

**12.6 DPA 5 – NATURAL ENVIRONMENT**

**Category**            **Protection of the Natural Environment - Its Ecosystems and Biological Diversity**

**Application**        This Development Permit Area applies to Protection Areas (including Indigenous Species, Raptor Habitat, Aquifer Protection, and Riparian Areas). These areas are shown on Map 4.

*A development application may propose to vary the boundaries if it can satisfy the City that the natural features, functions and conditions of the area will be preserved, protected and/or enhanced by the proposed development design. Other land use regulations may be relaxed such as variances to setbacks, building height, parking requirements etc. (with the exception of the zoned use or the maximum allowable density) in consideration of better protection of the environment.*

**PROTECTION AREAS**

**Justification**        Duncan is situated within one of the rarest ecological zones in Canada, occupying what was once grassland, savanna, vernal meadows and rock outcrops. The majority of the area is in a historic floodplain connected to the Cowichan River, forming one of its boundaries and providing a rich fisheries habitat. While diking of the River has provided flood relief for the City, it has cut off many of the historic side channels. While Duncan, as an urban area, does not have a large number of significant natural, ecological or environmentally sensitive areas remaining, there are a number of areas of natural habitat and native vegetation that require protection from development. Development pressures continue to threaten these remaining areas.

Invasive species are causing problems in the many parts of the region. They need to be a priority because they have the ability to establish quickly and easily, and spread rapidly when introduced to a new site. Their effects can be devastating, permanently altering the landscape.

Many species of raptors (birds of prey) have been adversely affected by urban and rural land development in British Columbia. However, raptors can often coexist with people in human-modified landscapes if certain practices are adopted. Preserving and managing raptor habitats within urban and rural landscapes benefits more than just the birds. Many of the habitat features required by raptors add aesthetic and market value to real estate developments, and the presence of wildlife, including raptors, enhances the quality of life for residents.

The City of Duncan obtains its drinking water from the Lower Cowichan River aquifer, a natural underground water reservoir that provides excellent water quality. Contamination of the aquifer is of concern. For several reasons, the Cowichan River aquifer is particularly vulnerable: the groundwater lies only a few metres below the ground surface, which means that contaminants need to travel only a short distance through the soil to reach it; the layer protecting the groundwater from the upper surface consists primarily of highly permeable gravel and sand which allows rainfall to seep quickly through the pores of the coarse soil carrying contaminants from the surface to the aquifer below.

**Objectives**

- To minimize the impact of development on all protected areas.
- To monitor closely, all phases of development in areas that could impact protected areas.

**Guidelines      General (applicable to all Protection Areas)**

Protection areas represent areas within this DPA that are of ecological value and that are susceptible to disturbance.

- Protection Areas should be maintained free of *development* and conserved in a natural vegetated state, except as allowed under a development permit issued in accordance with these Guidelines.
- Development permit applications must make every effort through site design to avoid or minimize encroaching into *protection areas* and to avoid impacts on their *natural features, functions and conditions*.
- Consideration will be given to requiring applicants to provide, at the applicant's expense, a report, certified by a professional with experience relevant to the applicable matter. Such information or studies should consider the effect of the proposed development on one or all of the following, according to their relevance for the specific proposal:
 

○ soil cover	○ natural drainage systems
○ slope stability	○ quality and quantity of surface water and groundwater systems
○ natural vegetation	○ adjacent land uses
○ fish, avian and wildlife habitat	○ archaeological sites
	○ other environmental concerns
- Boundaries of protection areas should be physically located on the ground by an appropriately qualified professional prior to any site development or other disturbance.
- Temporary barrier fencing should be installed along these boundaries prior to any development activities, to demarcate the area of no disturbance.
- Where possible, protection areas should be protected through dedication, conservation covenant or other provisions acceptable to the Approving Officer.
- The City may require that the implementation of required environmental mitigation, restoration or enhancement measures approved under a development permit be monitored by an appropriately qualified professional.

**Protection Areas – Indigenous Species****Guidelines**

- A development permit must be applied for, and issued by the City of Duncan where the following conditions apply:
  - the retention of existing species (apart from invasive species) to minimize disruption to habitat; and,
  - the replacement of indigenous species where an area has been cleared.
- Replacement with indigenous species is preferred, particularly (but not limited to) along the river corridor and near the aquifer. Plant species should be selected for drought resistance, and/or be native to the area, and have value to wildlife habitat.
- *The following list of examples of invasive species is provided as a guideline only – other species not listed may also be included on completion of an*

*invasive species strategy by the City.*

- Purple loosestrife
- English ivy
- Dalmatian toadflax
- Scotch, English and Spanish broom
- Invasive clematis
- Traveller's joy
- English hawthorn
- Sweet vernal grass
- Daphne
- Oxeye daisy
- Giant hogweed
- Japanese and Himalayan knotweeds
- Himalayan blackberry
- Night flowering catchfly
- Hedgehog dog tail
- Orchard grass
- Common velvet grass

**Protection Areas - Raptor Habitat****Guidelines**

- A development permit must be applied for, and issued by the City of Duncan for raptor habitat areas.
- Development should not adversely impact raptor habitat features, including nest sites, foraging areas, roosting sites and surrounding protective buffers.
- Development Permits will be required in these areas for activity including construction, subdivision, land clearing, land grubbing, soil removal, soil deposit and tree removal.
- Developers are required to conduct a thorough site assessment during the course of site assessment or development to identify nest trees and other habitat features. The location of known nest trees are shown in the *Cowichan Valley Environmental Planning Atlas*, but as this inventory is ongoing, there may be important trees which have not yet been identified and developers are required to notify the City of these nest trees.
- Nest tree protection areas may be required to: remain free of development and in a naturally vegetated state; be free of disturbance; and subject to noise control (e.g. blasting) during the breeding season.
- Reference should be made to the BC Ministry of Environment *Best Management Practices for Raptor Conservation during Urban and Rural Land Development in British Columbia*.

**Protection Areas - Aquifer Protection****Guidelines**

- A development permit must be applied for, and issued by the City of Duncan, prior to any of the following activities being established:
  - auto repair shops, car washes, dry cleaning establishments, laboratories, landfills, gas stations, manufacturing facilities, recycling facilities or waste treatment and storage facilities, and, transfer stations;
  - any business that involves the use and storage of chlorinated solvents, petroleum hydrocarbons, organic liquids and pesticides and preservatives, or any other hazardous or regulated chemicals.
- Prior to obtaining approval to operate, the submission of an Aquifer Protection Plan, prepared by a recognized geotechnical expert in groundwater protection, must be submitted. The Plan should contain the following

information:

- (a) An assessment of the relationship of the proposed property development to the aquifer, using known geological, hydro geological and geotechnical information;
  - (b) An assessment of the potential for contamination and the expected results should an accident or leak occur;
  - (c) Identification of appropriate groundwater protection measures;
  - (d) Design and implementation of a groundwater monitoring program;
  - (e) Spill response, fire and contingency plans, including a contingency fund.
- During construction, the creation of any building piles and test holes drilled for geotechnical purposes must be reported to City authorities, and must be properly sealed upon completion, to mitigate the migration of contaminants to the aquifer.
  - Land stripping, excavations, ditching and trenching should be minimized. Extensive excavation activity should be carefully conducted in consultation with a geotechnical engineer.

## RIPARIAN AREAS

**Definitions** For the purposes of this Development Permit Area, the terms used herein have the same meaning that they do under the *Riparian Areas Regulation* (BC Reg. 376/2004).

**Justification** The Province of British Columbia's *Riparian Areas Regulation (RAR)*, under the *Fish Protection Act*, aims to protect riparian (waterside) habitat. Riparian Areas, associated with creeks and rivers are an important component of aquatic ecosystems and perform several key functions. Riparian areas filter contaminants from surface runoff and prevent erosion, shade surface waters and maintain cool water temperatures, provide wildlife habitat and corridors, and are an important food source for fish, aquatic invertebrates, birds and wildlife.

Their existence in a relatively undisturbed state helps to maintain a healthy, sustainable waterway. Disturbance of a riparian area may jeopardize delicate ecosystems and may lead to potential land erosion, slope instability, and flood risk. This Development Permit Area aims to restrict activities within the riparian area for the purposes of habitat protection, minimizing erosion and sedimentation and associated nutrient enrichment downstream to maintain long-term waterway health.

**Applicability** The Province of British Columbia's *Riparian Areas Regulation (RAR)* requires that residential or commercial development as defined in the *RAR*, near freshwater features, be subject to an environmental review for:

- (a) a 3:1 (vertical/ horizontal) ravine less than 60 m wide, a strip on both sides of the stream measured from the high water mark to a point that is 30 m beyond the top of the ravine bank, and
- (b) a 3:1 (vertical/ horizontal) ravine 60 m wide or greater, a strip on both sides of the stream measured from the high water mark to a point that is 10 m beyond the top of the ravine bank.

**Guidelines**

- A development permit must be applied for, and issued by the City of Duncan, prior to any of the following activities occurring in a Riparian Assessment

Area, where such activities are directly or indirectly related to existing or proposed residential or commercial land uses in any Zone or Land Use Designation:

- (a) removal, alteration, disruption or destruction of vegetation;
  - (b) disturbance of soils;
  - (c) construction or erection of buildings and structures;
  - (d) creation of nonstructural impervious or semi-impervious surfaces;
  - (e) flood protection works;
  - (f) construction of roads, trails, docks, wharves and bridges;
  - (g) provision and maintenance of sewer and water services;
  - (h) development of drainage systems;
  - (i) development of: utility corridors;
  - (j) subdivision as defined in Section 872 of the *Local Government Act*.
- Prior to undertaking any of the development activities listed above an owner of property within the designated area should apply to the City of Duncan for a development permit, and the application should meet the following guidelines:
    - (a) A qualified environmental professional (QEP) will be retained at the expense of the applicant, for the purpose of preparing a report on the riparian area pursuant to the RAR Assessment Methodology guidebook. The report will be submitted to the Ministry of Environment, Fisheries and Oceans Canada and the CVRD;
    - (b) Where the QEP report proposes a Harmful Alteration, Disruption or Destruction (HADD) to fish habitat pursuant to Section 35(2) of the *Canada Fisheries Act*, the development permit shall not be issued unless the HADD is subsequently approved by Fisheries and Oceans Canada. In order to apply for a HADD, the City of Duncan would have to express its support in principle for the HADD, and identify the context (from the QEP report);
    - (c) Where the QEP report describes an area designated as Streamside Protection and Enhancement Area (SPEA), the development permit will not allow any development activities to take place therein, and the owner will be required to provide a plan for protecting the SPEA over the long term through measures to be implemented as a condition of the development permit, such as:
      - a dedication back to the Crown Provincial,
      - gifting to a nature protection organization (tax receipts may be issued),
      - the registration of a restrictive covenant or conservation covenant over the SPEA confirming its long-term availability as a riparian buffer to remain free of development;
    - (d) Where the QEP report describes an area as suitable for development with special mitigating measures, the development permit will only allow the development to occur in strict compliance with the measures described in the report. Monitoring and regular reporting by professionals paid for by the applicant may be required, as specified in a development permit;
    - (e) If the nature of a proposed project in a riparian assessment area evolves

due to new information or some other change, the QEP will be required to re-assess the proposal with respect to the SPEA;

- Wherever possible, QEPs are encouraged to exceed the minimum standards set out in the *RAR* in their reports.