Source Number	Identify source type 1-peer reviewed science 2-municipal documents 3-provincial documents 4-Federal documents 5-NGO documents	Year Published	Specific to Southern Ontario? (Y/N)	Does this apply to a specific EMG section? (Yes/No). If yes, list section(s): 1. EIS, 2. Data collection standards, 3. ESA, Boundary Delineation, 4. Significant Woodlands, 5. Buffers, 6. Plant selection.	Title and/or Reference	Summary or description (if applicable)	Link to access document (if applicable)
					HIGH PRIORITY SOURCES FORMATTED BELOW IN RED		
1	2	2012	Y	5	Buffers – Beacon Environmental 2012 (Credit River CA)	Buffers	Beacon on buffers
2	2	2017	Y	*1*	*Guidelines for the Preparation of Environmental Impacts Studies, version 1, City of Guelph. Prepared with the assistance of Beacon Environmental. Last accessed August 21, 2019 (includes a clearer way of presenting impact assessments and divides monitoring into three different types. Also good appendices on Wildlife Survey Guidance*	EIS	https://guelph.ca/city-hall/planning-and-development/community-plans-studies/environment-planning/guidelines-preparation-environmental-impact-studies/
3	3	2017	Y	*other*	*Monitoring – Conservation Halton Ecological Monitoring Protocols, version 1.0, February 2017*	monitoring	https://www.conservationhalton.ca/long-term-environmental-monitoring
4	2	2015	N	*1,2*	*City of Ottawa, Environmental Impact Statement Guidelines, October 2015, includes identifying cumulative impacts. Appendix 10 includes standard mitigation measures for various natural heritage features and functions. Appendix 6, Preliminary Environmental Data Collection Checklist seems, in part, easier to use then our current one.*	EIS	https://ottawa.ca/en/living-ottawa/environment/environmental-policy-and-planning#natural-heritage-system
5	5	2019	Y	2	BioMAP (Bioassessment of Water Quality)	BioMAP (Bioassessment of Water Quality) methodology and protocol was developed by Ronald W. Griffiths, Ph.D. at the Centre for Environmental Training Niagara College, Glendale Campus Niagara-on-Lake, Ontario. The City of London completed 13 Sub-watershed studies in 1995. The MOE requested that the BioMAP monitoring was used to establish ecological/environmental baseline conditions for open watercourses within these 13 sub-watershed studies. This monitoring was undertaken in 1993-1995 and from approximately 2000 until 2015.	Previous reports prepared for the city of London that use BioMAP can be made available upon request. https://www.amazon.ca/BioMAP-Bioassessment-quality-Ronald-Griffiths/dp/0968592104
6	3	2004	Y	1	Forest Edge Management Plan Guidelines, Toronto and Region Conservation Authority, 2004 (this should be included in restoration where new edge is created)		http://trca.on.ca/dotAsset/40029.pdf
7	1	2007	N	1	Nirupama, N., & Simonovic, S. P. 2007. Increase of flood risk due to urbanisation: a Canadian example. Natural Hazards, 40(1), 25.		
8	1	2018	N	1	Agrawal, N. (eds.). 2018. Natural Disasters and Risk Management in Canada. Advances in Natural and Technological Hazards Research, vol. 49. Springer, Dordrecht.		
9	1	2017	N	1	Edge, C. B., Fortin, M. J., Jackson, D. A., Lawrie, D., Stanfield, L., & Shrestha, N. 2017. Habitat alteration and habitat fragmentation differentially affect beta diversity of stream fish communities. Landscape Ecology, 32(3), 647-662.		
10	2	2010	Y	1	Beacon Environmental. 2010. Recommendations for Conducting Wetland Environmental Impact Studies (EIS) for Section 28 Regulations Permissions. Prepared for Conservation Ontario by Beacon Environmental in association with SCS Consulting Group and Blackport and Associates.		
11	4	2014	N	1	The Water Survey of Canada (Environment Canada)	Pg 4 outlines requirements to measure flow - can be adapted for stream habitat analysis to standardize measurements	http://publications.gc.ca/collections/collection_2014/ec/En56-245-1999-eng.pdf
12	4	2006?	N	1	Table 5: Sensitivity of Fish and Fish Habitat from Practitioners Guide to the Risk Management FRAMEWORK FOR DFO HABITAT MANAGEMENT STAFF, version 1.	EIS	EIS Table 5 from DFO
13	3	2017	N	1	Preparing environmental assessments. Government of Ontario		https://www.ontario.ca/page/preparing-environmental-assessments
14	2	2015	N	1	BASELINE WATER QUALITY MONITORING PROGRAM FOR THE FUTURE WIARTON WASTEWATER TREATMENT PLANT, FALL 2015. Draft III Report prepared for: Saugeen Ojibway Nation (SON) and Town of South Bruce Peninsula. Prepared by: ZEAS Incorporated. 36 McCutcheon Ave Nobleton, Ontario L0G 1N0	"Benthic macroinvertebrate data were statistically evaluated and used to assess water quality in Colpoys Bay. Four end-points were used; total density, total number of taxa, Simpson's Diversity Index and the Bray-Curtis Index. In addition the BioMAP metrics were calculated. BioMAP utilizes a biotic "Water Quality Index" (WQI(d)) and a set of summary metrics to determine the status of a water body (Griffiths 1999). The BioMAP Water Quality index (WQI(d)) is an abundance-weighted mean sensitivity value of the benthic macroinvertebrates occurring at a site. The sensitivity values assigned to macroinvertebrates range from 0 to 4 with 0 being assigned to the most tolerant taxa and 4 assigned to the taxa most sensitive to environmental stresses"	
15	1	2018	Y	2	Tim P. Duval, Effect of residential development on stream phosphorus dynamics in headwater suburbanizing watersheds of southern Ontario, Canada. Science of The Total Environment. Volumes 637–638, 2018. Pages 1241-1251. ISSN 0048-9697. https://doi.org/10.1016/j.scitotenv.2018.04.437.	Suburban landscapes are known to have degraded water quality relative to natural settings, including increased total phosphorus (TP) levels; however, the effect of subdivision construction activities on stream TP dynamics are less understood. This study measured TP and its constituents particulate, dissolved organic, and dissolved inorganic phosphorus (PP, DOP, and DIP, respectively) in two headwater streams of contrasting urbanization activity to examine whether the land-use conversion process itself contributed to TP concentrations and export. The nested watershed undergoing significant active residential community construction contained large areas of cleared former agricultural field and associated sediment mounds with elevated soil TP (~1000 mg kg−1), and twice as many stormwater management (SWM) ponds than the watershed with completed suburban communities. Daily stream sampling for six months revealed limited differences in TP between urbanized and urbanizing watersheds regardless of season or stream flow condition; however, the forms of TP varied significantly. The proportion of TP as DOP was consistently higher in the urbanizing stream relative to the urban stream, which was in line with significant decreases in DOP concentration as proportion of cleared former agricultural land decreased and density of SWM ponds increased. The DOP, and to a lesser extent DIP and PP, dynamics resulted in a 2.5× greater areal export of TP from a small watershed actively being suburbanized during the study period compared to the larger watershed with greater land urbanized 3–5 years ago. The results of this study suggest stream TP concentrations are relatively unresponsive to active versus established suburban cover, but the forms of TP can be quite different, and the period of home construction can increase phosphorus (P) delivery to and export through nearby streams. This information can aid land managers and urban planners update best management practices to mitigate the transfer of terrestrial P to the aquatic environment.	
16	3	2018	N	2	Vegetation Resources Inventory – British Columbia. Ground Sampling Procedures, 2018. Inventory Methods for Forest and Grassland Songbirds. Prepared by Ministry of Environment, Lands and Parks (BC) Resources Inventory Branch for the Terrestrial Ecosystems Task Force Resources Inventory Committee, March 16, 1999.		
17	3	2011	Y	2	A land manager's guide to conserving habitat for forest birds in southern Ontario, Ministry of Natural Resources, 2011, 140 pp.		https://npca.ca/images/uploads/common/mnr-guide-s-ontario-forestry.pdf
18	5	2015	Y	2	Ontario Nature, 2015, The Ontario Reptile and Amphibian Atlas	Data source	https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas/
19	2	2014	Y	2	Middlesex County, 2014, Middlesex Natural Heritage System Study, 48 pp.	Data source	
20	4			2	Data collection - Aquatic Species at Risk Maps, DFO, http://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html	Data collection	
21	4	2007		2	Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds. April 2007 Environment Canada, Canadian Wildlife Service, 33 pp. (the protocols can be applied to any situation, not just wind turbines)	Data collection	http://publications.gc.ca/site/eng/458449/publication.html
22	5	2005	N	2	The Atlas of the Breeding Birds of Ontario (2001-2005) and its predecessor and any updated version	Data source that should be used to determine how bird distributions have changed.	
23	5		Y	2	Nature London's Annual Christmas Bird Counts	Bird count data could be used for specific sites in London as a data source for changes in populations as there are data for specifics sites that have been sampled each year for a number of years.	http://www.naturelondon.com/annual-bird-counts/
24	5	2004	N	2	Ontario Benthos Biomonitoring Network (OBBN)	Data collection protocol for aquatic invertebrates	https://desc.ca/programs/OBBN
25	5			2	Bird Studies Canada Citizen Science Programs	Bird Studies Canada offers multiple programs based on citizen science (e.g. Breeding Bird Survey, Canadian Migration Monitoring Network, Christmas Bird Count, eBird, Great Backyard Bird Count, Great Canadian BirdAthon, National Nocturnal Owl Surveys, Project Feederwatch, Project NestWatch, Swifts and Swallows). Data can be useful as indicators of species abundance over time, as well as sightings of elusive or threatened species possibly missed by standard monitoring	https://www.birdscanada.org/volunteer/programmap/index.jsp?lang=EN&targetpg=caprograms

26	1	2017	N	2	Chilima, J. S., Blakely, J. A., Noble, B. F., & Patrick, R. J. 2017. Institutional arrangements for assessing and managing cumulative effects on watersheds: Lessons from the Grand River watershed, Ontario, Canada. Canadian Water Resources Journal, 42(3), 223-236.	monitoring	https://tandfonline.com/doi/abs/10.1080/07011784.2017.1292151?scroll=top&needAccess=true&journalCode=tcwr20
27	5	2006	Y	2	The Southwestern Ontario Orthophotography Project (SWOOP)	Data set consists of multiple remotely sensed data products including 30 cm which was derived from digital aerial photography collected in the spring and summer of 2006 by First Base Solutions. SWOOP encompasses the following municipal tiers: Bruce County, Brant County, Elgin County, Essex County, Grey County, Haldimand County, Huron County, Lambton County, Middlesex County, Norfolk County, Oxford County, Perth County and Wellington County, Dufferin County (west), Municipality of Chatham-Kent. (Restricted access)	
28	4		N	2	GeoGratis	A portal provided by the Earth Science Sector (ESS) of Natural Resources Canada (NRCan).	http://geogratis.gc.ca/
29	5		N	2	Scholars GeoPortal	An award-winning geospatial data discovery tool made possible by the Ontario Council of University Libraries and Government of Ontario (Restricted access)	
30	4		N	2	EarthExplorer	Provides basic information and on-line access to remotely-sensed data from the U.S. Geological Survey Earth Resources Observation and Science (EROS) Center archive.	http://earthexplorer.usgs.gov/
31	1	2012	N	2	Quantifying Stream Substrate for Habitat Analysis Studies	How to identify substrates in a sediment	https://www.tandfonline.com/doi/abs/10.1577/1548-8659%281985%295%3C499%3AQSSFHA%3E2.0.CO%3B2
32	5	2012	N	2	Alberta Native Plant Council (ANPC) Guidelines for Rare Vascular Plant Surveys in Alberta	Guidelines for conducting rare plant surveys. The guidelines were prepared as... a need was identified to standardize the methodology, because it was noted that pre-disturbance surveys were sometimes conducted with inappropriate techniques, timeframes and scopes.	https://anpc.ab.ca/wp-content/uploads/2015/01/Guidelines-For-Rare-Plant-Surveys-in-AB-2012-Update.pdf
33	4	2015	N	2	Rare prairie plant survey protocol.	Protocol provides instructions on survey techniques and data collection for presence/not-detected status of rare prairie plants	http://www.environment.gov.sk.ca/Default.aspx?DN=fcbfda20-dfdc-4e13-b56d-af4a9c7a70d0
34	4	2018	N	2	Inventory and Survey Methods for Rare Plants and Lichens	This document was developed in response to a critical need to standardize methods of detecting the presence of rare vascular plants, bryophytes, and lichens in British Columbia (BC) to inform projects related to environmental assessment, species at risk surveys, and other inventories where it is important to know the distribution of rare plants and lichens. The compilation was guided in part by published standards employed in other North American jurisdictions as well as by the experience and knowledge of BC's community of professional botanists. The primary survey types are floristic inventories and targeted surveys	https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/nr-laws-policy/risc/inventory_and_survey_methods_for_rare_plants_and_lichens.pdf
35	1	2010	N	2	Vanderpoorten A, Papp B, Gradstein R. Sampling of bryophytes. In: Eymann J, Degreef J, Häuser C, Monje JC, Samyn Y, Vandespiegel D, editors. Manual on field recording techniques and protocols for all taxa biodiversity inventories Vol 8. Belgium: ABC taxa; 2010. p. 331-45.	Sampling methods for bryophytes (mosses), non-vascular plant sampling	
36	1	2005	N	2	Newmaster, S. G., Belland, R. J., Arsenault, A., Vitt, D. H., & Stephens, T. R. (2005). The ones we left behind: comparing plot sampling and floristic habitat sampling for estimating bryophyte diversity. Diversity and distributions, 11(1), 57-72.	Sampling methods for bryophytes (mosses), non-vascular plant sampling	
37	1	2018	N	2	Bowering, R., Wigle, R., Padgett, T., Adams, B., Cote, D., & Wiersma, Y. F. (2018). Searching for rare species: A comparison of Floristic Habitat Sampling and Adaptive Cluster Sampling for detecting and estimating abundance. Forest Ecology and Management, 407, 1-8.	Sampling methods for rare species	
38	5		Y	2	Muma, Robert. A graphic guide to Ontario mosses.	Ontario moss ID guide	https://worldofmosses.com/ggom/ggomClassIdent.html
39	5	2016	N	2	Brodo, Irwin M. 2016. Keys to Lichens of North America: Revised and Expanded	Lichen ID guide	
40	5	2016	Y	2	Pope, Ralph H. 2016. Mosses, Liverworts, and Hornworts: A Field Guide to the Common Bryophytes of the Northeast	ID guide to non-vascular plants	
41	5	2007	N	2	Walewski, Joe. 2007. Ferns & Allies of the North Woods: A Handy Field Reference to All 86 of Our Ferns and Allies	Fern ID guide	
42	5	2017	Y	2	Baroni, Timothy J. 2017. Mushrooms of the Northeastern United States and Eastern Canada: Timber Press Field Guide	Mushroom ID guide	
43	5	2016	Y	2	Barron, George. 2016. Mushrooms of Ontario and Eastern Canada. Lone Pine.	Mushroom ID guide	
44	4	2017	N	2	Completing and Using Ecosystem Service Assessment for Decision-Making: An Interdisciplinary Toolkit for Managers and Analysts		http://publications.gc.ca/collections/collection_2017/eccc/En4-295-2016-eng.pdf
45	5	NA	Y	2	Recommend using data from the many freely available citizen science apps to gain local knowledge of species as part of data collection process	Suggested apps: iNaturalist (https://www.inaturalist.org/), Seek (https://www.inaturalist.org/pages/seek_app), eBird (https://ebird.org), Ontario Reptile and Amphibian Atlas (https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas/), Bumble Bee watch (https://www.bumblebeewatch.org/); Natural Heritage Information Centre (NHIC) (https://www.ontario.ca/page/natural-heritage-information-centre); Leafsnap (http://leafsnap.com/); Journey North monarch monitoring (http://journeynorth.org/monarch/); EDDMapS Ontario (https://www.eddmaps.org/ontario/) - invasive species reporting	
46	5	NA	N	2	Birds Canada. "Amphibian Surveys Overview." https://www.birdscanada.org/volunteer/glmmp/?targetpg=glmmpfrog	Guidelines for conducting amphibian surveys in Canada.	
47	1	2009	N	2	Oldham, M.J., & Brinker, S.R. (2009). Rare Vascular Plants of Ontario, Fourth Edition. Natural Heritage Information Centre, Ontario Ministry of Natural Resources. Peterborough, Ontario.	An updated atlas of vascular plants in Ontario (previous version was Oldham (1996)).	
48	5	NA	N	2	Nature Serve. "Conservation Status Assessment." https://www.natureserve.org/conservation-tools/conservation-status-assessment	Generally, the NHIC website is cited when referring to global ranking of rare species. However, these rankings originate from Nature Serve, so it should also be cited.	
49	4	2018	N	2	Government of Canada. 2018. "COSEWIC list of wildlife species assessed." https://wildlife-species.canada.ca/species-risk-registry/sar/assessment/wildlife_species_assessed_e.cfm	This is an updated list relative to the 1996 COSEWIC report referenced in Section 2 of the EMG.	
50	3	2018	N	2	Government of Ontario. 2007. "Species at risk in Ontario list." Most recently updated in 2018 https://www.ontario.ca/laws/regulation/080230/v13	This is a link to the most recent list of species at risk, assembled by COSSARO.	
51	5	2019	N	2	Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature. (2019). "Atlas of the Breeding Birds of Ontario." https://www.birdsontario.org/atlas/secondatlas.jsp?lang=en	This is a link to the digitized Breeding Bird Atlas of Ontario, which can replace the older reference to Cadman et al., 1987.	
52	5	2019	N	2	Toronto Entomologist's Association. (2019). "Ontario Butterfly Atlas." http://www.ontarioinsects.org/atlas_online.htm	This is a link to the digitized Ontario Butterfly Atlas, which can replace the print version cited in section 2 of the EMG (Holmes et al., 1991).	
53	1	2003	N	2	Oldham, M.J. (2003). *Conservation Status of Ontario Amphibians.* Natural Heritage Information Centre, Ontario Ministry of Natual Resources. Peterborough, Ontario.	This citation lists the conservation status of Ontario amphibians and can be used to complement the older summary of Ontario herpetofauna by Weller (1994). Weller (1994) is cited in section 2 of the EMG.	
54	5	2001	N	2	Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature. (2001). "Guide for participants." https://www.birdsontario.org/download/atlas_feb03.pdf	This guide for participants, published by the Ontario Bird Atlas, provides detailed guidelines for conducting breeding bird surveys in Ontario, with specific instructions for southern Ontario.	
55	4	?	Y	2	General nesting periods for migratory birds by zones. London is in the C1 zone	Determine when migratory birds might be nesting so you can plan your activities to reduce the risk of harming migratory birds.	https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html
56	1	2019	N	2	Project Feederwatch by the Cornell Lab of Ornithology.	A citizen science database of bird sightings over long-term monitoring periods.	https://feederwatch.org/about/project-overview/#about-the-data
57	3	2018	N	2	Minnesota Pollution Control Agency. Minnesota Pollution Control Agency Guidelines for monitoring of lakes, rivers and streams, and wetlands. 2018. https://www.pca.state.mn.us/water/water-monitoring-standard-operating-procedures	A collection of extensive monitoring guidelines for lakes, rivers and streams, and wetlands. These guidelines are recommended by EEPAC for monitoring of aquatic systems.	
58	3	2017	N	2	Stanfield, L. *Ontario Stream Assessment Protocol. 2017. https://www.pca.state.mn.us/water/water-monitoring-standard-operating-procedures*	Provincial guidelines for assessing streams.	

59	1	2015	N	3	*Jarzyna, Marta A., et al. "Landscape Fragmentation Affects Responses of Avian Communities to Climate Change." Global Change Biology 21.8 (2015): 2942-53.*	Forecasting the consequences of climate change is contingent upon our understanding of the relationship between biodiversity patterns and climatic variability. While the impacts of climate change on individual species have been well-documented, there is a paucity of studies on climate-mediated changes in community dynamics. Our objectives were to investigate the relationship between temporal turnover in avian biodiversity and changes in climatic conditions and to assess the role of landscape fragmentation in affecting this relationship. We hypothesized that community turnover would be highest in regions experiencing the most pronounced changes in climate and that these patterns would be reduced in human -dominated landscapes. To test this hypothesis, we quantified temporal turnover in avian communities over a 20-year period using data from the New York State Breeding Atlases collected during 1980–1985 and 2000–2005. We applied Bayesian spatially varying intercept models to evaluate the relationship between temporal turnover and temporal trends in climatic conditions and landscape fragmentation. We found that models including interaction terms between climate change and landscape fragmentation were superior to models without the interaction terms, suggesting that the relationship between avian community turnover and changes in climatic conditions was affected by the level of landscape fragmentation. Specifically, we found weaker associations between temporal turnover and climatic change in regions with prevalent habitat fragmentation. We suggest that avian communities in fragmented landscapes are more robust to climate change than communities found in contiguous habitats because they are comprised of species with wider thermal niches and thus are less susceptible to shifts in climatic variability. We conclude that highly fragmented regions are likely to undergo less pronounced changes in composition and structure of faunal communities as a result of climate change, whereas those changes are likely to be greater in contiguous and unfragmented habitats.	
60	1	2012	N	3	Gray, P.A., D. Paleczny, T.J. Beechey, B. King, M. Wester, R.J. Davidson, S. Janetos, S.B. Feilders, and R.G. Davis. 2012. Ontario's Natural Heritage Areas: Their Description and Relationship to the IUCN Protected Areas Classification System (A Provisional Assessment). Version 1.1. Queen's Printer for Ontario, Peterborough, Ontario, Canada. 356 pp.		
61	5	2016	N	3	Worboys, G. L., Ament, R., Day, J. C., Lausche, B., Locke, H., McClure, M., ... & Woodley, S. (2016). Advanced draft, areas of connectivity conservation guidelines: definition, types, selection critera, and governance. Gland, Switzerland: IUCN.	Areas of Connectivity Conservation (ACCs) interconnect protected areas and connect them to the wider semi-natural and natural landscapes, freshwaterscapes and seascapes. This Guideline defines and describes ACCs and is based on connectivity conservation research and practice pioneered by IUCN WCPA researchers, practitioners and experts from other organisations prior to and following the 2003 IUCN Durban World Parks Congress.	https://www.iucn.org/sites/dev/files/content/documents/acc_advdraft_guidelines_28may2016.pdf
62	1	2015	N	4	Effects of habitat structure, human disturbance, and habitat connectivity on urban forest bird communities, Kang, W., Minor, E., Park, C-R., Lee, D., Urban Ecosyst, on line January 2015	Remnant patches with lower levels of human distrubance had higher diversity than newly established patches where intense human activities had occurred more frequently.	doi 10.1007/s11252-014-0433-5
63	3	2015		5	Appendix F: Guidelines for Ecological Buffer Areas, Environmental Planning Policies - April 2015, Cataraqui Region Conservation Authority	EIS	EcologicalBuffers Cataraqui Region CA
64	3	2012	N	5	Categorizing and Protecting Habitat under the Endangered Species Act, Feb 2012, Ontario, https://www.ontario.ca/page/species-risk-guides-and-resources		
65	1	2006	N	5	Effects of Habitat Disturbance from Residential Development on Breeding Bird Communities in Riparian Corridors, SUZANNE M. LUSSIER, Environmental Management Vol. 38,No. 3,pp. 504–521		
66	1	2016	N	5	King, S. E., Osmond, D. L., Smith, J., Burchell, M. R., Dukes, M., Evans, R. O., ... & Kunickis, S. (2016). Effects of riparian buffer vegetation and width: a 12-year longitudinal study. Journal of environmental quality, 45(4), 1243-1251.	Project objective: determine effectiveness over 12 years of buffer types and buffer widths on reducing groundwater nitrate. Results: wider buffers more effective, buffer efficacy increased over time, buffer vegetative type was not significant.	
67	1	2018	N	5	Lima, E. A. C. F., & Ranieri, V. E. L. (2018). Land use planning around protected areas: Case studies in four state parks in the Atlantic forest region of southeastern Brazil. Land use policy, 71, 453-458.	Study results indicate that the use of the buffer zone as an effective strategy for the management of protected areas (PA) requires a link between the PA managers and local government, to facilitate articulation between management plan of the PA and the municipal master plan. Otherwise, establishment of buffer zone risks having no practical effect on biodiversity conservation in the protected area.	
68	1	2014	N	5	Dindaroğlu, T., Reis, M., Akay, A. E., & Tonguc, F. (2015). Hydroecological approach for determining the width of riparian buffer zones for providing soil conservation and water quality. International Journal of Environmental Science and Technology, 12(1), 275-284.	Approach for determining buffer width. A hydroecological approach using geographical information system technology can be successfully implemented to provide maximum sustainable protection of water and soil resources in riparian zones, especially in the lake basins	
69	1	2013	Y	5	Barriers to the effective planning and management of residential encroachment within urban forest edges: A Southern Ontario, Canada case study, Wendy McWilliam , Robert Brown, Paul Eagles, Mark Seasons, Urban Forestry & Urban Greening, 2013	Prevailing planning, design and management approaches in Southern Ontario municipalities in Canada indicate planning and management tools have been developed to remove and impede encroachment impacts; however, many are infrequently implemented. This lack of implementation contributes to a high prevalence and spa-tial area of encroachment within Southern Ontario municipal woodland edges with adjacent housing	ttp://dx.doi.org/10.1016/j.ufug.2013.08.002
70	1	2010	Y	5	The housing-forest interface: Testing Structural approaches for protecting suburban natural systems following development, Mcwilliam, W. et. al.,Urban Forestry & Urban Greening (2010)	Even under the most effective boundary treatment, encroachment activities continued at significant distances from forest borders. Forested buffers of at least 50 m wide are required to segregate encroachment impacts from sensitive forested natural systems.	doi:10.1016/j.ufug.2009.12.002
71	1	2011	Y	5	Wendy J. McWilliam, Paul F.J. Eagles, Mark L. Seasons & Robert D. Brown (2011): Effectiveness of Boundary Structures in Limiting Residential Encroachment into Urban Forests, Landscape Research	Transect and quadrat sampling of 40 forest edges adjacent to 186 residential properties were sampled in six Southern Ontario municipalities to determine impact frequency and area cover of encroachment. The results indicated some structures are effective in reducing the frequency and area cover of some encroachment behaviours. Other behaviours were not signi ficantly reduced by any structural treatment. Furthermore, some behaviours were increased by structures. Substantial areas of encroachment continued to occur under even the most e ffective boundary treatments. The treatment most successful in reducing frequency and area was ungated fencing in combination with a mown grass strip. It was found to reduce the incidence of yard extensions and concentrate encroachments closest to forest edges.	To link to this article: http://dx.doi.org/10.1080/01426397.2011.592243
72	1	2010	Y	5	Assessing the Degradation Effects of Local Residents on Urban Forests in Ontario, Canada, Wendy McWilliam, Paul Eagles, Mark Seasons, and Robert Brown, Arboriculture & Urban Forestry 2010. 36(6): 253-260	Encroachment results from various boundary treatments; however, it is not known whether encroachment represents a substantial source of degradation within Ontario, Canada, municipal forests. To evaluate this, percentage cover of encroachment impacts adjacent to 186 homes within 40 forests of six Southern Ontario municipalities was surveyed. The results indicated degradation re-sulting from encroachment was substantial. Encroachment occurred in highly valued and sensitive ecosystems, and during sensitive time periods. This was highly prevalent and covered a substantial proportion of the forest edge. Some encroachment behaviors were particularly harmful, resulting in the loss of signi ficant forest area to residential land uses. Furthermore, encroachments remained over long periods.	
73	1	2012	Y	5	Evaluation of planning and management approaches for limiting residential encroachment impacts within forest edges: A Southern Ontario case study, McWilliam, et. al., Urban Ecosyst (2012) 15:753-772	Recommendations for improved approaches for managing residential encroachment impacts within forest edges is provided.	doi 10.1007/s11252-012-0232-9
74	5	2015	N	5	Guidelines for Ecological Buffer Areas: CRCA Environmental Planning Policies - April 2015 - Appendix F - Page 1 of 7		CRCA Guideline for Buffers
75	1	2012	Y	6	Newmaster, S.G. and S. Ragupathy, 2012. Flora Ontario – Integrated Botanical Information System (FOIBIS), Phase I. University of Guelph, Canada. Available at: http://www.uoguelph.ca/foibis/	Provides uptodate information about flora	
76	1	1996	Y	3,5	Norman, A. J. (1996). The use of vegetative buffer strips to protect wetlands in southern Ontario. Wetlands. Environmental gradients, boundaries and buffers. CRC Press, New York, 263-275.	Recommendations on width of buffer strips for protecting wetlands in Ontario	
77	1	2008	N	3,5	Corlett, D., & Phillips, M. (2008). Science-based watershed policy for stream corridors: Integrating economic and ecological considerations (Doctoral dissertation, Master's thesis (portion) presented to the Department of Landscape Architecture and Regional Planning at the University of Massachusetts, Amherst).	methodology for sizing protective stream corridors and evaluating existing programs	
78	1	2008	Y	1,3	Eigenbrod, F., Hecnar, S. J., & Fahrig, L. (2008). Accessible habitat: An improved measure of the effects of habitat loss and roads on wildlife populations. Landscape Ecology, 23(2), 159-168. doi:10.1007/s10980-007-9174-7	Habitat loss is known to be the main cause of the current global decline in biodiversity, and roads are thought to affect the persistence of many species by restricting movement between habitat patches. However, measuring the effects of roads and habitat loss separately means that the configuration of habitat relative to roads is not considered. We present a new measure of the combined effects of roads and habitat amount: accessible habitat. We define accessible habitat as the amount of habitat that can be reached from a focal habitat patch without crossing a road, and make available a GIS tool to calculate accessible habitat. We hypothesize that accessible habitat will be the best predictor of the effects of habitat loss and roads for any species for which roads are a major barrier to movement. We conducted a case study of the utility of the accessible habitat concept using a data set of anuran species richness from 27 ponds near a motorway. We defined habitat as forest in this example. We found that accessible habitat was not only a better predictor of species richness than total habitat in the landscape or distance to the motorway, but also that by failing to consider accessible habitat we would have incorrectly concluded that there was no effect of habitat amount on species richness.	

79	1	2019	N	1,3	Ongoing accumulation of plant diversity through habitat connectivity in an 18-year experiment	Deleterious effects of habitat fragmentation and benefits of connecting fragments could be significantly underestimated because changes in colonization and extinction rates that drive changes in biodiversity can take decades to accrue. In a large and well-replicated habitat fragmentation experiment, we find that annual colonization rates for 239 plant species in connected fragments are 5% higher and annual extinction rates 2% lower than in unconnected fragments. This has resulted in a steady, nonasymptotic increase in diversity, with nearly 14% more species in connected fragments after almost two decades. Our results show that the full biodiversity value of connectivity is much greater than previously estimated, cannot be effectively evaluated at short time scales, and can be maximized by connecting habitat sooner rather than later.	https://science.sciencemag.org/content/365/6460/1478.full
80	1	2011	Y	1,5	Falk, K., Nol, E., & Burke, D. (2011). Weak effect of edges on avian nesting success in fragmented and forested landscapes in ontario, canada. Landscape Ecology, 26(2), 239-251. doi:10.1007/s10980-010-9543-5	We studied the effects of anthropogenic edges on predation and parasitism of forest bird nests in an agriculturally fragmented landscape and a continuously forested landscape in Ontario, Canada. Nesting data were collected at 1937 nests across 10 species in the fragmented landscape from 2002–2008, and 464 nests across 4 species in the continuously forested landscape from 2006–2008. Brood parasitism only occurred in the fragmented landscape, and was positively related to the proportion of rural grassland and row crop habitats within 500-m of nests. Daily nest survival was negatively related to the density of roads within 500-m of nests in the fragmented landscape, but was not influenced by distance to anthropogenic edge in either landscape. Predation rates were higher in the fragmented landscape for Ovenbird and Rose-breasted Grosbeak nests, but did not differ between landscapes for Veery and American Redstart nests. Uniformly high predation in the fragmented landscape may be a result of (1) matrix predators that penetrate deep (>300 m) into the forest interior, or (2) the additive effect of forest-dependent and matrix-associated predators that results in high predation pressure in both edge and interior habitats. Further research focused on the identification of nest predators, their population dynamics, and habitat use is required to understand the underlying mechanisms leading to uniformly high nest predation in fragmented landscapes.	
81	3	2014	Y	1,2	Toronto and Region CA Environmental Impact Statement Guidelines, Oct 2014, pp. 31. Includes data collection standards for the inventory of natural components for an EIS	data collection	TRCA EIS Guidelines
82	3	2017	Y	1,2	EIS - Conservation Halton's Guidelines for Ecological Studies, August 2017. 6 pp. has nice table of studies, their timing as well as method and protocol.	EIS	#VALUE!
83	1	2016	Y	No	Kirchhoff, D., McCarthy, D., Crandall, D. D., McDowell, L., & Whitelaw, G. 2016. A policy window opens: strategic environmental assessment in York Region, Ontario, Canada. In Progress in Environmental Assessment Policy, and Management Theory and Practice (pp. 27-48).		
84	3	2011	Y	No	A Summary of the Effects of Climate Change on Ontario's Aquatic Ecosystems	MNR Climate Change Research Report	https://files.ontario.ca/environment-and-energy/aquatics-climate/stdprod_088243.pdf
85	1	2014	Y	1,3	*Koen, Erin L., et al. "Landscape Connectivity for Wildlife: Development and Validation of Multispecies Linkage Maps." Methods in Ecology and Evolution 5.7 (2014): 626-33.*	The ability to identify regions of high functional connectivity for multiple wildlife species is of conservation interest with respect to habitat management and corridor planning. We present a method that does not require independent, field-collected data, is insensitive to the placement of source and destination sites (nodes) for modeling connectivity, and does not require the selection of a focal species. In the first step of our approach, we created a cost surface that represented permeability of the landscape to movement for a suite of species. We randomly selected nodes around the perimeter of the buffered study area and used circuit theory to connect pairs of nodes. When the buffer was removed, the resulting current density map represented, for each grid cell, the probability of use by moving animals. •We found that using nodes that were randomly located around the perimeter of the buffered study area was less biased by node placement than randomly selecting nodes within the study area. We also found that a buffer of ≥ 20% of the study area width was sufficient to remove the effects of node placement on current density. We tested our method by creating a map of connectivity in the Algonquin to Adirondack region in eastern North America, and we validated the map with independently collected data. We found that amphibians and reptiles were more likely to cross roads in areas of high current density, and fishers (Pekania [Martes] pennanti) used areas with high current density within their home ranges. Our approach provides an efficient and cost effective method of predicting areas with relatively high landscape connectivity for multiple species.	
86	3	2015	Y	1,3	Ontario Ministry of Natural Resources and Forestry. Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E.		https://docs.ontario.ca/documents/4776/schedule-7e-jan-2015-access-vers-final-s.pdf
87	1	2012	N	2, 3	Gunson, K. E., Ireland, D., & Schueler, F. 2012. A tool to prioritize high-risk road mortality locations for wetland-forest herpetofauna in southern Ontario, Canada. Northwestern Journal of Zoology, 8(2), 409-413.		
88	1	2010	Y	2,3	Area-Sensitivity by Forest Songbirds: theoretical and practical implications of scale dependency, Desrocher, Renaud, Hockachka, Cadman, Ecography 33:921-931, 2010	Songbird presence is often associated with the area of suitable habitat in the surrounding landscape. However, the size of landscape for which this association is maximized is generally unknown, likely to vary among species, and may affect our ability to incorporate songbirds in landscape management. We measured the occurrence and the persistence of forest songbirds in relation to the amount of habitat measured at several scales: local (100, 200 m radius), neighborhood (400, 800 m), landscape (1.6, 3.2, 6.4 km) and regional (12–24 km), based on data from Ontario's Forest Bird Monitoring Program (1987–2005). Songbird occurrence was obtained from point count sites distributed across southern Ontario and each revisited in multiple years (mean=5.8 yr). Presence of each species at a site was associated with forest habitat area measures that account for differences in preferred forest cover types among species. Area of coniferous, deciduous and mixed forest was derived from Landsat TM imagery. Thirty -two of the 35 species studied were area-sensitive, and area-sensitivity was apparent for 13–25 species at each spatial scale. For 24 species, the strength of area-sensitivity varied with scale, suggesting the importance of local, neighborhood, landscape and regional habitat for 3, 5, 5, and 11 species respectively. As a result, the list of the five most area-sensitive species varied depending on the scale at which habitat was described. We conclude that area -sensitivity can occur at a broader set of scales than generally assumed, and is most pronounced at the regional scale. We suggest that a broad set of scales should be examined before taking conservation decisions based on avian area-sensitivity.	
89	1	2003	Y	3,4,6	*McLachlan, S. M., and D. R. Bazely. "Outcomes of Longterm Deciduous Forest Restoration in Southwestern Ontario, Canada." Biological Conservation 113.2 (2003): 159-69.*	At present, forest cover in southwestern Ontario, Canada, remains at less than 5% due to intensive agricultural and urban land use. Although much of the extant forest is increasingly protected by legislation, remnants continue to be degraded by the spread of non-native plant species, overgrazing, and recreational use. Some parks in the region have adopted management programs aimed at mitigating this degradation. Over the last 35 years, cottages and roads at Point Pelée National Park have been removed and sites either passively restored (i.e. road or cottage eliminated and vegetation allowed to regenerate) or actively restored (i.e. road or cottage eliminated, exotic vegetation removed, and native species planted). In 1994 and 1995, we assessed the effectiveness of restoration by comparing the understorey plant communities in 28 restored sites with those in less disturbed reference sites. There was a significant increase (P<0.0001) in the similarity of understorey plant communities between restored and reference sites as time-since-restoration increased. Soil moisture, canopy cover, distance to continuous forest, and site-shape all significantly affected plant species composition. Former road sites recovered significantly (P<0.05) more rapidly than former cottage sites, and the former lawns of passively restored cottage sites were the slowest to recover. Five years following active restoration, non-native ruderal species continued to dominate restored sites. The observed recovery of understorey plant communities in restored sites is attributed to their proximity to natural vegetation, and its function as a seed source. In some sites, recovery is substantial and, assuming present trajectories of change are maintained, we predict that recovery could occur in many mesic sites within the next 20 years. Restoration activity facilitates forest recovery and would appear to have a valuable function in mitigating ongoing conflicts between conservation and human use in this region.	
90	1	2007	Y	3,5	*Milne, Robert J., and Lorne P. Bennett. "Biodiversity and Ecological Value of Conservation Lands in Agricultural Landscapes of Southern Ontario, Canada." Landscape Ecology 22.5 (2007): 657-70.*	In eastern North America, large forest patches have been the primary target of biodiversity conservation. This conservation strategy ignores land units that combine to form the complex emergent rural landscapes typical of this region. In addition, many studies have focussed on one wildlife group at a single spatial scale. In this paper, studies of avian and anuran populations at regional and landscape scales have been integrated to assess the ecological value of agricultural mosaics in southern Ontario on the basis of the maintenance of faunal biodiversity. Field surveys of avian and anuran populations were conducted between 2001 and 2004 at the watershed and sub-watershed levels. The ecological values of land units were based on a combination of several components including species richness, species of conservation concern (rarity), abundance, and landscape parameters (patch size and connectivity). It was determined that habitats such as thicket swamps, coniferous plantations and cultural savannas can play an important role in the overall biodiversity and ecological value of the agricultural landscape. Thicket swamps at the edge of agricultural fields or roads provided excellent breeding habitat for anurans. Coniferous plantations and cultural savannas attracted many birds of conservation concern. In many cases, the land units that provided high ecological value for birds did not score well for frogs. Higher scores for avian and anuran populations were recorded along the Niagara Escarpment and other protected areas as expected. However, some private land areas scored high, some spatially connected to the protected areas and therefore providing an opportunity for private land owners to enter into a management arrangement with the local agencies.	

91	1	2018	Y	No	Cropland patchiness strongest agricultural predictor of bird diversity for multiple guilds in landscapes of Ontario, Canada. Frei, B., Bennett, E.M. & Kerr, J.T. Reg Environ Change (2018) 18: 2105. https://doi.org/10.1007/s10113-018-1343-5	The potential for agricultural landscapes to support biodiversity may vary greatly based on agricultural land use. Current knowledge suggests that agricultural composition and intensity are dominant drivers of biodiversity in agricultural landscapes, with variable effects of agricultural configuration and landscape diversity. The aim of this study was to determine the relative effects of agricultural composition, intensity, configuration, and landscape diversity on the species diversity of six distinct bird guilds on the landscape scale in a large and complex landscape in Ontario, Canada. We found that agricultural configuration, specifically patchiness of croplands, and to a lesser degree forage lands, was the strongest predictor of bird diversity for three of the six bird guilds considered (forest, shrubland, and town). The effects of increased cropland patchiness were variable, with forest and shrubland bird diversity increasing from small to moderate patchiness, and town bird diversity declining from moderate to high patchiness. Grassland birds, a group of considerable conservation concern, increased near linearly with increased agricultural land cover in the landscape, highlighting the need to consider agricultural lands in conservation planning for this species group. Woodland bird diversity declined significantly with all increasing measures of agricultural intensity, including the proportion of high-intensity agriculture and larger patches of agricultural land. Wetland birds were unique from the other guilds, showing primarily a strong association between diversity of land cover types and guild-level bird diversity. Surprisingly, increased cover of agricultural lands, which we predicted to be a dominant driver of guild-level bird diversity declines due to habitat loss, had weak, non-significant effects relative to the other land use variable being tested, except for the positive association with grassland birds. Our findings suggest that a mix of management strategies should be employed to consider the varying effects of agricultural lands on different bird guilds, such as the inclusion of agricultural land in conservation strategies for grassland species and further managing the configuration of agricultural lands to enhance biodiversity of agricultural landscapes.	
92	2	2007	Y	No	TERRESTRIAL NATURAL HERITAGE SYSTEM STRATEGY Toronto Region Conservation Authority, 2007.		https://trca.ca/conservation/greenspace-management/terrestrial-natural-heritage/
93	1	2016	Y	No	Kirchhoff, D., McCarthy, D., Crandall, D. D., McDowell, L., & Whitelaw, G. 2016. A policy window opens: strategic environmental assessment in York Region, Ontario, Canada. In Progress in Environmental Assessment Policy, and Management Theory and Practice (pp. 27-48).		
94	3	2011	Y	No	A Summary of the Effects of Climate Change on Ontario's Aquatic Ecosystems	MNR Climate Change Research Report	https://files.ontario.ca/environment-and-energy/aquatics-climate/stdprod_088243.pdf
95	2	2005	Y	1,2	Dingman Creek Subwatershed Study	See section 11.2 Monitoring Program Update for information about short and long term monitoring recommendations	https://www.london.ca/city-hall/master-plans-reports/reports/Documents/Dingman-Creek-Subwatershed-Study-Update%20Volume%201%20Main%20Report.pdf
96	2	2009	Y	1,2	Water Quality Monitoring Program for Dingman Creek	Includes BioMAP methods	https://www.london.ca/residents/Environment/Rivers-Creeks/Documents/Zeas-2009-Dingman.pdf