OSEC Response to
National Wildlife Services Advisory Committee (NWSAC) Recommendations

2019 NWSAC Recommendation #1:

The NWSAC recommends to the Secretary of Agriculture that APHIS Wildlife Services (WS) continue the process of development and registration of wildlife toxicants and expedite the process where possible.

Response:
Developing and registering wildlife toxicants is a high priority for the U.S. Department of Agriculture (USDA). As part of an integrated approach, the development of lethal control methods plays a role in managing wildlife damage, especially when non-lethal methods are ineffective or unavailable. USDA works closely with the Environmental Protection Agency (EPA) and the Food and Drug Administration (FDA) to ensure that toxicants are properly researched, registered, and safely applied. APHIS WS National Wildlife Research Center (NWRC) conducts the majority of research needed to develop and register toxicants. NWRC is conducting research to meet FDA and EPA requirements to register sodium nitrite for use as a feral swine toxicant by 2023. NWRC also works with Savannah River Ecological Laboratory/University of Georgia to test the efficacy and humaneness of the commercially available warfarin based KaPut® as another potential toxicant for feral swine management.

USDA recognizes the need to develop new and effective tools and approaches to protect livestock. APHIS supports registration of toxicants and recognizes and responds to the need to develop new humane and effective toxicants for wildlife damage management as part of an integrated approach. APHIS spends considerable time and funding maintaining registrations and updating labels of registered toxicants such as: DRC 1339, Zinc Phosphide, Sodium Cyanide, and others. APHIS recently worked closely with the EPA to negotiate and implement changes to M-44 use restrictions, expedited the associated state and federal registration updates, and relabeled existing stock to comply with the new use restrictions to maintain this necessary and effective tool to manage predation to livestock.

Toxicants currently under evaluation for feral swine management at the APHIS WS National Wildlife Research Center

SODIUM NITRITE (product name HOGGONE®)
A paste bait containing ~5% micro-encapsulated sodium nitrite. Field testing in 2018 indicated high lethality for feral swine, but unacceptable levels of non-target hazards from bait spilled outside the bait station by feral swine. Since the fielding testing, APHIS has worked on:

- Reformulation of the bait to increase palatability for feral swine and reduce attractiveness of the bait to non-target species.
- Modification of bait presentation to reduce spillage (i.e., offer bait in compacted trays).
- Modification of the bait station to reduce spillage (i.e., lighter lids).
- Modification of the baiting strategy to reduce non-target visits (i.e., shorten prebaiting period).

- Small-scale testing in Queensland, Australia (AU); Alabama (AL); and Texas (TX). The United States has indicated the above changes resulted in high lethality for feral swine and minimal spilled bait. Though there were few non-target deaths in AU and AL, several passerine birds were found dead in TX after they sought out and consumed tiny crumbs of spillage left by feral swine after feeding on toxic bait.
- Since the TX test, we have done a study to evaluate strategies to deter birds from mock bait sites. We plan to evaluate the most promising of these in a test in the same area of TX in July 2020. <u>If the results are promising, APHIS will:</u>
    - Submit application for larger scale field trails to the EPA targeting field trials in AL and TX during 2021. EPA takes 6 months to review applications.
    - Conduct food-use, human health hazard studies during 2020–2023.
    - Apply for registration in 2023, targeting a registration date of 2025. EPA takes 24 months to review.

Figure 1. Example of feral swine accessing the bait station designed for delivery of HOGGONE® (left). Example of the HOGGONE® place inside the bait station.

WARFARIN (product name: Kaput®)
A wax bait block containing 0.005% warfarin and a blue dye. In 2017, the EPA registered Kaput® for use on feral swine. No states have approved its use because of concerns over non-target risks, humaneness, and a lack of independent research. Since then:

- A cooperative agreement between USDA and University of Georgia was initiated to evaluate Kaput® in a pen and field setting.
- Pen results indicated that the time to death was nearly 8 days, although the time of distress before death was <1.5 hours for most pigs.
- Chemical evaluation of the bait indicated that nearly 50% more warfarin was present in the bait than stated on the product label.

- Field evaluation of the bait indicated that despite pre-baiting for 4 weeks, there was only limited interest by feral swine to access bait inside the manufacturer-supplied bait stations.
- Feral swine had difficulty accessing bait from manufacturer-supplied bait stations.
- Attempts to entice more use of the bait stations by continuing pre-baiting for 7 more weeks with the manufacturer-supplied "nontoxic lure" resulted in the deaths of numerous feral swine and non-target animals because the lure was contaminated with the anticoagulant toxicants, including bromadialone, warfarin, and diphacinone. Contamination occurred during the manufacturing process (admitted by the manufacturer).
- For the small number of study animals not exposed to the contaminated lure, 0% succumbed to the Kaput® toxic bait. All feral swine appeared to quickly lose interest in consuming bait once the toxic bait was offered.
- Toxic bait did not appear very palatable or attractive to free-ranging feral swine.
- Next steps are to-be-determined. The bait manufacturer will need to produce a new more palatable toxic bait. We expressed interest in helping them further if they committed to resolving these issues.

Figure 2. Example of a feral swine attempting to access the bait station designed for delivery of Kaput® (left). Example of the Kaput® placed inside the bait station.

<u>2019 NWSAC Recommendation #2</u>:

The NWSAC recommends to the Secretary of Agriculture that APHIS Wildlife Services (WS) communicate program activities proactively to constituents and stakeholders especially including non-traditional audiences in communities where WS is providing services. We encourage the use of econometrics in National Environmental Policy Act (NEPA) documents, research, and informational materials, including the positive economic impact of livestock and resources conserved through integrated wildlife damage management; and to communicate the relevancy and value of WS activities to the public's quality of life in keeping with the WS' focus on building public trust.

Response:
USDA supports proactive communication of APHIS Wildlife Services (WS) program activities consistent with USDA policies. Communications, with an emphasis on the value and relevancy of wildlife damage management, are integral to the APHIS WS Strategic Plan Fiscal Year (FY) 2020-2024 and is an integral part of the 3-year communication plan we are drafting.

APHIS staff utilizes non-government publications and leverages social media platforms and Agency roll-out plans to relay announcements and communicate information to stakeholders and the public (such as this press release and tweet about non-lethal protection of livestock from grizzly bear in Montana). To enhance information sharing with non-traditional audiences, APHIS has also facilitated the distribution of high-interest program activity stories on cable agricultural television (e.g. interview and tweet), Sirius radio, and in non-agricultural publications (e.g. GLRI Updates). The program has initiated the use of contemporary technology-based communication mediums, such as Arc-GIS story maps (three posted in FY 2020) and social media (FLICKR and more than 50 WS- or NWRC-related tweets or retweets) to share its operational activities with, and better engage, more urban and age-diverse audiences (such as this Facebook non-traditional post and story at Shaw Air Force Base).

The WS Economics Project at the WS NWRC conducts economic research of human-wildlife conflicts involving damaging wildlife populations, invasive species and wildlife-transmitted diseases; and develops improved methodology for assessing the benefits and costs of NWRC products and WS operations. As appropriate, findings are incorporated into NEPA documents (WS Nevada Pre-decisional Predator Management Environmental Assessment), research publications, and information materials to inform stakeholders and the public about the relevancy and value of WS activities to the general public.

WS has also initiated a video series on the APHIS YouTube channel highlighting the impact of feral swine on Americans' livelihoods through damage to agricultural and natural resource. WS' strategic partnership with The Wildlife Society (TWS) has enhanced communications to professional biologists and students of wildlife management through articles in *The Wildlife Professional* (2 stories and 3 ads), its TWS *eNewsletter* (submitted 13 stories and 59 open positions), and 13 TWS tweets about or retweets of WS stories.

2019 NWSAC Recommendation #3:

The NWSAC recommends that the Secretary of Agriculture seek additional appropriations to increase funding for the management of rabies in the United States in the interest of human and animal health and safety, especially but not limited to raccoon rabies in the east and canine rabies on the Texas-Mexico border. Additionally, the NWSAC recommends a continuation of research, development and use of more efficient and effective vaccines with the goal of being raccoon rabies free by 2053.

Response:
USDA recognizes the importance of managing raccoon rabies in the east and canine rabies on the Texas-Mexico border to protect human and animal health and safety. Economic modeling and analysis demonstrate that APHIS WS program in preventing wildlife rabies saves the

economy more than $58 million annually in cost associated with managing rabies exposure in humans, pets, and livestock.

USDA recognizes the role that research and testing play in developing a more efficient and effective vaccine to eliminate raccoon rabies in the United States. Approximately 25% of the target number of baits distributed in FY 2020 will be ONRAB Oral Rabies Vaccine. In order to move the barrier zone eastward more effectively, a more effective vaccine such as ONRAB will need to be deployed and adequate resources secured to deploy the more expensive vaccine. USDA is committed to working within available resources to address these issues, including appropriations.

2019 NWSAC Recommendation #4:

The NWSAC recommends to the Secretary of Agriculture, in reference to Double Crested Cormorants (DCCO), APHIS Wildlife Services (WS) be provided with increased resources in partnership with other wildlife agencies to include staffing and budget.

The NWSAC also recommends an increase in resources and efforts to assist farmers with lethal and non-lethal management of DCCO and other migratory birds that prey on aquaculture. Additionally, the NWSAC recommends that the Secretary of Agriculture communicate with the Secretary of Interior the following actions to protect the aquaculture industry:

- *To expedite the completion of an Environmental Assessment (EA) or Environmental Impact Statement (EIS) to support the re-creation of a DCCO Aquaculture Depredation Order.*
- *Recommend an increase to the allowable take from 51,571 to at least 91,175 for individual permits to be allocated across the states as recommended by USDA Wildlife Services.*
- *Bring back the use of decoys by permittees to target problem birds that are unaffected by hazing.*
- *Bring back the use of nest and egg destruction by permittees as a management tool.*
- *Instruct regional offices to issue individual permits for DCCO for a 12-month period as before instead of seasonal dates.*

The NWSAC also recommends that the Secretary of Agriculture discuss with the Secretary of Interior the pursuit of restoring the DCCO Public Resources Depredation Order in consultation with state fish and wildlife agencies.

Response:
USDA recognizes that DCCO depredation impacts the aquaculture industry and is committed to our partnership with U.S. Fish and Wildlife Service (USFWS) to provide producers with streamlined processes and effective management tools for resolving conflicts. Through cooperatively funded agreements, APHIS WS continues to provide operational and technical assistance to aquaculture producers, primarily via roost management of double-crested cormorants, harassment of fish-eating birds on commercial aquaculture facilities, and helping farmers acquire USFWS depredation permits. Cooperative funding allows WS the ability to

increase its resources and efforts to assist aquaculture farmers experiencing damage caused by migratory birds. Limited and longstanding Federal allocations allow WS to assist aquaculture farmers experiencing damage to migratory birds primarily in Mississippi, but also include WS aquaculture assistance in Alabama and Arkansas.

Between May 2016 and November 2017, court-ordered reviews related to the USFWS National Environmental Policy Act (NEPA) process limited WS' work and producers' ability to acquire USFWS-issued depredation permits. In 2017, WS helped USFWS produce an Environmental Assessment (EA), which allowed USFWS to resume issuing depredation permits to individual aquaculture producers. In December 2019, the USFWS increased the maximum allowable take to the lowest Potential Take Limit (PTL) of 74,396, as identified in the 2017 EA.

As part of the ongoing efforts to address DCCO conflicts at aquaculture facilities, the USFWS issued an Advance Notice of Proposed Rulemaking in January 2020 soliciting public input on future cormorant management. Proposed management alternatives include establishing a new permit for state wildlife agencies to authorize management to prevent impacts to wild and stocked fisheries, establishing an Aquaculture Depredation Order (AQDO), or a combination of both options (i.e., permit and AQDO). In anticipation of publishing a final rule this fall, USFWS posted a proposed rule in the Federal Register on June 5, 2020, opening a 45-day comment period. As a cooperating agency on the USFWS Environmental Impact Statement (EIS), WS continues to discuss and provide assistance and understanding of cormorant issues as they relate to wildlife damage management. The now vacated Public Resource Depredation Order previously authorized the use of decoys. The Code of Federal Regulations does not allow the use of decoys by permit. However, nest and egg destruction is an authorized and permitted management tool. Upon WS recommendation (WS Form 37), all USFWS Regions are authorizing permits to conduct DCCO management on a 12-month period. In FY 2020, WS assisted 74 producers in applying for year-round depredation permits to authorize DCCO nest and egg and other damage management activities in the top 3 aquaculture states: Mississippi (35), Arkansas (26), and Alabama (13).

2019 NWSAC Recommendation #5:

The NWSAC recommends the Secretary of Agriculture engage the Secretary of Interior to seek additional Department of the Interior (DOI) funding for APHIS Wildlife Services (WS) through an existing interagency agreement framework for conflict resolution involving large predator management in furtherance of restoration of species listed under the Endangered Species Act. The NWSAC specifically recommends additional resources be allocated for conflict resolution involving large predators, including but not limited to grizzly bears and wolves.

Response:
USDA works closely with DOI USFWS to expand cooperative relationships and increase funding to help reduce conflicts from large predators. From October 2019-January 2020, APHIS WS participated in meetings with USFWS regarding solutions to increasing conflicts with grizzly bears in Montana. These events included several meetings with the USFWS Director, USFWS regional and field employees, state agencies, Tribes, and livestock producers. In October 2019, Montana U.S. Representative Greg Gianforte and livestock producers organized a roundtable event in Montana to discuss current management activities that assist residents with

grizzly bear threats and damage, including funding. The agencies also discussed management options for grizzly bear conflict under the current legal framework, the 1986 Interagency Grizzly Bear Guidelines.

In March 2020, USFWS announced an interagency agreement with APHIS WS whereby USFWS provides WS with $250,000 to hire two additional WS bear conflict specialists in Montana to empower USFWS to address problem bears in Montana, update grizzly bear hazing guidelines, and remind the state natural resource agencies that federal funding is available for predator control actions. Through a separate agreement with USFWS, WS will expend $12,000 in FY 2020 to address grizzly bear conflicts with non-lethal solutions in Montana. WS also received $75,000 from USFWS in FY 2020 to partially fund a conflict management specialist to work in areas where wolves negatively impact livestock production in Oregon.

With additional federal allocations received in FY 2020 for non-lethal livestock protection, WS hired two range riders and one seasonal fencing technician, also in Montana, to complement the existing full-time fencing technician. All of these positions will be devoted to protecting livestock and other resources from predation. As of June 1, 2020, WS was on track to break records having conducted 55 investigations and confirming 38 grizzly depredations in Montana. Livestock have not yet been moved to summer range when depredation on livestock typically increases dramatically.

2019 NWSAC Recommendation #6:

The NWSAC recommends to the Secretary of Agriculture that administrative reforms be adopted to enhance the efficacy and customer service of APHIS Wildlife Services (WS) program delivery including the following:

a) *Amend billing documents to process changes at no added cost to Wildlife Services.*
b) *Provide more detailed accounting from the Agency feeder system and allow Wildlife Services to review and correct bills prior to submission to the cooperator.*
c) *Reform and simplify policies pertaining to the use of volunteers to enable the rapid and efficient recruitment of volunteer Wildlife Services workers at the field level.*
d) *Enable immediate access to vehicles by Wildlife Services field personnel for the fulfillment of their duties. Exempt Farm Bill funded and cooperator provided/funded vehicles from USDA vehicle caps.*
e) *The NWSAC recognizes and appreciates the APHIS Administrator and Under Secretary's support for Wildlife Services Fleet needs and active fleet management.*

Response:
USDA is committed to improving customer experience and streamlining processes.

Billing. All bills are generated directly out of the Financial Management Modernization Initiative (FMMI) System, the current departmental accounting system. USDA understands that this is a significant change from the state-based bills of the past. After several improvements to the current billing system, such as itemized billing and address corrections, APHIS is unable to further amend the billing process or waive the costs to individual programs that request changes.

By federal regulation, bills must reflect what is in each account at the time of bill processing and any corrections must be made within FMMI and reflected in a future bill. USDA understands that some cooperators may request or require additional detailed accounting. However, the individual state program can prepare and provide additional supporting documentation for those cooperators that require it. During FY 2020, WS did identify discrepancies in billing categories between FMMI bills and WS' internal Financial Workbook. These discrepancies are currently being corrected to more accurately reflect the billing categories in the FMMI produced bills.

Volunteers. USDA understands the need for simple and easy processes to formalize volunteer agreements. However, volunteers represent USDA. Therefore, it is important that volunteers go through background investigations and other reference checks similar to our employees. During FY 2020, USDA extended the term limits of volunteers to allow for more consistent use of volunteers without the necessity of short terms and frequent background checks.

Vehicle Cap. During FY 2019, APHIS WS continued to actively manage its own vehicle fleets, and has reduced the number of underutilized vehicles to less than 10 nationwide. WS representatives participate in the APHIS Fleet Management Board. This Board's goal is to establish processes to further reduce underutilized vehicles in APHIS and make underutilized vehicles available to program areas with growing needs. WS will have access to these vehicles if fleet expansion is needed.

2019 NWSAC Recommendation #7:

The NWSAC encourages the Secretary of Agriculture to continue working with the Secretary of the Interior to mitigate livestock depredation and property damage by vultures and eagles.

Response:
USDA recognizes that black vulture populations have increased in both abundance and range in the past 30 years and livestock producers continue to see increased losses due to predation from black vultures. APHIS Wildlife Services (WS) continues to provide both technical and direct control assistance to cooperators and stakeholders experiencing damage caused by black vultures. In FY 2019, APHIS WS and USFWS met with Congressional and cattle association representatives from several impacted States to discuss options for addressing flexibilities in Migratory Bird Depredation Permit issuance, providing better resources to obtain vulture damage management and permit information, and consider operational and research initiatives to allow for a better understanding of black vultures.

APHIS committed to Congressional, cattle association attendees and our USFWS counterparts to provide a "one stop shop" for information pertinent to livestock producers experiencing black vulture conflicts. To fulfill this commitment, APHIS enhanced an existing website to serve that need and communicated its availability to APHIS partners and stakeholders. Information accessible on the website includes resources available to assist with management, how and when to apply for a permit, and vulture research and management techniques. The website link is: https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/operational-activities/sa-damage-management/ct-species-by-name?sp=Vultures

APHIS WS helped negotiate an arrangement with USFWS to issue vulture depredation permits directly to Kentucky and Tennessee's respective Farm Bureaus. The Farm Bureaus in turn allow livestock producers to take a limited number of birds as sub-permittees under their respective permit. This permitting strategy reduces overall workload for each Federal agency, eliminates permit costs for individual producers, and expedites the permitting process. USFWS began an assessment of this program to determine expansion of the program to other States. The assessment showed that livestock producers, representatives of cattle and farm-related organizations, the USFWS, WS, as well as KY/TN state fish and wildlife agencies, all favorably view the pilot program. USFWS, in collaboration with WS, is developing a communication plan and determining next steps for possible program expansion to other Southeastern States.

To further assist producers experiencing vulture damage, APHIS WS and USFWS are holding depredation management and permit workshops nationally and have entered into interagency agreements to fund "Vulture Management Pilot Programs" that provide technical and direct control assistance to stakeholders and cooperators experiencing vulture damage in FY 2020. The USFWS funded pilot program will allow WS to respond to requests for assistance, ranging from livestock predation to property damage, and provide on-site and over-the-phone technical assistance to individuals experiencing vulture damage, as well as provide direct management assistance to cooperators and provide education on non-lethal management methods.

USDA recognizes the impacts that golden eagles have on livestock operations and is committed to enhancing communication and collaboration with the USFWS. WS coordinates with the USFWS to identify locations effected by golden eagle depredation to livestock. Upon WS recommendation (WS Form 37), the USFWS authorizes falconry groups the ability to capture depredating golden eagles for falconry-use purposes and in turn, reduce the site-specific threat the eagle posed to the livestock producer.

2019 NWSAC Recommendation #8:

The NWSAC recommends that the Secretary of Agriculture provide adequate resources to support preparedness and sustained infrastructure for emergency response to natural disasters, disease outbreaks, or any other declared emergency, as well as disease surveillance, prevention, and control of animal disease. The NWSAC further recommends APHIS Wildlife Services (WS) collaborate with USDA-APHIS-Veterinary Services and the Centers for Disease Control and Prevention to obtain additional funding for increased wildlife disease operations.

Response:
USDA recognizes the hard work and dedication by our personnel to protect humans and livestock from wildlife diseases. One of the six priorities outlined in the APHIS WS Strategic Plan (FY 2020-2024) is to improve and increase WS' capabilities related to wildlife disease and emergency response. This priority focuses on developing a comprehensive wildlife disease and emergency response function that will establish a national early detection and rapid emergency response framework by utilizing state diagnostic labs that are part of the National Animal Health Laboratory Network. Since 2003, USDA has supported the WS' National Wildlife Disease Program (NWDP). The NWDP participates in wildlife disease monitoring and surveillance in all regions of the United States. The program's wildlife disease biologists act as WS' first responders through the NWDP's Surveillance and Emergency Response System (SERS). WS

utilized the SERS to deploy biologists to the APHIS-wide response to the recent virulent Newcastle disease outbreak in Southern California. In addition, WS personnel helped vulnerable citizens during the 2018 hurricane season and Northern California wildfires. WS has received awards from USDA and the White House Office of Management and Budget for their response to the 2019 Nebraska floods, where WS conducted emergency aerial surveillance and utilized GIS technology to locate stranded cattle, carcasses, hazardous containers, and infrastructure damage. USDA also supports the WS' National Rabies Management Program to surveil, prevent, and control the spread of rabies.

APHIS WS used funding to conduct avian disease surveillance primarily through Avian Health appropriations. For FY 2020, APHIS increased WS Avian Health funds by more than $120K to expand wild bird disease surveillance in the Atlantic Flyway. When a larger response is necessary, emergency funds are available to WS for Wildlife Disease Biologist deployments to increase wildlife surveillance.

In FY 2020, WS and VS jointly held the Chronic Wasting Disease (CWD) Virtual Summit with stakeholders to identify the scientific needs to help prevent and control the transmission of CWD on a nationwide level, and to formulate priorities to aid in decision making associated with provision of funds to state animal health and wildlife agencies for CWD work.

2019 NWSAC Recommendation #9:

The NWSAC recommends the Secretary of Agriculture advocate for the creation and sustainment of a Wildlife Services Aviation Center of Excellence in Cedar City, Utah. Support should be commensurate with the growth and expansion of the Wildlife Services Aviation Program, the modernization and standardization of the Wildlife Services aircraft fleet, and the development and implementation of new and innovative training techniques and pilot recruitment and retention.

Response:
USDA recognizes the critical support the APHIS WS Aviation Training and Operations Center (ATOC) in Cedar City, UT, provides in carrying-out mission essential activities. WS has prioritized aviation improvements to support creation of the Center of Excellence, including creating a culture of advancing low level flying skills through training, hiring qualified and capable trainers, and standardizing training and the aircraft fleet. WS has expanded the size of the rotary wing fleet and is currently conducting an airplane needs assessment.

In November 2019, ATOC held the 2019 Pilot's Meeting. This meeting was an opportunity for all WS pilots to meet and discuss aviation safety, maintenance, operations, and aerial wildlife damage management best practices. ATOC updated the training curriculum for both pilots and gunners to increase aviation operations safety. This update also adds value to the sheep/livestock industry in that aircrews are more efficient at predatory control operations, thereby saving time and money. ATOC continues to aggressively recruit pilots through networking with professional aviation organizations such as the National Agriculture Aviation Association and the Airborne Public Safety Association. This effort not only provided a venue for enhancing safety through collaborating on best practices, it also increased the number of applicants for pilot vacancy announcements.

Recent changes to ATOC trainings designed to increase pilot and gunner safety include construction of an emergency egress trainer designed to teach extracting an injured crew member from an aircraft after a crash, utilizing plastic 5-gallon buckets as targets on the aerial range as a low cost solution to increase gunner proficiency, and developing a plan for pilots to attend emergency procedure training every 3 years at manufacturer's sanctioned training facility.

Additionally, ATOC is working with Southern Utah University (SUU) Flight School to acquire a helicopter flight simulator through the Department of Defense. If finalized, SUU will house and maintain the simulator, and allow for shared use to train WS pilots in emergency procedures that are not possible to conduct in an actual aircraft.

On May 25, 2020, WS published the Aviation Safety and Operations Manual. The updated manual incorporates the new training program and standardizes how aerial wildlife damage management operations are conducted across WS. These changes outline a safer way to conduct low level flying operations. ATOC is currently conducting an aircraft life cycle replacement study to ensure our aviation fleet remains airworthy.

2019 NWSAC Recommendation #10:

The NWSAC recommends that the Secretary of Agriculture continue to support the use of the M-44.

Response:
USDA recognizes the importance of the M-44 Sodium Cyanide Capsule in managing predation caused by wildlife. The M-44 is one of the safest, most selective and efficient tools available to producers in situations where predators are causing excessive damage to agriculture, livestock, or impacting threatened and endangered species. APHIS and the livestock producing community rely on M-44s as a critical tool in an integrated wildlife damage management program. While APHIS WS routinely recommends and implements proactive non-lethal predation reduction strategies for livestock producers seeking assistance, WS experience has shown that many livestock predation problems cannot be solved with non-lethal methods alone. From FY 2014 to FY 2019 WS used M-44s to take 16% of coyotes nationally.

M-44s are registered by APHIS for use in 14 states: Arizona, Colorado, Idaho, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Texas, Utah, Wyoming, Virginia and West Virginia. Five states (Texas, Wyoming, New Mexico, Montana and South Dakota) have registrations for non-WS applicators to use M-44s. In some of these states, M-44s are particularly important to livestock producers and account for up to 30% of WS coyote take annually. The M-44 has also been thoroughly reviewed by the EPA and has been found to be safe when used according to label directions.

APHIS WS recently worked closely with the EPA to negotiate and implement changes to M-44 use restrictions without reducing the effectiveness of the M-44. These changes included a requirement that WS not place M-44s within 600 feet of a residence, a requirement to notify residents within 0.5 miles of an M-44 device, a requirement that M-44s not be set within 300 ft. (an increase from 50 ft.) of a designated public path, and a requirement that applicators place 2

(increased from 1) warning signs within 15 feet of each M-44. APHIS WS promptly updated federal and state sodium cyanide registrations and relabeled existing stock to comply with the new use restrictions. WS also updated Directive 2.415, M-44 Implementation Guidelines, to mirror these changes and better reflect current M-44 best management, use, and safety practices. This included developing a new hazardous waste disposal Standard Operating Procedure for disposing of spent M-44 sodium cyanide capsules that aligns with EPA regulations. WS will conduct annual M-44 training as soon as practical to ensure that all applicators understand the new label, use, directive, and disposal requirements.

2019 NWSAC Recommendation #11:

The NWSAC recommends that the Secretary of Agriculture encourage the development of studies and reviews that integrate economic and ecological effects of wildlife damage management for the protection of American agriculture and natural resources, including objective science-based reviews that consider the value of wildlife management for the promotion of healthy ecosystems.

The NWSAC encourages APHIS Wildlife Services (WS) research on emerging wildlife conflict issues and techniques to minimize these conflicts, including predator behaviors indicating increased risk of human attack, and the use of Livestock Guardian Dogs (LGDs) to protect varied classes of livestock, including cattle, in different production systems.

Response:
USDA recognizes the importance of understanding the economic and ecological effects of wildlife damage management activities. The Economics Project at WS NWRC continues to evaluate the economic impacts of wildlife damage to American agriculture including several studies estimating the impact of feral swine damage to economically significant crops across the country. The Economics Project has also collaborated with Washington State University and Michigan State University to assess bird damage to dairies and fruit, respectively. All of these studies were designed to determine the loss value of the commodity going into the economy and the downstream impacts of that loss. For example, another study determined direct loss values and other impacts of bird damage to sunflower production. Overall in eight states sampled, the average annual total economic impact for bird damage to sunflower production was $29.5M and reduced employment by 14 jobs. Reducing sunflower yields by averages of 2.59% and 1.66%, blackbirds also caused direct damage valued at $13.26M and $4.3M within the eight states sampled per year for oilseed and confectionery hybrids, respectively. Studies are available at: https://nwrc.contentdm.oclc.org/digital/collection/NWRCPubs1/search/searchterm/Shwiff%2C%20Stephanie%20A/field/additi/mode/exact/conn/and/order/file/ad/desc

NWRC recently published results of several studies evaluating predator behavior and response to hazing as it pertains to urban coyotes, bears, and bobcats. These studies focused on the impacts to human and domestic animal safety. The Predator Research Group has also conducted a series of studies measuring predator removal impacts to greater sage-grouse and mule deer populations. Studies are available at:
https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/programs/nwrc/research-areas/predator-research/ct_predators_publications

Congress provided USDA $1.38M in FY 2020 to deliver and refine non-lethal strategies to reduce predation of livestock. The primary purpose of the funding is the operational implementation of non-lethal methods to protect livestock resources on ranches, farms, and other properties in 12 states: Arizona, California, Colorado, Idaho, Michigan, Minnesota, Montana, New Mexico, Oregon, Washington, Wisconsin, and Wyoming. These activities include range riding, installation of fencing and turbo fladry, and hazing of predators. In addition to the operational efforts, NWRC is conducting a comprehensive evaluation of the implementation of the non-lethal livestock protection methods. The Economics Project is evaluating cost effectiveness of these tools, as well as producers' attitudes towards using the tools. The Predator Research Group is monitoring each tool's ability to reduce depredation. In support of this initiative, WS is purchasing and placing Livestock Guardian Dogs (LGDs) on ranches in Colorado and will be monitoring and evaluating the effectiveness of the LGDs to protect livestock, including cattle, from bear depredation in large range operations.

2019 NWSAC Recommendation #12:

The NWSAC recommends to the Secretary of Agriculture that APHIS Wildlife Services (WS):

- *Work collaboratively with the U.S. Fish and Wildlife Service and the U.S. Geological Survey to assist state and tribal agencies tasked with managing Chronic Wasting Disease (CWD).*
- *Designate the National Wildlife Research Center (NWRC) as the primary research facility for applied research on CWD in wild cervids.*
- *Seek new funding for research including: methods to increase the timeliness of test results for both live and dead specimens, vaccine development, and other research priorities related to CWD.*

Response:

USDA recognizes that interagency collaboration is an important part of Chronic Wasting Disease (CWD) management. APHIS developed a CWD Coordination Team which is working with Department of Interior (DOI), state wildlife and agriculture agencies, tribal partners, and hunting and farmed cervid industry groups to facilitate communication among the stakeholder groups. In FY 2020, APHIS organized and hosted a CWD Summit to identify areas of CWD research and management that could benefit from federal funding. Recently, APHIS-Veterinary Services' Equine, Cervid, and small ruminant line item in the FY 2020 USDA appropriations, received a $5M increase for CWD research and management. Funds were directed by Congress to be distributed to state departments of natural resources and agriculture to assist in managing CWD and for additional research. The results and information from the Summit will inform APHIS decision makers, including WS, in selecting proposals for funding. Additionally, WS is participating in the DOI-USDA Task Force to coordinate federal activities on CWD.

NWRC has been active in working with state agencies, universities, and other federal agencies to identify gaps in knowledge of CWD in wild and farmed cervids. NWRC has also sought funding opportunities to support research to fill knowledge gaps that will aid in controlling CWD at the wild-farmed interface.

2019 NWSAC Recommendation #13:

The NWSAC recommends to the Secretary of Agriculture to expedite the development and registration of a sodium nitrite feral swine toxicant (Please refer to sodium nitrite toxicant research update in the response to Recommendation #1). We also urge the Secretary of Agriculture to explore new technologies for feral swine damage management and eradication.

APHIS Wildlife Services (WS) is encouraged to work with state feral swine task forces, tribal agencies, and the National Wild Pig Task Force to deliver state specific and national objectives for feral swine damage control and eradication.

Also, the NWSAC recommends the Secretary of Agriculture works with Food Safety Inspection Service (FSIS) to examine the safety of feral pork for human consumption as feral hogs have been shown to be the hosts for numerous zoonotic disease and parasites.

Response:
USDA remains committed to addressing feral swine populations and associated damage throughout the United States through the operation of APHIS WS National Feral Swine Program (NFSP). The goal of the program is to reduce damage and risk to agriculture, natural resources, property, animal health, and human health and safety in the United States by reducing or eliminating feral swine populations. The National Wild Pig Task Force and state feral swine task forces help provide direction in national feral swine damage management strategies at broad and local levels. Separately, APHIS is the lead federal agency in the Federal Agency Feral Swine Task Force. APHIS WS coordinated a January 2020 meeting with 21 other federal partners in attendance which helps guide management goals. WS Feral Swine Steering Committee will provide technical support and development recommendations for the WS Management Team regarding WS feral swine activities. The committee will be chaired by the WS Feral Swine Program Manager and comprised of representatives selected by respective Directors from the WS' Eastern and Western Regions and the National Wildlife Research Center.

Additional Farm Bill funding is allowing the NFSP to augment existing goals in feral swine damage management, specifically eradicating and reducing feral swine populations and damage in the Southeast. The 2018 Farm Bill provides $75 million – equally distributed between APHIS and the Natural Resources Conservation Service (NRCS) – over 5 years to establish a feral swine eradication and control pilot program (FSCP) addressing feral swine threats to agriculture, native ecosystems, and human and animal health. APHIS WS established collaborative projects with NRCS to address feral swine damage and control in high density areas with an initial focus in southern states. NRCS and WS implemented 20 projects in 10 States (AL, AR, FL, GA, LA, MS, NC, OK, SC, TX). Under the Farm Bill funding, WS provides direct control of feral swine through trapping, shooting, and aerial operations. WS will also conduct training and outreach, media responses when requested/needed, disease monitoring, research to develop new management tools, and evaluate the effectiveness of operational activities. NRCS will implement their funding through partner agreements in each of the 20 projects. These agreements establish methods for training partners, purchasing equipment, trapping support, hiring of personnel, and evaluating and monitoring damage.

NSFP collaborated with Food Safety and Inspection Service to collect 376 samples from feral swine at abattoirs in Texas (48.9%, 14.1%, 9.0%, and 3.5% of samples were seropositive for *Leptospira spp.,* influenza A, *Toxoplasma gondii,* and *Trichinella spiralis*, respectively). Testing detected active swine brucellosis infection in 13% of feral swine samples; 9.8% were seropositive (15.7% of samples were seropositive for exposure to hepatitis E). Antibody testing for *Mycobacterium bovis* is ongoing.