U.S. House of Representatives
Committee on Science, Space, and Technology
Subcommittee on Investigations & Oversight

HEARING CHARTER

"The Science of How Hunting Assists Species Conservation and Management**"**

Tuesday, June 19, 2012
2:00 p.m. – 4:00 p.m.
2318 Rayburn House Office Building

Purpose

On Tuesday June 19, 2012, the Subcommittee on Investigations and Oversight will hold an oversight hearing to examine the science used to inform wildlife management decisions that involve hunting. The federal government encourages hunting on some federal lands for numerous reasons, including wildlife management, recreation, and subsistence. This follows the North American Wildlife Conservation Model in which 1) fish and wildlife belong to all Americans, and 2)they should be managed in a way to guarantee their permanent existence.[1] In addition to federal, state, and local public lands, privately owned game ranches also enable hunting of specific species of animals, including some that are either endangered or extinct internationally. These ranches play an important part in the effort to boost the overall numbers of certain species, including their reintroduction into the wild. Existing federal regulations that authorized limited hunting of these species have been challenged in federal courts, resulting in a January 2012 final rule issued by the Fish and Wildlife Service that poses new challenges to these game ranches.

Background

Hunting for subsistence predates the arrival of Europeans in North America with Native Americans hunting buffalo and other species for meat and hides. The arrival of European immigrants and the westward spread of America led to increased hunting for subsistence as well as unregulated hunting. For example, the American population of buffalo fell from an estimated 30 to 75 million in the 1800's to less than a million today.[2] Beyond North America, the growing human population has resulted in significant pressure on the survival of numerous large game animals. In Africa, various subspecies of large animals such as leopards, gazelles, and rhinoceros have been identified as endangered, threatened, or extinct due to a variety of causes

[1] Although widely recognized, there is no legal definition of the North American Wildlife Conservation Model that is partially based upon the 1842 Supreme Court case Martin v. Waddell - 41 U.S. 367 – that first established the concept of a public trust for wildlife.
[2] www.fws.gov/species/species_accounts/bio_buff.html

including competition with humans for land and illegal hunting. Currently, over 5,000 species of animals and 29,000 species of plants are identified as at risk internationally.[3]
On July 1, 1975, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) came into force to address the international trade in threatened and endangered species. Some 175 countries, including the U.S., are CITES signatories.[4] As a signatory, the U.S. and other countries are required to establish a permitting system to regulate the international transport of species identified by CITES as threatened or endangered. This permitting system attempts to indirectly limit illegal hunting by making it more difficult for illegally harvested animals, in whole or in part, to cross international borders.

The core sciences behind hunting

Efforts to increase the numbers of individual species require initial scientific study of the existing population and what impacts their population growth. For example, a common method of determining waterfowl population is the Lincoln-Petersen estimator that determines population estimates through banding of waterfowl and measuring the number of recaptured waterfowl over time. In the formula $N = n1 * n2/m2$, N is the estimate population where n1 is the number of waterfowl banded, n2 is the number of all waterfowl harvested whether banded or unbanded, and m2 is the number of banded waterfowl harvested.[5] Another scientific formula can then be used to determine survival rates based upon recoveries of dead waterfowl.[6] Manipulation of population densities by hunting and other means is also used to determine the impact of density on a species population.[7] This aids wildlife managers in determining what the appropriate level of hunting is to avoid malnourishment of a resident species.

Overpopulation / invasive species

In contrast to the species identified by CITES and the U.S. government as at risk, some species of animals are in overabundance in America, causing environmental problems of their own. Overpopulation of one animal species can result in damage to other plant and animal species including disturbances to the local environment caused by wandering animals and consumption of other plant and animal species for food that threatens their existence. An important component of overpopulation is scientifically determining what numbers constitute overpopulation instead of a normal balance. Federal, state, and local governments have addressed species overpopulations through a variety of measures including hunting.

One example of the issues faced when dealing with overpopulation of a species can be found in Rock Creek Park in Washington, DC. Rock Creek Park is part of the National Park Service (NPS) and is home to a large and growing number of deer. Due to a growing number of issues caused by deer overpopulation, NPS undertook a multi-year review to understand harmful

[3] See the appendices of the Convention of International Trade in Endangered Species for a complete list of species worldwide identified as at risk. The complete list is available at www.cites.org/eng/app/appendices.php.
[4] Complete list available at www.cites.org/eng/disc/parties/index.php.
[5] The Lincoln-Petersen estimator is named for an 1896 discovery by a Danish fisheries biologist, Carl Petersen, and its use by an American, Frederick Lincoln, to estimate U.S. waterfowl populations for the U.S. Bureau of Biological Survey, a predecessor agency of the U.S. Fish and Wildlife Service.
[6] G.A.F. Seber, Estimating time-specific survival and reporting rates for adult birds from band returns, Biometrika (1970) 57(2): 313-318 doi:10.1093/biomet/57.2.313.
[7] White, G.C. and R.M. Berman Effect of density reduction on overwinter survival of free-ranging mule deer fawns. Journal of Wildlife Management 62:214-225 (1998).

impacts of deer overpopulation and how best to reduce them. In a 592-page Environmental Impact Statement issued in December 2011, NPS scientists surveyed the park to determine that there were 67 deer per square mile in the park in contrast to less than a handful anywhere in the park only 40 years earlier.[8] This population increase harmed other species by competing for space, vegetation being trampled and eaten by the deer, a loss of young tree seedlings, and nonnative seed dispersal.[9]

To determine the harm caused by the deer, NPS scientists established paired vegetation plots, only one of which was fenced off from deer. Significantly more vegetation survived in the plots not accessible to deer.[10] NPS reviewed previous studies that identified high deer levels as causing undesirable effects on other wildlife species such as migratory birds.[11] Other harms resulting from overpopulation of deer were identified including malnourishment of deer and greater rates of accidents involving deer.

To determine the appropriate options for reductions in deer populations, NPS reviewed scientific studies in Illinois, Connecticut, and New York of the impact and costs of reproductive control to determine whether controlled hunts would be more or less effective. None of the scientific studies demonstrated that reproductive control was effective in sharply reducing initial deer numbers. Other studies demonstrated that the typical cost for either reproductive control or surgical sterilization was approximately $1,000 in personnel and medical cost per deer.[12] NPS recommended that a combination of hunting, reproductive control, and capture / euthanasia be used to reduce Rock Creek Park deer populations. However, it recognized that the majority of the population reduction would be due to hunting.

Hunting's Economic Support for U.S. Wildlife Conservation

The acquisition and operation of additional acreage for local, state, and federal land requires ongoing funding. Licenses and permits for legal hunts provide a significant portion of these funds. For example, the U.S. Fish and Wildlife Service issues "duck stamps" that hunters are required to purchase before they hunt migratory ducks. With a current price of $15, duck stamps generate revenues that are used to acquire and expand existing wildlife refuges. Since the creation of the duck stamp program, over $850 million has been raised to help fund the acquisition and operation of over 5 million acres of land.[13]

Taxes on hunting equipment also fund wildlife research and land acquisition. First enacted in 1937 and expanded with other related legislation, the Federal Aid in Wildlife Restoration Act, commonly called the Pittman-Robertson Act, imposes a tax upon the sale of various items used for hunting.[14] Hunting also provides support for the economy through equipment, travel, and other expenditures by hunters. Every five years, the U.S. Fish and Wildlife Service and the U.S.

[8] Final White-Tailed Deer Management Plan Environmental Impact Statement, National Park Service, December 2011.
[9] *Ibid*, p. 1-2.
[10] *Ibid*, p. 17.
[11] *Ibid*, p. 28.
[12] *Ibid*, p 65-72.
[13] Statistical information to 2003 available at www.fws.gov/duckstamps/federal/sales/sales.htm. More recent statistical information was provided to Committee staff in advance of this hearing.
[14] The legislation imposes a tax of up to 11% on firearms, ammunition, and archery equipment.

Census Bureau jointly conduct a study to analyze the economic impact of hunting and other outdoor activities.[15] In its most recent five-year study from 2001 to 2006, the study found that 12.5 million hunters spent over $22 billion on hunting related expenditures.[16] FWS states the financial and others impacts of hunting very clearly on its website. See Appendix A for the full statement. In one case study, the Wildlife Society measured the impact of a $1.4 million investment in elk relocation by hunters in 1996 in Kentucky in an attempt to restart an elk herd that had previously been eliminated. Within twelve years, Kentucky had a population of over 6,500 elk.[17]

Hunting's Economic Support for International Wildlife Conservation

The impact of hunting extends to overseas locations where poaching threatens the survival of many large game species. In 2004, CITES approved the establishment of an annual quota of five adult male black rhinoceros each from South Africa and Namibia.[18] CITES identified several reasons to support such hunting including a reduction in pressures for illegal hunting due to revenue generation, funding for upkeep of the remainder of the herd, and robust monitoring that would ensure that hunting levels were appropriate for the population.[19] This effort was supported by groups ranging from hunting organizations to the World Wildlife Fund. Efforts by one U.S. citizen to apply to the FWS for a permit to import one trophy from an approved hunt in Namibia were also supported by these groups. In its letter to the FWS supporting importation, the World Wildlife Fund highlighted the positive impact of hunting post-reproductive males rhinoceros on the rest of the population.[20]

Issues

Permits for hunts on U.S. private game ranches

Privately owned game ranches located in the U.S. and abroad allow hunting of specific species on their property for a price that typically depends upon the species and size of the animal that is hunted. Costs are typically less than $10,000 per animal although rarer and/or larger animals may cost in excess of $20,000 to hunt. Additional services may be included in this price such as a guide to accompany the hunter, required hunting licenses for the location where the hunt will take place, and transport in the game ranch.[21]

Several U.S. based game ranches contain U.S. bred scimitar-horned oryx, addax, and dama gazelle. Listed as an endangered species, the addax and gazelle are extremely rare in the wild while the oryx is extinct in the wild. U.S. private game ranches have created habitats for these animals and depend upon funds from a limited number of legal hunts to operate. Some of these game ranches have exported animals to re-establish herds overseas. However, FWS regulations

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[15] National Survey of Fishing, Hunting, and Wildlife Associated Recreation (2006) located at http://www.census.gov/prod/www/abs/fishing.html.
[16] *Ibid*, p 4.
[17] "Conservation at a Crossroad", The Wildlife Professional, Spring 2009, p.28.
[18] CITES, Resolution Conf. 13.5 (rev. CoP14).
[19] *Ibid.*
[20] World Wildlife Fund submission to Federal Register Notice PRT229051, November 16, 2009 (Vol. 74, No. 219).
[21] Pricing examples can be found at www.blackcanyonbulls.net/Price_List.html, www.scenicviewhunting.com, www.thehighlonesomeranch.com/rates-reservations/big-game-hunting, and www.texashuntlodge.com/scimitar_horned_oryx_hunt_package.asp

require an individual permit for each hunt of these animals. Increasing the paperwork burdens of a legal hunter may reduce the incentive for private game ranchers to continue to grow the size of these herds. Without the income from these hunts, private game ranchers may not be able to continue to operate, and species populations may suffer as a result.

In 2005, the FWS issued a final rule concerning certain activities with captive U.S. bred scimitar-horned oryx, addax, and dama gazelle. At the time, research studies had found that only several hundred of the addax and dama gazelle each existed in the wild and that the scimitar oryx were extinct. The Federal Register notice that accompanied the final rule noted the positive impact of these private game ranches:

> Captive breeding in the United States has enhanced the propagation or survival of the scimitar-horned oryx, addax, and dama gazelle worldwide by rescuing these species from near extinction and providing the founder stock necessary for reintroduction. The scimitar-horned oryx is possibly extinct in the wild; therefore, but for captive breeding, the species might be extinct. Addax and dama gazelle occur in very low numbers in the wild, and a significant percentage of remaining specimens survive only in captivity (71% and 48%, respectively). Captive-breeding programs operated by zoos and private ranches have effectively increased the numbers of these animals while genetically managing their herds (Mallon and Kingswood 2001). Threats that have reduced these species' numbers to current levels in the wild continue throughout most of the historic range. As future opportunities arise for reintroduction in the antelope range countries, captive-breeding programs will be able to provide genetically diverse and otherwise suitable specimens.
>
> Some U.S. captive-breeding facilities allow sport hunting of surplus captive-bred animals. Sport hunting of surplus captive-bred animals generates revenue that supports these captive-breeding operations and may relieve hunting pressure on wild populations.

Subsequent to the issuance of this final rule, several groups filed suit in federal court alleging that the rule did not comport with the requirements of Endangered Species Act that each taking required a separate and unique permit to do so. District Court Judge Kennedy agreed with these groups, directing the FWS to revisit its prior regulations and impose hunt-specific permits.[22]

In 2011, the FWS issued new regulations to meet the requirements of the court but continued to find that:

> Captive-breeding programs have played a role in the conservation of the scimitar-horned oryx, addax, and dama gazelle, and we found that activities associated with captive breeding within the United States enhance the propagation or survival of the species by managing the species to ensure genetic integrity and diversity, serving as repositories for surplus animals, and facilitating the movement of specimens between breeding facilities. Some U.S. captive-breeding facilities allow sport hunting of surplus captive-bred animals, which generates

[22] *Friends of Animals, et al., v. Salazar, 626 F. Supp. 2d 102* (D.D.C. 2009)

revenue to support the operations and may relieve hunting pressure on wild populations.[23]

Trophy importation

Similar to the new rules for domestic endangered species identified above, each importation from a legal hunt of a CITES listed species must be individually approved by the FWS. Since the FWS uses a lengthy, full public comment period in the Federal Register, this creates a disincentive for hunters to spend their funds on these types of hunts where hunting is needed to fund conservation programs.[24] Hunters have urged FWS to speed up the permitting process to raise the financial value of these hunts for conservation efforts.

Witnesses

The Honorable Daniel Ashe
Director
U.S. Fish and Wildlife Service

Dr. Al Maki
Conservation Committee Chairman
Safari Club International

Dr. Stuart Pimm
Nicholas School of the Environment
Duke University

Mr. Nick Wiley
Executive Director
Florida Fish and Wildlife Conservation Commission

[23] 76 FR 39805

[24] See Federal Register Notice PRT229051, November 16, 2009 (Vol. 74, No. 219) for an example of such a process.

Appendix A

Official U.S. Fish and Wildlife Statement on the Impact of Hunting[25]

What do hunters do for conservation?

A lot. The sale of hunting licenses, tags, and stamps is the primary source of funding for most state wildlife conservation efforts.

By respecting seasons and limits, purchasing all required licenses, and paying federal excise taxes on hunting equipment and ammunition, individual hunters make a big contribution towards ensuring the future of many species of wildlife and habitat for the future. By paying the Federal excise tax on hunting equipment, hunters are contributing hundreds of millions of dollars for conservation programs that benefit many wildlife species, both hunted and non- hunted.

Each year, nearly $200 million in hunters' federal excise taxes are distributed to State agencies to support wildlife management programs, the purchase of lands open to hunters, and hunter education and safety classes. Proceeds from the Federal Duck Stamp, a required purchase for migratory waterfowl hunters, have purchased more than five million acres of habitat for the refuge system (2005 statistics only); lands that support waterfowl and many other wildlife species, and are usually open to hunting.

Local hunting clubs and national conservation organizations work to protect the future of wildlife by setting aside thousands of acres of habitat and speaking up for conservation in our national and state capitals.

[25] Original at www.fws.gov/hunting/whatdo.html.