

Protecting the scaly-naped pigeon ^[1]

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The scaly-naped pigeon (*Patagioenas squamosa*) is threatened by hunting in the Caribbean. At present, the pigeon is abundant in Puerto Rico, but overharvesting is a major concern; therefore, the development of a sustainable harvest strategy is a management priority. The management objective of the harvest strategy is to maximize hunting opportunity while keeping the population above an abundance threshold (NT) of 260,000 pigeons. To facilitate operational development and implementation of the harvest strategy, we conducted point-transect distance sampling to estimate population size, and mail and telephone hunter surveys to estimate total harvest. We used monitoring data and a Bayesian state-space model to estimate population and harvest management parameters, and predicted changes in population size as a function of expected total harvest. Population size averaged 262,899 pigeons (SE=122,087) in April–June 1986–2012, and total harvest averaged 40,760 pigeons (SD=43,405) in September–November 1986–2011.

Intrinsic rate of growth was 0.442 (SD=0.142), carrying capacity was 524,900 pigeons (SD=119,200), maximum sustainable harvest rate was 0.221 (SD=0.071) with a total harvest of 57,988 pigeons (SD=14,640), and equilibrium population size was 262,500 pigeons (SD=59,620). Because the population recently recovered from deforestation and has been affected by hurricanes, a conservative harvest level was prescribed at 50,311 pigeons (SD=24,939). However, harvest in 2008–2011 was 2.1 times larger than the maximum sustainable yield. Assuming 122,905 pigeons were harvested per year in 2012 and 2013, we predicted a population size of 216,000 pigeons (SD=90,770) in 2014, suggesting that restrictive regulations may need to be prescribed to meet the management objective. Our monitoring and modeling framework is an important first step in the development and implementation of a sustainable harvest strategy for the scaly-naped pigeon, and the approach can be applied to the management of other columbids in Puerto Rico.

From: Rivera-Milán, F., Boomer, G. S., and Martínez, A. (2014). Monitoring and Modeling of Population Dynamics for the Harvest Management of Scaly-Naped Pigeons in Puerto Rico. Journal of Wildlife Management; DOI: 10.1002/jwmg.672.

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