APPENDIX D
QUALIFICATIONS

Martin O'Halloran, CCEP
Fish and Wildlife Technologist, ISA Certified Arborist

EDUCATION

2001 Fish and Wildlife Technologist Diploma, Sir Sandford Fleming College, Lindsay, Ontario.

2000 Fish and Wildlife Technician Diploma, Sir Sandford Fleming College, Lindsay, Ontario. The Fish and Wildlife Technology program (fisheries aspect) focuses on advanced fisheries sampling and characterization techniques, laboratory techniques, data compilation and analysis, and report writing. The program examines the ecology, biology and taxonomy of common freshwater aquatic organisms along the aspects of water pollution, food web structure, and the impact of exotic species invasions.

PROFESSIONAL EXPERIENCE

2001 to Present	Fish and Wildlife Technologist, ISA Certified Arborist, LGL Limited, Cambridge, Ontario
2001	Stream Rehabilitation Specialist, Credit Valley Conservation, Mississauga, Ontario
2000	Environmental Technician, Toronto and Region Conservation Authority, North York, Ontario
1999	Fisheries Technician, Ministry of Natural Resources-Lake Ontario Management Unit, Picton, Ontario
1998	Resource Technician, Ministry of Natural Resources, Aurora, Ontario

ENVIRONMENTAL PROJECTS

Martin O'Halloran is a Technologist specializing in ecology support for projects such as infrastructure upgrades, class environmental assessments, *Fisheries Act* authorizations, arborist reports and mining impact assessments. Martin is responsible for evaluation/characterization of aquatic and terrestrial habitat, screening for species at risk, tree inventories, mitigation/compensation planning, and contract administration. This balanced skill set allows for a well rounded professional contribution to projects. Martin has also demonstrated abilities in project management and personnel supervision. Martin holds certifications as an Arborist by the International Society of Arboriculture and a Canadian Certified Environmental Practitioner by the Canadian Environmental Certification Approvals Board.

REPRESENTATIVE PROJECT EXPERIENCE INCLUDES:

- Various undisclosed mining contracts - Conducted field data collection including stream morphological data, flow data, using instruments such as YSI 750, micro-acoustic Doppler velocimeter (ADV). The objective of the project is to quantify the extent of metal loading in the aquatic environment (from natural and anthropogenic sources).
- Woodward Avenue Waste Water Treatment Plant Expansion Project – Detailed Design Arborist Report, City of Hamilton. Construction occurring in 2011.
- Ellesmere Road 2km 1500mm Watermain from Markham Road to Neilson Road – Detailed Design Arborist Report, City of Toronto. Construction scheduled for 2011/2012.
- Hamilton Kenilworth Reservoir and East Barton Pumping Station Upgrades – Detailed Design Arborist Report, City of Hamilton. Construction occuring in 2011.
- (Government Organization) Chemical and Biological Study to Assess the Receiving Waters in the Cobalt Area, Ontario. The scope included a review of all aquatic studies in the Cobalt Area, as well as an assessment of water quality in lakes and streams within the defined study area, including analysis of historical and current impacts to receiving waters by Cobalt area mines. Fisheries, benthic invertebrate sampling, water and sediment chemistry, flow/discharge measurements, morphological surveys were employed. The study in ongoing.

- (Private Client) Conducted field data collection including fish habitat data, stream morphological data, flow data using instruments such as YSI 750, micro-acoustic Doppler velocimeter (ADV). The objective of the project is to quantify the extent of metal loading in the aquatic environment (from natural and anthropogenic sources).
- Spadina Avenue to D'Arcy Street Water Main – Detailed Design Arborsit Report, City of Toronto.
- Rosehill Pumping Station Detailed Design Arborist Report, City of Toronto.
- Avenue Road to Duplex Avenue Detailed Design Arborist Report, City of Toronto.
- Yonge Street Arborist Investigations and Construction Inspecition, Town of Aurora.
- Rennie Park Arborist Assessment, Sanitary Sewer Replacement with Arborist Report, Class Environmental Assessment.
- Sandalwood Parkway Improvements Arborist Assessment, municipal road widening.
- Tributary of Salt Creek Culvert Replacement/Fisheries Act Authorization, project management.
- Appleby Line Road Improvements, Class Environmental Assessment, Fisheries Act Authorization.
- Upper Middle Road,Class Environmental Assessment.
- Church Tree Saving Plan, project management.
- Development Industry, Tree Appraisal, project management.
- Lynden Park Mall Expansion, site alteration permitting, aquatic habitat assessment, project management.
- Minilakes Fisheries Act Authorization/Site Alteration Permitting, aquatic habitat assessment, project management.
- Mining Sector Watershed Study, aquatic habitat analysis.
- Development Sector Arborist Report and Fisheries Act Authorization, Burlington/Bolton.
- Storm Water Management Pond Environmental Monitoring. Benthic invertebrate monitoring, water chemistry monitoring, reporting.
- Amherstburg Pollution Control Plant Environmental Assessment, collected baseline benthic invertebrate data, compiled and analyzed data, liase with project team, graphics support;
- Alton Community Fisheries Act (Section 35) Authorization security, existing conditions summary, agency liase, mitigation and compensation plan;
- Grand River Watermain Crossing – Holmedale Water Treatment Plant, Construction inspection including mitigation and environmental compensation recommendations, environmental monitoring of construction;
- 6th Line Fish Rescue – Town of Milton, Project Management, Co-ordinated field efforts to relocate fish from an in-water construction zone, liase with agencies and supplied summary reports;

MEMBERSHIPS/CERTIFICATIONS

MTO/DFO/MNR Certified Contract Specialist
Canadian Certified Environmental Practitioner (CCEP)
MNR Electrofishing Crew Leader (2nd Class)
International Society of Arboriculture – Arborist Cert.
Marine Pleasure Craft Operator Card
St. John Ambulance Standard First Aid Certification
St. John Ambulance CPR Certification
St. John Ambulance Wilderness First Aid Certification
WHMIS Certification
Working on Ice – Ice Safety Training
WSIB Certification – Occupational Health and Safety Worker Member (Part 1 and Part 2)

Allison Featherstone, B.Sc.
Senior Planning Ecologist, Assistant Manager

EDUCATION

1997	Bachelor of Science (B.Sc.), University of Guelph, Guelph, Ontario – Honours Specialization in Marine Biology.

PROFESSIONAL EXPERIENCE

June 2003 to present	Planning Ecologist, LGL Limited, Cambridge, Ontario
2001	Biologist and Consultant - Vancouver Aquarium Marine Science Centre, Vancouver, British Columbia
1998 - 2001	Zoologist - Greater Vancouver Zoo, Aldergrove, British Columbia
1997	Biologist - United States Fish and Wildlife Service, Homestead, Florida
1995 - 1997	Biologist and Naturalist – Halton Region Conservation Authority, Campbellville, Ontario
1996 - 1997	Biologist and Naturalist - NEST Inc., Eden Mills, Ontario
1994 - 1996	Biologist and Junior Naturalist Coordinator - The Arboretum, Guelph, Ontario
1991-1994	Biologist – University of Guelph Marine Annex
1990 - 1991	Environmental Technician - Conestoga Rovers and Associates Ltd., Waterloo, Ontario

VOLUNTEER EXPERIENCE

February 2006 to present	Ecological and Environmental Advisory Committee, Region of Waterloo

PROFILE

Since joining LGL in June 2003, she has been involved with natural heritage investigations in support of Environmental Assessments for sewer, water and transportation projects, Renewable Energy Projects, Comprehensive Broad Scale Environmental Studies and Environmental Impact Statements. She has participated in benthic and fisheries collections, wildlife monitoring, tree surveys and wildlife habitat assessments for amphibians including Jefferson salamander. She has coordinated one of the largest Jefferson salamander studies to date in the Province and possibly the range of the species, in order to address the requirements of the Endangered Species Act, 2007. Ms. Featherstone's role is to work as the project ecologist/biologist to provide a consolidated view of environmental sensitivities for a project and to work through project issues with the project team and approval agencies. Her experience as project manager and as part of a natural science team includes planning, investigating and preparing environmental impact studies, natural sciences reports, management plans, tree preservation plans and environmental inspection reports, permitting issues, including the determination of environmental constraints, development of monitoring strategies, recommendation of mitigation measures and attendance at public consultation centres for many projects.

PROJECT EXPERIENCE

Environmental Assessments (Highlighted Projects)

- Project Biologist for Burloak Water Purification Plant Class EA and Gore Bay Water Treatment Plant Class EA, involving assessment of fisheries habitats and terrestrial constraints for siting of water treatment plants and intake pipes into Lake Ontario and Lake Huron respectively.
- Project Biologist for Permit to Take Water 16th Avenue Trunk Sewer Phase 2 involving a detailed natural heritage environmental assessment based on secondary information, field investigations, and environmental monitoring of fisheries and terrestrial impacts.
- Project Biologist for Duffins Creek WPCP Upgrade EA, assessing the expansion of the plant.
- Project Biologist for the Oshawa WTP Upgrade and Expansion, involving the assessment of the expansion on the terrestrial and wetland features.
- Project Biologist for the 16th Ave Yong to McCowan Class EA, involving assessing the impacts relating to road improvements.
- Project Biologist for the South Kitchener Transportation Study Class EA, involving the assessment of transportation options, including detailed amphibian surveys.

- Project Biologist for Etobicoke Creek Sanitary Sewer Replacement, involving assessment of a sewermain replacement within the Etobicoke Creek floodplain.
- Project Biologist for Proprietary Wind Farm Project, involving screening of Natural Heritage Features at a broad environmental scale as well as a Bat Screening Assessment for determination of field efforts for pre-construction monitoring.
- Project Biologist for the Guelph Waste Water Treatment Plant involving a comprehensive benthic invertebrate investigation, which included the collection of benthic invertebrates, habitat information and detailed assessment of outfall, including the collection of data to satisfy the Ontario Benthos Biomonitoring Network protocol.
- Project Biologist for the Corner Brook Water Treatment Plant Upgrade EA and CEAA screening, involving a detailed desktop investigation of Natural Heritage Features.
- Project Biologist for a 4th Propriety Wind Farm Project, involving the completion of the Natural Heritage Review, field investigations, public and first nation's consultation to satisfy the new Green Energy Act and other project requirements.
- Project Biologist for the Grand and Nith River Water Quality Monitoring Program participating in the extensive benthic invertebrate sampling and water quality sampling portion of the project.
- Project Biologist for the River Road Extension Class EA, a transportation corridor project involving a complex Species at Risk permitting application under the Endangered Species Act, 2007.
- Project Biologist and coordinator for the Toronto Basement Flooding project, which is a large and complex project that involves assessing various flooding salutations at a large scale and small scale within a large geographic area.
- Project Biologist and coordinator for the Zone 1 and Zone 3 Burlington Oakville Interconnecting Watermains EAs (two separate EAs) involving a detailed and extensive program in support of the potential watermain crossing of Bronte Creek.

Comprehensive Environmental Studies, Environmental Impact Studies and Detailed Design (Highlighted Projects)

- Project Biologist for the Rockfort Quarry, proposed quarry application by James Dick Construction, involving detailed amphibian surveys.
- Project Biologist for Old Major Mackenzie Drive Fill Violation involving the preparation, approval, and implementation of a restoration plan as a result of a fill violation of TRCA policies along the Humber River valley.
- Project Biologist for the Etobicoke Creek Trunk Sewer Detailed Design which involved a detailed tree and vegetation survey and coordination with TRCA regarding their Habitat Implementation Programs for restoration of natural areas.
- Project Biologist and Project Manager for the Conestoga College Master Plan Environmental Impact Study for the new Cambridge Campus location.
- Project Biologist for the Credit Valley Trunk Sewer Rehabilitation Detailed Design involving the detailed assessment of impacts to natural heritage features within the Credit Valley River corridor.
- Project Biologist and Project Manager for the Brampton Christian School Natural Heritage Evaluation in support of the school expansion on table land adjacent the Etobicoke Creek valley in Brampton.

CERTIFICATIONS

2009	First Aid, Level I
1993	Sport SCUBA Diver – ACUC and NAUI Certification

Lynette Renzetti, B.Ed., B.Sc.
Planning Ecologist

EDUCATION

1991	Bachelor of Education (B.Ed.), University of Western Ontario, London, Ontario
1989	Bachelor of Science (B.Sc.Hons.), Biology – Environmental Sciences, Trent University, Peterborough, Ontario

PROFESSIONAL EXPERIENCE

2009 to present	Aquatic Biologist, LGL Limited, Cambridge, Ontario
	2007 - 2009 McNeil Consumer Healthcare, Guelph, Ontario
2003 - 2009	Self Employed, Guelph, Ontario
2006 - 2007	University of Guelph, Laboratory Services, Guelph, Ontario
2003 - 2004	Teacher, Upper Grand District School Board, Guelph, Ontario
1993 - 2001	Teacher, Abbotsford District School Board, Abbotsford, British Columbia
1995	Lab Supervisor, Kwantlen University College, Surrey, BC
1991 - 1993	Teacher, Academia Inter Americana, Guayaquil, Ecuador
1989-1991	Research Technician and Teaching Assistant, Trent University, Department of Biology, Limnology, Department of Environmental Science
1987 - 1989	Environmental Investigator, Ministry of the Environment

PROFILE

Ms Renzetti's work in the field of aquatic biology began in 1987 and has included field sampling, lab analysis, benthos identification, and limnological research. Lynette began her career in environmental science conducting research to investigate the role of feeding patterns on the uptake of heavy metals by benthic invertebrates. During this time she worked as an instructor teaching water quality field techniques at the post secondary level. As a field investigator with the MOE Lynette collected and analyzed water quality data on the Trent Severn waterway, investigated the effects of fish farming on stream water quality, and reported on the effects of pulp and paper effluent on the life history of benthos. Ms. Renzetti has dedicated many years to teaching environmental science and ecology at both the secondary and post secondary levels, within Canada and abroad. More recently, Lynette has worked in quality controlled manufacturing and laboratory testing environments writing and reviewing SOPs and working with Quality Management Plans. Since 2003 Lynette has acted as the benthos specialist for LGL Ltd. environmental research associates on several projects related to environmental assessment and joined the staff at LGL on a full time basis in 2009.

PROJECT EXPERIENCE

Renewable Energy Projects

- Natural Heritage Assessment for East Durham Wind Power
- Watercourse characterization and Water Body Report for Conestogo Wind Farm

Wastewater Water Quality Studies

- Surface Water Quality Monitoring Program for the Grand and Nith Rivers – Region of Waterloo
- Duffin Creek Water Pollution Control Plant EA – Regions of Durham and York

Invertebrate Studies

- Goderich Harbour Wharf Expansion EA – Goderich Port Management Corporation
- Earthworm Density Study, Detroit International River Crossing – Ministry of Transportation
- Biomonitoring of Wastewater Effluent Discharge on the Speed River – City of Guelph
- Grand and Nith River Biomonitoring – Region of Waterloo
- 16th Avenue Biomonitoring Program
- Nottawasaga River Biomonitoring Program

CERTIFICATIONS

2012 Standard First Aid and CPR (renewed annually)
2010 Swift Water Training, Access Rescue
2010 Working on Ice Safety Program, Access Rescue
2010 OBBN Benthos Identification Certificate, Ministry of the Environment
2010 Class 2 Backpack Electrofishing Certificate, Ministry of Natural Resources
2010 Ontario Stream Assessment Protocol, Ministry of Natural Resources

SELECTED TECHNICAL PAPERS AND REPORTS

2010 L.K. Renzetti, D.T. Summach, J.A. Fausto, and J.R. Bicudo. Surface Water Quality Monitoring Program on the Grand, Speed and Nith Rivers. Influents. Volume 5, Winter 2010

2010 Bicudo, J.R., Perrone, J., Anderson, M., Robertson, S., Summach, D. and L. Renzetti. A 'Grand' Challenge. Water Environment & Technology. November 2010

2009 Fausto, A., D. Summach, L. Renzetti. Surface Water Quality Monitoring Program for the Grand and Nith Rivers: Monitoring Reports. Prepared for the Region of Waterloo.

1991 Bigelow, Lynette, K. and David C. Lasenby. "Particle Size Selection in Cadmium Uptake by the Opossum Shrimp, *Mysis relicta*". Bulletin of Environmental Contamination and Toxicology (47):790-796.

CONFERENCES AND WORKSHOPS

2011 A.D. Latornell Conservation Symposium, Alliston, Ontario
2011 Water Environment Association of Ontario, Toronto Ontario; presenter
2010 Ontario Benthos Biomonitoring Network Identification Course, Oshawa, Ontario
2010 Ontario Stream Assessment Protocol Course, Oshawa, Ontario
2009 Grand River Watershed Conference, GRCA, Cambridge, Ontario

Erin Blenkhorn, B.Sc.
Aquatic Biologist

EDUCATION

1999 Honours Bachelor of Science (B.Sc.) in Environmental Science
Brock University, St. Catharines, Ontario.

PROFESSIONAL EXPERIENCE

2012-Present Aquatic Biologist, LGL Limited, Burlington, Ontario
2002-2012 Aquatic Biologist, Ecoplans (a member of MMM Group), Kitchener, Ontario
2000 Environmental Technician, Meadowbrook Golf & Country Club, Gormley, Ontario; Granite Golf Inc., Uxbridge, Ontario
1999 Field Technician for M.Sc. Grassland Passerine study in North Dakota, USA. (employed by University of Montana, Missoula, MT)

PROJECT EXPERIENCE

Subwatershed Studies

- South Waterdown Subwatershed Study –Conducted aquatic habitat and fisheries assessments, benthic inventories and analysis and assessment of salamander habitat. Involved in the development of aquatic constraints and opportunities for development, conducting preliminary impact assessments and provided input to future aquatic monitoring plans.

Linear Corridor Infrastructure Planning and Design

- Highway 69 Route Planning and Preliminary Design Study (Class EA) north of Parry Sound (70 km). Conducted wetland inventories, aquatic habitat assessments and impact analysis at proposed culvert/bridge crossings. Created an extensive photographic inventory on land and by helicopter and Massassauga rattlesnake gestation/hibernation surveys.
- Highway 427 Extension (north of Highway 7), Route Planning and Preliminary Design- Involved in assessing several routes in relation to impacts to aquatic habitat. Prepared aquatic impact assessment report for preferred alignment and worked closely with fluvial hydrogeologist throughout study.
- Highway 69 Detail Design Study- north of Highway 522 to north of Highway 64- Conducted aquatic habitat and fisheries assessments and completed risk assessments using DFO protocol framework, for all future highway crossings. Provided input into design specifications, drawings and details for the Contract package relating to fish and wildlife. Co-ordinated and conducted SAR turtle surveys during post-hibernation.

Municipal Infrastructure

- Dundas Class EA study from Cedar Springs Road to Trafalgar Road - Assessed all watercourse crossings in study area to determine fisheries potential (assessed connectivity, seasonal habitat conditions, background fisheries information). Co-ordinated field activities and agency correspondence.
- Bronte Road EA Study, Preliminary and Detail Design from Upper Middle Road to North Service Road- Prepared EA report and compiled vegetation and aquatic technical information for contract specifications/drawings.

Construction and Post-Construction Monitoring

- Fergus Mill Turbine Installation- Conducted regular construction monitoring (as required by the DFO HADD authorization) during the installation of a turbine adjacent to the shore of the Grand River. Also conducted post construction monitoring of riparian habitat to ensure site was stabilized.
- Forbes Creek restoration- Conducted post-construction monitoring of the creek which underwent natural channel design. Conducted photo monitoring, trout spawning surveys, benthic monitoring and riparian assessments.

- Post construction monitoring for DFO Authorizations including Westmount Road Extension (realignment of Laurel Creek), Breslau By-pass (realignment of Hopewell Creek), and monitoring fish habitat installations at H2 and H4 watercourses (Humber River tributaries) in Brampton. Conducted fish rescues at all sites during construction stages.

Species at Risk Investigations and Monitoring

- Union Gas -Proposed Brooke to Strathroy Pipeline- Conducted preliminary aquatic surveys for fish and mussel habitat (many SAR potentially present) at pipeline crossing locations. Conducted a fish and mussel rescue for a one day isolated crossing of the Syndeham River. Recovered/relocated mussels and fish according to approved management plans.
- Fairway Road Bridge, Region of Waterloo- Conducted mussel surveys along the edges of the Grand River within the vicinity of the proposed temporary construction zone. Identified and relocated mussels (including several Wavyrayed Lampmussels (SAR) away from construction zone and assisted with compilation of SARA and ESA permits and completion of monitoring reports.
- Salamander Movement Studies (SW Kitchener)- Participated and helped co-ordinate study which involved silt fence and pit fall trap surveys to capture migrating amphibians and vernal pool trapping (using minnow traps). Processed amphibians captured in traps and sampled potential Jefferson Salamander specimens (tail clipping) using appropriate protocols. Also participated in road mortality and amphibian calling surveys.

Benthic Invertebrate Studies

- North Waterloo Subwatershed Study- Developed a benthic invertebrate monitoring program in consultation with the GRCA. Co-ordinated sampling and prepared yearly monitoring reports.
- Sheldon Creek Watershed Plan Update- Conducted water quality and benthic invertebrate assessments and analyzed data to determine potential impacts to water quality in the watershed.
- Milton Quarry Expansion- Conducted annual benthic monitoring along a groundwater fed stream before and during extraction activities. Prepared annual reports comparing results of hydrogeology and fish surveys and previous benthic results.

VOLUNTEER WORK EXPERIENCE

2012	Member of the City of Guelph Environmental Advisory Committee (EAC).
Fall 2009	Credit Valley Conservation –Trout spawning surveys. Assisted with Brook and Brown Trout spawning surveys in the Credit River.
Oct 2000	Field Assistant. University of Sydney, Sydney, NSW Australia. Assisted with Ph.D. project studying desert ecosystems at different stages of succession following prescribed burns-captured, identified, measured and released small mammals and reptiles in the Simpson Desert.
Sept 1999	Bird Bander. U.S. Fish and Wildlife Service, Upham, ND USA. Responsible for preparing waterfowl banding sites (rocket net set-up) and banding and identifying waterfowl. Also assisted biologists with avian botulism checks in marshes aboard airboats.

CERTIFICATIONS/WORKSHOPS

- Natural Channels Conference, Mississauga, ON, 2010
- Ontario Benthic Biomonitoring Network (OBBN) Training Course, 2008
- Technical Training Course for MTO/DFO/OMNR Fish Habitat Protocol, 2006
- DFO Freshwater Mussels Identification, 2006
- ROM Identification of Ontario Fishes workshop, 2004
- Class 2 Electrofishing Crew Leader Certification, 2004
- Pleasure Craft Operators Certification, 2010
- Open Water Scuba Diver (PADI), 2002

Dana Summach, M. Sc.
Aquatic Biologist

EDUCATION

2001	Master of Science (M.Sc.), Phycology, University of Guelph, Guelph, Ontario. *Thesis*: Evolution of the carpogonial branch system in the red algal genus *Batrachospermum* (Batrachospermales)
1998	Honours Bachelor of Science (B.Sc.), University of Waterloo, Waterloo, Ontario. *Thesis*: Assessment of the periphyton community of a small campus pond, with emphasis on blue-green algae.

PROFESSIONAL EXPERIENCE

2005-Present	Aquatic Biologist, LGL Limited, Cambridge, Ontario.
2004	Research Technician, Department of Fisheries and Oceans Canada, Ontario Great Lakes Region Office, Burlington, Ontario.
2002-04	Management Biologist, Ontario Ministry of Natural Resources, Upper Great Lakes Management Unit, Owen Sound, Ontario.
2002	Environmental Technician, Chadwick Ecological Consultants, Denver, Colorado.
1999-01	Graduate Teaching Assistant, University of Guelph, Guelph, Ontario.
1999	Fisheries Intern, Department of Fisheries and Oceans, Burlington, Ontario.
1998	Field Biologist, Applied Biometics Inc., Waddington, New York.
1997	Field Ecologist, Halton Region Conservation Authority, Burlington, Ontario.
1996	Field Technician, Ministry of Natural Resources, Timmins, Ontario.

PROJECT EXPERIENCE

Water Quality and Biological Assessments

- Grand River and Nith River Surface Water Assessment. Lead a team in a multi year program to assess the impacts of WWTPs on the water quality in the Grand River watershed using seasonal water samples as well as fish and benthic communities.
- Surface Water Assessment of Cobalt, ON. Helped lead a team in the assessment of historical mining impacts on the surface water and biological communities in Cobalt, Ontario. The project involved an intense field program to collect water and sediment samples along with flow measurements to assess the contamination levels in the area and estimate loading of these contaminants in the system. A survey of the benthic and fish communities in lakes and streams was also conducted to assess the impacts the contaminants may have on the biological community in the area.

Mining

- Xstrata Biodiversity Projects - Part of a team that created a GIS database using existing data. Analyzed available data to estimate potential biodiversity surrounding several mine sites. Compiled existing impact assessment reports and analyzed them for spatial and temporal trends. Completed a Risk Assessment for the mining activities at each mine. Co-wrote the final reports. Projects included:

Environmental Assessments

- 16th Avenue Trunk Sewer Project - Led a field team in the collection of fisheries data using the MNR OSAP protocol. Analyzed changes in water quality and habitat using the fisheries data. Compiled the data in an access database created by the project team and summarized the findings in monthly reports.
- DRIC Project - Led a field team in the collection of benthic invertebrates for the assessment of water quality in Windsor streams. Surveyed various drains within Windsor to assess for fish habitat potential and habitat mapped those reaches with fish habitat. Surveyed watercourses for fish species and prepared a report on our findings.
- Mississauga Trunk Sewer – Surveyed all potential routes for natural heritage constraints. Assessed the fish habitat potential of all potential watercourse crossings. Prepared the natural heritage assessment report for the EA.
- Goreway Dixie– Completed desktop assessment of natural heritage constraints for two alternative

alignments. Prepared the natural heritage assessment report for the EA.

- 16th Avenue Yonge to McCowan – Surveyed route for natural heritage constraints. Surveyed watercourse crossings for fish habitat potential. Provided input into the EA natural heritage assessment report.
- 16th Avenue McCowan to York Durham– Surveyed route for natural heritage constraints. Surveyed watercourse crossings for fish habitat potential. Provided input into the EA natural heritage assessment report.
- Palgrave Humber Crossing – Surveyed the Humber River for fish habitat potential. Provided input for the final report.
- Yonge Aurora – Inventoried trees within the potential alignments. Provided input for the final report

Fisheries surveys

- Catholic School Board Aurora – Surveyed a watercourse for fisheries potential. Prepared a letter of intent for a fisheries act authorization to realign the watercourse.
- Schomberg Water Supply – Assessed the fish habitat potential for a watercourse crossing of a water supply pipe. Prepared a report on the findings using historical information and field surveys. Chose most environmentally sound route for the pipeline.
- Stouffville GO Station - Surveyed various watercourses for fish habitat potential and prepared a report outlining potential for realignment.
- Timmins WTP – Surveyed the Mattagami River for fish habitat potential and prepared a report.
- R.C. Harris WTP – Completed a desktop survey of potential fisheries impacts related to the dredging of an intake pipe.

MTO Fisheries surveys

- HWY 556 and 532 Sault Ste. Marie Fisheries Survey - Surveyed various culvert crossings for fish habitat potential and habitat mapped those reaches with fish habitat. Surveyed watercourses for fish species using a backpack electrofisher.
- Shewfelt Bridge Sault Ste. Marie Habitat Assessment – Surveyed area around bridge for fish habitat and prepared maps.
- HWY 400 Fisheries Survey – Surveyed various culvert crossings for fish habitat potential and habitat mapped those reaches with fish habitat. Surveyed watercourses for fish species and prepared a report on our findings.
- HWY 532 Habitat Assessment– Confirmed fish habitat assessment of a previous survey
- HWY 17 Fisheries Survey - Surveyed various culvert crossings for fish habitat potential and habitat mapped those reaches with fish habitat. Surveyed watercourses for fish species.
- HWY 401 Belleville Fisheries Survey – Surveyed a tributary of Potter Creek in Belleville. Collected fish species using an electrofisher and mapped habitat.

Environmental Impact Studies

Independently surveyed properties for environmental constraints with respect to vegetation and fisheries concerns as well analyzed the proposed effects of the proposed developments on the environment. Produced several reports outlining these environmental effects and constraints to clients. Projects included:

- Glanbrook scoped EIS
- Stonehenge EIS
- Ridgecore Development EIS
- Port Hope EIS

CERTIFICATIONS

- Certified in Stream Assessment Protocol for the Province of Ontario, MNR, 2005
- Certified Electrofishing Crew Leader, 2nd Class Backpack MNR, 2009
- Certified in Fisheries Assessment Specialist and Fisheries Contracts Specialist, MTO, 2006

Jennifer Noël, M.Sc.
Botanist, ISA Certified Arborist, Butternut Health Assessor

EDUCATION

2004	Master of Science (M.Sc.), Watershed Ecosystem Graduate Program, Environmental Science, Trent University, Peterborough, Ontario
2000	Bachelor of Science Honours Conservation and Restoration Ecology Laurentian University, Sudbury, Ontario
2000	Certificate in Environmental Biology Laurentian University, Sudbury, Ontario

PROFESSIONAL EXPERIENCE

Present	Botanist, and ISA Certified Arborist, LGL Limited, Cambridge, Ontario
2006	Ecologist, Watershed Management Ecology, Milton, Ontario
2005	Terrestrial Monitoring Assistant, Credit Valley Conservation, Mississauga, Ontario
2005	Data Manager, Ontario Soybean Growers, Guelph, Ontario
2004	Class Two Electrofishing Instructor, MRN Nipigon, Ontario
2004	Fisheries Research Technician, Trout Unlimited, Guelph, Ontario
2001-04	Graduate Teaching Assistant, Trent University, Peterborough, Ontario
2001	Biological Science Technician (Botany), USGS, Corvallis, Oregon
2001	Biology Research Assistant, MNR Fish Co-op Unit Sudbury, Ontario
1998-2001	Biology Research Assistant, Laurentian University, Sudbury, Ontario
1997	Field Technician, Ecological Service Group for Planning, Timmins

PROFILE

Jennifer Noël joined LGL's Cambridge Office in 2006, after 10 years of experience working for various stakeholders which include educational institutions, government agencies, conservation authorities, non profit organizations and the private sector. She has participated in a variety of projects including due diligence surveys, environmental impact studies, class environmental assessments, tree health assessments, hazard tree assessments, species at risk surveys, butternut health assessments, wetland identification and delineation, biodiversity assessments and natural heritage investigations. Ms. Noël has extensive experience in field sampling and analysis of aquatic and terrestrial ecosystems using a wide range of sampling gear such as seine nets, electrofishing gear, flow gauge, pH meters, conductivity meter and various plot sampling devices. Ms. Noël is certified in electrofishing, ecological monitoring and land classification (ELC), Ontario Wetland Evaluation System (OWES), tree assessments (ISA), butternut health assessment (BHA) and is familiar with the identification of aquatic and terrestrial plant, fish, and amphibians in Ontario. Ms. Noël has experience with project management, design and monitoring. She is fluent in both English and French.

PROJECT EXPERIENCE

Transportation Planning

- Bathurst Street Road Extension Green Lane Northerly to Yonge Street - Detail Design Class EA, York Region
- Bathurst Street Widening from Highway 7 to Teston Road – Detail Design, Town of Richmond Hill
- Bolton Arterial Road King Street to Highway 50 – EIS Regional Municipality of Peel
- Highway 50 from Castlemore Road to Mayfield Road –NHR Schedule C Class EA, York Region
- Detroit River International Crossing – Species at Risk Survey, Windsor

Species at Risk

- Bathurst Street Road Extension – Butternut Assessment and Permit Application, York Region
- Evergreen EIS – Butternut Screening and Assessment, Burlington
- Piller EIS – Butternut Screening and Assessment, Fort Erie
- Ipperwash Species at Risk Screening surrounding unexploded ordinance; bluehearts, American ginseng, heart-leaved plantain, goldenseal, butternut, dwarf hackberry, and spike blazing star
- Central Avenue EIS – Butternut Screening and Permit Application, Grimsby
- Highland Gardens Water Reservoir – Butternut Assessment and Permit Application, Hamilton
- Strasburg Road – salamander surveys, Kitchener
- DRIC – Species at Risk Surveys: spike blazing star, butternut, Kentucky coffee tree, willow leaf aster, colic-root, butternut, fox snake, butler garter snake, Windsor
- Meaford LFTC – Butternut, American Ginseng, Heart's-tongue fern, Meaford
- Bronte Creek Interconnecting Watermain- butternut, eastern flowering dogwood, Burlington

Biodiversity

- Belledune Risk Assessment New Brunswick
- Biodiversity Assessment of Xstrata's Mines 12 and 6. New Brunswick
- Vegetation Stress Analysis using NDVI of Xstrata's Mine 12. New Brunswick

Municipal infrastructure

- Lornewood Creek Sewer Replacement – Schedule C Class EA
- Highland Gardens Water Reservoir Improvements – Detail Design Class EA
- Coatsworth Cut CSO and Stormwater Outfalls Control in the City of Toronto– Preliminary Assessment Schedule "C" Class EA
- Watermain improvements EIS Meadowvale Pumping Station to Mill Creek Drive Mississauga - Natural Heritage Report
- Bronte Creek Interconnecting Watermain- Tree survey, Restoration Plan Recommendations and SAR Screening , Burlington

Arborist Tree Assessments

- Toronto Basement Flooding - Toronto
- Bronte Creek Interconnecting Watermain – Burlington
- Bathurst Street – Toronto, York Region
- D'Arcy Street to Gerard Tree Inventory for watermain – Toronto
- Tree inventory and Appraisal plan of subdivision - Beaton

Fisheries/Wildlife Biology Studies

- Deer survey - Meaford
- Fisheries investigation Highway 11 Frederick House and Kendal River Bridge –Cochrane.
- Amphibian surveys – Kitchener

Wetlands

- Jocic wetland delineation – Township of West Lincoln
- Conestoga College wetland delineation – Kitchener
- Conservation Halton wetland verification – Milton
- Windsor significant wetland evaluation - Windsor
- Rockfort wetland photo monitoring – Credit Valley Watershed
- Pine Ridge wetland photo monitoring – Milton

- Conservation Estates photo monitoring - Guelph
- Dolphin wetland impact and restoration – Georgina
- Shaver Road wetland delineation – Ancaster

CERTIFICATES

2010	ISA Hazard Tree Assessment Workshop, Toronto, Ontario
2009	ISA Certified Arborist, Gormley, Ontario
2008	Ontario Wetland Evaluation System, North Bay, Ontario
	Butternut Health Assessment Workshop, Burlington, Ontario
2007	Ecological Land Classification for Southern Ontario, Turkey Point, Ontario.
2005	Ecological Monitoring Assessment Network, Turkey Point, Ontario.

SELECTED TECHNICAL PAPERS AND REPORTS

2004	Noël, J. Growth, reproduction and control of an invasive aquatic plant, Cabomba caroliniana in Kasshabog Lake, Ontario and its potential dispersal. M.Sc. Thesis, Trent University, Peterborough, ON. 89 pp.
2000	Noël, J. Killarney sinkhole bog, a wetland investigation. B.Sc. Thesis, Sudbury, Laurentian University, ON 43 pp.

CONFERENCES AND WORKSHOPS

May 2008	Butternut Health Assessment Workshop, Burlington, Ontario
June 2008	Sedges Workshop, RBG, Burlington, Ontario
May 2009	Grasses Workshop, University of Guelph, Ontario
July 2009	Wetland Plant Identification Course, Guelph, Ontario