

Peregrine Falcon [Photo by Chris Lee]

November 2014

Abbotsford's residents are justifiably proud of the majestic beauty of their city which includes vistas of many mountain ranges on both sides of the International border. Abbotsford is home to a wide variety of habitat, including steep escarpments, forested slopes, sandstone rock faces, second growth and old growth forest, dry

bluffs, creeks, and riparian areas. There is an abundance of wildlife in our city; in fact, in contrast to most of the Metro Vancouver region, Abbotsford is home to large mammals such as cougars, black bears and bobcats. Many endangered species of animals and plants are found here including over 40 species classified as at-risk, counting 22 species currently listed on the federal *Species at Risk Act* reside in Abbotsford. Over 30 of these species-at-risk are located on Sumas Mountain, well-known both regionally and provincially as a biodiversity hotspot.

In recent years, there has been an increased community awareness of the need to conserve, protect and restore the natural environment. Maintaining high levels of biodiversity supports ecosystem services and social benefits. Natural ecosystem processes and services include things such as maintenance of air quality, contribution to climate stability, soil development, stormwater management, water purification, pollination, and erosion prevention. Social benefits include spiritual, cultural, recreational and aesthetic values. The cost of replacing these free services would be extremely expensive. It therefore makes economic and development sense to move towards sustainability.

Management of wildlife/species-at-risk (and their habitats) in Canada is under the jurisdiction of the federal and provincial governments. While the City of Abbotsford (City) does not have direct jurisdiction for wildlife/species-at-risk, the City has an interest in ensuring development/activities are consistent with senior government legislation, best management practices (BMPs),



What is Wildlife?

Wildlife includes all plant and animal species, and includes amphibians, mammals, reptiles, invertebrates, fish, etc.

guidelines, expectations etc., as this ensures development/activities align with the City's Community Sustainability Strategy and Official Community Plan (e.g. Strategy #2 - Protecting Our Natural Environment). Moreover, completion of Wildlife Assessment Reports demonstrates due diligence in ensuring that wildlife/species-at-risk issues are suitably addressed in compliance with senior government legislation.

To ensure wildlife (including species-at-risk) are protected, the City requires applicants to demonstrate they have suitably addressed wildlife/species-at-risk requirements and expectations of senior government. Assurances may include the proponent providing the City with copies of senior government approvals, copies of correspondence with senior government regulatory agency staff (if applicable), or statements from qualified environmental professionals (e.g. RPBio) accepting responsibility for the proposed development/activity with respect to legislative compliance, impact, mitigation etc. The above information requirements will be addressed in a Wildlife Assessment Report submitted to City staff. City staff will review information from the qualified professional for the above-noted assurances and ensure it is consistent with the City's Official Community Plan for protecting natural areas.



Typically, the City will request a *Wildlife Assessment Report* at the time of a proposed land use change for properties containing minimal existing development, or for properties adjacent to minimally developed land. City environmental staff can assess your specific project to determine if it requires a *Wildlife Assessment Report*. The *Wildlife Assessment Report* is a critical component of the land use planning phase of a development proposal. It assesses existing biological and physical conditions at the very onset of the development approval process by documenting, among other things, sensitive ecosystems and the species therein, identifying Environmentally Valuable Resources (EVRs), impacts from proposed development, recommended mitigation measures, and where appropriate, potential habitat enhancement/protection opportunities. Integrating this information into the early stages of land use planning is essential to making land use decisions that meet the expectations of the land manager, the City, and senior government.

These Guidelines are intended for property development applicants and their consultants, and the Wildlife Assessment Report is to be prepared, signed and sealed by a Qualified Environmental Professional (QEP). The professional(s) should have local experience with regard to sensitive ecosystems and wildlife species of the Lower Mainland region, and be familiar with all applicable inventory standards and published Best Management Practices (BMPs).

The purpose of this document is to describe what information is needed to meet the requirements

Environmentally Valuable Resources include:

- Species and ecosystems at risk
- Aquatic and riparian ecosystems
- Fish spawning and rearing areas
- Older forests or mature forests
- Second growth forests
- Natural meadows and grasslands
- Cliffs and rocky outcrops
- Wildlife trees
- Caves
- Coarse woody debris
- Wildlife mineral licks
- Nesting and denning sites
- Wildlife travel corridors
- Raptor or heron nest sites
- Old vacant buildings which may shelter birds or bats



Mountain Beaver den [Photo by Ryan Durand]

of a Wildlife Assessment Report. The information is adapted from the BC Ministry of Environment's (MoE) document Develop With Care 2014: Environmental Guidelines for Urban and Rural Land Development in BC (2014). Information from the above-noted document is summarized herein for convenience purposes and readers are directed to the source document for more details. Questions regarding content and interpretation should be directed to the document authors.



¹ A "Qualified Environmental Professional" means an applied scientist or technologist who practices in a relevant applied science or technology field including, without limitation, the field of agrology, forestry, biology, geomorphology, geology, hydrology, hydrogeology, or landscape architecture, whether acting alone or together with another qualified environmental professional, if

⁽a) the individual is registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association.

⁽b) the individual's area of expertise is recognized in the assessment methods as one that is acceptable for the purpose of providing all or part of an assessment report in respect of that development proposal, and

⁽c) the individual is acting within that individual's area of expertise.

Note: This information is provided for convenience only and is not in substitution of applicable City Bylaws or Provincial or Federal codes, laws, or permits (e.g. Provincial Water Act, Contaminated Sites requirements, Canadian Environmental Assessment Act approvals, Wildlife Permits, etc), It is the applicant's responsibility to ensure that any existing or proposed construction or other works complies with any applicable Bylaws, Codes, laws or permits.

Bio-inventory Process

A bio-inventory involves a Preliminary Site Survey which may lead to a Detailed Site Inventory and report. The bioinventory is based on existing biological and physical conditions or such conditions prior to any preparatory site disturbances. If the works have been started without an assessment, the applicant must stop all works and must attempt to identify what was on the site prior to disturbance.



Step 1: Preliminary Site Survey

Preliminary Site Surveys require a literature review and reconnaissance-level site survey to determine what species and EVRs are present or likely to be present on or near (i.e., within 100 m) the proposed development site. For a complete list of EVRs refer to Table 1 in Appendix 1 (MoE 2014).

- Review existing inventory information to determine if EVRs are known to occur on or near the proposed development site. For example:
 - Obtain a Wildlife Report prepared by the Fraser Valley Conservancy (http://www.fraservalleyconservancy.ca). This report draws upon a wide range of
 - data sources, including data from the City of Abbotsford, Central Valley Naturalists, SAR Recovery Teams, Conservation Data Center. Wildlife Tree Stewardship, South Coast Conservation Program (SCCP) Atlas, etc. Please contact the FVC at 604-625-0066 or info@fraservalleyconservancy.ca;
 - Search the BC Species and Ecosystems Explorer for the locations of species and ecosystems at risk on and near the development site:

- If your project is in the McKee Peak area, review the McKee Peak Terrestrial Ecosystem Mapping report for the mapping and classification of natural ecosystems;
- If your project is in the Sumas Mountain area, review the Sumas Mountain Sensitive Ecosystems Inventory report for mapping and classification of natural ecosystems and ratings of species-at-risk habitat;
- Search the Metro Vancouver Sensitive Ecosystems Inventory map for information on sensitive ecosystems throughout Abbotsford;
- See page 7 of this document and Appendix D of MoE's Develop With Care 2014 document (MoE 2014) for a list of existing inventory and environmental mapping information sources.



- **Conduct a site inspection** to determine species presence/absence and if smaller or less obvious EVRs, such as individual wildlife trees, dens, rock outcrops, etc are present.
 - See Appendix 1 for a list of some of the EVRs to search for on the development site. This checklist should be completed, signed by a qualified professional, and included in the final Wildlife Assessment Report.
- Map EVRs on a site plan

If there are no environmentally valuable resources...

If it can be shown that no EVRs exist or have existed on or within 100 m of the development site, a Detailed Site Inventory (i.e. Step 2) is not required. Please submit a brief *Wildlife Assessment Report* on the Preliminary Site Survey.

If there are (or potentially could be) environmentally valuable resources present...

If EVRs are or may be present on or within 100 m of the proposed development site, there are two options:

- 1. **No impact:** A Detailed Site Inventory may not be required. The development is designed so that there are no impacts to the EVRs (i.e. EVRs are located within designated protected areas). A brief *Wildlife Assessment Report* should be produced describing the EVR(s) identified, where they are located, and how they will be protected.
- 2. **Possible impact:** More information needed—carry out a Detailed Site Inventory. The information collected during the Detailed Site Inventory will be useful for project planning/layout, and for identifying measures to reduce the environmental impacts of the proposed development.

Step 2: Detailed Site Inventory

A Detailed Site Inventory should be conducted if development is to proceed in ways that might impact the EVRs during construction or after occupation.

- Determine the appropriate inventory methods and timing to use for conducting the detailed site assessment. The Resources Information Standards Committee (RISC) website provides information on inventory techniques. Multiple site visits during different seasons may be required in order to properly assess presence/absence of all of the species suspected of occurring on the site.
- Identify all EVRs on the site, describe their condition, and identify potential mitigation measures and restoration opportunities. Rare species and ecological communities should be identified by a QEP who has expertise in identifying such elements.



Vancouver Island Beggarticks [Photo by Chris Lee]

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- Map all EVRs according to the standards established in Standard for Terrestrial Ecosystem Mapping in British Columbia (RIC 1998).
- Identify potential development impacts, and avoidance or mitigation measures. The Wildlife Assessment Report should identify potential development impacts and ways to avoid them. If impacts cannot be avoided, the report should include information on mitigation options. If conservation values are high on the proposed development site, and avoidance or mitigation measures are not likely to be effective (for example, if there will be adverse impacts to a species at risk), the QEP should recommend that development be re-designed or relocated off the site.
- Identify restoration and enhancement opportunities. The QEP's Wildlife Assessment Report should also identify restoration and enhancement opportunities on or near the development site.



Wildlife Assessment Report Requirements

Development Plan and Site Description:

- A description of the proposed project (if available);
- A map showing the regional setting of the development;
- A surveyed map demarcating the location of all the EVRs known to occur on or near (within 100m) the development site, overlaid on a current aerial photo base:
- A site map indicating the layout of the project components and activities; and
- A site map indicating the topography and physical characteristics of the site prior to disturbance.

Off-site Conditions

 A description of the topography and physical characteristics of nearby sites which may be affected by the development (e.g. downstream and downslope habitats, wildlife travel corridors).

Existing Inventory Information:

- The Wildlife Report prepared by the Fraser Valley Conservancy;
- Results of any report reviews, including the McKee Peak Terrestrial Ecosystem Mapping report and the Sumas Mountain Sensitive Ecosystems Inventory report, if applicable;
- Results of any online searches, including the Metro Vancouver Sensitive Ecosystem Inventory, BC Species and Ecosystems Explorer, the Community Mapping Network, COSEWIC, etc.; and
- Any other information collected during the review of existing information.

Research Methods: research methods used must be based on recognized scientific standards and must be repeatable. Include descriptions of all methods used, including:

- Name/type of inventory method used;
- List of EVR(s) inventoried (please include a completed Table 1 from Appendix 1);
- Number of inventories per EVR;
- Timing and duration of inventories;
- Number of plots used;
- Inventory location (include general description and UTM coordinate);
- Where recognized standards were not followed (i.e. timing, intensity, etc) provide a
 justification for not requiring further inventory, or a recommendation for additional
 surveys;
- Confirmation that the locations of any species at risk were reported to the Conservation Data Center: and
- Names of all agencies and individuals contacted during the inventory.

Results:

- Describe all EVRs found/suspected of occurring on or near the development site;
- Provide any buffers recommended in BMPs, Recovery Plans, etc. For those EVRs without established buffers, provide recommendations;
- For species-at-risk known to occur in the area, an assessment of their likelihood of occurring on or adjacent to the development site;
- Summary tables of collected data;
- Map(s) showing the location and layout of all inventories conducted, and all EVRs and other important features (e.g. watershed boundaries) found on or near the development site in relation to the proposed development layout;

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- Photos of the site and its important features; and,
- Completed electronic copies of the CDC's Species and Ecosystems At Risk Observation Forms (available here: http://www.env.gov.bc.ca/cdc/contribute.html).

Discussion:

- Provide a completed Detailed Assessment Checklist (MoE 2014), found in Appendix 2;
- Discuss all EVRs found on or adjacent to the development site;
- Provide information on which alternative project designs/layouts were considered;
- Discuss the potential impacts to EVR(s) found on the site and adjacent (100m) area;
- Describe how to avoid and/or mitigate the impacts to the EVR(s);
- Describe how adverse impacts that cannot be avoided or mitigated will be compensated;
- Assess how effective the mitigation and/or compensation strategies will be in maintaining the health, form and function of the EVRs;
- Recommend a monitoring plan for prevention, mitigation and compensation activities for the periods before construction, during construction and after construction, where appropriate. The monitoring program should provide measurable targets and what actions will be taken if targets are not met. The Managing Species-at-Risk in BC Guidance for Resource Professionals prepared by the College of Applied Biology of BC and Association of BC Forest Professionals (http://www.cab-bc.org/files/SAR%20Paper.pdf) provides guidance regarding monitoring plans. It states "[w]hen recommending a management strategy or land or resource use that could affect a portion of the range of a species at risk, the resource professional should also recommend an effective monitoring program to indicate whether the strategy is having the anticipated effect. Adaptive management strategies may then be required to mitigate the impacts".

References:

 Provide references for all image sources, data sources, and supporting literature (including scholarly articles, BMPs, Recovery Plans, Inventory Methods, etc).

Signature and Seal:

 Provide signature and seal of the Qualified Environmental Professional(s) who conducted the inventory and prepared the Wildlife Assessment Report.

Monitoring Reports

Monitoring reports are required throughout the life of the project based on the monitoring plan recommended in the *Wildlife Assessment Report*. The independent environmental monitoring of works is undertaken to ensure that works are completed in compliance with the required standards, best practices, and conditions.



Downes Creek tributary [Photo by Tanya Bettles]



Great Blue Heron [Photo by Chris Lee]



Photo by Chris Leel



Resources

- Develop With Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia
 - (http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare/index.html)
- BC Species and Ecosystems Explorer: conservation and ecological information (http://www.env.gov.bc.ca/atrisk/toolintro.html)
- RISC Standards: (http://www.for.gov.bc.ca/hts/risc/index.html)
- eFlora BC: An electronic atlas of the plants of BC: (http://www.geog.ubc.ca/biodiversity/eflora/)
- eFauna BC: An electronic atlas of the wildlife of BC (http://www.geog.ubc.ca/biodiversity/efauna/)
- McKee Peak Terrestrial Ecosystem Mapping and Sumas Mountain Sensitive Ecosystem Mapping reports:
 - (http://www.abbotsford.ca/community/environment/watercourses_and_wildlife.htm)
- Metro Vancouver Sensitive Ecosystem Inventory: (http://www.metrovancouver.org/PLANNING/DEVELOPMENT/ECOLOGICALHEALTH/SEI/Pages/default.aspx)
- Community Mapping Network BC: maps of sensitive habitats and species distribution (http://cmnbc.ca/)
- Identified Wildlife Management Strategy: species accounts (http://www.env.gov.bc.ca/wld/frpa/iwms/accounts.html)
- Provincial Recovery Strategies: (http://www.env.gov.bc.ca/wld/recoveryplans/rcvry1.htm)
- Federal Recovery Strategies: (http://www.sararegistry.gc.ca/sar/recovery/recovery_e.cfm)
- COSEWIC (http://www.cosewic.gc.ca/eng/sct5/index e.cfm)
- South Coast Conservation Program (http://www.sccp.ca/)
- Species @ Risk a primer for British Columbia (http://www.speciesatrisk.bc.ca/)
- MOE Best Management Practices (http://www.env.gov.bc.ca/wld/BMP/bmpintro.html)

For more information

City Environmental Coordinators can help you comply with the Wildlife Assessment Report Guidelines.

If you have any questions, please contact us

at:

City of Abbotsford Planning Services 32315 South Fraser Way Abbotsford, BC V2T 1W7

Tel: 604-864-5510 Fax: 604-853-4981 www.abbotsford.ca Or contact an Environmental Coordinator directly:

Tanya Bettles, Environmental Coordinator tbettles@abbotsford.ca

Tel: 604-851-4186

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References

Ministry of Environment (MoE) Develop With Care 2014: Environmental Guidelines for Urban and Rural Land Development in BC.

Resources Inventory Committee (RIC) Standard for Terrestrial Ecosystem Mapping in British Columbia. May1998.

Table 1. List of Environmentally Valuable Resources (copied directly from Ministry of Environment's *Develop With Care* document [MoE, 2014])

Note: A check in the 'yes' or 'unknown' column either on site or nearby means that a detailed site inventory is required. Note: 'Near' development site means within 100m.

Enviro	onmentally valuable resources on or near development site	Yes	No	Unknown	Comments
Terres	strial ecosystems in relatively unmodified state:				
0	Conifer-dominated older forests or mature forests (>100 years old)				
0	Conifer-dominated second growth forests (60-100 years old)				
0	grasslands/shrub /herb communities				
0	deciduous woodlands				
0	coastal bluffs	Ш	Ш	III	
0	sparsely vegetated (e.g., sand dunes)			l <u>U</u>	
0	cliffs/rock faces/talus slopes				
Ecosy	rstems at risk:				
0	ecological communities on Conservation Data Centre Red or Blue Lists				
0	sensitive ecosystems (ecosystem types identified by Sensitive Ecosystems Inventories)				
0	areas identified as environmentally sensitive areas by local governments				
Aquat	ic or riparian ecosystems:				
0	seasonal or permanent watercourses (streams, creeks, rivers, ditches)				
0	seasonal or permanent wetlands				
0	groundwater springs and seepages, or vernal pools				
0	lakes or ponds				
0	riparian ecosystems beside these aquatic ecosystems				
0	vegetated gullies				

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Enviro	nmentally valuable resources on or near development site	Yes	No	Unknown	Comments
Specie	es at risk and their habitats:				
0	species at risk identified by COSEWIC				
0	species on provincial Red and Blue lists				
0	regionally significant species				
0	habitats for any of these species		Ш		
Signif	icant habitat features, e.g.:				
0	wildlife trees				
0	rotting logs and other course woody debris		Щ		
0	caves	l H	Н	l H	
0	cliffs and rocky outcrops		Ш		
0	seasonally flooded fields				
0	hedges and shelterbelts				
0	old buildings potentially used by bats or birds		Н	l 	
0	other		Ш		
Areas	of significant use by wildlife, e.g.:				
0	wildlife travel corridors	I H	Ш	l	
0	ungulate winter ranges; spring forage sites	l H		l H	
0	den sites (badger, snake, etc)		H	l H	
0	perch trees, raptor or heron nest sites	l H	H	l H	
0	other				



Site Checklist for Developers (copied directly from Ministry of Environment's Develop With Care document [MoE, 2014])

Note: A check in the 'yes' and 'not applicable' columns implies that environmental guidelines are being followed. Checks in the 'no' and 'unknown' columns indicate that further action or explanations are needed.

Site development checklist for developers	Yes	No	Unknown	N/A	Comments
Inventory:					
Has a preliminary site survey been completed and submitted to the local government?		Conduct preliminary site survey			
Does the preliminary site survey identify Environmentally Valuable Resources on or near (within 100m of) the development site?	See question 3	Follow Section 3 of the Develop with Care document and see question 5			
Are the Environmentally Valuable Resources set aside as 'no-development' areas?	Follow Section 3 and Section 4 of the Develop with Care document	Complete a detailed site inventory and wildlife assessment report and see questions 14-18			



Site development checklist for developers		Yes	No	Unknown	N/A	Comments
Site Concept and Design:						
4.	Does the proposal identify AND avoid (or address) potential hazards such as: Terrain stability (earthquakes, erosion) Areas subject to flooding, sea level rise or		Identify and address concerns			
	Wildlife conflicts		Concerns			
	Contaminated sites					
5.	Have smart growth options, progressive development standards, and LEED or other standards been considered and discussed?					
6.	Will rainwater be managed onsite?					
7.	Are buildings sited to avoid air quality concerns?					
8.	Do septic systems meet or exceed provincial and local governments' requirements?					
9.	Have wildlife corridors been retained to link to nearby habitat reservoirs and refuges (off-site and on-site)?		Work with local government staff to retain wildlife corridors between the development site and these habitats			



Site development checklist for developers	Yes	No	Unknown	N/A	Comments
Have roads been designed to minimize disruption to wildlife movements?		Redesign the development or use mitigation techniques			
11. If the site is adjacent to a protected area, have protected area staff been consulted and any impacts mitigated?		Consult MOE staff			
12. Will the development avoid or mitigate off-site impacts (e.g., modified hydrology, impacts on neighbouring environmentally sensitive areas, potential for wildlife conflicts)?		Redesign the development or use mitigation techniques			
13. Have opportunities for restoration been identified and incorporated into the plan?					
Has a detailed site inventory and wildlife assessment report been completed by an appropriately qualified professional and submitted to the local government?	Follow Section 4 of the Develop with Care document and advice from report	Complete a detailed site inventory and wildlife assessment report			
15. Have buffers around the Environmentally Valuable Resources been identified?					
Do proposed buffers meet or exceed the Provincial guidelines (see Section 4, Table 4.1 of the Develop with Care document)					



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Site development checklist for developers	Yes	No	Unknown	N/A	Comments
16. Does the proposal follow the Qualified Environmental Professionals' (QEPs) recommendations?					
17. Will the tentative site design retain the Environmentally Valuable Resources?		Use QEPs to identify suitable measures			
18. Have shorelines and streambanks been protected?					
Development and Construction:					
19. Has an on-site monitor been hired where necessary, and given authority to halt work if necessary?		Hire monitor			
20. Have the permits and approvals required for construction been identified and obtained (e.g. for instream works)?		Acquire needed permits			
21. Is construction works scheduled ONLY during recommended timing windows?		Identify and adhere to timing windows			
22. Are measures in place to protect surface and groundwater?					
23. Is there an erosion and sediment control plan in place and being followed?		Address erosion and sedimentation issues before start-up			



Site development checklist for developers	Yes	No	Unknown	N/A	Comments
24. Is air quality being protected during construction?					
25. Are there measures in place to prevent site contamination and spills?					
26. Have steps been taken to reduce construction waste?					
27. Are measures in place to protect Environmentally Value Resources during construction (e.g. fencing, additional timing buffers, timing windows)?					
28. Is water quality being protected and erosion/sedimentation being prevented?					
29. Is restoration of degraded habitats being undertaken?					
30. Are trails located outside of Environmentally Valuable Resources and their buffers?		Work with a QEP to design trails			
Post Development:					
31. Are natural landscaping techniques being followed?					
32. Have any potentially invasive species been eliminated from landscaping choices?					
33. Has use of pesticides been minimized or avoided?					
34. Have wildlife attractants been minimized?					
35. Are post development impacts being monitored for future action as needed?					

