

Manual of the slope revegetation method for conservation of regional ecosystem

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1. Introduction

On the slope face that is constructed accompanied by development business, afforestation has been implemented mainly by using exotic plants to the present, but there arose a problem of giving bad effect on the local ecological system through partial exotic plants growing outside the slope face.

Further, in an area that has a good natural environment, it is required to decrease effects on the local ecological system by utilizing native plants that is the regionality system (plant group having a certain commonality in genes).

This guideline is the outline of the method to afforest the slope face by utilizing native plants in the area in order to resolve the problem of exotic plants.

2. Outline of the Manual

As the slope face afforestation method using the local native plants, there are three construction methods such as “Surface soil use method,” “Natural invasion promotion method” and “Local seeds and nursery trees use method.” (Fig. 1) Each of them is respectively a method of afforestation utilizing the soil seeds buried in the surface soil of the developed land or seeds or seeds/nursery trees of the native plants growing in the developed land, which is a method to create vegetation appropriate for the targeted afforestation.

(1) Surface soil use method

It is an afforestation method to utilize the soil seeds buried in the surface soil, which is appropriate in case where earlier afforestation was required. The condition is that there should be surface soil containing buried seeds of target vegetation around the slope face in question. More specifically, there exists a method that collects and stores the surface soil beforehand and after having created the slope face, mix that soil with the vegetation material and implements the work through the vegetation material blow work.

(2) Natural invasion

promotion method

It is a method to capture those seeds invaded from natural vegetation around through the wind dispersal and bird dispersal and expect the vegetation recovery by bud break and settlement of those seeds on the vegetation mound, which is appropriate in case where a certain period was allowed to create vegetation. The condition is that target vegetation exists adjacent to the slope. More specifically, there is a method to locate vegetation mats in order to capture invading seeds easily.

(3) Local seeds and nursery trees use method

It is a method to utilize the seeds collected from natural vegetation around as well as nursery trees brought up from them, which is appropriate in case where ensured and earlier vegetation was required. The condition is that seeds or nursery trees of target vegetation are secured. More specifically, there is a method to implements the work through putting collected seeds on the vegetation material blow work, planting work of nursery trees, and nursery tree set blow work that mixed two methods.

3. Public announcement of the result

We have published this result as the TECHNICAL NOTE of NILIM No.722. We expect that this guideline contributes to develop a slope face that confronts the denudation and secure and maintain the biodiversity.

<http://www.nilim.go.jp/lab/ddg/>
(Landscape and Ecology Division)




	Surface soil use method	Natural invasion promotion method	Local seeds and nursery trees use method
Application	Case where earlier afforestation is required. There exists surface soil that contains buried seeds of afforestation targeted vegetation (woods or field) around the slope.	Case where a certain period was allowed to create vegetation. There exist vegetations of targeted afforestation adjacent to the slope (Seeds flying in expected).	Case where ensured and earlier afforestation is required. There exist vegetations around that can secure seeds and/or nursery trees of the plants of targeted afforestation.
Outline	Afforestation method that utilizes buried seeds contained in the surface soil. <u>Work example of Surface soil + Vegetation material blow work</u>  (Just after the work) (Six years from completion of the work)	Afforestation method that utilizes those seeds that naturally invaded from periphery. <u>Work example of the Vegetation mat construction</u>  (Just after the work) (Six years from completion of the work)	Afforestation method that utilizes seeds and/or nursery trees collected in periphery. <u>Work example of the Local seeds and nursery trees plant construction</u>  (Just after the work) (Six years from completion of the work)

Fig. 1 Examples of construction works “slope face afforestation method using the local native plants”