

Appendix A

MSES Team Resumes

Petr Komers, Ph.D., P.Biol.

Lead Advisor and Project Management

Overview

Dr. Komers has led ecological assessments in Canada, USA, Europe, Asia and Africa. His experience includes multimillion dollar industry and research projects in wildlife ecology, leading of international and multidisciplinary teams, and development of environmental standards. During his 20 years of working experience he resided in six countries, is fluent in four languages, worked with proponents, governments, stakeholders and NGOs. He routinely acts as an expert witness, a referee of scientific manuscripts, and as an examiner at university thesis defences.

Dr. Komers specializes in the assessment of disturbances of wildlife movements, regional habitat use and population ecology. Projects that mitigate impacts to wildlife movements and habitat use involve coal mines in the Eastern Slopes of Alberta, Diamond Mines in the NWT, Oil Sands mines north of Fort McMurray, Oil and Gas exploration in the Mackenzie Delta and Mackenzie Valley NWT, and international Oil and Gas Operations. Dr. Komers is an Adjunct Associate Professor at the University of Calgary, supervising graduate research on the effects of landscape disturbances on large mammals. He offers lectures in environmental science and conservation biology.

Key Projects

Dr. Komers analyzed effects of fragmentation and habitat loss and designed mitigation measures including re-vegetation plans and wildlife crossing structures. He also managed and integrated multiple disciplines for EIAs and research projects. Projects include:

- Third party reviews of EIAs for projects in the Athabasca Oil Sands, Alberta, and Diamond Mines in the NWT on behalf of First Nation stakeholders, 2002 to current
- Wildlife discipline lead for the MacKenzie Gas Project, NWT, 2003 - 2006
- Scientific Advisor to the Environmental Monitoring Advisory Board, NWT, 2003 - current
- Landscape disturbance effects on large mammals; supervision of Graduate Research, University of Calgary, 2002 to present
- Lead for the wildlife impact assessment of two mining projects in Alaska, 2004 -2006
- Road construction in urban and rural areas providing solutions for landscape connectivity and wildlife crossings, 2000 to 2004
- Sensitive area and wildlife corridor mapping in the Mackenzie Delta Region, NWT, and in the MD of Foothills, Alberta 2001
- Environmental impact assessment and environmental management plan in Kirthar National Park (Pakistan), 2000 - 2002
- Wildlife impact assessment at Gregg River mine near Jasper National Park (World Heritage Site), 1999

Areas of Specialization

Biodiversity

- Conducted forest health monitoring and ecosystem integrity evaluations
- Identified biodiversity indicators and developed plans for ecosystem management and environmental protection
- Analyzed effects of emission deposition, habitat clearing and fragmentation, assessing disturbance effects on species composition and performing population viability analyses for the mining and oil & gas industries, urban development, and agriculture.
- Completed cumulative effects assessments.

Wildlife Ecology

- Conducted current and relevant research on landscape ecology in the Foothills Natural Region, shows effects of habitat loss and fragmentation and suggests the potential implementation of threshold values for ecosystem management
- Conducted research on the dynamics of small populations and the success of re-introductions
- Published research in over 40 articles in peer reviewed and popular journals

Protected Areas

- Conducted research on terrestrial ecology
- Advised on area management and prepared environmental assessments and reports in Jasper, Banff, Wood Buffalo National Parks, Kananaskis Country Improvement District, Mackenzie Bison Sanctuary, Tsavo East National Park (Kenya), Kirthar National Park (Pakistan), Etosha National Park (Namibia)
- Taught conservation biology and environmental science treating the design and management of protected areas, based on landscape ecology and professional experience

Expert Witness

- Testified as an expert witness in public hearings defending development plans proposed for ecologically significant areas
- Routinely reviews scientific papers on wildlife ecology and reviewed reports for the International Union for the Conservation of Nature (IUCN), the Convention on the International Trade of Endangered Species (CITES), and the Commission on the Status of Endangered Wildlife in Canada (COSEWIC)

Management of applied science

- Fifteen years of management experience in national and international projects: Designed research and consulting projects, secured funding, implemented and completed all projects on schedule and within proposed budgets
- Manager Biophysical Services at IEG; supervisor of graduate student research; president of a professional association
- Responsible for the budgeting, administration and logistical support of up to 30 staff; formally trained in project management

Working with multi-disciplinary teams

- Managed and lead teams of multiple disciplines including terrestrial and aquatic fauna, flora, soil science, hydrogeology, socio-economics, restoration ecology, and GIS
- Produced comprehensive environmental reports and management plans
- Published research of multinational teams in scientific journals

Employment Experience

- 2002 - present **MSES Inc.: *President and Principal Consultant***
(International Project Development, Environmental Evaluation and Planning, Management of Environmental Science Teams, Wildlife Ecology Research)
- 2003 - 2006 **AMEC Earth & Environmental Ltd., Calgary, Alberta: *Casual Contractor***
(Wildlife Ecology for the Mackenzie Pipeline Environmental Group, Project Planning, Implementation and Management; Environmental Assessment and Planning)
- 2001 - 2002 **Inuvialuit Environmental & Geotechnical Ltd.: *Manager Biophysical Services***
(Project Planning and Implementation, Senior Review, Science Advisor, Public Consultation)
- 1997 - 2001 **AMEC Earth & Environmental Ltd., Calgary, Alberta: *Senior Consultant***
(Environmental Assessment and Planning, Project Planning, Implementation and Management, Public Consultation, Environmental Regulation)
- March 1998 **University of Calgary, Alberta: *Sessional Lecturer***
(Preparation And Delivery Of Lectures in Conservation Biology, Student Advisor)
- 1995 - 1996 **University of Uppsala, Sweden: *Research Fellow***
(Fundamental / Applied Research, Project Development and Management, Student Supervision, Public Consultation, International Team Leadership)
- 1993 - 1995 **University of Cambridge, England: *Research Fellow***
(Fundamental Research, Project Development and Management, International Collaboration)
- 1988 - 1992 **University of Saskatchewan, Canada: *Sessional Lecturer; Teaching Assistant***
- 1985 - 1987 **University of Alberta, Canada: *Teaching Assistant***

Education

- 1993 - 1997 Post-doctorate, University of Cambridge, UK and University of Uppsala, Sweden
- 1988 - 1992 Doctor of Philosophy, University of Saskatchewan, Canada
(Thesis: Mating strategies of male wood bison)

1985 - 1987	Master of Science, University of Alberta, Canada (Thesis: Mate choice in black-billed magpies)
1981 - 1984	Bachelor of Science, University of Berne, Switzerland
1977 - 1981	Swiss Federal Baccalauréat, Berne, Switzerland

Affiliations

<i>Past-President</i>	Alberta Society of Professional Biologists (ASPB)
<i>Adjunct</i>	Adjunct Associate Professor, University of Calgary, Biological Sciences
<i>Council</i>	Alberta Cooperative Conservation Research Unit (ACCRU)
<i>Member</i>	Editorial/Advisory Board for the Journal of ETHOLOGY, ECOLOGY & EVOLUTION
<i>Advisor</i>	Environmental Committee, Council Municipal District of Foothills No.31
<i>Member</i>	Society for Conservation Biology
<i>Biographee</i>	Who's Who in the World, Marquis Publications

Publications

Recent Presentations

- Kienzle S.W., J. Byrne , D. Schindler and P. Komers, 2005. **Do Massive Oil Sands Developments in a Northern Watershed Lead to an Impending Crisis? Results from a Gap Analysis of Environmental Impacts Assessments. American Geophysical Union (AGU) Conference Poster**, Section "Watershed resilience and sustainability", 5-9 December 2005, San Francisco, California
- Gavin, S. and Komers P.E. 2005. **Pronghorn behaviour in response to roads in southern Alberta, Canada.** Animal Behaviour Society, 42nd Annual Meeting, Snowbird, Utah, August 6-10,2005
- Komers, P.E. and Shih, S.2005. **From Science to Governance**, presented at the IAIA Western and Northern Canadian Affiliate series, Calgary, March 2005
- Komers P.E. and Clayton D. 2003. **Reclamation Challenges North of 60 – Wildlife, Regulations and Traditional Knowledge**, presented at the Canadian Land Reclamation Association, Calgary, Alberta
- Komers, P.E. 2002. **Replacing Opinion with Measurement in Environmental Assessments.** Presented at the National Energy Board, June in Calgary, Canada.
- Komers, P.E. and Archie, B. 2001. **Dealing with Traditional Land Use and Northern Heritage Issues in Development Projects** *Conference for the Mackenzie Oil & Gas Development Strategies*, October in Calgary, Canada.
- Komers, P.E. 2000. **Non-Linear Responses of Ecosystem Components to Provide Threshold Values for Cumulative Effects Management .** *Cumulative Effects Management Conference*, November in Calgary, Canada.
- Komers, P.E. 2000. **The break-up of habitat continuity indicates a threshold for ungulate responses to landscape changes.** *Annual Conference of the Society for Conservation Biology*, June in Missoula, Montana, USA.

Lectures, University of Calgary

Environmental Impact Assessment, on regulatory underpinnings and practical approaches to measurement in Canada and internationally. Winter Semester 2002.

Impacts on Wildlife, on the measurement and analysis of disturbance effects, Autumn 2001

Refereed Publications

Gavin, S.D. and P.E. Komers. 2006. **Do pronghorn (*Antilocapra americana*) perceive roads as a predation risk?** *Canadian Journal of Zoology* 84: 1775-1780

Brotherton, P.N.M. & Komers, P.E. . 2003. **Mate Guarding and the Evolution of Social Monogamy in Mammals.** In: *Monogamy: Mating Strategies and Partnerships in Birds, Humans and other Mammals.*, U. Reichard and C. Boesch eds., University of Cambridge Press, Cambridge. Pp. 42-58.

Komers, P.E. and G.P. Curman. 2000. **The Effect of Demographic Characteristics on the Success of Ungulate Re-introductions.** *Biol. Cons.* 93: 187-193.

Komers, P.E., B. Birgersson and K. Ekvall. 1999. **Timing of Estrus Influenced by Male Age in Fallow Deer.** *Am. Nat.* 153: 431-436.

Pélabon, C., P.E. Komers and J. Höglund. 1999. **Do leks limit the frequency of aggressive encounters in fallow deer? Linking local male density and lek occurrence.** *Can. J. Zool.* 77: 667-670.

Pélabon, C., P.E. Komers, B. Birgersson and K. Ekvall. 1999. **Social Interactions of Yearling Male Fallow Deer During the Rut.** *Ethology* 105: 247-258.

Komers, P.E. and P.N.M. Brotherton. 1997. **Female Space Use Is the Best Predictor of Monogamy in Mammals.** *Proc. R. Soc. B.* 264: 1261-1270.

Komers, P.E. 1997. **Behavioral Plasticity in Variable Environments.** *Can. J. Zool.* 75: 161-169.

Brotherton, P.N.M., J.M. Pemberton, P.E. Komers and G. Malarky. 1997. **Genetic Evidence of Monogamy in an Antelope, Kirk's Dik-Dik (*Madoqua kirkii*).** *Proc. R. Soc. B.* 264: 675-681.

Komers, P.E., C. Pélabon and D. Stenström. 1997. **Age at First Reproduction in Male Fallow Deer: Age- Vs. Dominance-specific Behaviors.** *Behav. Ecol.* 8: 456-462.

Komers, P.E. and P.N.M. Brotherton. 1997. **Dung Pellets Used to Identify the Distribution and Density of Dik-Dik.** *Afr. J. Ecol.* 35: 124-132.

Pélabon, C. and P.E. Komers. 1997. **Time-Budget Variations in Relation to Density-Dependent Social Interactions in Female and Yearling Male Fallow Deer During the Rut.** *Can. J. Zool.* 75: 971-977.

Komers, P.E. 1996. **Obligate Monogamy Without Paternal Care in Kirk's Dik-Dik.** *Anim. Behav.* 51: 131-140.

Komers, P.E. 1996. **Conflicting Territory Use in Males and Females of a Monogamous Ungulate, the Kirk's Dik-Dik.** *Ethology* 102: 568-579.

- Komers, P.E., F. Messier and C.C. Gates. 1994. **Plasticity of Reproductive Behavior in Wood Bison Bulls: On Risks and Opportunities.** *Ethol. Ecol. Evol.* 6: 481-495.
- Komers, P.E., F. Messier and C.C. Gates. 1994. **Plasticity of Reproductive Behavior in Wood Bison Bulls: When Subadults Are Given a Chance.** *Ethol. Ecol. Evol.* 6: 313-330.
- Komers, P.E., F. Messier, P. Flood and C.C. Gates. 1994. **Reproductive Behavior of Male Wood Bison Related to Female Progesterone Level.** *J. Mammal.* 75: 757-765.
- Komers, P.E., F. Messier and C.C. Gates. 1993. **Group Structure in Wood Bison: Nutritional and Reproductive Determinants.** *Can. J. Zool.* 71: 1367-1371.
- Komers, P.E., K. Roth and R. Zimmerli. 1992. **Interpreting Social Behavior of Wood Bison Using Tail Postures.** *Z. Säugetierk* 57: 343-350.
- Komers, P.E., K. Roth and C.C. Gates. 1992. **Search or Relax: The Case of Bachelor Wood Bison.** *Behav. Ecol. Sociobiol.* 31: 195-203.
- Komers, P.E. and E.J. Komers. 1992. **Juvenile Male Magpies Dominate Adults Irrespective of Size Differences.** *Can. J. Zool.* 70: 815-819.
- Dhindsa, M.S., P.E. Komers and D.A. Boag. 1989. **Nest Height of Black-Billed Magpies: Is it Determined by Human Disturbance or Habitat type?** *Can. J. Zool.* 67: 228-232.
- Komers, P.E. 1989. **Dominance Relationships Between Juvenile and Adult Black-Billed Magpies.** *Anim. Behav.* 37: 256-265.
- Komers, P.E. and M.S. Dhindsa. 1989. **Influence of Dominance on Mate Choice in Black-Billed Magpies: An Experimental Study.** *Anim. Behav.* 37: 645-655.
- Dhindsa, M.S., P.E. Komers and D.A. Boag. 1989. **The Effect of Familiarity with an Environment on the Dominance Relationships Between Juvenile and Adult Black-Billed Magpies.** *Orn. Scan.* 20: 187-192.
- Dhindsa, M.S., D.A. Boag and P.E. Komers. 1989. **Mate Choice in Black-Billed Magpies: The Role of Male Quality vs. Quality of Defended Resources.** *Orn. Scan.* 20: 193-203.
- Komers, P.E. and D.A. Boag. 1988. **The Reproductive Performance in Black-billed Magpies: Is it Related to Mate Choice?** *Can. J. Zool.* 66: 1679-1684.

Reports and Proceedings

- Komers, P.E. 2002. **Non-Linear Responses Of Ecosystem Components To Provide Threshold Values For Cumulative Effects Management .** *Proceedings of the Cumulative Environmental Effects Management Conference in Calgary*, November 2000.
- Komers, P.E. 2002. **Book Review: *Repairing Damaged Wildlands; A Process Oriented Approach*, by S.G. Whisenant** BIOS, The Alberta Society of Professional Biologists, Volume 17 (1) : 8.
- Patriquin, D.L. and Komers, P.E. 2000. **An Ecosystem Approach to Reclamation: The Gregg River Mine Project.** *Canadian Land Reclamation Association, Conference Proceedings, Edmonton*, October 2000.

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- Komers, P.E., G.P. Curman, B. Birgersson and K. Ekvall. 2000. **The Success of Ungulate Re-introductions: Effects of Age and Sex Structure.** In: L. Darling, ed. *Proceedings of the Species and Habitats at Risk Conference*, Kamloops, BC, Canada, February 15-19, 1999.
- Komers, P.E., J. Gilson. 1998. **The Development of Wildlife Corridors and Green Spaces; an Information Package.** Environmental Committee, Municipal District of Foothills No. 31, Alberta, Canada.
- Komers, P.E. and S. Ulfstrand. 1997. **Behavioral Plasticity in Fallow Deer Related to the Management of Fragmented Populations. Final report.** Roche Research Foundation, Annual Report, 1996. Basel: Editiones.
- Komers, P.E. 1994. **Monogamy in Dik-Dik Antelopes and its Relation to Population Parameters and Territory resources. Final research report.** National Council for Science and Technology, and the Office of the President, Kenya.
- Gates, C.C., N.C. Larter and P.E. Komers. 1991. **Size and Composition of the Mackenzie Wood Bison Population in 1989.** Government of the NWT, DRR, File Report No. 93.

Environmental Projects Managed (most recent five years)

- MSES (2004) **Preliminary Wildlife and Habitat Assessment for the Donlin Creek Gold Mine Project.** *Prepared for Placer Dome US (PDUS)*
- MSES (2004) **Evaluation of Road Access for the Pebble Copper Gold Mine, Alaska.** *Prepared for Alaska Department of Transportation and Public Facilities.*
- MSES (2004) **Wildlife advisor on design specifications for the Anthony Henday Drive, Edmonton, Alberta.** *Prepared for Millenium EMS Solutions.*
- MSES (2004) **Scientific advisor on wildlife monitoring programs.** *Prepared for the Environmental Monitoring and Advisory Board, NWT.*
- MSES (2003) **Third party review of three Oilsands Mining EIAs.** *Prepared for the Mickisew Cree First Nation.*
- MSES (2003) **Paskapoo Slopes Biophysical Impact Assessment – Sadek Property, Calgary.** *Prepared for WEEM Consultants.*
- MSES (2003) **Review of EIA Wildlife Sections for Snap Lake Diamond Project submitted by DeBeers Canada Mining Inc.** *Prepared for Stantec on behalf of North Slave Metis Association, Yellowknife.*
- IEG (2003) **Review of the Horizon Project EIA submitted by Shell Canada.** *Prepared for Mikisew Cree First Nation, Alberta, Canada.*
- IEG (2002) **Review of the Jack Pine Mine EIA submitted by Shell Canada.** *Prepared for Mikisew Cree First Nation, Alberta, Canada.*
- IEG (2002) **Review of the Fort Hills Oil Sands Project EIA submitted by True North Energy.** *Prepared for Mikisew Cree First Nation, Alberta, Canada.*
- IEG (2001) **Biophysical Surveys, Mapping Project for the Mackenzie Delta Region.** *prepared for Operators in the Inuvialuit Settlement Region, Northwest Territories, Canada.*

- AMEC Earth & Environmental Ltd. (2001) **Environmental Impact Assessment for the Dumbar Exploration License in Sindh Protected Areas, Pakistan**, prepared for Premier and Shell Pakistan.
- AMEC Earth & Environmental Ltd. (2000) **Environmental Compliance Monitoring for Albian Muskeg River Oil Sands Project**, prepared for Muskeg River Contractors.
- AMEC Earth & Environmental Ltd. (2000) **Environmental Permitting for the Deerfoot Extension, Calgary** prepared for UMA Engineering Ltd.
- AGRA Earth & Environmental Ltd. (2000). **Environmental Screening for the Bigstone Indian Reserve Highway Improvement**, prepared for ARA Engineering Ltd.
- AGRA Earth & Environmental Ltd. (2000). **Wilson Gardens Residential Development, Calgary**, prepared for Sarcee Properties Inc.

Popular Publications

- Komers, P.E. 1997. **Property Rites**. *Natural History*, March 106: 28-31.
- Komers, P.E. 1996. **Fallow Deer Breeding: What Can We Learn from Observing Deer Behavior?** [Swedish] *Svensk Hjortavel* 3/1996: 14-16.
- Komers, P.E. 1991. **A Wood Bison Summer**. Educational video, 31 minutes. Presented at the International Behavioral Ecology Congress, Princeton, 1992; Award Winner of the 1993 Animal Behavior Society Film Festival.
- Komers, P.E. and H. Erdmann. 1990. **Waldbisons: Die Geschichte Eines Wenig Bekannten Grosswildes**. *Das Tier* 1990: 11.
- Komers, P.E. 1989. **Schreikraniche vom Aussterben Bedroht: Hürde für Amerikanischen Naturschutz**. *Die Tierwelt*. 99(28): 13.
- Komers, P.E. 1988. **Wood Buffalo National Park**. Video copy available at the Wood Buffalo National Park interpretive centre, Fort Smith, NWT.
- Komers, P.E. 1988. **Elstern und Rabenvögel**. *Die Tierwelt*. 98(14): 13-14.

Troy Whidden, Ph.D., P.Biol.

Project Management, Wildlife Ecology & Biodiversity

Dr. Whidden is a terrestrial ecologist with more than ten years of academic and environmental impact assessment experience in the ecological sciences. His experience is heavily based on work in the NWT with particular relevance to First Nations. He has worked as a Project Manager for environmental services based in Inuvik, Northwest Territories, and Fort McMurray, Alberta. He has extensive experience evaluating and designing methods for impact assessment and managed numerous third-party reviews of hydroelectric and oil sands developments. He conducted numerous technical and issues-scoping workshops with local Aboriginal stakeholders in northern Canada and applied his expertise as a witness in regulatory hearings. He has also provided thorough technical scientific editing services to a wide variety of development projects. The focus of his academic research, which has carried over to the practice of environmental impact assessment, has been on population ecology and biodiversity.

Key Projects

Environmental Impact Assessment

- Reviewed EIA applications for developments in the Alberta Oil Sands Region on behalf of First Nation stakeholders (2001-current).
- Development, planning, and implementation of impact assessments for the Indian Oil and Gas Commission on behalf of First Nation stakeholders (2003).
- Senior review of the impact assessment method guidelines for a proposed offshore exploratory drilling program in the Beaufort Sea, NWT (2003).
- Project management, literature review, study design, data collection and analysis, cumulative effects assessment, and reporting for industrial developments in the Inuvialuit Settlement Region, NWT (2001-current).
- Assessed Valued Ecological Component (VEC) and cumulative effects information, provided mitigation recommendations, and conducted statistical analysis of field data for the Donlin Creek Mine Project, Alaska.
- Analyzed habitat impacts with respect to road corridors and performed issue scoping and identification of endangered species for Pebble Copper-Gold Mine Project, Alaska.
- Reviewed technical documents for the Environmental Monitoring and Advisory Board (current), NWT.
- Group Facilitator at an issues-scoping workshop for an offshore drilling program, NWT (2003).
- Senior review of the preliminary Wildlife EIS for the Mackenzie Valley Pipeline Project (2003).
- Lead editor of a compendium of environmental and regulatory best-practices for the Canadian Heavy Oil Association's handbook (current).
- Preparation of regulatory applications (onshore, offshore) on behalf of various oil and gas companies operating in the Inuvialuit Settlement Region, NWT (2001-2003).
- Taught and developed laboratory sessions in general biology, general ecology and evolution, population ecology, genetics, and invertebrate zoology.
- Population ecology and biodiversity research (1994-2002).

Ecosystem Management

- Constructed, evaluated and reviewed wildlife habitat suitability index model for a large-scale biophysical assessment in the Inuvialuit Settlement Region, Northwest Territories
- Assessment of the "Burns Bog Ecosystem Review," in terms of the general ecological context and aspects related to plant and animal population ecology and genetics
- Conducted vegetation classification and wildlife habitat suitability modelling in the Mackenzie Delta Region

Senior Scientific Editor

- Technical editor for general sections of the Comprehensive Study report for the Beaufort Sea Exploration Drilling Program
- Wrote and edited Permit Reports and Research License Applications for the Aurora Research Institute, NT
- QA/QC and technical editing of submissions to the Environmental Impact Screening Committee, NT

Research in Population Ecology

- Conducted research on genetic biodiversity at the population and community levels. Other aspects of this research pertained to genetic components of mating frequency, relatedness, systematics, and taxonomy.

Designed, conducted, and assisted with scientific investigations for a wide variety of animals and plants in maritime, prairie, badland, and mountain ecosystems across Canada.

Employment Experience

Nov 2003 - Present	Whidden Environmental Ltd: <i>Principal</i>
2003-2004	KAVIK-AXYS: <i>Project Coordinator</i>
2001-2003	Inuvialuit Environmental & Geotechnical Inc.: <i>Contractor, Project Manager & Group Leader, Biophysical Services</i>

Education

2002	Doctor of Philosophy, University of Calgary, Canada
1996	Master of Science, Acadia University, Canada
1994	Bachelor of Science (Honours), Acadia University, Canada

Affiliations

<i>Member</i>	Alberta Society of Professional Biologists (ASPB)
<i>Member</i>	Canadian Association of Environmental Biologists

Publications

Otterstatter, M.C. and T.L. Whidden. 2004. **Patterns of parasitism by tracheal mites (*Locustacarus buchneri*) in natural bumble bee populations.** *Apidologie* 35: 2004.

Otterstatter, M.C.; T.L. Whidden and R.E. Owen. 2002. **Contrasting frequencies of parasitism and host mortality among phorid and conopid parasitoids of bumble bees.** *Ecological Entomology* 27: 229-237.

Whidden, T.L. 1996. **The fidelity of commercially reared colonies of *Bombus Impatiens* Cresson (Hymenoptera:Apidae) to lowbush blueberry in southern New Brunswick.** *Canadian Entomologist* 128: 957-958.

Co-authored Reports

MSES Inc. 2005. **Review of the No Net loss Habitat Compensation and Monitoring Plan for the Canadian Natural Horizon Project.** Prepared for the Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.

MSES Inc. 2005. **A Review of Suncor Energy's Class II / III Industrial Landfill Application.** Prepared for the Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.

MSES Inc. 2005. **A Review of Suncor Energy's Waste Management Facility Application.** Prepared for the Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.

Whidden Environmental Ltd. 2005. **Environmental and Regulatory Best Management Practices Chapter,** Canadian Heavy Oil Association Handbook. T.L. Whidden, Editor.

IEG Environmental. 2004. **Husky Sunrise EIA Review.** Prepared for the Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.

AES Lynx Enterprises Inc. 2004. **Iliamna Regional Transportation Corridor Analysis.** Vol. II (Draft). Prepared for PND Inc, Anchorage, Alaska, USA.

AES Lynx Enterprises Inc. 2004. **Donlin Creek Environmental Evaluation Document,** (Internal Draft, Version 1). Prepared for Placer Dome US Inc, Anchorage, Alaska, USA.

Whidden Environmental Ltd. 2004. **Bird Survey for the Stoney Trail-Country Hills Boulevard Interchange.** Prepared for Kidco Construction Ltd., Calgary, Alberta, Canada.

MSES Inc. 2004. **Review of the Husky Sunrise Thermal Project Proposed Terms of Reference.** Prepared for the Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.

MSES Inc. 2004. **A Review of Suncor Energy's South Tailings Pond Project.** Prepared for the Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.

MSES Inc. 2004. **Tree Inventory for the Future Site of St. Demetrius Serbian Orthodox Church.** Prepared for Challenger Surveys Ltd, Calgary, Alberta, Canada.

Komers, P., E. Dickson, S. Kienzle, T. Whidden, and R. Levy. 2003. **Cumulative Effects in the Oil Sands: A First Nation's Big Picture View.** IEG. Calgary. Pp 27.

MSES Inc. 2004. **A Review of Suncor Energy's South Tailings Pond Project.** Prepared for the Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.

MSES Inc. 2004. **Tree Inventory for the Future Site of St. Demetrius Serbian Orthodox Church.** Prepared for Challenger Surveys Ltd, Calgary, Alberta, Canada.

MSES Inc. 2003. **Review of the Kearl Oil Sands Project Terms of Reference.** Prepared for the Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.

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- MSES Inc. 2003. **Suncor Stage 3 Project Review**. Prepared for the Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.
- MSES Inc. 2003. **Review of the 2002 Diavik Diamond Mine Wildlife Effects Monitoring Report on Behalf of the Environmental Monitoring Assessment Board**. Prepared for the Environmental Monitoring Advisory Board for the Diavik Diamond Project, Northwest Territories, Canada.
- MSES Inc. 2003. **A Review of RFQ and RFP (draft) for Southeast Anthony Henday Drive DBFO**. Prepared for Millenium EMS and Alberta Transportation, Edmonton, Alberta, Canada.
- MSES Inc. 2003. **Anthony Henday Drive: Bridge and Culvert Issues of Concern for Wildlife**. Prepared for Millenium EMS and Alberta Transportation, Edmonton Alberta, Canada.
- IEG, 2002. **General review of the EIA and SIR for the Dunvegan Hydroelectric Project** (Submitted by Glacier Power Limited). Prepared for The Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.
- IEG, 2002. **An assessment of the review of the Fort Hills EIA** (Submitted by TrueNorth Energy Limited). Prepared for The Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.
- IEG, 2002. **A review of the Jackpine Mine – Phase 1 EIA** (Submitted by Shell Canada Limited). Prepared for The Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.
- IEG, 2002. **A review of the Horizon Oil Sands Project Application for Approval** (Submitted by Canadian Natural Resources Limited). Prepared for The Mikisew Cree First Nation, Fort Chipewyan, Alberta, Canada.
- IEG, 2002. **Vegetation classification and wildlife habitat suitability modelling in the Mackenzie Delta region**. Prepared for Oil & Gas Producers in the Northwest Territories, Canada.
- IEG, 2002. **Biophysical assessment for the proposed extension of Nosehill Drive, NW**. Prepared for Carma Developers Limited, Calgary, Alberta, Canada.

Presentations

- Whidden, T.L. 2002. **Patterns of molecular and morphological variation between bumble bee species: utility beyond systematics?** Annual Meeting of the Canadian Society of Zoologists, Lethbridge, Alberta, Canada.
- Whidden, T.L. 2000. **The use of molecules and morphology in delineating bumble bee species**. Joint Annual Meeting of the Entomological Society of America and the Entomological Society of Canada, Montreal, Quebec, Canada.
- Whidden, T.L.; M.C. Otterstatter and R.E. Owen. 1999. **Bumble bees and dipteran endoparasites**. Entomological Society of Canada Annual Meeting, Saskatoon, Saskatchewan, Canada.
- Whidden, T.L.; M.C. Otterstatter and R.E. Owen. 1998. **Incidence of endoparasites in a population of bumble bees**. Entomological Society of Alberta Annual Meeting, Kananaskis, Alberta, Canada.

Project Experience

Writer and technical editor for general sections of the **Comprehensive Study Report for the Beaufort Sea Exploration Drilling Program of Devon Canada Corporation**

Assistant facilitator for the initial Issues **Scoping Workshop for the Beaufort Sea Exploration Drilling Program of Devon Canada Corporation**, Inuvik, NT

Senior review of the **Wildlife Environmental Impact Statement for the Mackenzie Gas Project**

QA/QC and technical editing of reports and baseline environmental studies completed for the **Beaufort Sea Exploration Drilling Program of Devon Canada Corporation**

Writing and editing of **Permit Reports and Research License Applications for the Aurora Research Institute, NT**

Assessment of the synthesis report entitled "Burns Bog Ecosystem Review". The assessment involved a critique of general ecological context and aspects specifically related to plant and animal population ecology and genetics

QA/QC and technical editing of submissions to the **Environmental Impact Screening Committee, NT**

Designed and supervised **biophysical impact assessments of sweet-gas wells on the Stoney Indian Reserve (Olympia Energy), AB**

Reviewed environmental impact assessments (wildlife, vegetation, biodiversity, and cumulative effects analyses) for oil sands (**TrueNorth - Fort Hills, Shell - Jackpine Mine Phase 1, CNRL - Horizon**) and hydroelectric developments (**Canadian Hydro - Dunvegan Project**) on behalf of the **Mikisew Cree First Nation, AB**

Integrated and assessed consultant reports from various scientific disciplines (air quality, water quality, hydrology, hydrogeology, and fisheries) used in the **review of environmental impact assessments for oil sand developments on behalf of the Mikisew Cree First Nation, AB**

Participated in **technical sessions and workshops for Shell-Jackpine Mine and CNRL-Horizon on behalf of the Mikisew Cree First Nation, AB**

Preparation and editing of **community bulletins to communicate industrial development activities to First Nation stakeholders**

Gathered and synthesized pertinent **scientific literature and industry reports for an investigation into vegetation and soil disturbance effects for the Mackenzie Gas Project pipeline right-of-way preparation for ColtKBR**

Assessed NT. **potential impacts and cumulative effects of proposed oil and gas exploration projects in the Inuvialuit Settlement Region, NT**

Researched and designed protocol for selecting **Valued Ecosystem Components in the Inuvialuit Settlement Region, NT**

Constructed, evaluated, and reviewed wildlife habitat suitability index models for a large-scale biophysical assessment in the Inuvialuit Settlement Region, NT

Evaluated and reviewed wildlife habitat suitability index models from a biophysical assessment in north-eastern AB

Conducted vegetation community analyses with baseline data gathered in the Inuvialuit Settlement Region, NT

Coordination of biophysical impact assessments and restoration plans for urban developments in Calgary, AB

Acted as a **technical editor and reviewer of environmental protection plans, environmental impact screening reports, environmental overviews, impact assessment proposals, and contaminated site assessments**

Sheri Gutsell, Ph.D.

Plant Population & Community Ecology

Dr. Gutsell is a forest ecologist and practitioner of environmental assessments. Key projects include the Environmental Impact Statement for a natural gas development in an ecologically sensitive prairie area. She has published scientific articles in prestigious journals and presented talks at conferences on forest dynamics and wildfires. In her expert review capacity, she routinely reviews scientific manuscripts and books and produces technical accounts on a variety of topics, including trends in biodiversity, plant species distribution and the effects of herbivory, drought, and wildfire on trees.

Consulting Experience

- Assessment and technical writing for Environmental Impact Statement (EIS) for a natural gas development in Saskatchewan, including effects on Vegetation, Wildlife, Hydrogeology and Surface Water, Soils and Landforms, Socioeconomics and Land Use, and Cumulative Effects.
- Letters to government agencies and the public, including report summaries for Saskatchewan government meetings, the government website, and two open houses.
- Involved in technical reviews of vegetation, reclamation and soil & terrain in oil sands Environmental Impact Assessments.
- Science writing for Ecology Connections: Connecting Ecology Research and Education – a University of Calgary science education website (www.EcologyConnections.ca).
- Conducted vegetation surveys that include ELC classification and non-native and rare plant surveys.

Employment Experience

2007-present	MSES Inc. (Vegetation Biologist)
2002-2004	Alpine Environmental Ltd. (Environmental Assessment & Technical Writing)
1991-1999	University of Calgary: <i>Teaching Assistant</i> <i>(Biology 1st year course, Ecology and Evolution 2nd year course, Terrestrial Ecology 4th year course, Conservation Biology 4th year course)</i>
1995-2001	University of Calgary: <i>Ph.D. Graduate Student</i>, Department of Biological Sciences
1991-1994	University of Calgary: <i>MSc Graduate Student</i>, Department of Biological Sciences
1987-1991	University of Calgary: <i>B.Sc. Student</i>

Education

2001	Doctor of Philosophy, University of Calgary, Canada
1994	Master of Science, University of Calgary, Canada

1991 Bachelor of Science (Ecology), University of Calgary, Canada

Courses Developed and Taught

- 2002 Terrestrial Communities and Ecosystems (4th year undergraduate course), University of Calgary (17 lectures)
- 2001 The Organization and Diversity of Life (1st year undergraduate course), University of Calgary (12 lectures)
- 1998 Understanding landscape-scale patterns of plant community composition (4th-year undergraduate course), University of Kelaniya, Sri Lanka (5 lectures)
- 1997 What can be learned about forest dynamics from the age distribution of trees? (4th year undergraduate lab exercise), Workshop of the Association for Biology Laboratory Education, University of Calgary (1-day field and lab exercise)
- 1995 Fire frequency, methods, models and interpretation (graduate course), 6th North American Field week, University of Calgary (5-day field and lab exercise)

Publications and Peer-Reviewed Journals

- Gutsell, S.L. and E.A. Johnson. 2002. **Accurately ageing trees and examining their height growth rates: implications for interpreting forest dynamics.** *Journal of Ecology* 90:153-166.
- Gutsell, S.L., E.A. Johnson, K. Miyanishi, J.E. Keeley, M. Dickinson, and S.R.J. Bridge. 2001. **Correspondence: Varied ecosystems need different fire protection.** *Nature* 409:977.
- Gutsell, S.L. and E.A. Johnson. 1996. **How fire scars are formed: coupling a disturbance process to its ecological effect.** *Canadian Journal of Forest Research* 26: 166-174.
- Johnson, E.A. and S.L. Gutsell. 1994. **Fire frequency models, methods and interpretations.** *Advances in Ecological Research* 25:239-287.
- Johnson, E.A., and S.L. Gutsell. 1993. **Heat budget and fire behaviour associated with the opening of serotinous cones in two Pinus species.** *Journal of Vegetation Science* 4(6):745-750.

Book Chapter

- Gutsell, S.L. and E.A. Johnson. 2007. **Wildfire and tree population processes.** In *Plant disturbance ecology: the process and the response.* E.A. Johnson and K. Miyanishi (eds.). Academic Press.

Published Abstracts (Refereed)

- Gutsell, S.L. and E.A. Johnson. 2001. **Understanding old-growth forests using stand level processes.** *Supplement to Bulletin of the Ecological Society of America* 82(4).
- Gutsell, S.L. and E.A. Johnson. 2001. **Understanding forest dynamics in the context of a fire-dominated landscape.** *North American Forest Ecology Workshop*

- Gutsell, S.L. and E.A. Johnson. 1999. **Examining a critical assumption of methods used to infer patterns of forest succession.** Supplement to Bulletin of the Ecological Society of America 80(4).
- Gutsell, S.L. and E.A. Johnson. 1994. **The mechanisms of fire scar formation.** Supplement to Bulletin of the Ecological Society of America 75(2):84.
- Gutsell, S.L. and E.A. Johnson. 1993. **A heat budget model for opening of serotinous cones in *Pinus banksiana* and *Pinus contorta* var. *latifolia*.** Supplement to Bulletin of the Ecological Society of America 74(2):261.

Other Publications (Non-Refereed)

- Gutsell, S.L. 2005. **Ecology Research Connections.** Kananaskis Field Stations publication. University of Calgary, Calgary, AB.
- Gutsell, S.L. 2003. **Trees and Forests of the Kananaskis: Barrier Lake Forestry Trails.** Interpretive Trail Guide. Kananaskis Field Stations publication. University of Calgary, Calgary, AB.
- Johnson, E.A., Miyanishi, K., Gutsell, S.L., Dickinson, M.B., and Revel, R. 2000. **Lightning, lightning fires and fire frequency.** Research Links. Parks Canada.
- Gutsell, S.L. and E.A. Johnson. 1998. **What can be learned about forest dynamics from the age distribution of trees?** In: Tested Studies for Laboratory Teaching: Proceedings of the 19th workshop/conference of the Association for Biology Laboratory Education (ABLE). S.J. Archer (ed). June 10-14, 1997. University of Calgary. Calgary, AB.

Conference Abstracts (Non-Refereed)

- Gutsell, S.L. and E.A. Johnson. 1999. **Testing the assumptions of methods used to infer patterns of forest succession.** In: Proceedings of Science and Practice: Sustaining the Boreal Forest. Networks of Centres of Excellence in Sustainable Forest Management. Edmonton, AB. 14-17 February.
- Gutsell, S.L. 1998. **Analysis of cohort life tables for upland tree species in the southern mixedwood boreal forest of Saskatchewan, Canada.** In: Proceedings of the Western Student Workshop. Networks of Centres of Excellence in Sustainable Forest Management. University of Alberta, Edmonton, AB. 2-3 October.
- Gutsell, S.L. and E.A. Johnson. 1998. **Analysis of cohort life tables for upland tree species in the southern mixedwood boreal forest of Saskatchewan, Canada.** In: Proceedings of the VII International Congress of Ecology. A. Farino, J. Kennedy, V. Bossu. (eds.). Florence, Italy. 19-25 July.
- Gutsell, S.L. 1995. **The affects of fire suppression in the North American boreal forest.** In: Conference on Sustaining Biodiversity in the Boreal Forest. Edmonton, AB. 29-31 January.
- Gutsell, S.L. and E.A. Johnson. 1994. **The mechanisms of fire scar formation.** In: Proceedings of the VI International Congress of Ecology. J.H. Hallis, H.J. Norman, R.A. Benton (eds.). Manchester, England. 21-26 August.
- Gutsell, S.L. and E.A. Johnson. 1994. **The mechanisms of fire scar formation.** In: Program of the 30th Annual Meeting of the Canadian Botanical Association. 26-30 June.

Gutsell, S.L. and E.A. Johnson. 1992. **A heat budget model for opening of serotinous cones in *Pinus banksiana* and *Pinus contorta* var. *latifolia***. In: Workshop on Disturbance Dynamics in boreal Forest. Umeå, Sweden. 10-14 August.

Book Reviews for Scientific Journals

Gutsell, S.L. 1996. **The Ecology of Fire**, by R.J. Whelan. Cambridge University Press. 1995. In: The New Phytologist 134(2):387.

Gutsell, S.L. and E.A. Johnson. 1992. **Atlas of the Vascular plants of the island of Newfoundland and of the islands of Saint-Pierre and Miquelon**, by E. Rouleau et G. Lamoureux. In: Cartographica 30(4).

Invited Lectures & Workshops

Gutsell, S.L. **La dynamique des peuplements locaux et paysage de la forêt boréale. Dépt. des sciences fondamentales**, Univ. du Québec à Chicoutimi. October, 1998. (Invited lecture)

Gutsell, S.L. and E.A. Johnson. **Forest dynamics in the boreal forest of Saskatchewan. Workshop in tree regeneration in the boreal forest**. Networks of Centres of Excellence in Sustainable Forest Management. Montreal, Quebec. April 1998. (Invited workshop)

Gutsell, S.L. **Large fire years: cause and meaning**. U.S. Forest Service Workshop. University of Washington, Seattle, Washington. 17-19 April, 1996. (Invited workshop)

Gutsell, S.L. **National workshop on wildland fire activity in Canada**. Canadian Forest Service Workshop. Edmonton, AB. 1-4 April 1996. (Invited workshop)

Gutsell, S.L. 1995. **The affects of fire suppression in the North American boreal forest**. Conference on Sustaining Biodiversity in the Boreal Forest. Edmonton, AB. 29-31 January. (Invited lecture)

Kashif M. Sheikh, Ph.D., P. Biol.

Ecosystem Services, Community Based Conservation

Overview:

He is a professional biologist with 15 years of multidisciplinary experience in terrestrial, high-mountain and freshwater ecosystem research, conservation and management. Dr. Sheikh was a full time Research Associate at the Canadian Circumpolar Institute, University of Alberta, participating in an international research program dealing with the sustainable use and community-based conservation of the wild species in the northern Canada. His work is contributing to sustainable development, policy development and community-based conservation issues in the Canadian Arctic. He specializes in the assessment and management of biodiversity, ecological inventorying of the wildlife movements, and mitigating ecological recovery processes. His strengths lie in effective planning and management of species and protected areas in partnership with the governments, private stakeholders and local communities. Dr. Kashif M. Sheikh has professionally worked in Asia since 1992, and from 2004 in Canada, and has considerable experience in the implementation of biodiversity conservation initiatives, primarily through his role as biodiversity program coordinator for the IUCN.

Key Projects

- Research Scientist in the analysis of the community-biodiversity-policy linkages within 'Conservation Hunting, Sustainable Development and community Values in the Canadian Arctic': A project for the Canadian Circumpolar Institute, University of Alberta, Canada.
- Supervised and coordinated multi-disciplinary research: Integration of Economic Measures in the Conservation of Biodiversity: A Critical Link in Protected Areas Management Effectiveness in Asia. IUCN Asia
- Towards Management Effectiveness: Protected area Planning and Conservation. IUCN Pakistan, IUCN Asia and IUCN international, Islamabad, Pakistan.
- Technical Backstopping, Biodiversity Information Coordination Support, Field Surveys Support, Exploring Linkages with Biodiversity Conventions: Mountain Areas Conservancy Project. A UNDP-GEF-IUCN project, Pakistan
- Supervised and coordinated the development of the Freshwater Biodiversity Assessment and Red List of (Fish, Molluscs, Crabs, Odonates) in Pakistan. IUCN Pakistan
- Project Technical Investigator for biodiversity conservation, waterfowl ecological studies and wetland management in Pakistan
- Supervised, coordinated, edited and compiled the 'Development of the Red-list of Threatened Mammals of Pakistan. IUCN Pakistan
- Involved in the development, coordination and deliberations fir Protected Area Management Effectiveness in Pakistan (via CoP-7 fast disbursement mechanism), IUCN, Pakistan

Areas of Specialization

Biodiversity

- Developed concepts and project proposals on various sectors of biodiversity including sustainable use, protected areas management, and traditional ecological knowledge (TEK)
- Advised various national level biodiversity initiatives as a biodiversity expert.
- Identified biodiversity indicators and developed plans for ecosystem management and environmental protection.

Species Recovery Planning

- Technically supported and coordinated scientific efforts and enabled policy development in threatened species recovery and planning processes regarding Asian Vulture Crises.
- Provided conceptual inputs to the species recovery planning processes for ungulate species in Pakistan

Community-based Conservation

- Development, handling, and analyzing the community-based conservation programs in Karakorum mountains regarding wise use of the wild resources
- Analyzed how international biodiversity regimes influence local communities in exploiting or sustainably managing the wildlife species e.g. Ungulates, Falcons, Ducks and Bustards.

Wildlife Ecology

- Ecological studies of avifauna in the Naltar Valley, Northern Pakistan with a Conservation Perspective'. Pakistan-German Research Project and WWF-Pakistan.
- Conducted research, coordination and monitoring of the effectiveness of the Migratory birds conservation and management.
- Conducted waterfowl breeding status, ungulate, migratory bird banding, and habitat surveys internationally.
- Trained forest wildlife staff in the surveys of migratory birds and understanding of species diversity in Punjab and Baluchistan, Pakistan.

Protected Areas

- Conducted multi-disciplinary research on the effectiveness of protected areas management and organized protected areas seminars and capacity building programs through IUCN networks.
- Coordinated and advised on environmental assessments and wildlife reports in Khunjerab National Park (Pakistan), Margallah Hills National Park (Islamabad), Chumbi Surla and Naltar wildlife sanctuaries.
- Reviewed cases for proposed protected areas and developed associated reports.

Inter Governmental Backstopping

- Offered technical, advisory and scientific backstopping to the Government of Pakistan's Ministry of Environment on issues of international biodiversity conventions and protocols such as CBD, CITES, CMS, WHC and others.
- Training, awareness and preparation of the governmental staff in participation at the inter-governmental meetings such as CoP and SBSTTA in Asia.

Nature-based Tourism Industry

- As part of the IUCN-Asia's Regional Sustainable Use Program, developed and implemented the concept of nature-based tourism in Himalayan foothills, with consideration of alternative resources and livelihood opportunities.
- Presented a case study on the concept of challenges to the tourism industry in western Karakorum mountains of Pakistan in the International Conference on 'Sustainable Mountain Communities' held at Banff Centre, Alberta, Canada in 2003.

Scientific and Technical Support

- Scientific Reviewer for the Alberta Conservation Association's/ ACCRU grants in biodiversity and also for papers in Wildlife Ecology and Conservation.
- Taught conservation biology, biodiversity conservation and environmental science popular lectures to University of Veterinary and Animal Sciences, and Lahore College Women University.
- Trained various young professional and interns in the field of species assessments using objective criteria, biodiversity conservation, mountain area ecological research and nature-based tourism.
- Trained forest and wildlife staff in the knowledge on biodiversity conservation, biodiversity protocols, wetland management and restoration on few selected ecosystem types.
- Prepared a GIS vegetation map for Naltar valley using ArcView, ArcInfo and Atlas GIS software at the Geography Institute, University of Bonn, Germany.

Management of Applied Science

- Nine years of experience in national and international small and medium scale projects: Designed research and conservation projects, secured funding, implemented and completed projects.
- Supervised university graduate students research; trained and intern in biodiversity science, served as focal point for the DIVERSITAS International in Pakistan.
- Participated with professionals of multiple disciplines including fauna, flora, socio-economics, ecology, and GIS

Employment Experience

- 2005 - 2007 **Canadian Circumpolar Institute, University of Alberta, Edmonton, Alberta:**
Research Associate/ Program Manager Conservation Hunting/
(Program Development; Policy, Community and Biodiversity Research; Fund Raising, Networking, Research Support and Planning)
- 2001 - 2005 **IUCN-The World Conservation Union- Asia, Islamabad:**
IUCN-P Biodiversity Expert, Program Coordinator, Head of Biodiversity Program

(Program Development; Policy, Community and Biodiversity Research, Biological Assessments, Red Listing of Species, Biodiversity Action Planning, Project Planning, Implementation and Management; Inter-governmental Coordination of Biodiversity Protocols, Training in Biodiversity Conservation and Assessments, Environmental Planning)

- 2001 - 2002 **Himal Program, HKH Region, IUCN-Pakistan, Islamabad, Pakistan: Project Manager,**
(Program Development, Fund Raising, Project Planning and Implementation, Public Consultations, Pilot Project Demonstrations and Implementation, Nature-based Tourism Development)
- 1999 – 2001 **Quaid-I-Azam University, Islamabad
Research Associate, Environmental Biology Section**
(Design of different projects, assisting and guiding M. Phil and M. Sc. students in research and studies in the field and lab.)
- 1996 – 2000 **DAAD – German Academic Exchange Service - Bonn, Germany/Pakistan-German Research Project “Culture Area Karakorum” (CAK), Pakistan: Research Fellow,**
(Research, Fieldwork, Data Collection, In-House Analysis, Museum Studies, Community-Outreach, Reporting)
- 1992 – 1998 **Research Assistant, Project Investigator for WWF-Pakistan and other institutions**
(Project Development and Execution, Networking, Stakeholder Liaison, Data Collection & Analysis, Project Delivery and Field Work, Wetland Management Planning, Interviews, Office Management, Publications/ Library Management, Meeting organization)

Education

- 1996 - 2001 Doctor of Philosophy, Quaid-i-Azam University, Islamabad, Pakistan
*in collaboration with Institute of Zoology and Museum Alexander Koenig, Germany
(Thesis: Ecological Studies of Avifauna in the Naltar valley, Northern Pakistan with a Conservation Perspective)*
- 1994 - 1996 Master of Philosophy, Quaid-i-Azam University, Islamabad, Pakistan
(Thesis: Biological Diversity Conservation Perspective at Mangla Reservoir)
- 1990 - 1993 Master of Science, University of the Punjab, Lahore, Pakistan
(Thesis: Ecological Studies of Gamaghar Lake in Relation to Migration of Waterfowl)
- 1987 - 1989 Bachelors of Science, Government College University, Lahore, Pakistan
(Zoology, Botany, Chemistry)

Awards/ Distinctions

- 2005-2006: DIAND and North-West Territories Protected Areas Strategy:
Research collaborator in the grant awarded to the CCI, U of A.
- 2005-2007: ArcticNet-Canada:

Research collaborator in the grant awarded to the CCI, U of A.

Affiliations

Reviewer ACA Grants in Biodiversity
Biodiversity & Conservation Journal by Kluwer Academic Publications, Netherlands and
Pakistan Journal of Ornithology by Ornithological Society of Pakistan

Member Alberta Society of Professional Biologists
 IUCN, Commission on Ecosystem Management (CEM), Switzerland
 IUCN, Species Survival Commission (SSC), Switzerland
 Threatened Waterfowl Specialist Group (TWSG), UK.
 IUCN-SSC-Regional Sustainable Use Specialist Group-North America, Canada
 Duck Specialist Group (DSG), UK
 DIWPA (Inventory and Conservation of Biodiversity in Asia Pacific), Japan.
 Ornithological Society of Pakistan (OSP)
 Centre for Environmental Research & Conservation (CERC), Pakistan

Lectures, University of Alberta

- November 20th 2006. ENCS 376: International Biodiversity Contexts: Translating Words into Actions: Global Biodiversity Conventions, National Strategies and Rural People, Lessons Learned in the Developing World. Department of Renewable resources, University of Alberta, Edmonton
- 16th October 2006. ENCS 474: Challenges and Prospects of Community-based Conservation in Western Karakorum Mountains of Asia. Department of Renewable resources, University of Alberta, Edmonton
- December 1st 2005. ENCS 474: Problems, Prospects and Experience of Community-based Conservation Hunting (CBCH) in few Mountain Ranges of Asia: Lessons Learned for.....Northern Canada. Department of Renewable resources, University of Alberta, Edmonton
- November 29th 2005. CSA Seminar Series: Problems, Prospects and Experience of Community-based Conservation Hunting (CBCH) in few Mountain Ranges of Asia: Lessons Learned for.....Northern Canada. Department of Renewable resources, University of Alberta, Edmonton

Publications

Refereed Publications

- Sheikh, K.M. 2006. **Involving Religious Leaders in Conservation Education in the Western Karakorum, Pakistan.** Mountain Research and Development 26 (4) 319-322
- Sheikh, K.M. 2006. **The Status and Conservation of Bears in Pakistan.** Chapter 1 In Understanding Asian Bears to Secure their Future. Japan Bear Network (compiler) Ibaraki, Japan. 1-6 pp.
- Virk, A.T., Sheikh, K. M. and Marwat, A.H. 2003. **Biodiversity- Northern Areas Strategy for Sustainable Development (NASSD).** Northern Areas Governmt. & IUCN-P Program. 34 pp.

- Sheikh, K et al. 2002. Use, **Exploitation and Prospects for Conservation: People and Plant Biodiversity of Naltar Valley, NW-Karakorums, Pakistan**. Biodiversity & Conservation 11(4): 715-742 Kluwer Academic Publishers, Netherlands.
- Sheikh, K.M. 2000. **Ecological Studies of Avifauna in the Naltar valley, Northern Pakistan, with a Conservation Perspective**. PhD Dissertation. Deptt. of Biological Sciences, Quaid-i-Azam University in collaboration with Institute of Zoology and Museum Alex. Koenig, Universitat Bonn, Germany.
- Sheikh, K. 2000. **Some findings on the IUCN-Red data Book Avian Species from Naltar valley, Northern Pakistan**. Pakistan Journal of Ornithology. 3: 21-26 pp
- Sheikh, K. 1999. **Habitat and Breeding Ecology of Himalayan Laughing Thrush Garrulax lineatus in the North-western Karakorums**. Pakistan Journal of Ornithology 2: 34-42
- Khan, A.A., Wright, G. and Sheikh, K.M. 1999. **Socio-economic Constraints, Women and Wetland Resources of Pakistan**. Pakistan Journal of Ornithology 3 (1-2): 13-17
- Sheikh, K., Mahmood, J.A. and Nadeem, M.S. 1997. **Conservation: A Must? To Safeguard the Biodiversity of Rangla Wetland Complex**. In. Biodiversity of Pakistan. Mufti, S.A., Woods, C.A. and Hasan S.A.(eds.) Pakistan Museum of Natural History and Florida Natural History Museum. 127-132 pp.
- Khan, A.A., Sheikh, K.M. and Right, G. 1996. **A Perspective of Community Based Management at Zangi Nawar Lake, Balochistan, Pakistan**. Blackwell Science Australia. Lakes & Reservoirs: Research and Management 1996. 2 (3-4), 153-155.
- Khan, A.A., Khan, R., Ullah, A., Shah, M.A., Mahmood, J.A. & Sheikh, K.M. 1996. **The Conservation Perspectives of Imperial Eagle Aquila helica and Steppe Eagle Aquila nipalensis in Pakistan**. Eagle Studies B.-U.Meyburg & R.D. Chancellor (eds.) WWGBP Berlin. 459- 461pp.
- Sheikh, K., Ahmad, T. and Khan, A. A. 1996. **Some Notes on Avifauna of Mangla Reservoir, AJK, Pakistan**. Pak. Jour. of Ornithology, 1(1) 31-37
- Sheikh, K.M. & Khan, A. A. 1996. **Wise Use: A Traditional Approach to Utilize the Resources of Rangla Wetland Complex**. Pak. Journal of Ornithology 2(1-2): 62-75
- Sheikh, K.M. 1996. **Biodiversity Conservation Perspectives at Mangla Reservoir**. M.Phil. Thesis. Department of Biological Sciences, Quaid-i-Azam University, Islamabad. Pakistan
- Sheikh, K. M., Nadeem, M. S. and Gishkori, M.H. 1995. **Study of Marbled Teal at Rangla Complex, Pakistan**. TWRG Newsletter. Wetlands & Wildfowl Trust, UK May 1995. 7: 13-15.
- Sheikh, K.M. 1993. **Ecological Studies of Gamaghar Lake in Relation to Migration of Waterfowl**. M.Sc. Thesis. Department of Zoology, University of the Punjab. Lahore, Pakistan
- Akhtar, T., Sheikh, K. And Chaudhry, A.A. 1992. **Gamaghar Dhand: A Hunting Bonanza Coming to an End**. Journal of Systematics and Experimental Biology. Scientific Res. Publications. 2 (2): 57-78

Books and Proceedings (Edited)

- Sheikh, K.M. and Molur, S. R.V. 2005. (Editors) **Status and Red List of Pakistan Mammals**. 312pp. IUCN Pakistan Program
- Sheikh, K.M. and Mirza, Z.B. 2006. **A Field Guide to the Birds of Northern Pakistan: With Conservation Implications**. A Resource for Communities, Wildlife Managers and Biodiversity Planners.
- Sheikh, K. M. 2004. Proceedings of the National Consultation: Protected Areas Management Effectiveness in Pakistan. **IUCN-Pakistan Program. 61 pp.**

Contributions in Authored Publications

- Emerton, L. 2002. A Toolkit for Financing NBSAPs in Asia (IUCN-Asia)
- IUCN- Asia. 2004. The Global Case Study: Integration of Economics into National Biodiversity Strategies and Action Plans (IUCN-Asia).
- Lee, D et al. 2004. The Global Action Plan for the Conservation and Management of White-headed Duck (Wetlands International, CITES and Wetlands and Waterfowl Trust (WWT) UK)

Popular Publications

- Sheikh, K and Anwar, M. 2001. **The BAP Process in Pakistan – action on behalf of Biodiversity**. Country & Regional Round –Up. IUCN The world Conservation Union- Asia, Colombo, 12-13 pp.
- Sheikh, K. 1998. **Lakes of the World-Rangla Wetland Complex-Pakistan**. International Lake Environment Committee Foundation 1091 Oroshimo-Cho, Kusatsu-city, Shiga 525-0001, Japan *ILEC-Newsletter* No. 32 July. Page 7
- Sheikh, K.M. 1994. **Gamaghar Jheel Going, Going Gone Almost**. Vol 1. 29 pp. June 1994 *The Way Ahead*. IUCN-Pakistan' s Environment and Development Quarterly.
- Sherazi, S.H. and Sheikh, K.M. 1994. **Kharal Lake: A Need for Conservation Efforts**, *Natura*, WWF-Pakistan Vol. 20, Issue 2, 18-20 pp.

Proceedings

- Sheikh, K. and Kashif, N. 2006. **Strategic Role of Pakistan Wetlands Resources: Need for a Migratory Waterbird Conservation Network**. Proc. of Global flyway Conf., 3-8 April 2004, Edinburgh, UK
- Sheikh, K. 2005. **'IUCN & Freshwater Biodiversity Conservation (Assessments, Research and Management)'**. Proceedings of the Fisheries and Freshwater Biodiversity Symposium. University of Veterinary & Animal Sciences, Lahore, Pakistan. 43-47 pp.
- Sheikh, K. 2003. **Challenges of a Sustainable Tourism based Economy in the Naltar valley, North-western Karakorums, Pakistan**. Proceedings of the International Conference on 'Sustainable Mountain Communities' the Banff Centre, Banff National Park, Alberta, June 14-18th 2003, 218-224 pp.

Sheikh, K. And Ahmad, T. 1998. **Gene Pools under Rigorous Strain: Need for a Wetland conservation Strategy, Experiences from Punjab Pakistan.** *Proceedings of the 8th Intl. Conf. on the Conservation and Management of Lakes*, May 1-3 Copenhagen, Denmark

Sheikh, K., Ahmad, T., Elzen, R.v.d., and Mirza, Z.B. 1998. **Conservation Aspects from Northern Pakistan: Wetland Birds of Naltar valley.** *Proceedings of the 8th Intl. Conference on the Conservation and Management of Lakes*, May 1-3 Copenhagen, Denmark

Environmental Reviews/ Reports

Anwar, M. and Sheikh, K.M. 2005. **A Review of the Implementation of the Biodiversity Action Plan (BAP) for Pakistan.** IUCN-Pakistan program. 89 pp.

Sheikh, K.M. 2004. IUCN-P, Protected Areas Systems in Pakistan and Steps for Future. IUCN- Pakistan Program 84 pp.

Sheikh, K. and Usman, I. 2002. **Developing Guidelines for Provincial Biodiversity Action Plans (PBAPs) in NWFP, Pakistan.** Global Lessons on Integrating Economics into Biodiversity & Conservation. A Case Study for Regional Biodiversity Program, and Regional Environ. Economics Program, IUCN-Asia 64 pp.

Sheikh, K.M. 2004. **Threatened Mammals of Baluchistan.** IUCN-Baluchistan 35 pp.

Abstracts

Sheikh, K. 2006. **Problems and prospects of community-based Conservation in the North-western Karakorums, Pakistan.** Intl. symposium of Society and Natural resources, Vancouver, Canada.

Sheikh, K. and Elzen, R.v.d. 2003. **Raptors in North-western Karakorums: Sightings and Notes from Naltar Valley, Northern Pakistan.** Proceedings of the 3rd Asian Raptor Symposium 'Asian Raptors Today', October 2003 in Taiwan.

Sheikh, K. 2003. **Wildlife Conservation Perspectives in a Karakorum Landscape: Experiences from Naltar Valley, Northern Pakistan.** International Symposium on the Biodiversity of Northern Areas of Pakistan. held September 8-9th 2003 in Islamabad. Higher Education Commission, QAU Islamabad and University of Bonn, Germany.

Rashid, A., Ahmad, T. And Sheikh, K.M. 1997. **Wildland Fire Effects on Vegetation Dynamics and Habitat Ecology of Margallah Hills National Park, Islamabad.** Proceedings of the 2nd Intl. Wildland Fire Conference, Canada, Environment. Page 109

Sheikh, K., Ahmad, T. and Mirza, Z.B. and Elzen, R. v. d. 2000. Birdlife of Naltar Valley, North- Western Karakorums: New Trends in Mountain Research. Submitted for 17th Pakistan Congress of Zoology.

Posters

Sheikh, K. M. and Freeman, M.M.R. 2006. **Conservation Hunting, Sustainable Development and Community Values in the Canadian Arctic**. IUCN-Sustainable Use Specialist Group and Zoological Society of London Symposium on Recreational Hunting – 12-13th October 2006, London UK.

Sheikh, K. 2003. **Potential, Problems and Prospects of Sustainable Nature-based Tourism in the Eastern Murree Hills, Pakistan**. Proceedings of the International Conference on 'Sustainable Mountain Communities' the Banff Centre, Alberta, June 14-18th 2003, Canada.

Short Notes, Citations and Updates

Sheikh, K. 1999. Sighting of Ferruginous Duck *Aythya nyroca* in Northern Pakistan. *WWT Bulletin*, UK.

Unpublished Reports

Sheikh, K., 1998. Ecological Studies of Avifauna in the Naltar Valley, Northern Pakistan With a Conservation Perspective. Detailed Field Progress Report submitted to Pakistan-German Research Project and WWF-Pakistan, Quaid-i-Azam University, Islamabad 45320, Pakistan

Sheikh, K. 1994. Study of Marbled Teal and Community Involvement for Wetland Management at Rangla Wetland Complex, Punjab. Final Project Report submitted to WWF Pakistan.

Sheikh, K. 1995. People and Wildlife of Baluchistan Deserts

Sheikh, K. 1996. Hunting in Punjab, Pakistan: A Historical Perspective

Sheikh, K. and Stewart, G., 1994. World Pheasant Association- Pakistan's Avicultural Survey. WPA-Pakistan Newsletter. 4-E/2 Gulberg III, Lahore, Pakistan

Sheikh, K. 1993. Checklist of the Birds of Kasur and Okara Distt., Punjab, Pakistan.

Sheikh, K. 1993. Two weeks in Khunjerab National Park. A Report submitted to Zoology Dept. Univ. of the Punjab, Lahore.

Abbie Stewart, M.Sc., P.Biol.

Wildlife Ecology and Administrative Assistant

Overview

Ms. Stewart is a terrestrial ecologist with more than five years of academic and environmental impact assessment experience in the biological sciences. She is competent, professional and extremely task-oriented. She has experience leading field crews and collecting and analyzing data for technical reports, baseline reports and environmental impact assessment reports. Her experience extends to projects occurring in the Northwest Territories, the Alberta Oil Sands Region, and southern Alberta. Ms. Stewart is proficient in the English language.

Key Projects

- Environmental Impact Assessment for the Mackenzie Valley Pipeline, NWT, Canada, 2003 – 2004.
- Wildlife baseline field work and technical reporting for Imperial Oil Resources Limited, Canada. 2003.
- Wildlife baseline field work and technical reporting for the Fort Hills Oilsands Project (TrueNorth Energy L.P.) in Alberta Oilsands Region, Canada, 2002
- Wellsite and Pipeline Tie-In Development Application for the Jumpbush Development Project (Petrobank Energy and Siksika Energy Resources Corporation) in southern Alberta, Canada, 2002.

Environmental Consulting

- Assisted with impact assessments for resource extraction project in northern Alberta.
- Conducted background and database research, literature review, and information synthesis for local housing development and northern mining projects.
- Involved in technical review of oil sands Environmental Impact Assessment and associated report writing, report compilation and integration with first nations issues.
- Worked on the project team for the Mackenzie Valley Pipeline Environmental Impact Statement - specific work includes the wildlife regional baseline analysis, project specific effects on valued wildlife species, field data analysis and associated technical writing.
- Experience writing wildlife technical reports and performing statistical analyses and model validation for inclusion in Environmental Impact Assessments and Baseline reports.
- Field crew lead for wildlife surveys in remote areas of the NWT and northern Alberta.
- Conducted owl, pellet group, winter track count, amphibian, forest hawk, bat, ELC and rare plant surveys in the boreal forest. Conducted rattlesnake den and general wildlife reconnaissance survey in Alberta prairie region.
- Assist in administration and project management including budget tracking and assessment.

Research in Landscape Ecology

- Currently conducting research on ungulate abundance and distribution in relation to landscape level variables. This research includes an assessment of composition and configuration of complex, heterogeneous landscapes.
- Conducted research on bat habitat use in an urban environment. The research evaluated bat species presence and relative abundance in areas with varying degrees of human disturbance. Research required skill in using ultrasound detectors, mist nets, harp traps, and computer software for analysis of ultrasound recordings.

Employment Experience

June 2005 – present **Management Solutions in Environmental Science (MSES) Inc.: Wildlife Ecologist / Project Assistant**

Sept 2005 – Dec 2005 **University of Calgary, Alberta: Teaching Assistant**

Sept 2004 – Dec 2004 **University of Calgary, Alberta: Teaching Assistant**

May 2001 – Aug 2004 **AXYS Environmental Consulting Ltd., Calgary, Alberta: Wildlife Ecologist**

Jan. 2000 – Aug 2000 **The City of Calgary, Calgary, Alberta: Environmental Technician**

May 1999 – Aug 1999 **University of Calgary, Calgary, Alberta: Lab / Field Assistant**
(Department of Biological Sciences)

Education

2007 Master of Science in Landscape Ecology, University of Calgary, Canada.

2001 Bachelor of Science in Ecology (co-op), University of Calgary

Affiliations

Member Alberta Society of Professional Biologists (ASPB)

Member The Wildlife Society

Member International Association for Landscape Ecology (IALE)

Publications

Stewart, A. 2007. **The Effects of Habitat Amount and Fragmentation on Ungulates in the Alberta Foothills Natural Region: Mosaic versus Binary** Perspectives. Masters of Science Thesis, Department of Biological Sciences, Faculty of Graduate Studies, University of Calgary.

Co-Authored Reports

MSES Inc. 2007. **A Review of the Husky Oil Operations Limited's Sunrise Thermal Project Approval Amendment.** Prepared for the Mikisew Cree First Nations IRC, Alberta, Canada.

MSES Inc. 2007. **Review of the Approval of Suncor's Processing Plant and Mine (Voyageur Upgrader and North Steepbank Extension Project).** Prepared for the Mikisew Cree First Nations IRC, Alberta, Canada.

MSES Inc. 2007. **Review of Albian Sands Energy Inc. 2006 Muskeg River Mine Annual Environment Report.** Prepared for Mikisew Cree First Nations IRC, Alberta, Canada.

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- MSES Inc 2006. **Wildlife Assessment Report for Parsons Creek Project**. Prepared for Graymont Inc., Alberta, Canada.
- Mackenzie Project Environment Group (MPEG). 2003. **Infrastructure and Granular Resources Wildlife Technical Field Report – Production Area and Pipeline Corridor**. Prepared for Imperial Oil Resources Ventures Ltd., Aboriginal Pipeline Group, ConocoPhillips Canada (North) Resources Limited, Shell Canada Ltd. and ExxonMobil Canada Properties. Calgary, AB. pp. 1-107 pp. Authorship: A. Dennis (release date unknown).
- AXYS Environmental Consulting Ltd. (2003) 2003 **Winter Wildlife Surveys Field Technical Report**. Prepared for Imperial Oil Resources Ltd. Calgary, Alberta. pp.1-84. Authorship: D. Jorgensen, A. Dennis, A. Embacher.
- AXYS Environmental Consulting Ltd. (2002) **Fort Hills Oil Sands Project – Owl Survey Technical Report**. Prepared for TrueNorth Energy L.P. Calgary, Alberta. 12 pp. Authorship: A. Dennis.
- AXYS Environmental Consulting Ltd. (2002). 2002 **Jumpbush Development project: Wellsite and Pipeline Tie-In Development Applications**. Prepared for Petrobank Energy and Resources, Calgary, Alberta. pp.1-94. (co-authored)

Presentations

- Stewart, A. 2007. **The influence of landscape resource heterogeneity on ungulates**. Oral presentation at the US Chapter of the International Association of Landscape Ecology, Tucson, AZ, USA (April 9-13th, 2007).
- Stewart, A. 2007. **On Ungulate Resource Use in a Mosaic Landscape**. Poster presentation at the Alberta Chapter of the Wildlife Society, Canmore, Alberta (March 18-21st, 2007).
- Stewart, A. 2007. **The Effects of Habitat Amount and Fragmentation on Ungulates in the Alberta Foothills Natural Region: Mosaic versus Binary Perspectives**. Oral (exit seminar) presentation at the University of Calgary, Alberta (March 14th, 2007).
- Stewart, A. 2006. **Environmental Science 401**. Guest Lecturer, University of Calgary, Alberta.
- Stewart, A. 2006. **The Effect of Landscape Scale Disturbance on the Abundance and Distribution of Ungulates**. Prairie University Biological Symposium, University of Calgary, Alberta.
- Stewart, A. 2005. **The Effect of Landscape Scale Disturbance on the Abundance and Distribution of Ungulates**. Biology 601 Seminar Series, University of Calgary, Alberta.

Shannon Gavin, M.Sc., P. Biol.

Wildlife Ecology and Administrative Assistant

Overview

Ms. Gavin is a wildlife ecologist who has experience with environmental impact assessments through her work on wildlife assessments, integrating information for EIA reviews and consulting with communities on oil and gas projects. She earned a Master's degree in Conservation Ecology from the University of Calgary (Canada). She studied the impact of roads on the behaviour and habitat use of ungulates, specializing in field sampling techniques and statistical analyses. She has several years of experience with large mammals having developed an extensive knowledge base of international conservation programs and management protocols for many species. Ms. Gavin is proficient in the English language.

Key Projects

Environmental Assessments

- Assisted with biophysical impact assessments for resource extraction project in northern Alberta.
- Assisted with biophysical impact assessments for residential development in Calgary, Alberta.
- Co-authored community newsletter and poster for the Mikisew Cree First Nation IRC to highlight their issues and concerns towards a mine expansion.

Data Management and Analysis

- ANCOVA, Poisson Regression, Akaike Information Criterion for model selection; data analysis using SAS and JMP IN statistical software.
- Collection and management of data on breeding behaviour of endangered species for conservation breeding programs at various zoo facilities.

Project Management and Integration

- Sampling design and logistical support for resource extraction project in northern Alberta and residential development in southern Alberta.
- Integration of discipline issues and concerns in third party reviews for the Mikisew Cree First Nation IRC and Chipewyan Prairie Dene First Nation IRC.
- Compiling community newsletters for consultation with communities on EIA's.

Research in Conservation Ecology

- Conducted research on the effects of human disturbances on pronghorn antelope behaviour and habitat use.
- Managed and coordinated field crews for project examining the effects of roads on pronghorn antelope; prepared grant applications and administered budget for project.
- Prepared papers and presentations for several national and international wildlife conferences.

Environmental Field Techniques – Wildlife

- Collected ungulate habitat use data by pellet group surveys for residential housing project in southern Alberta.
- Identification of amphibian species by sight and sound for amphibian call surveys in northern Alberta.
- Collected baseline wildlife data by fecal pellet surveys for wildlife inventory report for a resource extraction project (Alberta).
- Assisted with snow tracking surveys to compare ungulate distribution in fragmented versus unfragmented landscapes in northern Alberta.
- Fecal pellet and snow track surveys to assess habitat use by ungulates in southern Alberta.
- Quantification of behavioural responses to determine zones of influence on pronghorn related to road use.
- Assisted with habitat mapping, mist netting and nest searching of yellow warblers to examine territorial behaviour in southern Alberta.

Environmental Field Techniques – Vegetation

- Surveys using Daubenmire coverage method to assess percentage of plant coverage.
- Browse surveys on shrub species to examine habitat use of ungulates.

Employment Experience

2006-present	MSES Inc., Calgary, Alberta: <i>Wildlife Ecology, Research and Development</i>
2003-2004	MSES Inc., Calgary, Alberta: <i>Research Assistant</i> (<i>Research compilation for meta-analysis</i>)
2002-2005	University of Calgary, Alberta, Canada: <i>Graduate Teaching Assistant</i> (<i>Introductory Ecology and Biology</i>)
2000-2001	Fossil Rim Wildlife Centre, Texas, USA: <i>Animal Care Specialist</i> (<i>Daily care, record keeping for conservation programs, mark recapture, handraising neonates</i>)
1999-2000	Turpentine Creek Wildlife Refuge, Arkansas, USA: <i>Animal Keeper</i> (<i>Daily care of large felids, presenting educational programs</i>)
1999	Texas Snow Monkey Sanctuary, Texas, USA: <i>Primate Keeper</i> (<i>Daily care, behavioural observations</i>)
1997	Dr. C. Celada, University of Alberta, Canada: <i>Research Assistant</i> (<i>Data collection for Territorial Behaviour of Yellow Warblers project</i>)

Education

2002-2006	Master of Science, University of Calgary, Canada (Thesis: The Effects of Roads on Pronghorn Antelope Behaviour and Habitat Use)
1994 - 1998	Bachelor of Science, University of Alberta, Canada (Major: Zoology)

Affiliations

Member The Wildlife Society (TWS)
Member Animal Behaviour Society (ABS)

Publications

- Gavin, S. and P.E. Komers.** 2006. Do pronghorn (*Antilocapra americana*) perceive roads as a predation risk? *Canadian Journal of Zoology* 84(12): 1775-1780.
- Gavin, S. and P.E. Komers submitted.** The effects of road traffic on pronghorn habitat use. *Journal of Applied Ecology*.
- Gavin, S. In press.** Road effects on pronghorn antelope in southern Alberta, Canada. Proceedings of the 21st Biennial Pronghorn Antelope Workshop, Bismarck, North Dakota.

Co-Authored Reports

- Wildlife Assessment Report for Parsons Creek Project.** MSES Inc 2006. Prepared for Graymont Inc., Alberta, Canada.
- Sanctuary on the Bow Terrestrial Ecological Resource Assessment.** MSES Inc 2006. Prepared for Sherbrooke Investments Ltd., Alberta, Canada.
- Review of Synenco Energy Inc.'s Application for Approval of the Northern Lights Mining and Extraction Project.** MSES Inc 2006. Prepared for the Mikisew Cree First Nation IRC, Alberta, Canada.
- Review of Birch Mountain Resource's Environmental Impact Assessment for the Hammerstone Project.** MSES Inc 2006. Prepared for the Mikisew Cree First Nation IRC, Alberta, Canada.
- A review of the Application for Renewal of Syncrude Canada Ltd.'s Approvals under the Alberta Environmental Projection and Enhancement Act.** MSES Inc 2006. Prepared for the Mikisew Cree First Nation IRC, Alberta, Canada.
- Donlin Creek Winter Wildlife Study Report.** MSES Inc 2006. Prepared for Placer Dome U.S Inc., Alaska, USA.

Presentations

- Gavin, S. and P. Komers. 2005.** Pronghorn antelope response to roads. *presented at* Animal Behavior Society Conference, Salt Lake City, Utah, August.
- Gavin, S. 2004.** Effects of road on pronghorn antelope habitat use and behavior. *presented at* 21st Biennial Pronghorn Antelope Workshop, Bismarck, North Dakota, May.
- Gavin, S. 2004.** The effects of road disturbance on pronghorn antelope habitat use (*Antilocapra americana*). *presented at* Prairie Universities Biological Symposium, Edmonton, Alberta, February.

Poster Presentations

Gavin, S. 2003. Habitat fragmentation and pronghorn antelope. *presented at* Pacific Ecology and Evolution Conference, Vancouver, British Columbia, February.

Gavin, S. 2002. Why did the antelope cross the road? *presented at* University of Calgary, Department of Biological Sciences, Ecology Division Open House, Calgary, Alberta.