Urban Forestry Education at UBC: A Holistic Program for Future Greenspace Practitioners and Leaders

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Outline

I. Pressures on Urban Foresters
II. Vision for a Holistic Education in Urban Forestry at UBC
III. Proposed Program Structure
IV. Request for Input
Pressures and Demands on Urban Foresters

- Climate change – challenges to forests just when we need them to offset heat, flooding, air pollution, energy costs, etc.
- Rapid urban development and urban population growth
- Fragmentation and loss of biodiversity
- Rising health/psychological demands
- Rise of community engagement
Projected BC warming

Average Temperature Anomalies in BC

Source: PCIC
New impacts – need for cooling

Metro Van 55 degree days

+180 degree days (+330%)

Source: PCIC
UBC’s Vision for Urban Forestry:

• **Holistic/interdisciplinary**: broader than forestry alone – bridging gaps between forestry, arboriculture, and landscape architecture

• **Forest systems level**, more than just street trees

• **Integration** of green infrastructure & urban ecology into planning of new/ retrofitted cities & peri-urban areas

• **Climate proofing our cities**: toward low-carbon resilient communities

• **People-friendly**: health & well-being

• **Interaction with practitioners** & real world projects
Job Outlook in the Urban Forestry Sector
United States (2012-2022)

Data basis: United States Department of Labor 2014
UCEC Research and Teaching Support

- Sustainable resource management and conservation
- Community forestry
- Social science/community engagement/environmental psychology
- Recreation planning and well-being
- Climate change planning/modelling (adaptation and mitigation), including urban heat islands (Geography)
- Remote sensing/LiDAR/GIS/modelling/visualization/crowd-sourcing (MAGIC)
- Wood Science/green buildings/LCA

Credit: John Danahy & Natural Resources Canada
Northshore snowpack & water supply

Average April 1st Snowline

Canadian Global Climate Model 2: A2 scenario

Data: Environment Canada; Visualization: D. Flanders, CALP
Kimberley Adaptation Plan Visioning
Vulnerability modelling & community engagement

Mountain Pine Beetle and fire in the watershed could increase debris flows and accelerate run-off

Climate Change projected increase of winter precipitation, leading to likely flooding
3D LiDAR, carbon modelling, and solar access analysis

Credit: R. Tooke
When suburbs are dense enough to support public transit & walkability, traffic congestion and associated carbon emissions are reduced.
But can we also increase tree canopy to sequester carbon, reduce building energy use, and improve quality of life?

LOW-CARBON, RESILIENT, ATTRACTIVE COMMUNITIES (Lo-CAR)
B.U.F. Degree Themes and Transferable Skills

Transferable Skills

- Community Engagement, Public Education and Communications
- Smart Data and Modelling
- Planning and Design
- Policy, Economics, Legal and Professional Practice & Management
Four Year Program with 2 Minors

Undergraduate Degree Program

Year 1
- Forestry Students

Year 2
- Bachelor of Urban Forestry
  - Minor 1: Urban Greenspace Management

Year 3
- Bachelor of Urban Forestry
  - Minor 2: Landscape and Recreation Planning

Year 4
- MSc MSFM
- MSc Urban Forestry
- MLA or MSc “SCARP”

BSF

BSc Natural Resources Conservation
New Courses Developed for the Program

- Greening the City
- Urban Forests & Well-Being
- Arboriculture Principles & Practice
- Urban Forestry Administration, Policy & Law
- Ecological Restoration
- Green Network Planning (SALA)
- Recreation and Tourism Planning
- Integrated Capstone Studio
- Urban Forestry Field School
Thank you for your attention

Dimensions of urban forestry education

- Urban Ecology
- Climate Change & Sustainability
- Recreation & Human Health
- Community Engagement/Public Education
- Policy, legal & professional practice
- Smart Data & Modelling Tools
- Economy, Business & Management
- Design & Planning (green infrastructure)
- Arboriculture, plant selection & tree management
- Forest Sciences & Management (including disturbance/pests)

Source: adapted from Baumeister 2014

http://www.forestry.ubc.ca/students/undergraduate/prospective/degree-programs/urban-forestry-degree/
Discussion with the audience

1. Feedback on proposed educational programs
2. Priorities for innovative Urban Forestry education and future leaders?
3. Challenges educators will face
4. Do practitioners need continuing education on a regular basis?
5. Do Urban Forestry practitioners need accreditation?