EST. 2015

WILD HARVEST INITIATIVE®

WILD FOOD SHARING

Findings from a survey on the sharing and consumption of wild harvested meat in Texas

August 2020

conservation VISIONS®

Table of Contents

Please cite as: Mahoney, S.P. (2020). *The Wild Harvest Initiative® Wild Food Sharing: Findings from a survey on the sharing and consumption of wild harvested meat in Texas* (August 2020). St. John's, Newfoundland, Canada: Conservation Visions.

Questions? Contact Conservation Visions at insights@conservationvisions.com.

EXECUTIVE SUMMARY

Beginning in August and ending in October 2018, **Conservation Visions**, in partnership with **Texas Parks and Wildlife Department**, conducted the *Texas Wild Meat Sharing and Consumption Index Survey*. This survey was designed to gather information about the amount of wild meat harvested by recreational hunters in Texas and explore their subsequent consumption and sharing habits. The survey was sent to 45,000 people who had purchased at least one hunting license in Texas between 2014 and 2017 (inclusive). In total, 2,735 completed questionnaires (6.08%) were returned.

From 2014 to 2017, an average of 1.19 million hunting licences were purchased annually in the state of Texas. Survey results, alongside data from the Texas Parks and Wildlife Department, indicate that, of this total, an annual average of 718,343 hunters (60.5%) were successful in harvesting one or more animals. Results suggest the most popularly hunted species among Texan hunters is white-tailed deer, with over 75% of respondents reporting they hunted this species.

The survey revealed that nearly all successful hunters (97.7%) shared their wild harvested meat. This meat was shared with, on average, 5.8 million individuals annually, including 2.1 million individuals inside the hunters' households and an average of 3.7 million individuals outside of their households. On average, hunters shared a staggering 42.9% of the meat from their hunt with people outside of their immediate household.

Respondents reported being primarily motivated to share wild meat outside of their household because either they possessed more than they could consume in their household (27.3%) or they wanted to help family and friends with food stocks (24.2%). Disaggregating responses revealed that younger respondents (born after 1980) more often reported having been motivated by bragging rights/competition with fellow hunters, making room in their freezers, and reciprocity than older respondents (born before 1965).

Hunters with rural addresses were less likely than those living in urban areas to respond that they had more wild meat than their household could consume and were more likely to report being primarily motivated by a desire to share their harvest in order to help family and friends with food stocks. Respondents in the highest income bracket ($200,000+) were more likely than respondents in any other income group to report both that they were unable to retain harvested meat and that they donated their meat to a charity.

The most commonly cited motivation for hunting was time with friends / family (52.2%) and the most common obstacle to hunting was a lack of free time (30.7%).

The findings of this survey clearly demonstrate that the benefits of wild recreationally harvested meat in Texas extend well beyond the harvesters themselves and even beyond hunters' households to positively impact many others. The magnitude of wild meat harvested and shared in Texas and the motivations for these activities reflect a tradition founded in community and stewardship in the state.

INTRODUCTION

Recreational hunting participation in the US and Canada has decreased significantly over the last several decades. Hunter numbers peaked in the US in 1982, when nearly 17 million hunting licenses were sold. By 1991, license sales had fallen to 14 million, representing just 7% of the total population. This downward trend has continued and, in 2016, the US reported less than 11.5 million hunters, representing just 4% of the population (Krebs, 2019; US Fish and Wildlife Service, 2018; Rott, 2018).

Canada does not track recreational hunting data with the same rigor as the US, but national surveys conducted in 1981, 1991, 1996 and 2012 do reveal a similar downward trend (Filion et al, 1983, 1989, 1993; Gray et al, 1993; DuWors, 1999; Federal, Provincial and Territorial Governments of Canada, 2012). The most recent figures provided for Canada show that approximately 1.3 million people in Canada are actively involved in hunting activities, representing less than 4% of the total population (The Conference Board of Canada, 2019).

Despite decreasing hunting participation in the US and Canada, current research indicates significant support for the activity among the general populace. A study conducted in 2019 by Responsive Management and the National Shooting Sports Foundation found that 80% of Americans approved of legal hunting activities (Responsive Management & The National Shooting Sports Foundation, 2019). Similarly, research in Canada shows that close to two thirds (65%) of the population view hunting for meat favourably (Bartel, 2019).

There has been much speculation about why public support for hunting remains strong. It has been theorized that hunters are connected in a variety of ways to the general population and many members of the public, including non-hunters, are led to understand the value of hunting activities through these connections. An example of such a connection is the shared consumption of wild harvested meat.

There has previously been some investigation of non-hunters' consumption of wild meat, indicating that hunters share the food they harvest; however, little is known about how much sharing of recreationally harvested meat actually takes place (Burger, 2000, 2002; Responsive Management & National Shooting Sports Federation, 2011; Stedman & Decker, 1996; Goguen, 2018).

To determine the extent to which hunters share wild harvested meat with people inside and outside their household, and explore the motivations for this sharing, Conservation Visions, in partnership with Texas Parks and Wildlife Department, designed the Texas Wild Meat Sharing and Consumption Index Survey.

This survey is part of a landmark study: the Wild Harvest Initiative®, which was launched by Conservation Visions in 2015. This initiative represents the first serious effort to evaluate the comprehensive economic, conservation, and social benefits of recreational wild animal harvests to modern American and Canadian societies. The Initiative's science-based approach and long-

term advocacy and knowledge mobilization strategies are providing a new and innovative assessment of wildlife's value to all citizens, including in the contexts of food security and human health.

The data obtained from this survey is used to evaluate the participation, consumption, and sharing habits of Texas hunters. This survey is the first of a series of jurisdictional surveys planned for the US and Canada.

METHODOLOGY

Survey Area

Texas is the second largest state in the US by area (695,000 km^2) and population (est. 29 million). Texas has diverse landscapes common to the US south and southwestern regions; terrain ranges from coastal swamps and piney woods to rolling plains, rugged hills, desert and mountains. Approximately 150 mammal species are native to Texas and the state boasts hundreds of bird species, as well as more than 100 species of snake (DeWitt et al, 2020). During the 2017–2018 hunting season, 1,158,371 hunting licences were purchased in the state of Texas.

Survey Design and Implementation

The on-line Texas survey was conducted in phases from August 22 to October 16, 2018. It was distributed to a sample of Texas hunting licence buyers that purchased at least one licence in the last 4 hunting seasons (2014–15, 2015–16, 2016–17 and 2017–18), qualifying them to hunt one or more game species. Residential status was determined by home address and non-resident hunters were not included in the survey. Given that the focus of the survey was meat consumption and sharing, individuals who purchased fur trapper licences were also excluded from the sample pool.

Survey respondents were asked to complete a harvest matrix indicating which species they had harvested, the number of animals harvested, whether the harvest occurred on public or private land, and how much of the harvested meat they shared, if any. Other survey questions were designed to interrogate motivations for hunting and sharing, as well as household wild meat consumption patterns. The species list used in the harvest matrix mirrored the legally hunted species list for Texas, as reported in the Wild Harvest Initiative® database. For practical reasons, select small game species as well as upland and migratory bird species were grouped into categories, such as "ducks" and "rabbits" (For a full list of survey questions, see Appendix A).

A first mailing (Original) of questionnaires was sent on August 22, 2018 to 20,000 email addresses that were randomly selected from a list of hunters provided by Texas Parks and Wildlife Department. After the first mailing was completed and responses were tallied, it was determined that the response rate was too low for statistical treatments and thus a second mailing (Supplemental) of 20,000 questionnaires was sent on September 19, 2018. A third mailing (Test) of 5,000 was also sent on September 19, 2018, but only to individuals who had purchased a

hunting license in the preceding year (during 2017). This third mailing was run independently to test for differences in response between those selected within a 4-year sample frame (2014-15, 2015-16, 2016-17 and 2017-18 hunting seasons) and those selected from a single year sample frame, representing the most recent hunting season (2017-18). Each person had one chance to be selected regardless of how many hunting licences were purchased by any individual. Reminders were sent to all non-respondents after 14 days and again after 28 days of e-mailing. The survey remained open for response one month after the second e-mail reminder was sent.

Testing Differences in Responses between Surveys

A Pearson's Chi-square analysis was used to determine if differences existed between survey types (Original, Supplemental and Test). An alpha value of 0.01 was used because of the large number of tests analyzed–this decreased the likelihood of finding a significant difference between survey types when no difference actually existed (type I error). The survey questions that were analyzed using this method were:

- Did hunter possess a hunting licence in 2014, 2015, 2016 and 2017?
- Did hunter hunt in 2014, 2015, 2016 and 2017?
- Was hunter successful in obtaining wild meat through own recreational hunting in 2014, 2015, 2016 and 2017?
- Did hunter share any of the wild meat that was personally harvested in 2014, 2015, 2016 and 2017?
- Did hunter personally consume any of the wild meat harvested?

A one-way Analysis of Variance (ANOVA) was performed to determine differences in means between survey types for each of the questions below. Again, an alpha value of 0.01 was used because of the large number of tests analyzed. The Levene test was used to test for homogeneity of variance. If significance was determined from the ANOVA, a post-hoc Bonferroni was used to determine pairwise differences. The survey questions that were analyzed using this method were:

- Number of meals eaten each year from harvest of wild meat.
- Number of individuals in immediate household in 2014, 2015, 2016 and 2017.
- Number of individuals in immediate household that consumed wild meat harvested in 2014, 2015, 2016 and 2017.
- Number of individuals outside household with whom hunter shared wild harvested meat in 2014, 2015, 2016 and 2017.
- Importance of successful hunts and bringing home wild meat.
- Importance of wild meat to household's food security.
- Importance of nutrition as a motivation for hunting wildlife.
- Importance of the ability to harvest wild meat to quality of life.
- Importance of projects like these which raise awareness of significance of wild lands for hunting.

The following outliers were removed before tests were performed:

- For responses to the question that asked the number of meals eaten each year, any response above 365 was removed.
- For responses to the question that asked the number of individuals in household and number of individuals in household that consumed wild meat, any response above 15 was removed.
- For responses to the question that asked the number of individuals outside the household that consumed wild meat, any response above 50 was removed.
- Looking at the number of animals harvested, all records that were more than three standard deviations above the mean were removed.

When reporting how much of their harvest was shared, respondents had the option of reporting in units (number of animals shared) or pounds. In instances where a respondent reported a higher number of units than animals harvested, the amount shared was changed from units to pounds. In instances where respondents reported sharing more pounds of meat than they had harvested, this response was removed from the data set.

Estimating Totals and Detecting Differences between Response Groups

Data regarding the number of hunting licenses purchased annually in Texas was provided by Texas Parks and Wildlife Department records. These data were used alongside survey findings to derive estimates for the total number of licence holders who harvested an animal or animals and the percentage who shared harvested meat for each of the 2014-15, 2015-16, 2016-17, and 2017-18 hunting seasons. Shared wild meat consumption was further broken down by the number of individuals inside and outside the hunter's household who consumed a portion of the meat harvested by the licence holder.

Given the survey's subject matter, there was concern that successful hunters would be more likely to respond than other survey recipients. This response bias would prove problematic for any calculations intended to reflect state-wide trends. Taking this into consideration, Texas Parks and Wildlife Department provided hunting success rates for 12 hunted species for which they maintained records. For calculations related to these 12 species, those success rates were utilized rather than success rates reported by survey respondents. For the remaining 17 species reported in the survey, a success rate bias was calculated and used to adjust success rates reported within the survey sample. This bias was calculated by determining the percentage difference between those success rates captured by Texas Parks and Wildlife Department and those represented within the survey sample for the above mentioned 12 species. A separate bias rate was calculated for big game and small game/birds. This bias was then applied to each of the remaining 17 species, in order to reduce the reported success rates from the survey sample by a factor estimated to represent the response bias.

Survey responses were categorized by gender and age group (Greatest/Silent–born before 1946; Boomers–born from 1946 to 1964; Generation X–born from 1965 to 1980; and Millennials/Generation Z–born after 1980). Responses were further broken down by community size (Rural–population less than 10,000; City–population from 10,000 to 100,000; and Metro–

population over 100,000); and household income (<$49,000; $50,000–$99,000; $100,000–$149,000; $150,000–$199,000; and $200,000 or more). For community size and household income groupings, the total number of licences purchased was extrapolated from the survey responses because no other purchasing statistics were independently available for these groups (unlike gender and age). Significant differences were determined between groups if there was no pairwise overlap between confidence intervals. Only those differences that were found to be statistically significant are captured within the summarized results that follow.

For the survey questions that interrogated motivations for sharing wild meat, motivations for hunting, and hunting obstacles, percentages were tabulated for each possible response for every question. These calculations were broken down by gender, age group, community size, and household income. Pearson's Chi-squared (χ^2) was used to test if responses differed across categorical groupings. If differences were detected, then a χ^2 test was used to determine the categories that differed from the categorical expected values.

RESULTS

Survey Samples

Of the 20,000 questionnaires sent in the Original mailing, a total of 1,044 (5.22%) were returned. Of the 20,000 questionnaires sent in the Supplementary mailing, a total of 1,149 (5.75%) were returned. Finally, of the 5,000 questionnaires sent in the Test mailing, a total of 542 (10.84%) were returned. In total, 45,000 questionnaires were sent to licenced hunters and 2,735 (6.08%) were returned. Of the 2,735 respondents, 53 indicated they were female while 1,509 indicated they were male.

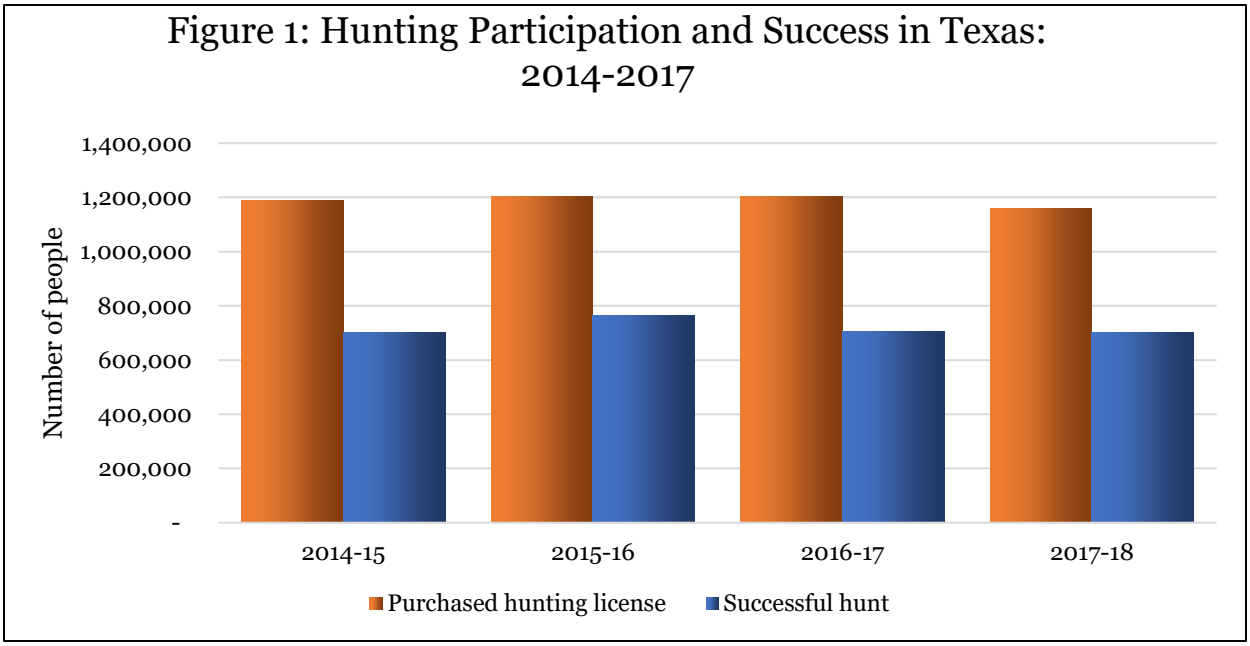
Differences in Responses between Surveys

Only one significant difference ($p = 0.007$) was detected between the Original and Test surveys. This occurred for the question that asked the number of individuals that lived in the household in 2014. The Bonferroni test determined the difference was between the Original and Test surveys. All other tests were non-significant at the $\alpha = 0.01$ level.

Given these results, it is reasonable to assume that no differences in responses existed between the three mailings. As a result, the return data was combined and analyzed as one data set.

Hunting Participation and Preferred Species

From 2014 to 2017, an annual average of 1.19 million hunting licences were purchased in the state of Texas and an average of 718,343 or 60.5% of hunting license holders were successful in harvesting an animal (Figure 1).



In comparing respondents' demographic information, we found that male hunters and those residing in higher income households had higher proportions of successful hunts. The oldest age group (The Greatest/Silent age group) hunted less often, were less successful, and shared less wild meat than younger age groups.

More than 75% of respondents indicated harvesting white-tail deer, making it the most popular harvested species by a large margin. Other frequently harvested species included dove, feral pig, duck, and axis deer. No other species were harvested by more than 3% of survey respondents (Table 1).

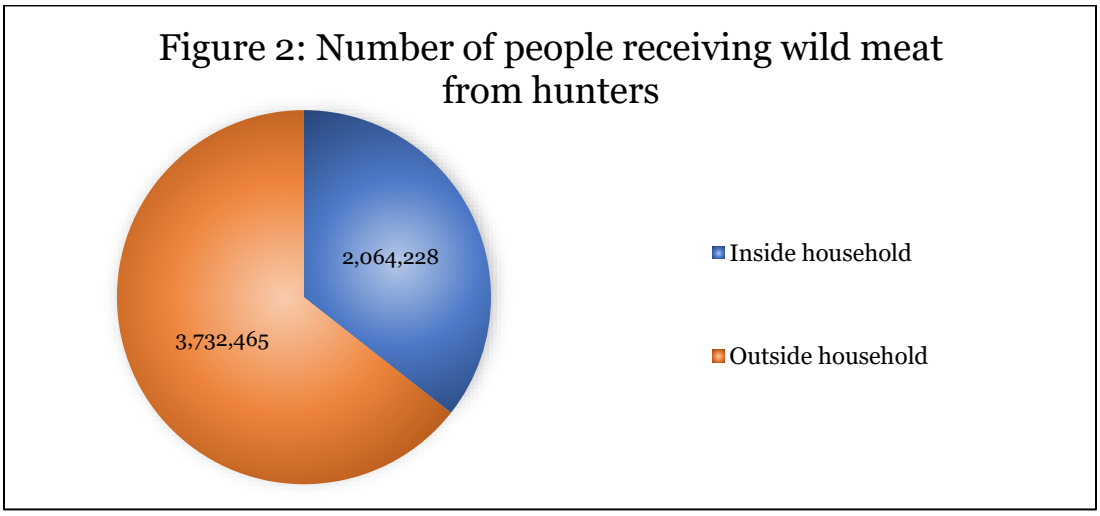
Table 1: Top 5 species harvested by respondents

				
1. White-tailed Deer	**2. Dove**	**3. Feral Pig**	**4. Duck**	**5. Axis Deer**
Percentage of respondents that hunted this species				
75.1%	**17.1%**	**14.3%**	**8.3%**	**6.8%**

Sharing Wild Harvested Meat

The survey revealed a very high incidence of wild meat sharing. From 2014 to 2017, of the approximately 718,343 hunters who were successful, on average, each year, an estimated 701,559 (97.7%) shared wild meat from their harvests.

Successful hunters shared this meat each year with an average of 2.1 million individuals inside their households and 3.7 million individuals outside their households, or with 5.8 million individuals in total (Figure 2). Overall, this survey revealed that hunters gave away approximately 42.9% of their harvested meat to individuals outside of their immediate households.

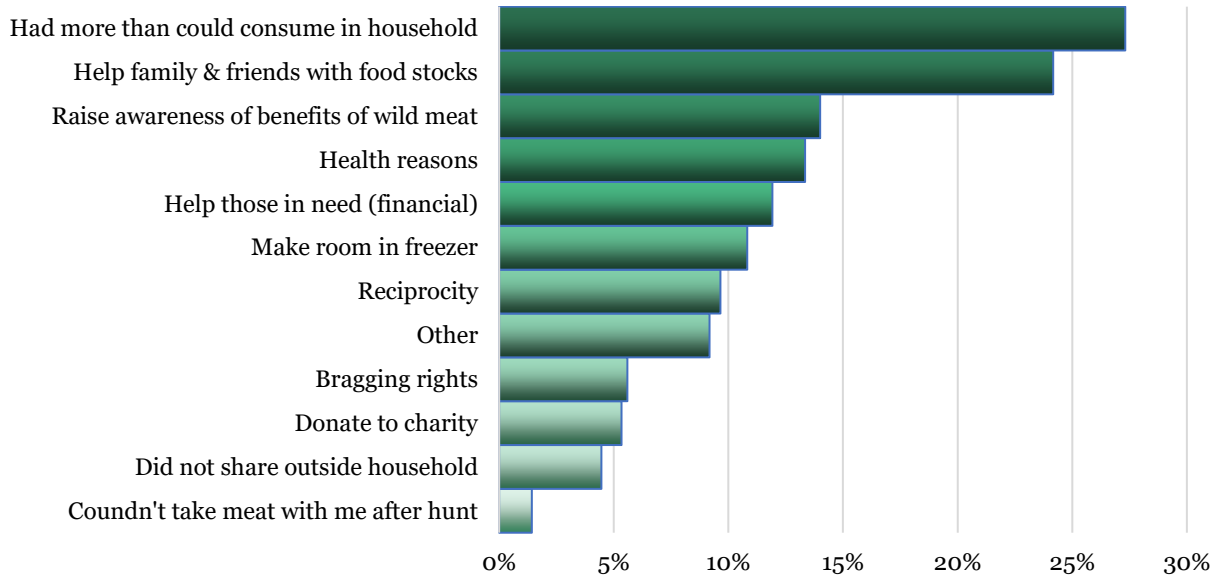


Motivations for Sharing Wild Meat

The survey results indicated not only that the vast majority of hunters shared their harvest but, notably, that this sharing was not limited in any way to those within the hunters' households. In fact, only 4% of hunters reported they did not share their harvest with persons outside their household.

The two most prevalent motivations for sharing wild meat outside the household were that the hunter had more than they could consume in their household (27.3%) and that they wished to help family and friends with food stocks (24.2%). Other commonly chosen options included raising awareness of the benefits of wild meat (14.0%); health reasons (provision of healthy protein to others) (13.3%); and helping those in need (11.9%) (Figure 3).

Figure 3: Motivations for Sharing Wild Meat



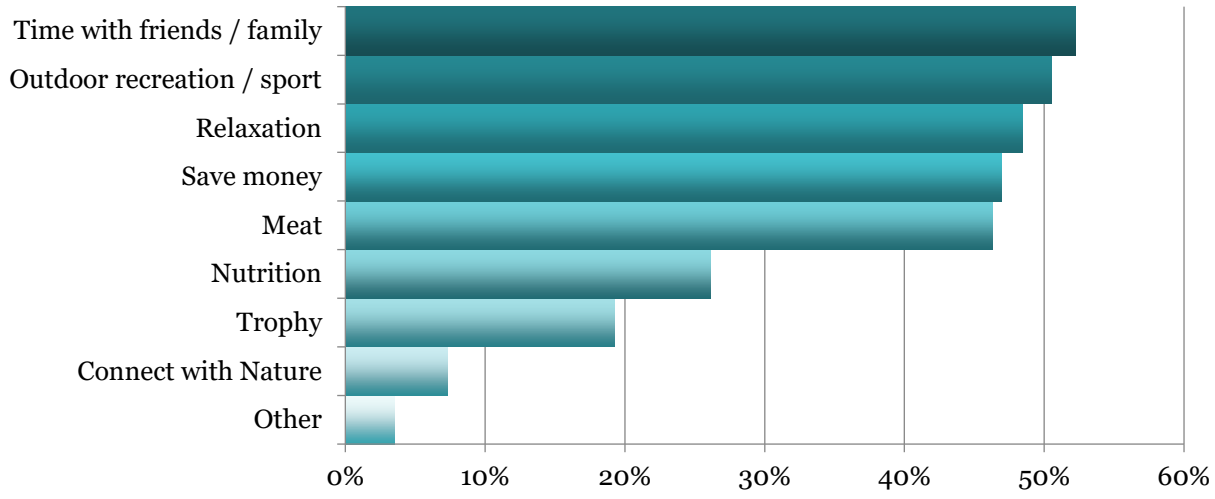
Disaggregated, the responses reveal that younger hunters (Millennials/Gen Z) were significantly more likely to be motivated by bragging rights/competition with fellow hunters, making room in their freezer and reciprocity than were older hunters (Boomers and Greatest/Silent age group). Hunters residing in rural areas were less likely to state that they had more than they could consume in their household as a motivation for sharing and were more likely to share from a desire to help family and friends with food stocks, than were hunters residing in metro areas.

Hunters residing in households reporting the highest income bracket ($200,000+) were more likely than any other income group to state that they could not take meat with them after their hunt and that they donated their meat to charity.

Motivations for Hunting

Respondents were asked about their motivations for hunting and were provided with a series of options, as well as an "other" option; they were permitted to choose any or all that applied. The most popularly reported motivations for hunting were spending time with family and friends (52.2%), engaging in outdoor recreation/sport (50.5%), relaxation (48.4%), saving money (46.9%), and acquiring meat (46.3%) (Figure 4).

Figure 4: Motivations for Hunting



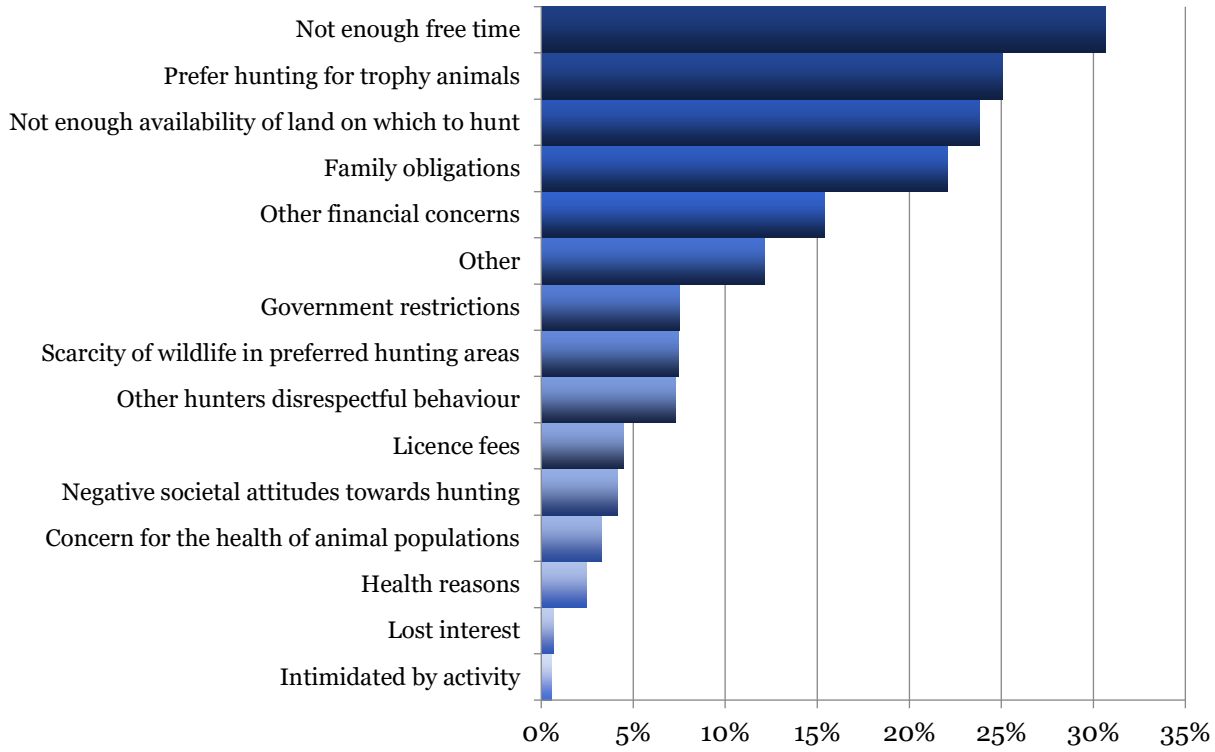
An examination of disaggregated data revealed a number of significant findings. For instance, we found that women, younger hunters (Gen X and Millennials/Gen Z), and those residing in rural regions were motivated to hunt by a desire to connect with nature more frequently than men, older hunters (The Greatest/Silent and Boomer age groups), and those residing in metro areas.

Hunters in the youngest age category (Millennials/Gen Z) more frequently reported being motivated by the desire to acquire a trophy than Boomers. Those in the oldest age group (The Greatest/Silent age group) were significantly less likely to select nutrition as a motivation than all other respondents.

Hunting Obstacles

The most common obstacle to hunting reported by respondents was that they did not have enough free time (30.7%). Other common obstacles to hunting included a preference for hunting trophy animals (25.0%), not enough availability of land on which to hunt (23.8%), and family obligations (22.1%) (Figure 5).

Figure 5: Hunting Obstacles



An examination of differences among respondents revealed that younger hunters reported not having enough free time and family obligations as obstacles significantly more often than older hunters. Respondents residing in households reporting lower income brackets (<$49,000-$99,000) also pointed to family obligations significantly more often than respondents reporting higher income brackets ($150,000-$200,000+). Not surprisingly, health reasons were more frequently cited as an obstacle by the oldest category of hunters (Greatest/Silent generation). Meanwhile, license fees and other financial concerns were reported as obstacles significantly more often by lower income respondents than those reporting the highest income bracket.

DISCUSSION

Survey Findings

The results of this survey demonstrate the magnitude of wild meat harvested and shared by Texas hunters each year. From 2014 to 2017, an average of 1.19 million hunting licences were purchased annually and a significant majority of hunters were successful in harvesting a wild animal (60.5% of license holders).

Nearly all successful hunters shared their harvest with others (97.7% of successful hunters), sharing their meat with an average of 5.8 million individuals each year, including an estimated

3.7 million individuals living outside of the hunters' households. On average, hunters shared 42.9% of their total harvest with people outside of their immediate household.

It is not known how many people may have been given wild meat by more than one hunter. This would cause double-counting and would lead to an overestimate of the number of individuals receiving shared meat. However, given the population of hunters (1.19 million) compared to the total population in Texas (29 million), any overestimate is likely insignificant.

The two most frequently reported motivations for hunters to share their harvest were an abundance of meat – more than they could consume in their household (27.3%) – and to help family and friends with their food stocks (24.2%).

Notable demographic differences were observed with respect to hunters' motivations for sharing harvested meat. Hunters born after 1980 were more likely to be motivated to share in order to gain bragging rights, make room in their freezer and return favors; whereas, hunters born before 1965 were significantly less likely to identify these motivations. This trend may point to an initial excitement and sense of achievement about hunting successes among younger hunters and a tendency to share their meat for recognition, more than altruism. As hunters age, they seemingly become less possessive of their harvested meat and more likely to share their hunt for reasons that result in no immediate gain or benefit to themselves.

Hunters residing in metro areas were less likely to be motivated to share from a desire to help family and friends with food stocks and more likely to state that they had more than they could consume in their household than hunters residing in rural areas. This is consistent with research that suggests both a higher prevalence of food insecurity in rural regions of the US, as well as stronger community and neighbourhood connections (Feeding America, 2020; Parker et al, 2018). Seemingly, from the survey responses, hunters residing in rural regions were sharing their harvest to meet known food stock shortages among their family and friends, whereas those residing in metro areas were sharing more often due to their own overabundance of food.

Finally, hunters with a household income of $200,000 or more were more likely to state that they donated their shared harvest to charity and that they could not take the meat with them after their hunt. This may be due to high income households engaging in more trophy-focused hunting activities, where they are less interested in the meat and more concerned with the age and physical stature (antler size and confirmation) of the animal taken. Alternatively, this may suggest that hunters who are more financially stable are not as concerned about the value of the meat harvested and are more willing to donate to others who are not family but are in need of food.

The most prevalent motivations for hunting were to spend time with family and friends (52.2%) and to engage in outdoor recreation/sport (50.5%). A lack of free time was reported as the most prominent obstacle to hunting (30.7%).

Examining hunting motivations across demographic groups revealed some minor differences. Survey results indicated that female hunters, younger hunters (born after 1980), and hunters residing in rural areas were more likely to be motivated to hunt out of a desire to connect with nature than hunters from other demographic categories. Another notable observation was that older age hunters (born before 1965) and hunters residing in lower income households (<$99,000) were less likely to be motivated by obtaining a trophy. This may suggest that hunters

from lower income households are more concerned with obtaining meat to supply food stocks for their household and are less concerned with procuring a trophy animal. Likewise, older hunters may no longer be as concerned with an animal's trophy status, though they might have been as younger hunters. Finally, based on responses, nutrition seems to be less important to the oldest age group (born before 1945).

There were several differences noted among demographic groups with respect to responses concerning hunting obstacles. It is perhaps unsurprising that those in the oldest age group (born before 1945) were more likely to indicate health reasons as an obstacle to hunting. It is also not surprising that family obligations were indicated as an obstacle more often by younger hunters (born after 1965) and hunters residing in lower income households (<$49,000-$99,000). Younger hunters (born after 1965) also indicated that a lack of free time was an obstacle to hunting; these individuals are more likely to have young children and be employed, affording them less free time to pursue hunting activities.

As expected, financial issues like licence fees and other financial concerns were chosen as obstacles more often by hunters from lower income households (<$99,000). Hunters from this demographic group would likely have less disposable income and be more concerned with financial obstacles. Hunters residing in high income households ($200,000 or more) were less likely to choose these options as obstacles to hunting.

Suggestions for Survey Improvements

In completing this online survey, respondents chose their desired response by selecting the appropriate block corresponding to the answer. For questions where the respondent was asked if he/she hunted, or had a successful hunt, for example, respondents were required to answer with a "yes" or leave blank. For this type of question, it is preferred, from an analytical point of view, to include a "no" option as well as the "yes" option. Without the "no" option, one cannot determine if the question was left out or the respondent meant to answer "no". As a result, we may be underestimating the proportion of positive responses because the number of missing data points is not known.

For the number and weights of harvested animals shared, the respondent could answer in either units or weight. On many occasions, the respondent filled the total weight shared in the "units" column. This incorrect entry could be avoided by adding a provision in the "units" column so that the number cannot be larger than the number of animals harvested. This would save a lot of time when completing the analysis of the survey results.

Findings from the three survey mailings reveal that individuals who have hunted within the preceding hunting season are more likely to respond to the survey than those who hunted in earlier years but their responses do not differ from those collected over a four-year period. For future surveys in other jurisdictions, it may be most appropriate to only target individuals who have purchased a hunting license in the last hunting season rather than including four years of data.

CONCLUSION

This study reveals that a high percentage of Texas hunters share a significant amount of their wild harvested meat with individuals both inside and outside of their households. Indeed, while on average, only 1.19 million people in Texas hunt each year, an additional 5.8 million people are benefiting from their harvested meat. In a state where approximately 1 in 7 people (4 million people total) are experiencing food insecurity, this finding has profound implications (Feeding Texas, 2020) and may well forecast similar relevancies for jurisdictions across Canada and the United States.

In general, the survey responses indicate and emphasize the importance of community as part of hunting activities and traditions. When asked why they hunt, most hunters responded that they wished to spend time with family and friends. Meanwhile, the two most prevalent motivations for hunters sharing harvested meat were that hunters had more than they could consume in their household and that they wished to help family and friends with food stocks. Each of these responses speaks to an awareness and appreciation for family and community food sharing within the hunting tradition.

Considering these responses, it seems clear that recreational hunting activities have a ripple effect that extends far beyond the small percentage of the population that actually engages in these activities. In fact, responses suggest that hunting is viewed as a community activity and that the rituals around this tradition serve to build and strengthen community networks. This may explain the reason that hunting for meat continues to benefit from majority support by citizens in both the US and Canada.

Additional surveys in other states, provinces, and territories will serve to expand and strengthen the findings from this pilot survey and help paint a more accurate picture of the wild meat consumption and sharing practices of hunters in the US and Canada.

REFERENCES

Bartel, Mario. 2019. "Survey gauges evolving Canadian views about treatment of animals." Vancouver is Awesome (November 23, 2019). Retrieved on February 11, 2020: https://www.vancouverisawesome.com/events-and-entertainment/canadian-views-treatment-animals-1947120

Burger, J. 2000. "Gender differences in meal patterns: Role of self-caught fish and wild game in meat and fish diets." *Environmental Research Section A,* 83: 140-149.

Burger, J. 2002. "Daily consumption of wild fish and game: Exposures of high end recreationalists." *International Journal of Environmental Health Research,* 12: 343-354.

Byrd, Elizabeth, John G. Lee and Nicole J. Olynk Widmar. 2017. "Perceptions of Hunting and Hunters by U.S. Respondents." *Animals (Basel),* v.7, No. 11 (November 2017).

DeWitt C. Reddick, Ralph A. Wooster and Gregory Lewis McNamee. 2020. "Texas." Encyclopædia Britannica (January 17, 2020). Retrieved on February 11, 2020: https://www.britannica.com/place/Texas-state

DuWors, Elaine, Michel Villeneuve, Fern L. Filion, Roger Reid, Pierre Bouchard, Douglass Legg, Peter Boxall, Tim Williamson, Alistair Bath and Scott Meis. 1999. *The Importance of Nature to Canadians: Survey Highlights*. Ottawa: Environment Canada.

Federal, Provincial and Territorial Governments of Canada. 2012. *2012 Canadian Nature Survey: Awareness, participation, and expenditures in nature-based recreation, conservation, and subsistence activities*. Federal, Provincial and Territorial Governments of Canada.

Feeding America. 2020. "Millions of rural children struggle with hunger." FeedingAmerica.org. Retrieved on February 11, 2020: https://www.feedingamerica.org/hunger-in-america/rural-hunger-facts

Feeding Texas. 2020. "Learn About Hunger." FeedingTexas.org. Retrieved on February 11, 2020: https://www.feedingtexas.org/learn

Filion, Fern L., Stephen W. James, Jean-Luc Ducharme, Wayne Pepper, Roger Ried, Peter Boxall and Dan Teillet. 1983. *The Importance of Wildlife to Canadians: Highlights of the 1981 National Survey*. Ottawa: The Canadian Wildlife Service.

Filion, Fern L., Elaine DuWors, André Jacquemot, Pierre Bouchard, Peter Boxall, Paul A. Gray and Roger Reid. 1989. *The Importance of Wildlife to Canadians in 1987: Highlights of a National Survey*. Ottawa: The Canadian Wildlife Service.

Filion, Fern L., Elaine DuWors, Peter Boxall, Pierre Bouchard, Roger Reid, Paul A. Gray, Alistair Bath, André Jacquemot and Gregg Legare. 1993. *The Importance of Wildlife to Canadians: Highlights of the 1991 Survey*. Ottawa: The Canadian Wildlife Service.

Goguen, A.D., Riley, S.J., Organ, J.F., and Rudolph, B.A. 2018. "Wild Harvested Venison Yields and Sharing by Michigan Deer Hunters." *Human Dimensions of Wildlife,* Vol. 23, No. 3: 197-212.

Gray, Paul A., Peter Boxall, Roger Reid, Fern L. Filion, Elaine DuWors, Andre Jacquemot, and Alistait Bath. 1993. *The importance of wildlife to Canadians: Results from three national surveys*. Edmonton: Northern Forestry Center.

Krebs, Natalie. 2019. "Why We Suck at Recruiting New Hunters, Why it Matters, and How You Can Fix It." *Outdoor Life* (October 15, 2019). Retrieved on February 11, 2020: https://www.outdoorlife.com/why-we-are-losing-hunters-and-how-to-fix-it/

Parker, Kim, Juliana Menasce Horowitz, Anna Brown, Richard Fry, D'vera Cohn and Ruth Igielnik. 2018. "What Unites and Divides Urban, Suburban and Rural Communities." Pew Research (May 22, 2018). Retrieved on February 11, 2020: https://www.pewsocialtrends.org/2018/05/22/what-unites-and-divides-urban-suburban-and-rural-communities/

Responsive Management & The National Shooting Sports Foundation. 2011. *American attitudes toward hunting, fishing, and target shooting 2011*. Harrisonburg, VA: Newton, CT: National Shooting Sports Foundation, Inc.

Responsive Management & The National Shooting Sports Foundation. 2019. *American attitudes toward hunting, fishing, sport shooting and trapping*. Harrisonburg, VA: Newton, CT: National Shooting Sports Foundation, Inc.

Rott, Nathan. 2018. "Decline in Hunters Threatens How U.S. Pays for Conservation." NPR (March 20). Retrieved on February 11, 2020: https://www.npr.org/2018/03/20/593001800/decline-in-hunters-threatens-how-u-s-pays-for-conservation

Stedman, R.C. and Decker, D.J. 1996. "Illuminating an overlooked hunting stakeholder group: Nonhunters and their interest in hunting." *Human Dimensions of Wildlife,* 1: 29-41.

The Conference Board of Canada. 2019. "The Economic Footprint of Angling, Hunting, Trapping and Sport Shooting in Canada." Retrieved on February 11, 2020: https://www.ofah.org/wp-content/uploads/2019/09/Economic-Footprint-Analysis-of-AHTS.pdf

US Fish and Wildlife Service. 2018. "National Survey of Fishing, Hunting, & Wildlife-Associated Recreation." Maryland: United States Census Bureau.

APPENDIX A: SURVEY QUESTIONS

Page 1 - Welcome

(TPWD and WHI logo appear at top of the page)

Texas Parks and Wildlife and Conservation Visions' Wild Harvest Initiative® invite you to complete our "Wild Meat Sharing and Consumption Index" survey, which focuses on hunting, wild harvested meat, and the sharing of wild harvested meat. The survey is part of a multiyear, landmark study that will provide the first complete assessment of the economic, ecological, and social values of hunting to modern society. If you would like to learn more about the Wild Harvest Initiative®, please visit http://conservationvisions.com/wild-harvest-initiative.

This survey is optional, and should take less than 10 minutes to complete. If you decide to participate, your responses will remain anonymous. There is space at the end of the survey for any comments you would like to submit. If you have any questions about the survey or the Wild Harvest Initiative®, please contact us by email at insights@conservationvisions.com.

Please note that within this survey, sharing refers to anyone other than yourself that used the wild harvested meat, even if they were in your household. Please consider completing this survey whether or not you shared any wild harvested meat. All data is valuable to our analysis, and your participation is appreciated.

1. Please tell us in which years the following occurred.

Choices are the four previous calendar years (2014, 2015, 2016, 2017), as well as an option for "None of these".

a. You possessed a hunting license in this year
b. You hunted in this year
c. You were successful in obtaining wild meat through your own recreational hunting
d. You shared any of the wild meat that you personally harvested with another person, including those in your household

If they said they did not possess a hunting license in any year, the survey ends. While a hunting license had to have been purchased for the email address to have been selected, there is no guarantee that the one viewing the email was the one that purchased it.

Page 2 – Yearly Harvest

Please note that this page may take several second to load on some systems. If you are unable to enter any data, then it is still loading.

2. In the table below, please indicate the type(s) and amount of wild meat that you **shared with those outside your immediate household** in each calendar year.

    a. If the animal harvested is not in the species list, please choose Other.
    b. For Location, please choose the U.S. state or Canadian province in which the hunting occurred. If the location was in another country, please choose Other.
    c. You may report the number of animals shared if you are unsure of the number of pounds. If you harvested wild meat but did not share any, please still include your harvest in the table and enter 0 into the amount shared.
    d. If the species chosen is Other, please enter the number of pounds shared, not the number of animals.

Please add as many rows as necessary by using the green plus button located on the right of the chart. You can remove any unnecessary rows with the red minus button on the left.

The dynamic matrix / table has eight columns. Respondents create new rows as necessary.

a. Calendar Year – dropdown box containing the four years of interest.
b. Species – dropdown box containing the species common names.
c. Location – dropdown box containing all US states and Canadian provinces.
d. Public / Private – dropdown box containing Private Only, Mostly Private, Private and Public, Mostly Public, Public Only.
e. Number Harvested – dropdown box containing the numbers.
f. Number or Pounds Shared – dropdown box with the choices Number, Pounds.
g. Amount Shared: dropdown box containing the numbers 1 – 1000.
h. Days Hunting - dropdown box containing the numbers 1 – 365.

Page 3 – Sharing and Consumption

3. Some hunters do not personally consume any of the wild meat they harvest, and instead give it all to family, friends, and / or others. Do you personally consume any of the wild meat you harvest?

Yes / no option button.

4. If you do consume some of your wild harvested meat, approximately how many times do you eat meals that include it each year? If you do not consume any of your wild harvested meat, please leave this question blank.

Open-ended edit.

5. Please let us know the number of individuals in each group during each year. When counting your immediate household, please include all individuals who reside in your household including yourself and any children that live in the household, regardless of age.

Grid with the four years (2014, 2015, 2016, 2017) as the column titles. Answers are dropdown edits with the numbers 1 – 200.

a. Number of individuals in your immediate household
b. Number of individuals in your immediate household that consumed wild meat you harvested
c. Number of individuals outside your household with whom you shared wild harvested meat

6. With whom did you share your harvests?

Please check all that apply.

The answers are a list of checkboxes that get displayed in a set order so that a – c always appear at the top.

a. I did not share any meat
b. Family members inside my household
c. Family members outside of my household
d. Friends and/or neighbors
e. Associates from work/clubs/organizations
f. Community groups
g. Food banks
h. Guides/outfitters
i. Other, please specify (contains checkbox and textbox)

7. What were your motivations for sharing your wild meat harvest with those outside your household?

Please check all that apply.

The answers are a list of checkboxes. They are not displayed in random order in order to ensure the first one is always on top.

a. I did not share with anyone outside my household
b. Helping family and friends with their food stocks
c. Helping those in need (financially)
d. Health reasons (provision of healthy protein to others)
e. Donating to charitable organizations
f. Raising awareness of the benefits of wild meat
g. Bragging rights/competition with fellow hunters
h. I had more than I could consume in my household
i. I couldn't take it with me after my hunt
j. I was just making room in the freezer
k. Reciprocity (hopes of getting meat back in other years from other hunters)
l. Other, please specify (contains checkbox and textbox)

Page 4 – Importance of Hunting and Wild Meat

8. How important are each of the following to you?

Five statements for which they must chose a single answer from Very Important, Important, Neutral, Unimportant, Very Unimportant.

a. Your hunts are successful and you bring home wild meat
b. Wild meat to your household's food security
c. Nutrition as a motivation for hunting wildlife
d. Your ability to harvest wild meat to your quality of life
e. Projects like these which raise awareness of the significance of wild lands for hunting

9. What were your motivations for hunting?
Please check all that apply.

The answers are a list of checkboxes that get displayed in random order.

a. Outdoor recreation / sport
b. Time with friends / family
c. Save money
d. Meat
e. Connect with nature
f. Relaxation
g. Nutrition
h. Trophy
i. Other, please specify (contains checkbox and textbox)

Page 5 – Wild Harvest and Local Food

10. In which other types of wild harvests do you participate?

Please check all that apply. If you did not participate in any of these activities please skip to the next question.

The answers are a list of checkboxes; they are not displayed in random order so that the two fishing choices are always displayed next to each other.

a. Recreational freshwater fishing
b. Recreational saltwater fishing
c. Trapping
d. Berry picking
e. Fruit and/or herb foraging
f. Mushroom foraging
g. Gathering firewood
h. Other, please specify (contains checkbox and textbox)

11. Do you purposely seek out locally grown and/or gathered foods?

Yes / no option button.

12. If you do purposely seek out locally grown or gathered foods, please tell us which ones.

Answer is an open-ended text box / memo field.

Page 6 – Hunting Obstacles

13. Which of these are significant obstacles to your hunting of wild meat?

Please check all that apply. If none apply, then leave blank and skip this question.

The answers are a list of checkboxes that are displayed in random order.

a. Government restrictions (bag limits, season length, etc.)
b. License fees
c. Other financial concerns (for equipment, lodging, travel, etc.)
d. Not enough free time
e. Other hunters' disrespectful behavior in the bush
f. Lost interest
g. Negative societal attitudes towards hunting
h. Family obligations
i. Concern for the health of animal populations
j. Health reasons
k. Scarcity of wildlife in my preferred hunting area(s)
l. I prefer hunting for trophy animals
m. Not enough availability of land on which to hunt
n. Intimidated by the activity (use of firearms, field dressing, etc.)
o. Other, please specify (contains checkbox and textbox)

Page 7 – Demographics

The following questions will help us know more about Texas hunters. The information you provide will remain strictly confidential and you will not be identified with your answers. If you would prefer not to answer an individual question, just leave it blank.

14. Of which hunting / conservation organizations are you a member?

Please check all that apply.

The answers are a list of checkboxes that are displayed in alphabetical order.

a. Not a member of any hunting / conservation organizations

b. Backcountry Hunters & Anglers
c. Dallas Safari Club
d. Ducks Unlimited
e. Houston Safari Club
f. National Wild Turkey Federation
g. Pheasants (and Quail) Forever
h. Quality Deer Management
i. Rocky Mountain Elk Foundation
j. Safari Club International
k. Sportsmen's Alliance
l. Whitetails Unlimited
m. Wild Sheep Foundation
n. Other, please specify (contains checkbox and textbox)

15. In which year were you born?

Answer is an open-ended text box / memo field.

16. What is your gender?

Answer is an open-ended text box that allows the respondents to describe themselves, rather than being restricted to a short list of choices. This is seen as more inclusive and a better choice by sociologists if gender is asked. The great majority will enter male, female, m, or f, and the remainder can be categorized at the time of analysis. Note that this question is not about their sex, which is a matter of biology. Gender is about personality and social roles, which is what is needed, as that may affect how they share wild meat.

17. What is your zip code?

Open-ended edit.

18. How large is the community in which you live?

Single answer chosen from:
a. Rural (less than 500)
b. Small town (500 - 10,000)
c. City (10,000 - 100,000)
d. Large city (100,000 - 1 million)
e. Metropolitan (over 1 million)

19. What is your highest education level?

Single answer chosen from:
a. Less than high school
b. High school graduate

c. Some college
d. Vocational school
e. College graduate
f. Masters or PhD degree

20. What is your ethnicity?

Note that this question is about ethnicity/culture, not race. Like gender, it is about personality, not biology or appearance.

Single answer chosen from the alphabetically ordered list:

a. African American or Black
b. Asian
c. Caucasian
d. Hispanic
e. Native American
f. Pacific Islander (includes Hawaiian)
g. Other, please specify (option button and textbox)

21. What is your annual household income?

Single answer chosen from:

a. Less than $25,000
b. $25,000 - $49,999
c. $50,000 - $74,999
d. $75,000 - $99,999
e. $100,000 - $149,999
f. $150,000 - $199,999
g. $200,000 or more

Page 8 – Comments

22. If you would like to be contacted when the results from this survey are available, please enter your email address below. This will be used only to let you know when the results are available, and will not be sold or given to any anyone, or used for any other purpose.

Answer is an open-ended text box that will only accept responses that fit a valid email format.

23. Please provide any additional comments you'd like to share with us.

Answer is an open-ended memo field.

Page 9 – Completion