions and/or repair a bank collapse.



Hand roders – people who cut vegetation by hand using a scythe (also see Roding).

Headwall – an engineered retaining wall of a culvert or watercourse crossing.

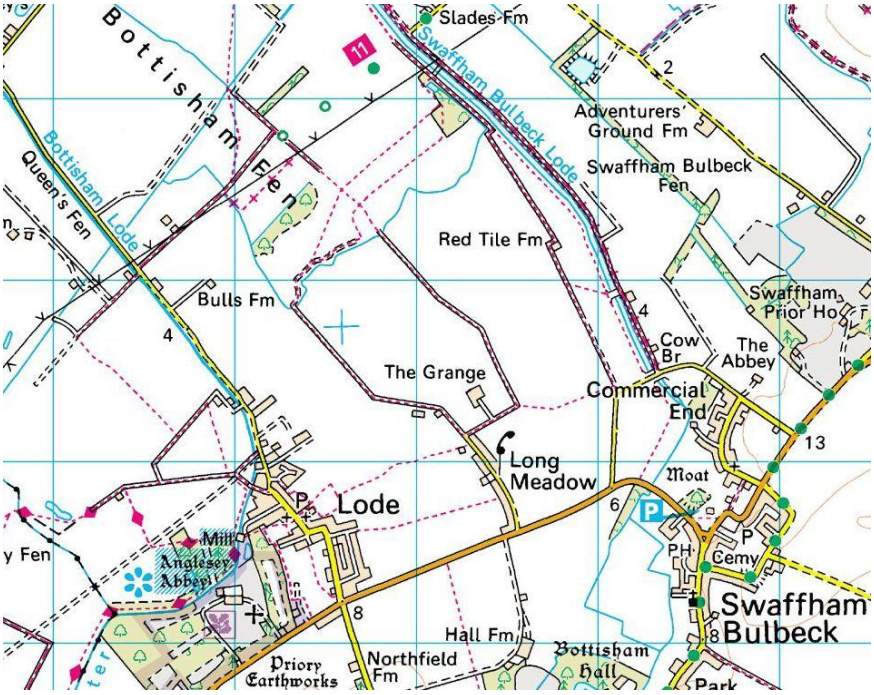
Headwater – the upper reaches of a watercourse farthest away from an outfall. Often left unkempt to the benefit of wildlife and requires minimal management.

Highland carrier – often an Environment Agency managed watercourse taking runoff from the surrounding uplands which is elevated and embanked above ground level.

Impoundment structure – a permanent or temporary structure used to hold up water, often for irrigation purposes or for differential water level management within a catchment or sub catchment. They can be a simple series of wooden boards that can be added or removed as required, or be a manually operated gate.

Improvement – a design modification of an existing watercourse or the creation of a new one.

Lode – an artificial and often an embanked and elevated water body frequently encountered in the southern fenland. Many are connected with main rivers (see below) and often in association with monasteries and priories. They tend to be of significant antiquity with many believed to be of Late Saxon origin. It is surmised that they were used for the transportation of goods and commerce across the wider fenland. It seems highly that the northern fenland term 'lade' is a localised corruption of lode. Transporting cargo by water was six times cheaper than by road in the medieval fens.



Main River – Environment Agency managed rivers such as the Nene, Welland, Witham, Ouse and several other large water bodies. They are classed as highland carriers before reaching their tidal outfalls.

Outfall – any point where water finally discharges into another water body e.g. a dyke into a drain or a river into an estuary etc.

Ordinary watercourse – a watercourse that does not form part of a main river.

Penstock – manual or automatically operated valve, flap of gate for releasing or holding water.

Pointing doors – a pair of doors hinged on their outer vertical edges which open and close with water pressure. Normally fitted to navigation locks or gravity outfalls, they open when the tide goes out and close on the incoming tide.

Pumping Station – electric and/or diesel powered flood defence assets which range from small to large depending on the catchment they serve.

Reprofiling – taking a watercourse back to its original dimensions following encroachment over a number of years. Note the field under drain outfalls on the right image.

Roding – cutting of vegetation within a drainage channel.

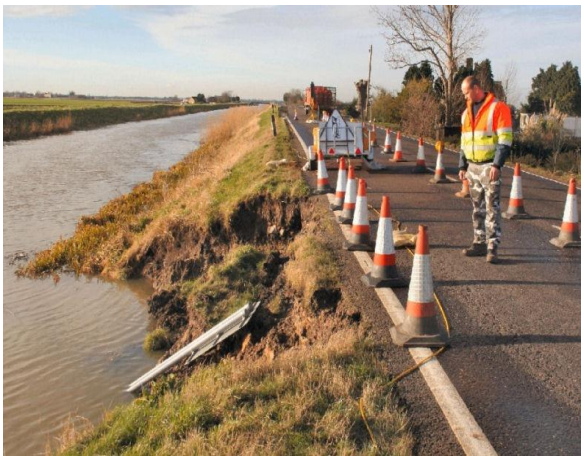
Roddon – ancient fenland rivers and their tributaries. Show as low sinuous mounds in fenland fields.

Running silt – often encountered on silt and sandy gravel or where a drain or ditch cuts through a roddon. The waterlogged substrate becomes liquefied and extremely unstable at the waterline and below it and can lead to bank slips, especially if aggravated by vibration from passing vehicles etc. Piling with back boards is often required to make good any repairs.

Runoff – water flowing into a catchment area following rainfall either overland or through urban piped systems. (Agricultural runoff rate is based on a standard historic figure of 1.4 litres per second per hectare – is used widely by IDB's and the EA and regarded throughout the UK to reflect a true representation of rainwater run-off from an undeveloped agricultural field or green field site).

Sewer – smaller than a drain, they are an open narrow watercourse often referred to a field boundary dyke or ditch which can be dry or contain shallow water. The veins of the fens.

Slip – a major/minor collapse of a watercourse bank.



Sluice – gravity, manual or mechanically operated water level control structure that allows water movement between catchments and at tidal outfalls. * An archaic fenland term for a sluice is a gote or gowt, hence Anton's Gowt near Boston and Tydd Gote and Four Gotes near Wisbech.

Stall rope – rope, often with floats attached placed across waterway to collect cut vegetation and other debris as it floats downstream channel.

Stoning – deliberate placement of frost proof stone above and below the waterline to protect the edge of a watercourse from fretting or water erosion. The planting of sedge or reed plugs and/or coir rolls is often seen as a greener alternative.

Sunken Tunnel or siphon – a large conduit under a watercourse used to transfer water between catchments as required.

Tide Lock – Used to describe a situation when the water from an inland channel cannot discharge to the sea via a gravity outfall because the tide level is too high.

Tilting door/weir – an adjustable sturdy door that can be finely adjusted to allow water to pass over the door when lowered, or hold water back when raised.

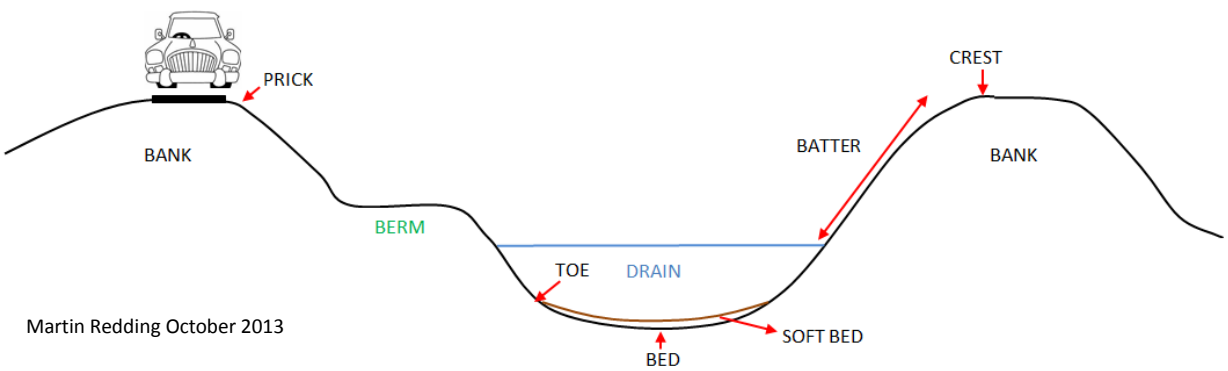
Vertical or guillotine door – the adjustable water retaining structure on a gravity outfall to control the water level on the upstream side of the structure.

Warping – While not a common fenland practice, this involved intentional and seasonally controlled fluvial and tidal flooding of land predominantly over winter. Nutrient rich estuarine silt was thus deposited on top of the existing soil whereby each controlled (or sometimes uncontrolled!) flood episode deposited a thin silt film that over time eventually built up land levels. As a result, such land became extremely fertile.

Weed screen – a steel griddle placed in front of a pumping station or other water level control structure to prevent debris damaging pump impellors and obstructing flow. The screen can be cleared of debris mechanically, automatically or manually.

Weir – structure to hold back water at a certain level within a watercourse and/or for environmental or irrigation purposes.

Typical IDB drain cross section with terms.



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