

SERS Guided Pathway: Ecosystem Conservation & Restoration Sciences

This pathway through the SERS curriculum helps students who are interested in the environmental sciences focus of SERS – SERS is concerned mainly with ecosystem conservation and restoration sciences.

There are relevant Diplomas or Minors that are congruent with this Pathway as well - the Diploma in Ecological Restoration and Rehabilitation, Diploma in Environmental Assessment and Parks Minor would be most relevant to this Pathway.

Regardless of what you earn (a Diploma) or what you bundle (a Pathway), the key thing for you to do is to market yourself in a way that facilitates the life and career you desire. Your CV (or, more simply, resumé) and your social media presence (business cards, v-cards, LinkedIn, blog, website, vlog channel, Instagram, X (Twitter), Facebook and so on) should be designed to reflect who you are and what skills, education, and outlook you offer. These can be tweaked to suit different audiences and purposes and you can change your self-labels to meet the vernacular of different fields.

This Pathway is part of the SERS mission: SERS is a recognized leader in bringing together people who have the vision, commitment, skills and knowledge needed to protect, restore, reform and transform the social and ecological systems that we all depend on. Our faculty and students are united by a desire to work towards a sustainable future.

SERS is distinctive because of our commitment to transdisciplinary teaching, learning and research:

- We're focused on ecologically and socially significant issues at scales ranging from the community to the globe.
- We work within, between and across disciplines and ways of knowing; the knowledge we draw on comes from many sources, perspectives, fields and disciplines rather than just one.
- We work closely with the people who are affected by the issues that concern us to make sure our work is relevant and effective.

Key Faculty Members for Ecosystem Conservation and Restoration Sciences Pathway:

- Christine Barbeau
- Simon Courtenay
- Brad Fedy
- Brendon Larson
- Chantel Markle
- Stephen Murphy
- Maren Oelbermann
- Andrew Trant

**Courses at the Core of the Ecosystem Conservation and Restoration Sciences Guided Pathway
(The companion fast track guide suggests the most obvious path)**

A. Courses that are also required as core courses for the SERS degree:

1. ENVS 178 Introduction to Environmental Research Methods
2. ENVS 200 Field Ecology
3. ERS 202 Natural Resources Ecology
4. ERS 300 Social Ecological Systems Analysis
5. ERS 401 Translational Ecology
6. ERS 403A/B Senior Honours Thesis (with one of the key Pathway faculty as a supervisor)

B, Elective courses key to this Guided Pathway; it is recommended you take at least 8 of these courses (the field and/or technical skills courses are particularly important – these are denoted below):

1. ERS 234 Forest Ecosystems
2. ERS 270 Introduction to Sustainable Agriculture
3. ERS 283 Ontario Natural History: Species and Patterns (*field skills course*)
4. ERS 335 Restoration Ecology (*field/technical skills course*)
5. ERS 337 ReWilding and Ecological Restoration (*technical skills course*)
6. ERS 340 Ecosystem Assessment (*field skills course*)
7. ERS 341 Professional Conservation and Restoration Practice I (*field skills course*)
8. ERS 342 Professional Conservation and Restoration Practice II (*field skills course*)
9. ERS 346 Wildlife Ecology (*technical skills course*)
10. ERS 382 Ecological Monitoring (*field skills course*)
11. ERS 383 Tropical Ecosystems
12. ERS 431 Ecological Consequences of Climate Change
13. ERS 484 Soil Ecosystem Dynamics (*technical skills course*)
14. ENVS 300 Vascular Plants of Southern Ontario (*field/technical skills course*)
15. ENVS 444 Ecosystem and Resource Management in Parks/Natural Areas
16. ENVS 469 Landscape Ecology, Restoration, and Rehabilitation
17. GEOG 181 Designing Effective Maps (*technical skills course*)

C. Other Selected UW Courses Relevant to this Pathway¹:

- BIOL 351 Aquatic Ecology & BIOL 470 Methods of Aquatic Ecology
- BIOL 426 Phycology & BIOL 450 Marine Biology & BIOL 452 Quantitative Fisheries Biology
- BIOL 455 Ecological Risk Assessment and Management
- BIOL 457 Analysis of Communities & BIOL 458 Quantitative Ecology
- ENVS 278 Applied Statistics for Environmental Research
- GEOG 316 Multivariate Statistics
- GEOG 405 Wetlands

¹ Note that many have pre-requisites (and many of these are 1st and 2nd year physical, taxonomy or taxa based courses that are also useful to ecologists) and many are not offered in each year; the more analytical courses, naturally, will be rather math-focused. Many of the physical and analytical GEOG courses and several other BIOL courses are useful for ecology as well.

Key Resources Related to the Pathway²:

- Biohabitats Inc.: <https://www.biohabitats.com/>
- Canadian Land Reclamation Association: <https://www.clra.ca/>
- Canadian Parks and Recreation Association: <https://www.cpra.ca/>
- Canadian Society for Ecology and Evolution: <http://csee-scee.ca/>
- Centre for Applied Sciences in Ontario Protected Areas (CASIOPA); <https://casiopa.ca>
- College of Applied Biology <https://www.cab-bc.org/application-forms-membership/registered-professional-biologist-application>
- Dougan and Associates: <https://www.dougan.ca/>
- Ecological Society of America: <https://www.esa.org/esa/>
- ECO Canada: <https://www.eco.ca/>
- (Ministry of) Environment and Climate Change Canada: <https://www.ec.gc.ca/?lang=En>
- European Ecological Federation: <http://www.europeanecology.org/>
- GoodWork.ca (Environmental Jobs): <https://www.goodwork.ca/jobs>
- NRSI Inc.: <https://www.nrsi.on.ca/>
- North-South Environmental: <https://www.nsenvironmental.com/>
- Parks Canada: <https://www.pc.gc.ca/en/index.aspx>
- Rewilding Europe: <https://rewildingeuropa.com/what-is-rewilding/>
- Society for Conservation Biology: <https://conbio.org/>
- Society for Ecological Restoration: <https://www.ser.org/>
- Society for Ecological Restoration – Ontario Chapter” <https://chapter.ser.org/ontario/>
- Society for Ecological Restoration – UWaterloo Student Association: <https://www.facebook.com/seruwaterloo/>
- Society of Wetland Scientists: <https://sws.org/>
- United Nations Convention on Biodiversity: <https://www.cbd.int/>
- United Nations Global Environmental Facility: <https://www.thegef.org/about-us>
- Workcabin.ca (Environmental Jobs): <http://www.workcabin.ca/>
- @prof_smurph (Stephen Murphy’s twitter feed)
- @chantelmarkle (Chantel Markle’s twitter feed)
- @ajtrant (Andrew Trant’s twitter feed)
- @OelbermannMaren (Maren Oelbermann’s twitter feed)
- @fedy_lab (Brad Fedy’s twitter feed)
- @ers_uw (SERS’ twitter feed)
- @SERestoration (Society for Ecological Restoration’s twitter feed)
- @ESArestore (Ecological Society of America’s twitter feed)
- @SEROntario (SER Ontario Chapter’s twitter feed)
- @CASIOPA_ON (CASIOPA’s twitter feed)

² Several organizations have professional designations you can apply for; the companies listed are ones that were founded by or employ SERS students in great numbers or are ones that have had huge influence in SERS related areas. You can also find these and other environmental job clearinghouses on X or Facebook – a simple search will find a lot of relevant pages and accounts to follow.