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This information sheet describes the typical average properties of the specified soil to a depth of 1 metre, and should not be the primary source of data when making land use decisions on individual farms and paddocks.

Utuhinaf

Mellow Humic Organic Soil

Utuh_31a.1 (100% of the mapunit at location (5823536, 1798004), Confidence: Medium)

Key physical properties

| | |
|-----------------------------------|--|
| Depth class (diggability) | Deep (> 1 m) |
| Texture profile | Loamy Peat Over Loam |
| Potential rooting depth | 30 - 60 (cm) |
| Rooting barrier | Anoxic conditions |
| Topsoil stoniness | Stoneless |
| Topsoil clay range | 5 - 15 % |
| Drainage class | Poorly drained |
| Aeration in root zone | Very limited |
| Permeability profile | Moderate Over Slow |
| Depth to slowly permeable horizon | 30 - 60 (cm) |
| Permeability of slowest horizon | Slow (< 4 mm/h) |
| Profile available water | (0 - 100cm or root barrier) Very high (282 mm) |
| | (0 - 60cm or root barrier) Very high (188 mm) |
| | (0 - 30cm or root barrier) Very high (102 mm) |
| Dry bulk density, topsoil | 0.54 g/cm ³ |
| Dry bulk density, subsoil | 0.54 g/cm ³ |
| Depth to hard rock | No hard rock within 1 m |
| Depth to soft rock | No soft rock within 1 m |
| Depth to stony layer class | No significant stony layer within 1 m |

Key chemical properties

| | |
|---------------------|------------|
| Topsoil P retention | High (62%) |
|---------------------|------------|

About this publication

- This information sheet describes the *typical average properties* of the specified soil to a depth of 1 metre.
- For further information on individual soils, contact Landcare Research New Zealand Ltd: www.landcareresearch.co.nz
- Advice should be sought from soil and land use experts before making decisions on individual farms and paddocks.
- The information has been derived from numerous sources. It may not be complete, correct or up to date.
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- Landcare Research shall not be liable on any legal basis (including without limitation negligence) and expressly excludes all liability for loss or damage howsoever and whenever caused to a user of this factsheet.



Additional factors to consider in choice of management practices

Vulnerability classes relate to soil properties only and do not take into account climate or management

Soil structure integrity

| | |
|--------------------------|-------------------|
| Structural vulnerability | Very low (0.40) |
| Pugging vulnerability | not available yet |

Water management

| | |
|--|---|
| Water logging vulnerability | High |
| Drought vulnerability - if not irrigated | Low |
| Bypass flow | High |
| Hydrological soil group | C/D |
| Irrigability | Flat to very gently undulating land with severe drainage/permeability restrictions and soils with high to very high PAW |

Contaminant management

| | |
|------------------------------------|-------------------|
| N leaching vulnerability | Very Low |
| P leaching vulnerability | not available yet |
| Bypass flow | High |
| Dairy effluent (FDE) risk category | B |
| Relative Runoff Potential | Low |

Additional information

| | |
|----------------------------|----------------------------|
| Soil classification | Mellow Humic Organic Soils |
| Family | Utuhinaf |
| Sibling number | 31 |
| Profile texture group | Peaty |
| Soil profile material | Organic layered or stony |
| Rock class of stones/rocks | Not Applicable |
| Rock origin of fine earth | From Rhyolitic Rock |
| Parent material origin | Alluvium |

Characteristics of functional horizons in order from top to base of profile:

| Functional Horizon | Thickness | Stones | Clay* | Sand* |
|--|------------|---------|-----------|-----------|
| Loamy Organic Humic | 15 - 20 cm | 0 % | 5 - 15 % | 5 - 15 % |
| Loamy Organic Humic | 20 - 30 cm | 0 % | 5 - 15 % | 5 - 15 % |
| Loamy Weak, Acidic Tephric | 20 - 40 cm | 0 - 3 % | 10 - 25 % | 15 - 25 % |
| Loamy Fine Slightly Firm, Acidic Tephric | 20 - 30 cm | 0 - 4 % | 10 - 30 % | 20 - 40 % |

* clay and sand percent values are for the mineral fines (excludes stones). Silt = 100 - (clay + sand)

Soil information for OVERSEER

The following information can be entered in the OVERSEER® Nutrient Budget model. This information is derived from the S-map soil properties which are matched to the most appropriate OVERSEER categories. Please read the notes below for further information.

Soil description page

1. Select **Link to S-map**
2. Under S-map sibling data enter the S-map name/ref: **Utuh_31a.1**

Considerations when using Smap soil properties in OVERSEER

- The soil water values are estimated using a regression model based on soil order, parent rock, soil functional horizon information (stone content, soil density class), as well as texture (field estimates of sand, silt and clay percentages). The model is based on laboratory - measured water content data held in the National Soils Database and other Landcare Research datasets. Most of this data comes from soils under long-term pasture and may vary from land under arable use, irrigation, etc.
- Each value is an estimate of the water content of the whole soil within the target depth range or to the depth of the root barrier (if this occurs above the base of the target depth). Where soil layers contain stones, the soil water content has been decreased according to the stone content.
- S-map only contains information on soils to a depth of 100 cm. The soil water estimates in the > 60 cm depth category assume that the bottom functional horizon that extends to 100 cm, continues down to a depth of 150cm. Where it is known by the user that there is an impermeable layer or non-fractured bedrock between 100 and 150 cm, this depth should be entered into OVERSEER. Where there is a change in the soil profile characteristics below 100 cm, the user should be aware that the values provided on this factsheet for the > 60 cm depth category will not reflect this change. For example, the presence of gravels at 120 cm would usually result in lower soil water estimates in the > 60 cm depth category. Note though that this assumption only impacts on a cropping block, as OVERSEER uses soil data from just the top 60 cm in pastoral blocks.
- OVERSEER requires the soil water values to be non-zero integers (even though zero is a valid value below a root barrier), and the wilting point value must be less than the field capacity value which must be less than the saturation value. The S-map water content estimates supplied by the S-map web service have been rounded to integers and may be assigned minimal values to meet these OVERSEER requirements. These modifications will result in a slightly less accurate estimate of Available Water to 60 cm (labelled PAW in OVERSEER) than that provided on the first page of this factsheet, but this is not expected to lead to any significant difference in outputs from OVERSEER.

