

## 气候变化对我国红松林地理分布影响的研究\*

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**摘要** 在红松林地理分布规律研究的基础上,应用地理信息系统 IDRISI 和专门计算机软件——生态信息系统 GREEN,找出适宜红松林分布的地理气候参数区间,并以此确定了红松林适宜分布区,在此基础上,根据全球气候预测模型 GCM,预测的 2030 年的气候变化结果,就气候变化对我国红松林地理分布的可能影响进行了预测。结果表明,到 2030 年,因气候变化的影响,我国适宜红松分布的面积将有所增加,但增加幅度不大,仅占当前气候条件下适宜红松分布面积的 3.4%,局部地区变化的情况是:在黑龙江省的西北部适宜红松分布的面积将有所增加;在辽宁省的西南部适宜红松分布的面积将有所减少。红松林现实分布区的南界将向北移动 0.1~0.6 个纬度,北界将向北扩展 0.3~0.5 个纬度,黑龙江省境内的红松林分布区的西界将向西扩展 0.1~0.5 个经度。我国适宜红松分布的面积将由当前气候条件下的  $2.9 \times 10^7 \text{hm}^2$ ,增加到  $3.0 \times 10^7 \text{hm}^2$ ,就当前气候变化影响预测中存在的问题及未来研究的方向进行了讨论。

**关键词:** 气候变化,红松,地理分布,预测。

EFFECTS OF CLIMATE CHANGES ON GEOGRAPHICAL  
DISTRIBUTION OF *Pinus koraiensis*  
IN CHINA

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**Abstract** Based on the studies of geographical distribution of *Pinus koraiensis*, a GIS, named IDRISI, and designed a software of ecological information system, named GREEN, were applied in this paper to find the climate parameter suitable for its growth. According to the parameter, its natural distribution scope was defined. Furthermore, according to the prediction of climate change in 2030 by GCMs, the possible effects of climate changes on the distribution of *Pinus koraiensis* were predicted. It suggests that due to the climate changes, the area of *Pinus koraiensis* in China will increase by 3.4% of the total areas which are suitable for its growth at the present. Specifically in regions, the area of *Pinus koraiensis* stands in the northwest of Heilongjiang Province and in the southwest of Liaoning Province could increase while that in the southwest of Liaoning Province likely could

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