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Title: Ecological vegetation change and its impact factors in Weining Plain

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关键词: [规-化差值植被指数](#); [高程](#); [地下水位埋深](#); [卫宁平原](#)

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摘要: 卫宁平原是宁夏地区重要的生态绿洲,也是我国西北地区重要的农业生产基地。利用中等分辨率的归一化差值植被指数MODIS NDVI,对宁夏卫宁平原生态植被的时空变化规律进行了研究;分析了气温、降水等气候因子以及高程、地下水位埋深等因素对植被变化的影响。结果表明:在2000-2011年间卫宁平原的植被指数总体呈上升趋势,气温和降水对卫宁平原的植被变化具有较强的影响,与NDVI的相关系数分别为0.696和0.873;当高程在1120-1220 m之间变化时,NDVI大于0.5,植被发育较好,主要为农田;当高程超过1 240 m时,NDVI均小于0.25,植被发育相对较差,为天然稀疏灌木;卫宁平原绝大部分地区的植被生长的地下水位埋深小于5 m。

Abstract: Located in arid area, the Ningxia Autonomous Region is one of the regions with the most fragile eco-environment in China. Weining Plain is an oasis in the Ningxia Autonomous Region and it is also the very important agricultural base in northwest China. This study discussed the spatial and temporal variation of ecological vegetation in the Weining Plain of Ningxia Autonomous Region using MODIS NDVI with medium resolution rate. The impacts of air temperature, precipitation, elevation and groundwater level on vegetation change were also analyzed. Results indicate that, the NDVI of the plain was increased during the period of 2000-2011. The air temperature and precipitation have important influence on the vegetation change of the plain and the correlation coefficients

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with NDCI are 0.696 and 0.873, respectively. When the elevation ranges between 1120 and 1220 m, the NDVI is greater than 0.5, the vegetation cover is dense and the vegetation type is mainly the crops. When the elevation is higher than 1240 m, the NDVI is less than 0.25, the vegetation cover is sparse and is mainly sparse shrub. The underground water level of the vegetation in most areas of Weining Plain is lower than 5 m.

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