PhD Opportunity: Trees, Biodiversity, and Human Well-Being in a Changing World

Location: Conservation Solutions Hub, Carleton University, Ottawa, Canada
Supervisor: Drs. Vivian Nguyen and John Zelenski in collaboration with Dr. Rachel Buxton
Start Date: Flexible (Summer 2027 preferred)
Funding: Fully funded PhD position in either Biology or Psychology (subject to university admission requirements)

Are you interested in understanding how nature improves human well-being?

We are seeking a motivated PhD student to join an interdisciplinary research project investigating how tree planting and biodiversity influence human health, well-being, and people's connections to nature. This exciting project combines environmental psychology, conservation science, virtual reality, and social science methods to better understand the benefits of nature-based solutions.

The successful candidate will contribute to a large collaborative research program examining how tree planting initiatives deliver ecological and social benefits across Canada and be part of the Carleton Conservation Solutions Hub.

Project Overview

Tree planting is increasingly promoted as a nature-based solution for biodiversity conservation, climate adaptation, and community well-being. While the ecological benefits of trees are widely recognized, we know far less about how people experience tree plantings as they mature from young saplings into established forests.

This PhD project will investigate:

- How tree plantings at different stages of growth affect human well-being
- Whether biodiversity, particularly birds and soundscapes, enhances restorative experiences in nature
- How virtual reality can be used to simulate natural environments and assess human responses
- How people's emotional, cognitive, and physiological responses compare between virtual and real-world environments
- What factors drive feelings of restoration, well-being, and connectedness to nature

Research Activities

The student will lead and contribute to a combination of:

Virtual Reality Experiments

Using Carleton University's Experiential Learning Hub, the student will:

- Design and conduct immersive VR experiments
- Evaluate participant responses to simulated forests at different stages of tree growth
- Examine the effects of biodiversity-rich soundscapes (e.g., birdsong)
- Collect physiological, affective, and cognitive measures of well-being
- Analyze responses from hundreds of study participants

Field-Based Research

The student will:

- Conduct research in tree planting sites across the Ottawa-Gatineau region
- Lead walking interviews with participants in young, intermediate, and mature tree planting sites
- Explore how people perceive, experience, and emotionally respond to different forest conditions

Desired Qualifications

Applicants should have:

- A Master's degree (completed or near completion) in environmental studies, conservation, ecology, psychology, geography, forestry, human dimensions, recreation, public health, or a related field
- Strong interest in human-nature relationships and nature-based solutions
- Experience with social science research methods (surveys, interviews, experiments, or mixed methods)
- Strong quantitative and/or qualitative analytical skills
- Strong experimental design skills
- Excellent written and verbal communication skills
- Experience with statistics, experimental design, physiological monitoring, virtual reality, GIS, or environmental psychology is considered an asset but is not required

What You Will Gain

The successful candidate will receive opportunities to:

- Professional development and networking opportunities through the Conservation Solutions Hub's interdisciplinary community of researchers, practitioners, policymakers, and community leader
- Collaborate with conservation organizations, including Tree Canada

- Develop expertise in environmental psychology, human dimensions of conservation, and nature-based solutions
- Gain experience using cutting-edge virtual reality research technologies
- Publish in high-impact academic journals
- Present research at national and international conferences
- Mentor undergraduate student researchers

About the Lab and the Conservation Solutions Hub

The Hub is a collaborative team of researchers with diverse expertise in conse3rvation science. We focus on co-creating science that drives conservation action.

Dr. John Zelenski's research focuses on the psychology linking natural environments, subjective connections with nature, happiness, and sustainable behaviour. This involves unpacking the ways that people's interactions with nature can prompt well-being and pro-environmental inclinations.

Dr. Vivian Nguyen's research focuses on the human dimensions of environmental management and conservation, including how people interact with and benefit from natural environments. The lab values collaborative, inclusive, and applied research that informs policy and practice.

We strongly encourage applications from candidates from equity-deserving groups, including Indigenous Peoples, racialized persons, persons with disabilities, women, and members of LGBTQ2S+ communities.

How to Apply

Please submit:

1. A cover letter describing your interest in the project and relevant experience
2. Curriculum vitae (CV)
3. Academic transcripts (unofficial copies are acceptable initially)
4. Contact information for two to three academic references

Applications will be reviewed on a rolling basis until the position is filled.

For inquiries, please contact:

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