

EST.  2015  
WILD HARVEST  
INITIATIVE®

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QUARTERLY UPDATE

•  
SEPTEMBER 2021

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**Mule deer generate approximately 82 million meals every year in North America.**

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## HARVEST PROFILE – MULE DEER

### Mule Deer and Food Security

Mule deer (*Odocoileus hemionus*) are native to North America and occupy a wide diversity of habitats. The animals range over approximately 3.8 million km<sup>2</sup>, extending south from Alaska to Mexico, and east from California to Nebraska and Kansas.

Mule deer are comprised of 10 different subspecies, with two distinct groups: “true” mule deer and black-tailed deer. True mule deer and black-tailed deer diverged during a glaciation of North America 18,000 years ago, when true mule deer found

a refuge from the ice in the south and black-tailed deer found a similar refuge in the Pacific Northwest. Black-tailed deer are smaller than true mule deer and are found in coastal mountainous regions. However, black-tailed deer and true mule deer co-occur in certain jurisdictions and can also hybridize.

The Wild Harvest Initiative® (WHI) team determined the live mass and edible mass of harvests with respect to the mule deer subspecies present within each jurisdiction. This report summarizes the harvest data of all mule deer subspecies (i.e., black-tailed deer and true mule deer) and reports all such harvests as mule deer.

In the case of Colorado which only reports a combined total of both mule deer and white-tailed deer harvests, we accepted the Mule Deer Working Group and Western Association of Fish and Wildlife Agencies’ estimate that only five percent of the animals harvested are white-tailed deer.

Mule deer have been hunted by indigenous peoples in North America for time immemorial, and were of great cultural significance to many groups who used the muscle, heart, liver, intestines, sinew and bones for food and tools. Today, mule deer are enjoyed by millions of hunters and wildlife viewers in Canada, the United States, and Mexico.

Between 2014 and 2016, a total of 783,420 mule deer were harvested in the US and Canada; 375,528 in 2014/15 and 407,892 in 2015/16. Of the combined total, 83,295 animals were harvested in Canada and 700,125 were harvested in the US.

The total live weight of all mule deer harvested between 2014 and 2016 was over 136.9 million lbs (62.1 million kg), which amounted to over 61.2 million lbs (27.8 million kg) of edible meat.

On average, 30.6 million lbs (13.9 million kg) of quality meat are generated each year from mule deer harvests. This translates to approximately 81.6 million meals per year (based on a 6oz serving).

These harvest quantities represent a significant contribution to the local diets, culinary traditions and home food budgets of many North American families.

### Conservation Status

Mule deer populations have a history of fluctuating over time. Before the American West was settled by Europeans, little is known about mule deer abundance. During the 1800s, however, the mule deer population in North America was threatened wherever it co-occurred with humans due to heavy subsistence and market hunting, and habitat destruction largely resulting from overgrazing by

### Historical Perspective – A Failed Relocation

In 1906, President Theodore Roosevelt made the Kaibab Plateau and the adjacent Grand Canyon a national game preserve in response to concerns about low numbers of mule deer. In the absence of a strong understanding of sustainable use and conservation science, hunting predators of mule deer was strongly encouraged, while hunting of mule deer was prohibited. As a result, the mule deer population increased to such a level that tens of thousands faced starvation and many succumbed. In December 1924, with hunting still prohibited, an unsuccessful attempt was made to drive the animals across the Grand Canyon and through the swift, deep Colorado River to the south side where forage was abundant.

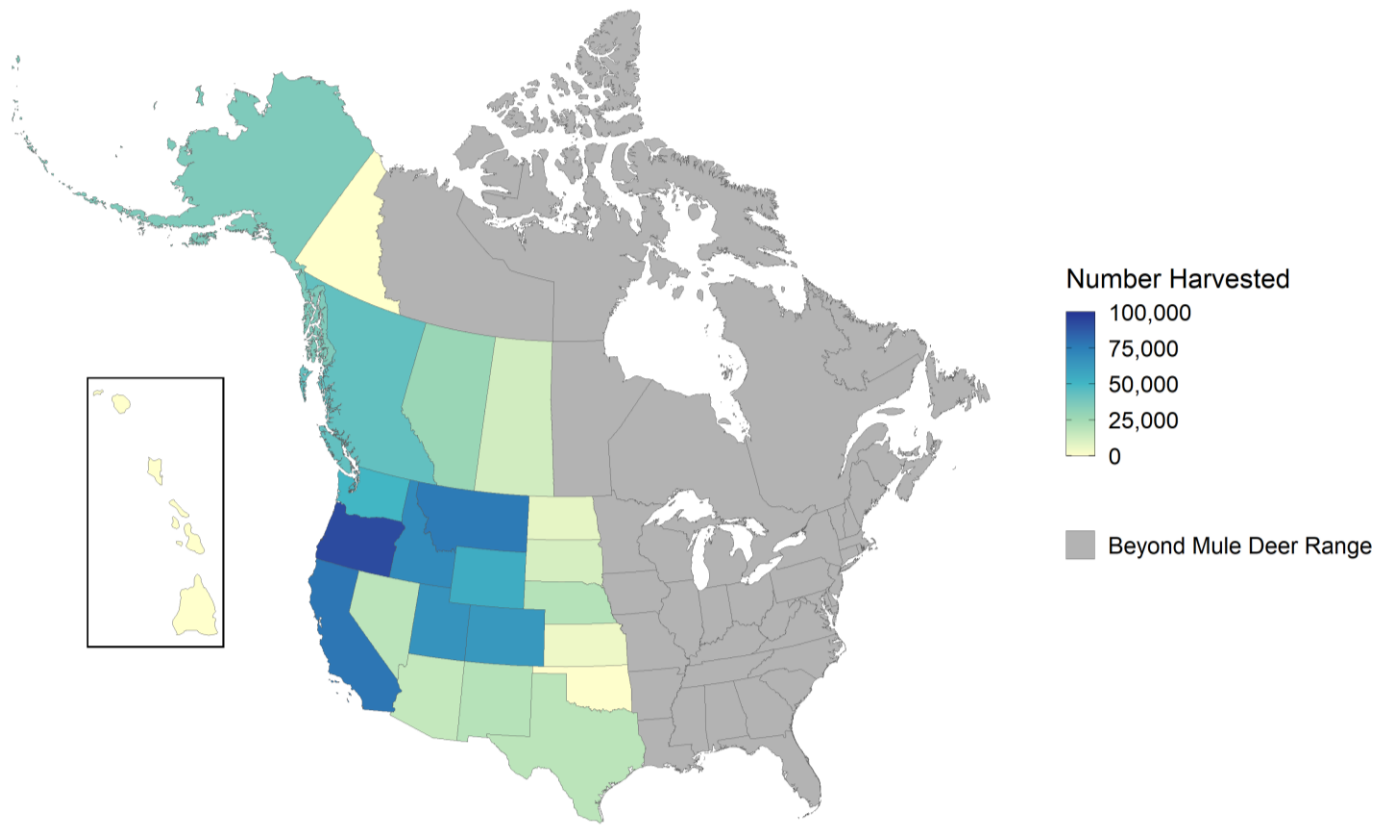


#### “True” Mule Deer

	Live Mass (lbs)	Edible Mass (lbs)
Male	200.0	88.0
Female	142.5	66.0

#### Black-Tailed Deer

	Live Mass (lbs)	Edible Mass (lbs)
Male	159.7	71.0
Female	80.0	36.0



**Figure 1.** Number of mule deer harvested in Canada and the USA (2014-16).

livestock. Prolonged poor weather also threatened the deer’s existence.

The American Conservation Movement, however, began its early stirrings in the mid-late 1800s and this was good news for mule deer as for many other species. Hunters and other conservationists, passionate about fair chase and preserving an outdoor heritage, brought mule deer to the forefront of conservation for both government and local publics in the early 1900s.

Following the implementation of improved land use regulations and more restrictive harvest laws for mule deer, their populations increased to record levels, peaking in 1950 at 7.5 million animals. Starting in the 1960’s,

however, numbers again declined. While the reasons for this decline varied across the mule deer range, poor weather and lack of quality forage were key factors.

Today, mule deer populations are adversely affected by habitat loss and fragmentation, poor forage quality, drought, severe weather, competition with other ungulates, predation, disease, and poaching. Nonetheless, as conservation efforts by government agencies, NGOs, and individuals persist, the North American mule deer population now remains stable at around 5 million, and has done so since 1980. The species is currently classified as “least concern” on the IUCN red list, meaning there is no forecasted risk of extinction.

### Species Profile – Mule Deer

- Scientific name: *Odocoileus hemionus*
- The *Odocoileus* genus also includes white-tailed deer, which can successfully interbreed with mule deer. Columbian black-tailed mule deer successfully interbred with white-tailed deer in Tennessee.
- Mule deer are capable of “stotting”, which involves all four feet coming onto the ground at the same time. In this way, they can reach speeds of 25 mph for a short time.
- Mule deer are named for their large ears that move independently.
- Mule deer are versatile, surviving in places with a monthly average temperature of -2°F (Yukon, Feb) and 88°F (Texas, Aug).



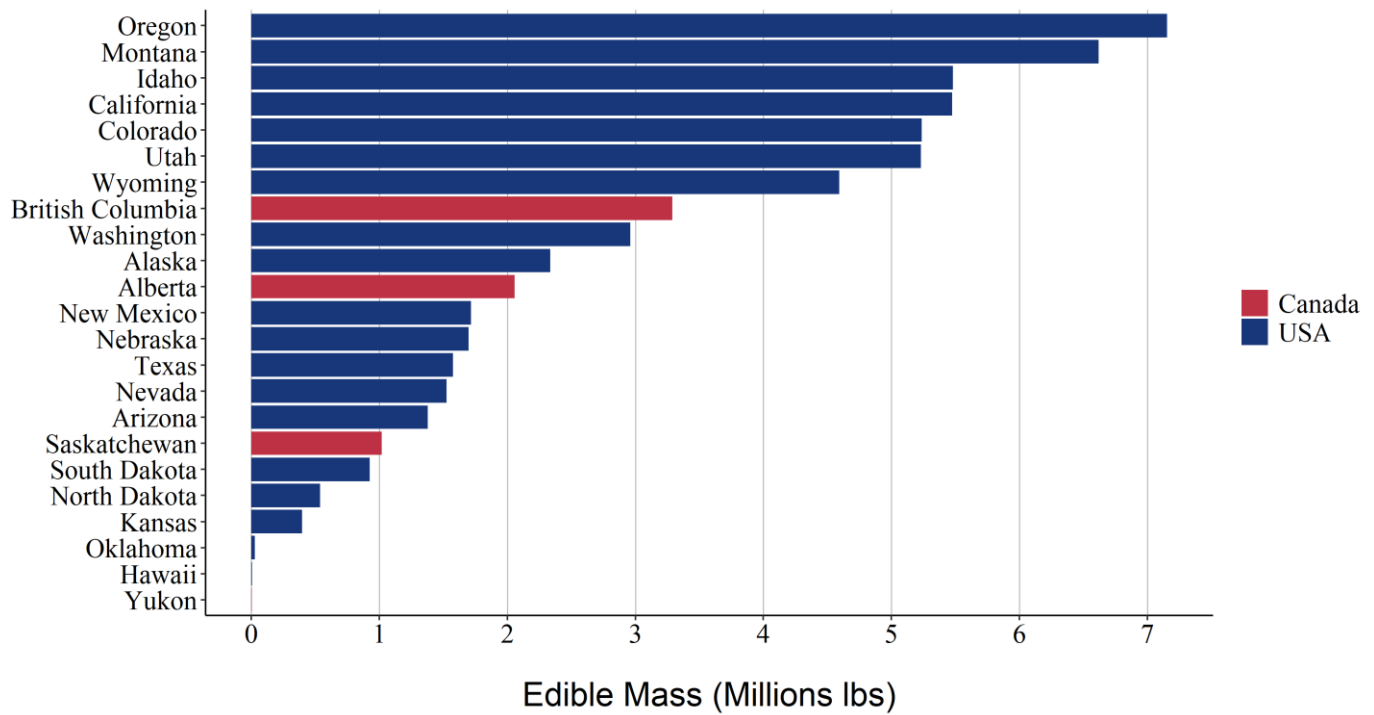


Figure 2. Food generated from mule deer harvests in Canada and the USA (2014-16).

## PROGRESS REPORTING

### Recreational Fishing in Canada

#### Increasing the Scope

To more extensively capture changes in recreational fishing in Canada through time, the WHI team recently obtained additional historical data from the Department of Fisheries and Oceans Canada (DFO) for the period 1975-1990, adding another fifteen years of harvesting to our database. In addition, we have now incorporated fish harvests that were reported without a species designation, and used the best data available to estimate the live and edible weights of these harvests. As a result of these additions, the WHI database now contains the most comprehensive dataset currently available on recreational fishing in Canada,

encompassing the period 1975 to 2015.

#### Economic Valuation - Fish

The WHI team has made significant progress in evaluating the economic value of the food generated by recreational angling in Canada. Summary statistics obtained from Nielsen, representative of the average price of seafood in 2020-2021, were used to determine the commercial purchase cost equivalency for fish caught for consumption by recreational angling in Canada.

#### Preliminary Results

A technical paper focusing on the food value of Canada's recreational fishery is nearly complete. In this report, we summarize new findings surrounding recreational fishing in Canada, with important conclusions regarding wild harvested food. On average, between 1975 and 2015, recreational anglers

in Canada harvested 132.6 million fish, representing 181.4 million lbs (82.3 million kg) of edible meat, each year. By assigning each fish species that was caught for consumption with a commercial purchase cost equivalent, we estimate that on average, between 1975 and 2015, recreational angling generated 2.20 billion Canadian dollars worth of food, each year. However, the amount of edible meat generated by recreational angling has decreased significantly, from 349.6 million lbs (158.6 million kg) in 1985, to only 76.4 million lbs (34.67 million kg) in 2015. No thorough investigation of the amount of food generated for consumption through recreational angling in Canada (or any other country) has previously been performed, and our results suggest that previous rough estimates are too low. For example, a recent report estimated the amount of food generated through recreational

angling in Canada by assigning a generic live mass to all harvested fish species. Using this method, it was estimated that recreational angling generated 79.2 million lbs (35.9 million kg) of fish in Canada in 2010. In contrast, we assigned a live mass specific to each harvested fish species and found that in 2010, recreational angling generated over twice this amount of fish for consumption – 179.4 million lbs (81.4 million kg) of fish. We plan to share this report with our partners in the upcoming quarter. This report will form the basis of a peer-reviewed academic publication and other new communications products.

## **Wild Harvest Initiative<sup>®</sup> Database**

### *Wild Harvest Data Collection*

The first major sourcing of recreational hunting harvest data for Canada and the United States concentrated on the years 2014-2016. These data have formed the basis for many of our outreach statistics, including those used in our various Fact Sheets. Our latest round of data collection has focused on the 2016-2019 period and is nearly complete. It would have been finalized already but data collection was delayed in certain states and provinces due to COVID resurgences. Nevertheless, we are very close to a full five years of data and quality assurance testing has already begun.

### *Economic Valuation - Hunting*

Research and consultations related to an economic evaluation of

recreational hunting harvests are ongoing.

### *Database Updates*

The WHI Database has now been migrated to a cloud-based server and is currently undergoing quality testing. The new database structure will improve remote access to the data and facilitate collaboration, complex data analyses, and interdisciplinary research. It is another important step in professionalizing the WHI.

## **Wild Meat Sharing and Consumption Index**

Our Wild Meat Sharing and Consumption surveys in Wyoming, Nevada and Arizona are now closed, with all three having recorded very good response rates.

Analysis for the Wyoming survey is nearly complete and a draft report will be available by the end of October. Analyses of the Nevada data has also commenced and for Arizona will begin shortly. Reports on both the Arizona and Nevada surveys can be expected during the upcoming quarter.

The WHI team has also finalized work on the Alaska survey questionnaire designed in collaboration with the state wildlife agency, and we plan to implement this survey during the upcoming quarter.

Once analyses of these four latest surveys are completed, we will conduct a comparative analysis (with the Texas survey results also included) to determine how hunting

harvest sharing compares among states, and this information will be presented in a separate document that will include a review of relevant academic and grey literature.

We remain in discussions with other U.S. States concerning subsequent surveys and hope to launch a Canadian survey by 2022.

Additionally, we continue to investigate the possibility of expanding this program initiative to administer surveys in other parts of the world, thus potentially documenting the true universality of the wild meat sharing phenomenon.

## **Wild Harvest Initiative<sup>®</sup> Partnership Alliance**

### *Exploring New Partnerships*

We remain engaged in partnership discussions with several organizations, including other state agencies, an alternative energy company, a land trust, and an international NGO focused on sustainable wildlife use and community-based natural resource management. In addition, we are making slow but steady progress with respect to a partnership with the US Forest Service.

## **Communications**

### *Factsheets*

A new WHI factsheet focused on mule deer (*Odocoileus hemionus*) will be released before the end of October. This will be the fourth Fact Sheet produced thus far.

## Films

We have a number of films finalized or currently in production. Titles scheduled for release in the upcoming quarter include "Hunting, Fishing, and Food" and "Cowboys & Conservationists", produced in collaboration with WHI partner Wyoming Department of Fish and Game. We are also finalizing a longer, twelve-minute production, on "Hunting and the Art of Human Existence". The film, "Public Lands and Nation Building," produced in collaboration with Backcountry Hunters and Anglers, has now received over 1.3 million views (<https://www.facebook.com/ShaneMahoneyConservationVisions/videos/776105479730519>). This film focuses on the important linkages between wild harvesting and public land, an issue of relevance to the entire Wild Harvest Partnership. We again encourage you to take a look and share the piece as widely as possible.

## Special Promotion!!!!

During the last quarter, we purchased ad space in the 2021 USA TODAY Hunt & Fish special issue to feature the Wild Harvest Initiative®. The special edition magazine, produced and distributed by USA TODAY Sports Weekly, celebrates "the great American wild and her triumphant re-opening in the wake of the COVID-19 pandemic," and hit newsstands at the end of August (<https://usatodaysspecial-va.newsmemory.com/?special=hunt+and+fish&date=20210805>; page 87). The Special Issue is expected to

reach over 3 million viewers and provide excellent exposure for our efforts.

## Wild Harvest Relevant Conferences and Global Conservation Outreach

In June, Conservation Visions participated in the latest global review of IPBES' (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) Sustainable Use of Wild Species Assessment, on which, Shane Mahoney is a registered technical reviewer (<https://ipbes.net/sustainable-use-wild-species-assessment>). This is an extraordinarily important compilation of sustainable use practices from around the world. IPBES is an intergovernmental panel with 134 member states that works to strengthen the science-policy connection for biodiversity and ecosystem services. We offered significant commentary regarding the linkages between wild harvested food, wildlife, land conservation, and human wellbeing. In this review, the WHI was further recommended as an indicator of the direct benefits of sustainable use in a temperate region, which recalls both the SBSTTA (Subsidiary Body on Scientific, Technical and Technological Advice) process and the development of the Post-2020 Global Biodiversity Framework of the Convention on Biodiversity (CBD) (<https://www.cbd.int/doc/c/dfef/f7d6/e70e24d4d67f6b1815895e5e/sbstta-23-inf-20-en.pdf>). The SBSTTA is an advisory body that serves a

critical function in providing recommendations to the CBD Conference of the Parties, which represents the fundamental authority for the Convention. The CBD is a legally binding international environmental treaty, comprised of 195 countries and the European Union.

Conservation Visions also participated in the Association of Fish and Wildlife Agencies' Annual Meeting (Sept. 8-14; <https://www.afwaannualmeeting.org/>), making presentations to both the International Relations Committee and Executive Committee. During the meeting, the WHI was discussed in relation to sustainable use as a conservation mechanism, and in relation to the One Health Approach, during a presentation by Shane Mahoney.

In late September and October, Conservation Visions participated in the One With Nature World of Hunting and Nature Exhibition in Budapest, Hungary, speaking on global conservation trends as part of the Federation for Hunting and Conservation's Annual General Meeting. Conservation Visions and the Wild Harvest Initiative® were featured prominently in a booth within the International Exhibition Hall A (Sept. 25 – Oct. 14; <https://onewithnature2021.org/en>). This represented a first opportunity for the WHI program to engage directly with the European public.

# THE WILD HARVEST INITIATIVE® PARTNERSHIP ALLIANCE



Not pictured is Richard A. "Dick" Corbett