YEARLY MEAN VEGETATION CHANGE ANALYSIS IN KOREAN NATIONAL PARKS USING SPOT-VGT NDVI TIME SERIES

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Abstract: Recently, as the climate change, which has a direct impact on the habitat of species, appears all over the world, the national institutions to manage the protected areas are performing the corresponding strategies and the related programs about it. In this study, we detected and analyzed the multi-annual vegetation changes in Korean national park areas which have very high ecological values using SPOT-VGT NDVI S10 time series acquired from 1999 to 2011. The 10-day synthesis products (S10) were combined to monthly units using the Maximum Value Compositing (MVC) method, and the results were combined to yearly mean NDVI images. The 13-years' yearly mean NDVI data were converted to the Greenness Rate of Change (GRC) image and the Coefficient of Variation (CV) image, and the change images were used to calculate the yearly mean NDVI change statistics in Korean national park areas. The statistical results showed that the vegetation change in Korean national parks was increased weakly for the past 13 years and the change level was 2~5% based on the coefficient of variation. To observe the seasonal fluctuation of NDVI, monthly NDVI trend analysis will be performed in future studies. The final result of this study is expected to be helpful in establishing the satellite-based monitoring system for the conservation of species in national parks.

Keyword: SPOT-VGT NDVI, national park, MVC, GRC, CV