

# FPH Frying Pan Hut Land System

**Area:** 69.4 km<sup>2</sup>

**Landscape:** Gullied and eroded land where the Burra Creek cuts across pediments abutting the ranges. The associated outwash has also been eroded and dissected. The landscape is relatively unstable and subject to erosion.

**Annual rainfall:** 220 – 285 mm average

**Geology:** Holocene alluvium associated with modern streams and creeks. Older alluvium forms lateral terraces and floodplain deposits. Pleistocene age calcreted and calcareous gravelly sediments also occur in a few places. Proterozoic Adelaide Geosyncline rocks outcrop in the middle of the land system where exposed by stream erosion. They include: Appila Tillite, Tapley Hill, Tarcowie Siltstone, Wilyerpa and Waukaringa Siltstone Formations.

**Main soils:**

- A4** (22%) Deep (rubbly) calcareous loam (Hypercalcic-Lithocalcic Calcarosol)
- D4** (19%) Loam over pедaric red clay (Pedaric Red Sodosol-Dermosol)
- A3** (14%) Deep moderately calcareous loam (Calcic Calcarosol)
- A6** (12%) Gradational calcareous clay loam (Pedal Hypercalcic-Lithocalcic Calcarosol on clayey subsoil)
- A2** (11%) Calcareous loam on rock (Paralithic Calcarosol)

**Minor soils:**

- L1** (9%) Shallow soil on rock (Rocky Rudosol-Tenosol)
- A5** (5%) Rubbly calcareous loam on clay (Supracalcic-Lithocalcic Calcarosol on clay)
- M1** (4%) Deep sandy loam (Brown-Grey-Red Kandosol-Tenosol)
- B2** (4%) Shallow calcareous loam on calcrete (Petrocalcic Calcarosol-Rudosol)

**Summary:** The Frying Pan Hut land system consists of alluvium deposited by the Burra Creek and other minor creeks. The landscape is highly erodible and is dissected. Soils are mostly calcareous with red pедaric sodic duplex soils common. Shallow soils on Proterozoic rocks are found where erosion has cut deeply into the landscape.

**Soil Landscape Unit summary:** Frying Pan Hut Land System (FPH)

| SLU | % of area | Component   | Main soils | Prop# | Notes   |
|-----|-----------|-------------|------------|-------|---|
| AKB | 14.3      | Rocky slope | A2L1       | D     | Rolling rises with very shallow rocky calcareous soils formed on calcareous sandstones, siltstones, shales and fillites. Relief is 9-30m, slopes are 10-30%.<br><br>Main soils: <u>Shallow stony soils on rock - L1</u> and <u>Calcareous clay loam on rock - A2</u> .  |
| IYB | 4.0       | Rise        | A6A4       | V     | Rises and flats formed on unconsolidated clay sediments (eg. Blanchetown Clay Formation) or highly weathered rock. Soils have non-sandy surfaces, and are gradational calcareous soils (Calcarosols). More than 30% are highly calcareous with clay subsoil and over 30% are texture contrast with clay subsoil. More than 10% are rubbly loamy-clay loamy and over 10% are shallow over calcrete.<br><br>Main soils:<br><b>Rises:</b> <u>Gradational calcareous clay loam - A6</u> and <u>Deep (rubbly) calcareous sandy loam - A4</u> . |
|     |           | Flat        | D4         | C     |   |
|     |           | Stony       | B2A4       | L     |   |



|      |      |                  |      |   |  |
|------|------|------------------|------|---|--|
|      |      |                  |      |   | <p><b>Flats:</b> <u>Clay loam over pedaric red clay - D4</u><br/> <b>Stony plains:</b> <u>Shallow calcareous loam on calcrete - B2</u> and <u>Deep (rubbly) calcareous sandy loam -A4.</u></p>   |
| IuC  | 3.5  | Undulating slope | A4A5 | D | <p>Undulating slopes on which the soils are underlain by deeply weathered, kaolinised fine-grained rock. Moderately scalded. Relief is less than 30m, slopes are 3-10%.</p> <p>Main soils: <u>Deep (rubbly) calcareous sandy loam -A4</u> and <u>Rubbly calcareous loam on clay - A5.</u></p>  |
| Iunn | 2.6  | Eroded slope     | A4A5 | D | <p>Rolling slopes, eroded, with severe gullyng (over 20% of land affected) and moderate scalding (5-10%). Relief is 9-30m, slopes are 10-30%.</p> <p>Main soils: <u>Deep (rubbly) calcareous sandy loam -A4</u> and <u>Rubbly calcareous loam on clay - A5.</u></p>  |
| JLU  | 5.7  | Flat             | D4   | D | <p>Plains and rises with more than 20% pedaric, texture contrast (loam over crumbly red clay) soils, but less than 20% calcareous gradational soils.</p> <p><b>JLU</b> Plains. Moderately scalded (10-50%). Subsoils are moderately saline.<br/> <b>JLp</b> Flats and rises.<br/>                 Moderately gullied (stable banks) and scalded (10-50%).</p> <p>Main soils:<br/> <b>Flats and depressions:</b> <u>Clay loam over pedaric red clay - D4.</u><br/> <b>Rises:</b> <u>Gradational calcareous clay loam - A6</u> and <u>Deep (rubbly) calcareous sandy loam -A4.</u></p> |
| JLp  | 3.2  | Flat             | D4   | D |  |
| JPo  | 10.1 | Flat             | D4A6 | D | <p>Pediments and plains with texture contrast soils formed on outwash sediments derived from basement rocks. Calcareous in some part of the profile. More than 20% of soils are pedaric (fine crumbly structure in subsoils).</p> <p><b>JPo</b> Flats. Moderately gullied (10-20%) and scalded (10-50%).<br/> <b>JPq</b> Gently sloping fans. Severely scalded (over 50%). Slopes are 1-3%, relief is less than 9m.</p> <p>Main soils: <u>Clay loam over pedaric red clay - D4</u> and <u>Gradational calcareous clay loam - A6.</u></p>   |
| JPq  | 5.5  | Gentle slope     | D4A6 | D |  |
| KFB  | 1.4  | Gentle slope     | A5A4 | D | <p>Pediments and plains with calcareous gradational soils and more than 20% red pedaric texture contrast soils.</p> <p><b>KFB</b> Gently sloping plain. Slopes are 1-3%, relief is less than 9m.<br/> <b>KFU</b> Plains. 10-50% scalded.</p> <p>Main soils:<br/> <b>Slopes:</b> <u>Rubbly calcareous loam on clay - A5</u> and <u>Deep (rubbly) calcareous sandy loam -A4.</u><br/> <b>Flats:</b> <u>Gradational calcareous clay loam - A6</u> and <u>Deep (rubbly) calcareous sandy loam -A4.</u></p>   |
| KFU  | 0.9  | Flat             | A6A4 | D |  |
| KIG  | 12.0 | Fan              | A4A6 | E | <p>Gently sloping fans-basement rock complex with gradational soils, which are calcareous throughout. Moderately gullied (10-20%) Slopes are 1-3%, relief is less than 9m.</p> <p>Main soils:<br/> <b>Fans:</b> <u>Deep (rubbly) calcareous sandy loam -A4</u> and <u>Gradational calcareous clay loam - A6.</u><br/> <b>Rises:</b> <u>Calcareous loam on rock - A2</u> and <u>Shallow stony soils on rock - L1.</u></p>   |
|      |      | Rise             | A2L1 | E |  |
| KLC  | 5.1  | Dissect slope    | A4A3 | D | <p>Undulating dissected pediments with clay loamy calcareous soils.</p>  |



|     |      |            |      |   |  |
|-----|------|------------|------|---|--|
|     |      |            |      |   | <p>Slopes are 3-10%, relief is less than 9m.</p> <p>Main soils: <u>Deep (rubbly) calcareous clay loam -A4</u> and <u>Deep moderately calcareous clay loam - A3.</u></p>  |
| KMm | 17.7 | Fan        | A4D4 | E | <p>Undulating dissected fans and rises on which gradational calcareous soils are dominant with red texture contrast soils. Shallow soils on calcrete are also common on rises. Slopes are 3-10%, relief is less than 9m. Moderately gullied (10-20%) and scalded (10-50%).</p> <p>Main soils:<br/> <b>Fans:</b> <u>Deep (rubbly) calcareous sandy loam -A4</u> and <u>Clay loam over pederic red clay - D4.</u><br/> <b>Rises:</b> <u>Deep (rubbly) calcareous sandy loam -A4</u> and <u>Shallow calcareous loam on calcrete - B2.</u></p> |
|     |      | Rise       | A4B2 | E |  |
| KVA | 3.5  | Flat       | A3A4 | D | <p>Flats formed on calcareous outwash sediments derived from basement rock. More than 90% of soils are calcareous throughout (Calcarosols). Moderately saline soils throughout.</p> <p>Main soils: <u>Deep moderately calcareous sandy loam - A3</u> and <u>Deep (rubbly) calcareous sandy loam -A4.</u></p>   |
| KgB | 1.2  | Flat       | A4A6 | D | <p>Gently undulating flats with over 50% gradational calcareous soils of which most have more than 20% gravel or stone (non-pedogenic). Slopes are 1-3%, relief is less than 9m.</p> <p>Main soils: <u>Deep (rubbly) calcareous sandy loam -A4</u> and <u>Gradational calcareous clay loam - A6.</u></p>   |
| XAB | 7.8  | Creek flat | M1A3 | D | <p>Creek flat with mixed alluvium. Eroded watercourses with stable banks.</p> <p>Main soils: <u>Deep alluvial loam - M1</u> and <u>Deep moderately calcareous sandy loam - A3.</u></p>   |
| XKA | 1.6  | Flat       | A3   | D | <p>Alluvial depression with deep silty calcareous clay loamy soils with stable banks and gully walls.</p> <p>Main soils: <u>Deep moderately calcareous sandy loam - A3</u> and <u>Rubbly calcareous clay loam on clay - A5.</u></p>  |

# PROPORTION codes assigned to Soil Landscape Unit (SLU) components:

- |   |  |   |                                   |
|---|--|---|-----------------------------------|
| D | Dominant in extent (>90% of SLU)         | C | Common in extent (20–30% of SLU)  |
| V | Very extensive in extent (60–90% of SLU) | L | Limited in extent (10–20% of SLU) |
| E | Extensive in extent (30–60% of SLU)      | M | Minor in extent (<10% of SLU)     |



**Detailed soil profile descriptions:**

- A2/L1** Shallow calcareous loam (Paralithic, Hypercalcic / Lithocalcic Calcarosol) (A2)  
Gradational calcareous sandy loam over clay loam on weathered rock.  
**OR** Shallow stony loam (Calcareous, Paralithic, Leptic Tenosol) (L1)  
Shallow calcareous sandy loam on rock.
- A3** Deep moderately calcareous (sandy) loam (Calcic Calcarosol)  
Calcareous (sandy) loam topsoil grading into loamy-clay loamy subsoil without a significant CO<sub>3</sub> build-up in the subsoil (<20% CO<sub>3</sub> in subsoil). Pediment type Calcarosols.
- A4** Deep (rubbly) calcareous loam (Hypercalcic-Lithocalcic Calcarosol)  
Calcareous sandy-clay loamy topsoil grading into loamy-clay loamy subsoil with a significant CO<sub>3</sub> build-up in the subsoil. Often rubbly. Soil usually >120 cm in depth.
- A5** Rubbly calcareous loamy sand on clay (Supracalcic-Lithocalcic Calcarosol on clay)  
Calcareous loamy sand topsoil grading into loamy-clay loamy subsoil on a clayey substrate. Usually rubbly. Clayey substrate occurs at >60 cm and <120 cm.
- A6** Gradational calcareous clay loam (Pedal Hypercalcic-Lithocalcic Calcarosol on clayey subsoil)  
Calcareous loams to clay loams grading into brown-red clay. Often rubbly.
- B2** Shallow calcareous loam on calcrete (Petrocalcic Calcarosol-Rudosol)  
Shallow, grey to reddish calcareous sandy to clay loamy soil on calcrete. This includes calcareous Petrocalcic Rudosols.
- D4** Loam over red friable clay (Calcic, Pedaric, Red Sodosol)  
Thin to medium thickness fine sandy loam to loam over a finely structured friable red clay, calcareous from about 50 cm, grading to fine or medium grained alluvium.
- L1** Shallow stony loam (Paralithic, Leptic Tenosol)  
Shallow stony loam, often calcareous throughout or with depth, overlying weathering rock shallower than 50 cm.
- M1** Alluvial loam (Orthic Tenosol)  
Very thick loam with variable gritty or more-clayey lenses, formed over recent alluvium.

**Further information:** [DEWNR Soil and Land Program](#)

