PEOPLE AND NATURE

A culture of conservation: how an ancient forest plantation turned into an old growth forest reserve - the story of the Wamulin forest

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Forest plantations are forests that are intentionally planted for eventual harvesting. These forest plantations are expanding at the expense of naturally occurring forests, including old-growth forests that have grown for generations without significant disturbance. Old growth forests are especially valuable because they have high levels of biodiversity and provide many ecosystem services that benefit humans. Forests naturally regenerated following disturbance may also have high biodiversity and ecosystem service potential. However, it is unclear whether natural regeneration will lead to the development of new forests similar to old-growth forests because most naturally regenerated second-growth forests are young (only several decades to a century old). We want to determine the ecological and cultural role of forest plantation and see when natural processes take place how an old forest plantation might compare to a forest that developed without human intervention and management. We present a case study of a very old second-growth forest in southeastern China –the Wanmulin forest– in which a forest plantation planted approximately six centuries ago has now developed into an old forest with extraordinary high biodiversity levels, an immense carbon pool, and a rich culture.

The Wanmulin forest was planted in the 14th century through a charitable contribution and was conserved as sacred forest because of the belief that the prosperity of people is closely linked to the prosperity of trees. The recent designation of the forest as a nature reserve has further protected it from development. The forest is now characterized with extraordinarily high biodiversity and high capacities for providing ecosystem services of high market value. This case illustrates that, although human activity is the main cause for the disappearance and degradation of many forests, when human interests and cultural values align, a forest plantation can develop through natural processes into an old forest with characteristics similar to primary old-growth forests. But this process takes multiple centuries. Thus, protecting current second-growth forests and rebuilding culture values that directly link forest conservation and sustainable use to human wellbeing are key aspects of the continued conservation-aided succession of second-growth forests.

The Wanmulin Nature Reserve was initially a man-made Chinese-fir plantation but is now an approximately 600 years old mixed-species forest with many old-growth characteristics and high ecosystem services. Photo courtesy of Xiaohui Guan.

Plain language summary from article:

Yang, Z.-J., Zheng, Q.-R., Zhou, M.-X., Zeng, H.-D., Hogan, J. A., & Lin, T.-C. (2021). A culture of conservation: How an ancient forest plantation turned into an old growth forest reserve – The story of the Wamulin forest. *People and Nature, 00*, 000–000.
https://doi.org/10.1002/pan3.10248