IDAHO DEPARTMENT OF FISH AND GAME

Virgil Moore, Director

Wildlife Restoration Project F12AF00802

Final Progress Report

WILDLIFE HEALTH LABORATORY

July 1, 2012 to June 30, 2013

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FEDERAL AID IN WILDLIFE RESTORATION
ANNUAL PROJECT PERFORMANCE REPORT

1. State: Idaho

Grant number: F12AF00802

Grant name: Wildlife Health Laboratory

2. Report Period: July 1, 2012 to June 30, 2013

Report due date: September 28, 2013

3. Location of work: Statewide
All work was accomplished in all counties.

4. Costs: Expenditures will be provided in a separate SF425.

5. Objectives:

a. Provide laboratory services and support for the wildlife management and research activities of the Bureau of Wildlife.

b. Continually update procedures and techniques for data collection, determination, dissemination, and storage.

c. Provide other lab services upon request and as priorities dictate.

6. 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.

a. Provide veterinary services for statewide wildlife programs and the Wildlife Health Laboratory (WHL).

b. Coordinate and facilitate wildlife disease investigations at the Idaho Department of Fish and Game (Department) Wildlife Health Laboratory with the University of Idaho Caine Veterinary Teaching Center and cooperating state and federal agencies.

c. Lab personnel will aid in development of collecting procedures, take an active part in the actual collection of samples to analyze disease and health-related data, and provide training in sample collection techniques.

d. Offer services for carrying out genetic analysis to assist in managing wildlife populations.

e. Conduct investigations on diseases of concern for Idaho's wildlife, especially as the diseases impact or are impacted by livestock.

f. Wildlife health data collection will be completed and maintained as it relates to wildlife disease and management of populations.

g. Necropsies will be performed on various specimens as the need arises.

h. Teeth received by the lab will be processed and age data will be reported to regional managers and biologists (black bear, bobcat, river otter, deer, elk, moose, and antelope).

i. Provide training for Department personnel on immobilization and restraint-required techniques, and supply immobilization drugs.

j. Determination of the incidence of exposure of transplanted game birds to *Salmonella* and *Mycoplasma sp* will be completed using the appropriate diagnostic assays.

k. Technical assistance will be provided to cooperating agencies, the public, and institutions.

l. Data storage and reporting procedures will be revised so that computer entry and analysis will become the primary method of handling age data.

m. Collections of literature and reference materials will be maintained.

n. Laboratory procedures manual will be updated and maintained.

o. Various skulls and skeletal preparations for species identification, aging, and Department collections will be processed.

7. Describe how the objectives were met.

Wildlife Health Laboratory services include: analyses of biological samples, clinical diagnosis of wildlife diseases, biological sample collection, packaging and shipping training, and wildlife immobilization training. Disease research and long term disease monitoring provide information about the impact of disease and wildlife health components on wild populations; which is essential for Wildlife management and the determination of harvest objectives.

The Wildlife Health Laboratory works with other state, federal, and private organizations on wildlife health issues. Strong affiliations are in place with the Idaho State Department of Agriculture, the University of Idaho, Washington State University, Boise State University, and the USGS National Wildlife Health Center. The Wildlife Health Laboratory works cooperatively with the National and Idaho Chapter of the Wild Sheep Foundation.

The Wildlife veterinarian represents the Department on the Wildlife Health Committee of the Western Association of Fish and Wildlife Agencies and at the U. S. Animal Health Association through membership on the Captive Wildlife and Alternative Livestock, Brucellosis, Sheep and Goats, Tuberculosis and Wildlife Disease Committees.

Annual statewide training offered by the Wildlife Health Laboratory provides procedural and technique updates and refreshers for biological sample collection related to CWD, Brucellosis, biological sample packaging and shipping, wildlife immobilization, and wildlife genetic specimen collections (Table 1). WHL personnel were responsible for instructing over 60 biologists and conservation officers during 2012-2013 in wildlife capture techniques using chemical immobilization, and certification for use of controlled substances.

Table 1. Training Provided by WHL

Name of session	Type	Number Held	Estimated Attendance	People Attending
Wildlife Chemical Restraint Classes	Training	4	60	IDFG, Zoo Boise Personnel
Wildlife Human Attack Response Team	Training	1	15	IDFG Staff (biologists, Regional Conservation Educators and Senior Conservation Officers)
Idaho Wildlife Brucellosis Plan Coordination Meeting	Coordination	1	15	State and Federal Veterinarians, USDA, ISDA and Wildlife biologists
Wildlife Management and CSI Wildlife Youth Conservation Education Expo; sponsored by the Wild Sheep Foundation	Training	10	300	School Children (5-18)
IDFG Biologists CWD Training	Training	5	20	IDFG Biologists
Brucellosis In Idaho – an overview	Information-education	1	20	USDA, TAMU, WGFD, WY Livestock Board, Veterinarians and biologists from 4 African countries
Veterinary Student Externships	Training	3	3	Veterinary Students

During the 2012-2013 project year WHL personnel processed 2,513 biological samples collected from different species of wildlife throughout the state for disease and health purposes (Table 2).

All biological samples were digitally entered and archived along with results in electronic databases for dissemination and reporting on wildlife health. The databases receive continuous data quality audits to ensure data accuracy and continuity.

Table 2. Biological Samples Processed.

CWD samples harvest surveillance	917
Brucellosis harvest surveillance	304
Live animal surveillance	466
DNA samples	646
Necropsy/Tissue samples	180
Total biological samples FY2013	2,513

Necropsies were performed on 180 animals to determine cause of death and collect biological data in support of wildlife management and research assessments (Table 3). Three to 5 biological samples were collected from some cases at necropsy for disease diagnostics. Some of these were submitted for CWD and brucellosis testing (Table 4).

Table 3. Necropsy Species

Avian		27
Raptor	8	
Upland Game	7	
Waterfowl	2	
Other	10	
Bat		4
Bear		6
Bighorn Sheep		13
Coyote		6
Deer		36
Domestic Sheep		1
Elk Rocky Mtn		47
Environmental		2
Frog		11
Lynx		1
Moose		15
Mountain Lion		3
Muskrat		1
Pronghorn		1
Raccoon		1
Rat		1
Skunk		2
Squirrel		5
Wolf, Gray		4
Total *excludes DNA only submissions		180

Brucellosis and Chronic Wasting Disease (CWD) surveillance continued throughout the state. A total 929 CWD samples were collected, primarily from hunter check stations, and 12 from focused disease surveillance (Table 4). No positive CWD samples were found. Brucellosis surveillance efforts were focused on hunter harvest and active disease

surveillance. A total of 4,987 hunter sample kits were sent out and 304 (6.1%) samples returned. An additional 184 samples were submitted from active disease surveillance. Nine elk samples were found to be seropositive in eastern Idaho.

Table 4. Species Tested for CWD/Brucellosis through active surveillance.

Species	CWD	Brucellosis
Bighorn Sheep	0	32
Elk Rocky Mtn	2	32
Moose	2	3
Mountain Goat	0	1
Mule Deer	7	116
White-tailed Deer	1	0
Total *excludes hunter surveillance	*12	*184

The WHL cooperated on statewide research projects in mule deer ecology, predator-ungulate ecology, wolverine disturbance, black bear population assessment, bighorn sheep survival and wolf pup survival (Table 5). The animals were captured using a variety of methods including leg snares, live traps, net gunning, darting, and drive net operations. Animals were radio-collared, ear tagged, measured, evaluated for health status, and sampled depending on the capture protocols. Samples were collected from 466 animals. The wolf pup project was the first use of Isoflurane gas anesthesia in field anesthesia of wolf pups in the U.S. A total of 11 pups were implanted with transmitters in two den sites in northern Idaho

Table 5. Live Accession Log

Black Bear	19
Bighorn Sheep	43
Bobcat	1
Mule Deer	143
Golden Eagle	4
Rocky Mountain Elk	65
Frog/Toad	117
Hawk	9
Moose	8
Mountain Goat	2
Mountain Lion	5
Owl	1
Sage-grouse	8
Salamander	9
Wolf	32
Total *excludes DNA only submissions	466

WHL personnel collaborated with private research foundations and BSU to continue investigation of West Nile Virus in raptors in SW Idaho. .

The WHL conducted wildlife health related field investigations for exotic deer louse, *Bovicola tibialis,* The primary goal of this management effort was to reduce the spread of this exotic louse species to deer adjacent to the town of Riggins, Idaho, by removing a significant proportion of the deer residing in Riggins (n=69). Once the deer population was reduced to about less than 20 animals, a treatment program aimed at reducing the lice population on those deer was conducted. This treatment regime will be evaluated during the winter of 2013.

The WHL collaborated with Washington State University and University of Saskatchewan to evaluate the genotypic strains of *Echinococcus* species found in Idaho. The WHL collaborated with the University of Saskatchewan to identify the species of nematode that produced the dorsal spined larvae found in mule deer in Riggins in 2006-2013.

In addition, the WHL also collaborated with Washington State University and the University of Idaho, Caine Veterinary Center to further current studies on *Mycoplasma* sp. in bighorn sheep.

WHL personnel expanded Brucellosis surveillance to include tissue culture of 33 samples from 24 eastern Idaho hunter harvest elk. All tissues were culture negative for *Brucella abortus.*

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

None.

9. List any publications or in-house reports resulting from this work.

Drew, Mark L. 2012. Idaho Chronic Wasting Disease Surveillance Plan Update.

Drew, Mark L. 2012. IDFG Wildlife Restraint Manual.

Drew, Mark L. 2012. Riggins Deer Removal.

Drew, Mark L. 2013. Pronghorn Comprehensive Health Plan

Drew, Mark L. 2012 Moose Comprehensive Health Plan

Drew, Mark L. 2013, Idaho Ground Squirrel Comprehensive Health Plan

Drew, Mark L., K. Rudolph, G. C. Weiser, and A. C. S. Ward. Health status and microbial (Pasteurellaceae) flora of free-ranging bighorn sheep following contact with domestic ruminants. Submitted.

Drew, Mark L., and G. C. Weiser. Disease survey of domestic goats and their potential relationship to disease in BHS. In preparation.

Hebdon, Tricia L., 2012, Wildlife Human Attack Response Training Manual. Idaho Department of Fish & Game, Boise.

Wade, W. Edwards, S. Dauwalter, C. Almendra, M. Kardos, J. Lowell, R. Wallen, S. Cain, W. Holben, and G. Luikart. 2012. Yersinia enterocolitica: An unlikely source of positive Brucellosis test in Greater Yellowstone Ecosystem Bison (Bison Bison). Journal of Wildlife Diseases 48: 537-541.

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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.