研究论文

无量山大寨子黑长臂猿(*Nomascus concolor jingdongensis*)种群生存力

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摘要　　据2003年9月至2005年9月，对云南中部无量山大寨子黑长臂猿种群（5个群体）进行了观察，获得了群体大小、配偶体制、繁殖间隔、环境容纳量、死亡率、灾害的发生频率等种群参数，并结合近缘种的一些相关数据，利用旋涡模型（Vortex 914），对无量山大寨子地区黑长臂猿亚种群的动态进行了模拟分析。结果显示：大寨子亚种群是一个具有很强的潜在繁殖力的种群，如果没有偷猎，亚种群在100a之内不会灭绝，并且能迅速达到环境容纳量。但是每年如果有1只成年雄性和1只成年雌性被猎杀，该种群将会在第78年灭绝，且灭绝概率为100%。不同程度的死亡率对种群影响不大，但高死亡率显著延缓了种群到达环境容纳量的时间。环境容纳量对种群遗传多样性损失具有重要的影响，在没有猎杀的情况下，种群的长期存活需要一个较大的环境容纳量。因此，在黑长臂猿受到严格保护、且栖息地主要在保护区内的今天，严密监控火灾的发生，限制牲畜进入林区等人为干扰的影响，保护好黑长臂猿栖息地是首要工作之一。但如果能使其栖息地周围的森林植被得到恢复，增加其栖息范围，将有利于该地区黑长臂猿的发展。

关键词　　无量山；黑长臂猿；旋涡模型；种群生存力分析

分类号　　Q145,Q958

Population viability analysis for black crested gibbon (*Nomascus concolor jingdongensis*) in Dazhaizi et Mt. Wuliang, Yunnan, China

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Abstract From September 2003 to September 2005 a population of five groups of black crested gibbon (Nomascus concolor jingdongensis) was monitored for 15 to 20 days each month in Dazhaizi, Wuliangshan National Nature Reserve, central Yunnan, China. Data on population size, mating system, birth intervals, death rate, carrying capacity and catastrophe were collected and used with the computer program Vortex 9.14 to simulate population dynamics of the black crested gibbon in Dazhaizi. Results of the simulation suggest that in the absence of poaching the population will reach carrying capacity within the next 100 years. However, a modest harvest of one male and one adult female every year would result in the population going extinct within 78 years. The time to carrying capacity of 100 years is the result of the high mortality rate experienced by this population. Loss of genetic diversity will be greater if the population remains low or well below carrying capacity rather than if allowed to reach carrying capacity. Results suggest that long-term survival, in the absence of poaching, is primarily limited by the carrying capacity of Dazhaizi. Therefore, protection of this population of black crested gibbon is dependent on the prevention of poaching and a reduction or complete cessation of habitat loss. One important step in reducing habitat loss promoting forest regeneration will be to restrict domestic animals in the habitat of black crested gibbon. In addition it will be crucial to protect and improve corridors connecting this population to surrounding populations.

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Key words [Mt. Wuliang](#) [black crested gibbon](#) [vortex model](#) [population dynamics simulation](#)

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