

EGU22-3385

<https://doi.org/10.5194/egusphere-egu22-3385>

EGU General Assembly 2022

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



Evaluating biodiversity Offset effectiveness in landscape scale

Seungyeon Lee, Yujin Shin, Dayong Jeong, and Seongwoo Jeon

Korea University, Division of Environmental Science and Ecological Engineering, Seoul, Korea, Republic of
(syl9005@korea.ac.kr)

Jeju island is located at the southern part of Korea peninsula which has unique natural resources due to volcanic eruption. This area has high demand of urbanization as well as high pressure of development since it is one of the best touristic places in Korea.(Ryu Hyeong Won & DongHo Jang, 2018) To mitigate the struggle between nature protection and development, environmental offset has been suggested (Martin et al., 2016; Quétier & Lavorel, 2011). But, because the effect of the offset turns out in the future, the appropriateness of offset is hard to calculate. Some research has been tried to predict future consequences of offset but either there are in virtual area or in defined area(Bull et al., 2014; Gordon et al., 2011). The object of this research is to quantify the effects of biodiversity offset in landscape level and find out the best way to keep no net loss in overall landscape. The study area is probable offset area of offsetability map (probable offset area map) derived from proceeding research. The effectiveness will be compared in four following scenarios. 1) Business as usual. 2) applying offset randomly 3) applying offset considering landscape pattern 4) applying offset considering landscape pattern and size. Each scenario will presume the future landscape change and the total biodiversity change. As a result, the scenario with applying offset will increase its biodiversity value than business as usual. Furthermore, the offset applying pattern and size will affect the increasing rates of biodiversity values. This research is pointing out the importance of considering landscape pattern and size while applying biodiversity offset. Also, the result will support the political decision for offsetting development impact to improve overall biodiversity. This work was conducted with the support of the Korea Environment Industry & Technology Institute (KEITI) through its Urban Ecological Health Promotion Technology Development Project, and funded by the Korea Ministry of Environment (MOE) (2020002770003).