

"How does vegetation change after human activity?"

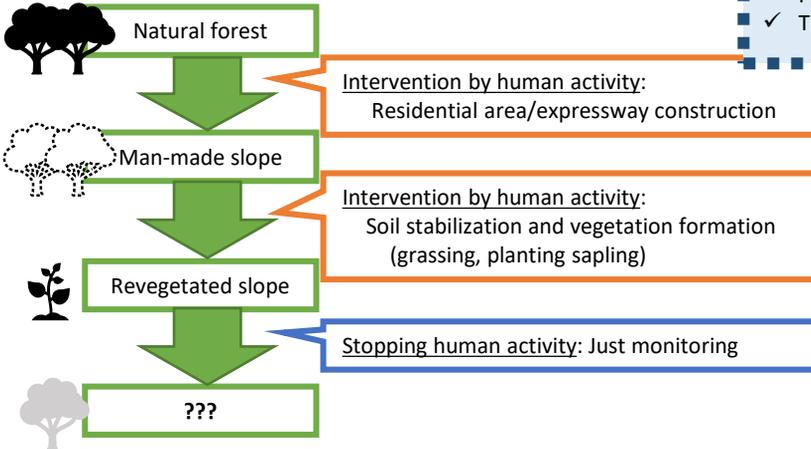
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My Research Targets

Vegetation transition for long term (≥ 10 yrs)



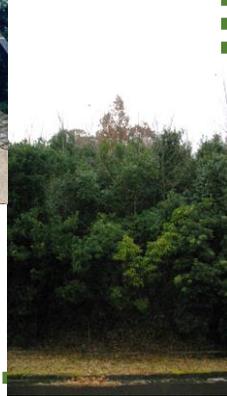
Expected outcomes

Cost optimization for vegetation management

- ✓ Prediction of succession/established vegetation
- ✓ Timing and frequency of management



18 yrs after revegetation (plantation saplings)

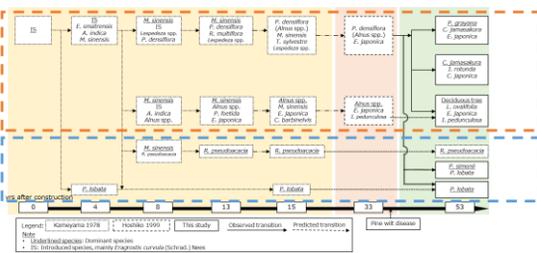


1: Vegetation transition on man-made slopes for 53 years

The vegetation on 7 load-side slopes of the oldest expressway in Japan and its transitions for 53 years were clarified.

The slope vegetation was classified two succession types.

The conceptual diagram of slope vegetation transition was created from these results.



A) Normal succession/transition (Orthoseres)



Deciduous forest

Bamboo dominance



B) Not/only a few seen changes in vegetation over time (Plagioseres)



Vine species dominance

2: Vegetation on planted man-made slopes over 10 years after revegetation

Information of forest stand structure and Initial plantation situation (ex. density, species) of planted man-made slopes were collected.

Initial plantation density And future stand structure were compared.

Plantation density (tree/ha)	Num. of years after plantation	Tree density at the survey (tree/ha)	Stand structure
16796	10	13050	Single peak
7800	20	8720	Double peak
6400	33	7722	Single peak
6400	18	5083	Single peak
2500	10	5492	L-shaped or double peak
2200	33	3400	L-shaped or double peak

References

- Yui Oyake, Junichi Imanishi, Kazuya Ishihara, Isao Ogura and Shozo Shibata (2019) Long-term vegetation transition on man-made slopes 53 years after construction in Central Japan, LAEE 15: 363-378.
- Yui Oyake, Junichi Imanishi, Kazuya Ishihara and Shozo Shibata (2019) Tree stand characteristic and structure on the embankment slope after 11 years from certified native species seedlings' plantation by mainly *Pinus densiflora* and *Quercus serrata*, J. JSRT 45(1): 3-8. (in Japanese with English Abstract)