

## **Elk and Chronic Wasting Disease Management in Wind Cave National Park Implementation Plan**

### **BACKGROUND**

In 2009, Wind Cave National Park (Park) developed its Wind Cave Elk Management Plan and Environmental Impact Statement (EIS) (NPS 2009) that provided direction in establishing goals for management of the elk utilizing the Park. The plan was designed to reduce and then maintain the park's elk herd at a target population goal based primarily on a forage allocation model. There are a number of species in the park that are dependent on forage including bison and black tailed prairie dogs and thus the forage allocation model evaluated the forage needs as a whole to establish an elk population that could be sustained, while providing adequate forage and habitat for other key species.

Under the plan, the elk population within the park would be managed between 232 to 475 elk. This plan was prepared in partnership with the South Dakota Department of Game, Fish and Parks (SDGFP) to manage elk population levels that will be in better balance with other park resources. The adaptive management policy laid out in the Plan was to provide an adaptive strategy that would provide for the inclusion of new information from monitoring and research conducted over the 15 to 20 years. The preferred alternative called for the height of the fence surrounding the park to be raised to seven feet and jump gates were installed that could be raised and lowered to allow elk to naturally leave the park but would block their return until after the state managed elk hunting season.

The selected Elk Management Plan preferred alternative, adjustable gates in the perimeter fence to promote egress and limit ingress, has not been as successful as hoped in reducing the number of elk in the park. In addition, recent research has revealed that the prevalence of chronic wasting disease (CWD) is markedly higher inside than outside the park. Further, presumptive mortality from CWD has increased from 3.4% (2005-2009) to 9.5% (2011-2014). This high rate of disease coupled with observed low herd productivity indicate that the population growth rate is negative and may continue to decline. Although today the population is over the population objective, in the long term, left unchecked CWD may threaten sustainability of the herd at the park objective. At an April 2016 meeting, staff from the Park, the Midwest Regional Office, the National Park Service's Biological Resources Division (BRD), U.S. Geological Survey and South Dakota Game Fish and Parks agreed that further management to reduce the population to protect park resources from elk overuse is prudent because the population is above the management objective; and the reduction of elk numbers may also assist in the control of CWD within the elk population in the park and in the greater Black Hills region of South Dakota.

As a result of this information, a coupled management/research plan of action is suggested, which will implement population management goals established in the EIS in an attempt to decrease or stabilize the spread and amplification of CWD in the region. This course of action includes:

- Jump gates will remain closed for an extended time period (7-10 years) to minimize elk movement and spread of CWD outside the park;

- Reducing the number of elk in WICA to the lower end of the population objective (~230 elk); and
- In cooperation with a USGS researcher, evaluating the effects of this reduction on CWD prevalence and population health indices (e.g., survival, pregnancy and calf recruitment rates, body condition, and population growth).

The success of this plan requires long-term commitment to holding the elk population at the Park low and to evaluating the effects of this treatment. It was determined that the Park should act quickly to implement this action so as to address the CWD prevalence issue early. A series of subsequent discussions with SDFGP lead to the current implementation strategy to cull elk using trained volunteers with oversight by Park personnel. The logistics of removing large numbers of animals (~250 the first year and smaller numbers in subsequent years), conducting appropriate testing and donating the meat are significant and discussed within this Implementation Plan.

### **GENERAL GOALS AND OBJECTIVES**

The 2009 Elk Management Plan/EIS provided for a range of adaptive management strategies to be implemented in order to meet forage allocation goals. This plan does not alter the range or scope of those strategies. However, the implementation of those strategies will assist to achieve a redefined set of goals linked to CWD management at the Park. These goals are:

- Manage elk in accordance with the current Wind Cave Elk Management Plan/EIS, while minimizing the effects of chronic wasting disease (CWD) on the elk population in the park and the greater Black Hills region.
- Evaluate effects of a reduction of elk density on prevalence of CWD and on physical condition, survival, and recruitment of elk at Wind Cave.

### **PREVALENCE REDUCTION ACTION PLAN**

Starting the fall of 2016, the Park will initiate a population reduction in elk. Animals will be culled initially with Park staff (late October to early November) and once safety and operational procedures are in place, trained volunteers selected from the State of South Dakota SDFGP database will be enlisted to assist with this operation. In order to carry forward the general goals listed above, the Park has determined that the following general actions will take place:

#### ***Phase 1 – Herd Reduction and Disease Evaluation (to commence Fall 2016)***

**Objective: Reduce elk population from ~550 to ~232 (as per Elk Management Plan) while improving population size estimation and evaluating current disease prevalence.**

In order to minimize the likelihood of CWD spreading further into the surrounding areas, the Park will maintain a functionally closed population by keeping the “jump” gates closed for duration of the study period. While this area is functionally fenced for the period of this effort, the elk population is considered wildlife and will be treated as such for management purposes.

In October 2016 after the rut, not more than 25 young (<3 year old) males will be culled from the population to initiate efforts to meet reduction targets early in the season. Only males will be removed at this time thereby enabling removal of females later in the season when accurate pregnancy data can be collected. The first few weeks of this effort will be conducted using Park staff only, to streamline and solidify logistics of operations and identify needs for operational improvements. All animals collected will be tested for CWD and animals in which CWD is not detected carcasses will be processed for meat donation (see subsequent sections of this document for details).

In November 2016, the Park will conduct a population survey via helicopter (replicate annually if possible). The Park in consultation with the BRD, SDFGP and USGS will establish a listing or quota of animals to be targeted for removal, identifying age and sex class categories. This effort will provide selection criteria for animals that need to be taken in the field to maintain a healthy sex ratio and age class distribution.

In November 2016, adult cows (30-40) will be collared with GPS transmitters to collect data on cause-specific mortality and elk movements in response to management. The collars will also provide locations of elk congregations to assist in finding animals in the field (so called “Judas” animals) for efficient removal. Each animal collared will be subject to a rectal biopsy for CWD status at entry to the study, a collection of blood for genetics and pregnancy data and a tooth collected for age.

Throughout winter 2016-2017, population reduction treatment will continue with a target of a reduction of up to the goal of 250 elk removed in year one, with fine-scale reduction to reach final population goal of 232 in year two, if necessary. Animals will be removed from across the park and across demographic classes. The population surveys will be repeated in the fall of each year as needed.

### ***Phase 2 – Maintain Population Size of ~232 for 7 Years (2017-2023)***

During this phase, we will continue population surveys (including demographic ratios), mortality monitoring, and suspect animal removals. The Park will implement elk removal operations as necessary to maintain a population size of ~232 for 7 Years and will include the use of trained volunteers in the effort, as appropriate. If the Park intends to remove more than 20 animals in a given year, SDGFP will be contacted to initiate a selection process for use of trained volunteers. As funding allows, the Park will deploy additional collars for attrition replacement so as to monitor vital rates at the reduced density.

### ***Phase 3 – Re-Evaluate Disease Prevalence (2024)***

During this last phase, the Park will re-evaluate disease prevalence through a subsampling effort using lethal removal or live CWD tests. The Park will also deploy 30-40 GPS collars to examine vital rates in comparison to initial estimates. At the conclusion of this phase, the Park, BRD and USGS will develop a report outlining the effect and response of reduced density on disease prevalence. If prevalence of CWD falls at or below the rate detected within the Black Hills elk population, the Park will consult with SDGFP to determine whether opening the jump gates to

provide free flow of elk to and from the Park and the adjacent area is a management consideration.

## **OPERATIONAL NEEDS AND PROCEDURES**

The Park will be removing, testing, and processing up to 250 elk through a contingent of Park staff and trained volunteers. The Park has worked closely with SDFGP to develop an appropriate strategy for selecting and training volunteers for this effort. The use of trained volunteers in this type of depredation operation has shown to be beneficial and has been conducted at Theodore Roosevelt and Rocky Mountain National Parks in recent years (Powers et al. 2016). A great deal of care and planning is needed, however, to make this effort effective and safe.

## **OPERATIONAL GOALS AND OBJECTIVES**

The Park has identified the following goals relative to this operation effort:

- Maintain a safe environment for the employees, volunteers, park visitors and contractors throughout the elk reduction process.
- Utilize teams of volunteers led by NPS team leaders to lethally remove elk and teams of packers to recover all salvageable meat from the field and transport it to the park cold-storage facility in a safe and orderly manner.
- Minimize disruptions to normal park operations, interpret the reduction program to the staff and public, and maintain a high level of visitor satisfaction.
- Continually solicit input and evaluate program components in order to identify areas of improvement and efficiencies and to increase reduction success in the field.
- Maintain an active line of communication with the South Dakota Department of Game, Fish and Parks with respect to meat donation and weekly elk reduction success.

To achieve these goals, the Park has identified the following objectives:

- Reduce the elk population to a target of ~232 elk in the fall 2016- winter 2018 seasons. Future reduction goals will be adjusted based on the past year(s) success and current population estimate.
- Ensure all volunteers attend required briefings and pass their shooting proficiency test.
- Strive for zero injuries to park staff, volunteers, visitors, or meat recovery teams (packers).
- Ensure elk meat is as clean as possible throughout the field processing, transport (packing), handling and storage phases.
- Extract all tissue/fluid samples from each elk for CWD and other testing.
- Maintain communication between the Team Leaders and the meat recovery coordinator to ensure all elk shot can be processed, packed out and refrigerated in a reasonable time.
- Maintain a clean cold-storage truck and coordinate meat donation through the SDGFP to minimize carry-over of meat from week to week.

## **PROCESS FOR SELECTION OF TRAINED VOLUNTEERS**

SDGFP will directly assist the Park and use the existing application submission and drawing process to assemble a list of trained volunteers. This system will allow:

- The application process to be completed electronically. Those who need assistance submitting an application can utilize the SDGFP call center;
- Information and requirements for participation will be available on the application website and must be read prior to an application being submitted (see section below and Appendix B);
- Individuals can select the time period they wish to participate; and
- A random drawing to be conducted that will create a list of volunteers for each time period.

When the drawings are completed, SDGFP will provide the Park with a file containing a list of names, in the order they were drawn, for each established time period. This file will also contain the contact information (address, phone, email). The Park will need four trained volunteers per week. Previous experience indicates attrition rates are roughly 20%, thus it is prudent to make contact with 4 selected volunteers and identify an additional 2 alternates per week. The Park, therefore will need a roster of roughly 10 names per week to ensure adequate coverage during each timeframe. This will allow additional individuals to be contacted should someone decline to participate.

Applicants will be notified by the Park of their drawing status by email but results will not be displayed on their individual SDGFP profiles. Notification would only come through contact from the Park.

This submission and drawing process is similar to activities conducted in the past, and will not require major modifications to the SDGFP database process in providing this assistance. The Park will provide SDGFP information to be posted on their site on the qualifications required to take part in this effort. The Park and SDGFP will target an early September 2016 announcement of the opportunity with notification of selected parties by mid-October 2016. The Park and SDGFP will issue a joint news release describing the opportunity and develop a fact sheet to communicate a common message.

## **VOLUNTEER ELIGIBILITY CRITERIA**

The following criteria needed to be met for the volunteers participating in the elk reduction program.

- Provide a pictured proof of identity (driver's license, passport)
- Be a United States citizen and a resident of South Dakota.
- Be at least 18 years of age.

- Pass a NCIC criminal background check and sign a volunteer applicant affidavit of criminal history and background investigation release (see Appendix C).
- Sign up as an unpaid NPS Volunteer employee (NPS VIP Program) for five days.
- Self-certify physical fitness by stating their ability to walk up to 10 miles a day, and the ability to carry a 75 pound pack.
- Provide own equipment, lodging, food, rifle (Firearms must be at least .25 caliber with a bottlenecked cartridge, firing a non-toxic (lead-free) bullet that is at least 100 grains and is of a non-frangible design.
- Agree to take and pass a firearms proficiency test.
- Understand they cannot participate in any reduction activities or carry firearms should they fail the background investigation or firearm proficiency.

Public volunteers will be required to use non-toxic ammunition while conducting all elk reduction activities. Volunteers will be responsible for the securing the appropriate ammunition at their expense. A list of approved ammunition and manufacturers will be provided to each volunteer.

Selected volunteers are to report to the park administrative headquarters at 8:00 am on Monday of the week they are selected. The Park will provide a brief overview of the project, briefing on safety and their outline the responsibilities of each volunteer. All volunteers selected to participate in the elk removal will be responsible for securing their firearms within their vehicles until needed. No firearms are permitted within the park headquarters offices.

### **SHOOTING PROFICIENCY TEST**

A shooting proficiency test is required in order to establish a minimum competency standard for the Volunteers who would be working with the Park during the elk reduction effort. The test will be conducted at the Park on Monday of each week during the effort (from mid-November to late February, minus established periods during the holidays). There will be shooting stations set up at the range under the supervision and direction of the Team Leaders. Each Team Leader will be equipped with a spotting scope and will tell the Volunteers where they hit on the target. The Park will provide a law enforcement liaison and EMT during the testing, and one Park staff person will serve as “range master” and supervise all activities at the range. Volunteers will have up to 10 practice shots to make sure their rifles were still “dialed” in and then they will inform their Team Leader that they are ready to take the test. To successfully pass the test, each Volunteer must place a minimum of three of five shots in an 8 inch target at 200 yards. Further, each Volunteer must shoot from a realistic hunting situation position, i.e. lying prone or sitting on the ground and shooting off of shooting sticks or bipods. Volunteers must pass the test with any rifle they plan to use in the field. Volunteers who are unsuccessful demonstrating shooting proficiency will not be permitted to participate in elk reduction activities. All volunteers will participate in a safety orientation and training.

### **FIELD ACTIVITIES**

#### **FIELD WORK**

All volunteers selected to participate in the elk removal will be responsible for securing their firearms within their vehicles until needed. The actual field work of removing elk from the Park will be conducted Tuesday, Wednesday, and Thursday of each week during the reduction period (late October through Late February). Friday of each week is designated as the “clean-up” day to address recovery, sampling and handling/processing. The team leaders will meet every morning and plan where each group works within the park each day based on the “Judas” elk information and other scouting reports. This coordination will ensure that the Park is being utilized equally and that there will be no conflict with teams or safety concerns. The Volunteers will meet their respective team leaders at a predetermined time each morning. Once an elk or group of elk is located, the team leader and Volunteers will formulate a plan to conduct a stalk. Depending on terrain, weather, wind direction, snow cover, and distance, the stalk may take a relatively short period of time but in some instances it may take hours. The Team Leader will articulate the primary targets given the demographic classes identified as priorities for the day. The Team Leader will designate the target to the shooter and ensure the animal went down. If an elk is not killed with the initial shot from a volunteer the team leader will immediately fire a second round to humanely dispatch the animal. The team leader will then decide if another animal should be, or could be taken. The Team Leader will consider time of day, elk density, evidence of a clear shot at the individual elk the team is targeting, and ease of recovery of the carcass when making recommendations.

### **SHOOTING ORDER**

Each team of Volunteers will be randomly assigned a shooting order. Having multiple shooters at a given any time is considered dangerous, and inefficient. Shooters one and two will be permitted to have bullets in the magazine of their rifles. The Team leader will instruct Shooter one which elk is to be shot. Shooter two will serve as a stand-by and would be instructed to shoot at another specific elk, if the opportunity presented itself. Another elk will not be taken unless that first elk went down and does not get up. This approach will avoid animals from being hit but not recovered. Team leaders will take follow-up shots whenever necessary to ensure an animal is humanely dispatched.

### **FIELD DATA COLLECTION**

Field data will be collected using hand held GPS units to the extent possible to reduce input error. Paper copies will also be completed as backup information in case of data logger failure. Software created by Theodore Roosevelt National Park will be used and adapted for the needs of Wind Cave National Park. A variety of shooting information will be collected “on site” including: shot distance, caliber/cartridge of rifle/bullet, shot placement, number of shots taken, distance travelled by elk after initial shot, and who was the shooter. Each NPS led team will carry a data logger to electronically collect data. Hard copy forms will also be carried and transported out of the field with the carcass.

### **FIELD HANDLING**

Park staff will ensure Volunteers follow recommendations published by the appropriate state wildlife management departments for field dressing procedures and carcass handling to minimize exposure to CWD infectious material. Such recommendations can be found at the SDGFP website <http://gfp.sd.gov/wildlife/diseases/chronic-wasting-disease/cwd-facts.aspx>. Sanitary conditions should be maintained throughout the process from the time of kill through field dressing and transport. Carcasses will be held under the park's direct control until final CWD test results are obtained and the meat is cleared.

After an elk is killed, the Team Leaders will place a phone call/radio call to Park staff at headquarters and report the number of elk taken and provide a Global Positioning System (GPS) location/verbal description location of the elk. A Recovery team will then come to this location to assist in the processing and handling. Elk will be removed whole if possible. If not possible due to the safety of operating an ATV/UTV in some locations, the entire elk will be broken down into smaller parts for transport. A tarp will be placed under each elk before it is broken down to capture as much biological material as possible. Every effort will be made to remove all parts of the elk, except the stomach contents. Meat will be placed into Alaskan game bags, provided by the Park. Meat will never touch the ground and every effort will be made to keep hair and blood off of meat to the extent possible. The Park will provide a demonstration of appropriate processing methods on the first elk taken and volunteers will be directly involved in processing subsequent animals taken using this same process.

An ATV/UTV will be utilized to greatest extent possible following NEPA/NHPA approved best management practices in Wind Cave. Best management practices include:

- a) ATV/UTV use will be allowed when the ground is dry or frozen only.
- b) ATV/UTVs will not be driven in streams or their associated riparian areas, or in wetlands (e.g. seeps, springs).
- c) Efforts will be made to conceal or lessen visibility of OHV tracks from the road/visiting public and communicate that tracks are not open for public use. This could include the use of temporary barricades and signs. It also includes planning ATV use/deployment so that tracks run parallel rather than perpendicular to nearby roads so visibility from roads is reduced.
- d) All known archeological sites will be avoided by ATV/UTV users. In areas when archeological surveys have been conducted, only one pass over the area is allowed without a survey conducted. If an area is to be driven over at least twice, this would constitute a "trail" and then must have an archeological survey before this "trail" can be utilized.
- e) Efforts will be made to limit ATV/UTV use to those "trails" that have already been surveyed and cleared

## **CARCASS HANDLING, PROCESSING AND DISTRIBUTION**

Recovered elk will be taken to the processing area to be hung, skinned, washed, quartered (if not conducted in the field), bagged inventoried, tissue samples collected for CWD testing and cataloged, and moved to refrigerated storage. Volunteers will be involved in all aspects of culling, processing, and tissue sample collection.

All elk removed during this elk reduction effort will be tested for chronic wasting disease (CWD). CWD is a transmissible spongiform encephalopathy (TSE) found in cervids (e.g., elk, deer, and moose). TSEs are caused by unusual infectious agents called prions that affect the nervous system. CWD is a contagious and fatal disease in cervids but is not known to affect domestic livestock or humans.

Current research indicates that the health risk to humans that consume elk and deer infected with CWD is extremely low, if any (NPS Office of Public Health, 2006). Based on analysis of existing epidemiologic and laboratory studies, there is currently no established link between CWD and similar human TSE diseases. However, current literature reviewed by the Public Health Program and subject area experts contacted, agree that there is still more to be learned and that many questions remain unanswered about the transmissibility of CWD to humans. Thus, all meat handling and distribution will be subject to the guidelines stipulated in the NPS Office of Public Health document titled “Elk and Deer Meat from Areas Affected by Chronic Wasting Disease: A Guide to Donation for Human Consumption” (NPS Office of Public Health, 2006).

Brain stem at the level of the obex, rectal lymphoid tissue, and retropharyngeal lymph nodes will be taken from the elk and tested for CWD. The samples will be given a unique identifier and recorded into the Park database and attached to each individual elk. The samples will be sent each week to the NPS Biological Resources Division in Fort Collins, CO and will be tested by Colorado State University Veterinary Diagnostic Laboratory, using the BioRad ELISA test. The Park will be informed on the results of the tests within 7 to 10 days following the submittal.

## **MEAT DISTRIBUTION**

The National Park Service has the authority to donate meat to other governmental agencies, Native American Indian Tribes and various other non-profit organizations. SDGFP has offered to manage elk meat distribution, processing and handling. Elk meat will be transferred to SDGFP, who in turn will permit each Volunteer to take up to the equivalent of one CWD negative elk home. Each Volunteer must participate in all 4 days (shooting proficiency day and 3 field days) of elk reduction activities to receive any elk meat. Volunteers will not receive the elk they may have shot, but instead will be provided an animal shot the week earlier so as to ensure all animals leaving the Park have been tested. This stagger will allow for test results to be returned and ensure animals distributed are CWD negative animals. The CWD negative elk meat will be evenly distributed to Volunteers within the team, but will not exceed one elk per volunteer in a given week. Depending on the take from the week before it is possible that less than a full elk will be distributed to Volunteers. Meat can only be donated to individuals after informed consent has been obtained. Volunteers will receive up to one elk in quarters that have been stored in game bags.

The remaining CWD negative elk will be distributed by SDGFP to tribes or non-profit agencies (e.g. Feeding South Dakota, Sportsman Against Hunger) in compliance with the guidelines stipulated in NPS Office of Public Health, 2006. Only quarters, or any meat attached to the four

legs, the backstraps and the tenderloins are to be retained for meat processing and distribution. The remaining portions of the animals (head, spinal column, pelvis, rib, internal organs) will be disposed of in a park incinerator or approved landfill so as to avoid any potential for contamination of meat, as these components of the animal have a higher potential for containing prion. All meat will be weighed, recorded, labeled and stored in a walk-in, climate controlled truck supplied by the Park. The Volunteers will be provided the opportunity to pick up meat Thursday afternoons or Friday morning. Volunteers will receive meat from elk taken during previous weeks that have already been tested for CWD. Each Volunteer will be required to sign a waiver stating that they are taking home meat that had come from an area with known CWD but that the disease was not detected in their animal. The Volunteers also will be required to obtain a transportation permit from SDGFP in accordance with section 41-6-22 of the South Dakota Code so they may legally possess and transport elk meat from the Park.

### **MEAT DISTRIBUTION TO CHARITIES**

At the end of each reduction week, remaining elk meat will be available for donation through SDGFP. The elk meat will not be released until the results of the CWD test have been received by the Park (one week to 10 days). SDGFP will take possession of the meat and make it available to Native American Tribes or non-profit agencies. SDGFP will make contact with these groups prior to the initiation of activities to determine interest and establish procedures compatible with those guidelines stipulated in NPS Office of Public Health, 2006 for distribution, and SD labeling requirements for game meat. These criteria for distribution include that:

- No obviously sick, emaciated or otherwise unhealthy appearing animals will be donated for human consumption.
- Only animals that appear completely healthy will be considered for donation.
- No animals testing positive for CWD will be distributed for consumption.
- Meat will not be donated to soup kitchens.
- Donated meat will be clearly marked in packaging so as to describe its origin from a CWD positive area and testing status as CWD not detected (see label recommendations below).
- All donated meat will be processed and packaged in a state approved and licensed meat processing plant that processes according to state recommendations to reduce risk of exposure to the CWD agent.
- Meat will be labeled as wild game and will not be USDA inspected therefore it cannot be sold or enter commerce.

Meat will be donated to individuals after they have been informed that the meat comes from elk in an area where CWD is prevalent and that only those elk in which CWD was not detected are being donated. The following language will be used on labels on all processed meat:

Please read the following prior to consuming your elk meat taken from Wind Cave National Park

- This elk meat came from an area of South Dakota where chronic wasting disease (CWD) is prevalent.

- CWD is not known to affect humans.
- All animals from which this meat was derived were tested for CWD.
- If CWD was not detected, the elk was processed for meat.
- A “not detected” CWD test result is not interpreted to mean that there is zero risk of exposure to the CWD infectious agent.
- CWD testing is not considered a meat safety test or a human health test. However, research is still ongoing and public health officials advise caution and recommend that human exposure to the CWD infectious agent be avoided as they continue to evaluate any potential health risk.
- More information is available at <http://cwd-info.org/>

## **CARCASS DISPOSAL**

Positive carcass identification linked to the CWD sample must be established at the time of kill, and maintained throughout transport, storage, and processing. All CWD positive carcasses and carcass parts will be transported according to all state and federal laws and regulations regarding transport of elk or deer carcasses and parts from areas with known CWD. All CWD positive animals and the remaining (no usable meat) portions of all animals (head, spinal column, pelvis, rib, internal organs, etc.) will be disposed of at the park incinerator or an approved landfill.

## **REFERENCES**

National Park Service. 2009. Wind Cave National Park Final Elk Management Plan and Final Environmental Impact Statement. Wind Cave National Park, Hot Springs, South Dakota.

National Park Service Public Health Program. 2006. Elk and Deer Meat from Areas Affected by Chronic Wasting Disease: A Guide to Donation for Human Consumption. NPS Office of Public Health, Visitor and Resource Protection Directorate. May 2006.

Powers, J., R. Kahn, W. Whitworth, J. Mack, and B. Bobowski. 2016. Elk management in the National Park Service: Two case studies in the use of public volunteers. Natural Resource Report NPS/NRSS/BRD/NRR—2016/1119. National Park Service, Fort Collins, Colorado.

## **APPENDIX A PARK STAFFING PLAN**

The Park has determined that the use of trained volunteers to assist in the execution of this Implementation Plan is appropriate and efficient in achieving reduction and CWD management goals. Park staff will be needed to serve as Team Leaders to direct the reduction activities, ensure safe working conditions and maintain appropriate handling and cleaning standards. Support staff are also necessary to assist in transport and handling as well as data collection, and veterinary services.

**Project Team Lead** – The Park will secure a GS-9 Biologist/Biological Technician who will be responsible for overseeing the elk reduction activities for the Park. The Project Team Lead will establish standard operating procedures for volunteers, initiate volunteer background investigations, conduct the firearms proficiency testing, and develop daily work plans for field implementation. The Project Team Lead reports to the Chief of Resource Management and communicates key issues and problems for resolution and updates to Park Management weekly on project progress and milestones.

**Team Leaders** – The Park will hire four staff with firearms proficiency and skills in wildlife management to serve as Team Leaders of volunteer crews. Team Leaders will be responsible for the day to day implementation of elk reduction activities including safety, volunteer oversight and training, elk handling and field dressing, elk storage/inventory, data entry, equipment management and upkeep and assist with scouting, telemetry, veterinary service/sampling and data collection.

**Recovery Team** – Elk will be removed whole if possible. If not, elk will be processed in the field and carried to the nearest location where an ATVs/UTV can finish removing the processed elk from the field. This team will consist of park staff and volunteers as appropriate.

Existing Park staff will support the operation but at a minimum the following roles and responsibilities will be designated to ensure a continuity of operations and a safe work environment:

**Law Enforcement Liaison** – A Park law enforcement officer will assist in the design and execution of the firearms proficiency testing. The officer will also assist with securing and reviewing background investigations, securing firearms, and review of standard operating procedures for the reduction effort.

**EMT** – An EMT will be available during elk reduction activities. Should a park EMT not be available, the Park will work with the local community to secure assistance and coverage.

**Natural Resource Staffing** – Natural Resource staff will serve as backup Team Leaders in the event that the role is unfulfilled on a given day or week. Natural Resource staff will be trained in the operating procedures and knowledgeable about the status of the project by participating in team briefings and updates. Natural Resource staff will also assist with BRD veterinary services and also in the USGS field work.

**Team- Volunteer Composition** - The Park will have two field teams tasked with elk reduction efforts each week from later October through late February. Each field team will be comprised of 1 Park staff person and 2 volunteers. If additional teams are proven valuable, Park staff will coordinate with additional volunteers to fill out the new teams.

Daily work assignments are displayed below. A cost estimate for these activities is provided in Table 1.

Project Team Lead	
Field Team A	Field Team B
Technician 1	Technician 2
2 volunteers	2 volunteers
Recovery Team A	Recovery Team B
Technician 3	Technician 4
WICA staff	WICA staff

Table 1: Estimated Park budget for Elk and CWD Management Activities

Year 1					
Labor					
Project Team Lead GS-9	13	pay periods	3,000		39,000
Team Leaders (Technicians GS-7 (4 total))	10	pay periods	2,500	25,000	100,000
Supplies					
Refrigerated Trailer	5 months	\$4,000	per month		20,000
Meat storage Racks					2,200
Meat hanging rails					5,000
Meat storage bags					4,000
UTV trailers	2	3500	Each		7000
Elk sleds					600
Biological sampling supplies					4,000
Field Processing Station					
Electrical and Water	upgrade				5,000
Vehicles and Fuel					7,500
Elk Processing*					
\$200/elk	200 elk				\$ 40,000
Total					\$234,300

\*elk processing costs will be determined at a later date and dependent on partnership arrangements established through SDGFP (estimate if NPS conducts independently)

Year 2

Labor				
Project Team Lead GS-9				
	7	pay periods	\$3,000	\$ 21,000
Team Leaders (Technicians GS-7 (4 total))				
	5	pay periods	2,500	12,500
				\$ 50,000
Supplies				
Refrigerated Trailer				
	5 months	\$4,000	per month	\$ 8,000
Vehicles and Fuel				\$ 5,000
Elk Processing*				
\$200/elk	100 elk			\$ 20,000
Total				\$104,000
Project Total				\$338,300

\*elk processing costs will be determined at a later date and dependent on partnership arrangements established through SDGFP (estimate if NPS conducts independently)

APPENDIX B  
Information and Requirements for Participation  
As a Trained Volunteer

The following criteria needed to be met for the Volunteers participating in the elk reduction program.

- Provide a pictured proof of identity (driver's license, passport)
- Be a United States citizen and a resident of South Dakota.
- Be at least 18 years of age.
- Pass a NCIC criminal background check and sign a volunteer applicant affidavit of criminal history and background investigation release.
- Sign up as an unpaid NPS Volunteer employee (NPS VIP Program) for five days.
- Self-certify physical fitness by stating their ability to walk up to 10 miles a day, and the ability to carry a 75 pound pack.
- Provide own equipment, lodging, food, rifle (Firearms must be at least .25 caliber with a bottlenecked cartridge, firing a non-toxic (lead-free) bullet that is at least 100 grains, and is of a non-frangible design), and non-lead ammunition.
- Agree to take and pass a firearms proficiency test.
- Understand they cannot participate in any reduction activities or carry firearms should they fail the background investigation or firearm proficiency test.
- Actively participate in all safety briefing and follow team lead instructions.
- When not in use, volunteers must secure their weapon at all times.

**Summary of Volunteer Responsibilities:** Wind Cave National Park seeks volunteers to assist in the reduction of elk within the park boundary. Volunteers will be part of teams that will locate and shoot elk, and assist in field processing the animals under the direction of a National Park Service Team Leader. This action is needed to address a concern associated with chronic wasting disease and volunteers will be part of an effort to determine if the reduction of elk density can result in a reduction in disease prevalence. These operations will run from mid-November through the end of February. Volunteers are asked to select a week where they can commit to 5 consecutive days (Monday –Friday). Volunteers will be provided an opportunity to obtain elk meat at the conclusion of their volunteer experience.

Appendix C  
Elk Removal Project  
Wind Cave National Park

VOLUNTEER APPLICANT AFFIDAVIT  
AND  
BACKGROUND INVESTIGATION RELEASE

I have applied to work with the National Park Service (NPS) for a volunteer position and understand that my responses to the questions below and the type of service for which I have applied require a criminal background investigation. In consideration of the NPS processing of my application as a volunteer, I hereby irrevocably agree to the following terms and conditions:

1. The term "background investigation," as used in this document, refers generally to a check of my driving record, criminal record, and domestic violence; other verification/investigation of identity and history may occur.
2. I hereby voluntarily authorize the NPS (and/or formal designee) to perform a background investigation as described above.
3. It has been represented to me that all such information is confidential as it relates to any third party or entity, and that the said information will not be released to any third party without my permission or a court order.
4. I authorize any person or entity contacted by the NPS' officers, agents, or employees during the course of my background investigation, to furnish to such officers, agents, or employees any information they may have regarding my identity, driving or criminal record, and hereby expressly waive any and all legal privileges I may have relating to those areas.

Pursuant to the National Park Service's acceptance of my Volunteer Application, I also hereby affirm the following by initialing and circling the correct choice:

1. That **[I have been]/[I have not been]** convicted of any felony or misdemeanor, other than minor traffic violations not involving the use of alcohol or drugs; *Initial* \_\_\_\_\_;

AND;

2. That **[I have been]/[I have not been]** convicted of any hunting or fishing violations or had my hunting or fishing license privileges suspended; *Initial* \_\_\_\_\_.

**ALL APPLICANTS MUST COMPLETE:**

**I agree to notify the NPS in the event that I am convicted of any such felony or misdemeanor during my tenure as a Volunteer with said agencies.**

**Initial** \_\_\_\_\_

I was notified that I may be required to periodically sign an affidavit of criminal history to verify continued status. By my signature below, I, \_\_\_\_\_, acknowledge that I have completed this affidavit fully and truthfully, and also authorize the NPS (and/or formal designee) to conduct the background investigation in order to consider me for volunteer placement. I further agree that neither the Federal Government nor the State of South Dakota is liable for actions taken according to reports secured.

Volunteer Applicant Signature \_\_\_\_\_ Date \_\_\_\_\_

Date of Birth \_\_\_\_\_

Driver's License State \_\_\_\_\_ Number \_\_\_\_\_ Exp. Date \_\_\_\_\_