IDAHO DEPARTMENT OF FISH AND GAME

Virgil Moore, Director

Project F16AF00747

Interim Performance Report

WILDLIFE HEALTH LABORATORY

July 1, 2017 to June 30, 2018

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FEDERAL AID IN WILDLIFE RESTORATION
FINAL PERFORMANCE REPORT

State: Idaho

Grant number: F16AF00747 Amendment 1

Grant name: Wildlife Health Laboratory

Report Period: July 1, 2017 to June 30, 2018

Report due date: September 28, 2018

Location of work: Statewide

Approach:

- Provide veterinary services for statewide wildlife programs and the Wildlife Health Laboratory.
- Coordinate and facilitate wildlife disease investigations at the Idaho Department of Fish and Game Wildlife Health Laboratory with various cooperating universities, state and federal agencies.
- Lab personnel will aid in development of disease surveillance plans and sample collecting procedures, take an active role in the investigation of disease events, participate in field collection of samples for disease and health-related data, and provide training in sample collection techniques. Wildlife Health Program personnel will provide training, materials, and support for field activities involving capture of wildlife. The vast majority of wildlife health assessment sampling activities, including all aircraft supported operations, will be conducted in conjunction with wildlife capture projects identified in the Wildlife Research and Survey & Inventory projects. Some limited sampling will be achieved through ground-based hand capture (e.g. clover traps, drop nets, catch-pole), or chemical immobilization, of targeted wildlife. Additionally, dead wildlife, including those found incidentally, or those available through check stations, will be sampled. Disease sampling and analysis on federally listed species is conducted either in conjunction with Section 6 Cooperative Agreements, or from dead animals in coordination with appropriate USFWS personnel. The Department has no plans to actively conduct health assessments on woodland caribou, lynx, grizzly bears, or northern Idaho ground squirrels. However, health assessments, necropsies and genetic sampling may be performed on individuals found dead.
- Offer services to support genetic analysis for managing wildlife populations.
- Conduct investigations on diseases of concern for Idaho's wildlife, especially as the diseases impact or are impacted by livestock.
- Wildlife health data will be analyzed to provide information on the occurrence of wildlife disease and its potential impact on management of populations, a comprehensive wildlife health records data base will be maintained at the Wildlife Health Laboratory.
- Necropsies will be performed on various specimens as the need arises.

- Provide training for Idaho Department of Fish and Game personnel and other city, state, and federal personnel on immobilization and physical restraint techniques, and supply immobilization drugs to department personnel.
- Technical assistance will be provided to cooperating agencies, the public, and institutions.
- Collections of literature and reference materials will be maintained.
- Laboratory procedures manual will be updated and maintained.
- Provide training for Idaho Department of Fish and Game personnel and other city, state, and federal personnel on wildlife sample collection, handling, and shipping for lab analysis and historic archiving.

Expected Results:
Wildlife health assessment includes the collection and analysis of biological samples obtained from wildlife, fieldwork to investigate wildlife disease situations, and diagnosis of disease in animals through field and laboratory necropsies. These services will provide biological information essential for wildlife management decisions. Disease research and long term disease monitoring will provide information about the impact of disease on wildlife populations, and assist in wildlife conservation and management actions. Veterinary support during animal immobilization, capture, marking, and translocation will ensure projects will be efficient and minimize undesirable impacts to wildlife.

Objectives:

1. Collect, process, submit, analyze, and report on 2,500 biological samples to determine health status by 30 June 2018.
2. Conduct 175 necropsies to determine health status, presence of disease, and/or cause-of-death by 30 June 2018.
3. Train 100 Department staff and others in proper animal restraint and immobilization by 30 June 2018.

If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.

N/A

Describe how the objectives were met.

Objective 1: Collect, process, submit, analyze, and report on 2,500 biological samples to determine health status by 30 June 2018.

Between July 1, 2017 and June 30, 2018, the Wildlife Health Lab staff received, accessioned, processed, input and analyzed 2279 total biological cases. These cases were related to disease surveillance, cause of death assessments, live animal health checks, and species genetic sampling (Table 1). Carcasses, tissues, or biological samples from 295 animals were submitted for necropsy or lab analyses to determine cause of death and collect biological data in support of wildlife management and research assessments. One thousand seven hundred and twenty eight samples were collected for CWD surveillance from six mule deer population management units (PMUs) and from targeted surveillance across the state (Table 2). CWD was not detected in the samples submitted. Brucellosis surveillance efforts focused on hunter-harvested elk and active disease surveillance and captured animals. Four thousand five hundred sample kits were sent out to hunters and 252 (11%) samples were returned. An additional 120 samples were submitted for active disease surveillance from elk captured for management purposes. Four management elk tested as reactors on brucellosis serology tests. Of the 252 hunter surveillance elk, 249 were negative, two were suspect or reactors, and one sample was determined to be unsuitable for testing because of improper tissue types, inappropriate sample amounts and poor sample collection. Data from all biological samples were digitally entered and archived along with results in electronic databases for dissemination and reporting on wildlife health. The databases received continuous data quality audits to ensure data accuracy and continuity.

Table 1. Biological Samples Processed

FY2017 – FY 2018 BIOLOGICAL CASES			
	FY2017	**FY2018**	**Total**
Total biological cases	**3270**	**2279**	**5549**
CWD Harvest Surveillance	1066	588	1654
CWD Targeted Surveillance*	18	56	74
Brucellosis Harvest Surveillance (Elk)	257	252	509
Brucellosis Management Surveillance*	388	120	508
Live Animal Surveillance	583	676	1259
DNA Samples	1048	468	1516
Necropsy/Tissue samples	316	295	611

*not counted in total as they are included as cases in other categories

Table 2. 2017-2018 CWD Surveillance

Hunter Surveillance : Mule Deer	# of Samples	Points	Detection Ability with 95% Confidence
Zone1			
Boise River	137	120.39	
Smokey-Bennett	58	43.5	
Weiser-McCall	94	53.42	
	289	**217.31**	**1.5% Minimum Threshold**
Zone 2			
Caribou	143	157.34	
Island Park	114	84.73	
Palisades	42	45.08	
	299	**287.15**	**1.0% Minimum Threshold**
Suspect Submissions			
Mule Deer	37	na	
White-tailed Deer	6	na	
Elk	9	na	
Moose	4	na	
	56		
Total	**644**		

Objective 2: Conduct 175 necropsies to determine health status, presence of disease, and/or cause-of-death by 30 June 2018.

Between July 1, 2017 and June 30, 2018, the Wildlife Health Lab staff conducted a total 295 necropsies, cause of death assessments, or received samples from dead or harvested animals for archiving. Ninety-five full necropsies were performed on more than 30 species during this period. Between three and ten biological samples were collected per necropsy cases for disease diagnostics and cause of death analyses. One hundred and thirty four field necropsy tissues or other samples were submitted to the lab for assessment and diagnostic testing. In addition, 65 bighorn sheep and 33 mountain goat hunters submitted numerous samples for health assessment and disease testing and these numbers were included in the total necropsy cases. Bighorn sheep and mountain goat hunter-harvest surveillance efforts are assisting biologists and managers in identifying areas of disease prevalence in bighorn sheep and mountain goat populations across Idaho.

Objective 3: Train 100 Department staff and others in proper animal restraint and immobilization by 30 June 2018.

Fifty-three biologists and enforcement officers attended training in Wildlife Chemical Restraint during the FY2018 grant period. IDFG Wildlife Chemical Restraint training is a two-day course taught by Dr. Mark Drew. It provides mandatory training and re-training wildlife and enforcement staff that utilize chemical immobilization drugs as part of their routine job duties. IDFG staff are provided current and up to date training on a bi-annual basis per policy.

Wildlife Health Lab staff also provided training for 48 biologists, wildlife law enforcement officers, and communications staff at four Wildlife Human Attack Response workshops during the grant period. This training focused on wildlife behavior, as well as best practices in wildlife restraint, biological sampling, and communication. The Wildlife Health Lab also provided wildlife education and career seminars to over 900 youth (ages 10-18), parents, and educators at the Wild Sheep Foundation sponsored Youth Conservation Education Expo in Reno, Nevada in January of 2018.

Table 3. Training Provided by WHL FY2018

Name of session	Type	Number Held	Estimated Attendance	People Attending
Wildlife Chemical Restraint Classes	Training	4	53	Biologists, Law Enforcement
Wildlife Human Attack Response Team & Biological Sample Collection	Training	2	48	Biologists, Law Enforcement
Youth Conservation Education Expo; sponsored by the Wild Sheep Foundation	Training	2	900	Youth, Parents, Educators and General Public

Discuss differences between work anticipated in grant proposal and grant agreement and that actually carried out with Federal Aid grant funds.

N/A

List any publications or in-house reports resulting from this work.
Reports, Presentations, and Posters

2017 Hosch-Hebdon, Tricia L. Idaho's Perspective: Brucellosis and Chronic Wasting Disease, High Divide Collaborative Workshop, Dillon, MT.

2017 Peterson, Erin M., Robert Voermans, Matthew Burns, Cassie Dayan, and Stacey Dauwalter. 2017 DNA Extraction and Identification of *Yersinia pestis* in Rodent Liver and Spleen Tissue Samples. Idaho Bureau of Laboratories.

2018 Strategy for Chronic Wasting Disease Prevention, Detection, and Management for Idaho's Wild Cervids (Deer, Elk, and Moose). Idaho Department of Fish and Game.

Publications

David E. Ausband, Michael S. Mitchell, Sarah B. Bassing, Andrea Morehouse, Douglas W. Smith, Daniel Stahler, and Jennifer Struthers. Individual, Group, and Environmental Influences on Helping Behavior in a Social Carnivore. Ethology; International Journal of Behavioural Biology. 122(12): 963-972. DOI10.1111/eth.12566

Bevins, S. N., R. J. Dusek, C. L. White, T. Gildewski, B. Bobenstein, K. G. Mansfield, P. DeBruyn, D. Kraege, E. Rowan, C. Gillin, B. Thomas, S. Chandler, J. Baroch, B. Schmit, M. J. Grady, R. S. Miller, Mark L. Drew, S. Stopak, B. Zscheile, J. Bennett, J. Sengl, C. Brady, H. S. Ip, E. Spackman, M. L. Killian, M,. K. Torchette, J. M. Sleeman and T. J. Deliberto. Widespread detection of highly pathogenic H5 influenza viruses in wild birds from the Pacific Flyway of the United States. Nature Scientific Reports 6, 28980. DOI 10.1038/srep28980.

Drew, Mark L. and G. C. Weiser. Potential disease agents in domestic goats and relevance to bighorn sheep (*Ovis canadensis*) management. PlosONE, DOI 10.1371/journal.pone.0173396.

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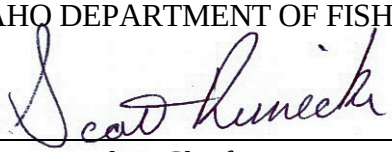

Scott Reinecker, Chief
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FEDERAL AID IN WILDLIFE RESTORATION

The Federal Aid in Wildlife Restoration Program consists of funds from a 10% to 11% manufacturer's excise tax collected from the sale of handguns, sporting rifles, shotguns, ammunition, and archery equipment. The Federal Aid program then allots the funds back to states through a formula based on each state's geographic area and the number of paid hunting license holders in the state. The Idaho Department of Fish and Game uses the funds to help restore, conserve, manage, and enhance wild birds and mammals for the public benefit. These funds are also used to educate hunters to develop the skills, knowledge, and attitudes necessary to be responsible, ethical hunters. Seventy-five percent of the funds for this project are from Federal Aid. The other 25% comes from license-generated funds.