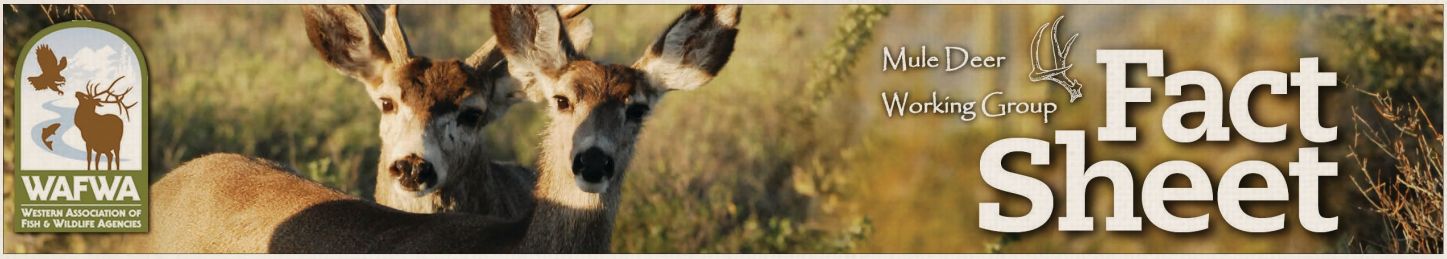

ASSESSING MULE DEER HARVEST
Fact Sheet #31

BACKGROUND
Mule deer is an iconic species in the western United States, Canada and portions of Mexico. Regulated mule deer harvest is an important tool wildlife managers use to influence deer population size, as well as sex and age structure. At the same time, hunting is a viable recreational activity and a primary objective for management throughout their range.

Mule deer die from a variety of causes including harvest, severe weather, predation, vehicle collision, starvation, disease, etc. Of all causes of mortality, harvest is easiest for managers to control and monitor. Wildlife managers measure and monitor harvest levels to ensure mule deer harvest is consistent with management objectives and ensure over-harvest doesn't occur. Hunter participation, by providing hunting and harvest information, is critical to maintain and enhance mule deer populations and mule deer hunting opportunity.

WHAT HARVEST DATA ARE COLLECTED
Many factors determine hunter success rates, including type of weapon used, season length and timing, hunt location, hunter numbers, and population structure. Wildlife managers need basic information from hunters on several key components of the hunt or harvest to incorporate into future management decisions. Commonly collected information includes: 1) whether a deer was harvested, 2) sex and possibly age class of harvested deer, 3) where it was harvested 4) how many days a person hunted regardless of success, 5) hunting method or weapon type, and 6) hunter satisfaction.

Management agencies usually collect the needed information through harvest surveys. Harvest surveys may also be used to collect other information to assess the social aspects of hunting experiences such as hunter values and expectations, hunt quality, perceptions of hunter crowding, or other issues that may impact hunting experiences.


Photo: Jim Baichtal

HARVEST SURVEY METHODS
Most jurisdictions use some combination of 4 primary methods to collect harvest information. All methods rely on hunter participation and response during or following completion of the hunt.

Hunter field checks or check stations have been used for a long time to contact hunters, ensure compliance with hunting regulations and laws, and collect biological information from harvested animals.

Field checks and check stations provide a valuable opportunity to simply engage with hunters to listen to their stories, concerns, and suggestions. Check stations tend to be strategically located along major travel corridors where hunters must stop, hunting documents and harvested animals are checked, and in some cases biological samples may be taken. Field checks or contacts at check stations do not provide a measure of total harvest or overall success rate of hunters that is reliable enough to gauge effect of the hunting season. A more formal scientific harvest survey is needed to provide statistically valid measures of harvest and hunter success.

Traditionally, harvest surveys have been done via mail. Hunters are mailed a survey to complete and return to the wildlife agency for analysis. This method can have low hunter response rates requiring repeated mailings reminding hunters to submit the important information. Low response rates tend to increase the danger for biased harvest estimates. Mail surveys can be problematic because of missing and incorrect information.

Telephone surveys can be more effective for collecting data from more hunters and have replaced mail surveys in some jurisdictions. Agency staff or contracted personnel call a sample of licensed hunters and ask a standardized list of questions regarding their hunt. Survey complexity and duration can vary but usually surveys takes only a matter of minutes once contact is made with the hunter. Like mail surveys, telephone surveys can require multiple attempts to contact the hunter and may also result in low contact or response rates, which affects data quality and survey cost. Cellphone technology and dynamically changing phone numbers has complicated this survey method.

Online surveys are the newest method for collecting harvest data. Agencies provide a web link where hunters go online and answer a series of questions related to the hunt. Once hunters become accustomed to this method, data collection effectiveness and cost efficiency increase. A concern is potential bias if successful hunters respond more readily than unsuccessful hunters.

SURVEY CONSIDERATIONS

As with other data collection processes, mule deer managers must evaluate reliability of harvest survey data. Large errors in harvest data can have serious ramifications for future management decisions. Number of hunters responding to the survey influences statistical reliability of harvest information the most. This sampling rate, contact rate, or response rate depends on the type of survey. Data are most reliable when number of hunters providing information is high relative to total number of hunters. Timing of surveys relative to when the hunt occurred is also important. Harvest surveys that occur soon after the end of the hunting season tend to be more reliable because the hunting experience is still fresh in the minds of hunters.

Because response rate has such a large impact on the information collected, wildlife agencies tend to focus much effort on improving participation or maintaining high response rates. These efforts may include incentives such as entry into special prize drawings or opportunities to win special tags. Agencies also may use penalties for not reporting. Penalties range from not being allowed to apply for hunts the following year to penalty fees.

SUMMARY

Numbers of mule deer hunters and harvest levels are critical pieces of information for mule deer managers. Harvest assessment data complements information on population sex and age structure and size and this information is important for population modeling. Continued hunter participation by providing this vital information is critical to sustain mule deer on the landscape and continue providing mule deer hunting opportunities.

More information on Mule Deer can be found at www.muledeerworkinggroup.com

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