Big Game Hunting Recreation Demand

This EnviroAtlas national map portrays estimated day trip recreation demand for big game hunting within each 12-digit hydrologic unit (HUC) in the contiguous United States. These data are based on population distribution and hunter-reported willingness to travel for big game hunting. Big game includes deer, elk, bear, and wild turkey.

Why is recreational hunting important?
Big game hunting is an industry that supports conservation, local business, government, and general well-being. Land managers must understand the demand for big game hunting to help better plan recreation areas in places where people are more likely to participate. The demand for and revenue from big game hunting contributes to the continued conservation of natural lands, which provide benefits such as air and water filtration, water and carbon storage, mitigation from natural hazards, and appealing settings that encourage people to spend time outdoors. Time spent outdoors recreating can improve health and help connect people with the environment and the ecosystem services that it provides.

Outdoor recreation has significant impacts on human health and wellbeing. Recreational activities and time spent outdoors can improve cardiovascular and mental health by lowering blood pressure more than just from exercise alone. Interacting with natural landscapes has also been shown to relieve stress and increase overall wellbeing. By conserving natural land in areas where there is higher demand for recreation, it is possible to increase access to the outdoors and improve people’s health and wellbeing.

How can I use this information?
The map, Recreation Demand for Big Game Hunting, illustrates the estimated demand for recreational hunting of deer, elk, bear, and wild turkey in the contiguous U.S. Other EnviroAtlas maps show the recreation demand for bird watching, freshwater fishing, and migratory bird hunting for each 12-digit HUC. Used together or independently, these maps can help identify the estimated demand for recreational activity to inform decisions about land conservation for hunting, fishing or bird watching.

This map can also be used in conjunction with other maps in EnviroAtlas, such as big game species richness maps, protected areas (PADUS) maps, or GAP ecological systems, to help identify areas with high recreational value for inclusion in conservation and recreation management decisions. When used in conjunction with EnviroAtlas potential habitat stressor maps and economic data for recreation, users could determine the effect of degraded natural lands on local economies.

Photo: Bull Elk, Gary Zahm, USFWS
How were the data for this map created?
This data layer is based on the EnviroAtlas dasymetric allocation of population data. The dasymetric data illustrates where people are most likely to reside within an area based on land cover. The USFWS Fishing, Hunting, and Wildlife-Associated Recreation Survey (FHWAR, 2011) was used to determine the big game hunting participation rates for different rural and urban demographic groups for each region in the U.S. Regional participation rates were applied to the dasymetric data for people over the age of 18 to determine the number of annual day trips people would take for big game hunting. The U.S. Department of Agriculture Forest Service National Visitor Use Monitoring program (NVUM, 2011) was used to generate people’s willingness to travel for big game hunting. Day trip recreational demand for big game hunting in any given 480 meter pixel was calculated by distributing the number of days people were expected to participate in big game hunting by their willingness to travel for that activity. The demand for big game hunting in each pixel was then summarized by 12-digit HUC. For more information on these methods, see the layer’s metadata or the publications below.7

What are the limitations of these data?
EnviroAtlas uses the best data available, but there are still limitations associated with these data. The data are limited to individuals over the age of 18 taking day trips for big game hunting. This layer does not provide information about individuals taking overnight trips. Willingness to travel for big game hunting was calculated using visitor use data from National Forest and Grassland sites and therefore might not be representative of people who hunt on state or private land. Also, the data did not take into account infrastructure or geographical features (i.e. roads, cities, recreational destinations, restricted areas, etc.). Therefore, recreation demand may be higher or lower in certain areas depending on the proximity of recreation destinations and ease of access. Modeled data are intended to complement rather than replace monitoring data. This recreation demand model does not provide information on the actual amount of recreation in an area, but rather it predicts the expected demand for big game hunting in a given location.

How can I access these data?
EnviroAtlas data can be viewed in the interactive map, accessed through web services, or downloaded. Data for FHWAR or NVUM can be accessed through their respective websites.

Where can I get more information?
A selection of related resources and available data are listed below. For more information on the data creation process for EnviroAtlas, access the metadata for the data layer from the drop down menu on the interactive map table of contents and click again on metadata at the bottom of the metadata summary page for more details. To ask specific questions about this data layer, please contact the EnviroAtlas Team.

Acknowledgments
The data for Big Game Hunting Recreation Demand were generated by Samantha Sifleet and Michael Mangiante, EPA ORISE Fellows, and Lisa Wainger, University of Maryland Center for Environmental Science. The fact sheet was created by Michael Mangiante.

Selected Publications


EnviroAtlas: Led by the U.S. Environmental Protection Agency
December 2016