Identifying Candidate Protected Areas to Adapt for Climate Change

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The protected area is the most useful tool for conservation habitats. Globally, each nation has agreed to secure the protected area by 17% of terrestrial area with Aichi Target by 2020. Even though South Korea has established the protected area about 10.3% of terrestrial area, it is still lack to meet the Aichi Target 11. Meanwhile climate change has a lot of impact to establish the protected area, because suitable areas for agriculture will be changed and the habitats of alien species threatening the endemic species habitat will be extended, by increasing temperature and rainfall.

This study tried to find some alternatives analysis to meet the Aichi target 11 against climate change impacts. First, we found the positive and negative features of climate change impacts to set the protected areas. Positive features were the distributions of threatened species and the spatial pattern of biodiversity. Negative features were the land cover change, the change of suitable agricultural areas, the occurrences of land slide and the distributions of alien species. Second, we considered the mechanism to establish the protected area such as maximum set coverage, maximal set coverage and utility maximization. From the result of this study, we would contribute to decision making processes for establishing protected areas to adapt for climate change.

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