

Proposed changes to Tree Protection & Management Bylaw



City of Courtenay
June 15, 2016

Presentation outline

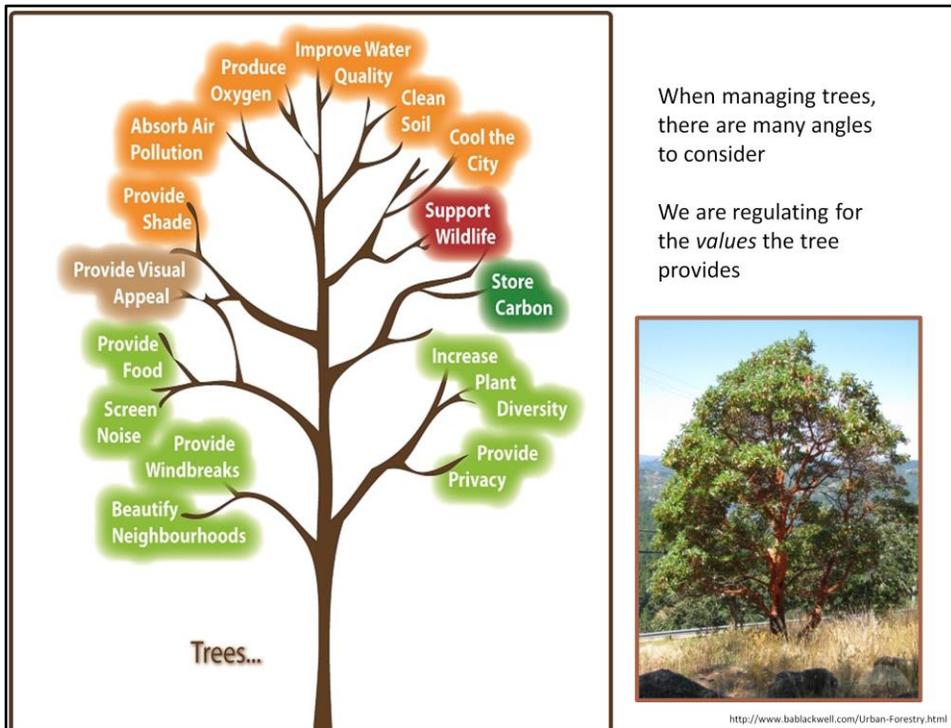
- Why consider managing and protecting trees
- Values trees provide
- Bylaw overview
- What we've heard so far
- Q&A



Why manage trees in the first place?

- Under the *Community Charter*, municipalities in B.C. have the ability to regulate trees
- OCP and RGS provide many references to the community's desire to protect and plant trees
- OCP states a review of the Tree bylaw will occur

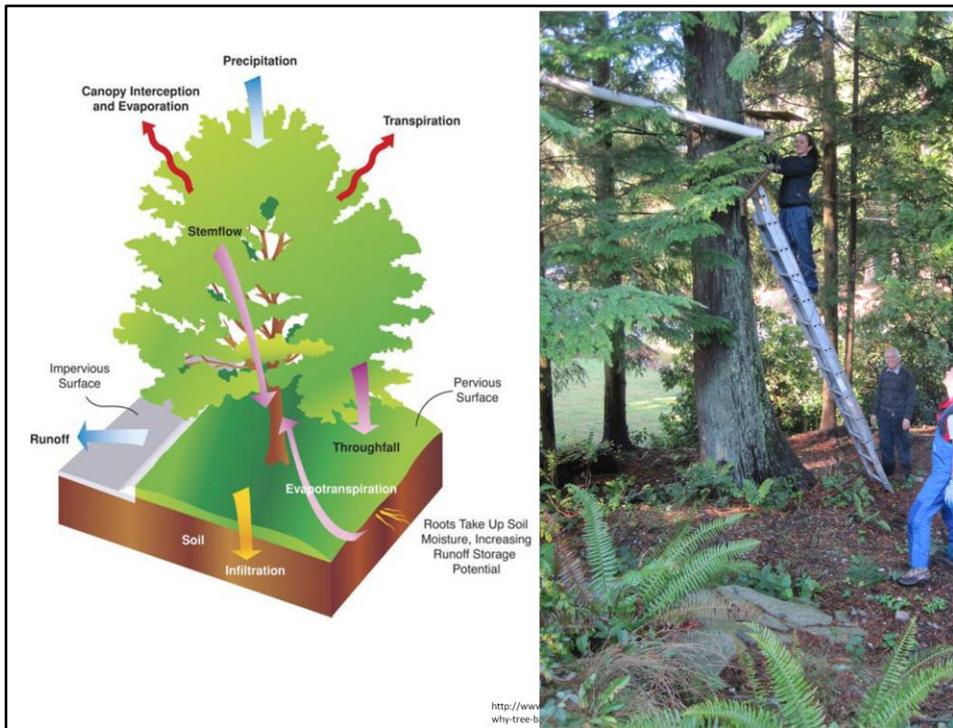




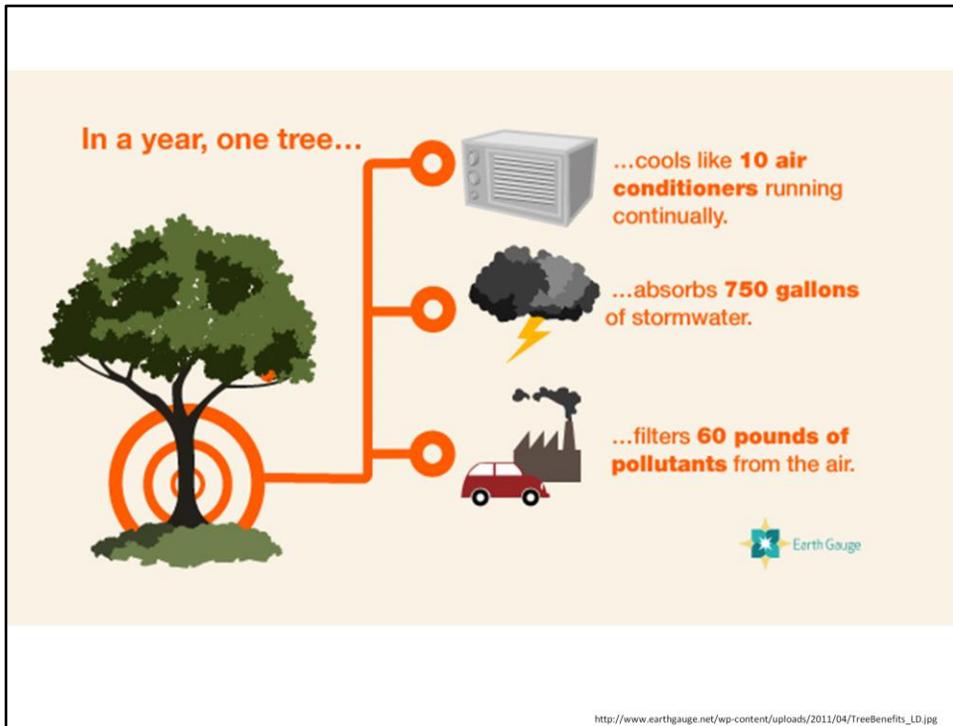
- Serve as infrastructure – water, utility bills, air quality
- Create an enjoyable environment – uniqueness, beauty, play
- Some argue that trees are very useful type of crop to have around – food, materials. Community self-sufficiency and resilience philosophies.



- Stormwater – conifers are especially valuable at this.
- Shade – deciduous trees especially good at this, particularly if planted in the south and west so that they can let light in in the winter when they have no leaves, and can provide shade in the summer.
- Windbreak – less important here than in prairies, but may still have some application here – can prevent heat loss from low insulated walls.
- Pollutants – we learned this past winter that we have an air quality problem in the valley during certain times of the year.

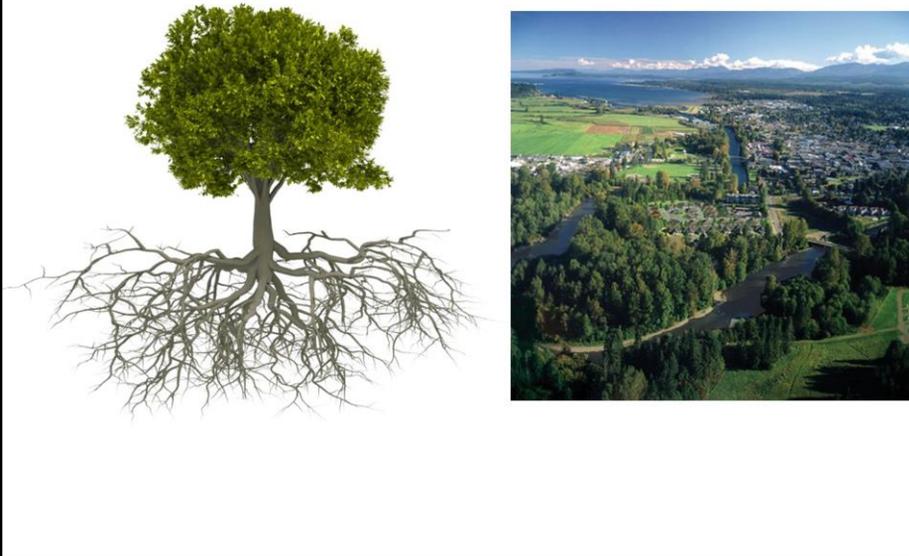


- Trees can play a helpful role in supporting more traditional forms of stormwater/rainwater infrastructure (drainage)
- Managing water is a huge issue in our community – too much in the winter (flooding), too little in the summer (drought). Having ‘living green things’ around can help to ‘buffer’ these extremes in seasonal climate conditions.
- Trees hold a lot of water – physically – during rain events, and help to transpire.... Which is also helpful during droughts as they can pull water from deep in the soil and create a moderated micro-climate around them. Cooling from shade, but also from the tree breathing.

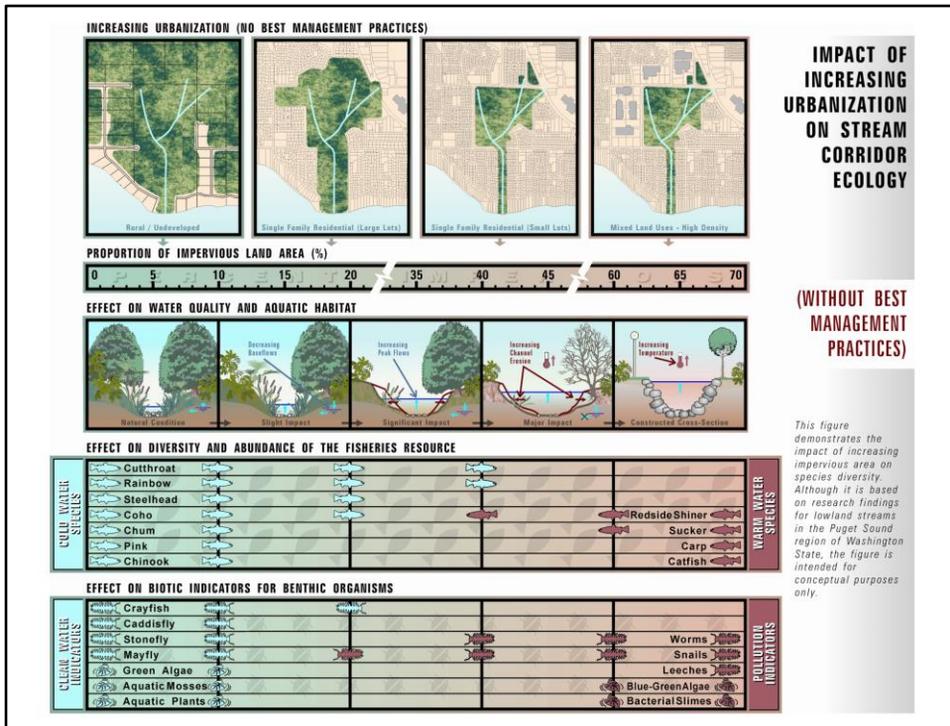


We're starting to quantify their benefits to justify why they're a part of our urban infrastructure like roads or pipes.

Important to remember that trees are alive, and are part of living ecosystems



- Not only do trees do work for us, they also have requirements because they are living things.
- Their health can become compromised during development.
- People might forget that the root mass is critical to maintain, and existing drainage patterns that the tree would have adapted to.
- Living with a tree is a relationship like any other.



- Trees are part of larger landscape scale living systems – ecosystems.
- Together, forested areas can help to preserve stream ecosystems. These images are showing that as a community develops with more impervious surfaces (roads, driveways, rooftops), that stream complexity, native biodiversity and productivity decrease. At the same time, temperatures and pollutant loadings increase. Effects of forestry are well known on salmon populations when it was learned that what happens on the land is essential to fish survival and reproduction in particular – urban fish need healthy streams too.
- This is not to say that trees alone can save urban streams, but their very presence ensures that there are permeable surfaces, shade, and water retention and slow release over an entire watershed.

COLLEGE of the ENVIRONMENT School of Environmental and Forest Sciences UNIVERSITY of WASHINGTON

Human Dimensions of Urban Forestry and Urban Greening

featuring research on peoples' perceptions and behaviors regarding nature in cities

Green Cities: Good Health
human health & well-being research

Projects Director
Kathleen L. Wolf, Ph.D.

Nature and Consumer Environment
Research about how the urban forest influences business district visitors.

Trees and Transportation
Studies on the value of having quality landscapes in urban roadsides.

Civic Ecology
Studies of human behaviors and benefits when people are active in the environment.

Policy and Planning
Integrating urban greening science with community change.

Urban Forestry and Human Benefits
More resources, studies and links . . .

Human Dimensions of Urban Forestry and Urban Greening

Policy & Planning

Other pages present research on human response to city trees, urban forests and green spaces. Our knowledge of the benefits and functions of trees in built places has grown substantially in recent years. Yet there is a gap in general public awareness of this information, and integration of the knowledge into local government policy and planning. This page considers science and policy issues for better urban forestry planning in communities.

Studies, Papers & Information

Metro Nature for Human Health and Wellness

Metro nature is a term that captures the diverse and complex natural and ecological elements in cities, including patches of native landscapes, gardens and other cultural landscapes, urban farms, and the urban forest. A science review, *Green Cities, Good Health*, shares the results of thousands of peer-reviewed publications about the associations between metro nature and human health and wellness. Building on the article database, our team is now sharing other analyses and ideas about the role of metro nature for urban quality of life - including economic valuation.

- Wolf, K.L., M.K. Meesele, S.C. Grado, A.S.T. Robbins. 2015. Economic values of metro nature health benefits: A life course approach. *Urban Forestry and Urban Greening* 14, 694-701 ([link](#)).
- Wolf, K.L., A.S.T. Robbins. 2015. Metro nature, environmental health, and economic value. *Environmental Health Perspectives* 123, 5390-4 ([link](#)).
- Wolf, K.L., and C. Vondrasek. 2014. Technologies for Metro Nature Health Benefits Mapping. Seattle: University of Washington. ([link](#)).
- Wolf, K.L., & E. Housley. 2014. Reflect and Restore: Urban Green Space for Mental Wellness. Annapolis MD: TKF Foundation, 12 pp. ([link](#)).
- Wolf, K.L., & E. Housley. 2014. Environmental Equality: Providing Healthy Nature for Everyone. Annapolis MD: TKF Foundation, 16 pp. ([link](#)).
- Wolf, K.L., & E. Housley. 2013. Feeling Stressed? Take a Time Out in Nature. Annapolis MD: TKF Foundation, 6 pp. ([link](#)).
- Wolf, K.L. 2011. Green Cities for Good Health: A Tool for Urban Forestry Advocacy. *City Trees*. Journal of the Society of Municipal Administrators, 7, 2: 5-15. ([link](#) - or - [link](#)).
- Wolf, K.L. 2005. Metro Nature Services: Functions, Benefits and Values. pp. 294-315. In: S.M. Wachter and S.L. Birch (Eds.), *Growing Greener Cities: Urban Sustainability in the Twenty-First Century*. Philadelphia: University of Pennsylvania Press. 416 pp. ([link](#)).
- Wolf, K.L. 2005 (Winter). With Plants in Mind: Social Benefits of Civic Nature. *MasterGardener*, 2, 1:7-11. ([link](#)).

Trees and Community Economic Development

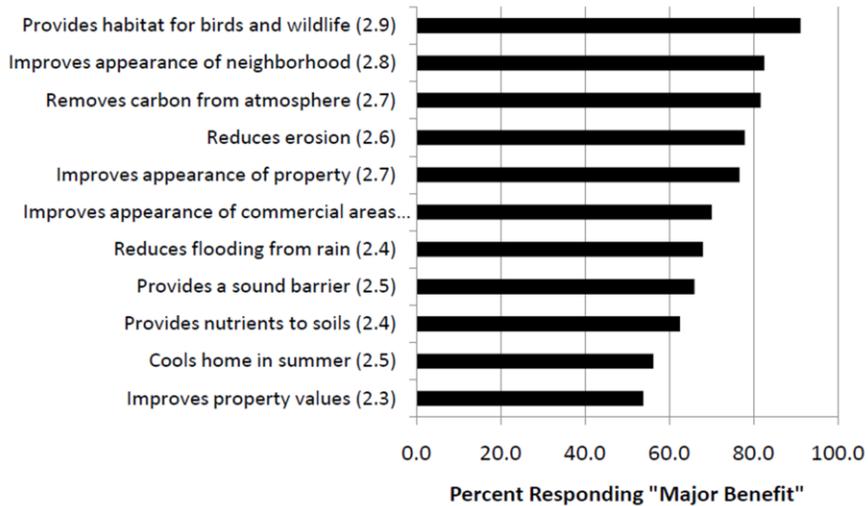
These papers summarize the benefits that trees and forests provide for urban dwellers and the economic valuation of such benefits. Valuation approaches have been devised to assess the

www.naturewithin.info

- Great resource on collection of scientific studies on the values that trees can provide to communities, including people’s perceptions such as healing benefits.
- (How many have heard of the studies that show that people recovering in a hospital who have a view of trees and nature, recover faster than people who don’t?).
- Is a university initiative from University of Washington.

Citizens of Nanaimo: perception of tree values

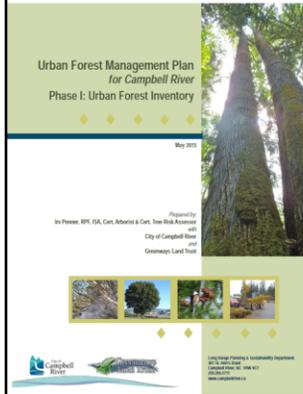
Figure 5. Perceived Benefits of City Trees (Q5)



- I've mentioned a number of values that trees provide: From the utilitarian in terms of treating them like urban infrastructure, from a private property value perspective, and even health and wellness was mentioned.
- Sometimes it's fun to see what our neighbours are up to compare.

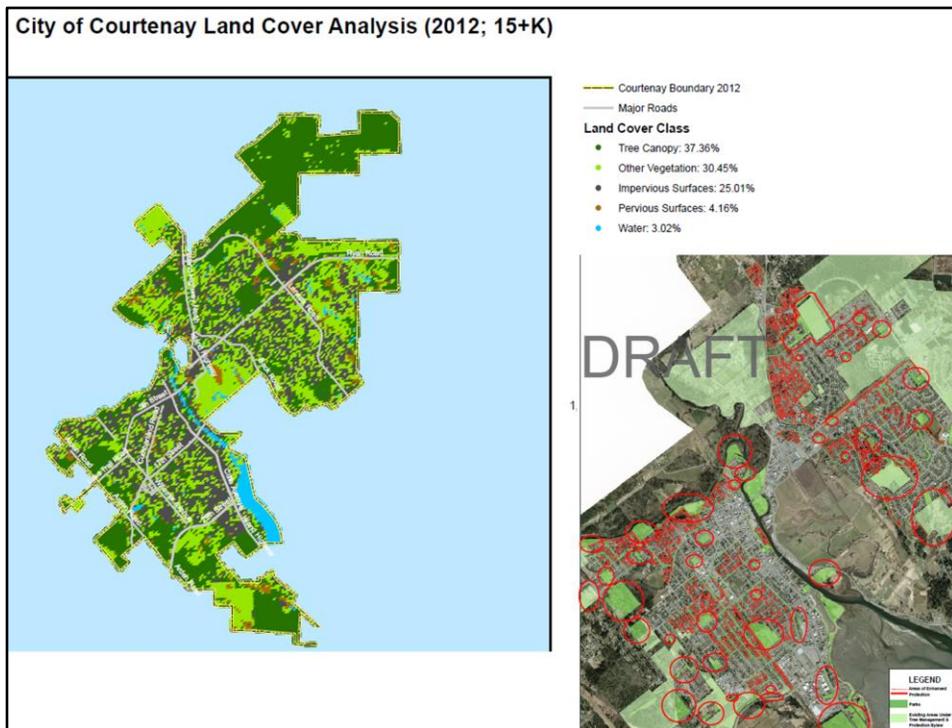
Quantification of benefits is possible

E.g. Campbell River's Urban Forest Inventory



FEATURE	MEASURE
Number of trees	435,000 within the UCA – 2,800 of these are street trees 3.4 million city-wide – 109 trees per person
Canopy cover	33% in the UCA 58% city wide
Increase canopy cover	A 1% increase in the UCA would require planting of 31 ha with ~25,000 trees
Plantable spaces	There is almost 15 ha of plantable spaces within municipal parks
Most common tree species	In UCA natural areas and parks: Douglas-fir (in the evergreens, 7 species total) red alder (in the deciduous trees, 12 species total)
Most common street tree species	Flowering cherry, red maple, Norway maple, katsura (33 species total)
Annual street tree values	Benefits: \$67 per tree – total \$187,600 Average cost: \$17 per tree Net benefit: \$50 per tree – total \$161,600 Replacement value of street trees: \$2,240,400
Carbon sequestered annually	2,940 tonnes in the UCA – 426 tonnes by street trees 28,200 tonnes city wide
Corporate GHG emissions	1,511 tonnes CO ₂ e (2012)
Community GHG emissions	181,356 tonnes CO ₂ e (2010)
Total carbon stored	100,000 tonnes within UCA – 600 tonnes in street trees 982,000 tonnes city wide
Stormwater runoff reduction	3,785 litres annually per tree 1.6 billion litres within the UCA
Air quality	60% reduction of fine particulate air pollution by street trees
Business benefits	9-12% increased spending in well-treed commercial areas
Real estate values	1-5% increase for trees in front yard landscaping 6-9% increase for neighbourhood tree cover
Energy savings	10-15% residential heating savings from wind reduction 30% saved on air conditioning costs from shade trees

- Our neighbours to the north have recently released a study that shows the value of Campbell River's urban forest from a quantification of values perspective.
- Campbell River does not yet have a Tree Protection and Management Bylaw, but they recognize that urban forest inventory is a first phase towards achieving that.



- The City does not have an urban forest strategy, and this bylaw review exercise is not intended to be an urban forest strategy, but we have done some preliminary analysis of urban canopy cover, which is one metric used to understand the urban forest.
- Preliminary analysis (DRAFT) suggests that based on 2012 aerial imagery that the overall City wide canopy cover is approximately 37%. This appears to be a respectable number when we compared to other pacific coast communities of comparable size. Many communities do aim for a higher target however – in the 40%+ range.
- The Local Area Plans are all asking for more tree retention – Old Orchard, Arden Corridor, South Courtenay, Sandwick, Mission.
- One of the questions in the survey is about if you support an urban forest strategy which would allow us to understand Courtenay’s tree resources as a system better.

The key changes proposed in the new Bylaw include:

- ✓ Setting a target number of trees that must be retained or replanted on all properties, depending on property size;
- ✓ Applying the bylaw to all lands within the City, and including more species under special protection;
- ✓ Different permit fees and security requirements.





The City is proposing an approach to tree management that aims to:

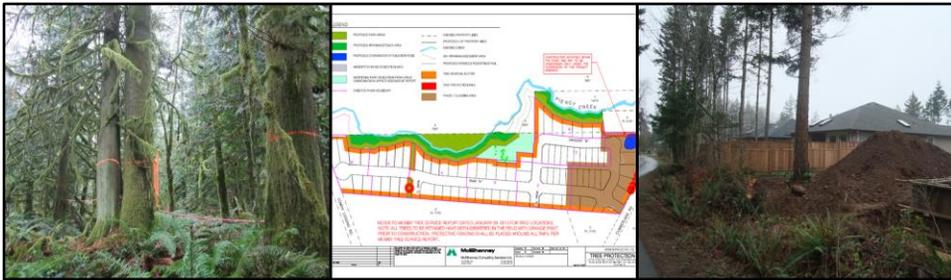
- Retain and protect trees where it is safe and feasible to do so, and
- Require replacement trees when a tree is not safe or reasonable to retain including the option to pay into a Tree Replacement Fund for planting programs on other lands.

By setting a target number of trees for each property, the applicant, City staff and the community can understand what is expected for each property before someone applies to have a tree removed.

Zone	Where are examples of this Zone in Courtenay?	Minimum lot size	Number of trees that would be required
R-1, Residential One	Much of east Courtenay	650m ² (approximately 0.16 of an acre, a small urban lot)	3
R-2, Residential Two (allows secondary residences in some instances)	Much of west Courtenay	750m ² (approximately 0.2 of an acre)	4
RR-2, Rural Residential Two	Adjacent the Courtenay cemetery	1250m ² (approximately ¼ acre)	6
RR-5, Rural Residential 5	Headquarters Rd. near Vanier School	4000m ² (approximately 1 acre)	20



$$\text{Size of your property (in square meters)} \times 0.005 = \text{Number of trees required}$$



Is it appropriate to use the same target-based approach for new developments as it is for existing neighbourhoods?



- Greenfield developments (new subdivisions) are an opportunity to preserve trees as part of larger connected ecosystems.
- Existing neighbourhoods are opportunities to identify trees of particular beauty, or specimen quality.
- These are different contexts and preliminary findings from the survey are indicating that survey participants are interested in taking a more ‘design’ approach to greenfield development that aims to retain clusters of trees that make sense in an overall park and ecological context.

Protected Species

Garry oak and Pacific dogwood trees are designated protected species under the current Bylaw. This means that only under very rare circumstances can these trees be removed such as hazardous condition or if they are preventing a landowner from developing to their allowed zoning.

The species listed below are proposed to be added to the protected species list because they are native and currently rare in the community and may be at the northern extent of their range, thus providing important genetic diversity to changing climate conditions.

The survey asks if you support the species listed below being added to the protected species list.

Garry oak (*Quercus garryana*)



Pacific dogwood (*Cornus nuttallii*)



The City is proposing that the following species be added to the protected species list:

Arbutus
(*Arbutus menziesii*)



Western white pine
(*Pinus monticola*)



Trembling aspen
(*Populus tremuloides*)



Pacific yew
(*Taxus brevifolia*)



Proposed application fees, security requirements and fines for illegal activities

	Tree Cutting Permit Fees	Protection Securities	Tree Replacement Securities	Penalties																
Current Bylaw	\$250 for the permit and an additional \$5 for every tree removed.	None	<p>When replacement trees are required, an applicant must submit a replacement security (\$250/new tree) to ensure that the applicant plants the required replacement tree.</p> <p>Upon planting, the City returns 80% of the security and the remaining 20% is held by the City for 3 years to ensure successful establishment of the tree.</p>	<p>\$1000 ticket per tree removed without a permit</p> <p>or</p> <p>up to \$10,000 per tree if successful prosecution in court.</p>																
Proposed Bylaw changes	<p>Sliding scale fee structure, reflecting that not all tree cutting and management situations are the same:</p> <table border="1" style="width: 100%;"> <tr> <td>Single family lots up to 1000m² (approximately ¼ acre) or only two trees removed on any sized lot:</td> <td style="text-align: center;">\$50</td> </tr> <tr> <td>Single family lots between 1000m² and 4000m² (between ¼ and 1 acre):</td> <td style="text-align: center;">\$100</td> </tr> <tr> <td>Larger lots, and new multi-lot subdivisions:</td> <td style="text-align: center;">\$250/acre</td> </tr> <tr> <td>Hazardous tree removal:</td> <td style="text-align: center;">No fee</td> </tr> </table> <p>The \$5 fee for each tree removed would also not apply.</p>	Single family lots up to 1000m ² (approximately ¼ acre) or only two trees removed on any sized lot:	\$50	Single family lots between 1000m ² and 4000m ² (between ¼ and 1 acre):	\$100	Larger lots, and new multi-lot subdivisions:	\$250/acre	Hazardous tree removal:	No fee	<p>The City is considering requiring a protection security fee of \$1000 per tree, when conducting development close to a protected tree. The protection security would be returned upon proof that the tree was not damaged during adjacent development activities.</p> <p>This is suggested as best practice because tree protection fencing can fall apart over time, and can be removed. Some other communities in B.C. require a protection security.</p>	<p>Security fee increase from \$250 to \$300 to reflect the current costs of purchasing and installing a tree.</p> <p>Returning 100% of the security fee 1 year after planting rather than in two installments 3 years apart.</p> <p>The option to pay into the Tree Planting and Replacement Fund would also be available to applicants in some circumstances.</p>	<p>The proposed Bylaw would add more activities that are subject to ticketing:</p> <table border="1" style="width: 100%;"> <tr> <td>Cutting or damaging without a permit:</td> <td style="text-align: center;">\$1000/tree</td> </tr> <tr> <td>Failure to install and/or maintain protection fencing:</td> <td style="text-align: center;">\$250/tree</td> </tr> <tr> <td>Failure to replant a tree:</td> <td style="text-align: center;">\$350/tree</td> </tr> <tr> <td>Remove remains of tree prior to investigation:</td> <td style="text-align: center;">\$250/tree</td> </tr> </table> <p>If pursued through the courts, the up to \$10,000 per tree penalty would remain a penalty option.</p>	Cutting or damaging without a permit:	\$1000/tree	Failure to install and/or maintain protection fencing:	\$250/tree	Failure to replant a tree:	\$350/tree	Remove remains of tree prior to investigation:	\$250/tree
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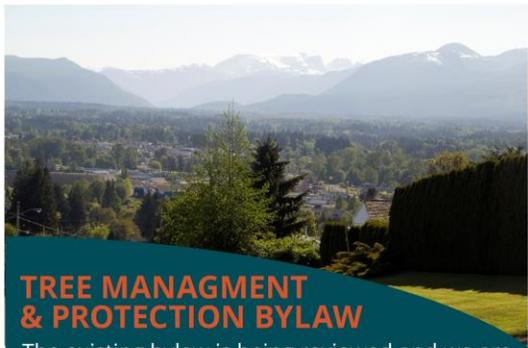
The Survey asks if you support the sliding scale fee structure and protection securities.

(some) of what we're hearing so far...

- Questions about species – protecting and prohibiting
- More educational resources requested
- Light access for food growing is important
- Conflict with density a concern
- Clarity on reasons for removal desired
- Multi-lot subdivisions and existing neighbourhoods are not the same
- Importance of tree size emphasized
- Application fees – cost/benefits of too high vs. too low
- Want to see urban forest achieved through taxation



Questions and Discussion



TREE MANAGEMENT & PROTECTION BYLAW

The existing bylaw is being reviewed and we are seeking public input.

Wednesday June 15th, 5:00 pm to 7:30 pm
Evergreen Lounge, Florence Filberg Centre

Staff will give a presentation at 6:00 pm followed by a question and answer session.

Tuesday June 21st, 12:00 pm to 2:00 pm
Courtenay Library

Staff will be available to discuss the proposed bylaw changes.

Fill in the survey online at www.courtenay.ca/trees or in person at the City of Courtenay and be entered into a prize draw for a slow-release tree watering bag.

Please tell your friends!



Development Services | 250-334-4441 | planning@courtenay.ca
courtenay.ca/trees

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