Wildlife hunting management using a bio-economic model (A case study deer in Shirahmad protected area)

Abstract

Today, irregular hunting and harvesting wildlife has caused many different species of animals is at risk of extinction. Increasing population and technological advancement precipitate process of harvesting of animal species and that is considered as essential challenge in sustainable development. In order that, wildlife to be used constantly and sustainable by humans, requires correcting and principles management in harvest and protection. In this study, to protect of deer species in Sabzevar Shirahmad protected area has been determined sustainable and optimal hunting surface by using a bio economic model. For this purpose, the effects of several factors such as regeneration rate, sex ratio, last year population, the average annual precipitation and mean temperature were studied on the rate of population growth with information about the population of deer in the last thirteen years (2001- 2013), then was determined best rate hunting for fifty years. According to the results, was obtained best rate hunting 0.0042, 0.0002, 0.017 and 0.0025 for lambs, yearlings, adult males and adult females respectively. With this rates of hunting will be maintained stability population for the next fifty years. The results also showed with increased rate of hunting, the population declined more rapidly and will not be maintained sustainability.

Key words: Wildlife, Deer, Sabzevar Shirahmad, Bio economic models

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