

探討屏東平原之土地利用對地下水水質的影響

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摘要

屏東平原地區為了滿足對飲用水、灌溉用水與養殖用水的需求，大量地下水被當成是水源取用。經由地下水質長期監測顯示，部分水質參數超出行政院環境保護署(EPA)所制定標準。由於地下水與地表上的景觀相連，地表下的水質進而受到土地利用的影響，藉由描繪土地利用與地下水的關係，可以劃定土地利用對地下水影響較大的區域，並且優先考慮需要密集水質監測的範圍。本研究的目的是描述屏東平原土地利用與地下水水質之間的關係。應用多變量因子分析(Factor analysis)方法，透過水質監測井的水質參數與監測井周遭不同土地利用所占面積百分比去探討之間的相對關係。此研究結果期望提供一個污染潛勢圖以供政府決策者去評估以往的土地利用型態或更進一步採取新的措施以達到預防或監控屏東平原的地下水污染情況。

The impact of land use on groundwater quality in Pingtung Plain

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Abstract

A substantial amount of groundwater is used as a source of water to meet for drinking, irrigation and aquaculture requirements in Pingtung plain. A long-term survey of groundwater quality reveals that several measured water quality parameters are in excess of the criteria regulated by Taiwan's Environmental Protection Administration (EPA). Groundwater is directly connected to the landscape above and is thus affected by land use. Characterizing the relationship between land use and groundwater can demarcate the areas where groundwater quality is significantly affected by land use, prioritize the areas where more intensive monitoring might be needed. The purpose of the study is to characterize the relationship between land use and groundwater quality in the Pingtung Plain. The multivariate factor analysis method is used to investigate the relationship between the water quality parameters at the monitoring wells and the area percentage for different land use categories in the neighborhood of the wells. The results are expected to provide a map to help government decision makers to evaluate current land use practices and adopt new measures to better prevent or control groundwater pollution in the Pingtung Plain.