SOILS OF POHNPEI

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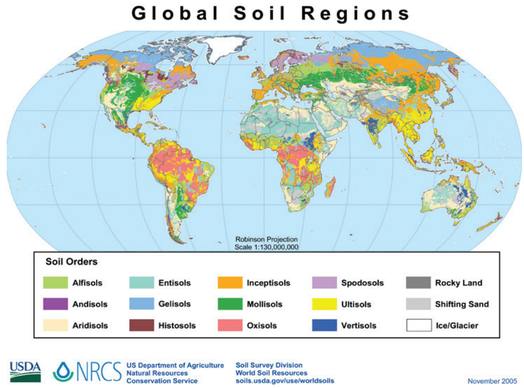


Alfisols: moderately fertile soils found in forest and savanna landscapes

Andisols: typically fertile soils formed from volcanic ash

Aridisols: soils of the deserts or dry regions

Entisols: soils with minimal development, often sandy or rocky

Gelisols: soils in the artic region with permafrost

Histosols: soils high in organic matter found in wet and/or cold climates

Inceptisols: weakly developed soils

Mollisols: very fertile and productive soils developed in grasslands

Oxisols: low fertility, acid soils of the humid tropics

Spodosols: acid, infertile soils formed in wet and cool climates typically under coniferous forest

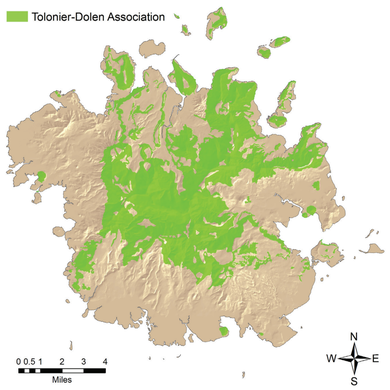
Ultisols: acid, infertile soils in moist environments

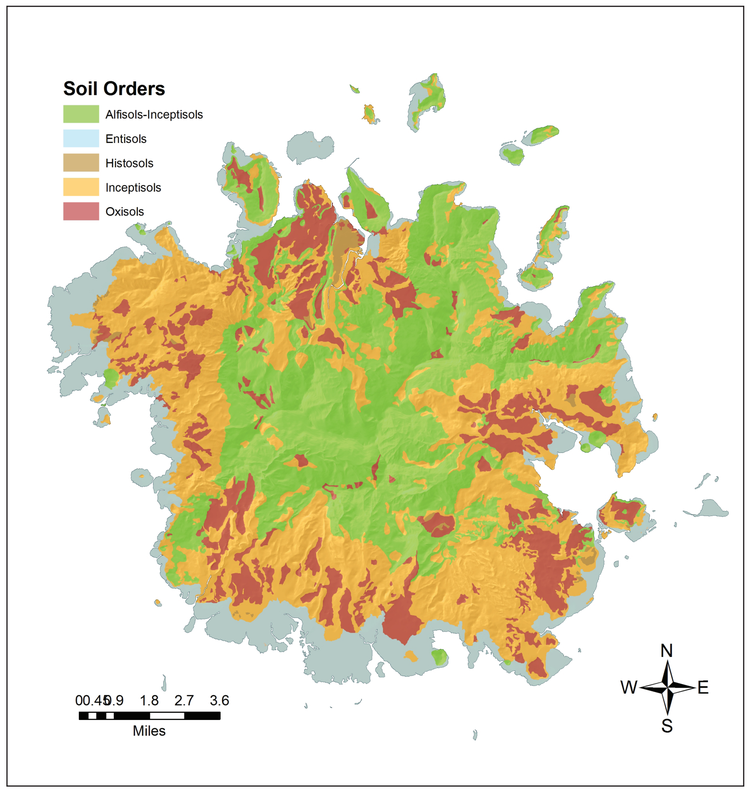
Vertisols: shrink/swell, fertile, clay-rich soils found in warm dry environments

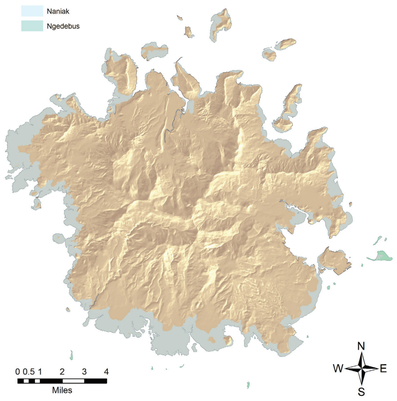
Alfisols-Inceptisols

The Tolonier-Dolen association covers steep, forested land on Pohnpei. The Tolonier series is an Alfisol and covers approximately 50% of the area while the Dolen series is an Inceptisol, covering about 30% of the area. Both soils are very deep and well-drained, rich in organic matter and moderately to strongly acidic. The Tolonier is a more stony soil. The land is mainly mixed tropical forest with traditional agroforest systems common at the lower elevations. The soils' fertility comes from high organic matter inputs

Tolonier Photos: R. Gavenda







Entisols

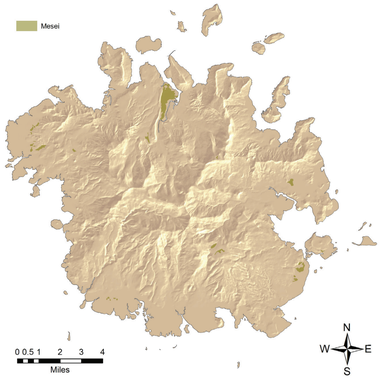
The Naniak series is an Entisol formed from alluvium found in the mangrove forests of the flat, coastal tidal marshes. It is a moderately deep, black, muck soil with poor drainage. In its natural state, it has a neutral to slightly alkaline pH, but because it has a high sulfur content it becomes extremely acidic if it is drained. The Ngedebus series is an excessively drained, sandy soil derived from coral found on the coral islets.

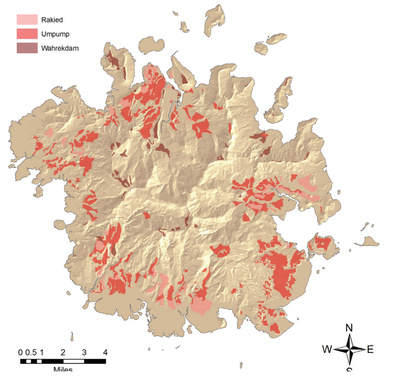
Naniak Photo: R. Gavenda

Histosols

The Mesei series is a Histosol formed from decaying plant material. It is a moderately deep, slightly acid, and poorly drained soil found in bottom lands. This is an important wetland soil.

Mesei Photo: G. Santos





Oxisols

The Oxisols of Pohnpei have formed on old lava flows at intermediate elevations. They are moderately deep to very deep, acid to strongly acid soils with low fertility. Under natural vegetation their organic matter-rich surface layer supplies plant nutrients. With proper management, they can be very productive soils.

Oxisols Photos: R. Gavenda

Acknowledgement

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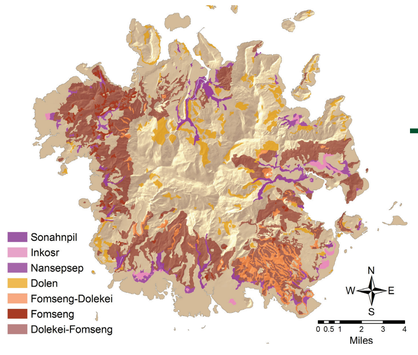
Inceptisols

The Inceptisols found on bottomlands and alluvial fans are the Nansepsep, Sonahnpil, and Inkosr series. The Nansepsep and Inkosr are slightly acid, deep and poorly drained soils suited to wetland taro production whereas the Sonahnpil is a well-drained, acid to very acid soil. The Inceptisols found at mid-elevation are the Dolekei, Dolen, and Fomseng soils. The Dolekei and Dolen soils are deep fertile soils with high organic matter in the surface layer. It is an important soil supporting traditional agroforestry crop production. The productivity of this soil is sustained by maintaining high organic matter levels. The Fomseng is a shallow soil with lower organic matter levels and lower overall fertility. Crop productivity is limited by shallow rooting depth, low available water, and slope.



Fomseng-Dolekai

Nansepsep Photos: G. Santos