

森林在防止地球溫暖化功能上之研究

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摘 要 有關防止地球溫暖化可以說是人類百年之大計，而氣候變遷的國際公約，是必要的先決條件，如何約束工業先進國，排放二氧化碳等地球溫暖化氣體，是為抑制地球溫暖化的必要措施，京都議定書即是此措施的第一步。

而自有史以來迄今，人類即開始伐採森林，排放大量的二氧化碳，但是由於是在數千年內，緩慢的排放，幾乎悉數被海洋所吸收。因此在大氣中皆保持一定的濃度（約 275ppm）。但近四十年來全球的森林減少了一億六千萬公頃，加上使用大量的石化資源，使大氣二氧化碳的濃度，為產業革命當時的三倍（800ppm）。其增加量引發地球對流層的溫室效應，而使氣溫上昇，造成氣候的變遷，甚至降雨現象的遽變，如台灣海棠，瑪莎及泰利颱風所帶來的豪雨，美國紐奧良的颶風其強風豪雨，犧牲數千的生命。在在凸顯出森林的逐漸消失，對全球氣候的變遷，皆有直接間接的關係。

因此本論文就防止地球溫暖化的對策上，森林所扮演的角色，進行探討，以森林的永續經營為指標，緩和全球氣候的變遷。

關鍵詞：地球溫暖化，全球氣候變遷，颶風，永續經營，溫室效應。

The Function of Forests in Preventing Global Warming

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ABSTRACT Preventing global warming is a long-range program for mankind, while international treaties concerning climate change and prerequisite condition on limiting the emission of carbon dioxide in industrial countries are necessary measures. The Kyoto Protocol is the first step in this measure.

Throughout history, humans have felled forests and emitted carbon dioxide, yet, since the emissions have taken place slowly over a period of a thousand years, the ocean absorbed most emitted carbon dioxide, and the concentration in the atmosphere remained at about 275ppm. However, during the last forty years, the forests were reduced by 160×10^9 hectares. Also due to massive use of petroleum resources, the concentration of carbon dioxide in the atmosphere is tripled from the amount during the Industrial Revolution (800ppm). The increased concentration has resulted in greenhouse effect of the troposphere, rising temperatures, climate change, drastic change of precipitation, such as the torrential rain brought by Typhoon Talim and Haitang, and Hurricane Katrina, which have led to thousands of casualties. The facts have shown the direct and indirect effects of the disappearance of forest on global climate change.

Therefore, this paper discusses the role of the forest in preventing global warming,

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and aims to promote the sustainable development of forests to lessen the climate change.

Key Words: global warming, global climate change, hurricane, sustainable development, greenhouse effect.

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