

Implementation Plan to Disband the Wildlife/Livestock Disease Investigations Team

SUMMARY

This plan addresses the decision by the Office of the Deputy Administrator to immediately ramp down the work of the Wildlife/Livestock Disease Investigations Team (WiLDIT), close their research facilities in Fort Collins, CO, and the pens at Corwin Springs, MT, and disband this unit.

The plan includes the reassignment of the WiLDIT personnel, the closure of current research projects, disposition of research animals, property disposition, other logistics, and notifications. Information on the agreements and Memorandum of Understanding (MOU) in place with other entities regarding the projects and disposition of the research animals is included.

Personnel will be moved out of the WiLDIT group by the end of FY 2017. The disposition plan for all animals will be determined by July 31, 2017. After approval of the implementation plan, discussions with certain project collaborators are needed to determine if they want to acquire the research animals and then APHIS will need to approve the proposed disposition. The seropositive and seronegative bison at the Montana facilities would be disposed of or transferred per agreements with the National Park Service (NPS) and the Environmental Assessment (EA). Colorado State University (CSU) will receive the 60-day termination notice required in the current MOU.

It has been determined that a 1010 package and Congressional notification are not required for this organizational change; however, a Civil Rights Impact Analysis (CRIA) is needed and underway.

PERSONNEL PLACEMENT

The four permanent employees currently assigned to the WiLDIT group will retain their grades and be reassigned pending approval from the CRIA, which is currently underway. The term employee is in the second year of a possible four-year position that expires March 6, 2018. There is one Saul T. Wilson student who graduates in May 2018. There are eight part-time students hired through the CSU cooperative agreement for their tuberculosis vaccine project.

- Dr. Jack Rhyan will remain with the VS National Veterinary Services Laboratories (NVSL) and will be assigned to oversee the writing of publications related to the completed research, continue to serve as a pathologist on special projects

submitted to NVSL from the field, and serve on a regular basis as a pathologist for NVSL in Ames, IA. His duty station would remain in Colorado.

- Dr. Pauline Nol, Veterinary Medical Officer, and Matt McCollum, Wildlife Biologist, will be reassigned to VS Center for Epidemiology and Animal Health (CEAH) to provide wildlife expertise to CEAH projects. They are meeting with the CEAH Director to determine the appropriate organizational unit at CEAH for reassignment.
- Samantha Bruce, the Saul T. Wilson student, will transfer to CEAH. Since she graduates in May 2018, it is not expected she will work much after this summer.
- Karl Held, Animal Health Technician, will be assigned to the VS Surveillance Preparedness and Response Services (SPRS) District 6 office in Lakewood, CO, with his duty station as his home.
- Morgan Wehtje is on a term appointment on feral swine annual appropriations expiring March 6, 2018. APHIS Human Resources has confirmed that we are obligated to maintain this term position through the expiration date. She is finishing her PhD in disease ecology with extensive experience in modeling, data analytics, and spatial analysis in the next 2 months. She is meeting with the CEAH Director to determine where her skills would best be used. Wildlife Services (WS) may have at least partial salary funding to allow completion of a feral swine collaborative project and VS Science, Technology, and Analysis Services (STAS) will look at options for funding the salary.

RESEARCH PROJECTS WRAP-UP

COLORADO PROJECTS

Evaluation of duration of infertility produced by GonaCon™, an immuno-contraceptive vaccine, in bison

Collaborators: The Nature Conservancy; WS/NWRC

Location: Medano-Zapata Ranch (animals owned by The Nature Conservancy) in southern Colorado

Status: Started in 2011 with bison from a brucellosis negative herd and to be completed in November 2017. APHIS does not have ownership of these animals. Contact will be made with the owners of the animals (Nature Conservancy) and NWRC about ending this project early. However, since the animals are only rounded up in November of each year, the tissues from the nine GonaCon™ treated bison needed to complete the study may need to be collected when the animals are available as they are mixed on a large range. Since WS/NWRC is a collaborator, transfer of the study conclusion could be discussed with officials there.

Agreements: This study is being conducted under NWRC-approved Protocol QA-1923.

This protocol requires that tissues be taken for histopathology. Jack Rhyan will complete the histopathology examination. NWRC and Jack Rhyan will work jointly to write this project report. GonaCon™ treated bison cannot be used for human consumption based on the EA.

Brucellosis infection and transmission dynamics in elk

Collaborators: Wyoming Game and Fish, USDA Agricultural Research Service (ARS), CSU

Location: WiLDIT Wildlife Research Facility, Fort Collins, CO

Status: The elk were moved to the facility, however, the project was halted in February 2017. All seropositive elk were removed by April 2017. Collaborators were notified in February and March of 2017.

Agreements: This project did not have any agreements with collaborators. A CSU-approved Institutional Animal Care and Use Committee (IACUC) protocol was in place (#14-4956A). Collection permits were in place with Wyoming Game and Fish (#33-1040-2017; #33-1041-2017) and Colorado Parks and Wildlife (#17TR2152).

Development of DryDart technology to deliver brucellosis vaccine to bison

Collaborators: ARS/National Animal Disease Center (NADC)

Location: ARS/NADC

Status: There is an ongoing study at NADC in Ames evaluating injected pelleted RB51 vaccine in comparison to liquid RB51. The study will conclude with challenge in 2018. WiLDIT personnel are not necessary to complete the study as is in NADC facility.

Agreements: NA

Use of assisted reproductive techniques to produce brucellosis-free bison with Yellowstone genetics

Collaborators: CSU – lead

Location: WiLDIT Wildlife Research Facility, Fort Collins, CO

Status: This project depends on bison owned by APHIS that will no longer be available for use by CSU.

Agreements: There is a five-year MOU with CSU signed by the Western Region Director in effect until October 2018 that requires a 60-day notice for termination. This notification will be sent on approval of the implementation plan. These bison are also under the agreements applicable to Yellowstone National Park (YNP) bison regarding disposition.

Evaluation of killed *Mycobacterium bovis* vaccine to protect feral swine from bovine tuberculosis

Collaborators: CSU; University Castilla la Mancha, Spain; Neiker Inc., Spain

Location: WiLDIT Wildlife Research Facility and CSU

Status: Feral swine piglets of Hawaiian origin have been vaccinated and will enter CSU BSL-3 in August 2017 for *M. bovis* challenge. These animals are from a brucellosis- and tuberculosis (TB)-free herd. On entry into the BSL-3 at CSU, these animals will no longer be the primary responsibility of WiLDIT. Animals will be necropsied November-December 2017. Disposition of pigs is by incineration. Tissues will be collected and cultured at NVSL and histopathology read by Jack Rhyan to complete this study. Manuscript will be

prepared and submitted for publication based on data. This study is being conducted under CSU IACUC Approved Protocol #14-5367A.

Agreements: A cooperative agreement with CSU covers this project. A master's student is depending on having these animals available for sampling in the BSL-3 for her oral fluids project described below (Two Agreements: Alfano, Marialexia-Learning Plan; Alfano, Marialexia-Placement Agreement).

Development of volatile organic compounds (VOCs) in wild pigs

Collaborators: Rovira i Virgili University, Spain, IREC, University Castilla la Mancha, Spain, CSU; NWRC

Location: WiLDIT Wildlife Research Facility, Fort Collins, CO, and CSU

Status: Project with Spain is nearing conclusion. Intended sample collections from current projects will be taken over by NWRC or will not take place.

Agreements: Current cooperative agreement with Rovira i Virgili University will be completed and closed out by August 14, 2017, and manuscript(s) prepared and submitted for publication based on data collected from previous projects.

Development of oral fluid collection studies for feral swine

Collaborators: CSU, VS-STAS; University of Florida (UFL); University of Georgia (UGA)

Locations: Savannah River Field Station, Georgia, and CSU.

Status: Oral fluids are currently being collected from feral swine in the field via a collection device comprised of a wool ball and attractants (swine apples) deployed by UGA and UFL collaborators. A Colorado School of Public Health master's student will also collect oral fluids from pigs via ropes and swine apples for a project called the "evaluation of killed *Mycobacterium bovis* vaccine to protect feral swine from bovine tuberculosis." The student is depending on these data to complete her student practicum, a requirement for graduation. The animal portion of this project will be completed when the study is terminated at necropsy in November 2017. UFL and Savannah River collaborators will participate in a presentation to be given at the International Wildlife Disease Association Conference in Chiapas, Mexico, in July 2017.

Agreements: NA

Development of oral fluid collection studies for elk

Collaborators: NA

Location: WiLDIT Wildlife Research Facility, Fort Collins, CO

Status: Study will evaluate methods of oral fluids collection in elk. Study will be completed by September 30, 2017. This study is being conducted under CSU IACUC Approved Protocol # 17-7157A.

Agreements: NA

Evaluation of killed preparations of *Brucella abortus* in mice

Collaborators: CSU

Location: CSU, Fort Collins, CO

Status: The third of three studies is in the final stage and will be completed by September 2017. There are no live animals left in this study. CSU is conducting cultures.

Agreements: A cooperative agreement was in place for this study. The CSU IACUC protocol was #16-6694A.

Bison conservation

Collaborators: VS/SPRS; CSU; City of Fort Collins, CO; Larimer County, CO

Location: WiLDIT Wildlife Research Facility, Fort Collins, CO

Status: Yellowstone-genetics bison have been used to establish or augment four public herds. Twenty bison are going through the APHIS-approved quarantine protocol in the WiLDIT pens. The youngest animals that need to complete quarantine per agreements were born in 2017. This means the project will end in 2022. We will develop a plan to ensure these animals complete quarantine or reach agreement on transferring ownership of these bison or reach agreement for other disposition.

Agreements: These bison are covered under YNP agreements referred to under the Montana Projects section and under the 2015 Intergovernmental Agreement that includes APHIS, the City of Fort Collins, Larimer County and CSU. APHIS' responsibilities in the agreement include providing the "seedstock" bison for the project and disease monitoring for all project animals to ensure the bison remain brucellosis free. The agreement signed by Dr. Shere on behalf of Dr. John Clifford provides that any party may terminate the agreement at any time on no less than 6 months advance written notice to the other parties.

Development of safe and effective immobilization protocols for wild swine

Collaborators: WS/NWRC, Colorado Parks and Wildlife; Texas A&M University; Wildlife Pharmaceuticals

Location: WiLDIT Wildlife Research Facility, Fort Collins, CO

Status: Studies will be completed by September 30, 2017.

Agreements: NA

Use of DryDarts to deliver immobilizing agents to elk

Collaborators: Wildlife Pharmaceuticals

Location: WiLDIT Wildlife Research Facility, Fort Collins, CO

Status: Study will be completed by September 30, 2017.

Agreements: NA

MONTANA PROJECTS

Evaluation of GonaCon™, an immuno-contraceptive vaccine, as a means of decreasing transmission of *Brucella abortus* in bison in the Greater Yellowstone Area

Collaborators: VS/SPRS; WS/NWRC; YNP

Location: APHIS quarantine facility in Corwin Springs, MT

Status: Don Herriot will be coordinating this project termination in accordance with the applicable agreements.

Agreements: There are two main agreements governing disposition of the bison from this project. There have been previous agreements with the NPS allowing the removal of bison from YNP for the project that included animal disposition requirements. The most recent

agreement was an Interagency Agreement (IAA) between APHIS and the NPS signed in February 2013 by Dr. Mark Davidson as the Western Region Director with a period of performance through January 31, 2017. The IAA refers to the EA when describing the consignment of the bison based on brucellosis status. The 2012 EA titled *Evaluation of GonaCon™, an Immunocontraceptive Vaccine, as a Means of Decreasing Transmission of Brucella abortus in Bison in the Greater Yellowstone Area*, and the resulting Finding of No Significant Impact for the Proposed Study (FONSI) signed by Dr. Don Herriott in May 2012 included animal disposition information. In brief, the agreements provide:

- GonaCon™ treated bison will be disposed of by incineration or landfill burial. Per the conditions of approval from the Environmental Protection Agency for this study, they cannot be consumed by humans. If APHIS wanted to handle this any differently, significant discussions would need to take place.
- Brucellosis seropositive bison:
 - EA states
 - “Seropositive animals from the study that have not received GonaCon™ would be distributed to Montana food banks as is routinely done with other YNP seropositive bison.”
 - FONSI states
 - “Both bison that test seropositive for brucellosis and bison treated with GonaCon™ from the study would not be allowed to be consumed by humans and would be humanely euthanized when the study is complete.” Note this is not what is in the EA or the IAA regarding the seropositive non-treated bison. The EA states that there is no danger of transmission of the infection to humans from consuming cooked meat from *B. Abortus* infected bison and the bacteria typically is not found in muscle tissue with normal cooking temperatures killing any existing bacteria.
 - IAA states
 - “At the end of the study, all seropositive animals will be euthanized and necropsied with specimens collected for culture. All carcasses, with the exception of those vaccinated with GonaCon™, will be donated to local food banks or Indian tribes. Ova and semen will be collected and frozen for generic conservation utilizing embryo transfer techniques.”
 - “All or a subset of offspring that remain or become seropositive for *B. abortus* will be maintained and monitored through their first parturition.”
- Bison that test negative for brucellosis exposure:
 - EA states
 - “All animals that test negative for brucellosis for the duration of the study and satisfy existing bison quarantine release requirements outlined in the APHIS Uniform Methods and Rules (USDA APHIS, 2003) would be used for bison conservation purposes.”
 - IAA states
 - “Consigned to a quarantine location for further diagnostics;

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- Consigned to a managed for public trust conservation program to supplement population genetic diversity;
 - Consigned to an introduction program to establish a new conservation population of wild bison on tribal or public lands; or
 - Utilized in an embryo transfer program for bison genetics conservation.”
 - It is noted, “If no such opportunities exist, bison will be consigned to a private not-for-profit bison conservation program, or as a last choice, to any private party that requests transfer of ownership. The Animal and Plant Health Inspection Service will be responsible for organizing the final disposition of the GonaCon™ research animals whether for conservation or transfer to other research.”
- An additional requirement is to provide final reports to the Key Official for the NPS, who is the Superintendent of YNP. In response to questions on the EA, APHIS noted that when the study is complete, the results would be published in a peer-reviewed scientific journal and that the disposition of the animals or genetic materials from the study would be made after consultation with bison experts at YNP and conservation organizations such as the American Bison Society, the International Union for Conservation of Nature, or other applicable organizations. Note: APHIS will need to determine the disposition in light of the current situation in the GYA and consideration of State animal health officials’ assessments.

In addition, the study is being conducted under NWRC-approved Protocol QA-1858, and protocol approval from the Bison Quarantine Facility IACUC.

COOPERATIVE AGREEMENTS STATUS

WiLDIT had four cooperative agreements in place in 2017.

- Detection of TB, Bruc in swine
 - Fundacio URV in Tarragona, Spain
 - Ends August 14, 2017
 - Funds expended
- Inactivated *Brucella abortus* vaccine in mice
 - Colorado State University
 - Ends June 30, 2017
 - Funds will be expended
- Molecular detection of *Mycobacterium bovis*
 - Colorado State University
 - Ends August 14, 2017
 - Funds will be expended
- TB *M. bovis* vaccine in feral swine
 - Colorado State University
 - Ends July 31, 2017

- Funds remaining will be expended with no cost extension to conclude the study in CSU biocontainment unit

DISPOSITION OF ANIMALS

WiLDIT Wildlife Research Facility, Fort Collins, CO

Elk

All brucellosis-seropositive elk have previously been euthanized. Many of these animals were either born at the WiLDIT facility or have been housed here for some time; therefore they are well suited to captive research. We will attempt to transfer the remaining 34 brucellosis-seronegative elk to another research facility; possibly NADC, Colorado Parks and Wildlife, CSU, or Wyoming Game and Fish Department. There are no prior agreements associated with the disposition of these animals. Since they are now housed within a CWD endemic area, this may limit the number of locations where they can be transferred.

Bison

Currently, in Fort Collins, 22 seronegative bison are going through the approved APHIS quarantine protocol and there are 11 seropositive bison. Disposition of animals is governed by the 2013 IAA with YNP and the Intergovernmental Agreement referred to in the bison conservation project. APHIS will need to determine if either WS or CSU could potentially continue the quarantine process to meet the agreements. Quarantine of the seronegative animals would be completed in 2022.

Swine

Two breeding herds exist: Texas feral swine and Hawaii feral swine. Both herds have 8-10 breeding sows and two boars. Because these animals have been trained to be handled, and the Hawaii feral swine are rather valuable for TB research, we will work with our collaborators to see if there is any interest in transferring these animals. This will be completed by the end of September 2017.

Surveillance, Preparedness and Response Services (SPRS) Bison Research Facility, Corwin Springs, MT

Dr. Don Herriott will take the lead in closing down this project according to the agreements in place and described under the Montana Projects section. Samples will be collected as indicated in the protocols and Environmental Assessment. Based on information we currently have but subject to change in serostatus after the current calving season, there are 33 GonaCon™ treated bison that need to be incinerated or sent to landfill and 33 seronegative non-treated females, 10 seronegative bulls, and 31 seropositive non-treated females to handle according to the NPS agreements.

PROPERTY DISPOSITION

WiLDIT personnel will provide their inventory records to Marjorie Swanson, CEAH Administrator Officer, and MaryAnn Waterbury, NVSL Property Manager, for suitable disposition of equipment and supplies at the Colorado pens and the laboratory space at NWRC. NVSL will send one or two individuals trained in property acquisition and disposition to assist the team in this process. STAS will work with the SPRS District 5 Administrator Officer Tim Solinger on the property disposition in Montana.

OTHER LOGISTICS

Pens in Montana – coordinated with Dr. Don Herriott

- Leases are up for renewal in July for two of the three pens, with the other expiring in March 2018. It is expected we would renew the two leases to allow for the summer blood tests and return land to original state if requested as provided for in the leases. The Forest Service and NPS may have interest in leasing two of the sites. One of the leases is funded through a cooperative agreement with the Montana Department of Agriculture.
- Current animals in the leased pens are related to the WiLDIT project. Currently, there are no other animals under quarantine in the pens.

Pens in Colorado

- There is no lease for the WiLDIT pens in CO that are on CSU property. There is a MOU with a 60-day termination notice to be provided. This will be provided as soon as the plan is approved and when it has been determined that the last animals will be removed or the ownership of those animals transferred. CSU may elect to maintain the pens on its property or request that the ground be returned to its original state by Veterinary Services.

NOTIFICATIONS

On acceptance of the plan, several notifications will take place.

- VS Deputy Administrator Dr. Jack Shere will notify the State Veterinarians in Wyoming, Montana, and Colorado of the disposition of the WiLDIT projects they have been involved with. The Hawaii State Veterinarian will be notified when it is determined if the feral swine from Hawaii are transferred to a collaborator. An update will be provided on the tuberculosis vaccine trial at that time.
- Dr. Jack Rhyan will notify collaborators.
- Dr. Don Herriott will notify the NPS.
- Dr. Shere will provide any notifications necessary for VS.