

North American Wildlife Forensic Laboratories

A Directory of Facilities and Specializations

August 2000

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Departamento de Patología, Facultad de Medicina Veterinaria y Zootécnica, U.N.A.M.	76

Introduction

This Directory of North American Wildlife Forensic Laboratories was developed by the Commission for Environmental Cooperation (CEC) under the guidance of the North American Wildlife Enforcement Group (NAWEG). It contains the results of a questionnaire sent to all provincial/territorial and state wildlife departments and laboratories in North America.

This register gathers and disseminates information concerning existing wildlife forensic centers in North America. It lists the centers in each of Canada, Mexico and the United States of America at the state/provincial and regional levels, gives important contact information and includes details on the type of organization and areas of specialization available. One of the goals of compiling and sharing the information in this directory is to foster improved knowledge and application of forensic techniques for enhancing enforcement of wildlife laws.

The CEC was created in 1994 when Canada, Mexico, and the United States signed the North American Agreement on Environmental Cooperation. The Agreement promotes regional cooperation for conservation, protection and enhancement of the environment. It also commits the Parties to effectively enforce their respective environmental laws, including those for protection of wild flora and fauna. In response to this commitment, the CEC in 1995 established an Enforcement Cooperation Program to provide a forum for regional cooperation, exchange expertise, build enforcement capacity and explore alternative approaches to effective enforcement.

NAWEG is a network of senior wildlife enforcement officials from Canada, Mexico and the United States. It has focused on improving North American capacity to enforce laws regulating the sustainable use and conservation of wildlife, particularly with respect to the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES). NAWEG participates in the Enforcement Cooperation Program of the CEC. It provides guidance in the identification of priorities for regional cooperation and in increasing cooperation in protecting wildlife on the continent.

Acknowledgements

The CEC wishes to acknowledge the contribution of the many individuals who assisted in the preparation of this directory, including the members of the NAWEG who initiated this project. We also wish to acknowledge in particular the untiring efforts of William J. Adrian and Danny Walker who prepared and distributed the questionnaires and performed the painstaking task of collating the information to prepare this directory. Finally we wish to thank all those who responded to the questionnaire and provided the information for making this directory possible.

Web version

A web version of this directory is presently being prepared. It will be available on the CEC web site in 2000 at www.cec.org. The CEC welcomes any information to keep this directory up to date as changes occur in addresses, contact names or services offered.

Darlene A. Pearson
Head, Law and Policy
Commission for Environmental Cooperation

List of Surveyed States and Provinces, Contact
Persons and Wildlife Forensic Laboratory
Availability

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
ALABAMA	ALLEN E. ANDRESS Alabama Game & Fish Division 64 North Union Street Room 559 Montgomery, AL 36130-1456	Phone: 334-242-3467 Fax: 334-242 3032 E-mail: jscott@dsm.d.state.al.us	NO	Uses Auburn University for DNA, protein and enzyme comparisons. Also uses Alabama Department of Forensic Science
ALASKA	JIM WOLFE State of Alaska Alaska State Crime Laboratory Department of Public Safety 5500 East Tudor Road Anchorage, AK 99507	Phone: 907-269-5596 Fax: 907-338-6614 E-mail: james_wolfe@dps.state.ak.us	YES	See wildlife forensic lab section
ARIZONA	JIM BIDDLE Arizona Game & Fish Department 2221 West Greenway Road Phoenix, AZ 85023	Phone: 602-789-3309 Fax: 602-789-3921 E-mail:	NO	Uses Department Public Safety Crime Laboratory and Ashland USFWS Wildlife Forensic Laboratory
ARKANSAS	DENNIS LEEK Assistant Chief, Enforcement Division Arkansas Game & Fish Commission #2 Natural Resources Drive Little Rock, AR 72205	Phone: 501-223-6382 Fax: E-mail:	NO	Uses Arkansas State Crime Laboratory
CALIFORNIA	JIM BANKS California Department of Fish & Game Wildlife Investigation Laboratory 1701 Nimbus Road Suite D Rancho Cordova, CA 95670	Phone: 916-358-2815 Fax: 916-358-2817 E-mail: 75142.1002@compuserve.com	YES	See wildlife forensic lab section

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
COLORADO	DAL SCHAFFER CAROL MEHAFFY Colorado Division of Wildlife 317 West Prospect Ft. Collins, CO 80526	Phone: 970-472-4313 Fax: 970-472-4457 E-mail: dal.schaffer@state.co.us carol.mehaffy@state.co.us	NO	Uses Colorado State University College of Veterinary Medicine and Wyoming Department of Game and Fish Laboratory
CONNECTICUT	RAUL CAMEJO Department of Environmental Protection Law Enforcement Division 79 Elm Street Hartford, CT 06106	Phone: 860-424-3012 Fax: 860-424-4070 E-mail: raul.camejo@po.state.ct.us	NO	
DELAWARE	H. W. TOWERS, JR. Delaware Department of Agriculture 2320 South DuPont Highway Dover, DL 19901	Phone: 302-739-4811 Fax: 302-697-4451 E-mail: wes@smtp.dda.state.de.us	NO	Uses the Delaware Department of Agriculture Laboratory
FLORIDA	ROBERT L. EDWARDS Florida Fish and Wildlife Conservation Commission Farris Bryant Building 620 South Meridian Street Tallahassee, FL 32399-1600	Phone: 850-488-6251 Fax: E-mail:	NO	
GEORGIA	Sgt. Terry L. West Wildlife Resources Division Law Enforcement Section 2109 US Highway 278 SE Social Circle, Georgia 30025	Phone: 770-918-6414 Fax: 706-557-3041 E-mail: terry_west@mail.dnr.state.ga.us	NO	Uses University of Georgia, Southeastern Wildlife Disease Center. Also has officers trained for the Octorloney analysis

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
HAWAII	GARY D. MONIZ Enforcement Chief Department of Land & Natural Resources Division of Conservation and Resources Enforcement 1151 Punchbowl Street, Room 311 Honolulu, HI 96813	Phone: 808-587-0068 Fax: 808-587-0080 E-mail: DLNR_Enforcement@exec.state.hi.us	NO	Uses State of Hawaii, Department of Agriculture, Veterinary Diagnostic Laboratory, and the Department of Health, Diagnostic Laboratory
IDAHO	KAREN M. RUDOLPH Idaho Fish & Game Wildlife Health Laboratory	E-mail: Krudolph@micron.net	YES	In house and Ashland USFWS Wildlife Forensic Laboratory. See wildlife forensic lab section
INDIANA	Lt. DAVID WINDSOR Training Officer/Forensic Program Coordinator Law Enforcement Division Indiana Department of Natural Resources Indianapolis, IN 46204	Phone: 317-232-4014 Fax: 317-232-8035 E-mail: d Windsor@dnr.state.in.us	NO	Uses university and state laboratories for lead test, DNA, hair and feather identification
IOWA	LOWELL JOSLIN Iowa Department of Natural Resources Wallace State Office Building Des Moines, IA 50319	Phone: 515-281-5919 Fax: 515-281-6794 E-mail: lowell.joslin@dnr.state.ia.us	NO	Uses state laboratories for blood work, firearms, meat and hair identification. Also uses Ashland USFWS Wildlife Forensic Laboratory.
ILLINOIS	JENNIFER C. HENRY Illinois Department of Natural Resources 524 South 2nd Street Suite 330 Springfield, IL 62701-1787	Phone: 217-782-6431 Fax: 217-785-8405 E-mail: jhenry@dnrmail.state.il.us	NO	Uses state and university laboratories. Also uses Ashland USFWS Wildlife Forensic Laboratory

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
KANSAS	RICHARD HARROLD Kansas Wildlife & Parks 512 SE 25th Avenue Pratt, KS 67124	Phone: 316-672-5911 Fax: 316-672-6020 E-mail:	NO	Uses Kansas Bureau Investigation laboratory, the Texas Wood Hatchery laboratory, and Ashland USFWS Wildlife Forensic Laboratory
KENTUCKY	RANDY HEDGES Kentucky Department of Fish & Wildlife #1 Game Farm Road Frankfort, KY 40601	Phone: 502-564-3176 Fax: 502-564-3178 E-mail:	NO	Uses state and university laboratories for blood and hair identification, firearms, tool marks, and trace evidence
LOUISIANA	BRIAN SPILLMAN Louisiana Department of Wildlife & Fish Division of Law Enforcement PO Box 98000 Baton Rouge, LA 70898-9000	Phone: 225-765-2987 Fax: 225-763-3851 E-mail: spillman-bl@wlf.state.la.us	NO	Uses state and University labs
MAINE	DEBORAH S. PALMAN Maine Warren Service Department of Inland Fish. & Wildlife 284 State Street Station 41 Augusta, ME 04333	Phone: 207-941-4440 Fax: 207-941-4443 E-mail: Debbie_Palman@state.me.us	YES	See wildlife forensic Lab section
MARYLAND	Capt. MICHAEL G. SEWELL Maryland Natural Resources Police 580 Taylor Avenue., E-3 Annapolis, MD 21401	Phone: 410-260-8864 Fax: 410-260-8879 E-mail: MSEWELL@DNR.STATE.MD.US	NO	Uses state and University labs. Also uses Ashland USFWS Wildlife Forensic Laboratory
MASSACHUSETTS	THOMAS RICARDI Massachusetts Environmental Police 183 Mille Street Westboro, MA 01581	Phone: 508-366-6420 Fax: 508-792-7437 E-mail:	NO	Uses state and University laboratories

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
MICHIGAN	DAVID BICIGO Michigan State Police 6296 Dixie Highway PO Box 608 Bridgeport, MI 48722	Phone: 517-777-9300 Fax: 517-777-0551 E-mail: BicigoD@state.mi.us	YES	
	DAVID A. PUROL Michigan Department Natural Resources Law Enforcement Division 530 West Allegan PO Box 30031 Lansing, MI 48933	Phone: 517-335-3411 Fax: 517-373-6816 E-mail: purol@state.mi.us	YES	See wildlife forensic lab section
MINNESOTA	SCOTT BRADLEY Special Investigation Unit Department of Natural Resources 500 Lafayette Road St Paul, MN 55155	Phone: 612-297-1201 Fax: E-mail:	NO	Uses the University of Minnesota College of Veterinary Medicine, Minnesota Bureau of Criminal Apprehension, and Ashland USFWS Wildlife Forensic Laboratory
MISSISSIPPI	RANDALL MILLER Mississippi Dept. of Wildlife, Fish, & Parks PO Box 451 2906 North State Street Jackson, MS 39206	Phone: 601-364-2233 Fax: 601-364-2231 E-mail:	NO	Uses the Mississippi State Police Crime Laboratory and Ashland USFWS Wildlife Forensic Laboratory
MISSOURI	DAVE BEFFA Field Chief Missouri Department of Conservation P.O. Box 180 Jefferson City, MO 65102	Phone: 573-751-4115 Fax: 573-751-8971 E-mail: beffad@mail.conservation.state.mo.us	YES	See wildlife forensic lab section

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
	JEFFREY KOPPLEMAN Fisheries Research Biologist 1110 South College Avenue Columbia, MO 65201	Phone: 573-884-6861 Fax: 573-882-9807 E-mail: kippej@mail.conservation.state.mo.us	YES	See wildlife forensic lab section
MONTANA	KEITH E. AUNE Montana Dept. Fish, Wildlife, & Parks PO Box 173220 Bozeman, MT 59717	Phone: 406-994-6357 Fax: 406-994-4090 E-mail: Kaune@montana.edu	YES	See wildlife forensic lab section
	JULIE LONG Montana Division of Forensic Science 2679 Palmer Street Missoula, MT 59808	Phone: 406-728-4970 Fax: 406-549-1067 E-mail: jolong@mt.gov	YES	See wildlife forensic lab section
NEBRASKA	DAVID OATES Nebraska Game & Parks Commission 2200 North 33 Street Lincoln, NE 68503	Phone: 402-471-5441 Fax: 402-471-5528 E-mail: doates@ngpc.state.ne.us	YES	See wildlife forensic lab section
NEVADA	TOM ATKINSON Nevada Division of Wildlife PO Box 10678 Reno, NV 89520	Phone: 707-688-1500 Fax: E-mail:	NO	Uses state and university labs
NEW HAMPSHIRE	Major RONALD ALIE Chief of Law Enforcement Fish and Game Department 2Hazen Drive Concord, NH 03301	Phone: Fax: E-mail:	NO	Uses University labs

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
NEW JERSEY	DOUGLAS E. ROSCOE, Ph.D. Research Scientist New Jersey Division of Fish and Wildlife Clinton WMA 7 Van Sykel's Road Hampton, NJ 08827	Phone: 908-735-6398 Fax: 908-735-6161 E-mail:	YES	See wildlife forensic lab section
NEW MEXICO	JOHN MILES New Mexico Department. of Game & Fish PO Box 25112 Sante Fe, NM 87504	Phone: 505-827-7934 Fax: 505-827-7915 E-mail: jmiles@gmfish.state.nm.us	NO	Uses the state crime laboratory and Ashland USFWS Forensic Laboratory
NEW YORK	did not respond to survey request			
NORTH CAROLINA	KENNTH W. EVERHART North Carolina Wildlife Resource Commission 512 North Salisbury Street Raleigh, NC 27604-1188	Phone: 919-733-7191 Fax: 919-715-7644 E-mail: everhakw@mail.wildlife.state.nc.us	NO	Uses state and university laboratories
NORTH DAKOTA	RAY GOETZ North Dakota Game & Fish Department 100 North Bismarck Expressway Bismarck, ND 58501-5095	Phone: 701-328-6324 Fax: 701-328-6352 E-mail: rgoetz@state.nd.us	NO	Uses private laboratories and Ashland USFWS Wildlife Forensic Laboratory
OKLAHOMA	DENNIS MAXWELL Assistant Chief, Law Enforcement Oklahoma Dept. of Wildlife Conservation 1801 North Lincoln Oklahoma City, OK 73105	Phone: 405-521-3719 Fax: 405-522-3486 E-mail:	NO	Uses university laboratories, Texas Wood Hatchery laboratory and Ashland USFWS Wildlife Forensic Laboratory
	GENE GILLILAND Research Biologist Oklahoma Dept. Wildlife Conservation 500 East Constellation Norman, OK 73072	Phone: 405-325-7288 Fax: 405-325-7631 E-mail: ggillokla@aol.com	YES	See wildlife forensic lab section

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
OHIO	DANIEL T. SCHNEIDER Ohio Division of Wildlife 1840 Belcher Drive, G-3 Columbus, OH 43224-1329	Phone: 614-265-7093 Fax: 614-262-1143 E-mail: dan.schneider@dnr.state.oh.us	YES	Uses state and university laboratories and Ashland USFWS Wildlife Forensic Laboratory
OREGON	JAMES O. PEX Oregon State Police Forensic Laboratory 333 South 4th Street Coos Bay, OR 97420	Phone: 541-269-2967 Fax: 541-267-2007 E-mail: jim.pex@state.or.us	NO	
	BRAD TELYEA Oregon State Police Forensic Services Division 400 Public Service Building Salem, OR 97310	Phone: 503-378-3720 Fax: 503-363-5475 E-mail: brad.telyea@state.or.us	YES	State crime laboratory also provides forensic services
PENNSYLVANIA	PAUL R. DAUBE Pennsylvania State Police Crime Laboratory 1800 Elmerton Avenue Harrisburg, PA 17110	Phone: 717-783-5554 Fax: 717-772-3267 E-mail:	YES	See wildlife forensic lab section
RHODE ISLAND	DAVID M. TYLER Rhode Island Dept. Environmental Management Division of Enforcement 83 Park Street Providence, RI 02839	Phone: 401-222-3070 Fax: 401-222-6823 E-mail:	NO	Uses university laboratories and state crime laboratory
SOUTH CAROLINA	Lt. Colonel STANLEY SMITH South Carolina Department of Natural Resources P.O. Box 167 Columbia, SC 29201	Phone: 803-734-3607 Fax: 803-734-3962 E-mail: smsiths@scdnr.state.sc.us	NO	Uses River Bank Zoo, Columbia, for Evidence Recover and Ashland USFWS Wildlife Forensic Laboratory
SOUTH DAKOTA	RONALD CATLIN South Dakota Game, Fish & Parks Dept. 523 East Capitol Pierre, SD 57501-3185	Phone: Fax: E-mail:	NO	

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
TENNESSEE	MIKE STOCKDALE Tennessee Wildlife Resources Agency 200 Lowell Thomas Drive Jackson, TN 38301	Phone: 901-423-5725 Fax: 901-423-6483 E-mail: mike@compu.net	YES	See wildlife forensic lab section
TEXAS	BEVERLY VILLARREAL Texas Parks and Wildlife Department A.E. Wood Hatchery 507 Staples Road San Marcos, TX 78666	Phone: 512-353-3483 Fax: 512-353-0629 E-mail: beverly_villarreal@tpwd.state.tx.us	YES	See wildlife forensic lab section
U.S. FISH AND WILDLIFE SERVICE	KEN GODDARD National Fish & Wildlife Forensic Laboratory 1490 East Main Street Ashland, OR 97520	Phone: 541-482-4191 Fax: 541-482-4989 E-mail: ken_goddard@fws.gov	YES	See wildlife forensic lab section
UTAH	DOUGLAS MESSERLY Investigator Utah Division of Wildlife Resources P.O. Box 606 1470 North Airport Road Cedar City, UT 84720	Phone: 435-865-6116 Fax: 435-586-2457 E-mail: dmesserl@state.ut.us	NO	Uses state crime laboratory for blood, tissue, hair identification, ballistics. Uses private laboratories for DNA analyses
VERMONT	RICHARD E. HISLOP Vermont Fish & Wildlife Department 103 South Main Street Waterbury, VT 05671-0501	Phone: 802-241-3681 Fax: 802-241-3295 E-mail: rhislop@fwd.anr.state.vt.us	NO	Uses state crime laboratory
VIRGINIA	HERB FOSTER Virginia Dept. of Game & Inland Fisheries PO Box 11104 4010 West Broad Street Richmond, VA 23230	Phone: 804-367-1000 Fax: 804-367-2430 E-mail: hfooster@dgif.state.va.us	NO	Uses state crime laboratory and Ashland USFWS Wildlife Forensic Laboratory

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
	R. W. MAWYER Virginia Dept. of Game & Inland Fisheries PO Box 11104 4010 West Broad Street Richmond, VA 23230	Phone: 804-367-1000 Fax: 804-367-2430 E-mail:	NO	Uses state crime laboratory and Ashland USFWS Wildlife Forensic Laboratory
WEST VIRGINIA	Lt. Colonel W.B. DANIEL Deputy Chief Division of Natural Resources Law Enforcement Building 3, Capitol complex Charleston WV 25305	Phone: 304-558-2783 Fax: 304-558-1170 E-mail: wdaniel@dnr.state.wv.us	NO	Uses West Virginia State Police Lab, South Charleston, WV, for blood, hair and DNA tests
WASHINGTON	JAMES B. SHAKLEE Washington Department of Fish & Wildlife 600 Capitol Way North Olympia, WA 98501-1091	Phone: 360-902-2752 Fax: 360-902-2944 E-mail: shakljbs@dfw.wa.gov	YES	See wildlife forensic Lab section
WISCONSIN	TOM HARELSON Wisconsin Department Natural Resources PO Box 7921 Madison, WI 53707	Phone: 608-266-1115 Fax: 608-266-3696 E-mail:	NO	Uses state crime laboratory
WYOMING	DEE DEE HAWK Wyoming Game & Fish Department PO Box 3312 University Station Laramie, WY 82071	Phone: 307-766-6313 Fax: 307-766-5630 E-mail: dhawk@uwyo.edu	YES	See wildlife forensic lab section
	DANNY N. WALKER Wyoming Assistant State Archaeologist Department of Anthropology University of Wyoming P.O. Box 3431 Laramie, WY 82071-3431	Phone: 307-766-5565 Fax: 307-766-4262 E-mail: dnwalker@uwyo.edu	YES	See wildlife forensic lab section

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
ALBERTA	BOB MCCLYMONT Natural Resources Service 7th Floor O.S. Longman Building 6909 - 116 th Street Edmonton, AB T6H 4P2	Phone: 780-427-3518 Fax: 780-422-9685 E-mail: Bob.McClymont@gov.ab.ca	YES	See wildlife forensic lab section
BRITISH COLUMBIA	HELEN M. SCHWANTJE Ministry of Environment Wildlife Branch PO Box 9374 STN Prov. gov. Victoria, BC V8V 9M4	Phone: 250-953-4285 Fax: 250-356-9145 E-mail: hschwant@fwdept.env.gov.bc.ca	NO	Uses University of Alberta laboratory and Ashland USFWS Wildlife Forensic Laboratory
	BILL BRESSER Ministry of Environment Lands and Parks PO Box 9338 STN prov. gov. Victoria, BC V8W 9M1	Phone: 250-953-3560 Fax: 250-953-3298 E-mail: bbresser@enforce.env.gov.bc.ca	NO	
	ERNEST COOPER Pacific Environmental Science Centre Environment Canada 2645 Dollarton Highway North Vancouver, B.C. V7H 1B1	Phone: 604-924-2542 Fac: 604-924-2555 E-mail: ernie.cooper@ec.gc.ca	YES	See wildlife forensic lab section
	SUSAN J. CROCKFORD Pacific Identifications, Inc. 6011 Oldfield road, R.R. #3 Victoria, B.C. V8X 3X1	Phone: 250-721-7296 Fax: 250-721-6215 E-mail: scrock@tnet.net	YES	See wildlife forensic lab section
MANITOBA	DAVID E. WARD Manitoba Natural Resources PO Box 36 200 Saulteaux Cr Winnipeg, Manitoba R3J 3W3	Phone: 204-945-7269 Fax: 204-945-8866 E-mail:	NO	Uses University of Alberta laboratory and Trent University laboratory

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
NEW BRUNSWICK	STEVE GRIFFITHS Molecular Biology Group Research & Product Council 921 College Hill Road Fredericton, NB E3B 6Z9	Phone: 506-452-0581 Fax: 506-452-1395 E-mail: sgriffit@rpc.unb.ca	YES	See wildlife forensic lab section
	MICHAEL COMEAU New Brunswick Dept. Natural Resources PO Box 6000 Fredericton, New Brunswick E3B 5H1	Phone: 506-453-2488 Fax: 506-453-2412 E-mail: mjcomeau@gov.nb.ca	NO	
	RICHARD MONROE Director, Enforcement Section Regional Support Services Department of Natural Resources and Energy P.O. Box 6000 Fredericton, NB E3B 5H1	Phone: 506-453-2488 Fax: 506-453-2412 E-mail:	NO	Uses University laboratory for wood fiber analysis. Use private laboratories for DNA , meat, hair, and blood analyses
NEWFOUNDLAND	ROBERT WHITTEN Dept. of Forest Resources & Agrifoods Bldg. 810 Pleasantville PO Box 8700 St. John's, Newfoundland A1B 4J6	Phone: 709-729-2647 Fax: 709-729-6108 E-mail: rwhitten@wild.dnr.gov.nf.ca	NO	Uses Trent University (see Ontario) for DNA testing, species and sex determinations
NORTHWEST TERRITORY	BRETT ELKIN NWT Wildlife & Fish. Division 600, 5102 - 50 th Ave Yellowknife, NWT X1A 3S8	Phone: 867-873-7761 Fax: 867-873-0293 E-mail: brett-elkin@gov.nt.ca	NO	Uses University of Alberta and Saskatoon laboratories and Ashland USFWS Wildlife Forensic Laboratory
NOVA SCOTIA	C.E. MOORE Nova Scotia Dept. of Natural Resources PO Box 698 Halifax, NS B3J 2T9	Phone: 902-424-8925 Fax: 902-424-7735 E-mail: cemoore@gov.ns.ca	NO	Uses state and university laboratories

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
ONTARIO	RICHARD STANKIEWICZ Ontario Ministry of Natural Resources Provincial Enforcement Section 300 Water Street, Box 7000 Peterborough, ON K9J 8M5	Phone: 705-755-1807 Fax: 705-755-1757 E-mail: rick.stankiewicz@mnr.gov.on.ca Chris.wilson@mnr.gov.on.ca	YES	OMNR Fisheries Genetic Lab and liaison with Trent University laboratory.
	DR. IAN K. BARKER, Regional Director Canadian Cooperative Wildlife Health Centre Ontario Regional Centre Department of Veterinary Pathology University of Guelph Guelph, Ontario N1G 2W1	Phone: 519-823-8800, ext. 4616 Fax: 519-824-5930 E-mail: ibarker@ovcnet.uoguelph.ca	YES	See wildlife forensic lab section
	BRADLEY N. WHITE PAUL J. WILSON Wildlife Forensic DNA Laboratory Department of Chemistry Trent University 1600 East Bank Drive Peterborough, ON K9J 7B8	Phone: 705-748-1687 Fax: 705-748-1625 E-mail: stankiri@epo.gov.on.ca pawilson@trentu.ca	YES	
PRINCE EDWARD ISLAND	Dr. PIERRE-YVES DAOUST, Regional Director Canadian Cooperative Wildlife Health Centre Atlantic Regional Centre Atlantic Veterinary College University of Prince Edward Island 550 University Avenue Charlottetown, Prince Edward Island C1A 4P3	Phone: 902-566-0667 Fax: 902-566-0958 E-mail: daoust@upej.ca	YES	See wildlife forensic lab section
QUEBEC	ABDALLAH MARDINI Lab Director 9530 Rue de la Faune Charlesbourg, QC G1G 5H9	Phone: 418-644-8844-315 Fax: 418-622-3014 E-mail: abdallah.mardini@fapaq.gouv.qc.ca	YES	See wildlife forensic lab section

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
	Dr. DANIEL MARTINEAU, Regional Director Centre canadien coopératif de la santé de la faune Faculté de méd. vétérinaire Université de Montréal C.P. 5000 St-Hyacinthe (Québec) J2S 7C6	Phone: 450-773-8521, ext 8347 Fax: 450-778-8116 E-mail: martinea@umontreal.ca	YES	See wildlife forensic lab section
SASKATCHEWAN	GARY WOBESER, Co-Director Canadian Cooperative Wildlife Health Centre Western/Northern Region Department of Veterinary Pathology University of Saskatchewan Saskatoon, Sask. S7N 5B4	Phone: 306-966-7310 Fax: 306-966-7439 E-mail: gary.wobeser@usask.ca	YES	See wildlife forensic lab section
YUKON TERRITORY	TONY J. GRABOWSKI Department Renewable Resources Field Services Branch PO Box 2703 Whitehorse, YK Y1A 2C6	Phone: 867-667-5115 Fax: 867-393-6206 E-mail: Tony.Grabowski@gov.yk.ca	NO	Uses University of Alberta laboratories and Ashland USFWS Wildlife Forensic Laboratory
BAJA CALIFORNIA SUR, MEXICO	PATRICIA CORTES CALVA Centro de Investigaciones Biológicas del Noroeste, S.C., (CIBNOR) Km. 0.5 a la telefónica terrenos "El Conchalito", El Conchalito La Paz A.P.128 La Paz, Baja California Sur, C.P. 23097	Phone: 112-5-36-33 Fax: 112-5-36-25 E-mail: pcortes@cibnor.mx	NO	
DURANGO, MEXICO	RAÚL MUÑÍZ MARTÍNEZ Centro Interdisciplinario de Investigación para el Desarrollo Integral Regional, I.P.N., Unidad Durango, (CIIDIR-Durango) Zarco No. 106 Vicente Guerrero A.P. Vicente Guerrero, Durango, C.P. 34890	Phone: 186-502 65 Fax: 186-502 65 E-mail:	NO	

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
MICHOACÁN, MEXICO	MANUEL GOMEZ ESPINOSA Gobierno Del Estado de Michoacan Zoologico de Morelia Calzada Juarez S/N A.P. 92 Morelia, Michoacán, C.P. 58000	Phone: 14-19-49 Fax: 14-19-49 E-mail:	NO	
SINALOA, MEXICO	LUIS FELIPE RODRIGUEZ AVILA Procuraduria Federal de Proteccion n Ambiente Prolongacion Angel Flores #1248 – 201 Poniente Col. Centro C.P. 80,000 Culiacan, Sinaloa, Mexico	Phone: 67-16-50-17 Fax: 67-16-51-06 E-mail: profepa@sin1.telmex.nat.mx	NO	
YUCATAN, MEXICO	VICTOR M. VIDAL-MARTINEZ Cinvesiav-IPN Merida Unit Antigua Casr a Progreso Km 6, Cordemey, Apde. Postal 73, C.P. 97310 Merida, Yucatan, Mexico 97310	Phone: 99-81-2960 Fac: 99-81-2917 E-mail: vvidal@kin.deamet.conacyt.mx	YES	
	Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma de Yucatán, (FMVZ-UADY) Km 15.5 Carr. Mérida-Xmatkuil, Cordemex Xmatkuil A.P.4-116 Mérida, Yucatán, C.P. 97100	Phone: 99-23-73-04 Fax: 99-23-40-09 E-mail:	NO	
	Msc. Francisco Aranda Cirerol c/o MVZ. Eduardo Sierra Lira Diagnostic Unit Coordinator/Veterinary Medicine Area Coordinator Faculty of Veterinary Medicine and Animal Husbandry Aut. University of Yucatan Km. 15.5 Carr. Merida-Xmatkuil Apdo. Postal 4-116 Col. Itzimna Merida, Yucatan, Mexico 97100	Phone: 52-99-42-32-00, extension 34-37 Fax: 52-99-42-32-09 E-mail: acirerol@tunku.uady.mx and elira@tunku.uady.mx	YES	See wildlife forensic lab section

STATE/PROVINCE	CONTACT	PHONE/FAX/EMAIL	FORENSIC LAB	COMMENTS
DISTRITO FEDERAL, MEXICO	Fernando Constantino Verterinarian Pathologist Departamento de Patologia, F.M.V.Z. UNAM, Ciudad Universitaria Mexico, Distrito Federal 04510	Phone: 52-56-16-10-60 Fax: 52-56-16-10-60 E-mail: fcc@servidor.unam.mx	YES	See wildlife forensic lab section

North American Wildlife Forensic Laboratories

ALASKA DEPARTMENT OF PUBLIC SAFETY

Lab Director or Forensic Specialist Name: Jim Wolfe
Title: Criminalist III
Address: Alaska State Crime Laboratory, 5500 E. Tudor Road
City: Anchorage
State/province: Alaska
Postal Code:
Telephone: 904-269-5683
Fax: 907-338-6614
E-mail: james_wolfe@dps.state.ak.us

How many staff work on wildlife forensics? One (1) Part Time

What forensic techniques are available at (within) your laboratory? The Alaska State Crime Lab provides Forensic science support for all law enforcement agencies in the state, including all wildlife law enforcement agencies. We provide analyses in most of the standard forensic techniques, i.e., firearm/tool marks, fingerprints, trace evidence, shoe prints/tire tracks, etc., and also provide the following wildlife specific techniques: species identification of big game hairs, physical matching of game animal parts and post-mortem exams.

What species can be identified with these techniques? We no longer do species identification of meat and blood. The hair identification can identify hairs from Alaskan cervids – moose, elk, caribou, blacktail deer.

What new forensic techniques or other data are being developed within your laboratory? In wildlife forensics – none.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? We would like to see a manufactured, quality, controlled (and validated) STR DNA typing kit for use on Alaskan big game animals.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes, all law enforcement agencies in the state of Alaska – local, state and federal.

Are fees charged to these outside agencies for forensic analyses? No.

Are fees charged to these outside agencies for court testimony? No.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Has never happened.

Is your laboratory certified by any private organization or state, provincial or federal agency? Yes, ASLLD certified.

Are laboratory personnel certified as court expert witnesses? Yes, in state and federal court for wildlife specific areas of hair identification, physical matching, post-mortem examinations, species identification by meat and blood.

Briefly describe your procedures for evidence control: Evidence is received by an evidence custodian. The lab maintains an internal chain of custody as evidence is checked out and returned by the analysts.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? We provide a written report describing the test results and the examiners findings.

Briefly describe your physical facilities: 18,000 square foot building housing 26 employees. We are relatively well equipped with instrumentation for analysis of a wide variety of evidence including 3 GCM's, one FTIR for drug analyses, SEM, micsd FTIR for trace evidence, AB1 310 for DNA STR analysis, vehicle exam area, and autopsy room with X-ray for state medical examiner's office.

Do you use any other laboratories for wildlife forensic tests? Yes, USFWS laboratory in Ashland, Oregon.

Do you use University or other state laboratories for wildlife forensic analyses? Yes, we use the state veterinarian for post-mortem examinations that involve more than bullet recovery or physical matching. We use the state fish and game laboratory for fish identifications.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	Yes

Other comments about your lab or capabilities: We are finding that the requests for wildlife specific tests are limited (partly because we have our wildlife officers send meat and blood evidence for species identification and DNA directly to the USFWS laboratory). Last year 30 cases came in from Wildlife Law Enforcement agencies and only three cases requested wildlife specific tests. The rest of the cases included analyses such as fingerprints, shoeprints, etc.

ALBERTA NATURAL RESOURCES SERVICES

Lab Director or Forensic Specialist Name: Bob McClymont

Title: Forensic Biologist

Address: 7th Floor, O.S. Longman Building, 6909 - 116th Street

City: Edmonton

State/province: Alberta

Postal Code: T6H 4P2

Telephone: 780-427-3518

Fax: 780-422-9685

E-mail: Bob.McClymont@gov.ab.ca

How many staff work on wildlife forensics?

Three (3) Full Time

What forensic techniques are available at (within) your laboratory? Immunodiffusion for identification of family; native PAGE for identification of species; IEF for identification of species; time of death; minimum number of individuals from assembly of body parts; bullet vs. arrow wound, antemortem vs. post-mortem; hair, feather, bone identification; age class of big game from teeth and bones; sex of big game from certain bones.

What species can be identified with these techniques? All big game species; most game bird and fish species; domestic animals, human.

What new forensic techniques or other data are being developed within your laboratory? Verifying electrophoretic techniques for identification of other species. We are implementing DNA analysis for determining sex, species, individualization, and geographic origin of various wildlife species.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? DNA for species identification, individualization, and geographic origin.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes. Any enforcement agency that requests

Are fees charged to these outside agencies for forensic analyses? Yes. Cost of sending exhibits to and from our lab would be paid by summiteer.

Are fees charged to these outside agencies for court testimony? Yes. Expenses incurred to attend court would be paid for us.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? We have been accepted in various Provincial courts as experts in species identification, time of death, ageing, wound identification, etc. It is up to each individual judge that we appear before as to whether or not he will accept us as being an expert.

Briefly describe your procedures for evidence control: Submissions are given a lab number and recorded in a log book. Summiteer completes an exhibit report or request for analysis form, identifying what is being submitted and what

information is required about the exhibit. Exhibits are locked up when not being worked on. If the analyst is required to testify, the exhibits would be taken to court. If the analyst is not required but the exhibits need to be returned, they would be sent in a sealed container.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Results are entered on a section of the bottom of the submitted Request For Analysis form or a Certificate of Analysis is completed.

Briefly describe your physical facilities: Large animal post-mortem room, small wet lab area, large dry lab area, large walk-in freezer, large forensic lab room where we do our electrophoresis and immunodiffusion, study skin room, skeleton storage room, office for each staff for paper work.

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyses? Yes. University lab used for DNA analysis; sex determination and individualization of big game species. Provincial Department of Agriculture used for toxicology, bacteriology and pathology.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

Regional Yes

National Yes

International Yes

In the past, we have traveled, but with continuing budget cuts, this may be more difficult in the future.

CALIFORNIA DEPARTMENT OF FISH AND GAME

Lab Director or Forensic Specialist Name: James Banks and Kenneth Levine

Title: Wildlife Forensic Biologist

Address: California Department of Fish and Game, 1701 Nimbus Road

City: Rancho Cordova

State/province: California

Postal Code: 95670

Telephone: 916-358-2815 or 2816

Fax: 916-358-2817

E-mail: 75142.1002@compuserve.com

How many staff work on wildlife forensics? One and a half (1.5) Full Time and one-half (0.5) half time.

What forensic techniques are available at (within) your laboratory? Immunodiffusion techniques; enzyme testing; DNA technology (currently deer; near future elk and abalone; or any other species where primers and base line information is available); morphology comparisons; fresh vs. frozen tissue; directions for projectile recovery or projectile pathways; organ identification. The techniques available in our lab must be well accepted by the forensic community and especially the wildlife forensic group.

What species can be identified with these techniques? Most any family of animals if anti-sera are available and can be tested properly and kept under controlled conditions. We can identify or confirm many species using immunology and enzymology, including deer, elk, bear, canids, felids, some upland game, some waterfowl, several marine and inland fish.

What new forensic techniques or other data are being developed within your laboratory? Primary emphasis is on DNA technology including sexing, presence of multiple number of individuals, exclusion, matching and geographical location of a variety of animals.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? DNA technology – many species need to be developed. More reliable techniques for times of death and length of time tissue has been frozen.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? No.

Are fees charged to these outside agencies for forensic analyses? Not applicable.

Are fees charged to these outside agencies for court testimony? Not applicable.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? No.

Is your laboratory certified by any private organization or state, provincial or federal agency? Yes: Genetic Identification Services for DNA analyses using STRs and PCR.

Are laboratory personnel certified as court expert witnesses? Yes, in state and federal court for wildlife forensic biology.

Briefly describe your procedures for evidence control: In house procedures have been well established for more than 23 years. Chain of custody and security procedures are based on procedures used by California Department of Justice.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of

the analysis? A written report is submitted to the submitting officer and much of the evidence is then returned.

Briefly describe your physical facilities: An office and computer stations, an evidence receiving room, a general forensic lab and a separate DNA laboratory, a documentation room and evidence room and freezers.

Do you use any other laboratories for wildlife forensic tests? Yes, NMR at UC Davis School of Human Medicine for biostatistical analyses and MCLA for DNA technology. DNA analyses and consultations from Genetic Identification Services ; and numerous universities in California.

Do you use University or other state laboratories for wildlife forensic analyses? Yes, see above.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? Yes, see above.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Sometimes
<i>National</i>	No
<i>International</i>	No

**CANADIAN COOPERATIVE WILDLIFE HEALTH CENTRE
WESTERN/NORTHERN REGION**

Lab Director or Forensic Specialist Name: Dr. Gary Wobeser

Title: Co-Director of CCWHC

Address: Canadian Cooperative Wildlife Health Centre, Western/Northern Region, Department of Veterinary Pathology, University of Saskatchewan

City: Saskatoon

State/province: Saskatchewan

Postal Code: S7N 5B4

Telephone: 306-966-7310

Fax: 306-966-7439

E-mail: gary.wobeser@usask.ca

How many staff work on wildlife forensics?

Three (3) Part Time

**CANADIAN COOPERATIVE WILDLIFE HEALTH CENTRE
ONTARIO REGION**

Lab Director or Forensic Specialist Name: Dr. Ian K. Barker

Title: Regional Director

Address: Canadian Cooperative Wildlife Health Centre, Ontario Regional Centre, Department of Veterinary Pathology, University of Guelph

City: Guelph

State/province: Ontario

Postal Code: N1G 2W1

Telephone: 519-823-8800, ext. 4616

Fax: 519-824-5930

E-mail: ibarker@ovcnet.uoguelph.ca

How many staff work on wildlife forensics?

Two (2) Part Time

**CANADIAN COOPERATIVE WILDLIFE HEALTH CENTRE
ATLANTIC REGION**

Lab Director or Forensic Specialist Name: Dr. Pierre-Yves Daoust

Title: Regional Director

Address: Canadian Cooperative Wildlife Health Centre, Atlantic Regional Centre, Atlantic Veterinary College, University of Prince Edward Island, 550 University Avenue

City: Charlottetown

State/province: Prince Edward Island

Postal Code: C1A 4P3

Telephone: 902-566-0667

Fax: 902-566-0958

E-mail: daoust@upei.ca

How many staff work on wildlife forensics?

Two (2) Part Time

**CANADIAN COOPERATIVE WILDLIFE HEALTH CENTRE
QUEBEC REGION**

Lab Director or Forensic Specialist Name: Dr. Daniel Martineau

Title: Regional Director

Address: Centre Canadien Cooperatif de la Santé de la Faune, Faculté de Méd. Vétérinaire, Université de Montréal, C.P. 5000

City: St. Hyacinthe

State/province: Quebec

Postal Code: J2S 7C6

Telephone: 450-773-8521, ext. 8347

Fax: 450-778-8116

E-mail: martinea@umontreal.ca

How many staff work on wildlife forensics?

Two (2) Part Time

What forensic techniques are available at (within) your laboratory? Necropsy and determination of cause of death in wild animals of all types; recovery of bullets; characterization of wounds; identification of toxins commonly used in wildlife poisonings; matching and interpretation of portions; collection of specimens for DNA analysis.

What species can be identified with these techniques? Canadian Cooperative Wildlife Health Centre laboratories provide diagnostic service for all free-living species. We do not have in-house facility for species identification, but use other laboratories for this purpose as required.

What new forensic techniques or other data are being developed within your laboratory? Our work is primarily determination of cause of death and we use other laboratories as required for specialized tests.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? Ready availability of DNA techniques for species and individual animals within Canada would be helpful.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes, we provide service to all wildlife resource agencies in Canada at present.

Are fees charged to these outside agencies for forensic analyses? No. The CCWHC is supported by environment Canada and the resource agencies of all provinces and territories. Routine analyses are provided without charge to these agencies. Detailed or extensive analyses (beyond routine) might require additional support.

Are fees charged to these outside agencies for court testimony? No.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes (has not happened to date)

Is your laboratory certified by any private organization or state, provincial or federal agency? Each of the laboratories operates within standard veterinary laboratory operating procedures.

Are laboratory personnel certified as court expert witnesses? No (done on individual case basis).

Briefly describe your procedures for evidence control: All cases receive a unique number on receipt. Specimens for forensic examination are received from the submitting officer by the pathologist directly and an "evidence continuity" form remains with the specimen at all times. Most specimens are photographed extensively with appropriate labels. Specimens sent to other laboratories are handled to maintain continuity of evidence, and following completion of examination, non-perishable evidence is returned to the submitting officer.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Validated and signed final report forms are returned to the submitting officer by the pathologist involved. In most cases, non-perishable samples, together with completed “evidence continuity forms” are also returned to the officer. Photographs and radiographs are usually retained under the pathologist’s control.

Briefly describe your physical facilities: All four CCWHC regional centres are located at veterinary colleges, each of which has a standard veterinary diagnostic laboratory with facilities for necropsy, bacteriology, virology, parasitology, toxicology and radiology, as well as specialists in these disciplines plus the clinical sciences.

Do you use any other laboratories for wildlife forensic tests? Yes.

Do you use University or other state laboratories for wildlife forensic analyses? Yes, as noted above, the CCWHC labs are located within universities and use university facilities. We have used the National Forensic Center in Ashland Oregon for DNA analyses. The facilities use among laboratories. At Saskatoon, we use the Department of Anthropology and Archaeology for identification of osseous remains.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes, under appropriate conditions.
<i>National</i>	Yes, under appropriate conditions.
<i>International</i>	Yes, under appropriate conditions.

IDAHO FISH AND GAME DEPARTMENT

Lab Director or Forensic Specialist Name: Karen M.. Rudolph

Title: Wildlife Laboratory Biologist
Wildlife Health Laboratory

E-mail: krudolph@micron.net

How many staff work on wildlife forensics?

One (1) Part Time

What forensic techniques are available at (within) your laboratory? Capabilities include cause of death by necropsy, family and species identification tests, gender based typing, and individual matching test for mule deer.

What species can be identified with these techniques? Family, species and gender typing tests are done for major big game species. Individual matching test is done for mule deer only at this point.

What new forensic techniques or other data are being developed within your laboratory? Individual matching for elk, hair identification.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? The ability to do the individual matching test for the major big game species, with common microsatellite primers.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? No, not at present.

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? No

Briefly describe your procedures for evidence control: Officers deliver and sign over evidence to me. I lock evidence in appropriate place (freezer, cabinet, etc.). Case file is established, including instructions for disposal of evidence. We have a total staff of 5 people at the lab, so I generally oversee the whole process. (No need for elaborate chain-of-custody procedures).

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? A notarized laboratory report (original) is sent to submitting officer, normally prefaced by a verbal result call. Letter is sent (post-marked) same day as written, by U.S. mail (not certified).

Briefly describe your physical facilities: The Wildlife Health Laboratory consists of multiple rooms. Two 12'x15' rooms contain the majority of equipment and bench space for forensic work. There is also a dark room/photography space (approx. 6'x6'), a wet lab with microscopes (approx. 12'x15'), a necropsy room and office space.

Do you use any other laboratories for wildlife forensic tests? Yes. We send out cases to Ashland, but we don't physically do forensic tests in other labs.

Do you use University or other state laboratories for wildlife forensic analyses? Yes, we have Albertson College of Idaho assist in bone analysis, the University of Idaho do toxicology analysis, and the State Crime Laboratory do ballistics for us.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? We have used private companies for some forensic analysis.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or

internationally?

Regional

Yes

National

Yes

International

Don't know. Depends on Budget

Other comments about your lab or capabilities: Our laboratory has been gearing up to provide (nearly) full service forensic testing capabilities in the last few years, although an increase in personnel isn't likely to occur. We hope to provide forensic services to neighboring states in the near future.

MAINE WARDEN SERVICE, DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

Lab Director or Forensic Specialist Name: Deborah S. Palman

Title: Game Warden Specialist

Address: 284 State Street, Station 41

City: Augusta

State/province: Maine

Postal Code: 04333

Telephone: 207-941-4440

Fax: 207-941-4443

E-mail: debbie_palman@state.me.us

How many staff work on wildlife forensics? Two (2) or Three (3) (one in training)

What forensic techniques are available at (within) your laboratory? Species identification for major big game and domestic species by immunoassay, hair identification, lead tests, test for presence of blood, determination if biological material has been frozen using blood cells. Determination of antler status by the measurement of testosterone levels in meat. Opinions from departmental biologists on species of fish by fillet shape, age of animals from bones, number of individuals from bones, seasonal characteristics of animals. Bone identification available through the University of Maine, DNA analysis available through cooperation with the University of Maine. Have electrophoresis equipment to identify domestic deer species, but it has not been used on actual cases yet (no need).

What species can be identified with these techniques? Deer, moose, bear, common domestic species, hair identification for species common to Maine, other species as biologist specialties allow.

What new forensic techniques or other data are being developed within your laboratory? We are developing a profile of deer microsatellite DNA in cooperation with the University of Maine Wildlife DNA Forensics Laboratory.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? We need to develop an easy way to tell white-tailed deer, moose, and domestic deer species apart. We currently use anti-moose serum, but that will run out in a few years.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? The Maine Warden Service Forensics Lab is available for use by other agencies and has been used by them in the past on occasion.

Are fees charged to these outside agencies for forensic analyses? No fees have been charged so far. Fees might depend on case load and travel expenses. The Wildlife DNA Forensics Lab is planning to charge outside agencies.

Are fees charged to these outside agencies for court testimony? No fees have been charged so far. Court testimony has been available, and probably would be available to adjoining states and Canadian Provinces.

Is your laboratory certified by any private organization or state, provincial or federal agency? Our laboratory is not certified.

Are laboratory personnel certified as court expert witnesses? Deborah Palman has been certified as an expert witness in court. The other personnel have not had to appear yet.

Briefly describe your procedures for evidence control: Standard law enforcement procedures are used. Wardens bring in evidence for analysis with chain of custody forms. Evidence is stored at the lab in secure areas, and if forwarded somewhere else, accompanied by lab personnel, sent by registered mail, and accompanied by chain of custody forms. Evidence tape is used to seal containers.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? A letter of results is sent upon completion of examination.

Briefly describe your physical facilities: One room in the basement of a run-down building, two freezers and a freezer-refrigerator. Storage cabinets for dry materials.

Do you use any other laboratories for wildlife forensic tests? We cooperate with the University of Maine Wildlife DNA Forensics Lab and also utilize the USFWS lab in Ashland, Oregon for identifications we cannot do. The Maine Department of Public Safety Lab does our firearms, fingerprint and traditional evidence work.

Do you use University or other state laboratories for wildlife forensic analyses? See answer above, and below.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No private consultants have been utilized yet. We utilize labs and equipment at the University of Maine for testosterone assay, and may have to switch to a private lab in the future due to equipment break downs. DNA work is done at the University of Maine Wildlife DNA Forensics Lab.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally? Lab personnel travel infrequently, about once every two years. Papers have only been presented regionally.

Other comments about your lab or capabilities: The lab is only a part time operation with little ability to expand capabilities on its own. We really need to benefit from research done by other facilities.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES, LAW ENFORCEMENT DIVISION

Lab Director or Forensic Specialist Name: Dr. Stephen M. Schmitt, D.V.M.

Title: Wildlife Veterinarian

Address: Rose Lake Wildlife Disease Lab, 8562 East Stoll Road

City: East Lansing

State/province: Michigan

Postal Code: 48823

Telephone: 517-373-9358

Fax: 517-641-6022

E-mail: schmitts@state.mi.us

How many staff work on wildlife forensics?

Three (3) Part Time

What forensic techniques are available at (within) your laboratory? Cause of death determination, X-ray, aging techniques, species identification, some hair, identification and elimination.

What species can be identified with these techniques? Deer, beaver

What new forensic techniques or other data are being developed within your laboratory? None. We do the work as a service to our Law Enforcement Division and fit the work into our existing schedules, which deal primarily with wildlife disease and various furbearer and bear surveys.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? Lab does not have the manpower or the time to utilize or develop additional techniques.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? No

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? Yes, in State/Province Court for cause of death determination

Briefly describe your procedures for evidence control: Forensic specimens and evidence are stored in a separate locked room. Access is limited. Evidence transmittal forms are used to maintain the chain of custody.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? A report and transmittal sheet as well as photos and any evidence are returned to the officer. Usually the office is called immediately after the examination with paperwork to follow.

Briefly describe your physical facilities: Necropsy room with examination table, walk-in cooler, chest freezers, and X-ray room. The facility is primarily a disease laboratory so they have additional offices, labs, files, library, animal rooms, outdoor holding pens, storage rooms and freezer facilities.

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyses? Yes, Michigan State University, fee for service basis. DNA testing for individual deer and elk identification.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses?

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	No
<i>National</i>	No
<i>International</i>	No

Other comments about your lab or capabilities: Forensic examinations are done by the Wildlife Disease Lab as a service to the Law Enforcement Division and are not a main responsibility of the laboratory. At this time, no person is assigned to provide forensic services full time. If such a person were assigned, the lab would be in the position of expanding services into some of the areas inquired about in this survey.

MICHIGAN STATE POLICE

Lab Director or Forensic Specialist Name: David Biligo

Title: Forensic Science Manager

Address: 6296 Dixie Highway, P.O. Box 608

City: Bridgeport

State/province: Michigan

Postal Code: 48722

Telephone: 517-777-9300

Fax: 517-777-0551

E-mail: biligod@state.mi.us

How many staff work on wildlife forensics?

Four (4) Part Time

What forensic techniques are available at (within) your laboratory? Species identifications using Ring Precipitation or Octorloney methodology. PGI Electrophoresis.

What species can be identified with these techniques? We have anti-sera and known sera for dog, cat, deer, bear, turkey, cow, swine, and these are the more common ones we run into.

What new forensic techniques or other data are being developed within your laboratory? None at this time.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? If we got on-line with human DNA analysis in the next 5 years, then we may be able to expand into animal DNA.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes. We do work for any law enforcement agency: state, local, DNR, US Fish and Wildlife (if they need something and don't want to send it on to their labs), ATF, FBI, etc.

Are fees charged to these outside agencies for forensic analyses? No.

Are fees charged to these outside agencies for court testimony? Do not know. We have not testified in any cases to date.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Determined on a case-by-case basis.

Is your laboratory certified by any private organization or state, provincial or federal agency? Yes. ASCLAD

Are laboratory personnel certified as court expert witnesses? No

Briefly describe your procedures for evidence control: The evidence must be submitted properly sealed with evidence tape initialed and dated. The evidence is secured by the analyst within the lab. After it is processed, it is resealed, initialed and dated and put in the property room until picked up by the submitting agency.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? A written report will be sent to them.

Briefly describe your physical facilities: We are in a 140' by 60' single story brick building. The building houses the serology/trace unit (does the animal analysis), narcotics unit, latent print unit, fire arms unit, polygraph unit, and office personnel.

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyses? Yes. U.S. Fish and Wildlife for DNA analysis.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	No

MISSOURI DEPARTMENT OF CONSERVATION

Lab Director or Forensic Specialist Name: Jeffrey Koppleman

Title: Fisheries Research Biologist

Address: 1110 South College Avenue

City: Columbia

State/province: MO

Postal Code: 65201

Telephone: 573-884-6861

Fax: 573-882-9807

E-mail: koppej@mail.conservaion.state.mo.us

How many staff work on wildlife forensics? One (1) Part Time

What forensic techniques are available at (within) your laboratory? Gel Electrophoresis, Immunodiffusion; Molecular DNA analysis.

What species can be identified with these techniques? Fish species native to Missouri; white-tailed deer; wild turkey.

What new forensic techniques or other data are being developed within your laboratory? None

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? DNA cataloging of all wildlife species having recreational or commercial value; determination of body of water of origin for aquatic organisms, especially fish and mussels.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? No.

Is your laboratory certified by any private organization or state, provincial or federal agency? No.

Are laboratory personnel certified as court expert witnesses? No.

Briefly describe your procedures for evidence control:Standard Chain of Custody procedures and use of locked deep freeze with restricted access.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Memorandum to officer submitting evidence.

Briefly describe your physical facilities:Standard 20 x 20 genetics type laboratory.

Do you use any other laboratories for wildlife forensic tests? Yes.

Do you use University or other state laboratories for wildlife forensic analyses? Yes, Missouri State Highway Patrol laboratory does fingerprinting, ballistic analysis, firearms and projectile matching and immunodiffusion for cervids.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	No
<i>National</i>	No
<i>International</i>	No

MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS

Lab Director or Forensic Specialist Name: Keith E. Aune

Title: Wildlife Laboratory Supervisor

Address: Box 173220

City: Bozeman

State/province: Montana

Postal Code: 59717

Telephone: 406-994-6357

Fax: 406-994-4090

E-mail: kaune@montana.edu

How many staff work on wildlife forensics? Two (2) Full Time

What forensic techniques are available at (within) your laboratory? Post-mortem examination for cause of death; hair analysis; radiographic analysis; species/sex identification by morphological characteristics; archived genetic/DNA information gathered during various research projects.

What species can be identified with these techniques? Many mammals common to Montana: Bear, lion, cervids, forest carnivores

What new forensic techniques or other data are being developed within your laboratory? Anatomical and morphological characteristics by sex and age, especially relevant to lion, bear and furbearer species; passive DNA collected during research

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes. We support investigations by federal agents of USFWS

Are fees charged to these outside agencies for forensic analyses? No

Are fees charged to these outside agencies for court testimony? No

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? No

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? No

Briefly describe your procedures for evidence control: Chain of evidence forms and tags; evidence accession; photographic/video tracking; lab exam report signed by examiner; evidence stored in locker with custody seals.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Lab examination report signed by examiner with photographic evidence.

Briefly describe your physical facilities: Clean lab workroom; necropsy room; large walk-in cooler and freezer; minus-70 upright freezer in small work room with bench and storage space; two cubicles/office space; upstairs storage area and museum.

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyses? Yes. Missoula Crime Lab for Ballistics. Montana State University for genetics and DNA

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? Yes.
LGL/Genetics/Alaska

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	No
<i>International</i>	No

Other comments about your lab or capabilities: Restricted to serious cases involving bears and wolves and occasional support to other enforcement cases.

MONTANA DIVISION OF FORENSIC SCIENCE

Lab Director or Forensic Specialist Name: Julie Long

Title: Serology/DNA Supervisor

Address: 2679 Palmer Street

City: Missoula

State/province: Montana

Postal Code: 59808

Telephone: 406-728-4970

Fax: 406-549-1067

E-mail: jlong@mt.gov

How many staff work on wildlife forensics? Two (2) as needed – very limited requests

What forensic techniques are available at (within) your laboratory? Ouchterlony, IEF

What species can be identified with these techniques? Ouchterlony used for deer family, humans and dogs; IEF used only for human polymorphism in our lab

What new forensic techniques or other data are being developed within your laboratory? DNA – STR

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? No

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? Yes, for both State/Province Court and Federal Court, in serology, DNA, Bloodstain pattern identification

Briefly describe your procedures for evidence control: All evidence is received by evidence technician. Cases are assigned to scientists. The scientist opens and inventories evidence. All scientists have their own locked evidence vault. After analyses are complete, sealed evidence is signed back to evidence technician for return to agency.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Written report

Briefly describe your physical facilities: Serology/DNA lab has large examination room/PCR room and office for four persons and two vaults for evidence storage.

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyses? We refer to Wyoming Game and Fish Laboratory or the Federal Laboratory in Ashland, Oregon.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	?

NEBRASKA GAME AND PARKS COMMISSION

Lab Director or Forensic Specialist Name: Dave Oates

Title: Laboratory Production Manager

Address: 2200 North 33rd Street

City: Lincoln

State/province: Nebraska

Postal Code: 68503

Telephone: 402-471-5441

Fax: 402-471-5528

E-mail: doates@ngpc.state.ne.us

How many staff work on wildlife forensics? One (1) Full Time; One (1) Part Time

What forensic techniques are available at (within) your laboratory? Identification of fresh water fish, birds, mammals, in fillets, bones, hair, feathers, meat, and blood for most game species found in Nebraska. Use of DNA for species, sexing and determining numbers of animals. We don't possess a sequencer, so fingerprinting is more difficult, but we are trying.

What species can be identified with these techniques? Most game species found in the state of Nebraska: fish, birds and mammals. Freshwater fish: morphologically by fillets and scales. Mammals morphologically and DNA. Putting out a paper on species identification using DNA in 1999. Game birds

What new forensic techniques or other data are being developed within your laboratory? DNA techniques for species identification, fingerprinting of deer; sexing of game birds using meat and blood.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? Sexing of game birds; determine time of death 2-7 days after death; time spent in the freezer for game animals.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Perhaps. We don't have a person who works only on forensic cases. We are a research related lab and forensics are carried out with other duties. We would have to charge if number of cases increased and it was necessary to perform many activities for other states.

Are fees charged to these outside agencies for forensic analyses? Yes and No. No, not right now. Yes, in the future if we become really involved with forensic cases.

Are fees charged to these outside agencies for court testimony? Yes. For court testimony, other states have always paid fees. In the past, it hasn't been for the person's time away from his job, but for travel, meals, and lodging. If this was frequent, our agency might not allow for covering wages. They have been great so far.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? Yes, in State/Province Court and Federal Court. Haven't been turned down on any forensic cases. Have done species identification, time of death, forensic techniques, fish fillets, and feathers. (You only go to court on about 2% of your cases).

Briefly describe your procedures for evidence control: Samples are logged in. Samples are kept in locked walk-in freezer or safe. Lab is locked when forensic evidence is being examined. Time when samples are out of freezer is

logged on data sheets. Samples are returned to freezer and logged in. Evidence is kept in freezer until case is complete.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Laboratory Examination Report includes: Date samples submitted, officer and items submitted. Findings – each sample is analyzed and results posted for each sample. Conclusion – results of findings. Disposition of evidence – evidence kept for at least one year in freezer.

Briefly describe your physical facilities: Have two labs. First is for genetics and forensics with office, weighing room, storage room, 30'x30' area for genetics and forensic work; 12'x21' area for genetics; 9'x18' necropsy room and handling of forensic samples. Second lab is 30'x27' general lab for all people in fisheries, wildlife, and other divisions to utilize.

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyses? Yes. State crime lab for ballistics, drugs, and fingerprints. State museum for bones, feathers, and hair comparisons and matching.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? Yes. All forensic labs are more than willing to assist on procedures that they are more familiar with than your lab. Wildlife forensic people are rather few in numbers and most are very willing to assist other forensic labs. State crime lab has been very helpful.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	Yes

Other comments about your lab or capabilities: Like most laboratories, we do our best on any forensic case that is presented to our facilities. Other outside sources are utilized if necessary.

NEW BRUNSWICK RESEARCH AND PRODUCTIVITY COUNCIL (RPC)

Lab Director or Forensic Specialist Name: Steve Griffiths

Title: Group Leader, Molecular Biology Group

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State/province: New Brunswick

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Fax: 506-452-1395

E-mail: sgriffit@rpc.unb.ca

How many staff work on wildlife forensics? Three (3) Part Time

What forensic techniques are available at (within) your laboratory? IEF analysis (protein profiling); RFLP analysis; PCR microsatellite analysis (ungulates); PCR mitochondrial DNA analysis

What species can be identified with these techniques? Moose, white-tailed deer; and salmon are generally submitted. However, if access to positive controls is possible, any species comparison can be entertained.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? Data basing of local populations of moose/deer/bear to provide allelic frequencies (PCR) matching probabilities (RFLP)

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes. Anybody that enquires

Are fees charged to these outside agencies for forensic analyses? Yes. \$250 Canadian for species determination by IEF, mtDNA. Minimum submission of two samples.

Are fees charged to these outside agencies for court testimony? Yes. Hourly rate of \$139 for professional and \$73 technical

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes

Is your laboratory certified by any private organization or state, provincial or federal agency? Yes. New Brunswick Provincial Government for IEF analysis

Are laboratory personnel certified as court expert witnesses? Yes. In Provincial Court for IEF

Briefly describe your procedures for evidence control: Samples are assigned seizure tag numbers; chain of custody documentation; job authorization documentation; sample secured in -20° freezer in locked strong box or sealed bag; access is restricted to Group Leader Griffiths

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Certificate of qualified technician (N.B.)

Briefly describe your physical facilities: Most equipment for molecular biology analysis available including analytical and preparative protein electrophoresis; two PE GeneAmp 9600 PCR machines; one 310 genetic analyzer (sequencing, genotyping); range of DNA electrophoretic capabilities.

Do you use any other laboratories for wildlife forensic tests? No

Do you use University or other state laboratories for wildlife forensic analyses? No

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	No

Other comments about your lab or capabilities: Although isoelectric focusing (IEF) has been used over six years for approximately 150 cases, analysis has generally been restricted to moose, deer and Atlantic salmon meat or the blood of moose and deer removed from butchering implements or clothing. Although DNA analysis capabilities exist, we have no experience presenting evidence in court and do not expect to be prepared to do so until the data base of regional populations is complete. Funding has stalled for this part of the initiative.

NEW JERSEY DIVISION OF FISH AND WILDLIFE

Lab Director or Forensic Specialist Name: Douglas E. Roscoe, Ph.D.

Title: Research Scientist

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7 Van Sykel's Road

City: Hampton

State/province: New Jersey

Postal Code: 08827

Telephone: 908-735-6398

Fax: 908-735-6161

E-mail:

How many staff work on wildlife forensics? Three (3) Part Time

What forensic techniques are available at (within) your laboratory? Immunodiffusion (meat and blood; serology for species identification); Time of Death (body temperature measurements); Lead Residue analysis (atomic absorption spectrophotometry; rhodizonic acid test); Anticholinesterase pesticide testing (bramenzyme activity in birds, mammals and fish); Necropsy and Histopathology (trauma, poisonings).

What species can be identified with these techniques? White-tailed deer, black bear, humans, raccoons, dogs.

What new forensic techniques or other data are being developed within your laboratory? None.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? PCR with genotyping.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? No.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? No.

Is your laboratory certified by any private organization or state, provincial or federal agency? No.

Are laboratory personnel certified as court expert witnesses? Yes, in state court for wildlife pathology.

Briefly describe your procedures for evidence control: Continuity of evidence forms accompany all submissions and corresponding accession numbers accompany materials during processing. Locked limited access buildings, coolers and freezers.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Diagnostic consultation record signed by the wildlife pathologist, toxicologist, or fish pathologist.

Briefly describe your physical facilities: Three separate laboratories at three field locations: toxicology lab, fish pathology lab, wildlife pathology lab. The latter includes necropsy room, cooler, freezers, histology laboratory room, pathological incinerator, photographic documentation set-up.

Do you use any other laboratories for wildlife forensic tests? Yes, University laboratory for PCR analysis for individuation.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? Yes.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	Yes

OKLAHOMA DEPARTMENT WILDLIFE CONSERVATION

Lab Director or Forensic Specialist Name: Gene Gilliland

Title: Research Biologist

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City: Norman

State/province: Oklahoma

Postal Code: 73072

Telephone: 405-325-7288

Fax: 405-325-7631

E-mail: ggillokla@aol.com

How many staff work on wildlife forensics? One (1) Part Time

What forensic techniques are available at (within) your laboratory? Electrophoresis (starch gel – isozyme); Iso-electric focusing

What species can be identified with these techniques? Most fish; deer and other game mammals

What new forensic techniques or other data are being developed within your laboratory? None

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? None

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes. Oklahoma State Bureau of Investigation

Are fees charged to these outside agencies for forensic analyses? No

Are fees charged to these outside agencies for court testimony? No

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? No

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? No

Briefly describe your procedures for evidence control: Game wardens bring evidence with special tags. Sign over to lab technician. Sample is numbered and kept in locked freezer.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Results of test on stock form and cost analysis for court costs

Briefly describe your physical facilities: Four electrophoresis chambers with regular power supplies. Two IEF beds with power supplies. Ultra cold freezer and refrigerated centrifuge.

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyses? No

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	No
<i>National</i>	No
<i>International</i>	No

Other comments about your lab or capabilities: Used infrequently (2-5 times per year) for deer season violations and an occasional fish case.

ONTARIO MINISTRY OF NATURAL RESOURCES

Lab Director or Forensic Specialist Name: Dr. Chris Wilson (research scientist) and Michael Gatt (research technician)

Agency Lab. Contact: Richard Stankiewicz

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City: Peterborough

State/province: Ontario

Postal Code: K9J 8N8

Telephone: 705-755-2260

Fax: 705-755-2276

E-mail: rick.stankiewicz@mnr.gov.on.ca

How many staff work on wildlife forensics? Two (2) Part Time

What forensic techniques are available at (within) your laboratory? Species identification (isozyme/allozyme electrophoresis; PCR-based DNA SSCP, RFLP and sequencing); population and individual identification (microsatellite DNA).

What species can be identified with these techniques? Species identification: most major native and introduced game and commercial fish species, several endangered non-game fish species (baitfish, darters). Population/individual identification: lake trout, brook trout, walleye, esocids.

What new forensic techniques or other data are being developed within your laboratory? Verifying DNA-based markers for identifying additional species.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? A geographic based (GIS) database with species and population-level data for sharing among labs (read-only use, with controlled submission protocols).

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes.

Are fees charged to these outside agencies for forensic analyses? Yes. Fee-per-sample costs range from \$75-\$200 per sample depending on the analyses required.

Are fees charged to these outside agencies for court testimony? Yes. All costs incurred from work for outside agencies, including travel costs and personnel time, must be charged to client agencies on a cost-recover basis.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes

Is your laboratory certified by any private organization or state, provincial or federal agency? No.

Are laboratory personnel certified as court expert witnesses? No.

Briefly describe your procedures for evidence control: Submissions are signed over, logged and tagged to ensure continuity of evidence. A case file is established, and forensic samples are kept under secure conditions (locked freezer in a controlled-access room) before and after analysis.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? A written report outlining the continuity of evidence, description of methods used, and interpretation of results.

Briefly describe your physical facilities: The laboratory is divided into several rooms that are partitioned by function, with separate areas for DNA extraction, storage, PCR amplification, visualization, isotope labeling and electrophoresis. Isozyme (allozyme) and DNA based analyses are carried out in separate rooms.

Do you use any other laboratories for wildlife forensic tests? No.

Do you use University or other state laboratories for wildlife forensic analyses? No.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally? Yes (all).

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	Yes

**TRENT UNIVERSITY, DEPARTMENT OF CHEMISTRY,
WILDLIFE FORENSIC DNA LABORATORY**

Lab Director or Forensic Specialist Name: Dr. Bradley N. White (Director) and Mr. Paul J. Wilson (Forensic Specialist)

Address: Wildlife Forensic DNA Laboratory, Department of Chemistry, Trent University, 1600 East Bank Drive

City: Peterborough

State/province: Ontario

Postal Code: K9J 7B8

Telephone: 705-748-1687

Fax: 705-748-1625

E-mail: pawilson@trentu.ca

How many staff work on wildlife forensics? Two (2) Full Time; One (1) Part Time

What forensic techniques are available at (within) your laboratory? Individual identification (matching samples) using multi-focus DNA fingerprinting and microsatellite markers; Species identification using both RFLP and PCR amplification protocols; Identification and quantification of game tissue mixed with domestic tissue, i.e., processed meat samples; gender identification of mammals; parentage analysis.

What species can be identified with these techniques? Multi-locus DNA fingerprinting for matching samples or parentage—the majority of vertebrate species (note:requires a higher quality sample, i.e., non-degraded blood or tissue); microsatellite analysis for matching samples from degraded samples—moose, deer species (white-tailed deer, mule deer, elk, caribou, etc.), cattle, wolves, black bears, whales and seals; species identification—the majority of vertebrate species (focus on moose, white-tailed deer, caribou, black bear (galls)); identification and quantification of game meat in mixed sources—moose, deer species and domestic species; gender identification—the majority of mammalian species.

What new forensic techniques or other data are being developed within your laboratory? Population identification for moose, white-tailed deer, wolves and tree species, specifically pine species

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? A data base system useable by wildlife forensic DNA laboratories to exchange information, protocols, allele frequencies and technical advice.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes. The primary mandate of the laboratory has been to provide a service to the Ontario Ministry of

Natural Resources, but the laboratory has been used by every provincial natural resource agency in Canada as well as Parks Canada, the Canadian Wildlife Service (CWS), the Royal Canadian Mounted Police (RCMP), the Centre of Forensic Science, Ontario, and the US Humane Society.

Are fees charged to these outside agencies for forensic analyses? Yes. Fee-per-sample costs range from \$75-\$200 per sample depending on the analyses.

Are fees charged to these outside agencies for court testimony? Yes. Travel costs plus an agreed upon expert witness testimony fee comparable to the standard amount provided by the Crown or State.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes

Is your laboratory certified by any private organization or state, provincial or federal agency? Not at present

Are laboratory personnel certified as court expert witnesses? Yes. Provincial Court and Federal Court in the field of DNA forensic analysis.

Briefly describe your procedures for evidence control: The laboratory maintains continuity of evidence and secures samples throughout the storage and analysis of samples. Quality assurance on evidence handling and evidence control has been based on the TWGDAM guidelines and drafts of the Canadian federal guidelines for DNA diagnostic Analysis provided by members of the committee.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? A DNA report outlining continuity of evidence, summary of methodology and interpretation of results, which include probability-of-a-match, etc.

Briefly describe your physical facilities: The laboratory was constructed specifically for wildlife forensic DNA analysis. The set-up follows the recommendations of various guidelines, TWGDAM and the proposed Canadian guidelines and recommendations from the RCMP laboratory and other experts. A flow of samples and DNA has been established to minimize contamination so samples move from station to station and never return upon completing a specific phase of the analysis. Specifically, the laboratory contains a DNA extraction area; a DNA handling/preparation area; a no DNA area for solutions and PCR reagents; a PCR amplification area; and an electrophoresis area.

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyses? Yes. The above entries describe the Wildlife Forensic DNA Laboratory that our Ministry uses. We have used this lab and have funded them annually for approximately six years. This lab is not a government lab, but the above gives the details necessary to describe themselves.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses?

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	Yes

PACIFIC ENVIRONMENTAL SCIENCE CENTRE, BRITISH COLUMBIA

Lab Director or Forensic Specialist Name: Ernest Cooper

Title: Head, Wildlife Forensics Program

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2645 Dollarton Highway

City: North Vancouver

State/province: British Columbia

Postal Code: V7H 1B1

Telephone: 604-924-2542

Fax: 604-924-2555

E-mail: ernie.cooper@ec.gc.ca

How many staff work on wildlife forensics? One (1) full time; Three (3) part time

What forensic techniques are available at (within) your laboratory? Bear bile analysis; morphological (gross) identification of wildlife parts and products; DNA analysis is under development.

What species can be identified with these techniques? Bile salts can be identified as family Ursidae or not Ursidae. Morphological identification of trophies, skins (reptile and fur), herbs, etc., for identification of exotic and game species.

What new forensic techniques or other data are being developed within your laboratory? Protein identification via immunodiffusion – identification to Family. Protein identification to species via myoglobin/hemoglobin analysis. DNA analysis (PCR-STR) for species identification, individualization and sexing. Microscopic morphological identification. Macro-array/gene chip technology.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? Identification of cooked meat; time of death; time of freezing; population origin via heavy metal analysis; laser ablation KCPMS.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes, Environment Canada; British Columbia Ministry of Environment, Department of Indian and Northern Affairs; Department of Fisheries and Oceans, and other provincial or federal agencies upon request.

Are fees charged to these outside agencies for forensic analyses? Cost recovery fees are negotiated within the framework of the Federal Treasury board policy.

Are fees charged to these outside agencies for court testimony? Cost recovery fees are negotiated within the framework of the Federal Treasury board policy.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes.

Is your laboratory certified by any private organization or state, provincial or federal agency? Yes; the Canadian Association of Environmental Analytical Laboratories (CAEAL), which is a partner of the Standards Council of Canada, ISO25, and ISO 9000.

Are laboratory personnel certified as court expert witnesses? Yes, in Provincial and Canadian Federal Court. Also trade in and use of bear parts in traditional medicine; International trade in endangered species (CITES). Analysts have completed Expert Witness training courses and are designated as analysts under specific Federal acts.

Briefly describe your procedures for evidence control: Lab access is strictly controlled. Access is via computer security cards. All access and movement is monitored. All items are given unique lab identification numbers and are locked in secure storage facilities available only to individual analysts.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Chain of custody; receipts, certificate of analysis or report.

Briefly describe your physical facilities: Federal government analytical Science Centre. Staff of 45 scientists and technicians. Facility is 4000 m² in size. There are four lab programs: scientific support, inorganic chemistry; organic chemistry and environmental toxicology. Wildlife Forensics is a new program presently in development.

Do you use any other laboratories for wildlife forensic tests? Yes.

Do you use University or other state laboratories for wildlife forensic analyses? Yes. The program is still in development. We consult with established forensic labs as required. Partnerships are being formed with the forensic program of the B.C. Institute of Technology (DNA analysis); University of Victoria (DNA analysis) and the B.C. Ministry of Agriculture Veterinary Laboratory (pathology).

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? Yes. Specialists in the identification of exotic species may be consulted if required.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	Yes

Other comments about your lab or capabilities: As mentioned above, the Wildlife Forensic program is in development and is progressing rapidly. The goal is to provide a full service capability for the identification of exotic and game species (via morphology, protein analysis and DNA), sexing of blood and tissue; and individualization of blood and tissue. The facility is profiled on the Internet at < www.pesc.org >.

PACIFIC IDENTIFICATIONS, VICTORIA, B.C.

Lab Director or Forensic Specialist Name: Susan J. Crockford

Title: Archaeozoologist

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6011 Oldfield Road, R.R. #3

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How many staff work on wildlife forensics? 1 Full Time; 2 Part Time

What forensic techniques are available at (within) your laboratory? Identification of skeletal material (including human remains); identification of shell fish; identification of fish scales; preparation of bone samples for DNA testing (sterile sample preparation)

What species can be identified with these techniques? Lists of Holdings available on request, especially complete collections. Can identify mammals (primarily coastal species, including porpoises), birds, fish (marine from the Aleutians to Northern California; fresh-water species for British Columbia and Yukon); marine shellfish; humans

What new forensic techniques or other data are being developed within your laboratory? Identification of digested remains (bone from stomach or fecal samples)

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? Addition of a range of domestic taxa; large ungulates; interior British Columbia taxa (especially small rodents); and passerine birds

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? No

Is your laboratory certified by any private organization or state, provincial or federal agency? Yes. The collection itself has a CITES permit

Are laboratory personnel certified as court expert witnesses? Possibly, in bone identification. Three staff members have over 20 years experience in bone identification

Briefly describe your procedures for evidence control:Received by courier with a signed release; lab is locked when unattended; out by courier with a signed release

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? As requested

Briefly describe your physical facilities:Fish specimens are organized by family; birds and mammals are organized by bone element; Equipment available includes dissecting microscopes, electronic balances, mechanical sieve, geological sectioning saw; dermestid beetles and enzymes for skeletal preparation; freezers for storage; flowhood for DNA sample preparation (UV lights); also drills, etc., for collecting bone samples

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyses? Yes; Royal British Columbia Museum, Vertebrate Zoology Collection; Burke Museum (Seattle), Vertebrate Zoology Collection; University of British Columbia (Vancouver), Vertebrate Zoology Collection

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? Yes; Corporate resume and client list available on request. Do bone identification; bone sample collection for DNA testing; rate is currently \$40.00 per hour, U.S.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	Yes

Other comments about your lab or capabilities:Our forensic work has been minimal to date, but we have done identification work for the following (among others):U.S. Federal (NMFS/Parks); Canadian National (DFO/Parks); B.C. Provincial Wildlife; U.S. state game and fish agencies (Alaska, Washington, Oregon); Yurok Tribal Council, California

**SOCIÉTÉ DE LA FAUNE ET DES PARCS DU QUÉBEC
LABORATOIRE D'EXPERTISE BIOLÉGALE**

Lab Director or Forensic Specialist Name: Abdallah Mardini

Title: Laboratory Director

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How many staff work on wildlife forensics? Two (2) Full Time; Two (2) Part Time

What forensic techniques are available at (within) your laboratory? Serological determination of family or species; morphological species identification (mammal, bird, fish); whole animal, hair, fish scale, feather; determination of minimum number of individuals; age/sex determination (whole animal); genetic methods (enzymes) to determine minimum number of animals (moose, white-tailed deer) and to determine if two or more samples could come from the same animal; cause of death (mammal, fish, bird); bear bile identification; bullet vs. arrow inference; anatomic match of animal pieces; X-rays for bullet direction and trajectory; X-rays for cause of death.

What species can be identified with these techniques? White-tailed deer, moose, caribou/reindeer, black bear, Atlantic salmon, brook trout, rainbow trout, lake trout, Arctic char, brown trout, Chinook salmon, Coho salmon, northern pike, walleye, yellow perch, Atlantic cod, horse rabbit, Canada goose, snow goose, spruce grouse, ruffed grouse, willow ptarmigan, sharp-tailed grouse; deer family.

What new forensic techniques or other data are being developed within your laboratory? Ursidae gall bladder identification

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? Gender identification and DNA testing for matching

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes. Government agencies as work load permits.

Are fees charged to these outside agencies for forensic analyses? Yes. For non-Canadian agencies and for court testimony fees for all agencies.

Are fees charged to these outside agencies for court testimony? Yes. For all outside agencies

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? No

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? Yes. In Provincial Court for Wildlife biochemical identification forensics and wildlife veterinary forensics.

Briefly describe your procedures for evidence control: Very strict chain of custody; sealable evidence pouches; evidence sealing tape

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Detailed scientific report

Briefly describe your physical facilities: Veterinarian facilities; microscopy room; biochemical laboratory; autopsy laboratory; fish scale reference collection; hair reference collection.

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyses? No

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	

TENNESSEE WILDLIFE RESOURCES AGENCY

Lab Director or Forensic Specialist Name: Mike Stockdale
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How many staff work on wildlife forensics? One (1) Part Time

What forensic techniques are available at (within) your laboratory? Macro and microscopic examination of hair and feathers; comparison of bone to reference specimens to determine species, age, sex and physical matching to determine if parts are from the same individual or minimum number of individuals; blood and meat samples identified using immunodiffusion and Phast system IEF; blood and meat samples sexed using PCR; fatty acid analysis to determine origin of crappie; determining time of death in various species; gross examination to determine firearm vs. archery wounds and post-mortem vs. ante-mortem; atomic absorption spectrophotometry to quantitatively differentiate firearm vs. archery wounds; freshwater fish identification by fillets; waterfowl breastbone identification.

What species can be identified with these techniques? Depends on the nature and condition of the specimens submitted. Most cases involve big game species.

What new forensic techniques or other data are being developed within your laboratory? Determining origin of freshwater mussels using heavy metal analysis; white-tailed deer and black bear DNA data bases to determine individualization using STR-PCR; species identification using STR-PCR (should be available by spring 1999).

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? Sexing and species identification of blood and meat samples of avian species; definitive identification of wild turkey vs. barnyard turkey; species identification of cooked meats; length of time meat has been frozen.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes. Any law enforcement agency

Are fees charged to these outside agencies for forensic analyses? Not at this time

Are fees charged to these outside agencies for court testimony? No, if overnight travel not required; Yes, if overnight travel is required.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? Yes, in State/Province court and Federal court, for hair, blood, meat and feather identification; time of death; gender identification using bones or PCR on blood and meat samples; archery vs. firearm wounds.

Briefly describe your procedures for evidence control: Evidence is received by analyst and assigned an individual case identifier. Evidence is locked up until removed for examination by analyst. If evidence is out and analyst leaves the lab, the lab door is locked. Standard chain of evidence tags used with signatures.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Verbal notification to officer or agency followed by written lab report.

Briefly describe your physical facilities: Forensic laboratory is located within the Department of Chemistry at the University of Tennessee at Martin. At present, three labs are used (Research, Biochemistry, and Advanced Analytical). In addition, Department of Biological Sciences is used for mammal and avian reference specimens.

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyses? Yes. State Crime Lab for standard police lab analyses (i.e., fingerprints, firearms, tool marks, etc.); State Department of Agriculture Veterinary Toxicology Lab (pesticide identification); Tennessee Technological University (some fish tissue identification); and USFWS Forensic Laboratory.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	Yes

TEXAS PARKS AND WILDLIFE DEPARTMENT

Lab Director or Forensic Specialist Name: Beverly Villarreal

Title: Conservation Scientist

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How many staff work on wildlife forensics? One (1) Full Time

What forensic techniques are available at (within) your laboratory? Species identification by serological methods (fish, mammals, birds, reptiles); DNA gender analysis (mammals); DNA fingerprinting (mammals; number of individuals, matching); fatty acid profiling of fish muscle for determination of farm-raised vs. wild fish; hair identification (limited).

What species can be identified with these techniques? Typically do white-tailed deer vs. North American cervids and exotic deer (Fallow, Axis, Sika, etc.); also hog, canine, feline (bobcat vs. mountain lion), cow, raccoon, rabbit. For birds, do turkey, quail, dove. For fish, can do freshwater bass, catfish, crappie, etc., and for saltwater, typically have most requests for red drum, black drum and spotted sea trout. The techniques used can be applied to a number of species. Have done alligator and some turtles. Just depends on what reference samples available for controls.

What new forensic techniques or other data are being developed within your laboratory? Fatty acid profiling of fish muscle; investigations into conditions under which profiles can change. Three studies were conducted. The first investigated prolonged refrigerator storage effects on altering linoleic acid level. The second involved changing the diet of farm-raised fish to natural forage for six weeks and looking at the range in linoleic acid. The third as changing the diet of wild fish to commercial feed and looking at change in linoleic acid after at least five weeks.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? Expand tetranucleotide microsatellite work for DNA fingerprinting to other species besides deer.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes. State and federal. Have done work for several states and USFWS

Are fees charged to these outside agencies for forensic analyses? Currently no. May depend on scale and scope of case.

Are fees charged to these outside agencies for court testimony? No. Outside agencies provide travel and per diem. No fees for analyst time.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes. If costs are paid.

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? No

Briefly describe your procedures for evidence control: Have a chain of custody that is completed when evidence is received. Usually only I handle the evidence after that point. Evidence is stored (if it's perishable) in an ultra-cold

freezer that can be locked. The evidence is assigned a case number and details are logged into a case book. The evidence is thereafter identified by this case number. Once the analyses are complete, I send an evidence disposition instruction form with the report to the warden, who completes the form and instructs me to retain the evidence until they can pick it up, ship it back to them, or throw it away.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? I send a report in the form of a letter, describing the evidence, what analyses were requested, the analyses performed, the results, and the conclusion.

Briefly describe your physical facilities: Two labs housed inside a hatchery field office/building.

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyses? Yes. Currently have a case being worked by the veterinary lab at UC-Davis involving DNA fingerprinting of dog hair.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? Yes. Use PE AGGEN for turkey sex determination.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	? (Depends on the budget)

USFWS NATIONAL FISH AND WILDLIFE FORENSICS LABORATORY

Lab Director or Forensic Specialist Name: Ken Goddard

Title: Laboratory Director

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How many staff work on wildlife forensics? 33 Full time scientific/technical/clerical

What forensic techniques are available at (within) your laboratory? A full range: morphological identification (visual and microscopic) of parts and products; blood and tissue identification and comparison (immunological, protein, DNA); chemical identification (instrumental); general criminalistics (latent prints, firearms, projectiles, etc.); cause of death (necropsy); and technical support (computers, electronics, graphics).

What species can be identified with these techniques? Far to many to list here.

What new forensic techniques or other data are being developed within your laboratory? Blood and tissue identification via hemoglobin and myoglobin analysis; DNA (STR) databases on state big game species; Caviar identification (DNA)

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? Depends on input from user groups (federal, state, and international)

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes. Any law enforcement agency (federal, state, international) with wildlife related evidence.

Are fees charged to these outside agencies for forensic analyses? No

Are fees charged to these outside agencies for court testimony? No

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes

Is your laboratory certified by any private organization or state, provincial or federal agency? We are an ACCLD/LAB accredited lab

Are laboratory personnel certified as court expert witnesses? Yes. In State/Province court and Federal court for morphology, pathology, criminalistics, DNA, proteins, chemistry

Briefly describe your procedures for evidence control: All received items are given unique lab identification numbers, logged into a computer-based evidence/case management system, transferred to individuals via bar cod readers and stored in locked storage facilities (for individual examiners). Access within the lab is controlled.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Chain of custody records, receipts, and case reports (signed)

Briefly describe your physical facilities: 23,000 sq ft laboratory facility. Concrete walls and alarmed glass. Stand-alone building. One story, with skylights throughout.

Do you use any other laboratories for wildlife forensic tests? No

Do you use University or other state laboratories for wildlife forensic analyses? No

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	Yes

Other comments about your lab or capabilities: Expect to double the physical size of lab (and roughly double the staff) by FY 2003

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

Lab Director or Forensic Specialist Name: Dr. James B. Shaklee

Title: Research Scientist

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State/province: Washington

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How many staff work on wildlife forensics? Three (3) Part Time

What forensic techniques are available at (within) your laboratory? Protein (allozyme) electrophoresis; DNA analysis (PCR; microsatellites, sequencing)

What species can be identified with these techniques? Basically any species can be identified using allozyme electrophoresis and/or DNA analysis. Our major laboratory focus has been on fish species, population, and individual identification (esp. Salmonids). We will be developing species and individual identification capabilities for deer, elk, bear, moose, caribou, bighorn sheep, Rocky Mountain goats and other wildlife species and protocols to distinguish them from farm animals.

What new forensic techniques or other data are being developed within your laboratory? See above. We will be developing/acquiring the necessary reference (baseline) data sets to allow the above described identifications.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes. We are prepared to do analyses for other agencies with similar resource management responsibilities and needs.

Are fees charged to these outside agencies for forensic analyses? Yes. Our charges to other agencies reflect our costs of doing the analyses.

Are fees charged to these outside agencies for court testimony? Yes. We require the outside agency to cover travel, per-diem, and salary costs only. We do not charge an expert witness fee.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? No

Briefly describe your procedures for evidence control: Our laboratory and sample storage areas are in a portion of a government building that is not open to the public. Further, we have locking freezers and storage rooms/ cabinets for evidence samples. Additional security procedures could be implemented if needed.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? We are prepared to submit whatever forms of documentation are required, including: copies of primary data (printed and/or electronic), photographs, instrument or computer printouts, reports, etc.

Briefly describe your physical facilities: Our laboratory is located in the agency headquarters building in Olympia, WA. The actual laboratory space consists of approximately 2,300 sq. ft, with an additional 760 sq ft room for freezers

and storage. We have over 25 electrophoresis power supplies and apparatus, a PCR machine, and semi-automated DNA sequencer (AB1-377) as well as electronic balances, pH meters, centrifuges, incubators, water baths, 8 ultra-freezers, refrigerators, a UV-transilluminator, 35 mm camera, and several microcomputers.

Do you use any other laboratories for wildlife forensic tests? Our agency has relied on the USFWS lab in Ashland, Oregon in the past for many analyses, but all our future analyses will be done in-house.

Do you use University or other state laboratories for wildlife forensic analyses? No

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes, provided funds are available for this purpose
<i>National</i>	Yes, provided funds are available for this purpose
<i>International</i>	Yes, provided funds are available for this purpose

Other comments about your lab or capabilities: We are currently in the process of establishing a fish and wildlife forensics capability as part of our existing Genetics Laboratory. Our Genetics Laboratory has been active for 14 years. We currently have 3 PhD research scientists, five biologists, and three scientific technicians conducting a variety of genetic investigations, many of which are focused on population genetics. It is our intent to develop the forensics capability to meet all of our department's needs and to conduct forensic analyses for other agencies as needed.

WYOMING GAME AND FISH DEPARTMENT

Lab Director or Forensic Specialist Name: Dee Dee Hawk

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How many staff work on wildlife forensics? Two (2) Full Time; Two (2) Part Time

What forensic techniques are available within your laboratory? Determine family and/or species level identification of blood and tissue based on enzymatic and serologic analysis; and hair using light microscopy. Enzymatic and serologic analysis utilized include: counter immuno-electrophoresis (CIEP) and isoelectric focus for enzymatic analysis using the PHAST System. The Western Blot for albumin analysis is also utilized for species identification. Processed and cooked meat identification is available using ELISA. Determine gender of submitted bone, blood, hair, and tissue using the polymerase chain reaction (PCR). Determine inclusion, exclusion, and minimum number of animals present as well as match probability using database standards on mule deer, white-tailed deer and elk. This technology is PCR based microsatellite genotyping on a Li-cor automated sequencer. We can do time of death analysis as well.

What species can be identified with these techniques? Enzymatic, serologic and light microscopy (hair) analysis result in identification to family level for Cervidae, Bovidae, Ursidae, Felidae and Canidae; and species for elk, moose, mule deer, white-tailed deer, bighorn sheep, beef, bison, black and grizzly bear, pronghorn and human. Depending on the location of origin of the hair, species identification may or may not be possible for hair. Gender identification is available for elk, mule deer, white-tailed deer, moose, black bear, grizzly bear, and antelope. Genotyping is currently on-line for mule deer, white-tailed deer, and elk. Presently working on bringing pronghorn and mountain lion on-line.

What new forensic techniques or other data are being developed within your laboratory? Currently we are bringing microsatellites on line for all species of interest to law enforcement. We have over 3,500 standards in the DNA standards collection that will be used to produce population genetics for biologist as well as generating statistical match probability number in forensic cases. After the antelope and mountain lions are working, we will bring bears, moose and sheep on-line. In 6-8 months we would like to start working on differentiation of red deer from elk.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your lab? Our laboratory would like to be capable of doing species identification based on PCR and not DNA sequencing. Some of this is available. It would be extremely helpful for forensic purposes to be capable of differentiating mule deer from white-tailed deer based on PCR. I don't know of any laboratory that has this capability but would be interested in contacting anyone who does. We would also be interested in what other laboratories use for species identification of processed meats for a comparison to the ELISA we use. Length of time in freezer would also be a helpful addition to our analysis.

Is your laboratory (i.e., staff and equipment) available for the use by other state (both intra- and inter-) or federal agencies? Evaluated on a case by case basis but not generally accepting work from other agencies because of current case load. Have worked for Other wildlife agencies, Colorado Division of Wildlife, etc.

Are fees charged to these outside agencies for forensic analyzes? Yes. In the event we would do analysis for other states, we have them replace reagents. I supply them with a manufacture and a list of supplies to purchase and these are shipped to our laboratory.

Are fees charged to these outside agencies for court testimony? Yes. No expert witness fees are charged but outside

agencies are responsible to pay for travel and per diem expenses.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyzes? Would be evaluated on a case by case basis.

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? Yes. In State/Province court for hair, meat and blood identification, antler matching and growth, time of death, toxicology, hair identification, identification and interpretation of drugs of abuse in biological samples and DNA genotyping.

Briefly describe your procedures for evidence control: All submitting agents have chain of custody forms supplied by the laboratory. These are used to record item numbers and descriptions as well as a description of the testing requested. There is a chain of custody on the back of the form that is used to sign over evidence to the laboratory. Within the laboratory, items are not signed over to different technicians. When evidence is returned, it is also signed out of the laboratory. All wardens in the State of Wyoming have forensic evidence collection kits that include instructions as to the proper collection procedures. The submitting agents have been instructed to seal all items. When a case is received in the laboratory, it is assigned a unique laboratory number which is used to track the evidence throughout the testing procedure. If an item is not sealed when it is received, we seal it here in the laboratory with our initials and a date. The case is subsampled for species and DNA testing. Whenever a seal is broken, the seal is initialed and dated and the new seal is also initialed and dated. All evidence is stored in a locked upright freezer or locked walk-in freezer (depending on the size). All subsamples for species identification are in a locked refrigerator when not in testing.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? In all cases submitted to the laboratory, a written laboratory report is sent to the submitting officer which indicates the types of testing done, the results of these tests, the conclusions and what is being done with the evidence.

Briefly describe your physical facilities? Evidence receiving, subsampling and species identification is done in the main Game and Fish Laboratory. This laboratory is shared with the fish disease certification program as well as the big game animal teeth aging. Physical spaces includes one bench dedicated to forensics as well as a big upright freezer and refrigerator. Glassware etc. is shared. The DNA laboratory is housed in another building and consists of three rooms. One is used exclusively for setting up PCR and master mix. The second room has the thermocycler and gels utilized for gender assay. The third room houses the sequencer for genotyping as well as the large -40C upright freezer which houses the DNA standards collection.

Do you use any other laboratories for wildlife forensic tests? Yes

Do you use University or other state laboratories for wildlife forensic analyzes? Yes. The Wyoming State Veterinary Laboratory is used for toxicology analysis and necropsy for cause of death and recovery of bullets. Toxicology analysis is requested when birds of prey have died from eating poisoned carcasses and identification of the type of toxin is required. The Wyoming State Crime Laboratory is used for bullet identification and matching a spent bullet back to a gun. The University of Wyoming Department of Anthropology Comparative Osteology Museum is used for numerous types of analysis including aging, species and gender identification of bones using a reference collection. That lab has also developed a discriminate function analysis test to determine wolf-dog breeding based on X-ray's of the skull of the suspect animal. The University of Alberta in Edmonton does several analyses for our laboratory, including microsatellite analysis on species we do not have on-line, and maternal inclusion for feline and canine cases.

Do you use private consultants, contractors, or research labs for wildlife forensic analyzes? Not at this time, have been used in the past.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally or internationally?

Regional	Yes
National	Yes

International

Yes

Other comments about your lab or capabilities? Our laboratory has been in contact with The University of Alberta in Edmonton about DNA database testing. We would be interested in getting together with other wildlife laboratories to discuss “What constitutes a population? How should database testing be presented in court?” I believe discussing this with other laboratories doing the same type of testing would increase our credibility in court because there would be a consensus.

UNIVERSITY OF WYOMING, DEPARTMENT OF ANTHROPOLOGY, COMPARATIVE OSTEOLOGY
MUSEUM

Lab Director or Forensic Specialist Name: Danny N. Walker, PhD., RPA

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How many staff work on wildlife forensics? 1 Part Time

What forensic techniques are available at (within) your laboratory? Osteological identification of Great Plains and Central Rocky Mountain mammals

What species can be identified with these techniques? Mammalian species, especially big game animals, that occur in the Great Plains and Central Rocky Mountains

What new forensic techniques or other data are being developed within your laboratory? Continual work on developing sexual identification characters based on osteological morphology; identification based on osteological characters of non-game mammals

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes

Are fees charged to these outside agencies for forensic analyses? Not for basic identifications. If court travel is required, then time and travel is billable.

Are fees charged to these outside agencies for court testimony? Expenses as outlined above.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes

Is your laboratory certified by any private organization or state, provincial or federal agency? No

Are laboratory personnel certified as court expert witnesses? Yes

Briefly describe your procedures for evidence control: When evidence is received, only the principal investigator has access to the material. All material is kept locked in secure cabinets until returned to submitter or end of court case.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Letter report describing the findings

Briefly describe your physical facilities: Approximately 2500 square feet of laboratory and storage space. Cold storage, both freezer and cold room, available for specimens needing such facilities. Processing room with stove and boiling facilities for removal of tissue from specimens if necessary.

Do you use any other laboratories for wildlife forensic tests? No

Do you use University or other state laboratories for wildlife forensic analyses? No

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes, with funding
<i>National</i>	Yes, with funding
<i>International</i>	Yes, with funding

Other comments about your lab or capabilities: Presently have over 3,000 osteological specimens of animals, primarily mammalian and avian, from the Great Plains and Rocky Mountains. Some exotics (non-North American) specimens are also available.

YUCATÁN, CINVESTAV-IPN, MÉRIDA UNIT

Lab Director or Forensic Specialist Name: Victor M. Vidal-Martinez

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How many staff work on wildlife forensics? Six (6)

What forensic techniques are available at (within) your laboratory? Histopathology of aquatic organisms (fishes, shrimps, frogs, oysters) (H&E, Ctoccot, Brown & Benn, Feulgen, PAS); microbiology of aquatic organisms (fishes, shrimps, frogs, oysters) (conventional techniques of culture plus MINI-API for bacteria, various at species level); parasitology of aquatic organisms (fishes, shrimps, frogs, oysters) (external and internal examination of hosts, looking for parasites); immunology of aquatic organisms (fishes, shrimps, frogs, oysters) (ELISA, Dot blot, western blot, electrophoresis).

What species can be identified with these techniques? At species level: monogeneans, degeneans, cestodes, nematodes, acanlocephabans, and bacteria. At large group level: viruses, fungi, and protozoans.

What new forensic techniques or other data are being developed within your laboratory? PCR and molecular biology techniques (DNA hybridization).

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your lab? PCR and molecular biology techniques.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes.

Briefly describe your physical facilities: Core laboratory with 90 m²; air conduit; gas; pumped air; 3 vehicles (of the institution, but we can book them); 10 Leica stereo-microscopes; 10 Zeiss light microscopes; light microscope with Die ormarski; 1 light microscope with photography facilities; 1 histokinnete; 1 microtome; 3 stoves; 2 freezers (120o C). ELISA machine; electrophoresis machine; autoclave; incubator; flotation bath; colhouse bath; 7 computers (pentiums) 3 printers (1 laser).

Do you use any other laboratories for wildlife forensic tests? Yes.

Do you use University or other state laboratories for wildlife forensic analyses? No.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	Yes

**FACULTY OF VETERINARY MEDICINE AND ANIMAL HUSBANDRY, AUT. UNIVERSITY OF
YUCATÁN**

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How many staff work on wildlife forensics? None

What forensic techniques are available at (within) your laboratory? We don't really have forensic techniques, but we can perform standard and special tissue stainings and those techniques related with identification of macroscopic lesions (necropsy). There is also another possibility in regard to forensic work. We have the biology carken in our faculty and that enables us to interact with specialists in that area, especially with those that work in the zoology of vertebrates and invertebrates.

What species can be identified with these techniques? None. We use the pathology work on domestic mammals and commercial poultry. We have to note that we have some cases in which we receive some wild animals (mammals mostly), but not very often.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your laboratory? All concerned with wildlife forensic work.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes, SAGAR, PROFEPA, other universities

Are fees charged to these outside agencies for forensic analyses? Yes, when required (as stated above, we are not really a forensic facility), but a diagnostic facility (as part of clinical work) and we have a price list of services.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Yes

Is your laboratory certified by any private organization or state, provincial or federal agency? Yes, Brucellosis Certification by SAGAR

Are laboratory personnel certified as court expert witnesses? No

Briefly describe your procedures for evidence control: We only have some procedures with laboratory quality control techniques.

What form of notification or documentation is submitted to the submitting officer or agency upon completion of the analysis? Our own laboratory results registration forms

Briefly describe your physical facilities:We are a diagnostic unit which includes six different departments:Department of Virology, Department of Immunology, Department of Bacteriology, Department of Clinical Pathology and Department of Pathology, which includes a necropsy facility.

Do you use any other laboratories for wildlife forensic tests? No.

Do you use University or other state laboratories for wildlife forensic analyses? No.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? No.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	Yes

Other comments about your lab or capabilities:We can send specific information when requested or required.

**DEPARTAMENTO DE PATOLOGÍA, FACULTAD DE MEDICINA VETERINARIA Y ZOOTECNIA,
U.N.A.M.**

Lab Director or Forensic Specialist Name: Fernando Constantino

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How many staff work on wildlife forensics? Two (2) Part time

What forensic techniques are available at (within) your laboratory? The Department of Pathology provides support for all veterinary diagnosis in the region or in Mexico, including domestic and wildlife animals. Forensic techniques include photography, gross and microscopic examination (morphology comparisons), fresh and frozen sectioning, and electron microscopy. Identification of toxins commonly used in poisonings are carried out with the lab (toxicology). Hair, feather, and bone identifications can be carried out. Other samples are sent to different laboratories within the university or outside the university to give a final result.

What species can be identified with these techniques? Most birds, fish, domestic and wildlife animals.

What new forensic techniques or other data are being developed within your laboratory? In wildlife forensics, none, as our work is primarily determination of cause of death. We use other laboratories when required for specific tests.

What wildlife forensic techniques do you feel are still needed to be developed either in your laboratory or at other laboratories for later adaptation at your lab? DNA typing kits.

Is your laboratory (i.e., staff and equipment) available for use by other state (both intra- and inter-) or federal agencies? Yes, with a request and agreement.

Are fees charged to these outside agencies for forensic analyses? They need to be negotiated.

Are fees charged to these outside agencies for court testimony? No.

Are personnel from your laboratory available for international court testimony, if needed as a result of your analyses? Has never happened.

Is your laboratory certified by any private organization or state, provincial or federal agency? Yes, PROFEPA, SEMARNAP, Mexico.

Are laboratory personnel certified as court expert witnesses? Has not happened.

Briefly describe your procedure for evidence control: Evidence is registered with a lab number and recorded at the Department of Pathology, F.M.V.Z., U.N.A.M. It is completed on a form request for analysis form, identifying what is being submitted and what information is required about the exhibit. The laboratory maintains the custody of samples received.

What form of notification or document is submitted to the submitting officer or agency upon completion of the

analysis? A written report provides the test results and the examiner's findings.

Briefly describe your physical facilities: Large post mortem room with refrigerator, freezer, wet lab area, photography room, histology, cytopathology, immunohistochemistry, and PCR laboratories. X-ray equipment is available in the facility.

Do you use private consultants, contractors, or research labs for wildlife forensic analyses? When needed, yes.

Can your lab personnel travel to present conference papers or workshops, regionally, nationally, or internationally?

<i>Regional</i>	Yes
<i>National</i>	Yes
<i>International</i>	Yes