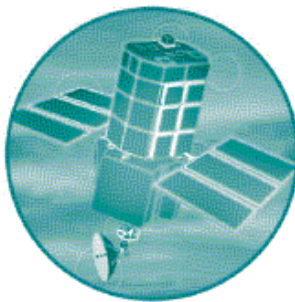


**DEFRA/Environment Agency
Flood and Coastal Defence R&D Programme**



Impact of agricultural soil conditions on floods – Autumn 2000

R&D Project Record W5B-026/PR

Impact of agricultural soil conditions on floods - Autumn 2000

Field observation records for investigated areas

R&D Project Record W5B-026/PR

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This report contains the field observation records of a targeted survey to assess the spatial extent of agriculturally degraded soils in selected catchments where floods occurred in 2000/2001. This detailed information supports the main report on this survey and its analysis (Technical Report No W5B-026/TR).

Keywords

Soil, flooding, soil degradation, erosion, compaction, land management, agriculture, soil hydrology, catchment

Research Contractor

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INTRODUCTION

This Project Record contains the Field Observation Records covering the catchments surveyed for the Environment Agency R&D Project W5B-026 on the Impact of Agricultural Soil Conditions on Floods in Autumn 2000. At each site, the surveyor recorded details concerning the cropping, soil surface condition, soil moisture state and the characteristics of the topsoil and upper subsoil horizons. The properties of the soil horizons were observed from small trial pits (approximately 30x30x40 cm) enabling a clearer interpretation of soil structure than can be gained from the use of an auger.

The project is written up in Technical Report W5B-026/TR.

1. SEVERN CATCHMENT, ALCESTER SP05

General Observations

The region was visited on 5th and 6th December 2000. There had been previous days of rain and rain fell steadily for most of the 5th December. This will have accounted for the excessive amounts of water noted on the soil surface and within the topsoil and immediate subsoil of most of the sites examined.

1. Bare ground (ploughed) and recently drilled land tended to have very wet topsoils with water collecting at the base of the plough. The reason for this is likely to be twofold. Firstly compacted layers may occur below the plough layer and restrict downward water movement. Secondly and possibly the more likely reason is that the recently cultivated layer is unnaturally loose and allows extremely rapid water movement down to the more restricting subsoil that has a more natural soil density. As the year progresses the ploughed topsoil will tend to reach an equilibrium density closer to the natural. It was also noted that water seemed to gravitate to drill depth. This may be due to the excessive loosening of the topsoil by the action of drilling.
2. Land not yet ploughed had noticeable areas of standing water. Whereas cultivated land tended to have water collecting or moving mainly in the wheelings, where the soil was compressed the uncultivated arable land had water only in localised depressions across the surface.
3. Land that had been drilled early in the autumn or late summer appeared to have better ground conditions with regard to water at the surface and within the topsoil than that drilled when the ground was becoming wet.
4. Some areas of permanent grass had noticeable standing water across the fields. No structural degradation at the surface, which may have reduced percolation, was evident. The quality of the grass sward appeared very good.
5. Where the topsoil or subsoil was evidently wet and where water seepage was noted the interiors of the structural units were noticeably less wet as one might expect

Alcester SP05.

Locality: Weethly Farm, Ragley Hall Estate.

Date: 5th Dec 2000.

Site: 1.

Grid Ref: SP053557.

Elevation: 107m.

Crop: Maize stubble.

Estimated cover: N/A.

Slope: ll 1.5.

Soil Series: Salop.

Erosion: Some slight deposition in wheelings but not excessive.

Soil Surface: Mounded but flattened in wheelings. **Soil Condition:** Slaked in wheelings.

Topsoil Depth: 20cm.

Texture: Clay loam.

Colour: 7.5YR3/2.

Structure: Moderate medium subangular in upper 12cm becoming compacted below. Blueish colours associated with anaerobism evident.

Subsoil Texture: Clay loam.

Colour: 7.5YR4/4.

Structure: Moderate subangular blocky.

Comment: Excessively wet above the compaction. Some large deep wheel ruts across the field.

Alcester SP05.**Locality:** Weethly Farm, Ragley Hall Estate.**Date:** 5th Dec 2000.**Site:** 2.**Grid Ref:** SP053558.**Elevation:** 107m.**Crop:** Permanent grass. **Estimated cover:** 80%.**Slope:** Cv 1.**Soil Series:** Salop, stony at 80cm.**Erosion:** None visible.**Soil Surface:** N/A.**Soil Condition:** N/A.**Topsoil Depth:** 10cm**Texture:** Clay loam.**Colour:** 10YR3/2.**Structure:** Coarse subangular blocky with medium platy structure in places.**Subsoil Texture:** Clay loam.**Colour:** 10YR4/4.**Structure:** Moderate medium and fine subangular blocky.**Comment:** Grass growing in tufts over much of this field. Some bare poached areas. Large poached areas in gateways and around feeders.**Alcester SP05.****Locality:** Weethly Farm, Ragley Hall Estate.**Date:** 5th Dec 2000.**Site:** 3.**Grid Ref:** SP052558.**Elevation:** 107m.**Crop:** Ley grass. **Estimated cover:** 2%.**Slope:** Ll 2.**Soil Series:** Salwick.**Erosion:** Localised erosion in wheelings. Some small rills and depositional fans. Nothing excessive.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 20cm.**Texture:** Clay loam.**Colour:** 7.5YR3/2.**Structure:** Moderate medium subangular.**Subsoil Texture:** Clay loam.**Colour:** 7.5YR4/4.**Structure:** Moderate medium subangular.**Comment:** Wet to 12cm then drier below.. Very deformable underfoot.**Alcester SP05.****Locality:** Weethly Farm, Ragley Hall Estate.**Date:** 5th Dec 2000.**Site:** 4.**Grid Ref:** SP048557.**Elevation:** 99m.**Crop:** Winter cereals, stubble . **Estimated cover:** N/A.**Slope:** Cv 2.5.**Soil Series:** Spetchley.**Erosion:** None visible.**Soil Surface:** Mounded.**Soil Condition:** Partly slaked.**Topsoil Depth:** 22cm.**Texture:** Clay loam to clay.**Colour:** 10YR3/2.**Structure:** 'Loose' medium subangular blocky structure, very wet, over unloosened moderate medium subangular blocky.**Subsoil Texture:** Clay.**Colour:** 5YR4/4.**Structure:** Moderate medium and coarse angular.**Comment:** Upper 15 cm very wet. Topsoil below was noticeably less wet. Subsoil very plastic and difficult to get a good sample to assess subsoil structure.**Alcester SP05.****Locality:** Weethly Farm, Ragley Hall Estate.**Date:** 5th Dec 2000.**Site:** 5.**Grid Ref:** SP050557.**Elevation:** 108m.**Crop:** Maize stubble.**Estimated cover:** N/A.**Slope:** Ll 1.5.**Soil Series:** Salwick.**Erosion:** Some slight deposition in wheelings but not excessive.**Soil Surface:** Mounded but flattened in wheelings. **Soil Condition:** Slaked in wheelings.**Topsoil Depth:** 20cm.**Texture:** Clay loam.**Colour:** 7.5YR3/2.**Structure:** Moderate medium subangular in upper 12cm becoming compacted below. Blueish colours associated with anaerobic conditions evident.**Subsoil Texture:** Clay loam.**Colour:** 7.5YR4/4.**Structure:** Moderate subangular blocky.**Comment:** Excessively wet above the compaction. Some large deep wheel ruts across the field.**Alcester SP05.**

Locality: Weethly Farm, Ragley Hall Estate.

Date: 5th Dec 2000.

Site: 6.

Grid Ref: SP054557.

Elevation: 122m.

Crop: Permanent grass.

Estimated cover: 100%.

Slope: Cx <1

Soil Series: Salop.

Erosion: None visible but surface poached.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 8cm.

Texture: Clay loam.

Colour: 10YR3/2.

Structure: Moderate fine and medium subangular.

Subsoil Texture: Clay loam.

Colour: 10YR3/4.

Structure: Moderate medium subangular with patches of coarser platy material.

Comment: Dry compared to previous soils. Poaching damage confined to surface. No surface ponding. Grazed by sheep.

Alcester SP05.

Locality: Weethly Farm, Ragley Hall Estate.

Date: 5th Dec 2000.

Site: 7

Grid Ref: SP060569.

Elevation: 85m.

Crop: Winter cereals.

Estimated cover: 10%.

Slope: Cv 0.5

Soil Series: Flint.

Erosion: None visible

Soil Surface: Mounded.

Soil Condition: Slaked.

Topsoil Depth: 21cm.

Texture: Clay loam

Colour: 10YR3/3

Structure: Moderate medium subangular.

Subsoil Texture: Clay loam.

Colour: 7.5YR4/4

Structure: Moderate medium subangular. Some slight density increase compared to the topsoil but nothing exceptional

Comment: Developed at base of slope. Standing water on the surface but below the immediate surface the soil is less wet.

Alcester SP05.

Locality: Thornhill Farm, Ragley Hall Estate.

Date: 5th Dec 2000

Site: 8

Grid Ref: SP060569.

Elevation: 75m.

Crop: Winter cereals.

Estimated cover: 5%.

Slope: Level.

Soil Series: Salwick.

Erosion: None visible but slight water movement between the puddles on the surface.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 22cm.

Texture: Clay loam

Colour: 7.5YR3/2

Structure: Moderate medium subangular in the upper 7cm over moderate medium to coarse subangular.

Subsoil Texture: Sandy clay loam.

Colour: 7.5YR4/4

Structure: Moderate medium subangular.

Comment: Upper part of the topsoil (7cm) loosened by the drill. Soil saturated to 7cm depth. Less wet in the coarser structure below. Interiors of all peds less wet than their faces.

Alcester SP05.

Locality: Coldcomfort Farm, Ragley Hall Estate.

Date: 5th Dec 2000.

Site: 9.

Grid Ref: SP067568.

Elevation: 70m.

Crop: Winter cereals.

Estimated cover: 3%.

Slope: Level.

Soil Series: Rivington, rock at 46cm.

Erosion: None visible.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 20cm.

Texture: Sandy loam.

Colour: 10YR3/3.

Structure: Weak medium subangular.

Subsoil Texture: Sandy loam.

Colour: 10YR4/4.

Structure: Weak fine and medium subangular.

Comment: Very wet, standing water in wheelings. Tyre widths suggest that a low pressure vehicle has been used. Good distinct surface capping which is continuous and about 2-3mm thick. Ped faces wetter than interiors.

Alcester SP05.

Locality: Coldcomfort Farm, Ragley Hall Estate.

Date: 5th Dec 2000. **Site:** 10. **Grid Ref:** SP068569.
Elevation: 69m. **Crop:** Winter cereals. **Estimated cover:** 3%.
Slope: Cx <1. **Soil Series:** Not known.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 22cm. **Texture:** Sandy loam. **Colour:** 10YR3/3.
Structure: Moderate medium subangular.
Subsoil Texture: Sandy loam. **Colour:** 10YR4/4.
Structure: Moderate to weak medium subangular.
Comment: Little standing water except on headlands. Areas of standing water have very little load bearing capacity. Soil waterlogged at 42cm depth. Slowly permeable clay subsoil at about 58cm.

Alcester SP05.

Locality: Coldcomfort Farm, Ragley Hall Estate.
Date: 5th Dec 2000.. **Site:** 11 **Grid Ref:** SP068573.
Elevation: 61m **Crop:** Field beans **Estimated cover:** 4%.
Slope: Cv <1 **Soil Series:** Brockhurst.
Erosion: None visible.
Soil Surface: Mounded. **Soil Condition:** Partly slaked.
Topsoil Depth: 22cm. **Texture:** Clay loam. **Colour:** 10YR3/3
Structure: Coarse angular and subangular blocky.
Subsoil Texture: Clay loam **Colour:** 5YR4/4.
Structure: Moderate medium subangular
Comment: Disked bean stubble. Bean plants are volunteers. Topsoil definitely cloddy. Noticeable water seepage at the base of the topsoil. Large number of worm holes conspicuous in the topsoil. Interiors of clods are much less wet than surfaces.

Alcester SP05.

Locality: Coldcomfort Farm, Ragley Hall Estate.
Date: 5th Dec 2000. **Site:** 12 **Grid Ref:** SP069573.
Elevation: 60m. **Crop:** Oilseed rape.. **Estimated cover:** 65%.
Slope: Ll 1.. **Soil Series:** Brockhurst.
Erosion: None.
Soil Surface: Mounded. **Soil Condition:** Partly slaked.
Topsoil Depth: 27cm. **Texture:** Clay loam. **Colour:** 10YR3/3.
Structure: Moderate medium and coarse subangular.
Subsoil Texture: Clay loam. **Colour:** 7.5YR4/4.
Structure: Not discernible.
Comment: Standing water only in wheelings. Seepage in topsoil. Waterlogged in upper 8cm (drill depth). Subsoil wet above the slowly permeable clay substrate at 45 cm. Subsoil below 45cm is plastic.

Alcester SP05.

Locality: Coldcomfort Farm, Ragley Hall Estate.
Date: 5th Dec 2000. **Site:** 13. **Grid Ref:** SP071576.
Elevation: 53m. **Crop:** Oilseed rape. **Estimated cover:** 65%.
Slope: Level. **Soil Series:** Salop.
Erosion: None visible.
Soil Surface: Mounded. **Soil Condition:** Partly slaked.
Topsoil Depth: 26cm. **Texture:** Clay loam. **Colour:** 7.5YR3/3.
Structure: Moderate coarse subangular.
Subsoil Texture: Clay loam. **Colour:** 7.5YR3/4.
Structure: Moderate to weak medium subangular blocky (Difficult to assess because of wetness).
Comment: Topsoil very wet. Water in wheelings. Seepage in topsoil. Water collected in the bottom of the excavated hole but no real evidence of deteriorating structure.

Alcester SP05.

Locality: Wood Bevington Farm, Ragley Hall Estate.

Date: 5th Dec 2000. **Site:** 14. **Grid Ref:** SP058541.
Elevation: 76m. **Crop:** Winter cereals. **Estimated cover:** 5%.
Slope: L1 2. **Soil Series:** Salwick but marginal to Arrow.
Erosion: Small rills and depositional fans at base of slope. Turbid surface water.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Sandy loam to sandy clay loam. **Colour:** 7.5YR3/2.
Structure: Large relatively dense clods.
Subsoil Texture: Sandy loam to sandy clay loam. **Colour:** 7.5YR4/4.
Structure: Medium platy structure in part with moderate medium subangular structure. Possibly a recently broken pan.
Comment: Soil wet in the upper 8cm but drier below. Stopped by stones at 65cm. Interior of peds less wet than the faces.

Alcester SP05.

Locality: Wood Bevington Farm, Ragley Hall Estate.
Date: 5th Dec 2000. **Site:** 15. **Grid Ref:** SP052539.
Elevation: 78m. **Crop:** Onions. **Estimated cover:** 1%.
Slope: ll 2. **Soil Series:** Wick.
Erosion: Some erosion between the onion beds.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Single grain. No load bearing ability to 18cm.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR3/4.
Structure: Single grain but tightly packed, compacted.
Comment: The method of bed formation destroys structure. No structure in the top and no load bearing capacity. At about 18cm depth the soil is more dense and noticeably less wet.

Alcester SP05.

Locality: Wood Bevington Farm, Ragley Hall Estate.
Date: 5th Dec 2000. **Site:** 16. **Grid Ref:** SP052540.
Elevation: 78m. **Crop:** Onions (harvested). **Estimated cover:** N/A.
Slope: Cv 1.5. **Soil Series:** Wick, stopped by stones at 65cm.
Erosion: None visible.
Soil Surface: Mounded. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Moderate medium subangular to about 18cm the coarse subangular below.
Subsoil Texture: Sandy loam.. **Colour:** 7.5YR4/4.
Structure: Moderate coarse subangular.
Comment: Harvested onion field. No surface ponding over most of the field. Some standing water on field edge where recently ploughed.

Alcester SP05.

Locality: Lower Oversley Lodge.
Date: 6th Dec 2000.. **Site:** 17. **Grid Ref:** SP092562.
Elevation: 68m. **Crop:** Winter cereals. **Estimated cover:** 30%.
Slope: Level.. **Soil Series:** Whimple.
Erosion: Nine visible.
Soil Surface: Flattened.. **Soil Condition:** Slaked.
Topsoil Depth: 24cm. **Texture:** Clay loam. **Colour:** 7.5YR3/2.
Structure: Moderate medium subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 7.5YR4/4.
Structure: Medium coarse subangular blocky.
Comment: Seepage at 19cm (base of plough layer). Upper part of the 18cm is wetter than the lower part. Standing water only in wheelings.

Alcester SP05.

Locality: Lower Oversley Lodge.

Date: 6th Dec 2000. **Site:** 18. **Grid Ref:** SP093558.
Elevation: 61m. **Crop:** Winter cereals. **Estimated cover:** 35%.
Slope: L1 6.5. **Soil Series:** Worcester (greenish grey subsoil var).
Erosion: None visible at the site but slight erosion in valley bottom with small rills caused by water either from the nearby track or from the neighbouring field. Possible blocked drain.
Soil Surface: Mounded. **Soil Condition:** Partly slaked.
Topsoil Depth: 24cm. **Texture:** Clay **Colour:** 10YR3/3.
Structure: Moderate medium and fine subangular blocky with larger clods up to 10cm diameter that break readily to angular and subangular fragments.
Subsoil Texture: Clay. **Colour:** 5YR4/4.
Structure: Moderate medium subangular but with some angular edges.
Comment: Water seepage within topsoil but wetter at its base. Subsoil less wet than above but not by much (plastic). Interior of aggregates drier than surfaces.

Alcester SP05.

Locality: Lower Oversley Lodge.
Date: 6th Dec 2000 **Site:** 19. **Grid Ref:** SP094555.
Elevation: 76m. **Crop:** Winter cereals. **Estimated cover:** 20%.
Slope: Cv 3. **Soil Series:** Worcester.
Erosion: None visible.
Soil Surface: Mounded. **Soil Condition:** Partly slaked.
Topsoil Depth: 24cm. **Texture:** Clay. **Colour:** 7.5YR3/2.
Structure: Moderate medium and coarse subangular blocky. Does not break into individual fragments as readily as the topsoil at site 18.
Subsoil Texture: Clay (plastic). **Colour:** 5YR4/4
Structure: Difficult to assess. Weak coarse angular with many fine angular nodules (geological?).
Comment: Seepage at about 15cm. Standing water occurs in the base of the dug hole after about 3-4 minutes. Marked yellowing of the crop on headlands and in wheelings. Surface water only in wheelings.

Alcester SP05.

Locality: Lower Oversley Lodge.
Date: 6th Dec 2000.. **Site:** 20. **Grid Ref:** SP095557.
Elevation: 76m.. **Crop:** Winter cereals. **Estimated cover:** 20%.
Slope: L1 2. **Soil Series:** Whimple.
Erosion: None visible.
Soil Surface: Mounded. **Soil Condition:** Slaked.
Topsoil Depth: 25cm. **Texture:** Clay loam **Colour:** 10YR3/2.
Structure: Moderate medium subangular blocky to 18cm then coarse angular clods down to the subsoil.
Subsoil Texture: Clay loam. **Colour:** 10YR5/3
Structure: Compacted at the surface of the horizon, coarse angular.
Comment: Seepage within the topsoil but mainly at the base of the plough layer. Water covers the bottom of the hole within 2-3 minutes. Relatively dry within peds. Standing water on headlands mainly in wheelings. Yellowing cereals on headland but not along tramlines.

Alcester SP05.

Locality: Lower Oversley Lodge.
Date: 6th Dec 2000 **Site:** 21. **Grid Ref:** SP0091553
Elevation: 76m **Crop:** Field beans **Estimated cover:** 1%
Slope: L1 4.5 **Soil Series:** Worcester
Erosion: Very small rills and deposition of silt in tractor tyre tread marks. Running surface water at the time of site visit turbid with sediment.
Soil Surface: Mounded. **Soil Condition:** Partly slaked.
Topsoil Depth: 26cm **Texture:** Silty clay loam. **Colour:** 5YR3/2.
Structure: Upper 5-8cm is moderate fine and medium subangular blocky over moderate to weak coarse subangular.
Subsoil Texture: Clay. **Colour:** 5YR4/4.
Structure: Moderate coarse angular. Difficult to assess. Soil plastic and deformable
Comment: Hole filled with water within 15cm of the surface within 5 minutes. Seepage in topsoil. Standing water on soil surface in wheelings and in pockets between wheelings.

Alcester SP05.**Locality:** Lower Oversley Lodge**Date:** 6th Dec 2000.**Site:** 22**Grid Ref:** SP089556.**Elevation:** 53m.**Crop:** Winter cereals.**Estimated cover:** 25%.**Slope:** Cv 4.5.**Soil Series:** Flint.**Erosion:** Wheelings show deposition of material in the tractor tyre tread marks.**Soil Surface:** Mounded.**Soil Condition:** Partly slaked.**Topsoil Depth:** 25cm.**Texture:** Clay loam.**Colour:** 5YR3/3.**Structure:** Moderate medium and fine subangular in the upper 5cm with coarse angular clods to 25cm.**Subsoil Texture:** Clay loam.**Colour:** 5YR4/4.**Structure:** Weak subangular blocky with a tendency to platy in places.**Comment:** Subsoil noticeably less wet than the topsoil. Standing water only in the tramlines. Topsoil wet with plenty of seepage between structural units. Centres of the clods less wet than surfaces. Low bearing strength in the surface with a tendency to sink into the ground.**Alcester SP05.****Locality:** Lower Oversley Lodge.**Date:** 6th Dec 2000.**Site:** 23.**Grid Ref:** SP088553.**Elevation:** 45m..**Crop:** Winter cereals.**Estimated cover:** 30%.**Slope:** Cx 2.**Soil Series:** Whimple.**Erosion:** Turbid running water in wheelings but no evidence of scouring.**Soil Surface:** Mounded**Soil Condition:** Partly slaked.**Topsoil Depth:** 26cm.**Texture:** Clay loam.**Colour:** 5YR3/3.**Structure:** From the surface to 18cm depth the structure is moderate medium subangular with weak coarse angular clods to approximately 26cm.**Subsoil Texture:** Clay loam.**Colour:** 5YR3/3.**Structure:** Moderate coarse subangular.**Comment:** Similar to site 20. Seepage throughout the upper part of the topsoil (0-18cm). Structural units have less wet interiors than faces. Some standing water on the surface away from wheelings. Water fills hole to within 15cm of the surface in about 5 minutes. Crop yellowing on wheelings and headlands.**Alcester SP05.****Locality:** Bomfords.**Date:** 6th Dec 2000**Site:** 24.**Grid Ref:** SP093539.**Elevation:** 38m**Crop:** Broad beans.**Estimated cover:** 15%.**Slope:** Level**Soil Series:** Arrow. Stopped by stones at 75cm.**Erosion:** None visible.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 28cm.**Texture:** Sandy loam.**Colour:** 7.5YR3/2.**Structure:** Moderate medium subangular. Soil surface capped.**Subsoil Texture:** Sandy loam.**Colour:** 7.5YR4/4.**Structure:** Weak fine and medium subangular. Loose to dig.**Comment:** Notably not wet, soil feels to be at field capacity and no more. Standing water only in wheelings.**Alcester SP05.****Locality:** Bomfords.**Date:** 6th Dec 2000.**Site:** 25. **Grid Ref:** SP093539.**Elevation:** 37m. **Crop:** Fallow after vegetables.**Estimated cover:** N/A.**Slope:** Level.**Soil Series:** Arrow.**Soil Surface:** Furrowed.**Soil Condition:** Slaked.**Topsoil Depth:** 28cm.**Texture:** Sandy loam.**Colour:** 7.5YR3/2.**Structure:** Moderate coarse subangular blocky with some medium angular fragments.**Subsoil Texture:** Sandy loam.**Colour:** 7.5YR4/4.**Structure:** Weak subangular blocky that breaks readily. Occasional coarse denser fragments.**Comment:** Topsoil feels to be above field capacity with low load bearing capacity. No surface water. Faces of topsoil structure are wet.**Alcester SP05.****Locality:** Bomfords.**Date:** 6th Dec 2000.**Site:** 26.**Grid Ref:** SP072536.**Elevation:** 69m.**Crop:** Volunteer cereals and weeds.**Estimated cover:** 70%.

Slope: Level. **Soil Series:** Impossible to assess from auger bore-far too wet.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 26cm (ploughed to 20cm). **Texture:** Sandy loam.
Colour: 7.5YR3/2.
Structure: Moderate medium subangular blocky.
Subsoil Texture: Sandy loam. **Colour:** Too wet to assess accurately (7.5YR4/4).
Structure: Too wet deforms on digging.
Comment: Water table at 40cm depth. Standing water across the field.

Alcester SP05.

Locality: Weethly Farm, Ragley Hall Estate.
Date: 6th Dec 2000. **Site:** 31. **Grid Ref:** SP055564.
Elevation: 122m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Cx 8. **Soil Series:** Salwick. Clay loam at 48cm.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 12cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Moderate to well developed fine and medium subangular blocky held together by root mat.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR4/4.
Structure: Moderate fine and medium subangular blocky. Not cohesive.
Comment: Much drier than site 30. Appears to only be at field capacity.

Alcester SP05.

Locality: Weethly Farm, Ragley Hall Estate.
Date: 6th Dec 2000. **Site:** 32. **Grid Ref:** SP054565.
Elevation: 122m. **Crop:** Ley grass. **Estimated cover:** 100%.
Slope: Level. **Soil Series:** Salwick.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 22cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Moderate fine medium subangular blocky. Good root mat in top 5cm but no change to structure because of this.
Subsoil Texture: Sandy clay loam. **Colour:** 7.5YR4/4.
Structure: Weak medium subangular blocky.
Comment: Very slight poaching visible but no indication of damage to the structure from poaching. Soil at field capacity. No water table.

Alcester SP05.

Locality: Weethly Farm, Ragley Hall Estate.
Date: 6th Dec 2000. **Site:** 33. **Grid Ref:** SP055566.
Elevation: 120m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Cx 18. **Soil Series:** Salwick. Stopped by stones at 68cm.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 12cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Well to moderate fine subangular blocky, some peds with angled edges. Good root mat.
Subsoil Texture: Sandy loam (to 25cm). **Colour:** 7.5YR4/4.
Structure: Weak fine and medium subangular blocky.
Comment: Water table at 50cm depth. Standing water in gateway and around troughs. Soil appears not to be wetter than field capacity.

Alcester SP05.

Locality: Knighton Farm.
Date: 6th Dec 2000. **Site:** 34. **Grid Ref:** SP039567.
Elevation: 69m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Level. **Soil Series:** Brockhurst.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.

Topsoil Depth: 12cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Well developed fine and medium angular blocky, however subangular blocky would normally be expected. Therefore topsoil may be 'compacted'.
Subsoil Texture: Clay loam. **Colour:** 7.5YR4/4.
Structure: Moderate fine subangular blocky.
Comment: Very wet surface but soil profile below the surface is much less wet. Subsoil clay is plastic. No water table.

Alcester SP05.

Locality: Knighton Farm.
Date: 6th Dec 2000. **Site:** 35. **Grid Ref:** SP035567.
Elevation: 69m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Level. **Soil Series:** Brockhurst.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 9cm. **Texture:** Clay loam **Colour:** 10YR3/2.
Structure: Well to moderately developed fine and medium subangular blocky. Good root mat.
Subsoil Texture: Clay loam. **Colour:** 10YR4/4.
Structure: Moderate fine and medium subangular blocky.
Comment: Water at 40cm depth just above the clay subsoil (48cm). Hock deep mud in gateway, around feeders and along fence boundary.

Alcester SP05.

Locality: Knighton Farm
Date: 6th Dec 2000. **Site:** 36. **Grid Ref:** SP042568.
Elevation: 69m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Ll 1. **Soil Series:** Worcester.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 18cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Well to moderately developed fine subangular blocky.
Subsoil Texture: Clay. **Colour:** 5YR4/4.
Structure: Moderate fine prismatic.
Comment: Standing water across the whole field but occurs below the top of the grass sward. No obvious reason for this. No drainage of water to the low point in the field. No deep ponding of water in the bottom of the field. Walking across the grass leaves muddy footprints. Adjacent ridge and furrow only wet in the furrows.

Alcester SP05.

Locality: Priory Farm.
Date: 6th Dec 2000. **Site:** 37. **Grid Ref:** SP049572.
Elevation: 91m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Cv 1. **Soil Series:** Salwick.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 20cm. **Texture:** Clay loam. **Colour:** 7.5YR3/2.
Structure: Moderately fine and medium subangular over moderate medium and coarse subangular blocky at about 8cm.
Subsoil Texture: Clay loam. **Colour:** 7.5YR3/4.
Structure: Moderate medium subangular blocky.
Comment: No standing water. Slight surface wetness. Water table at 48cm and very wet to 100cm. Water rises in the excavated inspection hole to within 30cm of the soil surface within 5 minutes.

2. SEVERN CATCHMENT, ARDDLEEN SJ21

General Observations

The region was visited on 20th and 21st December 2000. There had been previous days of rain causing severe flooding in the Severn valley but flooding had receded from the floodplain by the time of the site visit. The recent rains account for the excessive amounts of water noted in places on the soil surface, in tramlines.

1. The area is dominantly grass with some arable that is part of the livestock enterprise e.g fodder crops. Grassland usually had noticeable areas of standing water and in most instances a thin veneer of water covered the whole of the surface. Cultivated land however tended to have water collecting or moving mainly in the wheelings both in drilled and stubble fields. Where the soil was drilled the topsoil usually contained excess water coating structural units. Wetness at depth was not common. Uncultivated arable land often had water on the surface in places but excess water was less evident below the surface than for cultivated arable sites.
2. Where the topsoil or subsoil was evidently wet and where water seepage was noted the interiors of the structural units were noticeably less wet as one might expect.
3. The subsoils at the majority of sites appeared to be below or just at field capacity. This was not expected considering the excessive amount of rain that had fallen in the previous weeks. Even soils classed as gleyed in the Soil Survey classification had mottled subsoils that appeared to be at less than field capacity. In some instances the subsoil was so 'dry' that it was easy to crumble between the fingers.
4. There appears to be a broad link between land use and structural condition that has been noted in areas investigated earlier but reinforced in the Arddleen area. These are as follows:
 - Cereals and oilseed rape tend to have coarser structural units or compaction at the base of the ploughed layer and into the top of the subsoil. Where recently cultivated this is emphasised by the loose ploughed layer.
 - Potatoes and sugar beet, after harvest, have compaction at the surface. This is less in the middle to lower part of the ploughed layer with compaction again at the base of the ploughed layer and into the upper part of the topsoil. Harvested potato ground occasionally has a structureless topsoil that is wet and "pudding" like.
 - Grassland appears to have a compacted or smeared surface which retains water at the soil surface. Below the surface the soil is usually at or below field capacity with compaction noted only in very young leys that usually have the cereal type of topsoil structure.
 - At present no specific structural distribution within the topsoils of vegetable and maize growing land has been recognised. Maize land however appears to have characteristics similar to that of cereals. The variability of vegetable types and the different management associated with them is unlikely to provide a clear-cut structural picture.

5. At present it is unclear why most sites investigated appear to have subsoils that are below field capacity. One reason for this is given here as a point for consideration and future discussion.

Excessive water has entered the topsoil at a rate that has not allowed the air in the subsoil pores to escape and be replaced by water. This has effectively sealed off the subsoil pores except where they are coarse enough to allow water in at the same time as allowing air in. This sealing effect will be exacerbated by coarse dense structure or but alleviated where recently loosened by cultivation

6. Very little visible erosion on this sheet compared with previous sheets, Alcester and Claverley.

Arddleen SJ21.

Locality: Trederwen Hall.

Date: 20th Dec 2000.

Site: 1.

Grid Ref: SJ262155.

Elevation: 63m.

Crop: Cut maize. **Estimated cover:** N/A.

Slope: Cv 1 Very hummocky.

Soil Series: Foggathorpe.

Erosion: Some deposition in wheelings.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 26cm.

Texture: Clay loam.

Colour: 2.5Y3/2.

Structure: Moderate to weak fine and medium subangular blocky. Too wet to give a good assessment. Weak coarse subangular in the wheelings.

Subsoil Texture: Clay.

Colour: 2.5Y4/4, mottled.

Structure: Weak coarse prismatic.

Comment: Very wet at the surface. Standing water in wheelings. Remains of ponding in wheelings. Lower part of the topsoil very wet with the water held above the subsoil. Water rapidly fills excavated hole. Subsoil drier than topsoil.

Arddleen SJ21.

Locality: Trederwen Hall.

Date: 20th Dec 2000.

Site: 2.

Grid Ref: SJ263154.

Elevation: 63m.

Crop: Permanent grass. **Estimated cover:** 90%.

Slope: Level but with localised hollows.

Soil Series: Foggathorpe with high silt content.

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 15cm.

Texture: Silty clay loam.

Colour: 2.5YR3/2.

Structure: Weak coarse subangular in the upper 2-3cm over well developed fine and medium subangular blocky.

Subsoil Texture: Clay to silty clay.

Colour: 2.5Y4/4, mottled.

Structure: Moderate medium prismatic.

Comment: Heavily poached by sheep. Extensive surface water. Water in hollows. Profile relatively dry (moist not wet) throughout. Poaching appears to have reduced the infiltration. Completely different wetness profile from the nearby site 1

Arddleen SJ21.

Locality: Trederwen Hall.

Date: 20th Dec 2000.

Site: 3.

Grid Ref: SJ265152.

Elevation: 64m.

Crop: Ley grass (4years) **Estimated cover:** 80%.

Slope: Cx 1.

Soil Series: Foggathorpe.

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 28cm. **Texture:** Silty clay loam. **Colour:** 2.5Y3/2.

Structure: Moderate coarse subangular with patches where angular fragments occur (old clods breaking).

Subsoil Texture: Clay to silty clay.

Colour: 2.5Y5/4, mottled.

Structure: Moderate coarse prisms.

Comment: Site on the edge of the alluvium. Field very hummocky with ponds of standing water in hollows between hummocks. Surface significantly wetter than the interior of the topsoil. Some seepage at topsoil/subsoil junction. Subsoil to depth is no wetter than the bulk of the topsoil.

Arddleen SJ21.

Locality: Trederwen Hall.

Date: 20th Dec 2000.

Site: 4.

Grid Ref: SJ263158.

Elevation: 67m.

Crop: Cereals. **Estimated cover:** 2%.

Slope: Ll 1 with localised hollows. **Soil Series:** Not known. Fenton? Clay at 60cm.

Erosion: Small rills running to the lowpoints of the field.

Soil Surface: Mounded.

Soil Condition: Slaked.

Topsoil Depth: 30cm, ploughed to 18cm. **Texture:** Silty clay loam.

Colour: 2.5Y3/2.

Structure: Weak to moderate fine loose subangular blocky in upper 18cm over medium and coarse subangular blocky breaking readily to medium and fine subangular blocky.

Subsoil Texture: Silty clay loam.

Colour: 2.5Y5/4, mottled.

Structure: Moderate fine and medium subangular but there is a hint of weak prismatic.

Comment: Upper 18cm of topsoil very wet with low bearing capacity. Below 18cm the interiors of the peds are relatively dry and water is concentrated in some pore and on some structure faces. Uniformly moist below the topsoil. Subsoil does not impede water.

Arddleen SJ21.

Locality: Trederwen Hall.

Date: 20th Dec 2000.

Site: 5.

Grid Ref: SJ263160.

Elevation: 68m.

Crop: Maize, 50% still to harvest.

Estimated cover: N/A.

Slope: Level.

Soil Series: Cegin.

Erosion: None visible.

Soil Surface: Mounded.

Soil Condition: Slaked.

Topsoil Depth: 30cm, ploughed to 18cm. **Texture:** Silty clay loam.

Colour: 10YR3/3.

Structure: Moderate fine and medium subangular blocky to 18cm depth over coarse subangular blocky and large dense clods, some with anaerobic bluish colours in their centres.

Subsoil Texture: l clay loam.

Colour: 2.5YR3/4, mottled.

Structure: Weak coarse subangular.

Comment: This site examined on the cut part of the crop. Standing water in wheelings particularly in gateways. Subsoil below the topsoil requires added moisture for texturing. Subsoil below 60cm becomes very moist. In wheelings topsoil compacted at the surface and structure is verging on massive.

Arddleen SJ21.

Locality: Trederwen Hall.

Date: 20th Dec 2000.

Site: 6.

Grid Ref: SJ264160.

Elevation: 68m.

Crop: Permanent grass. **Estimated cover:** 100%.

Slope: Level.

Soil Series: Not known. 5.73 Waterstock medium silty var?.

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 11cm. **Texture:** Silty clay loam. **Colour:** 10YR3/2.

Structure: Well developed fine subangular blocky. Good root mat.

Subsoil Texture: Silty clay loam.

Colour: 10YR5/4.

Structure: Well developed fine subangular blocky.

Comment: Some poaching by sheep. Surface wet in places. No moving water in the topsoil or subsoil. Requires addition of water for texturing. No deep subsoil wetness.

Arddleen SJ21.

Locality: Trederwen Farm.

Date: 20th Dec 2000.

Site: 7.

Grid Ref: SJ269160.

Elevation: 65m.

Crop: Permanent grass.

Estimated cover: 100%

Slope: Generally level but localised depressions

Soil Series: Cegin.

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 12cm.

Texture: Silty clay loam. **Colour:** 2.5Y3/2.

Structure: Well to moderately developed subangular blocky with common angular edges. Marginal to angular blocky.

Subsoil Texture: Silty clay loam.

Colour: 2.5Y4/4, mottled.

Structure: Weak medium prismatic breaking readily to well developed fine subangular blocky.

Comment: Ridge and furrow field pattern. 5cm root mat. Poached. Standing water in hoof prints. Much less wet below the soil surface. Whole profile has similar water content (moist). Some slight seepage into the auger hole at 35cm and 60cm.

Arddleen SJ21.

Locality: Trederwen Farm.

Date: 20th Dec 2000.

Site: 8.

Grid Ref: SJ268162.

Elevation: 68cm. **Crop:** grass ley (2years). **Estimated cover:** 100%.

Slope: Level.

Soil Series: Sannan.

Erosion: None visible.

Soil Surface: N/A

Soil Condition: N/A.

Topsoil Depth: 28cm, ploughed to 20cm. **Texture:** Silty clay loam.

Colour: 10YR3/3.

Structure: Moderate medium subangular breaking to moderate fine subangular in upper 20cm over moderate coarse subangular and angular fragments. Compacted.

Subsoil Texture: Silty clay loam.

Colour: 2.5Y5/3.

Structure: Moderate coarse subangular blocky.

Comment: Profile uniformly moist. Slightly wetter on the soil surface. Less wet than the permanent pasture at site 7.

Arddleen SJ21.

Locality: Trederwen Farm.

Date: 20th Dec 2000.

Site: 9.

Grid Ref: SJ271167.

Elevation: 63m.

Crop: Peas, cropped with grass regrowth.

Estimated cover: 70%.

Slope: Cx 1.5.

Soil Series: Not known. ZC at 38cm.

Erosion: None visible.

Soil Surface: Mounded.

Soil Condition: Slaked.

Topsoil Depth: 26cm.

Texture: Silty clay loam. **Colour:** 2.5Y3/2.

Structure: Loose moderate medium subangular blocky.

Subsoil Texture: Silty clay loam.

Colour: 2.5Y5/4.

Structure: Moderate to well developed fine and medium subangular blocky. Vague indication of weak prismatic.

Comment: Much of this field has been flooded but the site is above flood line. Much farm midden material included at the base of the topsoil. No surface water.

Arddleen SJ21.

Locality: Rhos Farm.

Date: 20th Dec 2000.

Site: 10.

Grid Ref: SJ274173.

Elevation: 67m. **Crop:** Permanent grass. **Estimated cover:** 100%.

Slope: Level.

Soil Series: Cegin (mottled at 35cm).

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 11cm.

Texture: Silty clay loam. **Colour:** 10YR3/3.

Structure: Moderate medium subangular breaking readily to fine subangular blocky.

Subsoil Texture: Silty clay loam.

Colour: 10YR5/4.

Structure: Well developed fine subangular blocky.

Comment: No wetness in the profile. Requires addition of moisture to texture. Surface poached but no surface compaction noted. Good root mat at soil surface.

Arddleen SJ21.**Locality:** Rhos Farm.**Date:** 20th Dec 2000.**Site:** 11.**Grid Ref:** SJ273175.**Elevation:** 67m. **Crop:** Permanent grass. **Estimated cover:** 85%.**Slope:** Level.**Soil Series:** Denbigh. Stopped at 70cm, wet at 70cm.**Erosion:** None visible.**Soil Surface:** N/A.**Soil Condition:** N/A.**Topsoil Depth:** 8cm.**Texture:** Silty clay loam. **Colour:** 10YR3/2.**Structure:** Moderate medium subangular blocky breaking to fine subangular blocky in the upper 3-4cm. Moderate fine subangular blocky below, much looser.**Subsoil Texture:** Silty clay loam.**Colour:** 10YR4/4.**Structure:** Well to moderate fine subangular blocky.**Comment:** Field contains depressions partly filled with water. Badly poached in places with water in the hoof prints. Wet at 70cm. Good root mat.**Arddleen SJ21.****Locality:** Rhos Farm.**Date:** 20th Dec 2000.**Site:** 12.**Grid Ref:** SJ275175.**Elevation:** 67m. **Crop:** Permanent grass. **Estimated cover:** 100%.**Slope:** Level.**Soil Series:** Sannan.**Erosion:** None visible.**Soil Surface:** N/A.**Soil Condition:** N/A.**Topsoil Depth:** 12cm.**Texture:** Silty clay loam. **Colour:** 10YR3/3.**Structure:** Moderate medium subangular blocky breaking to well developed fine subangular blocky.**Subsoil Texture:** Silty clay loam.**Colour:** 10YR4/4.**Structure:** Moderate fine subangular blocky.**Comment:** Some indentations and hollows in the field. Recently rolled, tyre marks can be seen on the grass but very little wheel penetration, good load bearing. Good root mat. Slightly moist throughout.**Arddleen SJ21.****Locality:** Penthrryn.**Date:** 20th Dec 2000.**Site:** 13.**Grid Ref:** SJ271169.**Elevation:** 66m. **Crop:** Cereal stubble.**Estimated cover:** N/A.**Slope:** Ll 1.**Soil Series:** .**Erosion:** None visible.**Soil Surface:** Mounded.**Soil Condition:** Slaked.**Topsoil Depth:** 30cm.**Texture:** Clay loam.**Colour:** 10YR3/2.**Structure:** Moderate coarse subangular blocky.**Subsoil Texture:** Clay loam.**Colour:** 10YR5/4.**Structure:** Moderate medium subangular blocky.**Comment:** Recent application of manure. Water seepage between structural units in the topsoil. Centres of peds less wet than the faces.**Arddleen SJ21.****Locality:** Penthrryn.**Date:** 20th Dec 2000.**Site:** 14.**Grid Ref:** SJ271166.**Elevation:** 68m.**Crop:** Cereal stubble with volunteers grazed by sheep.**Estimated cover:** N/A.**Slope:** Level.**Soil Series:** Cegin.**Erosion:** None visible.**Soil Surface:** Mounded.**Soil Condition:** Slaked.**Topsoil Depth:** 28cm.**Texture:** Silty clay loam. **Colour:** 2.5Y3/2.**Structure:** Moderate coarse subangular blocky with some large cloddy/massive areas.**Subsoil Texture:** Silty clay loam.**Colour:** 2.5Y5/4, mottled.**Structure:** Moderate medium subangular blocky.**Comment:** Surface poached. Standing water in hoof prints. Slightly moist throughout the profile. Definite topsoil compaction.**Arddleen SJ21.**

Locality: Bron afon.

Date: 21st Dec 2000.

Site: 15.

Grid Ref: SJ238194.

Elevation: 85m.

Crop: Stubble turnips after arable.

Estimated cover: 90%.

Slope: Ll 1.

Soil Series: 711 Stanway? |Shale material at 70cm.

Erosion: None visible.

Soil Surface: Mounded.

Soil Condition: Slaked.

Topsoil Depth: 25cm, ploughed to 18cm. **Texture:** Silty clay loam to clay loam.

Colour: 10YR3/2.

Structure: Moderate medium subangular blocky in the upper 18cm becoming moderate to weak coarse subangular blocky to 25cm.

Subsoil Texture: Silty clay loam.

Colour: 2.5Y4/3.

Structure: Weak coarse subangular blocky in the upper 3-4cm over moderate medium subangular blocky.

Comment: Topsoil significantly wetter than the subsoil. Subsoil needs added water for texture assessment. No obvious wheelings or tramlines but bearing strength is not high. Below topsoil the subsoil is uniformly moist to depth.

Arddleen SJ21.

Locality: Bron afon.

Date: 21st Dec 2000.

Site: 16.

Grid Ref: SJ224188.

Elevation: 85m.

Crop: first year of clover after cereals.

Estimated cover: 90%.

Slope: Ll 1.

Soil Series: Foggathorpe.

Erosion: None visible.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 24cm. **Texture:** Clay to silty clay. **Colour:** 2.5Y3/2.

Structure: Moderate to weak very coarse subangular blocky with many angular edges.

Subsoil Texture: Clay. **Colour:** 2.5Y4/4, mottled.

Structure: Moderate to weak coarse subangular blocky becoming moderate medium angular and subangular blocky with depth.

Comment: Some bluish anaerobic colours in the topsoil. Water films on ped faces. Uniformly moist below the topsoil. Topsoil surface is wet.

Arddleen SJ21.

Locality: Bron afon.

Date: 21st Dec 2000.

Site: 17.

Grid Ref: SJ222187.

Elevation: 90m.

Crop: Field beans, part harvested.

Estimated cover: N/A.

Slope: Ll 4.5.

Soil Series: Not known. Deep silty Denbigh var or Atrim var.

Erosion: None visible.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 23cm. **Texture:** Silty clay loam. **Colour:** 2.5Y3/2.

Structure: Moderate medium and coarse subangular blocky. Coarse aggregates break readily to medium or smaller.

Subsoil Texture: Silty clay loam.

Colour: 2.5Y4/4.

Structure: Moderate coarse subangular blocky breaking readily to medium sized fragments.

Comment: No rutting of the soil. No erosion even on such a good slope. Topsoil marginally wetter than the subsoil. Quite stony with large angular lumps of rock.

Arddleen SJ21.

Locality: Bron afon.

Date: 21st Dec 2000.

Site: 18.

Grid Ref: SJ211175.

Elevation: 75m.

Crop: First year clover after cereals.

Estimated cover: 100%.

Slope: Level.

Soil Series: Foggathorpe, becoming ZCL to base of profile.

Erosion: None visible.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 24cm, drilled to 10cm. **Texture:** Silty clay to clay.

Colour: 2.5Y3/2.

Structure: Moderate medium and coarse subangular blocky in the drill depth over coarse and very coarse subangular blocky below drill depth.

Subsoil Texture: Silty clay.

Colour: 2.5Y4/4, mottled.

Structure: Coarse prismatic.

Comment: Upper part of the topsoil is very moist, lower part is less wet and similar to the rest of the profile. Site occurs in a valley bottom and is not as wet as would be expected.

Arddleen SJ21.

Locality: Bron afon.

Date: 21st Dec 2000.

Site: 19.

Grid Ref: SJ216175.

Elevation: 95m. **Crop:** Stubble turnips. **Estimated cover:** 40%.

Slope: Ll 5.

Soil Series: Denbigh.

Erosion: None visible.

Soil Surface: Mounded.

Soil Condition: Slaked.

Topsoil Depth: 24cm, ploughed to 18cm. **Texture:** Clay loam to silty clay loam.

Colour: 10YR3/2.

Structure: Moderate medium subangular blocky to 18cm over medium and coarse subangular blocky between 18 to 25cm.

Subsoil Texture: Clay loam.

Colour: 10YR4/4.

Structure: Moderate fine and medium subangular blocky.

Comment: Surprisingly dry. Profile uniformly moist below the topsoil. Topsoil is wetter but still requires added moisture for texturing.

Arddleen SJ21.

Locality: Bron afon.

Date: 21st Dec 2000.

Site: 20.

Grid Ref: SJ218175.

Elevation: 100m. **Crop:** Beans, chisel ploughed. **Estimated cover:** N/A.

Slope: Ll 3.5.

Soil Series: Cegin? Stopped at 65cm.

Erosion: None visible.

Soil Surface: Mounded.

Soil Condition: Slaked.

Topsoil Depth: 24cm, cultivated to 20cm. **Texture:** Silty clay loam.

Colour: 10YR3/2.

Structure: Loose moderate fine and medium subangular blocky to 20cm over moderate coarse subangular blocky.

Subsoil Texture: Silty clay loam.

Colour: 2.5Y4/4.

Structure: Moderate coarse subangular blocky.

Comment: Uniformly moist, no surface wetness.

Arddleen SJ21.

Locality: Bron afon.

Date: 21st Dec 2000.

Site: 21.

Grid Ref: SJ217174.

Elevation: 95m. **Crop:** Cereal stubble. **Estimated cover:** N/A.

Slope: Cx 2.5.

Soil Series: Denbigh.

Erosion: None visible.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 25cm. **Texture:** Clay loam. **Colour:** 10YR3/2.

Structure: Moderate medium and coarse subangular blocky with occasional patch of very coarse.

Subsoil Texture: Clay loam.

Colour: 10YR4/4.

Structure: Moderate medium subangular blocky.

Comment: Uniformly moist throughout the profile. No standing water. No visible water films on ped faces.

Arddleen SJ21.

Locality: Tre-wylan.

Date: 21st Dec 2000.

Site: 22

Grid Ref: SJ229178.

Elevation: 110m **Crop:** Permanent grass, sheep and cattle.

Estimated cover: 100%.

Slope: Ll 7.

Soil Series: Cegin.

Erosion: None visible.

Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 12cm. **Texture:** Silty clay loam. **Colour:** 10YR3/2, mottled.
Structure: Weak medium prismatic breaking readily to moderate medium subangular blocky.
Subsoil Texture: Silty clay loam. **Colour:** 2.5Y5/3, mottled.
Structure: Well developed fine and medium subangular blocky with some angular peds.
Comment: Good root mat. Soil surface poached. No water in hoof prints but soil surface is wet. Hooves must seal the surface though there is no indication of surface compaction.

Arddleen SJ21.

Locality: Tre-wylan.
Date: 21st Dec 2000. **Site:** 23. **Grid Ref:** SJ231178.
Elevation: 110m. **Crop:** Permanent grass. **Estimated cover:** 90%.
Slope: L1 3.5. **Soil Series:** Cegin, few stones.

Erosion: None visible.

Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 12cm. **Texture:** Silty clay loam. **Colour:** 2.5Y4/2, mottled.
Structure: Well developed fine and medium subangular.

Subsoil Texture: Silty clay loam. **Colour:** 2.5Y5/2.

Structure: Weak prismatic breaking to fine and medium subangular blocky and angular.

Comment: Surface very wet. Poached by sheep. Standing water in hoof prints. Possible springline influence along the slope because locally flowing water was noticed. Below soil surface profile is less wet and uniformly moist throughout.

Arddleen SJ21.

Locality: Tre-wylan.
Date: 21st Dec 2000. **Site:** 24. **Grid Ref:** SJ229177.
Elevation: 107m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Level. **Soil Series:** Mapped as Foggathorpe but may be alluvial.

Erosion: None visible.

Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 10cm. **Texture:** Clay loam. **Colour:** 10Yr3/3.

Structure: Thick root mat difficult to assess structure in the topsoil but conclude that it is moderate fine subangular blocky.

Subsoil Texture: Clay. **Colour:** 10YR4/2, mottled.

Structure: Weak fine and medium prismatic breaking readily to well developed fine angular blocky. At 19cm the structure is coarse prismatic.

Comment: Not poached like sites 22 and 23. Assume no stock grazed in this field when wet. Film of water on soil surface across the whole field. No apparent compaction in the surface to account for this. Uniformly very moist profile (just about plastic).

Arddleen SJ21.

Locality: Tre-wylan.
Date: 21st Dec 2000. **Site:** 25. **Grid Ref:** SJ226176.
Elevation: 107m. **Crop:** Permanent grass, ridge and furrow.
Estimated cover: 100%.
Slope: Cx 1. **Soil Series:** Cegin, stopped by stones at 70cm.

Erosion: None visible.

Soil Surface: N/A. **Soil Condition:** N/A.

Topsoil Depth: 10cm. **Texture:** Silty clay loam.

Colour: 10YR3/2, slightly mottled.

Structure: Moderate fine subangular blocky. Strong root mat.

Subsoil Texture: Silty clay loam. **Colour:** 10YR5/3, mottled.

Structure: Weak fine prisms breaking to moderate fine subangular blocky with some angular aggregates.

Comment: Film of surface water. Wetter in localised depressions. Some poaching but not excessive. Subsurface seepage at 29cm. Below this soil is estimated to be below field capacity. Seepage fills auger hole within 5 minutes.

Arddleen SJ21.

Locality: Tre-wylan.
Date: 21st Dec 2000. **Site:** 26. **Grid Ref:** SJ225175.

Elevation: 115m. **Crop:** Permanent grass. **Estimated cover:** 80%.
Slope: L1 4. **Soil Series:** Denbigh, deep var.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 11cm. **Texture:** Silty clay loam. **Colour:** 10YR3/2.
Structure: Well developed fine and medium subangular blocky. Strong root mat.
Subsoil Texture: Silty clay loam. **Colour:** 10YR4/4.
Structure: Well developed fine and medium subangular blocky.
Comment: Profile slightly moist to 60cm then moist to 70cm then wet. Slight surface poaching and surface noticeably moister than below the surface. Requires wetting for texture assessment.

Arddleen SJ21.

Locality: Tre-wylan.
Date: 21st Dec 2000. **Site:** 27. **Grid Ref:** SJ227174.
Elevation: 115m. **Crop:** Permanent grass. **Estimated cover:** 80%.
Slope: Cv 3. **Soil Series:** Denbigh var.
Erosion: Some slight sediment movement and resorting noted in hoof prints and on barer ground.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 10cm. **Texture:** Silty clay loam. **Colour:** 10YR3/2.
Structure: Well developed fine angular blocky. Good root mat.
Subsoil Texture: Silty clay loam. **Colour:** 10YR4/3.
Structure: Well developed fine and medium subangular blocky.
Comment: Poached. Soil surface wet. No standing water in hoof prints. Very wet at 58cm. From just below the soil surface to 58cm the soil is uniformly moist.

Arddleen SJ21.

Locality: Tre-wylan.
Date: 21st Dec 2000. **Site:** 28. **Grid Ref:** SJ226177.
Elevation: 105m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Level. **Soil Series:** Mapped as Foggathorpe but could well be alluvial.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 10cm. **Texture:** Clay. **Colour:** 2.5Y3/2.
Structure: Thick root mat makes structural assessment difficult but consider structure to be well developed fine subangular blocky.
Subsoil Texture: Clay. **Colour:** 2.5Y4/2.
Structure: Moderately developed medium subangular blocky breaking to fine subangular. At 24cm coarse prisms.
Comment: May be alluvial. Stoneless. Wet surface with standing water in places. Very little noticeable poaching.

Arddleen SJ21.

Locality: Garreg Lwyd.
Date: 21st Dec 2000. **Site:** 29. **Grid Ref:** SJ223151.
Elevation: 126m. **Crop:** Permanent grass. **Estimated cover:** 90%.
Slope: Cx 1. **Soil Series:** Sannan.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 12cm. **Texture:** Silty clay loam. **Colour:** 10YR3/2.
Structure: Well developed fine subangular blocky. Good root mat.
Subsoil Texture: Silty clay loam. **Colour:** 10YR4/4.
Structure: Moderate to well developed fine and medium subangular blocky.
Comment: Some poaching, not recent. Surface is wet. Moisture content of profile less than field capacity. Crumbly at depth.

Arddleen SJ21.

Locality: Garreg Lwyd.
Date: 21st Dec 2000. **Site:** 30. **Grid Ref:** SJ224151.
Elevation: 125m. **Crop:** Permanent grass. **Estimated cover:** 90%.

Slope: L1 1.5. **Soil Series:** Not known. Hass mottles above a subsoil that is definitely not mottled. Mottles are definitely mottles and not parent material colours.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 12cm. **Texture:** Silty clay loam. **Colour:** 10YR3/3, mottled.
Structure: Moderate medium subangular blocky.
Subsoil Texture: Silty clay loam. **Colour:** 10YR4/4.
Structure: Moderate medium and coarse subangular blocky.
Comment: Surface very wet in places. Poached with water in hoof prints. Subsoil below 30cm is very slightly moist and crumbly (well below field capacity). Seepage at 58cm into the auger hole but still crumbly below this. No visible mottles below 30cm.

Arddleen SJ21.

Locality: Garreg Lwyd.
Date: 21st Dec 2000. **Site:** 31. **Grid Ref:** SJ226171.
Elevation: 120m. **Crop:** Permanent grass. **Estimated cover:** 80%.
Slope: Level. **Soil Series:** Cegin.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 10cm. **Texture:** Silty clay loam. **Colour:** 10YR3/2.
Structure: Moderate fine subangular blocky with common angular edges.. Strong root mat.
Subsoil Texture: Silty clay loam. **Colour:** 10YR3/3.
Structure: Weak prismatic breaking to moderate medium and fine subangular blocky.
Comment: Much poaching. Sheep grazing the field. Soil surface is wet and easily muddied.

3. YORKSHIRE OUSE CATCHMENT, BEDALE SE28

General Observations

The region was visited on 17th and 18th January 2001. There had been excessive rain in November and December causing severe flooding in the north of England. No rain of any quantity had fallen in recent weeks. The weather at the time of survey was cold with freezing temperatures and snow showers.

1. The ground was frozen to in excess of 5cm depth in places. In some sheltered sites and where there was a crop or stubble cover topsoils were less likely to be frozen. The frozen ground masked the load bearing ability of the topsoil which at previously visited sites served as an indication of potential wetness and structural damage. In places the structure at the soil surface was masked.
2. Land not yet ploughed was noticeably much drier than expected given the wet winter.
3. Where the topsoil or subsoil was evidently wet and where water seepage was noted the interiors of the structural units were noticeably less wet as one might expect.
4. The presence of stones in many of the soils on this sheet help to mask the presence of compaction and allow the soil to break when it is dug.
5. The term "massive" in relation to structure is used where little or no discernible soil fragmentation was observed.

Bedale SE28.

Locality: Northcote.

Date: 17th Jan 2001.

Site: 1.

Grid Ref: SE244809.

Elevation: 137m. **Crop:** Winter cereals ploughed and drilled.

Estimated cover: 1%.

Slope: Cx 1.

Soil Series: Aberford. Stopped by stones or rock at 45cm.

Erosion: None visible.

Soil Surface: Slightly mounded.

Soil Condition: Slaked.

Topsoil Depth: 28cm ploughed to 20cm.

Texture: Clay loam.

Colour: 2.5Y4/2.

Structure: Moderate fine and medium angular blocky becoming coarse subangular blocky below 20cm.

Subsoil Texture: Clay loam.

Colour: 2.5Y4/4.

Structure: Coarse subangular blocky.

Comment: Nearby ploughing is smearing the base of the plough layer. Very stony with limestone. Topsoil is very plastic. No subsoil mottles visible.

Bedale SE28.

Locality: Northcote.

Date: 17th Jan 2001.

Site: 2.

Grid Ref: SE214811.

Elevation: 145m. **Crop:** Drilled winter wheat.

Estimated cover: 2%.

Slope: Cx 0.5.

Soil Series: Aberford?

Erosion: None visible.

Soil Surface: Slightly mounded.

Soil Condition: Slaked.

Topsoil Depth: 25cm. Ploughed to 20cm.

Texture: Heavy clay loam.

Colour: 2.5Y4/2 **Structure:** Moderate fine and medium angular. Looks like the result of freezing but reaches to 20cm depth.

Subsoil Texture: Heavy clay loam.

Colour: 2.5Y4/4.

Structure: Weak coarse angular blocky (compacted).

Comment: Stopped at 62cm by stones or rock. Stones dominantly limestone. Junction of topsoil with the subsoil is compacted. Topsoil is very deformable but below 28cm (below the compaction) the soil matrix is drier and is not quite plastic.

Bedale SE28.

Locality: Northcote.

Date: 17th Jan 2001.

Site: 3.

Grid Ref: SE242809.

Elevation: 134m. **Crop:** Drilled winter wheat.

Estimated cover: 10%.

Slope: Cx 2.

Soil Series: East Keswick.

Erosion: None visible.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 25cm Ploughed to 20cm. **Texture:** Clay loam.

Colour: 2.5Y4/2.

Structure: Moderate fine and medium subangular blocky.

Subsoil Texture: Clay loam.

Colour: 10YR4/4.

Structure: Moderate medium subangular blocky.

Comment: A slight hint of increased density at the topsoil/subsoil junction but only slight. Topsoil moister than the subsoil.

Bedale SE28.

Locality: Northcote.

Date: 17th Jan 2001.

Site: 4.

Grid Ref: SE245807.

Elevation: 129m. **Crop:** Drilled wheat.

Estimated cover: 1% poor establishment.

Slope: Ll 1.

Soil Series: East Keswick.

Erosion: Evidence of reorganisation and movement of mineral material across the soil surface. Most evident in wheelings. Evidence of ponding in depressions.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 25cm Ploughed to 20cm. **Texture:** Clay loam.

Colour: 10YR3/2.

Structure: Moderate medium subangular blocky with common angular edges.

Subsoil Texture: Clay loam.

Colour: 10YR4/4.

Structure: Moderate coarse subangular blocky.

Comment: Topsoil moderately stony. No visible mottles. Similarly moist throughout the profile.

Bedale SE28.

Locality: Whitwell Hill.

Date: 17th Jan 2001.

Site: 5

Grid Ref: SE245810.

Elevation: 135m. **Crop:** Lifted fodder beet.

Estimated cover: N/A.

Slope: Cv 1.

Soil Series: East Keswick.

Erosion: None visible.

Soil Surface: Mounded.

Soil Condition: Partly slaked.

Topsoil Depth: 26cm. Ploughed to 20cm. **Texture:** Clay loam.

Colour: 10YR3/2

Structure: The top 5cm is compacted and could be considered massive but is easily broken. Below there is a moderate medium subangular blocky structure. At 20-22cm structure is weak to moderate coarse subangular blocky.

Subsoil Texture: Clay loam.

Colour: 10YR4/4.

Structure: Upper 5-6cm is coarse subangular blocky.

Comment: Site excavated in low pressure wheeling.

Bedale SE28.

Locality: Mowbray Hill.

Date: 17th Jan 2001.

Site: 6.

Grid Ref: SE258802.

Elevation: 99m. **Crop:** Permanent grass.

Estimated cover: 100%.

Slope: Cx 2.

Soil Series: Malham (shallow var). Sl stony, non-calc and stopped at 38cm.

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 12cm. **Texture:** Sandy silt loam, high silt. **Colour:** 10YR3/2.

Structure: Moderate fine and medium subangular blocky.

Subsoil Texture: Sandy silt loam (high % silt).

Colour: 10YR4/4.

Structure: Moderate fine and medium subangular blocky.

Comment: Soil si below field capacity. Structure is good but peds are not distinctive in the horizon. Stopped at 38cm by rock.

Bedale SE28.**Locality:** Mowbray Hill.**Date:** 17th Jan 2001.**Site:** 7.**Grid Ref:** SE257814.**Elevation:** 99m. **Crop:** Spring cereal stubble mucked.**Estimated cover:** N/A.**Slope:** Cx 2.**Soil Series:** Aberford, rock at 36cm.**Erosion:** None visible.**Soil Surface:** N/A.**Soil Condition:** N/A.**Topsoil Depth:** 25cm.**Texture:** Clay loam.**Colour:** 2.5Y4/3.**Structure:** Moderate medium subangular blocky.**Subsoil Texture:** Clay loam.**Colour:** 2.5Y4/4.**Structure:** Moderate medium subangular blocky.**Comment:** Stopped at 36cm. Topsoil is non-calc, subsoil sl calc. Common stones. No visible compaction.**Bedale SE28.****Locality:** Mowbray Hill.**Date:** 17th Jan 2001.**Site:** 8.**Grid Ref:** SE259815.**Elevation:** 91m. **Crop:** Permanent grass.**Estimated cover:** 90%.**Slope:** Cx 4.**Soil Series:** Aberford, stopped at 64cm.**Erosion:** None visible.**Soil Surface:** N/A.**Soil Condition:** N/A.**Topsoil Depth:** 12cm.**Texture:** Sandy silt loam. **Colour:** 10YR3/2.**Structure:** Moderate fine and medium subangular blocky with patches of coarse subangular blocky.**Subsoil Texture:** Clay loam.**Colour:** 7.5YR4/4.**Structure:** Moderate medium subangular blocky.**Comment:** Some poaching. Profile water content is below field capacity.**Bedale SE28.****Locality:** Mowbray Hill.**Date:** 17th Jan 2001.**Site:** 9.**Grid Ref:** SE261814.**Elevation:** 99m. **Crop:** winter barley stubble recently mucked.**Estimated cover:** N/A.**Slope:** Level.**Soil Series:** Waltham. Non-calc, stopped at 72cm by stns.**Erosion:** None visible.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 28cm. Ploughed to 20cm. **Texture:** Clay loam, high silt.**Colour:** 10YR3/2.**Structure:** Moderate fine and medium subangular blocky with medium subangular blocky at the base of the horizon.**Subsoil Texture:** Clay loam, high silt.**Colour:** 10YR4/3.**Structure:** Moderate medium subangular blocky.**Comment:** Common stones. Subsoil less moist than the subsoil (below field capacity).**Bedale SE28.****Locality:** Mowbray Hill.**Date:** 17th Jan 2001.**Site:** 10.**Grid Ref:** SE263813.**Elevation:** 99m. **Crop:** was winter barley, ploughed. **Estimated cover:** N/A**Slope:** None visible.**Soil Series:** Aberford, common stones, stopped by stns/rock at 35cm.**Erosion:** None visible.**Soil Surface:** Furrowed.**Soil Condition:** Unslaked.**Topsoil Depth:** 28cm ploughed to 20cm. **Texture:** Clay loam, high silt.**Colour:** 2.5Y4/2.**Structure:** Moderate fine and medium subangular blocky.**Subsoil Texture:** Clay loam, high silt.**Colour:** 2.5Y5/4.**Structure:** Moderate medium subangular blocky with numerous angular edges.**Comment:** Nothing to add.

Bedale SE28.**Locality:** Mowbray Hill.**Date:** 17th Jan 2001.**Site:** 11.**Grid Ref:** SE263809.**Elevation:** 85m. **Crop:** winter barley stubble, mucked.**Estimated cover:** N/A.**Slope:** Cx 4.**Soil Series:** Aberford? Calc FLS at 25cm, rock at 82cm.**Erosion:** None visible.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** not recorded.**Texture:** Clay loam, high silt.**Colour:** 2.5Y3/3.**Structure:** Moderate fine and medium subangular blocky.**Subsoil Texture:** Clay loam.**Colour:** 2.5Y4/3.**Structure:** Moderate medium subangular blocky.**Comment:** Profile is below field capacity.**Bedale SE28.****Locality:** Mowbray Hill.**Date:** 17th Jan 2001.**Site:** 12.**Grid Ref:** SE260809.**Elevation:** 88m. **Crop:** Permanent grass. **Estimated cover:** 100%**Slope:** Cx 2.**Soil Series:** Not known, stopped at 82cm, non-calc.**Erosion:** None visible**Soil Surface:** N/A.**Soil Condition:** N/A.**Topsoil Depth:** 20cm.**Texture:** Sandy silt loam, high silt. **Colour:** 10YR3/2.**Structure:** Moderate coarse subangular blocky in the upper 8cm over moderate fine and medium subangular blocky.**Subsoil Texture:** Clay loam.**Colour:** 7.5YR4/4.**Structure:** Moderate medium subangular blocky.**Comment:** Compacted at the surface. Profile estimated to be below field capacity.**Bedale SE28.****Locality:** Mowbray Hill.**Date:** 17th Jan 2001.**Site:** 13.**Grid Ref:** SE258808.**Elevation:** 91m. **Crop:** Lifted potatoes. **Estimated cover:** N/A.**Slope:** Cx 2.5.**Soil Series:** East Keswick.**Erosion:** Rills and gulleys common in wheelings. Large amount of deposited sand at the base of slopes.**Soil Surface:** Mounded.**Soil Condition:** Slaked.**Topsoil Depth:** 28cm.**Texture:** Clay loam.**Colour:** 10YR3/2.**Structure:** Weak medium subangular blocky.**Subsoil Texture:** Clay loam.**Colour:** 10YR4/4.**Structure:** Moderate coarse subangular blocky with numerous angular edges.**Comment:** Site examined between wheelings. Thin water films around stones. In the wheelings the upper 10cm of the topsoil is platy and angular blocky (compacted) and is less wet than loose material between the wheelings.**Bedale SE28.****Locality:** Mowbray Hill.**Date:** 17th Jan 2001.**Site:** 14.**Grid Ref:** SE255810.**Elevation:** 106m. **Crop:** Lifted sugar beet. **Estimated cover:** N/A.**Slope:** Cx 2.**Soil Series:** Aberford.**Erosion:** No visible erosion. Compare site 13 in adjacent field.**Soil Surface:** Mounded.**Soil Condition:** Partly slaked.**Topsoil Depth:** 28cm. Ploughed in upper 20cm.**Texture:** Clay loam.**Colour:** 10YR3/2.**Structure:** Weak to moderate fine and medium subangular blocky to 20cm over weak very coarse subangular blocky (compacted).**Subsoil Texture:** Clay loam, stony.**Colour:** 10YR4/4.**Structure:** Weak coarse subangular with some angular edges.**Comment:** Stopped at 48cm by stns/rock. Profile estimated to be below field capacity.**Bedale SE28.****Locality:** Mowbray Hill.**Date:** 17th Jan 2001.**Site:** 15.**Grid Ref:** SE252812.

Elevation: 114m. **Crop:** Sugar Beet, ploughed. **Estimated cover:** N/A.
Slope: Cv 1. **Soil Series:** East Keswick.
Erosion: No visible erosion.
Soil Surface: Furrowed. **Soil Condition:** Unslaked.
Topsoil Depth: 28cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate medium subangular blocky in plough becoming coarse subangular blocky with numerous angular faces.
Subsoil Texture: Clay loam. **Colour:** 10YR4/4.
Structure: Medium coarse subangular blocky with angular edges and occasional platy remnant.
Comment: Profile slightly below field capacity. Very wet in gateway. Some smearing in furrow but not excessive, coarse channels are not sealed by plough.

Bedale SE28.

Locality: Mowbray Hill.
Date: 17th Jan 2001. **Site:** 16. **Grid Ref:** SE24815.
Elevation: 114m. **Crop:** Peas ploughed and drilled to winter wheat.
Estimated cover: N/A.
Slope: Ll 1.5. **Soil Series:** Waltham.
Erosion: None visible.
Soil Surface: Mounded. **Soil Condition:** Unslaked.
Topsoil Depth: 26cm. ploughed to 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Dense weak coarse subangular blocky with some medium angular fragments.
Subsoil Texture: Clay loam. **Colour:** 7.5YR3/2.
Structure: Weak coarse subangular blocky, compacted.
Comment: Topsoil very moist. Thin water films on some stones. Centres of aggregates are drier than faces. Subsoil below about 40cm. is less moist than horizons above.

Bedale SE28.

Locality: Mowbray Hill.
Date: 17th Jan 2001. **Site:** 17. **Grid Ref:** SE248816.
Elevation: 114m. **Crop:** Winter wheat stubble – mucked.
Estimated cover: N/A.
Slope: Ll 0.5 **Soil Series:** Tetbury. Clay at 55cm. soft rock at 68cm.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. ploughed to 20cm. **Texture:** Clay loam. **Colour:** 2.5Y4/2.
Structure: Weak coarse prisms breaking to fine and medium angular blocky in upper 20cm. over very coarse subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 2.5Y4/4.
Structure: Very coarse subangular blocky compacted few planes of weakness.
Comment: Topsoil feels moister than subsoil. Subsoil clay is just plastic. The soft limestone is dry and crumbly. Because of the muckspreading there are numerous wheelings so site is located between wheelings.

Bedale SE28.

Locality: Whitwell Hill.
Date: 17th Jan 2001. **Site:** 18. **Grid Ref:** SE247800.
Elevation: 137m. **Crop:** Lifted beet remnants being grazed by sheep.
Estimated cover: N/A.
Slope: Cx½ 0.5 **Soil Series:** Aberford? Stopped at 70cm. by stone/rock(?).
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked (poached.).
Topsoil Depth: 28cm. Ploughed to 20cm. Stony, non-calcareous limestone.).
Texture: Clay loam. **Colour:** 10YR3/2.
Structure: Surface 3-4cm. compacted by sheep. Quite dense over moderate fine and medium subangular blocky becoming coarse and dense below 20cm.
Subsoil Texture: Clay loam, calcareous, moderately stony. **Colour:** 2.5Y5/4.
Structure: Moderate coarse subangular blocky and angular fragments.
Comment: No standing water despite surface poaching. Estimate 130 sheep have completely sealed the soil surface. Some standing water in gateway.

Bedale SE28.**Locality:** Whitwell Hill**Date:** 17th Jan 2001.**Site:** 19.**Grid Ref:** SE249803.**Elevation:** 129m. **Crop:** Winter wheat ploughed and drilled.**Estimated cover:** 1% Poor establishment.**Slope:** Cx 0.5.**Soil Series:** Aberford, stopped by stones/rock at 68cm.**Erosion:** None visible.**Soil Surface:** Mounded.**Soil Condition:** Slaked.**Topsoil Depth:** not recorded**Texture:** Clay loam. Non-calcareous, stony.**Colour:** 10YR3/2.**Structure:** Moderate medium angular May be affected by frost?**Subsoil Texture:** Clay loam stony calcareous.**Colour:** 2.5Y5/4.**Structure:** Moderate coarse subangular blocky.**Comment:** Topsoil quite wet with subsoil at about field capacity. Evidence of recent standing water. Water films on ped faces and around stones.**Bedale SE28.****Locality:** Mowbray Hill.**Date:** 18th Jan 2001.**Site:** 20.**Grid Ref:** SE232818.**Elevation:** 94m. **Crop:** Late sown winter wheat following peas.**Estimated cover:** N/A.**Slope:** Cx 1.5.**Soil Series:** East Keswick.**Erosion:** None visible.**Soil Surface:** Mounded.**Soil Condition:** Unslaked.**Topsoil Depth:** 28cm. Ploughed to 20cm.**Texture:** Clay loam.**Colour:** 10YR3/2.**Structure:** Moderate fine and medium subangular blocky to 8cm (drill depth) over medium subangular blocky to 20cm. Dense, compacted breaking to coarse subangular blocky to 28cm depth.**Subsoil Texture:** Clay loam.**Colour:** 10YR3/4.**Structure:** Compacted breaking to coarse subangular blocky with some medium angular blocky.**Comment:** Common limestone. Surface to 2-3cm. frozen. Some water films around stones and on ped faces in the compacted part of the topsoil. Interior of compacted peds appear less moist than surfaces. Profile appears uniformly moist.**Bedale SE28.****Locality:** Mowbray Hill.**Date:** 18th Jan 2001.**Site:** 21.**Grid Ref:** SE231819.**Elevation:** 102m. **Crop:** Winter wheat – ploughed. Next crop peas.**Estimated cover:** N/A.**Slope:** Cx 1.5.**Soil Series:** East Keswick/Pinder. Stopped by stones at 45cm.**Erosion:** None visible.**Soil Surface:** Furrowed.**Soil Condition:** Unslaked.**Topsoil Depth:** 28cm. Ploughed to 20cm.**Texture:** Clay loam many stones.**Colour:** 10YR3/2.**Structure:** Complex structure with moderate medium subangular blocky and strong medium angular (frosted clod) and dense material at base of topsoil giving weak coarse subangular blocky.**Subsoil Texture:** Clay loam**Colour:** 10YR4/4 Mottled.**Structure:** Weak coarse subangular blocky to 35cm. over moderate medium subangular blocky.**Comment:** Topsoil frozen to 5cm. Common water films on stones and ped faces.**Bedale SE28.****Locality:** Mowbray Hill.**Date:** 18th Jan 2001.**Site:** 22.**Grid Ref:** SE230800.**Elevation:** 107m. **Crop:** Winter barley ploughed for peas.**Estimated cover:** N/A.**Slope:** Cx 2.5.**Soil Series:** East Keswick, stopped by stones at 60cm.**Erosion:** None visible.**Soil Surface:** Furrowed.**Soil Condition:** Unslaked.**Topsoil Depth:** 28cm, ploughed to 20cm.**Texture:** Clay loam.**Colour:** 10YR3/2.**Structure:** Moderate medium and coarse subangular blocky.**Subsoil Texture:** Clay loam.**Colour:** not recorded.

Structure: Moderate medium and coarse subangular blocky.

Comment: Base of topsoil (what was the surface inverted by ploughing) is wet and very plastic. Water films common. No excessive compaction at base of plough layer is visible but the wet nature of the base of the plough layer indicates some impedance to water movement.

Bedale SE28.

Locality: Mowbray Hill.

Date: 18th Jan 2001.

Site: 23.

Grid Ref: SE220824.

Elevation: 110m. **Crop:** Potatoes – part lifted.

Estimated cover: N/A.

Slope: Level.

Soil Series: Hopsford.

Erosion: Small rills in wheel ruts and deposition of sand common.

Soil Surface: Mounded.

Soil Condition: Slaked.

Topsoil Depth: 28cm.

Texture: Clay loam.

Colour: 10YR3/2.

Structure: Weak coarse subangular blocky and angular fragments throughout though horizon appears slightly less dense in its middle part.

Subsoil Texture: Clay loam.

Colour: 10YR4/4. Slightly mottled.

Structure: Moderate coarse subangular blocky.

Comment: Site located where potatoes have been lifted. Very rutted – standing water in ruts. Ground frozen to 5cm. Common bluish anaerobic colours in the topsoil. Topsoil not wet as would be expected probably because water cannot get into the topsoil.

Bedale SE28.

Locality: Mowbray Hill.

Date: 18th Jan 2001.

Site: 24.

Grid Ref: SE238816.

Elevation: 129m. **Crop:** Winter wheat, ploughed.

Estimated cover: N/A.

Slope: Cx 1.5.

Soil Series: Hopsford.

Erosion: None visible.

Soil Surface: Furrowed.

Soil Condition: Unslaked.

Topsoil Depth: 28cm, ploughed to 20cm.

Texture: Clay loam.

Colour: 10YR3/2.

Structure: Moderate medium and coarse subangular blocky with numerous angular edges. Weak coarse subangular blocky at base of topsoil.

Subsoil Texture: Clay loam.

Colour: 10YR4/4.

Structure: Weak coarse subangular blocky – significant patches could be considered massive.

Comment: Wet at base of plough layer particularly amongst ploughed in straw. Much less wet at surface and in the subsoil. Subsoil below 60cm. slightly moist. Common water films in ploughed layer.

Bedale SE28.

Locality: Mowbray Hill.

Date: 18th Jan 2001.

Site: 25.

Grid Ref: SE241817.

Elevation: 135m. **Crop:** Winter wheat ploughed.

Estimated cover: N/A.

Slope: Cv 0.5.

Soil Series: Aberford? Stopped by stones at 52.

Erosion: None visible.

Soil Surface: Furrowed.

Soil Condition: Unslaked.

Topsoil Depth: 28cm. Ploughed to 20cm.

Texture: Clay loam. Moderately stony.

Colour: 10YR3/2.

Structure: Moderate fine and medium subangular blocky with remnants of compaction at base of plough (previous years soil surface?) and at junction of topsoil and subsoil.

Subsoil Texture: Heavy clay loam. Calcareous, very stony.

Colour: 2.5Y5/4.

Structure: Moderate medium subangular blocky.

Comment: Stones make assessing structure difficult. Topsoil frozen. Soil wet at base of plough in an area of incorporated straw. Becomes moist in the subsoil.

Bedale SE28.

Locality: Low Ground.

Date: 18th Jan 2001.

Site: 26.

Grid Ref: SE283830.

Elevation: 38m. **Crop:** Permanent grass. **Estimated cover:** 100%.

Slope: Ll 1.

Soil Series: Dunkeswick. Clay at 42cm.

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 18cm. **Texture:** Clay loam.
Colour: 10YR3/2.
Structure: Moderate fine and medium subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 10YR4/3, mottled.
Structure: Moderate medium prismatic breaking readily to fine and medium angular blocky.
Comment: Soil surface wetter than topsoil. Compare to permanent grass on Arddleen sheet. Thin water films on ped faces in subsoil.

Bedale SE28.

Locality: Low Ground.
Date: 18th Jan 2001. **Site:** 27. **Grid Ref:** SE283832.
Elevation: 35m. **Crop:** Permanent grass. **Estimated cover:** 90%.
Slope: Cx 2. **Soil Series:** Hopsford.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 22cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Strong fine and medium subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 10YR4/4.
Structure: Moderate coarse prismatic breaking to moderate medium subangular blocky.
Comment: Some areas bare of grass. Hoofprints are common across the soil surface. Upper 3-4cm. of topsoil has abundant bluish anaerobic colours. Difficult to assess structure here because of root mat but considerably wetter than the horizons below which is at about field capacity.

Bedale SE28.

Locality: Low Ground.
Date: 18th Jan 2001. **Site:** 28. **Grid Ref:** SE283832.
Elevation: 35m. **Crop:** Winter cereals-poor germination so reploughed for spring. **Estimated cover:** N/A.
Slope: Cx 1. **Soil Series:** Hopsford.
Erosion: None visible.
Soil Surface: Furrowed. **Soil Condition:** Unslaked.
Topsoil Depth: 28cm, ploughed to 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate medium subangular blocky becoming dense and weak coarse subangular blocky at base of topsoil.
Subsoil Texture: Clay loam. **Colour:** 10YR5/4, mottled.
Structure: Upper 2-3cm. compacted but becoming weak medium and coarse subangular blocky.
Comment: Smearing at base of plough. Topsoil appears slightly wetter than rest of profile. See photo.

Bedale SE28.

Locality: Lower Ground.
Date: 18th Jan 2001. **Site:** 29. **Grid Ref:** SE287830.
Elevation: 33m. **Crop:** Ley Grass. **Estimated cover:** 90%. Some bare patches.
Slope: Level. **Soil Series:** Kearby. Clay at 58.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 22cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate medium and coarse subangular blocky becoming angular at base of topsoil.
Subsoil Texture: Clay loam. **Colour:** 10YR5/4. Slightly mottled.
Structure: Weak coarse prismatic breaking to coarse subangular blocky.
Comment: Slight poaching. Compaction at the junction of topsoil and subsoil. Topsoil structure is not as good as some arable sites. Perhaps it was ploughed when conditions were less than favourable.

Bedale SE28.

Locality: Lower Ground.
Date: 18th Jan 2001. **Site:** 30. **Grid Ref:** SE286831.
Elevation: 32m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Level. **Soil Series:** Fladbury – check if alluvium.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.

Topsoil Depth: 20cm. **Texture:** Clay loam/C.
Colour: 10YR3/2, slightly mottled.
Structure: Moderate fine and medium subangular blocky.
Subsoil Texture: Clay. **Colour:** 10YR5?2. Mottled.
Structure: Weak coarse prismatic breaking to strong medium and coarse angular.
Comment: Soil surface wet – wetter than the interior of topsoil. Slight seepage at junction of topsoil with the subsoil. 2-3cm. of good thick root mat. No water enters auger hole.

Bedale SE28.

Locality: Low Park House.
Date: 18th Jan 2001. **Site:** 31. **Grid Ref:** SE275830.
Elevation: 38m. **Crop:** Permanent grass. **Estimated cover:** 90%.
Slope: Cx 1. **Soil Series:** Dunkeswick. Clay at 45cm.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 18cm. **Texture:** Clay loam. **Colour:** 10YR4/2. Mottled.
Structure: Moderate to strong fine and medium subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 10YR5/4. Mottled.
Structure: Moderate to strong fine and medium subangular blocky.
Comment: Ridge and furrow. Soil surface wetter than the majority of the topsoil. Clay subsoil is very plastic but becomes significantly less so at 75cm depth. Thick surface root mat.

Bedale SE28.

Locality: Low Park House.
Date: 18th Jan 2001. **Site:** 32. **Grid Ref:** SE276830.
Elevation: 35m. **Crop:** Permanent grass. **Estimated cover:** 95%.
Slope: Cv 0.5. **Soil Series:** Dankeswick var? Hints of alluvium.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 8cm. **Texture:** Clay loam. **Colour:** 10YR3/3.
Structure: Root mat too strong to assess structure.
Subsoil Texture: Clay loam. **Colour:** 10YR4/2. Mottled.
Structure: Strong to moderate fine and medium subangular blocky. At 24cm. it is weak to moderate coarse prismatic breaking to moderate medium and coarse angular.
Comment: Topsoil is dominantly a root mat. Subsoil reaches to 24cm. depth over clay. Common seepage in subsoil to junction with clay at 24cm. Auger hole fills with water in about 5 minutes. Soil surface is wet and poached.

Bedale SE28.

Locality:
Date: 18th Jan 2001. **Site:** 33. **Grid Ref:** SE275826.
Elevation: 42m. **Crop:** Permanent grass ploughed and reseeded in the past.
Estimated cover: 90%.
Slope: Level. **Soil Series:** Kearby. Clay at 70cm.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 22cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate medium subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 10YR5/4. Slightly mottled.
Structure: Moderate medium and coarse subangular blocky.
Comment: Significant poaching by sheep in the surface. Soil surface feels wet underfoot but no standing water visible. Profile is moist throughout.

Bedale SE28.

Locality: Low Park House.
Date: 18th Jan 2001. **Site:** 34. **Grid Ref:** SE276826.
Elevation: 42m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Cv 0.5. **Soil Series:** Dunkeswick. Clay at 35cm.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.

Topsoil Depth: 18cm. **Texture:** Clay loam. Slightly mottled.

Colour: 10YR4/2.

Structure: Moderate medium subangular blocky breaking to smaller sized medium subangular blocky and fine subangular blocky.

Subsoil Texture: Clay loam.

Colour: 10YR5/4. Mottled.

Structure: Moderate medium subangular blocky breaking from weak medium and coarse prisms.

Comment: Soil surface wet. Good root mat. Subsoil wet at 65cm., possible water table but if so this is the first since Arddleen and Claverley.

Bedale SE28.

Locality: Low Park House.

Date: 18th Jan 2001.

Site: 35.

Grid Ref: SE272827.

Elevation: 46m. **Crop:** Permanent grass. **Estimated cover:** 95%.

Slope: L1 0.5.

Soil Series: Hallsworth var. Clayey stoneless drift.

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 18cm.

Texture: Clay loam.

Colour: 10YR4/2.

Structure: Strong fine subangular blocky.

Subsoil Texture: Clay.

Colour: 2.5YR5/4. Mottled.

Structure: Not recorded.

Comment: Topsoil surface wet and horizon very moist with some seepage at junction with the subsoil. Ridge and furrow. Below 60cm. subsoil clay is less moist than above however auger hole fills with water within 5 minutes, does not appear to be caused by seepage at topsoil/subsoil junction.

Bedale SE28.

Locality: Low Park House.

Date: 18th Jan 2001.

Site: 36.

Grid Ref: SE272829.

Elevation: 46m. **Crop:** Permanent grass. **Estimated cover:** 95%.

Slope: Level.

Soil Series: Dunkeswick. Clay at 35cm.

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 25cm.

Texture: Clay loam.

Colour: 10YR4/2. Slightly mottled.

Structure: Moderate to strong fine and medium subangular blocky with medium subangular blocky aggregates breaking readily to fine.

Subsoil Texture: Clay loam.

Colour: 10YR5/4. Mottled.

Structure: Moderate medium and fine subangular blocky.

Comment: Poached by sheep. Depth of topsoil indicates ploughing and reseeded. Water films around stones and on ped faces in the subsoil. Whole profile is very plastic. Profile above field capacity?

Bedale SE28.

Locality: Low Park House.

Date: 18th Jan 2001.

Site: 37.

Grid Ref: SE275832.

Elevation: 35m. **Crop:** Permanent grass. **Estimated cover:** 60%.

Slope: Cx 1.

Soil Series: Kearby. Clay at 48cm.

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 15cm.

Texture: Clay loam.

Colour: 10YR3/2.

Structure: Strong to moderate fine and medium subangular blocky with medium subangular blocky breaking readily to fine subangular blocky.

Subsoil Texture: Clay loam.

Colour: 10YR4/4.

Structure: Strong fine and medium subangular blocky.

Comment: Badly poached, only about 60% of sward remains. Good root mat. Surface appears wetter (moister) than the bulk of the topsoil. Poaching has sealed off the surface.

Bedale SE28.

Locality: Clifton Grange Farm.

Date: 18th Jan 2001.

Site: 38.

Grid Ref: SE217849.

Elevation: 111m. **Crop:** Permanent grass.

Estimated cover: 90%.

Slope: Cx 3.

Soil Series: Dunkeswick. Clay at 40cm.

Erosion: None visible.

Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 18cm. **Texture:** Clay loam. **Colour:** 10YR4/2. Mottled.
Structure: Moderate medium fine prismatic breaking readily to fine subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 10YR4/4. Mottled.
Structure: As above.
Comment: Topsoil poached with water in places in the hoof prints.

Bedale SE28.

Locality: Clifton Grange Farm.
Date: 18th Jan 2001. **Site:** 39. **Grid Ref:** SE215850.
Elevation: 113m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Cx 1. **Soil Series:** Dunkeswick. Clay at 38cm.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 18cm. **Texture:** Clay loam. **Colour:** 10YR4/1.
Structure: Moderate medium fine prismatic breaking readily to fine subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 10YR4/3. Mottled.
Structure: Moderate medium fine prismatic breaking readily to fine subangular blocky.
Comment: Slight poaching. Soil surface does not appear to be any moister than rest of topsoil. Clay subsoil very plastic but not wet.

4. SEVERN CATCHMENT, CLAVERLEY SO79/89

General Observations

The region was visited on 14th and 15th December 2000. There had been previous days of rain causing severe flooding in the Severn valley. About 3mm of rain fell during the night of the 15th December. The recent rains account for the excessive amounts of water noted in places on the soil surface, in tramlines.

1. Bare ground (ploughed) and recently drilled land often had very wet topsoils with low bearing strength and occasionally water collected at the base of the ploughed layer (this was not always the base of the topsoil). The reason for this is likely to be twofold. Firstly compacted layers may occur below the plough layer and restrict downward water movement. Secondly and possibly the more likely reason is that the recently cultivated layer is unnaturally loose and allows extremely rapid water movement down to the more restricting subsoil that has a more natural soil density. As the year progresses the ploughed topsoil will tend to reach an equilibrium density closer to the natural.
2. Land not yet ploughed usually had noticeable areas of standing water. Whereas cultivated land tended to have water collecting or moving mainly in the wheelings, where the soil was compressed the uncultivated arable land had water only in localised depressions across the surface.
3. Land that had been drilled early in the autumn or late summer appeared to have better ground conditions with regard to water at the surface and within the topsoil than that drilled when the ground was becoming wet.
4. Where the topsoil or subsoil was evidently wet and where water seepage was noted the interiors of the structural units were noticeably less wet as one might expect

Claverley SO79/89.

Locality: Farmcote Farm.

Date: 14th Dec 2000.

Site: 1.

Grid Ref: SO777914.

Elevation: 102m.

Crop: Winter cereals after sugar beet.

Estimated cover: 5%.

Slope: L1 1.

Soil Series: Wick. Loamy sand at 70cm.

Erosion: Some very small depositional fans. Obviously some water movement but insufficient volume or direction to create rills.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 30cm.

Texture: Sandy loam.

Colour: 7.5YR3/2.

Structure: Weak to moderate fine and medium subangular blocky in the upper 18cm (ploughed). Below 18cm peds are dominantly medium.

Subsoil Texture: Sandy loam.

Colour: 5YR4/4.

Structure: Weak medium and coarse angular blocky, compacted.

Comment: Soil at field capacity but no visible excess water. Wet at 55cm. No standing water

Claverley SO79/89.

Locality: Farmcote Farm.

Date: 14th Dec 2000.

Site: 2.

Grid Ref: SO775912.

Elevation: 115m.

Crop: Winter cereals after sugar beet.

Estimated cover: 2% (Drilled later than site 1).

Slope: Cv 2.5. **Soil Series:** Wick. Loamy sand at 80cm.
Erosion: Small rills and depositional fans.
Soil Surface: Mounded. **Soil Condition:** Slaked.
Topsoil Depth: 34cm (Ploughed to 19cm). **Texture:** Sandy loam.
Colour: 7.5YR3/2.
Structure: Moderate fine and medium subangular blocky. Loose in upper part but wet and cohesive below 25cm.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR4/4.
Structure: Moderate to weak coarse angular.
Comment: No wheeling indentations to denote tramlines. Wet at 28cm but less wet below 34cm down to 100cm.

Claverley SO79/89.

Locality: Farmcote Farm.
Date: 14th Dec 2000. **Site:** 3. **Grid Ref:** SO773911.
Elevation: 135m. **Crop:** Winter cereals. **Estimated cover:** 8%.
Slope: Ll 3.5. **Soil Series:** Salwick. Clay loam at 65cm, loamy sand at 80cm but stopped by stones.
Erosion: Not excessive but some scouring along drill lines and tramlines. Depositional fans at the base of slope.
Soil Surface: Mounded. **Soil Condition:** Slaked.
Topsoil Depth: 30cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Moderate fine subangular blocky to 10cm then moderate fine and medium subangular blocky becoming medium below 20cm.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR4/4.
Structure: Moderate medium subangular and angular blocky structure.
Comment: Drilling has changed the structure in the upper part of the topsoil. Soil wet and easily deformable below 18cm. Less wet in the subsoil.

Claverley SO79/89.

Localit Farmcote Farm.
Date: 14th Dec 2000. **Site:** 4. **Grid Ref:** SO773909.
Elevation: 125m. **Crop:** Winter cereal stubble. **Estimated cover:** N/A.
Slope: Ll 4. **Soil Series:** Newport. Loamy sand at 38cm.
Erosion: None visible near excavation but some deposition at the base of slope. Quite extensive deposition in gateway and out onto the road.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 30cm **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Weak to moderate fine and medium subangular blocky in upper 18cm becoming moderate medium and coarse subangular with many angular edges below 18cm.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR4/4.
Structure: Moderate medium angular with some platy characteristics and breaks readily but not along weakness planes.
Comment: No standing water or visible erosion. No contrasting wet layers in the soil despite the obvious compaction.

Claverley SO79/89.

Locality: Farmcote Farm.
Date: 14th Dec 2000. **Site:** 5. **Grid Ref:** SO776908.
Elevation: 105m. **Crop:** Sugar beet, lifted and ploughed.
Estimated cover: N/A.
Slope: Cv 1. **Soil Series:** Arrow. Sandy clay loam at 83cm.
Erosion: Some sedimentation in plough hollows.
Soil Surface: Furrowed. **Soil Condition:** Partly slaked.
Topsoil Depth: 34cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Weak to moderate fine and subangular blocky to about 16-18cm then moderate medium subangular below this depth.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR4/4.
Structure: Weak fine and medium subangular blocky. Does not really look or feel compacted.
Comment: Some standing water in wheelings and depressions along field edges. Below 18cm the topsoil is wet and easily deformable. Water films coat structural fragments.

Claverley SO79/89.**Locality:** Farmcote Farm.**Date:** 14th Dec 2000.**Site:** 6.**Grid Ref:** SO777911.**Elevation:** 102m. **Crop:** Sugar beet. (lifted).**Estimated cover:** N/A.**Slope:** L1 1.**Soil Series:** Wick. Loamy sand at 45cm.**Erosion:** Small rills and depositional fans.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 30cm.**Texture:** Sandy loam.**Colour:** 7.5YR3/2.**Structure:** Moderate medium subangular blocky becoming coarser at the junction with the subsoil.**Subsoil Texture:** Sandy loam.**Colour:** 7.5YR4/4.**Structure:** Moderate coarse angular with some platy characteristics.**Comment:** Surface water in headland wheelings. No excessive wetness in the topsoil or subsoil. Soil wet at 85cm.**Claverley SO79/89.****Locality:** Farmcote Farm.**Date:** 14th Dec 2000.**Site:** 7.**Grid Ref:** SO778912.**Elevation:** 96m. **Crop:** Winter cereal stubble.**Estimated cover:** N/A.**Slope:** L1 1.**Soil Series:** Salwick (CL/SCL at 55cm).**Erosion:** None visible.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 34cm (ploughed to 18cm). **Texture:** Sandy loam.**Colour:** 7.5YR3/2.**Structure:** Moderate medium subangular blocky.**Subsoil Texture:** Sandy loam.**Colour:** 5YR4/4.**Structure:** Moderate medium subangular breaking from weak medium prismatic.**Comment:** No standing water. Slightly wet above CL/SCL subsoil.**Claverley SO79/89.****Locality:** Farmcote Farm.**Date:** 14th Dec 2000.**Site:** 8.**Grid Ref:** SO778914.**Elevation:** 95m.**Crop:** Permanent grass with good root mat.**Estimated cover:** 100%.**Slope:** Cv <1.**Soil Series:** Salwick (SCL at 55cm and CL at 85cm).**Erosion:** None visible.**Soil Surface:** N/A**Soil Condition:** N/A.**Topsoil Depth:** 15cm.**Texture:** Sandy loam.**Colour:** 7.5YR3/2.**Structure:** Weak and medium prismatic breaking readily to moderate and well developed fine and medium subangular blocky.**Subsoil Texture:** Sandy loam.**Colour:** 7.5YR3/4.**Structure:** Moderate fine and medium prismatic breaking to moderate medium subangular blocky.**Comment:** Grazed by sheep. Upper 2-3cm poached but does not show any structural deterioration. Standing water only in gateway.**Claverley SO79/89.****Locality:** Farmcote Farm.**Date:** 14th Dec 2000.**Site:** 9.**Grid Ref:** SO777922.**Elevation:** 100m. **Crop:** Winter cereal stubble.**Estimated cover:** N/A.**Slope:** L1 2.5.**Soil Series:** Wick. Loamy sand at 80cm.**Erosion:** None visible.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 30cm.**Texture:** Sandy loam**Colour:** 7.5YR3/2.**Structure:** Moderate fine and medium subangular blocky. Appears looser in the upper 20cm.**Subsoil Texture:** Sandy loam.**Colour:** 7.5YR3/4.**Structure:** Compacted platy, possibly massive in part.**Comment:** Subsoil is difficult to penetrate with the spade. Slightly wetter soil immediately above the subsoil but not excessively wet given structural differences. Generally profile feels to be below field capacity.**Claverley SO79/89.**

Locality: Farmcote Farm.

Date: 14th Dec 2000.

Site: 10.

Grid Ref: SO777920.

Elevation: 97m.

Crop: Winter cereals following potatoes.

Estimated cover: 5%.

Slope: L1 1.5.

Soil Series: Wick. Loamy sand at 70cm.

Erosion: Small rills and depositional fans common cutting across the line of cultivation.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 32cm (ploughed to 20cm.

Texture: Sandy loam.

Colour: 7.5YR3/2.

Structure: Weak medium subangular becoming coarse at 20cm.

Subsoil Texture: Sandy loam.

Colour: 7.5YR4/4.

Structure: Medium subangular and angular blocky.

Comment: Load bearing capacity of topsoil is low. Easy to sink to the ankles. Topsoil wet with noticeable water films on structure faces. Very 'pudding' like. Subsoil less wet than topsoil. Loamy sand subsoil feels to be below Field Capacity.

Claverley SO79/89.

Locality: Farmcote Farm.

Date: 14th Dec 2000.

Site: 11.

Grid Ref: SO781915.

Elevation: 87m.

Crop: Winter cereal stubble.

Estimated cover: N/A.

Slope: Cx 1.5.

Soil Series: Arrow. Loamy sand at 75cm.

Erosion: None visible.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 30cm.

Texture: Sandy loam.

Colour: 7.5YR3/2.

Structure: Moderate medium subangular blocky with some denser patches (about 10cm diameter).

Subsoil Texture: Sandy loam.

Colour: 7.5YR4/4.

Structure: Moderate medium subangular blocky with some angular edges.

Comment: No standing water. Wet at 80cm. Many manganese concentrations at the junction of topsoil and subsoil. Subsoil does not appear compacted.

Claverley SO79/89.

Locality: The Beeches.

Date: 14th Dec 2000.

Site: 12.

Grid Ref: SO789936.

Elevation: 99m.

Crop: Potatoes, lifted.

Estimated cover: N/A.

Slope: Cx 1.

Soil Series: Newport.

Erosion: Sediment deposition between potato ridges. Much deposition in valley bottom.

Soil Surface: Mounded.

Soil Condition: Slaked.

Topsoil Depth: 32cm.

Texture: Loamy sand.

Colour: 7.5YR3/2.

Structure: Weak fine and medium subangular blocky. Some denser material at the junction with the subsoil.

Subsoil Texture: Loamy sand.

Colour: 7.5YR5/4.

Structure: Weak platy, breaks readily.

Comment: Topsoil wetter than the horizons below. Standing water on Clifton soils in low lying parts of the field.

Claverley SO79/89.

Locality: The Beeches.

Date: 14th Dec 2000.

Site: 13.

Grid Ref: SO790935.

Elevation: 100m.

Crop: Potatoes, lifted.

Estimated cover: N/A.

Slope: Cv <1.

Soil Series: Clifton.

Erosion: Muddy deposition between potato rows. Rills and fans of sand in wheelings.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 30cm.

Texture: Sandy loam.

Colour: 10YR3/2.

Structure: Weak medium subangular.

Subsoil Texture: Sandy loam.

Colour: 10YR5/4, Mottled.

Structure: Weak medium subangular.

Comment: Wet at 55cm. Clay loam at 60cm. Standing water in wheelings and between potato ridges.

Claverley SO79/89.

Locality: The Beeches.

Date: 14th Dec 2000.

Site: 14.

Grid Ref: SO788934.

Elevation: 99m. **Crop:** Fodder brassicas following winter cereals.
Estimated cover: 80%.
Slope: L1 2.5. **Soil Series:** Newport.
Erosion: Some small rills and deposition between the brassica beds.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 30cm. Ploughed to 17cm **Texture:** Sandy loam.
Colour: 7.5YR3/2.
Structure: Weak medium subangular blocky.
Subsoil Texture: Loamy sand. **Colour:** 7.5YR4/4.
Structure: Weak medium subangular blocky. Slight evidence of compaction.
Comment: No standing water.

Claverley SO79/89.

Locality: The Beeches.
Date: 14th Dec 2000. **Site:** 15. **Grid Ref:** SO788933.
Elevation: 98m. **Crop:** Sugar beet. **Estimated cover:** 100%.
Slope: Cv <1. **Soil Series:** Clifton. CL at 50cm.
Erosion: Small rills and deposition in wheelings.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 31cm. **Texture:** Sandy loam. **Colour:** 10YR3/2.
Structure: Moderate medium subangular blocky.
Subsoil Texture: Sandy loam. **Colour:** 10YR5/3, mottled.
Structure: Moderate medium and coarse subangular blocky with some angular edges.
Comment: Subsoil wet above the clay loam substrate. Topsoil also wetter than the immediate subsoil. Films of water evident on ped faces.

Claverley SO79/89.

Locality: The Beeches.
Date: 14th Dec 2000. **Site:** 16. **Grid Ref:** SO788938.
Elevation: 91m. **Crop:** Sugar beet, lifted with the tops being grazed by sheep.
Estimated cover: N/A.
Slope: Cx 3.5. **Soil Series:** Arrow. Stopped by stones at 60cm.
Erosion: Deposition in wheelings.
Soil Surface: Mounded by sheep. **Soil Condition:** Partly slaked with the cap broken by hooves.
Topsoil Depth: 28cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Moderate medium subangular blocky with the upper 3-5cm of the topsoil cloddy and compacted by hooves.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR4/4.
Structure: Weak medium platy.
Comment: Soil surface originally slaked and capped but now broken by animal hooves. Some standing water on the slope in hoof prints.

Claverley SO79/89.

Locality: The Beeches.
Date: 14th Dec 2000. **Site:** 17. **Grid Ref:** SO789938.
Elevation: 91m. **Crop:** Permanent grass (horses). **Estimated cover:** 100%.
Slope: L1 2.5. **Soil Series:** Wick. Fine LS at 75cm.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 12cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Moderate fine subangular blocky within the surface root mat to 6cm depth over moderate coarse subangular blocky (compacted).
Subsoil Texture: Sandy loam. **Colour:** 7.5YR3/3.
Structure: Weak fine subangular blocky.
Comment: Poached in places but not excessively. No surface water. Evidence of flooding in field bottom from nearby stream.

Claverley SO79/89.

Locality: The Beeches.
Date: 14th Dec 2000. **Site:** 18. **Grid Ref:** SO792941.

Elevation: 84m. **Crop:** Fodder turnips following winter cereals.
Estimated cover: 95%.
Slope: Cv 1. **Soil Series:** Quorndon.
Erosion: Some small rills in the tramlines and deposition at the base of the slope.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Moderate medium subangular blocky with some incorporated coarse clods.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR4/4, mottled.
Structure: Weak medium subangular blocky.
Comment: Topsoil and immediate subsoil above field capacity. Water films evident on ped faces. Becoming wet at 60cm.

Claverley SO79/89.

Locality: The Beeches.
Date: 14th Dec 2000. **Site:** 19. **Grid Ref:** SO791942.
Elevation: 85m. **Crop:** Potatoes, harvested. **Estimated cover:** N/A.
Slope: Cx 2.5. **Soil Series:** Quorndon?.
Erosion: Much deposition between ridges. Sediment fans at the base of the slope.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 30cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Between the rows soil is dense and compacted with a bluish anaerobic coloured tint. On the ridges weak medium subangular blocky.
Subsoil Texture: Sandy loam. **Colour:** 10YR3/3, mottled.
Structure: Weak medium subangular blocky with some denser pockets.
Comment: No standing water except in wheelings at the base of slope. No noticeable wetter areas in the profile. Some of the worst topsoil structure so far on the Claverley sheet but no surface water or stodgy topsoil.

Claverley SO79/89.

Locality: The Beeches.
Date: 14th Dec 2000. **Site:** 20. **Grid Ref:** SO783934.
Elevation: 114m. **Crop:** Corriander following potatoes. Harvested
Estimated cover: N/A.
Slope: Ll 3.5. **Soil Series:** Newport.
Erosion: Small rills and sedimentation between beds.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 30cm. **Texture:** Sandy loam to loamy sand.
Colour: 7.5YR3/2.
Structure: Moderate medium subangular blocky.
Subsoil Texture: Loamy sand. **Colour:** 7.5YR4/4.
Structure: At the junction of the topsoil and subsoil the structure is platy with noticeable horizontal root growth.
Comment: No water table or wet subsoil. Topsoil wetter than the rest of the profile.

Claverley SO79/89.

Locality: The Clive.
Date: 15th Dec 2000. **Site:** 21. **Grid Ref:** SO774977.
Elevation: 122m. **Crop:** Spring cereal stubble. **Estimated cover:** N/A.
Slope: Ll 1.5. **Soil Series:** Bromsgrove. Soft weathered sandstone at 65cm with bands of heavier SCL material.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 30cm, ploughed to 25cm. **Texture:** Sandy loam.
Colour: 7.5YR3/2.
Structure: Moderate medium subangular blocky to 25cm over coarse subangular dense material.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR3/4.
Structure: Moderate coarse platy.
Comment: A little horizontal root growth in the subsoil but not much. Roots concentrated vertically down worm channels. No surface wetness except in the gateway.

Claverley SO79/89.

Locality: The Clive.

Date: 15th Dec 2000.

Elevation: 110m.

Slope: Cx 3.

Erosion: None visible.

Soil Surface: N/A.

Topsoil Depth: 18cm.

Colour: 7.5YR3/2.

Structure: Upper 8-10cm compacted and has a weak to moderate coarse subangular blocky. Below this is a loose moderate fine and medium subangular blocky.

Subsoil Texture: Sandy loam (high % S).

Colour: 7.5YR3/4.

Structure: Moderate coarse subangular blocky with some indication of old platy structure.

Comment: Topsoil poached by sheep and horses. Poaching has caused a reduction in ground cover and compacted the upper part of the topsoil. Badly poached in gateway with surface wetness here. Slight surface wetness over the rest of the field but may be due to early morning dew or frost melt.

Claverley SO79/89.

Locality: The Clive.

Date: 15th Dec 2000

Elevation: 73m.

Slope: Cv 1.

Erosion: None visible.

Soil Surface: Flattened.

Topsoil Depth: 25cm.

Structure: Moderate medium and coarse subangular blocky to about 18cm over coarse subangular blocky with platy remnants at the junction with the subsoil.

Subsoil Texture: Sandy loam.

Structure: Moderate coarse prismatic.

Comment: Some horizontal root growth at the base of the topsoil. Surface wetness in tramlines and other wheelings. Tramlines are much deeper at the site than in other parts of the field where soil drainage is better. No evidence of water table. Water entering auger hole at 100cm after a few minutes. Subsoil below 50cm very plastic.

Claverley SO79/89.

Locality: The Clive.

Date: 15th Dec 2000.

Elevation: 123m.

Estimated cover: 80%.

Slope: Cx 1.5.

Erosion: None visible.

Soil Surface: Flattened.

Topsoil Depth: 25cm.

Structure: Moderate medium coarse and subangular blocky.

Subsoil Texture: Rock.

Structure: N/A.

Comment: Surface indented with hoof prints. Soil surface is wet possibly due to dew or melted frost. No evidence of surface compaction due to stock.

Claverley SO79/89.

Locality: The Clive.

Date: 15th Dec 2000.

Elevation: 122m.

Slope: Cv 1.5.

Erosion: None visible.

Soil Surface: Mounded.

Topsoil Depth: 29cm.

Structure: Massive, dense.

Subsoil Texture: Sandy loam.

Structure: Moderate to weak medium and coarse subangular blocky.

Site: 22.

Grid Ref: SO772976.

Crop: Permanent grass.

Estimated cover: 80%.

Soil Series: Bromsgrove, sandstone at 60cm.

Soil Condition: N/A.

Texture: Sandy loam.

Site: 23.

Grid Ref: SO771978.

Crop: Winter cereal stubble.

Estimated cover: N/A.

Soil Series: Clifton . SCL/CL at 60cm

Soil Condition: Slaked.

Texture: Sandy loam.

Colour: 10YR3/2.

Colour: 10YR5/3, mottled.

Site: 24.

Grid Ref: SO772975.

Crop: Stubble turnips grazed by sheep.

Soil Series: Eardiston, sandstone at 25cm.

Soil Condition: Slaked.

Texture: Sandy loam.

Colour: 7.5YR3/2.

Colour: N/A.

Site: 25.

Grid Ref: SO775977.

Crop: Sugar beet, partly lifted.

Estimated cover: N/A.

Soil Series: Bromsgrove.

Soil Condition: Slaked

Texture: Sandy loam.

Colour: 7.5YR3/2.

Colour: 7.5YR3/4.

Comment: Site located in area of crop that has been lifted. Much standing water in wheelings and soil surface wet between wheelings. Surface easily puddled by walking. Noticeably difficult to dig the topsoil due to its density.

Claverley SO79/89.

Locality: The Clive.

Date: 15th Dec 2000.

Site: 26.

Grid Ref: SO775977.

Elevation: 120m.

Crop: Sugar beet.

Estimated cover: 100%.

Slope: Ll 1.

Soil Series: Hodnet var. CL/SCL at 50cm.

Erosion: None visible.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 28cm, ploughed to 20cm.

Texture: Sandy loam.

Colour: 7.5YR3/2.

Structure: Weak medium and coarse subangular blocky.

Subsoil Texture: Sandy loam.

Colour: 5YR3/3.

Structure: Moderate coarse subangular blocky.

Comment: Only 30m from site 25, crop still in the ground. No surface wetness as at site 25. Base of topsoil noticeably wetter than upper part. No excessive wetness elsewhere in the profile even at the junction with the heavier textured subsoil. Subsoil plastic.

Claverley SO79/89.

Locality: The Clive.

Date: 15th Dec 2000.

Site: 27.

Grid Ref: SO775975.

Elevation: 123m.

Crop: Winter cereals.

Estimated cover: 13%.

Slope: Cx 1.

Soil Series: Bromsgrove. SCL at 95cm.

Erosion: Slight deposition at the base of the slope. Around the site there is some reorganisation of soil particles on the surface but no noticeable lateral movement. Subsoil plastic.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 30cm, ploughed to 20cm.

Texture: Sandy loam.

Colour: 7.5YR3/2.

Structure: Weak fine and medium loose subangular blocky in upper 20cm becoming weak platy to 30cm.

Subsoil Texture: Sandy loam.

Colour: 5YR3/3.

Structure: Weak prismatic. Breaks readily to single grain.

Comment: 3-4mm thick cap. Soft to walk on, low bearing capacity. No standing water even in the wheelings. No wetness at depth.

Claverley SO79/89.

Locality: The Clive.

Date: 15th Dec 2000.

Site: 28.

Grid Ref: SO775981.

Elevation: 116m. **Crop:** Sugar beet, tops grazed by sheep.

Estimated cover: N/A.

Slope: Level.

Soil Series: Bromsgrove (not as the soil map).

Erosion: None visible at the site but deposition evident in wheelings near gateway.

Soil Surface: Mounded by hooves.

Soil Condition: Slaked.

Topsoil Depth: 30cm.

Texture: Sandy loam.

Colour: 7.5YR3/2.

Structure: Upper 3-4cm is massive due to poaching. Moderate medium subangular to about 25cm then much denser with weak platy structure, possibly massive in part.

Subsoil Texture: Sandy loam.

Colour: 7.5YR3/2.

Structure: Upper 3-4cm weak platy. Loose single grain below.

Comment: Soil wet at 60cm and below. Topsoil poached with standing water in hoof prints. Below soil surface soil is less wet. No wetness above compacted layer at the base of the topsoil.

Claverley SO79/89.

Locality: The Clive.

Date: 15th Dec 2000.

Site: 29.

Grid Ref: SO773971.

Elevation: 104m.

Crop: Potatoes, lifted.

Estimated cover: N/A.

Slope: Cv <1.

Soil Series: Newport?.

Erosion: Much erosion numerous gulleys up to 20cm deep and 30cm across cutting across the line of cultivation. Sediment fans common.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 30cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Structureless. 'Pudding'.
Subsoil Texture: Sandy loam to loamy sand. **Colour:** 7.5Yr4/4.
Structure: Weak prismatic.

Comment: Very wet at 28cm. Water held up by compaction at base of topsoil and in the subsoil. Less wet below the compaction. Difficult to dig upper topsoil because very wet. Surveyor sunk to the shins. Hole dug to 35cm and water collected in the base of hole. Augured to 60cm before auger hole filled with water. Water draining into the hole faster than it can drain through even after compacted layers have been loosened with a spade.

Claverley SO79/89.

Locality: The Clive.

Date: 15th Dec 2000.

Site: 30.

Grid Ref: SO774969.

Elevation: 97m.

Crop: Potatoes, lifted.

Estimated cover: N/A.

Slope: Level.

Soil Series: Clifton (map shows Qn).

Erosion: Some slight deposition. Evidence of ponding (particle reorganisation).

Soil Surface: Flattened.

Soil Condition: Slaked (3cm cap).

Topsoil Depth: 35cm.

Texture: Sandy loam.

Colour: 7.5YR3/2.

Structure: Weak, loose fine and medium subangular blocky to about 25cm then weak platy below.

Subsoil Texture: Sandy clay loam to Clay loam.

Colour: 5YR4/4, mottled.

Structure: Moderate medium prismatic.

Comment: Topsoil wetter than the subsoil but not by much. No water table as might be expected. Slight water seepage into auger hole after about 5 minutes but nothing excessive. Load bearing capacity much greater than site 29 which is on the naturally better drained soil.

Claverley SO79/89.

Locality: The Clive.

Date: 15th Dec 2000.

Site: 31.

Grid Ref: SO777969.

Elevation: 94m. **Crop:** Winter cereal stubble.

Estimated cover: N/A.

Slope: Ll <1.

Soil Series: Clifton. CL at 60cm

Erosion: None visible.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 32cm.

Texture: Sandy loam.

Colour: 10YR3/2.

Structure: Moderate medium subangular becoming coarse at the junction with the subsoil. Peds have numerous angular corners.

Subsoil Texture: Sandy loam.

Colour: 10YR5/3, mottled.

Structure: At the junction with the topsoil it is moderate angular blocky becoming loose medium subangular blocky below.

Comment: No surface wetness. Moisture content throughout the profile appears to be uniform despite the potentially slowly permeable subsoil.

Claverley SO79/89.

Locality: The Clive.

Date: 15th Dec 2000.

Site: 32.

Grid Ref: SO778968.

Elevation: 94m.

Crop: Winter cereals.

Estimated cover: 5%.

Slope: Level.

Soil Series: Clifton. SCL/CL at 55cm.

Erosion: Sheet erosion evident across whole of the surface.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 25cm, ploughed to 18cm.

Texture: Sandy loam.

Colour: 10YR3/2.

Structure: Moderate medium Weak fine and medium subangular blocky becoming coarser and more dense below 18cm.

Subsoil Texture: Sandy loam.

Colour: 10YR5/4, mottled.

Structure: At the junction with the topsoil structure is moderate fine and medium angular and becomes subangular below 35cm.

Comment: Excessive free water at 18cm associated with ploughed in stubble band. Heavier textured subsoil has wetter pockets of material (wet sandy lenses). Water fills auger hole to within 70cm of the surface.

Claverley SO79/89.

Locality:

Date: 15th Dec 2000. **Site:** 33. **Grid Ref:** SO779968.
Elevation: 91m. **Crop:** Sugar beet, lifted. **Estimated cover:** N/A.
Slope: Ll 1. **Soil Series:** Clifton, CL at 40cm.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 30cm. **Texture:** Sandy loam. **Colour:** 10YR3/2.
Structure: Very dense. Probably not massive because there do appear to be planes of weakness. At about 25cm there is some evidence of a platy structure but not much developed.
Subsoil Texture: Sandy loam. **Colour:** 10YR5/6.
Structure: Moderate to weak angular blocky.
Comment: Two medium and one large pond has formed in this field due to recent rains. Much surface water in depressions across the soil surface. Worm holes common. Beneath the wet topsoil the ground appears to be at less than field capacity, definitely less wet than the topsoil. Subsoil not as wet as at site 32.

Claverley SO79/89.

Locality: Spoonleygate.
Date: 15th Dec 2000. **Site:** 34. **Grid Ref:** SO802962.
Elevation: 76m. **Crop:** Sugar beet, lifted. **Estimated cover:** N/A.
Slope: Cx <1. **Soil Series:** Clifton.
Erosion: Some sediment movement in wheelings.
Soil Surface: Mounded. **Soil Condition:** Slaked.
Topsoil Depth: 30cm. **Texture:** Sandy loam. **Colour:** 10YR3/2.
Structure: Upper 15 cm massive over moderate fine and medium subangular blocky becoming dense at about 25cm with a weak coarse subangular and platy structure.
Subsoil Texture: Sandy clay loam. **Colour:** 5YR4/4, mottled.
Structure: Moderate coarse subangular blocky.
Comment: Standing water in wheelings. Some areas of topsoil have no bearing strength. Apart from the soil surface the soil is uniformly moist.

Claverley SO79/89.

Locality: Spoonleygate.
Date: 15th Dec 2000. **Site:** 35. **Grid Ref:** SO801964.
Elevation: 73m. **Crop:** Winter cereal stubble,. **Estimated cover:** N/A.
Slope: Ll 1. **Soil Series:** Clifton, CL at 75cm.
Erosion: Evidence of slight erosion in wheelings.
Soil Surface: Mounded. **Soil Condition:** Slaked.
Topsoil Depth: 34cm. **Texture:** Sandy loam. **Colour:** 10YR3/2.
Structure: Moderate fine and medium subangular blocky becoming moderate medium angular blocky below 25cm.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR4/4, mottled.
Structure: Upper 3-4cm is dense and compacted becoming loose and single grain below.
Comment: No standing water. Wet band in the profile immediately above the clay loam sub 15th Dec 2000 strata.

Claverley SO79/89.

Locality: Spoonleygate.
Date: 15th Dec 2000. **Site:** 36. **Grid Ref:** SO801965.
Elevation: 73m. **Crop:** Potatoes, lifted. **Estimated cover:** N/A.
Slope: Level. **Soil Series:** Quorndon.
Erosion: Slight erosion in wheelings.
Soil Surface: Mounded. **Soil Condition:** Slaked.
Topsoil Depth: 30cm. **Texture:** Sandy loam. **Colour:** 10YR3/2.
Structure: Massive in the upper 15 cm of topsoil with weak subangular blocky between 15-25cm. Dense coarse subangular between 25 and 30cm.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR5/4, mottled.
Structure: Moderate coarse subangular.
Comment: Standing water in headland wheelings. Three large ponds have formed in depressions within the field. Water table at 60cm. Evidence of recent ponding in wheelings.

Claverley SO79/89.

Locality: Spoonleygate.

Date: 15th Dec 2000. **Site:** 37. **Grid Ref:** SO802966.
Elevation: 73m. **Crop:** Sugar beet, lifted. **Estimated cover:** N/A.
Slope: Level. **Soil Series:** Not known. LS at 60cm and at 85cm the substrate feels like sst.
Gleyed.
Erosion: None visible.
Soil Surface: Mounded. **Soil Condition:** Slaked.
Topsoil Depth: 30cm. **Texture:** Sandy loam. **Colour:** 10YR3/2.
Structure: Weak medium subangular blocky.
Subsoil Texture: Sandy loam. **Colour:** 10YR5/4, mottled.
Structure: Moderate coarse angular with some subangular faces.
Comment: Previous crop potatoes. Water table at 70cm. No standing water except on the headlands. Topsoil feels marginally wetter than the immediate subsoil.

Claverley SO79/89.

Locality: Spoonleygate.
Date: 15th Dec 2000. **Site:** 38. **Grid Ref:** SO804966.
Elevation: 76m. **Crop:** Sugar beet, lifted. **Estimated cover:** N/A.
Slope: Cx 1. **Soil Series:** Salwick, CL at 72cm.
Erosion: Some erosion in wheelings.
Soil Surface: Mounded. **Soil Condition:** Slaked.
Topsoil Depth: 34cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Loose moderate fine and medium subangular blocky between the wheelings. At 25cm structure is moderate coarse angular. Massive structure in the wheelings..
Subsoil Texture: Sandy loam to loamy sand. **Colour:** 7.5YR5/4.
Structure: Moderate to weak medium angular blocky.
Comment: Previous crop potatoes. Evenly moist throughout the profile. Massive topsoil structure in wheelings.

5. YORKSHIRE OUSE CATCHMENT, DALTON SE47

General Observations

The region was visited on 15th and 16th January 2001. There had been excessive rain in November and December causing severe flooding in the north of England. No rain of any quantity had fallen in recent weeks. The weather at the time of survey was cold with freezing temperatures and snow showers.

1. The ground was frozen to in excess of 5cm depth in places. In some sheltered sites and where there was a crop or stubble cover topsoils were less likely to be frozen. The frozen ground masked the load bearing ability of the topsoil which at previously visited sites served as an indication of potential wetness and structural damage. In places the structure at the soil surface was masked.
2. Land not yet ploughed was noticeably much drier than expected given the wet winter.
3. Where the topsoil or subsoil was evidently wet and where water seepage was noted the interiors of the structural units were noticeably less wet as one might expect.
4. The presence of stones in some of the soils on this sheet help to mask the presence of compaction and allow the soil to break when it is dug.
5. The term 'massive' in relation to structure is used where little or no discernible soil fragmentation was observed.
- 6 Inversion by ploughing of a compacted soil surface will serve to place the compacted material at the base of the plough unless it is dry enough to break naturally or is broken artificially by disking. There is some indication that this has occurred on this sheet but is equally relevant to other areas.

Dalton SE47.

Locality: The Piggery.

Date: 15th Jan 2001.

Site: 1

Grid Ref: SE486715.

Elevation: 29m. **Crop:** Permanent grass. **Estimated cover:** 100%

Slope: L1 1.

Soil Series: Dalton (var), clay at 44cm.

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 27cm. **Texture:** Sandy loam. **Colour:** 10YR3/2, sl mottled.

Structure: Coarse subangular clods in the upper 10cm. Weak fine subangular blocky and much loose material below.

Subsoil Texture: Sandy loam.

Colour: 10YR5/4, sl mottled.

Structure: Weak coarse prisms breaking to weak medium and coarse subangular blocky.

Comment: Surface frozen to 2-3cm. Subsoil clay below field capacity. No water in the profile. Some visible poaching in the gateway but not excessive.

Dalton SE47.

Locality: The Piggery.

Date: 15th Jan 2001

Site: 2.

Grid Ref: SE487717.

Elevation: 30m. **Crop:** Permanent grass.

Estimated cover: 100%.

Slope: Cx 0.5.

Soil Series: Everingham?

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 28cm. **Texture:** Sandy loam. High % sand. **Colour:** 10YR3/2.
Structure: Upper 5-10cm is compacted but easily broken by hand. Below 10cm weak fine and medium subangular blocky.
Subsoil Texture: Loamy sand. **Colour:** 10YR4/4, mottled.
Structure: Weak coarse prismatic.
Comment: Topsoil and subsoil are below field capacity. No surface water. Some poaching in gateway. Surface frozen to about 2-3cm depth. Upper part of subsoil at the junction with the topsoil is soft with no sign of compaction.

Dalton SE47.

Locality: The Piggery.
Date: 15th Jan 2001. **Site:** 3. **Grid Ref:** SE481720.
Elevation: 29m. **Crop:** Fodder beet. **Estimated cover:** 90%.
Slope: Level. **Soil Series:** Dalton? Texture is LS between 45-75cm with clay at 75cm.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Sandy loam. **Colour:** 10YR2/2.
Structure: Weak medium and coarse subangular blocky. Upper 20cm. is dense and compacted with large clods that break readily.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR5/6.
Structure: Weak coarse prismatic.
Comment: Standing water is visible in two large depressions forming small lakes. Despite the soft nature of the topsoil wheelings do not form excessively deep depressions. Upper part of the topsoil is compacted but readily breaks because of the sandy loam texture.

Dalton SE47.

Locality: The Piggery.
Date: 15th Jan 2001. **Site:** 4. **Grid Ref:** SE481720.
Elevation: 30m. **Crop:** Was stubble turnips now stock holding area.
Estimated cover: N/A.
Slope: Level. **Soil Series:** Everingham/Susted. No fine sand and no grey material.
Erosion: None visible.
Soil Surface: Mounded. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Loamy sand. **Colour:** 10YR3/2.
Structure: Upper 5cm is massive over weak fine and medium subangular blocky.
Subsoil Texture: Loamy sand. **Colour:** 10YR5/6, mottled.
Structure: Weak medium to coarse subangular blocky, much loose material.
Comment: Profile wet at 80cm. Above 80cm the soil is at field capacity. Surface is poached. Sand is medium size fraction. Soil surface is frozen in places.

Dalton SE47.

Locality: The Piggery.
Date: 15th Jan 2001. **Site:** 5. **Grid Ref:** SE458709.
Elevation: 18m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Level. **Soil Series:** Foggathorpe.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 26cm. **Texture:** Clay loam to clay. **Colour:** 2.5Y4/2.
Structure: Moderate to weak medium prismatic breaking to moderate medium angular blocky with numerous subangular edges.
Subsoil Texture: Clay **Colour:** 2.5Y4/4, mottled.
Structure: Moderate to weak medium prismatic.
Comment: Water at the soil surface does not show above the sward. Excess water in topsoil pores. Topsoil is very moist. Subsoil is plastic but becomes drier with depth and at 75cm requires addition of moisture to texture. Slight poaching.

Dalton SE47.

Locality: The Piggery.
Date: 15th Jan 2001. **Site:** 6. **Grid Ref:** SE451708.
Elevation: 17m. **Crop:** Permanent grass. **Estimated cover:** 100%.

Slope: Level. **Soil Series:** Fenton, marginal to Foggathorpe. Clay at 42cm.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 26cm. **Texture:** Heavy clay loam. **Colour:** 10YR3/2.
Structure: Weak coarse prismatic breaking to moderate medium subangular blocky.
Subsoil Texture: Heavy clay loam. **Colour:** 10YR5/6, mottled.
Structure: Moderate coarse prismatic.
Comment: Topsoil is at field capacity. No excess surface water. Subsoil is moist and plastic to 70cm then becomes drier and practically crumbly but not quite. Apart from the coarse structure there is no evidence of compaction.

Dalton SE47.

Locality: Briar Hill Farm.
Date: 15th Jan 2001. **Site:** 7. **Grid Ref:** SE479733.
Elevation: 33m. **Crop:** Stubble turnips following winter wheat.
Estimated cover: 3%.
Slope: Cx 0.5. **Soil Series:** Everingham.
Erosion: None visible, some 'blow'.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Loamy fine sand. **Colour:** 10YR3/2.
Structure: Compacted breaking to fine medium and coarse angular blocky.
Subsoil Texture: Loamy fine sand. **Colour:** 10YR5/2, sl mottled.
Structure: Compacted breaking to fine medium and coarse angular fragments.
Comment: Wet at 75cm. Surface is moist. Bulk of topsoil is just below field capacity. Good load bearing capacity. Turnips have been grazed.

Dalton SE47.

Locality: Briar Hill Farm.
Date: 15th Jan 2001. **Site:** 8. **Grid Ref:** SE478735.
Elevation: 33m. **Crop:** Winter wheat followed by stubble turnips grazed by sheep. **Estimated cover:** N/A.
Slope: Level. **Soil Series:** Everingham/Lund.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Loamy fine sand, high % medium sand. **Colour:** 10YR3/2.
Structure: Moderate to weak platy, a result of compaction. Soil breaks to give numerous tabular fragments and loose material.
Subsoil Texture: Loamy fine sand. **Colour:** 10YR5/6, mottled.
Structure: Moderate to weak platy, a result of compaction. Soil breaks to give numerous tabular fragments and loose material.
Comment: Field grazed by sheep. Poaching evident but because the soil is not wet hoof prints do not penetrate the surface. Topsoil and subsoil are moist. Subsoil becomes slightly wet at 70cm depth.

Dalton SE47.

Locality: Briar Hill Farm.
Date: 15th Jan 2001. **Site:** 9. **Grid Ref:** SE483737.
Elevation: 32m. **Crop:** Grazed stubble turnips following potatoes.
Estimated cover: N/A.
Slope: Level. **Soil Series:** Everingham.
Erosion: None visible but there is some segregation of sand particles by rain on the surface so the potential is there.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Loamy fine sand, high % medium sand. **Colour:** 10YR3/2.
Structure: Massive but breaks readily to angular platy fragments and medium and coarse angular blocky.
Subsoil Texture: Loamy fine sand, high 5 medium sand. **Colour:** 10YR4/6, mottled.
Structure: Massive but breaks readily to angular platy fragments and medium and coarse angular blocky.
Comment: Wet at 63cm. Water table at 75cm. Even though soil is compacted it is easily broken by hand. Topsoil and upper subsoil are moist

Dalton SE47.**Locality:** Briar Hill Farm.**Date:** 15th Jan 2001.**Site:** 10.**Grid Ref:** SE485739.**Elevation:** 31m. **Crop:** Set aside (first year).**Estimated cover:** 100%.**Slope:** Level.**Soil Series:** Lund.**Erosion:** None visible.**Soil Surface:** N/A.**Soil Condition:** N/A.**Topsoil Depth:** 28cm. **Texture:** Loamy sand. **Colour:** 10YR3/2.**Structure:** Weak fine and medium subangular blocky.**Subsoil Texture:** Loamy sand.**Colour:** 10YR5/6, mottled.**Structure:** Massive breaking to medium and coarse angular.**Comment:** Subsoil is compacted to about 38cm depth. It breaks readily due to the nature of the texture. Subsoil wet at 55cm and water collects in the auger hole.**Dalton SE47.****Locality:** Briar Hill Farm.**Date:** 15th Jan 2001.**Site:** 11.**Grid Ref:** SE485738.**Elevation:** 31m. **Crop:** Subble turnips following potatoes.**Estimated cover:** N/A.**Slope:** Level.**Soil Series:** Lund.**Erosion:** None visible.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** not recorded.**Texture:** Sandy loam.**Colour:** 10YR3/2.**Structure:** Massive but readily breaks to coarse angular blocky and much unaggregated material.**Subsoil Texture:** Sandy loam.**Colour:** 10YR5/6, mottled.**Structure:** Dense and massive breaking to platy and coarse angular blocky.**Comment:** Surface disturbed by grazing sheep. Topsoil and subsoil break readily despite being compacted. Wet at 80cm. Field is underdrained. Compare adjacent set aside field which is not underdrained.**Dalton SE47.****Locality:** Briar Hill Farm.**Date:** 15th Jan 2001.**Site:** 12.**Grid Ref:** SE478740.**Elevation:** 33m. **Crop:** Spring barley stubble.**Estimated cover:** N/A.**Slope:** L1 0.5.**Soil Series:** Not known.(stoneless Pinder var?). Clay loam at 60cm.**Erosion:** None visible.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 28cm.**Texture:** Sandy clay loam.**Colour:** 10YR3/2.**Structure:** Moderate fine and medium subangular blocky.**Subsoil Texture:** Sandy clay loam/clay loam.**Colour:** 10YR5/4, mottled.**Structure:** Moderate very coarse subangular fragments.**Comment:** Subsoil compaction starts at the base of the topsoil and into the subsoil for about 8cm. Subsoil at depth is moist. No surface water.**Dalton SE47.****Locality:** Briar Hill Farm.**Date:** 15th Jan 2001.**Site:** 13.**Grid Ref:** SE478740.**Elevation:** 33m. **Crop:** Grass ride since 1991.**Estimated cover:** 100%.**Slope:** L1 0.5.**Soil Series:** Topcliffe.**Erosion:** None visible.**Soil Surface:** N/A.**Soil Condition:** N/A.**Topsoil Depth:** 28cm.**Texture:** Sandy loam.**Colour:** 10YR3/2.**Structure:** Moderate medium and fine subangular blocky but with larger fragments that are the remnants of old compaction.**Subsoil Texture:** Clay loam.**Colour:** 10YR5/6, mottled.**Structure:** Coarse and very coarse angular blocky, compacted.**Comment:** No visible poaching. Some residual topsoil compaction at the junction of the topsoil and subsoil. The subsoil is at less than field capacity.**Dalton SE47.**

Locality: Briar Hill Farm.
Date: 15th Jan 2001. **Site:** 14. **Grid Ref:** SE476740.
Elevation: 35m. **Crop:** Winter wheat disked and subsoiled.
Estimated cover: N/A/
Slope: Level. **Soil Series:** Dunkeswick, clay at 75cm.
Erosion: None visible but some separation of sand particles at the surface.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Clay loam/sandy clay loam.
Colour: 10YR3/2.
Structure: Moderate medium and coarse subangular blocky with some large clods.
Subsoil Texture: Clay loam. **Colour:** 10YR4/4.
Structure: Moderate coarse subangular blocky.
Comment: Topsoil is moist and sticky. Subsoil is moist and plastic at depth.

Dalton SE47.

Locality: Broom Close House.
Date: 16th Jan 2001. **Site:** 15. **Grid Ref:** SE408705. **Estimated cover:** N/A
Slope: L1 1. **Soil Series:** Foggathorpe.
Erosion: None visible.
Soil Surface: Mounded. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Clay loam to clay. **Colour:** 10YR3/2.
Structure: Moderate fine and medium subangular blocky with large 10cm clods. Soil surface breaking to very fine angular blocky as a result of frost. Base of the topsoil is massive.
Subsoil Texture: Clay. **Colour:** 10YR4/4, mottled.
Structure: Massive at junction with the topsoil but has some planes of weakness.
Comment: Topsoil is wet. Water films are common in the region of the incorporated straw. Subsoil is very plastic but noticeably less plastic at 85cm. No surface water. Topsoil frozen to 2-3cm depth.

Dalton SE47.

Locality: Broom Close House.
Date: 16th Jan 2001. **Site:** 16. **Grid Ref:** SE409704.
Elevation: 20m. **Crop:** Winter wheat stubble. **Estimated cover:** N/A.
Slope: Cv 1. **Soil Series:** Foggathorpe but subsoil marginal to CL.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Clay. **Colour:** 10YR3/2.
Structure: Moderate medium and coarse angular blocky.
Subsoil Texture: Clay to clay loam. **Colour:** 10YR4/4, mottled.
Structure: Massive at the junction with the topsoil but coarse prisms below.
Comment: Water films on ped faces. Nearby the field is ploughed and shows similar structure but with a much less consolidated soil as would be expected.

Dalton SE47.

Locality: Broom Close House.
Date: 16th Jan 2001. **Site:** 17. **Grid Ref:** SE411705.
Elevation: 18m. **Crop:** Winter wheat in 2000. Ploughed for drilling.
Estimated cover: N/A.
Slope: Level. **Soil Series:** Foggathorpe.
Erosion: None visible.
Soil Surface: Mounded. **Soil Condition:** Partly slaked.
Topsoil Depth: 28cm. Ploughed to 18cm. **Texture:** Clay. **Colour:**
Structure: Surface is very fine angular due to frost to about 1cm. over well to moderately developed medium angular blocky to 18cm over very coarse angular (massive in places) to 28cm.
Subsoil Texture: Clay. **Colour:** 7.5YR4/4.
Structure: Massive (no visible ped faces or plains of weakness).
Comment: Topsoil wet. Water films on ped faces and around ploughed in straw. Subsoil very plastic. Noticeably less plastic at 65cm.

Dalton SE47.**Locality:** Broom Close House.**Date:** 16th Jan 2001.**Site:** 18.**Grid Ref:** SE407704**Elevation:** 24m. **Crop:** Winter barley stubble. **Estimated cover:** N/A.**Slope:** Level.**Soil Series:** Sheringham, marginal to Wilsford. LS at 45cm.**Erosion:** None visible.**Soil Surface:** Flattened. **Soil Condition:** Unslaked.**Topsoil Depth:** 28cm. Ploughed to 18cm. **Texture:** Sandy loam.**Colour:** 7.5YR3/2.**Structure:** Upper 5cm dense and compact over moderate fine and medium subangular blocky becoming dense and coarse (very coarse subangular blocky) at junction with subsoil.**Subsoil Texture:** Sandy loam.**Colour:** 7.5YR4/4.**Structure:** Weak coarse subangular blocky with numerous horizontal planes of weakness denoting some platiness.**Comment:** Not as wet as site 15. Field part ploughed and here surface compaction has largely been destroyed.**Dalton SE47.****Locality:** Pilmoor Hall.**Date:** 16th Jan 2001**Site:** 19.**Grid Ref:** SE451728.**Elevation:** 25m. **Crop:** Sugar beet.**Estimated cover:** N/A.**Slope:** Level.**Soil Series:** Dalton? (LS). Clay at 45cm.**Erosion:** None visible.**Soil Surface:** Mounded.**Soil Condition:** Partly slaked.**Topsoil Depth:** 28cm. **Texture:** Sandy silt loam. **Colour:** 10YR2/2**Structure:** Moderate medium and coarse subangular blocky becoming very coarse subangular at the base of the horizon.**Subsoil Texture:** Loamy sand.**Colour:** 10YR5/1.**Structure:** Very coarse subangular blocky, compacted.**Comment:** Crop recently lifted but site located between rows**Dalton SE47.****Locality:** Pilmoor Hall.**Date:** 16th Jan 2001.**Site:** 20.**Grid Ref:** SE466733**Elevation:** 26m. **Crop:** Lifted sugar beet.**Estimated cover:** N/A.**Slope:** Cx 0.5.**Soil Series:** Pilmoor. LFS at 45cm and C at 95cm.**Erosion:** None visible.**Soil Surface:** Mounded.**Soil Condition:** Partly slaked.**Topsoil Depth:** 28cm. **Texture:** Sandy loam. **Colour:** 10YR3/2.**Structure:** Compacted in the upper 20cm to give very coarse subangular blocky.**Subsoil Texture:** Sandy loam/loamy sand**Colour:** 10YR5/4.**Structure:** Weak coarse angular breaking to common platy units.**Comment:** Wet at 75cm. Clay at 95cm. Ground is mounded by the lifting of the crop.**Dalton SE47.****Locality:** Sessay Park.**Date:** 16th Jan 2001.**Site:** 21.**Grid Ref:** SE450745.**Elevation:** 27m. **Crop:** Cereal stubble.**Estimated cover:** N/A.**Slope:** Cx 1.**Soil Series:** Crewe var, stones in the subsoil.**Erosion:** None visible.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 25cm. **Texture:** Clay. **Colour:** 10YR3/2.**Structure:** Upper 15cm is moderate medium angular blocky. Below 15cm the soil is massive with few planes of weakness.**Subsoil Texture:** Clay.**Colour:** 10YR5/4, mottled.**Structure:** Massive.**Comment:** Topsoil is very moist and plastic. Subsoil becomes marginal to friable.**Dalton SE47.****Locality:** Sessay Park.**Date:** 16th Jan 2001.**Site:** 22.**Grid Ref:** SE450745.

Elevation: 29m. **Crop:** Winter barley. **Estimated cover:** 12%.
Slope: Cx 1. **Soil Series:** Salop, reddish till below 50cm. Marginal to pelosol.
Erosion: Some slight particle movement on the surface in the wheelings.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm, ploughed to 18cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate medium subangular blocky to 18cm. Massive to 28cm.
Subsoil Texture: Clay. **Colour:** 10YR5/4 mottled.
Structure: Dense compacted massive.
Comment: Although dense and massive in places there are numerous wormholes. Topsoil is very moist with common water films on aggregate faces. Profile becomes less wet with depth but subsoil is still plastic.

Dalton SE47.

Locality: Sessay Park.
Date: 16th Jan 2001. **Site:** 23. **Grid Ref:** SE451743.
Elevation: 39m. **Crop:** Winter barley. **Estimated cover:** 10%.
Slope: Ll 1. **Soil Series:** Dunkeswick, clay at 45cm.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm, ploughed to 18cm. **Texture:** Clay loam with high % sand.
Colour: 10YR3/2.
Structure: Upper 8cm is moderate medium subangular (drill effect) over dense clody material to 28cm.
Subsoil Texture: Clay loam, high % sand. **Colour:** 10YR5/4, mottled.
Structure: Weak very coarse subangular blocky.
Comment: Anaerobic colours associated with the presence of organic matter (ploughed in straw). Subsoil is plastic to depth.

Dalton SE47.

Locality: Sessay Park.
Date: 16th Jan 2001. **Site:** 24. **Grid Ref:** SE453743.
Elevation: 30m. **Crop:** Cereal stubble, disked. **Estimated cover:** N/A.
Slope: Cx 2. **Soil Series:** Salop, reddish till.
Erosion: Deposition of sand grains in wheelings is common.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm, ploughed to 20cm. **Texture:** Sandy silt loam.
Colour: 10YR3/2.
Structure: Moderate medium subangular blocky to 20cm over coarse subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 10YR6/4, mottled.
Structure: Weak coarse angular blocky, compacted.
Comment: Site occurs in area mapped as dominantly SL/LS. Topsoil appears to be below field capacity. Clay subsoil is plastic and readily deformable.

Dalton SE47.

Locality: Sessay Park.
Date: 16th Jan 2001. **Site:** 25. **Grid Ref:** SE454741.
Elevation: 25m. **Crop:** Winter barley. **Estimated cover:** 6%.
Slope: Level. **Soil Series:** Arrow(?), SCL at 80cm and C at 90cm.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Clay loam, high % sand.
Colour: 7.5YR3/2.
Structure: Moderate medium subangular blocky with common large clods.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR4/6.
Structure: Weak very coarse subangular blocky.
Comment: Topsoil clods contain bluish anaerobic colours. Subsoil clay is very plastic. Profile moist. Moderately stony in the topsoil.

Dalton SE47.

Locality: Sandholmes.
Date: 16th Jan 2001. **Site:** 26 **Grid Ref:** SE444755.
Elevation: 27m. **Crop:** Lifted sugar beet. **Estimated cover:** N/A.

Slope: Level. **Soil Series:** Everingham, not very mottled.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm, ploughed to 18cm. **Texture:** Loamy fine sand.
Colour: 10YR3/2.
Structure: Upper 18cm is weak fine and medium subangular blocky over very coarse subangular blocky, compacted.
Subsoil Texture: Loamy fine sand. **Colour:** 10YR5/6, sl mottled.
Structure: Weak coarse prismatic.
Comment: Wet at 65cm. Above 65cm profile feels to be below field capacity.

Dalton SE47.

Locality: Sandholmes.
Date: 16th Jan 2001. **Site:** 27. **Grid Ref:** SE439758.
Elevation: 25m. **Crop:** Sugar beet, part lifted. **Estimated cover:** 100% where not yet cropped.
Slope: Level. **Soil Series:** Dalton? Clay at 70cm.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm, ploughed to 18cm. **Texture:** Loamy fine sand.
Colour: 10YR3/2.
Structure: Moderate medium subangular blocky and large dense clods particularly below 18cm depth.
Subsoil Texture: Loamy fine sand. **Colour:** 10YR5/6, sl mottled.
Structure: Weak coarse prismatic with some platy remnants.
Comment: Site is located on area of lifted beet. Subsoil clay is plastic. No standing water. Where the crop has not been lifted compaction is only visible at the topsoil/subsoil junction

Dalton SE47.

Locality: Sandholmes.
Date: 16th Jan 2001. **Site:** 28 **Grid Ref:** SE439757.
Elevation: 25m. **Crop:** Winter cereal stubble. **Estimated cover:** N/A.
Slope: Level **Soil Series:** Foggathorpe.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 25cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate medium subangular blocky. Coarse subangular blocky at the base of the horizon but difficult to determine because it is wet.
Subsoil Texture: Clay. **Colour:** 10YR4/4, mottled.
Structure: Very coarse prismatic.
Comment: Topsoil is wet. Subsoil is plastic. Surface water in nearby gateway.

Dalton SE47.

Locality: Sandholmes.
Date: 16th Jan 2001. **Site:** 29. **Grid Ref:** SE438756
Elevation: 24m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Level. **Soil Series:** None visible.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 11cm. **Texture:** Sandy clay loam. **Colour:** 10YR3/2.
Structure: Strong to moderate fine and medium subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 10YR4/4, sl mottled.
Structure: Moderate medium and coarse subangular blocky.
Comment: Some poaching. Occasional wetter areas with standing water. No noticeable compaction.

Dalton SE47.

Locality: Sandholmes.
Date: 16th Jan 2001. **Site:** 30. **Grid Ref:** SE438758.
Elevation: 25m. **Crop:** Permanent grass. **Estimated cover:** 100%
Slope: Cx 2. **Soil Series:** Everingham.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.

Topsoil Depth: 12cm. **Texture:** Loamy fine sand. **Colour:** 10YR2/2.
Structure: Weak coarse subangular with large tabular clods in the upper 5cm – stock damage.
Subsoil Texture: Loamy fine sand. **Colour:** 10YR3/2.
Structure: Weak fine and medium angular blocky.
Comment: Deep organic rich layer but topsoil estimated to only be about 12cm thick. Wet at 79cm.

Dalton SE47.

Locality: High House Farm.
Date: 16th Jan 2001. **Site:** 31. **Grid Ref:** SE484788.
Elevation: 60m. **Crop:** Permanent grass. **Estimated cover:** 100%
Slope: Cx 1. **Soil Series:** Salop.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 12cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate to strong fine and medium subangular blocky. Good root mat.
Subsoil Texture: Clay loam. **Colour:** 10YR3/3.
Structure: Moderate medium prismatic breaking to moderate medium subangular blocky.
Comment: Stopped by stones at 58cm. Soil surface is wet under foot in places.

Dalton SE47.

Locality: Thirkleby Farm.
Date: 16th Jan 2001. **Site:** 32. **Grid Ref:** SE479786.
Elevation: 52m. **Crop:** Permanent grass (ridge and furrow)
Estimated cover: 95%.
Slope: Cx 1. **Soil Series:** Dunkeswick. Clay at till 65cm
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 8cm. **Texture:** Sandy silt loam. **Colour:** 10YR3/2.
Structure: Weak medium prismatic breaking to fine and medium subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 10YR5/4, mottled.
Structure: Moderate medium prismatic breaking to moderate medium subangular blocky.
Comment: Site excavated on the side of a ridge. Localised patches of excessive poaching. Subsoil clay is plastic. Topsoil and immediate subsoil is estimated to be below field capacity.

6. YORKSHIRE OUSE CATCHMENT, NORTHALLERTON SE39

General Observations

The region was visited on 19th and 20th January 2001. There had been excessive rain in November and December causing severe flooding in the north of England. No rain of any quantity had fallen in recent weeks. The weather at the time of survey was cold with freezing temperatures and snow showers.

1. The ground was frozen to in excess of 5cm depth in places. In some sheltered sites and where there was a crop or stubble cover topsoils were less likely to be frozen. The frozen ground masked the load bearing ability of the topsoil which at previously visited sites served as an indication of potential wetness and structural damage. In places the structure at the soil surface was masked.
2. Land not yet ploughed was noticeably much drier than expected given the wet winter.
3. Where the topsoil or subsoil was evidently wet and where water seepage was noted the interiors of the structural units were noticeably less wet as one might expect.
4. The presence of stones in many of the soils on this sheet help to mask the presence of compaction and allow the soil to break when it is dug.
5. The term “massive” in relation to structure is used where little or no discernible soil fragmentation was observed.
6. All elevations are estimated from the 1:50000 scale Ordnance Survey map.
7. Inversion by ploughing of a compacted soil surface will serve to place the compacted material at the base of the plough unless it is dry enough to break naturally or is broken artificially by disking. There is some indication that this has occurred on this sheet but is equally relevant to other areas.

Northallerton SE39.

Locality: Barstow Hall.

Date: 19th Jan 2001.

Site: 1.

Grid Ref: SE345932.

Elevation: 35m. **Crop:** Ley grass.

Estimated cover: 90%.

Slope: Cx 1.5.

Soil Series: Wick. Sandy at 60cm.

Erosion: None visible

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: 26cm. **Texture:** Sandy loam **Colour:** 7.5YR3/2.

Structure: Moderate fine and medium subangular blocky. Some angular faces.

Subsoil Texture: Sandy loam.

Colour: 7.5YR4/4.

Structure: Moderate coarse subangular blocky, some slight compaction.

Comment: High % of coarse sand in the subsoil. No evidence of surface wetness or water seepage within the topsoil or the rest of the profile.

Northallerton SE39.

Locality: Barstow Hall.

Date: 19th Jan 2001.

Site: 2.

Grid Ref: SE343931.

Elevation: 40m. **Crop:** Cereals now first year ley. **Estimated cover:** 8%
Slope: Cx 1.5 **Soil Series:** Kearby, clay at 65cm.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 22cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate medium subangular blocky in the upper 5cm (drill depth) over moderate coarse subangular and angular blocky – compacted.
Subsoil Texture: Clay loam, stony. **Colour:** 10YR4/3.
Structure: Not possible to assess (too stony).
Comment: Bluish anaerobic colours common in the topsoil. Profile is uniformly moist throughout. Faint water films visible on ped faces and stones in the topsoil.

Northallerton SE39.

Locality: Barstow Hall.
Date: 19th Jan 2001. **Site:** 3. **Grid Ref:** SE339932.
Elevation: 38m. **Crop:** Ley grass. **Estimated cover:** 80%.
Slope: Cx 1.5. **Soil Series:** Kearby, clay at 38cm.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 26cm. **Texture:** Sandy loam, marginal to clay loam.
Colour: 7.5YR3/2.
Structure: Moderate medium subangular blocky with some peds dominantly angular.
Subsoil Texture: Sandy clay loam. **Colour:** 7.5YR4/4.
Structure: Moderate medium and coarse prismatic.
Comment: Slightly greyed ped faces. Slightly poached. No surface wetness. Profile appears to be generally below Field Capacity. Clay subsoil practically friable.

Northallerton SE39.

Locality: Barstow Hall.
Date: 19th Jan 2001. **Site:** 4. **Grid Ref:** SE342933.
Elevation: 41m. **Crop:** Potatoes, lifted. **Estimated cover:** N/A.
Slope: Level **Soil Series:** Kearby, clay at 38cm.
Erosion: Indication of slight water flow and sediment movement. More noticeable erosion on lower part of the field but still not excessive.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Clay loam, high % sand. **Colour:** 10YR3/2.
Structure: Upper 5-10cm is moderate coarse angular blocky with occasional platy remnant over weak very coarse subangular blocky. Some patches could be described as massive.
Subsoil Texture: Clay loam, high % sand. **Colour:** 7.5YR4/4, slightly mottled
Structure: Weak coarse subangular blocky.
Comment: Soil surface is about 90% trafficked. Standing water common. Soil surface soft. Common bluish anaerobic colours. Subsoil clay practically friable until about 70cm depth then becomes plastic.

Northallerton SE39.

Locality: Barstow Hall.
Date: 19th Jan 2001. **Site:** 5. **Grid Ref:** SE344933.
Elevation: 36m. **Crop:** Permanent grass, ploughed for reseeded occasionally.
Estimated cover: 90%.
Slope: Cv 2. **Soil Series:** Wick.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 25cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Moderate medium subangular blocky with weak platy structure at the junction with the subsoil – compacted.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR4/4.
Structure: Weak coarse subangular blocky.
Comment: Some evidence of compaction at the soil surface but difficult to assess because of root mat. No surface wetness visible. Poaching by stock common but hoof prints do not penetrate far into the surface.

Northallerton SE39.

Locality: Lark Hall.

Date: 19th Jan 2001.

Site: 6.

Grid Ref: SE349925.

Elevation: 30m. **Crop:** Cut maize.

Estimated cover: N/A.

Slope: L1 2.

Soil Series: Wick.

Erosion: Some small rills in wheelings and deposition fans at the base of the slope.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 28cm. **Texture:** Sandy silt loam. **Colour:** 7.5YR3/2.

Structure: Moderate medium subangular blocky between the wheelings with 5cm of compaction at the surface in the wheelings.

Subsoil Texture: Sandy silt loam.

Colour: 7.5YR5/4.

Structure: Moderate medium subangular blocky.

Comment: Estimate that wheelings cover about 50% of the ground surface. Water in wheelings at the base of the slope.

Northallerton SE39.

Locality: Lark Hall.

Date: 19th Jan 2001.

Site: 7.

Grid Ref: SE346925.

Elevation: 43m. **Crop:** Cut maize.

Estimated cover: N/A.

Slope: Cx 3.

Soil Series: Hallsworth.

Erosion: Some small rills in wheelings. Deposition fans occur at the base of slope but they are not excessive.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 25cm. **Texture:** Clay loam. **Colour:** 7.5YR3/2.

Structure: Moderate medium subangular blocky with more dense material in the top 5cm with some coarse angular fragments.

Subsoil Texture: Clay.

Colour: 7.5YR5/4, mottled.

Structure: Moderate coarse prismatic.

Comment: Site located on a wheeling. Estimate that 50% of the surface is trafficked. Some slight bluish colouration due to anaerobism at the base of the plough layer.

Northallerton SE39.

Locality: Lark Hall.

Date: 19th Jan 2001.

Site: 8.

Grid Ref: SE348924.

Elevation: 46m. **Crop:** Cut maize.

Estimated cover: N/A.

Slope: Cx 2.

Soil Series: Kearby? Stopped at 55cm.

Erosion: Slight sediment movement in wheelings. No visible cutting of the surface.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 26cm. **Texture:** Clay loam. **Colour:** 7.5YR3/2.

Structure: Moderate medium subangular blocky in the upper 15cm over significantly denser very coarse subangular blocky.

Subsoil Texture: Clay loam.

Colour: 10YR5/4.

Structure: Weak medium prismatic breaking to moderate coarse subangular blocky.

Comment: No visible surface wetness. Site situated between wheelings, wheelings are compacted in the upper 5cm (see site 6). Estimate about 20% of surface is wheelings.

Northallerton SE39.

Locality: Lark Hall.

Date: 19th Jan 2001.

Site: 9.

Grid Ref: SE346924.

Elevation: 42m. **Crop:** Winter wheat.

Estimated cover: 8%.

Slope: Cx 3.5.

Soil Series: Kearby, mottled clay at 48cm.

Erosion: Evidence of particle movement in the wheelings but not very much

Soil Surface: Mounded and flattened.

Soil Condition: Slaked.

Topsoil Depth: 28cm, ploughed to 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2.

Structure: Mixed. Upper 5cm is medium subangular blocky (drill effect) over clods that break into medium angular blocky and also moderate coarse subangular blocky. At the base of the topsoil soil is compacted with little discernible structure.

Subsoil Texture: Clay loam.

Colour: 10YR4/4.

Structure: Moderate coarse subangular.

Comment: Bluish colours in the topsoil due to anaerobism. Soil surface is wet underfoot but may be due to melting frost. Thin water films visible in places on the topsoil ped faces and around stones.

Northallerton SE39.**Locality:** Lark Hall.**Date:** 19th Jan 2001**Site:** 10**Grid Ref:** SE346924**Elevation:** 44m. **Crop:** Winter wheat.**Estimated cover:** 8%**Slope:** Cx 0.5.**Soil Series:** Hopsford or Bishampton (may be argillic). Stopped at 80cm by stones.**Erosion:** None visible.**Soil Surface:** Mounded and flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 28cm, ploughed to 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2.**Structure:** Moderate medium subangular blocky.**Subsoil Texture:** Clay loam, stony.**Colour:** 10YR 3/3, mottled.**Structure:** Moderate medium subangular blocky.**Comment:** Odd that the structure is significantly different from site 9 and from what would be expected on an arable site. No visible surface wetness. Thin water films on ped faces. Profile uniformly moist.**Northallerton SE39.****Locality:** Lark Hall.**Date:** 19th Jan 2001.**Site:** 11.**Grid Ref:** SE345915.**Elevation:** 32m. **Crop:** Winter wheat stubble.**Estimated cover:** N/A.**Slope:** Cx 3.5.**Soil Series:** Dunkeswick, clay at 40cm.**Erosion:** None visible.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 28cm, ploughed to 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2.**Structure:** Moderate fine and medium subangular blocky becoming more dense and compacted below 20cm depth.**Subsoil Texture:** Clay loam.**Colour:** 10YR4/4.**Structure:** Moderate medium and coarse subangular blocky.**Comment:** No standing water. Profile uniformly moist.**Northallerton SE39.****Locality:** Lark Hall.**Date:** 19th Jan 2001.**Site:** 12.**Grid Ref:** SE342914.**Elevation:** 32m. **Crop:** Cut maize.**Estimated cover:** N/A.**Slope:** Cv 2.**Soil Series:** Dunkeswick, clay at 70cm.**Erosion:** Slight erosion in wheelings.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 28cm, ploughed to 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2.**Structure:** Moderate medium and coarse subangular blocky with the upper 5cm of the topsoil dense and compacted with the low 8cm of the horizon a weak very coarse dense subangular blocky.**Subsoil Texture:** Clay loam.**Colour:** 10YR4/3.**Structure:** Moderate medium coarse subangular blocky.**Comment:** Wheelings cover about 50% of the field. Site located in a wheeling. Subsoil wet at 70cm. In the topsoil ped faces are moister than ped interiors.**Northallerton SE39.****Locality:** Morton Grange.**Date:** 19th Jan 2001.**Site:** 13.**Grid Ref:** SE326913.**Elevation:** 38m. **Crop:** Permanent grass.**Estimated cover:** 95%.**Slope:** Ll 0.5.**Soil Series:** Wick.**Erosion:** None visible.**Soil Surface:** N/A.**Soil Condition:** N/A.**Topsoil Depth:** 22cm. **Texture:** Sandy loam. **Colour:** 7.5YR4/2.**Structure:** moderate to weak medium subangular blocky with more dense material at the base of the topsoil and also in the upper 5cm.**Subsoil Texture:** Sandy loam.**Colour:** 7.5YR4/4.**Structure:** Moderate very coarse subangular blocky.**Comment:** Bluish anaerobic colours in the upper 5cm of the topsoil.**Northallerton SE39.****Locality:** Morton Grange.

Date: 19th Jan 2001. **Site:** 14. **Grid Ref:** SE326914.
Elevation: 40m. **Crop:** Lifted potatoes and badly ploughed.
N/A. Estimated cover:
Slope: Cx 1. **Soil Series:** Flint? Clay at 40cm but stoneless.
Erosion: Common small rills in wheelings..
Soil Surface: Furrowed. **Soil Condition:** Partly slaked.
Topsoil Depth: 28cm. **Texture:** Clay loam. **Colour:** 7.5YR3/2.
Structure: Large clods breaking by weathering to coarse angular and subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 7.5YR4/4, slightly calc.
Structure: Weak medium and coarse prisms breaking to moderate medium and coarse subangular blocky.
Comment: Evidence of recent standing water. Topsoil is wet with common water films on ped faces. Interiors of peds are much less wet.

Northallerton SE39.

Locality: Morton Grange.
Date: 19th Jan 2001. **Site:** 15. **Grid Ref:** SE326915.
Elevation: 40m. **Crop:** Winter cereals. **Estimated cover:** 5%.
Slope: Level. **Soil Series:** Wick.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. **Texture:** Sandy loam. **Colour:** 7.5YR3/2.
Structure: Moderate medium subangular blocky becoming noticeably denser at the junction with the subsoil.
Subsoil Texture: Sandy loam. **Colour:** 7.5YR3/2.
Structure: Moderate medium and coarse subangular blocky.
Comment: Soil surface is wet due to melting frost and snow.

Northallerton SE39.

Locality: Morton Grange.
Date: 19th Jan 2001. **Site:** 16. **Grid Ref:** SE327912
Elevation: 38m. **Crop:** Lifted potatoes. **Estimated cover:** N/A.
Slope: Level. **Soil Series:** Flint, clay at 55cm.
Erosion: Slight sediment movement visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm, ploughed to 20cm. **Texture:** Sandy clay loam.
Colour: 7.5YR3/2
Structure: Moderate medium subangular blocky becoming coarse subangular blocky and more dense below 20cm depth.
Subsoil Texture: Sandy clay loam. **Colour:** 7.5YR4/4, slightly mottled.
Structure: Weak medium and coarse subangular.
Comment: Standing water in wheelings. Pondered water at the lower part of the field. Some bluish anaerobic colours in the topsoil. Site is located off the wheelings. Top 5-8cm of a wheeling is compacted (massive). Topsoil and upper subsoil are above field capacity.

Northallerton SE39.

Locality: Morton Grange.
Date: 19th Jan 2001. **Site:** 17. **Grid Ref:** SE325911.
Elevation: 30m. **Crop:** Permanent grass. **Estimated cover:** 90%
Slope: Cv 0.5. **Soil Series:** Arrow.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 15cm. **Texture:** Sandy loam. **Colour:** 10YR2/2.
Structure: Moderate fine and medium prismatic breaking to fine and medium subangular blocky.
Subsoil Texture: Sandy loam. **Colour:** 10YR4/4.
Structure: Moderate to weak medium to coarse subangular blocky.
Comment: Good root mat. Wet at 70cm depth. Water table at 80cm. Soil surface is poached and there is a faint wet squishiness in the surface.

Northallerton SE39.

Locality: Morton Grange.
Date: 19th Jan 2001. **Site:** 18 **Grid Ref:** SE325909.

Elevation: 30m. **Crop:** Potatoes still in the ground.

Estimated cover: N/A.

Slope: L1 0.5.

Soil Series: Dunkeswick, marginal to Hallsworth.

Erosion: Evidence of erosion between ridges.

Soil Surface: 'Flattened'. **Soil Condition:** Slaked.

Topsoil Depth: 28cm. **Texture:** Clay loam. **Colour:** 10YR3/2.

Structure: Medium and coarse dense subangular blocky with excessive water between peds. Below 20cm depth the soil is dense and massive.

Subsoil Texture: Clay loam.

Colour: 10YR4/4, mottled.

Structure: Massive, extremely difficult to crush by hand.

Comment: Site located between the ridges. The centres of the topsoil aggregates are much drier than their surfaces and are estimated to be below field capacity. Common bluish colours associated with anaerobism. Topsoil is very wet with low bearing strength.

Northallerton SE39.

Locality: Morton Grange.

Date: 19th Jan 2001.

Site: 19.

Grid Ref: SE324908.

Elevation: 28m. **Crop:** Stubble turnips grazed by sheep.

Estimated cover: N/A.

Slope: Level.

Soil Series: Pinder.

Erosion: None visible.

Soil Surface: N/A.

Soil Condition: N/A.

Topsoil Depth: Not recorded. **Texture:** Clay loam. **Colour:** 10YR3/2.

Structure: Weak coarse angular, compacted. No visible aggregates in the upper part of the topsoil.

Subsoil Texture: Clay loam.

Colour: 10YR4/4, mottled.

Structure: Weak coarse subangular blocky.

Comment: The whole field is a complete quag. 100% poached. Hoof prints are full of water. Upper 5-8cm of the topsoil is blue.

Northallerton SE39.

Locality: Morton Grange.

Date: 20th Jan 2001.

Site: 20.

Grid Ref: SE324910

Elevation: 30m. **Crop:** Wheat stubble drilled with fodder turnips.

Estimated cover: 90%.

Slope: Cv 1.

Soil Series: Dunkeswick.

Erosion: None visible.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 28cm, ploughed to 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2.

Structure: Moderate medium subangular blocky with old clod remnants breaking to medium and coarse angular blocky.

Subsoil Texture: Clay loam.

Colour: 10YR4/4.

Structure: Dense weak coarse angular blocky with some platy remnants.

Comment: Surface of the topsoil is wet but probably due to melting snow. Topsoil has been compacted in the past and the remnants are still present. Crop is yet to be grazed.

Northallerton SE39.

Locality: Scruton.

Date: 20th Jan 2001.

Site: 21

Grid Ref: SE302920

Elevation: 40m. **Crop:** Cut maize.

Estimated cover: N/A.

Slope: Level.

Soil Series: Not known. Slightly mottled clay at 50cm and sand at 70cm.

Erosion: None visible.

Soil Surface: Flattened.

Soil Condition: Slaked.

Topsoil Depth: 28cm, ploughed to 20cm. **Texture:** Sandy loam.

Colour: 10YR3/2.

Structure: Moderate to weak medium subangular blocky with compacted soil surface and coarse platy at the base of the horizon.

Subsoil Texture: Sandy loam.

Colour: 7.5YR3/4.

Structure: Moderate coarse platy, easily broken.

Comment: The field is part subsoiled and the site is located on an unsubsoiled part. Subsoiling has lifted slabs 2-3cm thick of compacted topsoil rather than break it. Subsoil clay is slightly plastic.

Northallerton SE39.**Locality:** Scruton.**Date:** 20th Jan 2001.**Site:** 22.**Grid Ref:** SE306921.**Elevation:** 40m. **Crop:** Cut maize.**Estimated cover:** N/A.**Slope:** Level.**Soil Series:** Brickfield? SL at 75cm.**Erosion:** None visible.**Soil Surface:** Part mounded and part flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 28cm.**Texture:** Clay loam.**Colour:** 10YR3/2.**Structure:** Moderate fine and medium subangular blocky. Upper 2-3cm is compacted and practically platy.**Subsoil Texture:** Clay loam.**Colour:** 10YR4/3, mottled.**Structure:** Moderate medium and coarse prismatic breaking to medium angular blocky.**Comment:** Topsoil is wet with water films on ped faces locally.**Northallerton SE39.****Locality:** Scruton.**Date:** 20th Jan 2001.**Site:** 23.**Grid Ref:** SE305923.**Elevation:** 40m. **Crop:** Cut maize.**Estimated cover:** N/A.**Slope:** Level.**Soil Series:** Not recorded. SL at 65cm.**Erosion:** Common rills in wheelings. Deposition at the base of slope and where flow rate changes.**Soil Surface:** Flattened.**Soil Condition:** Slaked.**Topsoil Depth:** 24cm.**Texture:** Sandy clay loam.**Colour:** 10YR3/2.**Structure:** Moderate coarse angular blocky with some subangular blocky.**Subsoil Texture:** Sandy clay loam.**Colour:** 10YR3/3.**Structure:** Moderate coarse subangular blocky becoming weak medium subangular blocky with depth.**Comment:** Profile uniformly moist. Topsoil contains some medium sized aggregates.**Northallerton SE39.****Locality:** Moor House.**Date:** 20th Jan 2001.**Site:** 24**Grid Ref:** SE325942.**Elevation:** 39m. **Crop:** potatoes, not lifted.**Estimated cover:** N/A.**Slope:** Cx 1.5.**Soil Series:** rewe.**Erosion:** Small rills between the potato ridges**Soil Surface:** N/A**Soil Condition:** Slaked.**Topsoil Depth:** 26cm.**Texture:** Clay**Colour:** 10YR3/2.**Structure:** Impossible to assess very wet.**Subsoil Texture:** Clay.**Colour:** 6YR4/4, mottled.**Structure:** Moderate coarse prismatic breaking to very coarse angular blocky.**Comment:** Subsoil is substantially drier than the topsoil. Subsoil clay is plastic. Common seepage at the base of the plough layer. Low bearing capacity.**Northallerton SE39.****Locality:** Moor House.**Date:** 20th Jan 2001.**Site:** 25.**Grid Ref:** SE324942.**Elevation:** 38m. **Crop:** Permanent grass.**Estimated cover:** 95%.**Slope:** Cx 1.5.**Soil Series:** Crewe.**Erosion:** None visible.**Soil Surface:** N/A.**Soil Condition:** N/A.**Topsoil Depth:** 22cm.**Texture:** Clay.**Colour:** 10YR3/2.**Structure:** Moderate medium and coarse subangular blocky.**Subsoil Texture:** Clay.**Colour:** 10YR4/4, mottled.**Structure:** Strong medium and coarse prismatic.**Comment:** Soil surface is wet under foot. Upper 3-4cm is bluish indicating anaerobic conditions. Moisture films on ped faces. Noticeable wheelings across the field. The excavated grass sod does not break when jumped on but stays as one lump, obviously good coherence between peds.**Northallerton SE39.****Locality:** Moor House.**Date:** 20th Jan 2001.**Site:** 26.**Grid Ref:** SE326941.**Elevation:** 39m. **Crop:** Permanent grass.**Estimated cover:** 80%.

Slope: L1 0.5. **Soil Series:** Crewe, not very reddish.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 22cm. **Texture:** Clay **Colour:** 10YR3/2, mottled.
Structure: Moderate fine and medium angular blocky. Upper 3cm is dense and compacted.
Subsoil Texture: Clay **Colour:** 10YR5/4, mottled.
Structure: Weak coarse prismatic breaking to moderate fine and medium angular blocky.
Comment: Surface is poached. Very wet at the soil surface with standing water in hoof prints. Anaerobic bluish colours common.. Soil surface compacted by poaching. Moor House.

Northallerton SE39.

Locality: Yafforth Grange.
Date: 20th Jan 2001. **Site:** 27. **Grid Ref:** SE331948.
Elevation: 49m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Level. **Soil Series:** Salop. Reddish clay at 58cm.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 18cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate fine subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 7.5YR4/3, mottled.
Structure: Moderate fine and medium subangular blocky.
Comment: Slight surface wetness. Good root mat. Soil surface covered by hoof prints.

Northallerton SE39.

Locality: Yafforth Grange.
Date: 20th Jan 2001. **Site:** 28. **Grid Ref:** SE330946.
Elevation: 49m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Cx 1. **Soil Series:** Hallsworth.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: cm. **Texture:** Clay loam. **Colour:** 10YR3/2, slightly mottled.
Structure: Strong fine subangular blocky. Soil surface compacted to about 1-2cm. below hoof prints.
Subsoil Texture: Clay. **Colour:** 10YR5/3, mottled.
Structure: Moderate fine and medium prismatic breaking to medium angular.
Comment: Ridge and furrow. Wetter in base of furrow with standing water in places. Tops of ridges 'black' and muddled as this is the preferred area for sheep. Significantly more seepage in upper part of subsoil. Much wetter at soil surface than within topsoil proper.

Northallerton SE39.

Locality: Yafforth Grange.
Date: 20th Jan 2001. **Site:** 29. **Grid Ref:** SE328946.
Elevation: 49m. **Crop:** Permanent grass. **Estimated cover:** 95%.
Slope: Cx 0.5 **Soil Series:** Hallsworth becoming 7.5YR/6YR at about 70cm.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 21cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Strong fine subangular blocky with wet damaged layer at soil surface.
Subsoil Texture: Clay. **Colour:** 10YR5/6.
Structure: Strong medium and coarse prismatic breaking to medium and coarse angular.
Comment: Surface poached and wet. Water in hoof prints. Slight seepage within topsoil and upper part of subsoil.

Northallerton SE39.

Locality: Yafforth Grange.
Date: 20th Jan 2001. **Site:** 30 **Grid Ref:** SE328948.
Elevation: 49m. **Crop:** Permanent grass. **Estimated cover:** 60%.
Slope: Level. **Soil Series:** Hallsworth.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2, slightly mottled.

Structure: Moderate fine and medium subangular blocky compaction at the surface due to poaching.
Subsoil Texture: Clay. **Colour:** 10YR5/6, mottled.
Structure: Moderate medium prismatic breaking to moderate coarse angular blocky.
Comment: Badly poached by cattle. Hoof prints penetrate to an average of 7cm. All hoof prints contain water and soil surface is wet with bulk of topsoil significantly less wet. Slight seepage at base of topsoil.

Northallerton SE39.

Locality: Langton Grange.
Date: 20th Jan 2001. **Site:** 31. **Grid Ref:** SE308972.
Elevation: 46m. **Crop:** Ploughed for cereals. **Estimated cover:** N/A.
Slope: Cx 1. **Soil Series:** Hallsworth.
Erosion: None visible.
Soil Surface: Mounded. **Soil Condition:** Partly slaked.
Topsoil Depth: 28cm. Ploughed to 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate medium subangular blocky becoming coarse subangular blocky below 20cm.
Subsoil Texture: Clay. **Colour:** 10YR4/4, mottled.
Structure: Coarse subangular blocky.
Comment: Topsoil wet in patches particularly around incorporated straw.

Northallerton SE39.

Locality: Langton Grange.
Date: 20th Jan 2001. **Site:** 32. **Grid Ref:** SE309972.
Elevation: 46m. **Crop:** Cereal stubble. **Estimated cover:** N/A.
Slope: Cx1. **Soil Series:** Dunkeswick.
Erosion: None visible.
Soil Surface: Flattened. **Soil Condition:** Slaked.
Topsoil Depth: 28cm. Ploughed to 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate medium subangular blocky becoming dense and compact below 20cm.
Subsoil Texture: Clay loam. **Colour:** 10YR4/4. Poor match.
Structure: Weak medium prismatic breaking to moderate medium and coarse angular blocky.
Comment: Some standing water in wheelings.

Northallerton SE39.

Locality: Langton Grange.
Date: 20th Jan 2001. **Site:** 33. **Grid Ref:** SE309969.
Elevation: 46m. **Crop:** Permanent grass. **Estimated cover:** 100%.
Slope: Level. **Soil Series:** Crewe.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 22cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate medium and coarse subangular blocky.
Subsoil Texture: Clay. **Colour:** 10YR4/4, mottled.
Structure: Weak medium prismatic breaking to medium coarse angular.
Comment: Slightly poached soil surface. Soil surface wet. Slight seepage within topsoil. Upper 3-4cm. definitely greyish – anaerobism.

Northallerton SE39.

Locality: Langton Grange.
Date: 20th Jan 2001. **Site:** 34. **Grid Ref:** SE308969.
Elevation: 46m. **Crop:** Permanent grass, reseeded. **Estimated cover:** 100%.
Slope: Cx 0.5. **Soil Series:** Dunkeswick. Clay at 50cm.
Erosion: None visible.
Soil Surface: N/A. **Soil Condition:** N/A.
Topsoil Depth: 25cm. **Texture:** Clay loam. **Colour:** 10YR3/2.
Structure: Moderate fine and medium subangular blocky.
Subsoil Texture: Clay loam. **Colour:** 7.5YR5/6.
Structure: Moderate medium subangular blocky breaking readily to fine subangular blocky.
Comment: Seepage at base of topsoil. Subsoil wet at 45cm. (above the clay). Auger hole fills with water within 5 minutes.

Northallerton SE39.**Locality:** Langton Grange.**Date:** 20th Jan 2001.**Site:** 35.**Grid Ref:** SE308968.**Elevation:** 45m. **Crop:** Cereal stubble.**Estimated cover:** N/A.**Slope:** Level.**Soil Series:** Crewe.**Erosion:** None visible.**Soil Surface:** Flattened. **Soil Condition:** Slaked.**Topsoil Depth:** 28cm. Ploughed to 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2.**Structure:** Moderate medium subangular blocky becoming dense and coarse below 20cm.**Subsoil Texture:** Clay.**Colour:** 10YR5/4, mottled.**Structure:** Moderate coarse prismatic.**Comment:** Base of topsoil not excessively compacted. Topsoil wetter than subsoil with water films on ped faces. Profile is at field capacity but no seepage visible and auger hole does not fill with water (compare site 34).**Northallerton SE39.****Locality:** Langton Grange.**Date:** 20th Jan 2001.**Site:** 36.**Grid Ref:** SE306966.**Elevation:** 43m. **Crop:** Cereal stubble.**Estimated cover:** N/A.**Slope:** L1 3.5.**Soil Series:** Dunkeswick. Clay at 55cm.**Erosion:** None visible.**Soil Surface:** Flattened. **Soil Condition:** Slaked.**Topsoil Depth:** 28cm. Ploughed to 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2.**Structure:** Moderate medium subangular blocky becoming medium and coarse below 20cm.**Subsoil Texture:** Clay loam.**Colour:** 10YR4/3, mottled.**Structure:** Moderate medium and coarse subangular blocky.**Comment:** Numerous wheelings some with standing water. Topsoil is moister than rest of profile.**Northallerton SE39.****Locality:** Langton Grange.**Date:** 20th Jan 2001.**Site:** 37.**Grid Ref:** SE306969.**Elevation:** 45m. **Crop:** Permanent grass. **Estimated cover:** 100%.**Slope:** Cx 2.5.**Soil Series:** Salop. Clay at 40cm.**Erosion:** None visible.**Soil Surface:** N/A.**Soil Condition:** N/A.**Topsoil Depth:** 20cm. **Texture:** Clay loam. **Colour:** 10YR3/2.**Structure:** Moderate fine and medium subangular blocky.**Subsoil Texture:** Clay loam.**Colour:** 10YR3/4, mottled.**Structure:** Moderate medium prismatic breaking readily to fine and moderate subangular blocky.**Comment:** Soil surface slightly poached and wet. Topsoil structure at surface difficult to identify because it is wet and bound together by root mat so deforms readily. Appears however to be coarser than in main body of the topsoil.

7. BOURNE CATCHMENT TQ 55, 64, 65

General Observations

1. This is the record of 70 observations in the Bourne catchment. Only 1 field of late-harvested crops (maize was found). The area is dominated by cereals (23 fields sampled), grass (18 fields sampled) and top fruit (25 fields sampled). Three set-aside fields and one rhubarb (just to be different!) field were also sampled.
2. On Hythe Beds it was rare to be able to auger the full depth because of stones and ragstone. Most have been recorded as Malling Series on the basis of what was seen on the auger.
3. All the orchards sampled were managed with a grass strip or alleyway between the trees, and bare ground (maintained by herbicide) beneath the trees themselves. In each orchard sampled, pairs of pits were dug to examine the structure under both the grass alleyway and the herbicide strip.
4. Earthworms were common in all orchard soils, particularly under the grass strips, but also (although fewer) under the herbicide strips, where they have concentrated the stones around their holes.
5. Erosion is present in tracks in all orchards. Where "none visible" is noted, this refers to the body of the orchard, and not to these trackways. It seems that water falling on the herbicide strips tends to run off into the grass strip between the trees so does not cause erosion in the strips themselves. In addition the concentration of stones around earthworm burrows is sometimes enough to slow run-off.
6. Bores B32-B40 are not in date order with the remainder as the surveyors were unsure how far they had gone with the numbering one day so started at B41 so as not to duplicate numbers. B32 to 40 were then allocated during later sampling.

Just west of Wrotham (TQ65/025925) there appears to be a small stream flowing from the base of the chalk scarp and contributing to the catchment. When, there had been little or no rain for at least one week.

Site no:	B1	Catchment:	Bourne	Locality:	North Frith Farm Mike Rogers, manager
Date:	15/12/00	Grid ref.:	TQ65/115042		
Elevation:	61m	Crop:	W.cereals.	Estimated cover:	15%
Slope:	4° Cx	Soil series:	Oxpasture	Soil subgroup:	572
Erosion:	none visible				
Soil surface form:	mounded	Soil surface condition:	partly slaked		
Topsoil depth:	29cm	Texture:	SZL-CL	Stones:	10%
Moisture:	v. moist; wet at base of horizon				
Topsoil structure:	moderate med. sab				
Subsoil texture:	CL				
Moisture:	moist; drier than topsoil				
Subsoil structure:	moderate med. sab				
Comment:	Drift over Weald Clay near hill top. Soil wettest at base of topsoil, but no gleying and firm to walk on. Water appears to be moving along base of plough layer.				

Site no: B2 **Catchment:** Bourne **Locality:** North Frith Farm
Date: 15/12/00 **Grid ref.:** TQ65/097048
Elevation: 66m **Crop:** P.G./long ley **Estimated cover:** 100%
Slope: 2° St/Cx **Soil series:** Oxpasture **Soil subgroup:** 572
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 28cm (2cm Ah) **Texture:** SZL-CL **Stones:** 10%
Moisture: moist; wet in some fissures and pores
Topsoil structure: strong/moderate fine sab; med. granular in top
Subsoil texture: CL (stony)
Moisture: moist
Subsoil structure: moderate med. sab
Comment: Drift over Weald Clay near hill top. Water draining off field running on surface through gateway. Evidence of springs/seepage lines. Less free water visible in fissures and pores than at Site B1.

Site no: B3 **Catchment:** Bourne **Locality:** North Frith Farm
Date: 15/12/00 **Grid ref.:** TQ65/128078
Elevation: 40m **Crop:** ley (newish) **Estimated cover:** 70%
Slope: 3° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: some evidence of water flow across field, but no clear rills
Soil surface form: flattened **Soil surface condition:** partly slaked beneath ley
Topsoil depth: 29cm **Texture:** CL (<30%C) **Stones:** <5%
Moisture: v. moist; wet in fissures and pores
Topsoil structure: moderate coarse/med. sab
Subsoil texture: C
Moisture: moist; drier than topsoil but still with some water in fissures
Subsoil structure: moderate/weak med/coarse sab
Comment: Thin drift over Weald Clay on lower slopes. Topsoil very soft and structure badly damaged by walking across field. Subsoil drier, particularly within peds. Photo.

Site no: B4 **Catchment:** Bourne **Locality:** North Frith Farm
Date: 15/12/00 **Grid ref.:** TQ65/144083
Elevation: 38m **Crop:** W. cereals **Estimated cover:** 10%
Slope: 1° St **Soil series:** Denchworth **Soil subgroup:** 712
Erosion: slight rills in wheelings. Slight deposition in level areas and at base of slope.
Soil surface form: mounded **Soil surface condition:** partly slaked; slaked locally, particularly in wheelings
Topsoil depth: 29cm **Texture:** C **Stones:** 5%
Moisture: v. moist; wet in some fissures and pores
Topsoil structure: moderate med. sab, weak coarse platy in bottom 8 cm.
Subsoil texture: C
Moisture: moist
Subsoil structure: weak coarse sab
Comment: Weald Clay. Crop better on higher ground above Site B4. Standing Water in wheelings on flat areas. 2 photos.

Site no: B5 **Catchment:** Bourne **Locality:** North Frith Farm
Date: 15/12/00 **Grid ref.:** TQ65/152134
Elevation: 54m **Crop:** Set-aside **Estimated cover:** 90%
Slope: 5° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: none visible.
Soil surface form: mounded, but rough and locally furrowed
Soil surface condition: partly slaked
Topsoil depth: 29cm **Texture:** CL-SCL **Stones:** 10-15%
Moisture: v. moist; wet in some fissures and pores
Topsoil structure: moderate coarse/med. sab. Dense at base of topsoil
Subsoil texture: SCL
Moisture: moist

Subsoil structure: moderate med./coarse sab

Comment: Slight compaction at base of topsoil – wet in fissures above. Less stony upslope. Photo of vegetation.

Site no: B6 **Catchment:** Bourne **Locality:** North Frith Farm
Date: 15/12/00 **Grid ref.:** TQ65/106118
Elevation: 46 m **Crop:** W. wh. stubble **Estimated cover:** n/a
Slope: 3° Cx **Soil series:** Denchworth **Soil subgroup:** 712
Erosion: none visible
Soil surface form: mounded **Soil surface condition:** partly slaked
Topsoil depth: 30 cm (cult. to 26 cm) **Texture:** CL (>30% clay) **Stones:** 5%
Moisture: moist; wet in some fissures and pores
Topsoil structure: weak/moderate coarse sab, weak coarse platy and slightly compact at base of topsoil.
Subsoil texture: C
Moisture: moist
Subsoil structure: moderate/weak coarse sab
Comment: Weald Clay. Although topsoil is wet in fissures and pores, it is less wet than earlier sites which have been ploughed and drilled this autumn. Vertical photo.

Site no: B7 **Catchment:** Bourne **Locality:** North Frith Farm
Date: 15/12/00 **Grid ref.:** TQ65/139014
Elevation: 46 m **Crop:** W. cereals **Estimated cover:** 10%
Slope: 3° St **Soil series:** Denchworth **Soil subgroup:** 712
Erosion: some surface wash into wheelings and very small rills. Some deposition in level areas.
Soil surface form: mounded **Soil surface condition:** partly slaked
Topsoil depth: 29 cm **Texture:** ZCL (~30% clay) **Stones:** 5%
Moisture: v. moist; wet in some fissures and pores
Topsoil structure: weak/moderate coarse sab, weak coarse platy at base of topsoil.
Subsoil texture: C
Moisture: moist
Subsoil structure: moderate/weak coarse sab
Comment: Weald Clay. Topsoil and upper subsoil are wet in fissures and pores. Vertical photo.

Site no: B8 **Catchment:** Bourne **Locality:** North Frith Farm
Date: 15/12/00 **Grid ref.:** TQ64/264854
Elevation: 32 m **Crop:** OSR **Estimated cover:** 40%
Slope: 1° St **Soil series:** Breamore/Hook **Soil subgroup:** 573
Erosion: none visible
Soil surface form: mounded **Soil surface condition:** unslaked/ partly slaked
Topsoil depth: 28 cm **Texture:** SZL-CL **Stones:** 5%
Moisture: moist; wet in some fissures and pores, particularly at base of topsoil
Topsoil structure: weak/moderate coarse sab, weak coarse platy at base of topsoil.
Subsoil texture: CL-SZL
Moisture: moist
Subsoil structure: weak/moderate coarse sab
Comment: Terrace gravels with brickearth influence. Water has moved down through the topsoil and accumulated at its base.

Site no: B9 **Catchment:** Bourne **Locality:** North Frith Farm
Date: 15/12/00 **Grid ref.:** TQ64/263902
Elevation: 29 m **Crop:** ley grass **Estimated cover:** 90%
Slope: <1° St **Soil series:** Breamore/Waterstock **Soil subgroup:** 573
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 30 cm **Texture:** SZL-CL **Stones:** 5%
Moisture: moist/ v. moist
Topsoil structure: moderate med./fine sab, finer towards the top and slightly platy in bottom 15 cm of topsoil.
Subsoil texture: SL-SCL
Moisture: moist

Comment: Terrace material. No free water seen. Cultivations for ley do not appear to have been as deep as 30 cm.

Site no:	B11	Catchment:	Bourne	Locality:	North Frith Farm
Date:	15/12/00	Grid ref.:	TQ64/202901		
Elevation:	31 m	Crop:	W. cereals	Estimated cover:	55%
Slope:	<1° St	Soil series:	Hook	Soil subgroup:	573
Erosion:	none visible				
Soil surface form:	mounded	Soil surface condition:	partly slaked		
Topsoil depth:	29 cm	Texture:	SZL-ZCL	Stones:	<1%
Moisture:	v. moist; wet in some fissures and pores				
Topsoil structure:	moderate med./fine sab, weak coarse platy and slight compact at base of topsoil.				
Subsoil texture:	ZCL				
Moisture:	moist				
Subsoil structure:	moderate med./coarse sab				
Comment:	Brickearth. Wet in fissures and pores, particularly at base of topsoil – water ran into auger bore from topsoil. Standing water in low parts of the field.				

Site no:	B12B	Catchment:	Bourne	Locality:	Goblands Farm
Date:	15/12/00		Grid ref.:	TQ64/446953	
Elevation:	29 m	Crop:	Apples-h. strip	Estimated cover:	50%
Slope:	2° Cv	Soil series:	Hook/Hamble	Soil subgroup:	573-571
Erosion:	none visible				
Soil surface form:	flattened	Soil surface condition:	slaked		
Topsoil depth:	30 cm	Texture:	SZL-ZL	Stones:	2%
Moisture:	moist				
Topsoil structure:	weak coarse sab, weak med./coarse platy in top 10 cm.				
Subsoil texture:	ZL-SZL				
Moisture:	moist				

Subsoil structure: weak/moderate med./coarse sab
Comment: Brickearth. No free water seen in soil at pit. Standing water 20 cm deep in bottom of field.

Site no: B13 **Catchment:** Bourne **Locality:** Goblands Farm
Date: 16/12/00 **Grid ref.:** TQ64/396851
Elevation: 21 m **Crop:** W. wh. stubble **Estimated cover:** n/a
Slope: 0° St **Soil series:** Fladbury **Soil subgroup:** 813
Erosion: none visible, although there has been water movement across the soil surface
Soil surface form: flattened **Soil surface condition:** partly slaked
Topsoil depth: 29 cm **Texture:** C **Stones:** <1%
Moisture: moist; v. moist/wet at base of topsoil
Topsoil structure: moderate/weak med./coarse sab, slightly platy at base.
Subsoil texture: C
Moisture: moist
Subsoil structure: moderate/weak coarse sab
Comment: Alluvium. Little evidence of free water; some at base of topsoil.

Site no: B14 **Catchment:** Bourne **Locality:** Goblands Farm
Date: 16/12/00 **Grid ref.:** TQ64/412868
Elevation: 22 m **Crop:** OSR **Estimated cover:** 40%
Slope: 1° St **Soil series:** Hook **Soil subgroup:** 573
Erosion: Slight rills in wheelings
Soil surface form: mounded **Soil surface condition:** partly slaked
Topsoil depth: 26 cm **Texture:** ZL-ZCL **Stones:** <1%
Moisture: moist; locally v. moist
Topsoil structure: moderate/strong med./fine sab
Subsoil texture: ZCL
Moisture: moist
Subsoil structure: moderate med./coarse sab
Comment: Brickearth. Little evidence of free water. No obvious compaction or platiness but some grey and ochreous mottles at the base of the plough layer. Many 1-2 mm pores. Photo.

Site no: B15 **Catchment:** Bourne **Locality:** Goblands Farm
Date: 16/12/00 **Grid ref.:** TQ64/443868
Elevation: 22 m **Crop:** W. wh. stubble **Estimated cover:** n/a
Slope: 1° St **Soil series:** Oxpasture **Soil subgroup:** 572
Erosion: none visible
Soil surface form: mounded **Soil surface condition:** partly slaked
Topsoil depth: 26 cm **Texture:** SZL **Stones:** 5%
Moisture: v. moist; wet in pores and fissures
Topsoil structure: moderate med./coarse sab, more compact at base of topsoil
Subsoil texture: CL over C at depth
Moisture: moist
Subsoil structure: moderate med./coarse sab
Comment: Brickearth/drift over Weald Clay at 55 cm depth. Free water in topsoil. Common (~2%) 1-2 mm pores..

Site no: B16 **Catchment:** Bourne **Locality:** Goblands Farm
Date: 16/12/00 **Grid ref.:** TQ64/415898
Elevation: 26 m **Crop:** OSR **Estimated cover:** 50%
Slope: 1° St **Soil series:** Hook/Hamble **Soil subgroup:** 573-571
Erosion: none visible
Soil surface form: mounded **Soil surface condition:** partly slaked
Topsoil depth: 28 cm **Texture:** ZL-ZCL **Stones:** 5%
Moisture: moist; wet in fissures and pores
Topsoil structure: moderate/strong med. sab, slightly compact at base of topsoil
Subsoil texture: ZCL-CL
Moisture: moist
Subsoil structure: moderate med. sab

Comment: Brickearth. Crop more advanced than Site B14. Free water at base of topsoil – flows into auger hole. Common (1-2%) 1-2 mm pores. Photo.

Site no: B17 **Catchment:** Bourne **Locality:** Hadlow College
Dave Hammond,
manager
Date: 16/12/00 **Grid ref.:** TQ64/304954
Elevation: 24 m **Crop:** ley grass **Estimated cover:** 80%
Slope: 1° St **Soil series:** Waterstock **Soil subgroup:** 573
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 28 cm **Texture:** SZL-CL **Stones:** 5%
Moisture: moist; v. moist in places particularly in top 5 cm
Topsoil structure: moderate med./coarse sab; top 5 cm damaged by poaching
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate coarse/med. sab
Comment: Drift. No free water seen.

Site no: B18 **Catchment:** Bourne **Locality:** Hadlow College
Date: 16/12/00 **Grid ref.:** TQ64/332945
Elevation: 24 m **Crop:** bare ground **Estimated cover:** 0%
Slope: 3° Cx **Soil series:** Breamore **Soil subgroup:** 573
Erosion: none visible
Soil surface form: mounded **Soil surface condition:** partly slaked; appears slightly capped but this is probably just the morning frost.
Topsoil depth: 28 cm **Texture:** SZL **Stones:** 15-20%
Moisture: moist; v. moist in places
Topsoil structure: moderate/weak med./coarse sab
Subsoil texture: SZL
Moisture: moist
Subsoil structure: moderate med. sab
Comment: Terrace material. No free water seen. Lower part of field, adjacent to Bourne, is floodplain with Fladbury soils – see bore B21. 3 photos.

Site no: B19 **Catchment:** Bourne **Locality:** unknown farm
Date: 16/12/00 **Grid ref.:** TQ64/354923
Elevation: 32 m **Crop:** maize stubble **Estimated cover:** n/a
Slope: 1° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: none visible, although there has been water movement over the soil surface
Soil surface form: mounded/flattened **Soil surface condition:** partly slaked and capped.
Topsoil depth: 28 cm **Texture:** CL-ZCL **Stones:** 5%
Moisture: moist, locally v.moist; wet on surface in places
Topsoil structure: weak coarse/v.coarse sab to ab; very compacted and almost structureless in places
Subsoil texture: CL over C
Moisture: moist
Subsoil structure: moderate coarse/med. sab
Comment: Thin drift over Weald Clay. Topsoil badly damaged, blue and anaerobic in places. Field has areas of standing water and has been heavily trafficked. 2 photos.

Site no: B20 **Catchment:** Bourne **Locality:** Hadlow College
Date: 16/12/00 **Grid ref.:** TQ64/340923
Elevation: 30 m **Crop:** bare ground **Estimated cover:** 0%
Slope: 1° Cx **Soil series:** Wickham **Soil subgroup:** 711
Erosion: none visible
Soil surface form: mounded **Soil surface condition:** partly slaked
Topsoil depth: 28 cm **Texture:** CL **Stones:** 10%
Moisture: v. moist; wet in pores and fissures
Topsoil structure: moderate/weak med./coarse sab, v.slightly platy and compact at base

Subsoil texture: CL over C
Moisture: moist
Subsoil structure: moderate med./coarse sab
Comment: Thin drift over Weald Clay. Common (>2%) pores 1-2 mm. Topsoil very moist but only slight structural problems evident. Photo.

Site no: B21 **Catchment:** Bourne **Locality:** Hadlow College
Date: 16/12/00 **Grid ref.:** TQ64/332915
Elevation: 23 m **Crop:** ley grass (newish) **Estimated cover:** 80%
Slope: 0° St **Soil series:** Trent/Fladbury **Soil subgroup:** 562/813
Erosion: none visible, but there appears to have been water movement across the soil surface
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 26 cm **Texture:** CL **Stones:** 0%
Moisture: v.moist
Topsoil structure: moderate fine/med. sab, finer and granular towards the top
Subsoil texture: CL over C
Moisture: moist
Subsoil structure: moderate med./coarse sab
Comment: Alluvium. No free water seen. No obvious structural problems.

Site no: B22 **Catchment:** Bourne **Locality:** Hadlow College
Date: 16/12/00 **Grid ref.:** TQ64/232970
Elevation: 30 m **Crop:** long ley (grazed) **Estimated cover:** 80%
Slope: <1° St **Soil series:** Waterstock **Soil subgroup:** 573
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 29 cm **Texture:** SZL **Stones:** 5-10%
Moisture: moist
Topsoil structure: moderate med./fine sab, granular in top 8 cm
Subsoil texture: SZL over CL over SCL
Moisture: moist
Subsoil structure: moderate med. sab
Comment: Drift. No free water seen. Slight poaching by sheep otherwise no obvious structural problems.

Site no: B23 **Catchment:** Bourne **Locality:** Hadlow College
Date: 16/12/00 **Grid ref.:** TQ64/220996
Elevation: 35 m **Crop:** ley grass (grazed) **Estimated cover:** 80%
Slope: <1° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 28 cm **Texture:** CL-SZL **Stones:** 10%
Moisture: moist; v. moist in top 8 cm
Topsoil structure: moderate med./coarse sab, finer towards the top but poached
Subsoil texture: CL over C
Moisture: moist
Subsoil structure: moderate med. sab
Comment: Drift over Weald Clay. Not as old a ley as Site 22. Much Fe/Mn. No free water seen. Top 8 cm of topsoil compacted and poached (by sheep).

Site no: B24 **Catchment:** Bourne **Locality:** Hadlow College
Date: 16/12/00 **Grid ref.:** TQ65/218040
Elevation: 34 m **Crop:** ley grass (grazed) **Estimated cover:** 80%
Slope: 3° St **Soil series:** Wickham **Soil subgroup:** 711/712
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 27 cm **Texture:** CL (<30% clay) **Stones:** 5%
Moisture: v. moist; locally wet, particularly in fissures and pores
Topsoil structure: moderate med./coarse sab, finer towards top but damaged by poaching and compacted

Site no:	B25	Catchment:	Bourne	Locality:	North Frith Farm
Date:	16/12/00		Grid ref.:	TQ65/115330	
Elevation:	45 m	Crop:	PG/ long ley	Estimated cover:	100%
Slope:	1° St	Soil series:	Wickham	Soil subgroup:	711
Erosion:	none visible				
Soil surface form:	n/a	Soil surface condition:	n/a		
Topsoil depth:	26 cm	Texture:	CL (<30% C)	Stones:	5%
Moisture:	v. moist; locally wet				
Topsoil structure:	moderate/strong med./fine sab, granular in top 9 cm				
Subsoil texture:	C				
Moisture:	moist				
Subsoil structure:	moderate med. sab				
Comment:	Wæld Clay. Wet in fissures and pores in both topsoil and subsoil, but topsoil the wetter. Topsoil was soft with standing water in places. Probably wet from movement of water through the topsoil from upslope.				

Site no:	B26	Catchment:	Bourne	Locality:	North Frith Farm
Date:	16/12/00	Grid ref.:	TQ65/140353		
Elevation:	47 m	Crop:	PG/ long ley	Estimated cover:	90%
Slope:	4° Cv	Soil series:	Wickham	Soil subgroup:	711
Erosion:	none visible				
Soil surface form:	n/a	Soil surface condition:	n/a		
Topsoil depth:	27 cm	Texture:	CL (<30% C)	Stones:	5%
Moisture:	v. moist; locally wet				
Topsoil structure:	moderate med./fine sab; granular in top 5 cm				
Subsoil texture:	CL over C at 55 cm depth				
Moisture:	moist				
Subsoil structure:	moderate med. sab				
Comment:	Wæld Clay. Wet in topsoil fissures and pores and, to a lesser extent, in subsoil. Topsoil is wet and soft to walk on. Water probably moving downslope through the topsoil. No obvious structural problems.				

Site no:	B27	Catchment:	Bourne	Locality:	North Frith Farm
Date:	16/12/00	Grid ref.:	TQ65/140343		
Elevation:	47 m	Crop:	PG	Estimated cover:	100%
Slope:	4° Cv	Soil series:	Wickham	Soil subgroup:	711
Erosion:	none visible				
Soil surface form:	n/a	Soil surface condition:	n/a		
Topsoil depth:	27 cm	Texture:	CL (<30% C)	Stones:	5%
Moisture:	v. moist; locally wet				
Topsoil structure:	strong fine sab; granular in top 5 cm				
Subsoil texture:	C				
Moisture:	moist				
Subsoil structure:	moderate med./fine sab				
Comment:	Weald Clay. Similar to Site 26 but better structure. Wet in topsoil fissures and pores and, to a lesser extent, in subsoil. Topsoil is wet and soft to walk on. Water probably moving downslope through the topsoil. No obvious structural problems.				

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Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 25 cm **Texture:** CL-SZL **Stones:** 2%
Moisture: moist
Topsoil structure: moderate med. sab, slightly platy in lower topsoil; fine sab to granular in top 3 cm root mat
Subsoil texture: ZCL-CL
Moisture: moist
Subsoil structure: moderate med. sab
Comment: Brickearth. No free water seen.

Site no: B28B **Catchment:** Bourne **Locality:** Hadlow Place
Date: 18/12/00 **Grid ref.:** TQ64/282840
Elevation: 32 m **Crop:** Apples-h.strip **Estimated cover:** 0%
Slope: <1° St **Soil series:** Hook/Park Gate **Soil subgroup:** 573/841
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** partly slaked, much moss
Topsoil depth: 26 cm **Texture:** ZL-ZCL **Stones:** 2%
Moisture: moist
Topsoil structure: moderate med./coarse sab, slightly platy in top
Subsoil texture: ZCL
Moisture: moist
Subsoil structure: moderate med./coarse sab
Comment: Brickearth. No free water seen. Common (1-2%) 1-2 mm pores.

Site no: B29A **Catchment:** Bourne **Locality:** Hadlow Place
Date: 18/12/00 **Grid ref.:** TQ64/321838
Elevation: 26 m **Crop:** Apples-grass **Estimated cover:** 100%
Slope: <1° St **Soil series:** Breamore/Waterstock **Soil subgroup:** 573
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 16 cm **Texture:** SZL **Stones:** 5%
Moisture: moist
Topsoil structure: moderate med. sab, fine in top 6 cm root mat
Subsoil texture: SZL-ZCL (~18% C)
Moisture: moist
Subsoil structure: moderate med./coarse sab
Comment: Terrace material. No free water seen.

Site no: B29B **Catchment:** Bourne **Locality:** Hadlow Place
Date: 18/12/00 **Grid ref.:** TQ64/321838
Elevation: 26 m **Crop:** Apples-h.strip **Estimated cover:** 0%
Slope: <1° St **Soil series:** Breamore/Waterstock **Soil subgroup:** 573
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** partly slaked
Topsoil depth: 18 cm **Texture:** SZL/SL **Stones:** 5%
Moisture: moist
Topsoil structure: moderate med./coarse sab, platy in upper 8 cm
Subsoil texture: SZL-ZCL (~18% C)
Moisture: moist
Subsoil structure: moderate med./coarse sab
Comment: Terrace material. No free water seen.

Site no: B30 **Catchment:** Bourne **Locality:** North Frith Farm
Date: 18/12/00 **Grid ref.:** TQ65/192080
Elevation: 42 m **Crop:** volunteer OSR/weeds **Estimated cover:** 70%
Slope: <1° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: slight rills in wheelings
Soil surface form: mounded/flattened **Soil surface condition:** partly slaked
Topsoil depth: 28 cm **Texture:** CL **Stones:** 5%
Moisture: v. moist; wet in fissures and pores

Topsoil structure: moderate med./coarse sab, platy in upper 8 cm and slightly compact at base
Subsoil texture: CL over C at 50 cm depth
Moisture: moist
Subsoil structure: moderate med./coarse sab
Comment: Weald Clay. Very wet topsoil in low and flat areas. Water confined to topsoil/plough layer, and probably moving laterally.

Site no: B31 **Catchment:** Bourne **Locality:** North Frith Farm
Date: 18/12/00 **Grid ref.:** TQ65/203105
Elevation: 40 m **Crop:** W wh. stubble **Estimated cover:** n/a
Slope: 3° Cx **Soil series:** Wickham **Soil subgroup:** 711
Erosion: very slight rills
Soil surface form: flattened **Soil surface condition:** partly slaked
Topsoil depth: 29 cm **Texture:** CL **Stones:** 5%
Moisture: v. moist; wet in pores and fissures
Topsoil structure: moderate med./coarse sab
Subsoil texture: C
Moisture: moist, wet in some pores and fissures
Subsoil structure: moderate/weak coarse sab
Comment: Weald Clay. Wet in pores and fissures, but drier than Site B30. No evidence of structural damage.

Site no: B32 **Catchment:** Bourne **Locality:** Beechin Wood Farm
 Ashley Gilman, manager
 01732 882037
Date: 12/1/01 **Grid ref.:** TQ65/077423
Elevation: 70 m **Crop:** W wh. **Estimated cover:** 5%
Slope: 2° Cx **Soil series:** Malling **Soil subgroup:** 571
Erosion: very slight rills and deposition in some wheelings
Soil surface form: flattened/mounded **Soil surface condition:** partly slaked, locally capped (particularly in wheelings)
Topsoil depth: 27 cm **Texture:** SZL **Stones:** 5% (variable)
Moisture: v. moist; wet on some faces
Topsoil structure: moderate med. sab
Subsoil texture: CL
Moisture: moist, wet on some faces
Subsoil structure: moderate med. sab
Comment: Hythe Beds. Subsoiled last autumn – this has loosened the upper subsoil and this was evident in digging the hole. Firm to walk across. 2 photos.

Site no: B33 **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/105422
Elevation: 59 m **Crop:** W wh. **Estimated cover:** <5%
Slope: 3° Cv **Soil series:** Bishampton **Soil subgroup:** 572
Erosion: some rills (up to 20 cm deep and 15 cm wide) in wheelings; deposition on the lower slopes, particularly by the Bourne (Photo)
Soil surface form: mounded/flattened **Soil surface condition:** partly slaked, locally capped
Topsoil depth: 26 cm **Texture:** CL **Stones:** 5%
Moisture: v. moist; wet on some faces (more so than B32)
Topsoil structure: moderate coarse/med. sab
Subsoil texture: CL
Moisture: moist, wet on a few faces
Subsoil structure: moderate coarse/med. sab
Comment: Drift: Hythe Beds Head or slumping over Atherfield Clay. Not subsoiled last autumn, upper subsoil 'tighter' than B32. Softer than B32 to walk across as more moisture retained in the topsoil. Photo of deposition by The Bourne.

Site no: B34 **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/126397

Elevation: 46 m **Crop:** Set aside (grass and weeds) **Estimated cover:** 90%
Slope: 0° St **Soil series:** Trent **Soil subgroup:** 562
Erosion: some deposition on alluvium (up to 10 cm thick) from rill draining the field upslope (Photos). See Site B35.
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 28 cm **Texture:** SZL-CL **Stones:** 5%
Moisture: moist; wet in fissures and pores
Topsoil structure: weak coarse/med. sab, slightly platy below 6 cm deep root mat
Subsoil texture: CL
Moisture: moist, wet in some fissures and pores
Subsoil structure: moderate coarse/med. sab
Comment: Alluvium. Not subsoiled last autumn.

Site no: B35 **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/143443
Elevation: 59 m **Crop:** W wh. **Estimated cover:** 5-10% (less at bottom of field)
Slope: 5° Cx **Soil series:** Wickham? **Soil subgroup:** 711
Erosion: a big rill (up to 30 cm deep and 25 cm wide) in valley that runs down the field to the river Bourne; deposition on the lower slopes, especially by the Bourne (Photo) (see Site B34). Minor rills in wheelings
Soil surface form: flattened **Soil surface condition:** partly slaked, locally capped
Topsoil depth: 27 cm **Texture:** CL **Stones:** 5%
Moisture: moist; wet on some faces
Topsoil structure: moderate coarse/med. sab
Subsoil texture: CL over C at 70 cm over CL
Moisture: moist; wet on a few faces, but only in upper subsoil
Subsoil structure: moderate coarse sab
Comment: Head over Atherfield Clay. Rill across field starts from a spring at the top of the field in what appears to be a small old quarry adjacent to a plum orchard (see Site B36) and runs down into the river Bourne near Site B34. Field firm to walk across; disked, then sown.

Site no: B36A **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/195478
Elevation: 120 m **Crop:** Plums-grass (2m) **Estimated cover:** 80%
Slope: 5° Cv **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 25 cm (8cm Ah) **Texture:** CL-SL **Stones:** 20-25%
Moisture: moist/v. moist
Topsoil structure: moderate med. sab, fine in Ah and becoming coarser with depth
Subsoil texture: CL
Moisture: moist
Subsoil structure: weak/moderate coarse sab
Comment: Hythe Beds. Poor growth in grass strip – very weedy. Relatively young orchard. No free water seen.

Site no: B36B **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/195478
Elevation: 120 m **Crop:** Plums-h.strip (1.5m) **Estimated cover:** 0%
Slope: 5° Cv **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked/ locally capped
Topsoil depth: 25 cm **Texture:** CL-SL **Stones:** 20-25%
Moisture: moist
Topsoil structure: weak coarse sab; coarse/med. weak platy in top 8 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: weak/moderate coarse sab

Comment: Hythe Beds. Straw spread on herbicide strip between trees has probably prevented more serious capping. No free water seen. Trees quite young – around 7 cm diameter trunks.

Site no: B37 **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/173515
Elevation: 97 m **Crop:** PG-rough grass **Estimated cover:** 100%
Slope: 9° Cx **Soil series:** Aberford **Soil subgroup:** 511
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 11 cm **Texture:** CL **Stones:** 15%
Moisture: moist
Topsoil structure: strong/moderate med. crumb over mod. fine sab at 7 cm depth
Subsoil texture: SL over limestone
Moisture: moist
Subsoil structure: weak coarse/med. sab
Comment: Limestone in Hythe Beds. Rough grass – apparently ungrazed. No free water seen.

Site no: B38A **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/157528
Elevation: 83 m **Crop:** Pears-grass (2m) **Estimated cover:** 80%
Slope: 7° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 21 cm (8cm Ah) **Texture:** CL **Stones:** 10%
Moisture: moist
Topsoil structure: moderate/strong fine/med. sab, granular in top 8 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate coarse/med. sab
Comment: Hythe Beds. No free water seen.

Site no: B38B **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/157528
Elevation: 83 m **Crop:** Pears-h.strip (1.5m) **Estimated cover:** 0%
Slope: 7° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked/ locally capped
Topsoil depth: 21 cm **Texture:** CL **Stones:** 10%
Moisture: moist
Topsoil structure: moderate coarse sab; slightly platy in top
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate coarse/med. sab
Comment: Hythe Beds. No free water seen.

Site no: B39 **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/136525
Elevation: 91 m **Crop:** Set aside (grass and weeds) **Estimated cover:** 90%
Slope: 7° St **Soil series:** Aberford/Malling **Soil subgroup:** 511/571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 21 cm **Texture:** CL **Stones:** 10%
Moisture: moist
Topsoil structure: strong/moderate fine sab, granular in root mat; very slight compaction at base of topsoil/top of subsoil
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate coarse/med. sab
Comment: Limestone in Hythe Beds. No free water seen.

Site no: B40A **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/170540
Elevation: 108 m **Crop:** Plums-grass (1.5m) **Estimated cover:** 90%
Slope: 2° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 27 cm (8cm Ah) **Texture:** CL **Stones:** 15%
Moisture: moist
Topsoil structure: moderate med./coarse sab, some platiness in lower topsoil, probably from trafficking during harvest
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate coarse/med. sab
Comment: Hythe Beds. No free water seen.

Site no: B40B **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/170540
Elevation: 108 m **Crop:** Plums-h.strip (3.5m) **Estimated cover:** 0%
Slope: 2° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked/ locally capped
Topsoil depth: 27 cm **Texture:** CL **Stones:** 15%
Moisture: moist
Topsoil structure: moderate coarse sab; slightly platy top
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate coarse/med. sab
Comment: Hythe Beds. No free water seen.

Site no: B41A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
 Ian Mitchell
 01732 810229
Date: 20/12/00 **Grid ref.:** TQ55/980493
Elevation: 111 m **Crop:** Apples-grass (3m) **Estimated cover:** 100%
Slope: 2° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 28 cm (11cm Ah) **Texture:** SZL **Stones:** 15%
Moisture: moist/v. moist
Topsoil structure: moderate/strong med./fine sab, granular in root mat; and coarser below 11 cm depth
Subsoil texture: CL (olive SCL at 70 cm depth)
Moisture: moist
Subsoil structure: moderate med./coarse sab
Comment: Hythe Beds. Grass recently trafficked – structural damage to top 4 cm in ruts. No free water seen.

Site no: B41B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/980493
Elevation: 111 m **Crop:** Apples-h.strip (4m) **Estimated cover:** 0%
Slope: 2° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked/capped
Topsoil depth: 28 cm **Texture:** SZL/CL **Stones:** 15%
Moisture: moist
Topsoil structure: weak med. sab; coarse/med. weak platy in top 8 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate coarse/med. sab
Comment: Hythe Beds. Old trees. No free water seen.

Site no: B42A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/978520
Elevation: 108 m **Crop:** Pears-grass (2m) **Estimated cover:** 100%
Slope: 2° St **Soil series:** Malling (cp Hamble) **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 16 cm **Texture:** SZL-CL **Stones:** 5%
Moisture: moist/v. moist
Topsoil structure: strong fine/med. sab
Subsoil texture: CL-SCL over ZCL (brickearth?) at 38 cm
Moisture: moist; some wetness below 45 cm depth
Subsoil structure: moderate/strong med./fine sab
Comment: Hythe Beds (with Brickearth?). Trafficking has damaged surface structure. A little free water in subsoil below 45cm depth.

Site no: B42B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/978520
Elevation: 108 m **Crop:** Pears-h.strip (2m) **Estimated cover:** 0%
Slope: 2° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked/capped
Topsoil depth: 14 cm **Texture:** CL **Stones:** 5%
Moisture: moist
Topsoil structure: weak/mod. med. sab; coarse/med. platy in top 6 cm
Subsoil texture: CL (olive SCL at depth)
Moisture: moist
Subsoil structure: moderate med. sab
Comment: Hythe Beds. No sign of brickearth-like material in this bore. No free water seen.

Site no: B43A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/961493
Elevation: 122 m **Crop:** Apples-grass (3m) **Estimated cover:** 100%
Slope: 3° Cx **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 16 cm **Texture:** CL **Stones:** 15%
Moisture: v. moist; wet in fissures and pores
Topsoil structure: mod./strong fine/med. sab; top 3 cm finer than below
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate med./coarse sab
Comment: Hythe Beds. Topsoil very soft underfoot – leaves muddy footprints. Trafficking has damaged surface structure.

Site no: B43B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/961493
Elevation: 122 m **Crop:** Apples-h.strip (4m) **Estimated cover:** 0%
Slope: 3° Cx **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked/capped
Topsoil depth: 13 cm **Texture:** CL **Stones:** 15%
Moisture: moist
Topsoil structure: mod./weak med./coarse sab; no sign of platy structure
Subsoil texture: CL - SCL
Moisture: moist
Subsoil structure: moderate med./coarse sab
Comment: Hythe Beds. Two rows of trees per strip. No sign of free water in soil.

Site no: B44A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/953487

Elevation: 128 m **Crop:** Apples-grass (2m) **Estimated cover:** 100%
Slope: 4° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 16 cm **Texture:** CL **Stones:** 20%
Moisture: v. moist; wet in fissures
Topsoil structure: mod. med. sab; fine in top 4 cm
Subsoil texture: CL over SL at 65 cm
Moisture: moist
Subsoil structure: moderate med. sab
Comment: Hythe Beds. Some free water in fissures in topsoil. Trafficking has damaged surface structure in ruts.

Site no: B44B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/953487
Elevation: 128 m **Crop:** Apples-h.strip (2.5m) **Estimated cover:** 0%
Slope: 4° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked/weakly capped
Topsoil depth: 8 cm **Texture:** CL **Stones:** 20%+
Moisture: moist
Topsoil structure: weak coarse sab; coarse platy in top 6 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate coarse/med. sab
Comment: Hythe Beds. Young trees. No free water seen.

Site no: B45A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/956458
Elevation: 123 m **Crop:** Apples-grass (2m) **Estimated cover:** 100%
Slope: 3° Cv **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 17 cm **Texture:** CL **Stones:** 20%
Moisture: moist/v.moist
Topsoil structure: mod./strong fine/med. sab
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate med. sab
Comment: Hythe Beds. No free water seen. Trafficking has damaged surface structure.

Site no: B45B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/956458
Elevation: 123 m **Crop:** Apples-h.strip (3m) **Estimated cover:** 0%
Slope: 3° Cv **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked/capped
Topsoil depth: 13 cm **Texture:** CL **Stones:** 20%
Moisture: moist
Topsoil structure: mod./weak med./coarse sab; med./coarse platy in top 5 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate coarse/med. sab
Comment: Hythe Beds. No free water seen.

Site no: B46A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/968465
Elevation: 117 m **Crop:** Apples-grass (2m) **Estimated cover:** 100%
Slope: 6° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible

Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 13 cm **Texture:** CL **Stones:** 10%
Moisture: moist/v.moist
Topsoil structure: mod. med./fine sab, granular in root mat
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate/weak med./coarse sab
Comment: Hythe Beds. No free water seen. Photo – view. Trafficking has damaged surface structure.

Site no: B46B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/968465
Elevation: 117 m **Crop:** Apples-h.strip (3m) **Estimated cover:** 0%
Slope: 6° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked/capped
Topsoil depth: 11 cm **Texture:** CL **Stones:** 10%
Moisture: moist
Topsoil structure: mod. coarse/med. sab; med./coarse platy in top 3 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate/weak med./coarse sab
Comment: Hythe Beds. No free water seen. Photo - vertical

Site no: B47A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/984553
Elevation: 105 m **Crop:** Apples-grass (2m) **Estimated cover:** 100%
Slope: 3° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: signs of erosion/deposition on tracks and roadway
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 28 cm (weak Ah 12 cm) **Texture:** SZL-CL **Stones:** 10%
Moisture: moist/v.moist
Topsoil structure: strong fine/med. sab, granular in root mat
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate med. sab
Comment: Hythe Beds. No free water seen in pit. Standing water in tracks at bottom of field.

Site no: B47B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/984553
Elevation: 105 m **Crop:** Apples-h.strip (3m) **Estimated cover:** 0%
Slope: 3° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: signs of erosion/deposition on tracks and roadway
Soil surface form: flattened **Soil surface condition:** slaked/weakly capped
Topsoil depth: 26 cm **Texture:** SZL-CL **Stones:** 10%
Moisture: moist
Topsoil structure: mod. med./coarse sab; med./coarse platy in top 5 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: moderate med. sab
Comment: Hythe Beds. No free water seen in pit. Standing water in tracks at bottom of field.

Site no: B48A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/988577
Elevation: 108 m **Crop:** Pears-grass (2m) **Estimated cover:** 100%
Slope: 4° Cv **Soil series:** Malling **Soil subgroup:** 571
Erosion: signs of erosion/deposition on tracks and roadway
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 13 cm **Texture:** CL **Stones:** 15-20%
Moisture: moist
Topsoil structure: moderate med./fine sab, finer and granular in top

Subsoil texture: CL
Moisture: moist
Subsoil structure: weak med./coarse sab
Comment: Hythe Beds. No free water seen in soil. Grass strip rutted, but now firm.

Site no: B48B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/988577
Elevation: 108 m **Crop:** Pears-h.strip (2m) **Estimated cover:** 0%
Slope: 4° Cv **Soil series:** Malling **Soil subgroup:** 571
Erosion: signs of erosion/deposition on tracks and roadway
Soil surface form: flattened **Soil surface condition:** slaked/weakly capped
Topsoil depth: 9 cm **Texture:** CL **Stones:** 15-20%
Moisture: moist
Topsoil structure: weak med./coarse sab; med./coarse platy in top 5 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: weak med./coarse sab
Comment: Hythe Beds. No free water seen.

Site no: B49A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/991602
Elevation: 109 m **Crop:** Pears-grass (2m) **Estimated cover:** 100%
Slope: <1° St **Soil series:** Malling **Soil subgroup:** 571
Erosion:
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 12 cm **Texture:** CL **Stones:** 5%
Moisture: v. moist
Topsoil structure: moderate med./fine sab, granular in root mat
Subsoil texture: CL
Moisture: moist
Subsoil structure: mod./weak med. sab
Comment: Hythe Beds. No free water seen in soil. Grass strip rutted.

Site no: B49B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/991602
Elevation: 109 m **Crop:** Pears-h.strip (2m) **Estimated cover:** 0%
Slope: <1° St **Soil series:** Malling **Soil subgroup:** 571
Erosion:
Soil surface form: flattened **Soil surface condition:** slaked/capped
Topsoil depth: 9 cm **Texture:** CL **Stones:** 5%
Moisture: moist
Topsoil structure: weak med./coarse sab; not platy
Subsoil texture: CL
Moisture: moist
Subsoil structure: mod./weak med. sab
Comment: Hythe Beds. No free water seen.

Site no: B50A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ65/022530
Elevation: 76 m **Crop:** Apples-grass (2.5m) **Estimated cover:** 100%
Slope: 5° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 29 cm (17 cm Ah) **Texture:** CL **Stones:** 5%
Moisture: v. moist
Topsoil structure: moderate/strong fine/med. sab; strong fine sab/granular in top 5 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: mod. med./coarse sab
Comment: Hythe Beds. No free water evident in soil.

Site no: B50B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ65/022530
Elevation: 76 m **Crop:** Apples-h.strip (3m) **Estimated cover:** 0%
Slope: 5° St **Soil series:** Malling **Soil subgroup:** 571
Erosion:
Soil surface form: flattened **Soil surface condition:** slaked/capped (much moss)
Topsoil depth: 29 cm **Texture:** CL **Stones:** 5%
Moisture: moist
Topsoil structure: weak med./coarse sab; medium platy in top 5 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Hythe Beds. No free water seen.

Site no: B51A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ65/035532
Elevation: 62 m **Crop:** Pears-grass (2m) **Estimated cover:** 100%
Slope: 4° Cx **Soil series:** Bursledon **Soil subgroup:** 572
Erosion:
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 17 cm (2 cm Ah) **Texture:** CL **Stones:** <5%
Moisture: moist; v. moist Ah
Topsoil structure: moderate fine/med. sab; granular in top 5 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Hythe Beds or drift from Hythe Beds over Atherfield Clay. No free water evident in soil. Springs nearby in lower part of field. Springs much more evident than normal this year, according to farm manager. Old plough layer at 29 cm depth.

Site no: B51B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ65/035532
Elevation: 62 m **Crop:** Pears-h.strip (2.5m) **Estimated cover:** 0%
Slope: 4° Cx **Soil series:** Bursledon **Soil subgroup:** 572
Erosion:
Soil surface form: flattened **Soil surface condition:** slaked/capped
Topsoil depth: 15 cm **Texture:** CL **Stones:** <5%
Moisture: moist
Topsoil structure: weak coarse/med. sab; slightly platy in top 4 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Hythe Beds or drift from Hythe Beds over Atherfield Clay. No free water evident in soil. Springs nearby in lower part of field. Springs much more evident than normal. Old plough layer at 29 cm depth.

Site no: B52A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ65/031518
Elevation: 70 m **Crop:** Pears-grass (2m) **Estimated cover:** 100%
Slope: 3° Cx **Soil series:** Malling **Soil subgroup:** 571
Erosion:
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 29 cm (10 cm Ah) **Texture:** CL **Stones:** 5%
Moisture: moist; v. moist Ah with a little free water in fissures
Topsoil structure: strong med./fine sab; granular in top 3 cm
Subsoil texture: CL; impenetrable (ragstone) at 55cm depth
Moisture: moist
Subsoil structure: mod. med. sab

Comment: Hythe Beds. Little free water evident in soil, but badly rutted grass strip from harvest. Springs nearby in lower part of field. Springs much more evident than normal, according to farm manager.

Site no: B52B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ65/031518
Elevation: 70 m **Crop:** Pears-h.strip (2m) **Estimated cover:** 0%
Slope: 3° Cx **Soil series:** Malling **Soil subgroup:** 571
Erosion:
Soil surface form: flattened **Soil surface condition:** slaked/capped (much moss)
Topsoil depth: 29 cm **Texture:** CL **Stones:** 5%
Moisture: moist
Topsoil structure: weak coarse/med. sab; slightly platy in top 5 cm
Subsoil texture: CL; impenetrable (ragstone) at 55cm depth
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Hythe Beds. No free water evident in soil. Springs nearby in lower part of field. Springs much more evident than normal.

Site no: B53A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ65/052514
Elevation: 62 m **Crop:** Pears-grass (2m) **Estimated cover:** 100%
Slope: 3° Cx **Soil series:** Malling **Soil subgroup:** 571
Erosion:
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 18 cm **Texture:** CL **Stones:** 5%
Moisture: moist; v. moist top 3 cm
Topsoil structure: strong med./fine sab; granular in top 3 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: mod. med./coarse sab
Comment: Hythe Beds. No free water evident in soil. Topsoil drier than Site B52.

Site no: B53B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ65/052514
Elevation: 62 m **Crop:** Pears-h.strip (2.5m) **Estimated cover:** 0%
Slope: 3° Cx **Soil series:** Malling **Soil subgroup:** 571
Erosion:
Soil surface form: flattened **Soil surface condition:** slaked/capped (much moss)
Topsoil depth: 15 cm **Texture:** CL **Stones:** 5%
Moisture: moist
Topsoil structure: mod. med./coarse sab; slightly platy top
Subsoil texture: CL
Moisture: moist
Subsoil structure: mod. med./coarse sab
Comment: Hythe Beds. No free water evident in soil.

Site no: B54A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ65/008495
Elevation: 91 m **Crop:** Apples-grass (2m) **Estimated cover:** 100%
Slope: 3° St **Soil series:** Malling **Soil subgroup:** 571
Erosion:
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 16 cm **Texture:** SZL-CL **Stones:** 5%
Moisture: moist; v. moist top 5 cm
Topsoil structure: mod. med./fine sab; granular in top 3 cm
Subsoil texture: CL
Moisture: moist
Subsoil structure: mod. med./coarse sab
Comment: Hythe Beds. No free water evident in soil.

Site no: B54B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ65/008495
Elevation: 91 m **Crop:** Apples-h.strip (3m) **Estimated cover:** 0%
Slope: 3° St **Soil series:** Malling **Soil subgroup:** 571
Erosion:
Soil surface form: flattened **Soil surface condition:** slaked/capped (much moss)
Topsoil depth: 16 cm **Texture:** SZL-CL **Stones:** 5%
Moisture: moist
Topsoil structure: mod. med./coarse sab; v. slightly platy top
Subsoil texture: CL; impenetrable (ragstone) at 55cm depth
Moisture: moist
Subsoil structure: mod. med./coarse sab
Comment: Hythe Beds. No free water evident in soil.

Site no: B55A **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/933412
Elevation: 150 m **Crop:** Apples-grass (2m) **Estimated cover:** 100%
Slope: 2° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 29 cm (2 cm Ah) **Texture:** SZL-CL **Stones:** 50%
Moisture: moist
Topsoil structure: mod. med./fine sab
Subsoil texture: CL; impenetrable (ragstone) at 46cm depth
Moisture: moist
Subsoil structure: mod. med./coarse sab
Comment: Hythe Beds. New orchard – recently replanted. No free water evident in soil.

Site no: B55B **Catchment:** Bourne **Locality:** Foxbury Farm, Stone Street
Date: 20/12/00 **Grid ref.:** TQ55/933412
Elevation: 150 m **Crop:** Apples-h.strip (2.5m) **Estimated cover:** 0%
Slope: 2° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked/capped (much moss)
Topsoil depth: 29 cm **Texture:** SZL-CL **Stones:** 50%
Moisture: moist
Topsoil structure: mod./weak coarse sab
Subsoil texture: CL; impenetrable (ragstone) at 46cm depth
Moisture: moist
Subsoil structure: mod. med./coarse sab
Comment: Hythe Beds. New orchard – recently replanted. No free water evident in soil.

Site no: B56 **Catchment:** Bourne **Locality:** Fairlawne Estate
 James Sheldrick, manager
 07771 507310
Date: 8/1/01 **Grid ref.:** TQ65/013253
Elevation: 63 m **Crop:** W. barley **Estimated cover:** 10%
Slope: 5° Cx **Soil series:** Ludford/Maplestead **Soil subgroup:** 571
Erosion: slight rills in wheelings and deposition at base of slope
Soil surface form: mounded **Soil surface condition:** partly slaked
Topsoil depth: 26 cm **Texture:** SZL **Stones:** 20%
Moisture: v.moist; wet in some fissures and pores
Topsoil structure: mod. med./coarse sab
Subsoil texture: SCL-CL (~20% C)
Moisture: moist
Subsoil structure: mod. coarse/med. sab, a little 'tight' at the top but nothing much
Comment: Stony Head over Weald Clay at depth. Firm to walk across. Common (1-2%) 2mm diam. pores. Lower part of field wetter and softer to walk across, probably similar to Site B57 with thinner drift. Springs on lower slope in wood adjacent to field.

Site no: B57 **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ55/974247
Elevation: 62 m **Crop:** W. barley **Estimated cover:** 10%
Slope: 3° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: slight rills in wheelings and deposition at base of slope
Soil surface form: mounded/flattened **Soil surface condition:** partly slaked (more so than B56)
Topsoil depth: 26 cm **Texture:** ZCL **Stones:** 10%
Moisture: v.moist; wet in fissures and pores
Topsoil structure: mod./weak med./coarse sab, v. slightly platy at base
Subsoil texture: CL over C (Head); impenetrable (stony) at 65cm depth
Moisture: moist
Subsoil structure: mod./weak coarse/med. sab
Comment: Drift over Weald Clay. Some ponding at base of slope.

Site no: B58 **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/036235
Elevation: 68 m **Crop:** Bare ground (arable) **Estimated cover:** 0%
Slope: 2° Cx **Soil series:** Ludford/Maplestead **Soil subgroup:** 571
Erosion: slight rills in wheelings in lower part of field
Soil surface form: mounded/furrowed **Soil surface condition:** partly slaked (slight)
Topsoil depth: 28 cm **Texture:** SZL-ZL **Stones:** 15%
Moisture: v.moist; wet in fissures and pores
Topsoil structure: mod. med. sab; loose
Subsoil texture: CL; impenetrable below 42 cm depth (stones)
Moisture: moist
Subsoil structure: mod.. coarse sab, slightly compact at the top but nothing much
Comment: Stony Head over Weald Clay at depth. Similar to Site B56. Lower part of field wetter and softer to walk across, probably similar to Site B57 with thinner drift.

Site no: B59 **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/077220
Elevation: 58 m **Crop:** Bare ground (arable) **Estimated cover:** 0%
Slope: 4° St **Soil series:** Wickham/Denchworth **Soil subgroup:** 711/712
Erosion: none visible
Soil surface form: furrowed/mounded **Soil surface condition:** unslaked
Topsoil depth: 29 cm **Texture:** CL-ZCL (~30% C) **Stones:** 5%
Moisture: v.moist; wet in fissures and pores and, particularly, in layer of buried straw
Topsoil structure: weak/mod. coarse sab; loose
Subsoil texture: C
Moisture: moist/sl. moist (remarkably dry in ped interiors)
Subsoil structure: mod.. coarse sab, tending to prismatic
Comment: Weald Clay. Thicker drift over clay at top of field. Soil soft to walk across. Lower part of field wetter and softer to walk across, probably similar to Site B57 with thinner drift.

Site no: B60 **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/037267
Elevation: 70 m **Crop:** ley (~15 yrs) **Estimated cover:** 100%
Slope: 1° Cx **Soil series:** Wickham/Pinder **Soil subgroup:** 711
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 28 cm (10 cm Ah) **Texture:** CL-ZCL **Stones:** 10-15%
Moisture: v.moist; wet in fissures and pores in top 2 cm
Topsoil structure: mod./strong fine sab, slightly platy below 10 cm depth; granular in top 2 cm
Subsoil texture: CL; impenetrable (stony) below 58 cm depth
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Stony Head over Weald Clay at depth. Slightly poached with most water in top 2 cm layer. Flat areas of field are wet and soft to walk across.

Site no: B61A **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/176363
Elevation: 76 m **Crop:** Apples–grass (2m) **Estimated cover:** 100%
Slope: 2° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 25 cm (10 cm Ah) **Texture:** SZL-ZL **Stones:** 20%
Moisture: v.moist
Topsoil structure: strong fine/med. sab, granular in top 5 cm
Subsoil texture: CL; impenetrable (stony) below 40 cm depth
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Hythe Beds (ragstone). Some chert stones. Grass strip rutted by traffic during harvest. Bramleys – 22 years old.

Site no: B61B **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/176363
Elevation: 76 m **Crop:** Apples–h.strip (3m) **Estimated cover:** 0%
Slope: 2° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked
Topsoil depth: 25 cm **Texture:** SZL-ZL **Stones:** 20%
Moisture: moist; wet in fissures and pores
Topsoil structure: weak/mod. coarse sab, slightly platy in top 8 cm
Subsoil texture: CL; impenetrable (stony) below 40 cm depth
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Hythe Beds (ragstone). Some chert stones. Bramleys – 22 years old.

Site no: B62A **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/202364
Elevation: 93 m **Crop:** Cherries–grass (2m) **Estimated cover:** 100%
Slope: 4° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 28 cm (12 cm Ah) **Texture:** CL-SCL **Stones:** 15%
Moisture: v.moist
Topsoil structure: mod./strong fine sab, granular in top 5 cm
Subsoil texture: SCL-CL over C at 47 cm depth; impenetrable (stony) below 55 cm depth
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Hythe Beds (ragstone). Many chert stones. Grass strip rutted by traffic during harvest. No free water seen. Cherry orchard – 10 years old.

Site no: B62B **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/202364
Elevation: 93 m **Crop:** Cherries–h.strip (4m) **Estimated cover:** 0%
Slope: 4° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked
Topsoil depth: 28 cm **Texture:** CL-SCL **Stones:** 15%
Moisture: moist
Topsoil structure: weak coarse sab, slightly platy in top 6 cm
Subsoil texture: SCL-CL over C at 47 cm depth; impenetrable (stony) below 55 cm depth
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Hythe Beds (ragstone). Many chert stones on surface. No free water seen. Cherry orchard – 10 years old.

Site no: B63A **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/220370
Elevation: 100 m **Crop:** Apples–grass (2m) **Estimated cover:** 100%
Slope: 5° Cx **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 26 cm (13 cm Ah) **Texture:** SL **Stones:** 15%
Moisture: v.moist
Topsoil structure: strong fine sab, granular in top 6 cm
Subsoil texture: SL-SCL; impenetrable (stony) below 50 cm depth
Moisture: moist
Subsoil structure: mod. med. sab
Comment: Hythe Beds (ragstone). Many chert stones. Grass strip rutted by traffic during harvest. No free water seen. 30 year old trees.

Site no: B63B **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/220370
Elevation: 100 m **Crop:** Apples-h.strip (4m) **Estimated cover:** 0%
Slope: 5° Cx **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked
Topsoil depth: 26 cm **Texture:** SL **Stones:** 15%
Moisture: moist
Topsoil structure: weak coarse sab, platy in top 6 cm
Subsoil texture: SL-SCL; impenetrable (stony) below 50 cm depth
Moisture: moist
Subsoil structure: mod. coarse/mod. sab
Comment: Hythe Beds (ragstone). Many chert stones on surface. No free water seen. 30 year old trees.

Site no: B64 **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/206381
Elevation: 82 m **Crop:** PG/ v.long ley **Estimated cover:** 100%
Slope: 7° St **Soil series:** Ludford/ Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 20 cm (11 cm Ah) **Texture:** SZL **Stones:** 15%
Moisture: v.moist
Topsoil structure: strong/mod. fine sab, granular in top 5 cm; more densely packed mod. med. sab below 11 cm depth
Subsoil texture: CL; impenetrable (stony) below 48 cm depth
Moisture: moist
Subsoil structure: mod. med. sab
Comment: Stony Head over Atherfield Clay or slumped Hythe Beds (ragstone). No free water seen. Not poached. Spring in the roadside verge to the west of this field.

Site no: B65 **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/228377
Elevation: 88 m **Crop:** PG/ v.long ley **Estimated cover:** 100%
Slope: 2° Cv **Soil series:** Bishampton? **Soil subgroup:** 572
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 14 cm **Texture:** SZL-CL **Stones:** 15%
Moisture: moist; v.moist/wet top 5 cm
Topsoil structure: strong/mod. fine sab, granular in top 5 cm
Subsoil texture: CL over C (~35% C) over CL
Moisture: moist
Subsoil structure: mod. med. sab
Comment: Stony Head over Atherfield Clay. No free water seen. Not poached. Slightly heavier and more mottled the B64 but otherwise v. similar.

Site no: B66 **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/266372
Elevation: 137 m **Crop:** PG/ long ley **Estimated cover:** 100%
Slope: 6° Cx **Soil series:** Malling **Soil subgroup:** 571-573
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 18 cm **Texture:** CL **Stones:** 15%
Moisture: v.moist
Topsoil structure: mod. fine/med. sab, granular in top 4 cm
Subsoil texture: SCL (olive mottled, but probably variegation not gleying); impenetrable below 45 cm
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Hythe Beds. Shown as woodland on 1:25000 field sheet – much burnt wood (charcoal) in topsoil and upper subsoil. No free water seen. Not poached.

Site no: B67 **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/267356
Elevation: 152 m **Crop:** PG/ long ley **Estimated cover:** 100%
Slope: 9° Cx **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 18 cm **Texture:** SZL **Stones:** 15%
Moisture: v.moist
Topsoil structure: strong fine sab, granular in top 5 cm
Subsoil texture: CL; impenetrable below 42 cm
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Hythe Beds. Shown as orchard on 1:25000 field sheet, but now in same field as B66. No free water seen. Not poached.

Site no: B68A **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/252398
Elevation: 133 m **Crop:** Apples–grass (2m) **Estimated cover:** 100%
Slope: 2° Cx **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 11 cm **Texture:** SZL-SL **Stones:** 10%
Moisture: v.moist
Topsoil structure: strong fine/med. sab, granular in top 6 cm
Subsoil texture: CL; impenetrable (stony) below 65 cm depth
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Hythe Beds (ragstone). Many chert stones. Grass strip rutted by traffic during harvest. No free water seen.

Site no: B68B **Catchment:** Bourne **Locality:** Fairlawne Estate
Date: 8/1/01 **Grid ref.:** TQ65/252398
Elevation: 133 m **Crop:** Apples–h.strip (4m) **Estimated cover:** 0%
Slope: 2° Cx **Soil series:** Malling **Soil subgroup:** 571
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked
Topsoil depth: 11 cm **Texture:** SZL-SL **Stones:** 10%
Moisture: moist
Topsoil structure: mod. coarse/med. sab, v. slightly platy in top
Subsoil texture: CL; impenetrable (stony) below 65 cm depth
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Hythe Beds (ragstone). Many chert stones on surface. No free water seen.

Site no: B69 **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/212524
Elevation: 132 m **Crop:** W. wh. **Estimated cover:** 5%
Slope: 2° St **Soil series:** Malling **Soil subgroup:** 571
Erosion: slight rills in wheelings
Soil surface form: mounded **Soil surface condition:** partly slaked/ locally capped
Topsoil depth: 26 cm **Texture:** SL-SCL **Stones:** 10%
Moisture: v.moist; a few wet ped faces
Topsoil structure: moderate med./fine sab; slight compaction at base of topsoil/ top of subsoil
Subsoil texture: CL-SCL
Moisture: moist; a few wet ped faces
Subsoil structure: moderate coarse sab
Comment: Hythe Beds, near the Angular Chert Drift cap. Some patches of ploughed-out red subsoil (?Stone Street) visible locally within field.

Site no: B70 **Catchment:** Bourne **Locality:** Beechin Wood Farm
Date: 12/1/01 **Grid ref.:** TQ65/294640
Elevation: 123 m **Crop:** rhubarb **Estimated cover:** 0%
Slope: 1° St **Soil series:** Bearsted **Soil subgroup:** 541
Erosion: none visible
Soil surface form: mounded; ridged **Soil surface condition:** partly slaked
Topsoil depth: 32 cm **Texture:** SL **Stones:** 10%
Moisture: moist
Topsoil structure: weak coarse/med. sab; slight compaction at base
Subsoil texture: SL
Moisture: moist
Subsoil structure: weak coarse sab
Comment: Site right on edge of catchment. Sampled as cropping different. Folkestone Beds, near the Angular Chert Drift cap. No free water seen.

8. UCK CATCHMENT TQ41, 42, 51, 52

General Observations

There are records of 71 observations. 25 were in grass fields, 24 in arable (which includes new leys), 11 are in maize, 4 in linseed (which can be late-harvested), 6 in top fruit (apples) and 1 in raspberries. There is not much fruit or late-harvest crops grown in this area.

Where small fields had been made into one big field and hedges and fences removed, the surveyors have sometimes sampled twice within the field if there appeared to be differences in soil type or surface condition. This has been noted in the records of individual sites. This was done mostly in fields with late harvested crops as there is not much maize and (apparently) no potatoes grown in the catchment.

Snow melt and rain on 1st January 2001 has left some of the land very wet.

Site no: U1 **Catchment:** Uck **Locality:** Chillies Farm
Mr Llewellyn
Date: 3/1/01 **Grid ref.:** TQ42/962806
Elevation: 129 m **Crop:** PG/long ley **Estimated cover:** 80%
Slope: 2° St **Soil series:** Cranbrook **Soil subgroup:** 711
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 25 cm **Texture:** ZCL **Stones:** <2%
Moisture: v.moist; wet in fissures and pores
Topsoil structure: strong/mod. med./fine sab, badly poached by cattle
Subsoil texture: fSL over fSCL at 54 cm depth
Moisture: moist; wet in some fissures and pores
Subsoil structure: mod./weak med./coarse sab
Comment: Ashdown Beds. Very wet, soft topsoil; water in poached hollows. Wet in fissures and pores but ped interiors are much drier. Water rapidly filled auger hole to base of subsoil. Farm reservoir nearby which is probably leaking into topsoil. Water moving laterally through topsoil.

Site no: U2 **Catchment:** Uck **Locality:** Chillies Farm
Date: 3/1/01 **Grid ref.:** TQ42/958791
Elevation: 128 m **Crop:** PG/long ley **Estimated cover:** 90%
Slope: 3° Cx **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 26 cm **Texture:** ZL-SZL **Stones:** <2%
Moisture: moist
Topsoil structure: strong/mod. med./fine sab, granular in top 5 cm; slightly poached by sheep
Subsoil texture: SZL over stony fSL, fSCL and CL
Moisture: moist
Subsoil structure: mod. med./coarse sab
Comment: Ashdown Beds. Topsoil relatively dry and firm. Flatter top of field is wetter than this Site but not as wet as U1. Parts of field may be disturbed. No free water seen.

Site no: U3 **Catchment:** Uck **Locality:** Chillies Farm
Date: 3/1/01 **Grid ref.:** TQ42/944790
Elevation: 121 m **Crop:** bare ground (incorp. winter cereal stubble (disked))
Estimated cover: 0%
Slope: 5° St **Soil series:** Wickham/Cranbrook **Soil subgroup:** 711
Erosion: small rills in wheelings

Soil surface form: mounded **Soil surface condition:** partly slaked
Topsoil depth: 28 cm **Texture:** SZL **Stones:** <5%
Moisture: moist; wet in fissures and pores
Topsoil structure: mod. med. sab, slightly compacted at base of topsoil
Subsoil texture: CL over SCL over stony C
Moisture: moist; wet in fissures and pores
Subsoil structure: mod. coarse/med. sab
Comment: Ashdown Beds. Part of field has been ploughed – water standing in furrows. Locally sandstone has been ploughed out. Free water in fissures and in pores, ped interiors drier. 3 photos.

Site no: U4 **Catchment:** Uck **Locality:** Chillies Farm
Date: 3/1/01 **Grid ref.:** TQ42/938776
Elevation: 110 m **Crop:** bare ground (incorp. winter cereal stubble)
Estimated cover: 0%
Slope: 5° St **Soil series:** Cranbrook/Wickham **Soil subgroup:** 711
Erosion: rills in wheelings 3-4 cm deep; much evidence of surface water flow
Soil surface form: mounded **Soil surface condition:** partly slaked
Topsoil depth: 28 cm **Texture:** ZCL **Stones:** <2%
Moisture: moist; wet in fissures and pores
Topsoil structure: mod. coarse/med. sab, slightly compacted at base of topsoil
Subsoil texture: CL over ZCL over C (38-68 cm) over SCL
Moisture: moist; wet in fissures and pores
Subsoil structure: mod. coarse sab, slightly platy at top of subsoil
Comment: Ashdown Beds. Same field as U3 – old boundary has been removed. Heavier topsoil than U3. Free water in fissures and in pores in topsoil, none in subsoil. Interiors of topsoil peds drier. Bore filled rapidly to base of topsoil – lateral water movement through topsoil/ploughed layer.

Site no: U5 **Catchment:** Uck **Locality:** Chillies Farm
Date: 3/1/01 **Grid ref.:** TQ42/947764
Elevation: 105 m **Crop:** ley grass
Estimated cover: 70%
Slope: 6° Cx **Soil series:** Cranbrook/Stanway **Soil subgroup:** 711
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 28 cm **Texture:** ZCL-CL **Stones:** <2%
Moisture: moist; wet in fissures and pores in top 5 cm only
Topsoil structure: mod./strong med. sab, badly poached (platy) in top 5 cm
Subsoil texture: CL over CL-ZCL
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Ashdown Beds. Poached by sheep – still out. Topsoil wet and soft. Photos of rills by adjacent wood between this pit and U6.

Site no: U6 **Catchment:** Uck **Locality:** Chillies Farm
Date: 3/1/01 **Grid ref.:** TQ42/943727
Elevation: 90 m **Crop:** ley grass
Estimated cover: 50%
Slope: 5° St **Soil series:** Cranbrook **Soil subgroup:** 711
Erosion: rills up to 10 cm deep along field edge and through gateway
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 27 cm **Texture:** ZCL-CL **Stones:** <2%
Moisture: v.moist; wet in fissures and pores
Topsoil structure: mod. coarse/med. sab, badly poached (platy) in top 5 cm
Subsoil texture: C over CL at 45 cm depth
Moisture: moist
Subsoil structure: mod./weak coarse sab
Comment: Ashdown Beds. Poached by sheep – still out. Water filled hole to base of topsoil. Topsoil wet and soft - subsoil much drier. Topsoil drier towards bottom of the field. Photos of rills by adjacent wood.

Site no:	U10	Catchment:	Uck	Locality:	Chillies Farm
Date:	3/1/01			Grid ref.:	TQ52/003790
Elevation:	115 m	Crop:	ley grass		
Estimated cover:		90%			
Slope:	2° Cx	Soil series:	Stanway/Cranbrook	Soil subgroup:	711
Erosion:	none visible, but much evidence of water movement				
Soil surface form:	n/a	Soil surface condition:	n/a		
Topsoil depth:	28 cm (9 cm Ah)	Texture:	ZCL-CL	Stones:	<2%
Moisture:	v.moist; wet in fissures and pores of top 9 cm only				
Topsoil structure:	0-9 cm: mod. fine/med sab, granular in top				
	9-28 cm: mod. coarse/med. sab				
Subsoil texture:	ZCL and CL interbedded				

Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Ashdown Beds. Poached by sheep. Much water has run into field through gateway upslope. Topsoil wet and soft. Much drier in bottom part of field. No free water seen below 9 cm depth.

Site no: U11 **Catchment:** Uck **Locality:** Chillies Farm
Date: 3/1/01 **Grid ref.:** TQ42/990766
Elevation: 129 m **Crop:** W. wheat stubble (harrowed) with volunteer growth
Estimated cover: 40%
Slope: 2° Cx **Soil series:** Curtisden/Pembury **Soil subgroup:** 572/541
Erosion: small rills in wheelings
Soil surface form: mounded **Soil surface condition:** partly slaked/slaked
Topsoil depth: 29 cm (old cult. deeper) **Texture:** ZCL-CL **Stones:** 5%
Moisture: moist/v.moist
Topsoil structure: mod. med/coarse sab
Subsoil texture: CL over stony fSL-fSZL at 38 cm depth
Moisture: moist
Subsoil structure: mod./weak coarse sab
Comment: Ashdown Beds. Soil has been recently subsoiled. No free water seen.

Site no: U12 **Catchment:** Uck **Locality:** Chillies Farm
Date: 3/1/01 **Grid ref.:** TQ42/986740
Elevation: 129 m **Crop:** W. wheat stubble (harrowed)
Estimated cover: 0%
Slope: 3° St **Soil series:** Curtisden/Pembury **Soil subgroup:** 572/541
Erosion: rills (20 cm by 8 cm) in wheelings
Soil surface form: mounded **Soil surface condition:** partly slaked; weakly capped
Topsoil depth: 29 cm (old cult. deeper) **Texture:** ZCL-CL **Stones:** 5%
Moisture: moist/v.moist
Topsoil structure: mod. med/coarse sab, top 1 cm platy
Subsoil texture: CL
Moisture: moist
Subsoil structure: mod./weak coarse sab
Comment: Ashdown Beds. Soil has been recently subsoiled. No free water seen. Deposition in flat areas and at edge of field.

Site no: U13 **Catchment:** Uck **Locality:** Chillies Farm
Date: 3/1/01 **Grid ref.:** TQ42/953850
Elevation: 156 m **Crop:** W. wheat stubble (harrowed)
Estimated cover: 0%
Slope: 3° St **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: rills in wheelings, particularly towards gateway at bottom of field
Soil surface form: mounded **Soil surface condition:** partly slaked
Topsoil depth: 28 cm **Texture:** ZCL **Stones:** 10%
Moisture: moist/v.moist; wet in pores and fissures
Topsoil structure: mod. coarse/med. sab, compact at base of plough layer
Subsoil texture: CL-fSCL-ZCL
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Ashdown Beds. Much evidence of water flow from field through gateway in south-east corner.

Site no: U14 **Catchment:** Uck **Locality:** Chillies Farm
Date: 3/1/01 **Grid ref.:** TQ42/8878570
Elevation: 165 m **Crop:** Bare ground (arable – ploughed)
Estimated cover: 0%
Slope: 2° St **Soil series:** Oxpasture **Soil subgroup:** 572
Erosion: rills in wheelings, particularly towards gateways at bottom of field. Some rills are big, up to 30cm deep and 90 cm across. The cultivated topsoil has been washed away and the firmer subsoil remains.
Soil surface form: furrowed **Soil surface condition:** partly slaked
Topsoil depth: 28 cm **Texture:** ZCL **Stones:** 10%

Moisture: v.moist/wet, particularly in pores and fissures
Topsoil structure: mod. coarse/med. sab, slight compaction at base of plough layer
Subsoil texture: CL—ZCL over C at 38 cm depth
Moisture: moist
Subsoil structure: mod. coarse sab, slight compaction at top of subsoil
Comment: Ashdown Beds. Much evidence of water flow from upslope into this ploughed area where it has caused extensive erosion of the looser topsoil (see 2 photos). Water has flowed across to the gateways in south and south-east of field. Topsoil very soft and, in places, difficult to walk across. Subsoil much drier.

Site no: U15 **Catchment:** Uck **Locality:** Chillies Farm
Date: 3/1/01 **Grid ref.:** TQ42/908871
Elevation: 174 m **Crop:** Bare ground (arable - disked)
Estimated cover: 0%
Slope: 3° St **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: small rills in wheelings
Soil surface form: mounded **Soil surface condition:** partly slaked
Topsoil depth: 28 cm **Texture:** ZCL-CL **Stones:** 10%
Moisture: v.moist
Topsoil structure: mod. coarse/med. sab, slight compaction at base of plough layer
Subsoil texture: fSZL
Moisture: moist
Subsoil structure: mod. coarse sab

Comment: Ashdown Beds. Evidence of water flow downslope. Topsoil is much drier than Site U14 where the soil has been further cultivated and so is looser and holds more water. Water has flowed from this part of the field onto the softer, looser ploughed topsoil downslope where it has caused extensive erosion of this topsoil (see 2 photos near U14).
Heavy rain (~8 mm) over night and constant rain on 4/1/01 accounts for some of the soil surface wetness.

Site no: U16 **Catchment:** Uck **Locality:** Nordens Green Farm
Bob Tidy
Date: 4/1/01 **Grid ref.:** TQ42/986568
Elevation: 68 m **Crop:** long ley
Estimated cover: 60%
Slope: 1° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 25 cm **Texture:** CL(<30% C) **Stones:** 5%
Moisture: v.moist; wet in fissures and pores
Topsoil structure: mod. fine/med. sab, coarser with depth
Subsoil texture: C
Moisture: moist; wet in fissures and pores
Subsoil structure: mod. coarse sab, tending to prismatic
Comment: Wadhurst Clay. Surface poached and very soft. Much water on surface in hollows.

Site no: U17 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ52/010592
Elevation: 75 m **Crop:** long ley
Estimated cover: 80%
Slope: 4° St **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 25 cm **Texture:** ZCL **Stones:** <2%
Moisture: v.moist; wet in fissures and pores
Topsoil structure: mod. fine/med. sab, coarser with depth
Subsoil texture: CL-C
Moisture: moist; wet in fissures and pores
Subsoil structure: mod. coarse sab, tending to prismatic; Some compaction at top of subsoil
Comment: Ashdown Beds. Very wet in top 3 cm in fissures and pores. Photo taken nearby where water has flowed from field into adjacent woodland. Surface poached and soft. Much water on surface in hollows. 3 photos taken nearby show flow of water from field into copse.

Site no: U18 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ52/016567
Elevation: 58 m **Crop:** long ley
Estimated cover: 60%
Slope: 3° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 25 cm **Texture:** CL **Stones:** <5%
Moisture: v.moist; wet in fissures and pores
Topsoil structure: mod. med./fine sab, coarser with depth
Subsoil texture: C
Moisture: moist; wet in fissures and pores
Subsoil structure: mod. coarse sab, tending to medium prismatic
Comment: Wadhurst Clay. Same field as U18 now, but different soil – this area was several small fields. Surface poached and very soft. Much water on surface in hollows. Photo taken nearby shows flow of water from field into wooded hedgeline.

Site no: U19 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ42/995554
Elevation: 58 m **Crop:** maize stubble
Estimated cover: 0%
Slope: 3° Cx **Soil series:** Wickham/Denchworth **Soil subgroup:** 711/712
Erosion: rills in wheelings
Soil surface form: flattened **Soil surface condition:** slaked/capped
Topsoil depth: 28 cm **Texture:** CL **Stones:** <5%
Moisture: moist
Topsoil structure: weak coarse/v.coarse sab, compact and dense
Subsoil texture: C
Moisture: moist
Subsoil structure: weak coarse/v.coarse sab, tending to medium prismatic
Comment: Wadhurst Clay. Surface capped and slaked. Topsoil very compacted with bluish colours in places. Clean water running down wheelings in the heavy rain. *Topsoil needed to be moistened before texturing!!!*

Site no: U20 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ42/992527
Elevation: 47 m **Crop:** maize stubble
Estimated cover: 0%
Slope: 3° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: rills in wheelings
Soil surface form: flattened **Soil surface condition:** slaked/capped
Topsoil depth: 30 cm **Texture:** CL **Stones:** 5%
Moisture: moist
Topsoil structure: weak coarse/med. sab, compact and dense
Subsoil texture: C
Moisture: moist
Subsoil structure: weak coarse sab, tending to prismatic
Comment: Wadhurst Clay. Similar to U19 but slightly better structure.

Site no: U21 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ42/990508
Elevation: 36 m **Crop:** PG/long ley
Estimated cover: 95%
Slope: 4° Cx **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 12 cm **Texture:** ZCL **Stones:** 5%
Moisture: moist
Topsoil structure: weak coarse/med. sab, compact and dense; better structured in root mat

Subsoil texture: CL
Moisture: moist
Subsoil structure: mod./weak coarse sab
Comment: Ardingly Sandstone/ Grinstead Clay – geology complex at this point. Poached. Topsoil less wet than U16, U17 and U18 – probably because topsoil here more compact and so absorbs less water. .
Site no: U22 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ42/968525
Elevation: 44 m **Crop:** PG
Estimated cover: 90%
Slope: 2° Cx **Soil series:** Neath/Rivington **Soil subgroup:** 541
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 12 cm **Texture:** SL **Stones:** 15%
Moisture: v.moist
Topsoil structure: mod./weak fine sab
Subsoil texture: SCL over sandstone at 48 cm depth
Moisture: moist
Subsoil structure: mod./weak coarse sab
Comment: Ardingly Sandstone. Rock out crop form knoll in field, and has been partially quarried in two places.

Site no: U23 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ42/978545
Elevation: 51 m **Crop:** PG
Estimated cover: 90%
Slope: 4° St **Soil series:** Curtisdens/Oxpasture **Soil subgroup:** 572
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 12 cm **Texture:** ZCL **Stones:** 5%
Moisture: moist; v.moist in top 3 cm
Topsoil structure: mod. coarse/med. sab, top poached
Subsoil texture: CL
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Wadhurst Clay. Barely moist below top 3 cm. No water entered the pit or auger hole. It may be that poaching has effectively sealed the surface and so the rain largely runs off, but this is by no means clear.

Site no: U24 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ42/966550
Elevation: 52 m **Crop:** Long ley
Estimated cover: 90%
Slope: 3° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 29 cm **Texture:** CL **Stones:** 5%
Moisture: v.moist; wet in top 3 cm
Topsoil structure: mod. coarse sab, finer towards top but top is poached
Subsoil texture: C
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Wadhurst Clay. Water enters the pit from the topsoil.

Site no: U25 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ42/968570
Elevation: 61 m **Crop:** Long ley
Estimated cover: 90%
Slope: 2° Cx **Soil series:** Oxpasture **Soil subgroup:** 572
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a

Topsoil depth: 29 cm **Texture:** CL **Stones:** 5%
Moisture: v.moist; wet in top 4 cm
Topsoil structure: mod. med. sab, finer towards top but top is poached
Subsoil texture: CL over C at 55 cm depth
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Wadhurst Clay. Now in same field as U24 but different soil. Water enters the pit from the topsoil, as for U24.

Site no: U26 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ42/982675
Elevation: 113 m **Crop:** New ley
Estimated cover: 30%
Slope: 3° St **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: rills up to 30 cm across and 10 cm deep
Soil surface form: flat **Soil surface condition:** partly slaked, capped
Topsoil depth: 28 cm **Texture:** ZCL **Stones:** <5%
Moisture: v.moist; some water in fissures and pores
Topsoil structure: mod. coarse/med. sab
Subsoil texture: CL
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Lower Tunbridge Wells Sand. There has been much run-off from this field. Given the rain last night and today (8 mm overnight and probably a similar amount this morning) the fissures and pores are surprisingly dry; the water appears not to be getting into the capped soil at this point. However, water enters the pit from the topsoil; this water is probably moving laterally through the topsoil.

Site no: U27 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ42/928557
Elevation: 53 m **Crop:** PG/long ley
Estimated cover: 85%
Slope: 3° Cx **Soil series:** Wickham **Soil subgroup:** 711
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 28 cm **Texture:** ZCL **Stones:** <5%
Moisture: v.moist; wet in top 3 cm and in some fissures and pores below
Topsoil structure: mod. coarse/med. sab, finer and granular in top 3 cm root mat
Subsoil texture: CL over C at 62 cm depth
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Wadhurst Clay. Moderately poached. No free water seen in subsoil.

Site no: U28 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ42/914553
Elevation: 60 m **Crop:** PG
Estimated cover: 95%
Slope: 3° Cx **Soil series:** Wickham/Stamway **Soil subgroup:** 711
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 24 cm **Texture:** ZCL **Stones:** <5%
Moisture: v.moist; wet in top 3 cm and in some fissures and pores below
Topsoil structure: mod./strong med. sab, finer and granular in top 3 cm root mat
Subsoil texture: CL-ZCL-ZC
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Wadhurst Clay. Some poaching. No free water seen in subsoil.

Site no: U29 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ42/935570
Elevation: 45 m **Crop:** PG

Estimated cover: 95%
Slope: 8° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 24 cm **Texture:** CL **Stones:** <5%
Moisture: v.moist; wet in top 3 cm and in some fissures and pores below
Topsoil structure: mod. med. sab, finer and granular in top 3 cm root mat
Subsoil texture: CL over C
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Wadhurst Clay. Slightly poached. No free water seen in subsoil.

Site no: U30 **Catchment:** Uck **Locality:** Nordens Green Farm
Date: 4/1/01 **Grid ref.:** TQ42/933567
Elevation: 42 m **Crop:** PG
Estimated cover: 95%
Slope: 0° **Soil series:** Conway **Soil subgroup:** 811
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 16 cm **Texture:** ZCL **Stones:** <2%
Moisture: v.moist; wet in top 5 cm and in some fissures and pores below
Topsoil structure: mod. med. sab, finer and granular in top 5 cm root mat
Subsoil texture: ZCL
Moisture: v.moist
Subsoil structure: mod./weak coarse sab
Comment: Alluvium. Slightly poached. Very moist throughout, and wet in top 5 cm and in some fissures and pores below. Same field as U29 but different soil.

Site no: U31 **Catchment:** Uck **Locality:** New House Farm
 John Randle, Church Farm
 Fletching, 01825 722231
Date: 5/1/01 **Grid ref.:** TQ42/926433
Elevation: 75 m **Crop:** W. barley
Estimated cover: 20%
Slope: 3° St **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: many rills up to 30 cm wide and 12 cm deep
Soil surface form: flattened **Soil surface condition:** slaked, capped
Topsoil depth: 28 cm **Texture:** ZCL-ZL **Stones:** 5%
Moisture: moist; wet in top 5 mm
Topsoil structure: mod./weak coarse sab, platy in top 5 mm
Subsoil texture: CL-SCL-fSL over stones or rock at 55 cm depth
Moisture: moist
Subsoil structure: mod./weak coarse sab
Comment: Lower Tunbridge Wells Sand. Firm to walk across. Water entered pit from base of topsoil, but no evidence of subsoil compaction. Water appears to have flowed over the soil entering the topsoil where possible and then flowing along the topsoil/subsoil boundary. Photos of rills to the east (upslope of U34).

Site no: U32 **Catchment:** Uck **Locality:** New House Farm
Date: 5/1/01 **Grid ref.:** TQ42/974473
Elevation: 45 m **Crop:** bare ground, disked
Estimated cover: 0%
Slope: 3° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: many rills up to 20 cm wide and 10 cm deep, and much deposition, particularly in gateway at bottom of the field north-east of this pit
Soil surface form: flattened/mounded **Soil surface condition:** slaked, capped
Topsoil depth: 29 cm **Texture:** ZCL **Stones:** 2%
Moisture: moist; wet in top 3 cm
Topsoil structure: mod./weak coarse sab, platy at base of topsoil
Subsoil texture: ZCL over C at 40 cm depth
Moisture: moist

Subsoil structure: mod./weak coarse sab, tending to prismatic
Comment: Lower Tunbridge Wells Sand. Free water in pores and fissures in topsoil. Photos of rills in gateway into field (south-west of this site) and gateway out of field to the north-east (boundary to field with Site U 33).

Site no: U33 **Catchment:** Uck **Locality:** New House Farm
Date: 5/1/01 **Grid ref.:** TQ42/988474
Elevation: 33 m **Crop:** W. barley
Estimated cover: 15%
Slope: 0° St **Soil series:** Conway **Soil subgroup:** 811
Erosion: sheet erosion across field – see comment below
Soil surface form: flattened and mounded **Soil surface condition:** slaked, capped
Topsoil depth: 28 cm **Texture:** ZCL **Stones:** 5% in topsoil
Moisture: v. moist; wet in top 4 cm
Topsoil structure: mod. coarse sab
Subsoil texture: ZCL-CL with much Fe/Mn
Moisture: v. moist
Subsoil structure: mod. coarse sab
Comment: Alluvium. Free water in pores and fissures in topsoil. Water has overflowed the ditches and has flowed in sheets across this field towards the river removing the upper subsoil (4-5 cm) across the northern end of the field. Where the soil was compacted in the tractor wheelings it has remained in place, but elsewhere it has been removed revealing the pre-sowing cultivation lines (see photo).

Site no: U34 **Catchment:** Uck **Locality:** New House Farm
Date: 5/1/01 **Grid ref.:** TQ42/982441
Elevation: 39 m **Crop:** W. barley
Estimated cover: 40%
Slope: 2° Cv **Soil series:** Wickham **Soil subgroup:** 711
Erosion: many rills running straight downslope to the river Uck
Soil surface form: flattened **Soil surface condition:** slaked, capped
Topsoil depth: 29 cm **Texture:** ZCL **Stones:** 5% (10% upslope)
Moisture: moist; wet in top 5 cm
Topsoil structure: mod. coarse sab, platy and dense at base
Subsoil texture: ZCL-CL with much Fe/Mn over C at depth
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Head over Wadhurst Clay. Some free water in pores and fissures in topsoil. Photos of rills and deposition at base of field by the river Uck.

Site no: U35 **Catchment:** Uck **Locality:** New House Farm
Date: 5/1/01 **Grid ref.:** TQ42/925412
Elevation: 60 m **Crop:** bare ground – disked?
Estimated cover: 0%
Slope: 3° St **Soil series:** Curtisden/Pembury **Soil subgroup:** 572-541
Erosion: many rills (10 cm wide by 3 cm deep) in wheelings
Soil surface form: mounded **Soil surface condition:** partly slaked, capped
Topsoil depth: 28 cm **Texture:** ZCL **Stones:** 5%
Moisture: v. moist; wet in top 1 cm
Topsoil structure: mod. coarse/med. sab, slight compaction at base
Subsoil texture: CL-SCL
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Lower Tunbridge Wells Sand. Free water in pores and fissures in topsoil – water enters pit from base of topsoil. Soil surface wet and soft to walk across. Structure damaged by trafficking for spreading lime and fym.

Site no: U36 **Catchment:** Uck **Locality:** New House Farm
Date: 5/1/01 **Grid ref.:** TQ42/943401
Elevation: 45 m **Crop:** bare ground – disked?
Estimated cover: 0%

Slope: 4° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: many rills in wheelings
Soil surface form: mounded **Soil surface condition:** partly slaked, capped
Topsoil depth: 29 cm **Texture:** ZCL **Stones:** 5%
Moisture: v. moist; wet in top 5 cm
Topsoil structure: mod. coarse sab, dense at base
Subsoil texture: ZCL-CL with much Fe/Mn over C at depth
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Head over Wadhurst Clay. Some free water in pores and fissures in topsoil – water enters pit from base of topsoil. Soil surface wet and soft to walk across. Structure damaged by trafficking for spreading lime and fym. Now the same field as U35 but different soil. There were two fields.

Site no: U37 **Catchment:** Uck **Locality:** New House Farm
Date: 5/1/01 **Grid ref.:** TQ42/938462
Elevation: 76 m **Crop:** W. barley
Estimated cover: 20%
Slope: 3° Cx **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: many rills up to 25 cm wide and 15 cm deep
Soil surface form: flattened **Soil surface condition:** slaked, capped
Topsoil depth: 28 cm **Texture:** ZCL-ZL **Stones:** 5%
Moisture: moist; wet in top 1 cm
Topsoil structure: mod./weak coarse sab, platy in top 1 cm, some compaction at base
Subsoil texture: CL-SCL over stones or rock at 65 cm depth
Moisture: moist
Subsoil structure: mod./weak coarse sab
Comment: Lower Tunbridge Wells Sand. Firm to walk across. Water entered pit from base of topsoil, as with Site U31.

Site no: U38 **Catchment:** Uck **Locality:** New House Farm
Date: 5/1/01 **Grid ref.:** TQ42/898430
Elevation: 68 m **Crop:** Maize stubble
Estimated cover: 0%
Slope: 7° Cx **Soil series:** Bearsted **Soil subgroup:** 541
Erosion: many small rills and deposition in wheelings
Soil surface form: flattened **Soil surface condition:** slaked, capped
Topsoil depth: 30 cm **Texture:** fSL **Stones:** 5%
Moisture: moist; v.moist in top 3 cm
Topsoil structure: weak coarse/v.coarse sab, dense and compacted
Subsoil texture: fSL over SL at 38 cm over rock or stones at 67 cm depth
Moisture: moist
Subsoil structure: weak coarse sab
Comment: Lower Tunbridge Wells Sand. Firm to walk across. Not as badly structured as maize fields at Nordens Green Farm yesterday. Photo of slaking and deposition in wheelings between here and U39.

Site no: U39 **Catchment:** Uck **Locality:** New House Farm
Date: 5/1/01 **Grid ref.:** TQ42/885405
Elevation: 63 m **Crop:** Maize stubble
Estimated cover: 0%
Slope: 3° Cx **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: many small rills (30 cm wide by 10 cm deep) and deposition in wheelings
Soil surface form: flattened **Soil surface condition:** slaked, capped
Topsoil depth: 29 cm **Texture:** fSL-ZCL **Stones:** 5%
Moisture: moist; v.moist in top 4 cm
Topsoil structure: weak coarse sab, dense and compacted, platy in top 2 cm where there has been deposition, and slightly compacted at base
Subsoil texture: CL (~ 18% C) over SL
Moisture: moist
Subsoil structure: weak coarse sab

Comment: Lower Tunbridge Wells Sand. Firm to walk across. Not as badly structured as maize fields at Nordens Green Farm yesterday. Now one field with U38 but different soils.
Dry and cold weather

Site no: U40 **Catchment:** Uck **Locality:** Owlsbury Farm
Philip Firmin
Date: 16/1/01 **Grid ref.:** TQ52/296815
Elevation: 120 m **Crop:** New ley
Estimated cover: 65%
Slope: 4° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked, capped
Topsoil depth: 28 cm **Texture: ZCL Stones:** 5%
Moisture: v.moist; a few wet faces
Topsoil structure: mod. med./fine sab, tending to platy in upper 10 cm
Subsoil texture: ZCL-ZC over C
Moisture: moist
Subsoil structure: mod. coarse sab, tending to prismatic
Comment: Wadhurst Clay. No free water seen in subsoil.

Site no: U41 **Catchment:** Uck **Locality:** Owlsbury Farm
Date: 16/1/01 **Grid ref.:** TQ52/290790
Elevation: 105 m **Crop:** New ley
Estimated cover: 65%
Slope: 4° St **Soil series:** Wickham/Cranbrook **Soil subgroup:** 711
Erosion: a few small rills in wheelings on lower slopes
Soil surface form: flattened **Soil surface condition:** slaked, capped
Topsoil depth: 27 cm **Texture: ZCL Stones:** 5%
Moisture: v.moist; wet faces in fissures and pores, and wet at base of plough layer
Topsoil structure: mod. med./fine sab, tending to platy in upper 5 cm
Subsoil texture: ZCL-ZC
Moisture: moist
Subsoil structure: mod. coarse sab; slight compaction at top
Comment: Wadhurst Clay. No free water seen in subsoil. Topsoil wetter the Site U40. Now same field as U40 but this was 4 (more recently 2) separate fields. Photo.

Site no: U42 **Catchment:** Uck **Locality:** Owlsbury Farm
Date: 16/1/01 **Grid ref.:** TQ52/280820
Elevation: 128 m **Crop:** Ley
Estimated cover: 95%
Slope: 4° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 28 cm **Texture: ZCL Stones:** 5%
Moisture: v.moist
Topsoil structure: mod. med./fine sab, granular in 3 cm root mat, but moderately poached
Subsoil texture: ZCL over C
Moisture: moist
Subsoil structure: mod. coarse/ v. coarse sab, tending to prismatic
Comment: Wadhurst Clay. No free water seen.

Site no: U43 **Catchment:** Uck **Locality:** Owlsbury Farm
Date: 16/1/01 **Grid ref.:** TQ52/268842
Elevation: 132 m **Crop:** maize stubble
Estimated cover: 0%
Slope: 4° Cx **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: rills in wheelings and much evidence of water movement across field
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 30 cm **Texture: ZCL Stones:** 5-10%
Moisture: v.moist

Topsoil structure: weak coarse sab, platy in top 7 cm; very compact; bluish green in some areas - gleying
Subsoil texture: CL
Moisture: moist
Subsoil structure: weak/mod. coarse sab, compact in the top
Comment: Ashdown Beds. No free water seen. Photo. Possible disturbance from railway construction?

Site no: U44 **Catchment:** Uck **Locality:** Owlsbury Farm
Date: 16/1/01 **Grid ref.:** TQ52/260768
Elevation: 105 m **Crop:** W. wheat stubble
Estimated cover: n/a
Slope: 4° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: small rills in wheelings
Soil surface form: flattened **Soil surface condition:** partly slaked, capped
Topsoil depth: 29 cm **Texture:** CL (< 30%C) **Stones:** 2%
Moisture: moist
Topsoil structure: mod./weak coarse sab, dense and 'tight'
Subsoil texture: C
Moisture: moist
Subsoil structure: mod. coarse/ v. coarse sab, tending to prismatic; top compact
Comment: Wadhurst Clay. No free water seen.

Site no: U45 **Catchment:** Uck **Locality:** Owlsbury Farm
Date: 16/1/01 **Grid ref.:** TQ52/257742
Elevation: 96 m **Crop:** bare ground – ploughed out ley
Estimated cover: 0%
Slope: 4° St **Soil series:** Wickham **Soil subgroup:** 711
Erosion: small rills in wheelings
Soil surface form: furrowed **Soil surface condition:** partly slaked
Topsoil depth: 28 cm **Texture:** CL (~ 30%C) **Stones:** 2%
Moisture: moist
Topsoil structure: mod./weak coarse/med. sab, dense and 'tight'
Subsoil texture: C
Moisture: moist
Subsoil structure: mod. coarse sab, top compact
Comment: Wadhurst Clay. No free water seen.

Site no: U46 **Catchment:** Uck **Locality:** Owlsbury Farm
Date: 16/1/01 **Grid ref.:** TQ52/253730
Elevation: 90 m **Crop:** cereal stubble with much grass growth
Estimated cover: 70%
Slope: 4° St **Soil series:** Wickham/Denchworth **Soil subgroup:** 711
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** partly slaked
Topsoil depth: 26 cm **Texture:** CL (~ 30%C) **Stones:** 5%
Moisture: v. moist; wet in some fissures and pores
Topsoil structure: mod. coarse/med. sab, dense and 'tight'
Subsoil texture: C, with much Fe/Mn at top
Moisture: moist
Subsoil structure: mod. coarse sab, tending to prismatic; v. compact and platy in top 2 cm
Comment: Wadhurst Clay. No free water seen.

Site no: U47 **Catchment:** Uck **Locality:** Owlsbury Farm
Date: 16/1/01 **Grid ref.:** TQ52/250708
Elevation: 88 m **Crop:** cereal stubble with much grass growth
Estimated cover: 75%
Slope: 5° Cx **Soil series:** Cranbrook/Stanway **Soil subgroup:** 711
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** partly slaked
Topsoil depth: 22 cm **Texture:** ZCL **Stones:** 2%

Elevation: 54 m **Crop:** maize stubble
Estimated cover: 0%
Slope: 2° St **Soil series:** Denchworth **Soil subgroup:** 712
Erosion: rills and deposition in wheelings
Soil surface form: flattened, badly rutted **Soil surface condition:** slaked, capped
Topsoil depth: 29 cm **Texture:** ZCL **Stones:** 5%
Moisture: moist
Topsoil structure: mod./weak coarse/med. sab; weak platy top; v. dense at base of topsoil
Subsoil texture: C
Moisture: moist
Subsoil structure: mod. coarse sab, tending to prismatic
Comment: Wadhurst Clay. Standing water (ice!) in wheelings. Soil badly damaged during harvest just before Christmas, but not as badly rutted as field next door (Site U50). These fields appear to be managed as one although there is a hedge between.

Site no: U52 **Catchment:** Uck **Locality:** Arches Farm
Date: 17/1/01 **Grid ref.:** TQ51/042918
Elevation: 36 m **Crop:** maize stubble
Estimated cover: 0%
Slope: 4° Cx **Soil series:** Wickham **Soil subgroup:** 711
Erosion: rills and deposition in wheelings
Soil surface form: flattened, badly rutted **Soil surface condition:** slaked, capped
Topsoil depth: 29 cm **Texture:** CL **Stones:** 2%
Moisture: v. moist
Topsoil structure: weak coarse sab; weak platy top; v. dense at base of topsoil where the soil is bluish (gleying)
Subsoil texture: CL over C at 57 cm depth
Moisture: moist
Subsoil structure: mod. coarse sab, tending to prismatic
Comment: Wadhurst Clay.
 Site in same field as U50 (this had been several smaller fields) but much lower in the landscape. Free water at 48 cm depth in subsoil. Standing water (ice!) in wheelings. Soil badly damaged during harvest just before Christmas. Many maize cobs left and some plants pushed over rather than harvested. Photo taken looking south-east with deer in front of the wood.

Site no: U53 **Catchment:** Uck **Locality:** Arches Farm
Date: 17/1/01 **Grid ref.:** TQ51/042945
Elevation: 52 m **Crop:** PG/ long ley
Estimated cover: 90%
Slope: 4° St **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 6 cm **Texture:** ZCL **Stones:** 2%
Moisture: v. moist
Topsoil structure: mod. fine/med. sab, poached and compacted by sheep (still out)
Subsoil texture: fSCL-ZCL over SL at 62 cm depth
Moisture: moist
Subsoil structure: mod./strong med./fine sab
Comment: Tunbridge Wells Sand. No free water seen.

Site no: U54 **Catchment:** Uck **Locality:** Arches Farm
Date: 17/1/01 **Grid ref.:** TQ51/003938
Elevation: 38 m **Crop:** PG/ long ley
Estimated cover: 90%
Slope: 4° St **Soil series:** Oxpasture **Soil subgroup:** 572
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 6 cm **Texture:** ZCL **Stones:** 2%
Moisture: v. moist
Topsoil structure: mod. fine/med. sab, root mat poached and compacted by sheep (still out)

Subsoil texture: CL-ZCL-fSCL over C at depth
Moisture: moist
Subsoil structure: mod. med. sab
Comment: Head over Wadhurst Clay. No free water seen.

Site no: U55 **Catchment:** Uck **Locality:** Arches Farm
Date: 17/1/01 **Grid ref.:** TQ51/006926
Elevation: 34 m **Crop:** PG/ long ley
Estimated cover: 90%
Slope: 0° St **Soil series:** Clwyd **Soil subgroup:** 562
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 5 cm **Texture:** ZCL **Stones:** 0%
Moisture: v. moist
Topsoil structure: mod. med. granular, root mat poached and slightly compacted by sheep (still out)
Subsoil texture: ZCL over ZC
Moisture: moist
Subsoil structure: strong fine sab over mod. med. sab
Comment: Alluvium. No free water seen.

Site no: U56 **Catchment:** Uck **Locality:** New Place Farm
 Simon Cottingham, manager
Date: 17/1/01 **Grid ref.:** TQ51/054945
Elevation: 42 m **Crop:** linseed stubble (harvested late Nov)
Estimated cover: 0%
Slope: 4° Cx **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: small rills in wheelings
Soil surface form: flattened **Soil surface condition:** slaked, capped
Topsoil depth: 27 cm **Texture:** ZCL-ZL **Stones:** 5%
Moisture: moist
Topsoil structure: mod. med. sab, top slightly platy
Subsoil texture: ZCL over ZL, stony at 58 cm depth
Moisture: moist; wet in a few fissures and pores
Subsoil structure: mod. med./coarse sab, compact at top
Comment: Tunbridge Wells Sand. Free water seen only in subsoil. Photo.
 Tenant: Jeremy Courtney, Crouch's Farm, East Hoathly, 01825 840242

Site no: U57 **Catchment:** Uck **Locality:** New Place Farm
Date: 17/1/01 **Grid ref.:** TQ52/107025
Elevation: 70 m **Crop:** linseed stubble and grass
Estimated cover: 50%
Slope: 1° St **Soil series:** Cranbrook/Stnway **Soil subgroup:** 711
Erosion: none visible
Soil surface form: flattened **Soil surface condition:** slaked, capped
Topsoil depth: 28 cm **Texture:** ZCL **Stones:** 5%
Moisture: moist; wet in a few pores and fissures
Topsoil structure: mod./strong med./fine sab, top weakly platy
Subsoil texture: ZCL
Moisture: moist
Subsoil structure: mod. coarse/med. sab, compact at top
Comment: Ashdown Beds.

Site no: U58 **Catchment:** Uck **Locality:** New Place Farm
Date: 17/1/01 **Grid ref.:** TQ52/073023
Elevation: 63 m **Crop:** linseed stubble and grass
Estimated cover: 60%
Slope: 3° St **Soil series:** Cranbrook/Stnway **Soil subgroup:** 711
Erosion: small rills in wheelings
Soil surface form: flattened **Soil surface condition:** slaked, partly capped
Topsoil depth: 28 cm **Texture:** ZCL **Stones:** 5%

Moisture: moist
Topsoil structure: weak coarse sab; compacted
Subsoil texture: ZCL over ZL-fSL at 45 cm depth
Moisture: moist
Subsoil structure: mod. coarse/med. sab, compact at top
Comment: Ashdown Beds. No free water seen. Subsoil (ZCL-ZL) is barely moist. Lower down slope from U57 in very large field that was previously split.

Site no: U59 **Catchment:** Uck **Locality:** New Place Farm
Date: 17/1/01 **Grid ref.:** TQ51/073975
Elevation: 48 m **Crop:** linseed stubble, volunteer growth and grass
Estimated cover: 60%
Slope: 3° Cv **Soil series:** Cranbrook **Soil subgroup:** 711
Erosion: small rills in wheelings, up to 20 cm by 20 cm
Soil surface form: flattened **Soil surface condition:** partly slaked, locally capped
Topsoil depth: 28 cm **Texture:** ZCL **Stones:** 5%
Moisture: moist; wet in some fissures and pores
Topsoil structure: mod. coarse/v. coarse sab; compacted and weakly platy throughout; 'tight' at base
Subsoil texture: ZCL over stony fSCL
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Ashdown Beds. No free water seen in subsoil. Photo of volunteer growth.

Site no: U60 **Catchment:** Uck **Locality:** New Place Farm
Date: 17/1/01 **Grid ref.:** TQ51/112990
Elevation: 88 m **Crop:** maize stubble
Estimated cover: 0%
Slope: 3° St **Soil series:** Cranbrook **Soil subgroup:** 711
Erosion: small rills in wheelings, up to 20 cm by 20 cm
Soil surface form: flattened **Soil surface condition:** partly slaked, locally capped
Topsoil depth: 29 cm **Texture:** ZCL-ZL **Stones:** 5-10%
Moisture: moist; wet in some fissures and pores
Topsoil structure: mod. coarse sab; compacted and platy top
Subsoil texture: ZCL over stony fSCL
Moisture: moist/sl. moist
Subsoil structure: mod./weak coarse sab
Comment: Ashdown Beds. No free water seen in subsoil. Field harvest early before it got very wet – no rutting as in U50, U51 and U52. Photo of surface, nearby rills up to 1.2 m across and 30 cm deep, and nearby deposition.

Site no: U61 **Catchment:** Uck **Locality:** New Place Farm
Date: 17/1/01 **Grid ref.:** TQ52/163005
Elevation: 72 m **Crop:** maize stubble
Estimated cover: 0%
Slope: 2° St **Soil series:** Cranbrook/Stamway **Soil subgroup:** 711
Erosion: Many large rills; deposition in wheelings and on low ground
Soil surface form: flattened **Soil surface condition:** slaked; capped
Topsoil depth: 31 cm **Texture:** ZCL **Stones:** 2%
Moisture: moist; wet in a few fissures and pores
Topsoil structure: mod. coarse/med. sab, platy top where capped
Subsoil texture: ZCL-CL
Moisture: moist
Subsoil structure: mod. coarse sab, weaker with depth
Comment: Ashdown Beds. Many rills, some large. Rills drain through gateway and into adjacent field. The sediment has blocked a ditch and culvert at the field boundary. It appears that this ditch is piped across adjacent field but the sediment has blocked the culvert and so the water (and the rills) continue across the adjacent field (see photos). Maize harvested early in the autumn (Sept. or early Oct.) Some linseed(?) straw in topsoil from last season.

Site no:	U65A	Catchment:	Uck	Locality:	Oast Farm PYO Mr Greenland
Date:	18/1/01			Grid ref.:	TQ42/818382
Elevation:	47 m	Crop:	Apples–grass (2m)	Estimated cover:	100%
Slope:	2° St	Soil series:	Atrim/Bearsted	Soil subgroup:	541
Erosion:	none visible				
Soil surface form:	n/a			Soil surface condition:	n/a

Topsoil depth: 20 cm (10 cm Ah) **Texture:** ZL **Stones:** 2%
Moisture: moist
Topsoil structure: mod./strong med./coarse granular over mod. med./fine sab below 10 cm depth; tight between 10 and 20 cm depth. Slight trafficking ruts
Subsoil texture: ZL-ZCL over ZCL
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Lower Tunbridge Wells Sand. Grey-blue colours (gleying) at base of topsoil (10-20 cm depth). Some ruts in grass strip. No free water seen.

Site no: U65B **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/818382
Elevation: 47 m **Crop:** Apples-h.strip (2.5m) **Estimated cover:** 0%
Slope: 2° St **Soil series:** Atrim/Bearsted **Soil subgroup:** 541
Erosion: run-off evident in strip and on tracks
Soil surface form: flattened **Soil surface condition:** slaked, slightly capped
Topsoil depth: 20 cm **Texture:** ZL **Stones:** 2%
Moisture: moist
Topsoil structure: mod. coarse sab, platy in top 4 cm
Subsoil texture: ZL-ZCL over ZCL
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Lower Tunbridge Wells Sand. No free water seen. Grey-blue colours not as evident as in U65A.

Site no: U66A **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/825393
Elevation: 45 m **Crop:** Apples-grass (2m) **Estimated cover:** 100%
Slope: 3° Cx **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 21 cm (9 cm Ah) **Texture:** ZL **Stones:** 2%
Moisture: moist
Topsoil structure: mod./strong med. granular over mod./strong med. sab below 9 cm depth. Slight trafficking ruts
Subsoil texture: ZCL
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Lower Tunbridge Wells Sand. Grey-blue colours (gleying) on ped faces at base of topsoil but no obvious structural problems. Some ruts in grass strip. No free water seen.

Site no: U66B **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/825393
Elevation: 45 m **Crop:** Apples-h.strip (2.5m) **Estimated cover:** 0%
Slope: 3° Cx **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: run-off evident in strip and on tracks
Soil surface form: flattened **Soil surface condition:** slaked, capped
Topsoil depth: 20 cm **Texture:** ZL **Stones:** 2%
Moisture: moist
Topsoil structure: mod. coarse sab, platy in top 4 cm
Subsoil texture: ZL-ZCL over ZCL
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Lower Tunbridge Wells Sand. No free water seen.

Site no: U67A **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/807412
Elevation: 57 m **Crop:** Apples-grass (2.5m) **Estimated cover:** 100%
Slope: 3° Cx **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: none visible

Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 18 cm (8 cm Ah) **Texture:** ZL **Stones:** 5%
Moisture: moist
Topsoil structure: strong med./fine sab; strong med./coarse granular in top 8 cm. Slight trafficking ruts
Subsoil texture: fSL over SCL at 50 cm depth over CL
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Lower Tunbridge Wells Sand. Some ruts in grass strip. No free water seen.

Site no: U67B **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/807412
Elevation: 57 m **Crop:** Apples–h.strip (3m) **Estimated cover:** 0%
Slope: 3° Cx **Soil series:** Curtisden **Soil subgroup:** 572
Erosion: run-off evident in strip and on tracks
Soil surface form: flattened **Soil surface condition:** slaked, capped
Topsoil depth: 18 cm **Texture:** ZL **Stones:** 5%
Moisture: moist
Topsoil structure: mod. coarse/med. sab, platy in top 4 cm
Subsoil texture: fSL over SCL at 50 cm depth over CL
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Lower Tunbridge Wells Sand. No free water seen.

Site no: U68A **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/798410
Elevation: 61 m **Crop:** Apples–grass (2.5m) **Estimated cover:** 100%
Slope: 2° St **Soil series:** Pembury/Curtisden **Soil subgroup:** 571-572
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 19 cm (9 cm Ah) **Texture:** ZL **Stones:** 5%
Moisture: moist; a little free water in some pores
Topsoil structure: mod. med./coarse sab, granular in top 9 cm.
Subsoil texture: fSZL over SCL at 55 cm depth
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Lower Tunbridge Wells Sand. Younger orchard than U67 and this is reflected in the soil structure under the grass strip. No free water seen.

Site no: U68B **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/798410
Elevation: 61 m **Crop:** Apples–h.strip (4m) **Estimated cover:** 0%
Slope: 2° St **Soil series:** Pembury/Curtisden **Soil subgroup:** 571-572
Erosion: some run-off in strip and on tracks
Soil surface form: flattened **Soil surface condition:** slaked, capped
Topsoil depth: 19 cm **Texture:** ZL **Stones:** 5%
Moisture: moist
Topsoil structure: mod. coarse/med. sab, platy in top 4 cm
Subsoil texture: fSZL over SCL at 55 cm depth
Moisture: moist
Subsoil structure: mod. coarse sab
Comment: Lower Tunbridge Wells Sand. No free water seen. Two rows of trees in the herbicide strip.

Site no: U69A **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/806387
Elevation: 46 m **Crop:** Raspberries–grass (2m) **Estimated cover:** 100%
Slope: 8° St **Soil series:** Pembury **Soil subgroup:** 541
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 20 cm (10 cm Ah) **Texture:** ZL **Stones:** 5%
Moisture: moist; a little free water in some pores
Topsoil structure: mod./strong fine/med. sab, granular in top 8 cm.
Subsoil texture: CL-SCL, stony at 70 cm depth

Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Lower Tunbridge Wells Sand. No free water seen.

Site no: U69B **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/806387
Elevation: 46 m **Crop:** Raspberries–h.strip (1m) **Estimated cover:** 0%
Slope: 8° St **Soil series:** Pembury **Soil subgroup:** 541
Erosion: some run-off on tracks
Soil surface form: flattened/mounded **Soil surface condition:** slaked
Topsoil depth: 20 cm **Texture:** ZL **Stones:** 5%
Moisture: moist
Topsoil structure: weak/mod. coarse sab
Subsoil texture: CL-SCL, stony at 70 cm depth
Moisture: moist
Subsoil structure: mod. coarse/med. sab
Comment: Lower Tunbridge Wells Sand. No free water seen.

Site no: U70A **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/858354
Elevation: 51 m **Crop:** Apples–grass (2m) **Estimated cover:** 100%
Slope: 2° St **Soil series:** Bearsted **Soil subgroup:** 541
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 21 cm (10 cm Ah) **Texture:** SZL-CL **Stones:** 5%
Moisture: moist
Topsoil structure: strong/mod. med./fine sab, finer and granular in top 10 cm. Slight trafficking ruts
Subsoil texture: SZL over SL at 62 cm depth
Moisture: moist
Subsoil structure: mod. coarse sab, weaker with depth
Comment: Lower Tunbridge Wells Sand. No free water seen.

Site no: U70B **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/858354
Elevation: 51 m **Crop:** Apples–h.strip (4m) **Estimated cover:** 0%
Slope: 2° St **Soil series:** Bearsted **Soil subgroup:** 541
Erosion: some run-off evident in strip and in tracks
Soil surface form: flattened **Soil surface condition:** slaked, slightly capped
Topsoil depth: 21 cm **Texture:** SZL-CL **Stones:** 5%
Moisture: moist
Topsoil structure: mod. coarse/med. sab, slightly platy in top
Subsoil texture: SZL over SL at 62 cm depth
Moisture: moist
Subsoil structure: mod. coarse sab, weaker with depth
Comment: Lower Tunbridge Wells Sand. Two rows of trees per strip. No free water seen.

Site no: U71A **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/849357
Elevation: 43 m **Crop:** Cherries–grass (2.5m) **Estimated cover:** 40%
Slope: 2° St **Soil series:** Curtisden/Bearsted **Soil subgroup:** 572/541
Erosion: none visible
Soil surface form: n/a **Soil surface condition:** n/a
Topsoil depth: 11 cm **Texture:** SZL **Stones:** 5%
Moisture: moist
Topsoil structure: weak/mod. med. sab; not the good structure normally associated with grass strips. Slight trafficking ruts
Subsoil texture: SZL-CL over CL at 47 cm depth
Moisture: moist; v.moist just above CL layer
Subsoil structure: mod. coarse/med. sab
Comment: Lower Tunbridge Wells Sand. poor grass growth in parts of strip – much moss. No free water seen.

Site no: U71B **Catchment:** Uck **Locality:** Oast Farm PYO
Date: 18/1/01 **Grid ref.:** TQ42/849357
Elevation: 43 m **Crop:** Cherries–h.strip (4m) **Estimated cover:** 0%

Slope: 2° St **Soil series:** Curtisden/Bearsted **Soil subgroup:** 572/541
Erosion: some run-off evident in strip and in tracks
Soil surface form: flattened **Soil surface condition:** slaked, slightly capped
Topsoil depth: 11 cm **Texture:** SZL **Stones:** 5%
Moisture: moist
Topsoil structure: mod. coarse/med. sab, slightly platy in top
Subsoil texture: SZL-CL over CL at 50 cm depth
Moisture: moist; v.moist just above CL layer
Subsoil structure: mod. coarse/med. sab
Comment: Lower Tunbridge Wells Sand. No free water seen.
Notes: near U70 and U71 there were burrows (rabbits?) which appear to have collapsed, possible due to water running off the orchard scouring out the burrows.