

Case Study of Ecological Evaluation by Clouded Hynobiid Salamander

Using Habitat Evaluation Procedures in Miki disaster-preparedness Park

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1 . BACK GROUND AND PURPOSE OF STUDY

It is necessary to change the qualitative Environmental assessment to the quantitative one in order to evaluate the impact of the development projects and mitigations. So, the purpose of this study is to evaluate the impacts of the park development project (including wetland restore mitigation) quantitatively using the model of Habitat Evaluation Procedures which had been developed in USA.

2 . METHOD

This study evaluates the impact of the park development project by using *Hynobius nebulosus* HSI model as urban landscape indicator species. This model covers 50% of the study site, and evaluation period starts from 1963(under cultivation) ending in 2045(50years after opened).The HSI model is follows. The nidus SI (Suitability Index) =SIV1(distance from nidus to forest) × SIV2 (Depth of nidus)×SI3(Temperature of nidus), The environment of habitat SI=SIV4(Percentage of forest around the nidus), HSI = (The nidus SI ×The environment of habitat SI).

According to the 4 scenarios (Chart.1),This HSI model simulates the impact of development, and the effect of mitigation and management to keep salamander habitat after mitigation.

3 . RESULT AND PROSPECT

The impact of development (Fig.1) to salamander habitat is -1543CHU, the effect of mitigation (Fig.2) is 1367CHU, and of management (Fig.3) is 1138CHU.These results indicate the effect of mitigation which reduces the impact of this project, and is kept by the management of mitigation area.

Although this model evaluates the impact and effect objectively, it covers 50% of the site only using this type of model. The future assignments is to improve *hynobius nebulosus* HSI model to evaluate more accurate, and to develop other HSI model for another type of habitat used for the rest of this site.

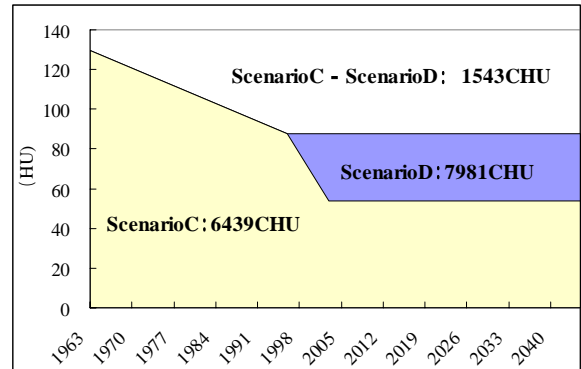


Fig.1 The impact of development project

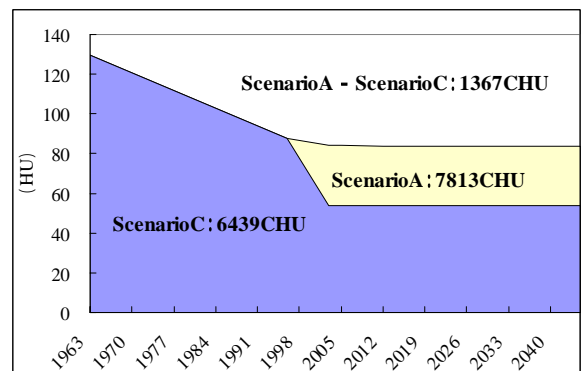


Fig.2 The effect of mitigation

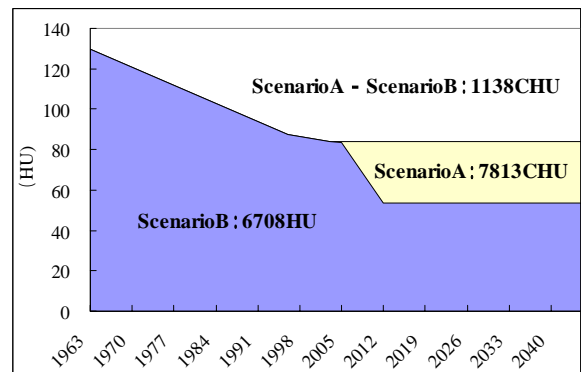


Fig.3 The effect of management to keep mitigation effect

Chart.1 Evaluation span of HEP and assumption of scenarios

