

Application Substitution may Save Endangered Species

Many species—tigers, rhinoceroses, pinnipeds, deer, green turtles, geckos, sea horses, pipefishes, and sea cucumbers—are endangered, threatened, or vulnerable to extinction partially because certain of their body parts are used as aphrodisiacs in traditional Chinese medicine. Is it possible that consumers will switch to Viagra, a less expensive and almost certainly more effective alternative treatment, and thereby help save these endangered species?

We cannot calculate the substitution elasticity directly between Viagra and these endangered species because their trade is illicit and not reported. However, harp seal and hooded seal genitalia are also used as aphrodisiacs in Asia, and they may be legally traded. Before 1998, Viagra was unavailable (effectively, it had an infinite price). When it became available at about \$15-20 Canadian per pill, the demand curve for seal sex organs shifted substantially to the left. According to von Hippel and von Hippel (2002, 2004), 30,000-50,000 seal penises were sold at between \$70 and \$100 Canadian in the years just before 1998. In 1998, the price per unit fell to \$15 to \$20 and only 20,000 organs were sold. By 1999-2000 (and thereafter), virtually none were sold. This evidence suggests a strong willingness to substitute at current prices: a positive cross-price elasticity between seal genitalia and the price of Viagra. Thus, perhaps Viagra can save more than marriages.