

# The impact of reconstruction work for the ecosystem of marshes which appeared after Great East Japan Earthquake. A case of Nonoshima island, Shiogama, Miyagi prefecture.

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Many tidelands and salt marshes emerged in a 'Sanriku' coastal area, struck by tsunami and ground subsidence which is caused by Great East Japan Earthquake. Japanese Ministry of Environment(MOE) undertook investigation of some salt marshes, revealing that some endangered species which are important for biodiversity preservation(ex. *Cybister cinensis*, *Ruppia rosellata*) appeared there. With this investigation, many researchers conducted study about plant diversity in the newly-formed salt marshes, reporting that vulnerable plants grows there.

Nevertheless, the fauna and the flora of the newly-formed salt marshes are threatened because most of them are subject to reconstruction work which reclaims land of 200m in width and 2.9m in height from the groundwater table inside the seawalls. Consequently, almost all newly-formed salt marshes disappeared.

Government designated 12 sanctuary and made the setback of seawalls to absorb their impacts on the fauna and the flora. The sustainable research for the plant diversity has been conducted in the sanctuaries, proving that the policy has succeed in plant diversity preservation to some extent. However, there has been little study done concerning the newly-formed salt marshes which had been reclaimed, hence the impact of reconstruction work on them is not made clear enough.

The present study was undertaken to reveal the impact of reconstruction work on the newly-formed salt marsh, investigating the succession of vegetation, fauna and flora. The research was conducted at the newly-formed salt marsh in Nonoshima Island, Shiogama, Miyagi prefecture. The vegetation maps were made to illustrate the vegetation succession from the satellite photographs of different periods and the fauna and the flora were also investigated.

The results of this study as follows:

- The water area has decreased by the reclamation.
- The vegetation succession is found after the complementing of reclamation.
- *Pocambarus clarkii* and *Solidago canadensis* var. *scabra*, assigned as the invasive alien species by MOE have invaded there.

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