URBAN FORESTRY

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Key Topics

- What is sustainable urban & community forestry and why is it important?
- What are the **benefits** of urban/community forests to society (ecosystem services).
- What are the **costs** associated with urban/community forests?
- What is an **urban forest management** plan is and why is it an essential tool?

What is Urban & Community Forestry?

The planting and care of trees in human settlements.

Urban and community forests broadly include:

- urban parks
- street trees
- landscaped boulevards
- public gardens
- greenways
- nature preserves
- shelter belts of trees

Why are urban forests important?

They provide a variety of benefits to society which we call ‘ecosystem services’.

Ecosystem services are services provided by the environment, free of charge.

- Social benefits
- Environmental benefits
- Economic benefits

Categorizing ecosystem services

- **Direct use**- selling goods from the ecosystem
- **Indirect use**- Aspects of biodiversity that provide economic benefit to people but are not harvested or damaged during use (protection of water and soil)
- **Optional values**- the potential to provide an economic value in the future (future medicines, genetics strains, new chemicals).
- **Existence value-** the value of just knowing something is there or not extinct

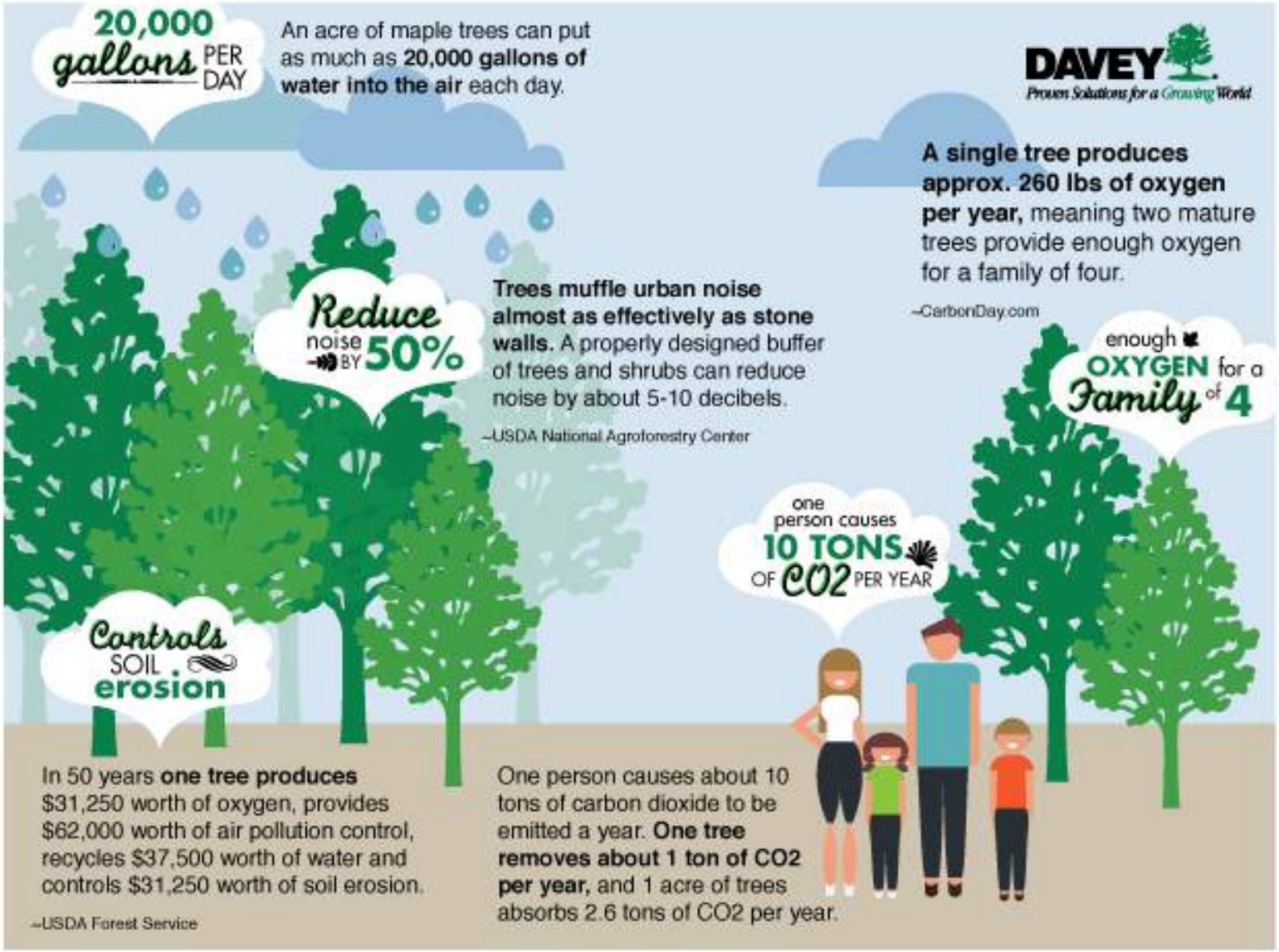

Image taken with permission from Davey Tree

Benefits provided by Urban Forests

- Soil quality
- Noise abatement
- CO_2 sequestration
- Air quality

- Local climate + energy costs
- Water flow and quality
- Wildlife and biodiversity
- Real estate and business
- Individual well-being and health
- Community well-being

Stormwater & Street Trees

- Capturing and storing rainfall in their canopy and releasing water into the atmosphere.
- Roots and leaf litter – infiltration of rainwater to soil
- Slow down and store runoff and reduce pollutants by taking up nutrients and other pollutants from soils and water through their roots.
- Trees transform pollutants into less harmful substances.

Challenges and Costs of Urban Forests

- Insects and disease
- Invasive plants
- Fire risk
- Natural Catastrophic events (wind, ice storms, tornadoes)
- Maintenance fees
- Road salt damage
- Water usage
- Inventory data fees
- Climate change
- Air pollution
- Lack of management capability
- Development pressures

Developing a management plan

- Create a tree board of urban forestry council
- Survey the trees
  - Species
  - Diameter
  - Condition & age
  - Maintenance needs
  - Location (address or GPS info)
  - Growing space
  - Insect or disease problems
- Public relations and education
- Urban forest cost/benefit analysis

Ways to cut costs

- Take a bottom-up approach in collecting field data on vegetation rather than a top-down approach with aerial imagery.
- Employ student labour and volunteers
- Plan long term
- Plant trees with low maintenance
- Choose longer living trees to delay removal
- Preserve existing trees
- Implementing tree requirements into development planning
- Create an equivalent replacement of habitat
- Moving young existing trees
- i-tree

Criteria for selecting urban trees

- Tolerance of local climate
- Transplants easily & has a high survival rate
- Low maintenance (low pruning, low irrigation)
- Insect and disease resistant
- Longer life expectancy
- Native species adapt quickly but non native may be more resistant to local disease

Case Study - Cost

Cost is limited, town council would like to find strategies to do more with less

- Encourage local citizens to form a not for profit
- Assist the start up by advertising for volunteers on the city website
- Get the local Envirothon teams involved with the not for profit
- Host an event to raise awareness and raise some funds too

Case Study- Tree inventory

The city has no information in regards to tree inventory. They need to first learn how many trees they have, the species and their condition.

- Use the core group from the not for profit to learn tree inventory skills
- Use a local arborist or forest consultant to do the training
- Other resources from the International Society of Arborists
- Once training is done then get local citizens and youth to do the inventory with phone apps and use open source Q-GIS to do the mapping

Case Study- Strategy

Strategies need to be developed to improve the future of the urban forest so it is more resilient to exotic pests and invasive species.

- When doing the inventory note all the pests and invasive species
- Look for funding sources the not for profit can get for invasive removal
- Contact the local authorities that deal with pests to get advice on controls
- Pests are often insects so get funding for volunteers to build bird houses and bats boxes that will dine on the pests

Road salt issues

- Salt-tolerant trees (conifers)
- Water soil early to dilute the salt concentration
- De-icing alternative to road salt
- Barriers to prevent salt-spray
- Research soil chemistry to see if there is something to add to the soil to bond to salt

Your ideas?

Case Study - Policy

A tree protection by-law proposal will be drafted to provide greater protection and better management of the town's existing urban forest

- Many communities in North America have already paid to have these by-laws written. Contact communities that have somewhat similar ecosystems and ask for copies of their by-laws
- A first draft of the by-laws can be a cut and paste of the best ideas. This could be done by the not-for profit, assisted by the local Envirothon community
- Have the not-for-profit access funding for an intergenerational project, youth and elders to do the by-laws and other urban forest projects, the catch would be old fashioned wisdom from seniors with high technology from youth.

Thank-you

If you have any questions related to urban forestry, feel free to contact Micha at rbcoffices@gmail.com or the RBC Inc. office at (604) 737-1112