

CAMERON COSGROVE

Conservation and Remote Sensing Scientist

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Publications: [ResearchGate](https://www.researchgate.net/profile/Cameron-Cosgrove)



I am an early career ecologist who is passionate about wildlife conservation and land management. I have strong data science and remote sensing that can be used to support evidence based environmental management. I am a published author with peer-reviewed papers on a range of Scottish conservation issues. I have recently finished my undergraduate dissertation in which I mapped and quantified the extent of deforestation across red panda (*Ailurus fulgens*) habitat in the Himalayas. I am now an MSc student in the Integrated Remote Sensing Studio, working on modelling the habitat of the rare Marbled Murrelet (*Brachyramphus marmoratus*) using advanced remote sensing techniques. I will be graduating in spring 2023 and will be publishing this habitat research. Please check out my website for more information and links to my research. I can work in both Canada and the UK.

Key Skills



Excellent ecological and conservation knowledge.
Experienced remote fieldworker (including drone surveys).



Advanced Remote Sensing and GIS skills. Strong data science skills including statistical analysis, data manipulation and visualisation in R.



Excellent communication skills including technical report writing, science communication, teaching, and managing volunteers

Education

2015 – 2019 | University of Edinburgh: BSc Ecological and Environmental Sciences, First Class

- Studies focused on conservation, ecological theory, and using data to inform environmental management.
- My dissertation “Evaluating Forest Loss in Red Panda Habitat between 2000 & 2018” was awarded the R. Stewart McDougall Prize for best bioscience or animal science dissertation in the School of Geosciences.
- Member of the Arctic Research Group Team Shrub.
- I was awarded with The University of Edinburgh Barson Bequest (£1800) to conduct field work in The Yukon, Canada.

2017- 2018 | The University of British Columbia: Study abroad programme, A average

- Courses included, Advanced Ecology, Biomathematics, Biostatistics, Remote Sensing for Ecological Management.

2020 – Spring 2023 (expected graduation) | The University of British Columbia: MSc Forestry, Research Based.

- Member of the Integrated Remote Sensing Studio.
- Research focuses on the use of Airborne Laser Scanning data to inform forest management. Lead researcher on a habitat modelling project predicting forest nesting suitability for Marbled Murrelets in BC using Airborne Laser Scanning (ALS) data. Two peer reviewed publications expected.

- Collaborating closely with the Ministry of Forests on the habitat modeling project.
- Co-author on the paper: “Modeling site index of selected poplar clones using airborne laser scanning data” - Canadian Journal of Forest Research, 2022. doi.org/10.1139/cjfr-2021-0257
- Courses included, Advanced Topics in Conservation Science (A+), Conservation Decision-making and Policy(A+)
- As the term project for Advanced Topics in Conservation Science I worked with two other students and the The Canadian Wildlife Society to produce a report titled “Mapping change in critical habitats using remote sensing and GIS tools” for the CWS. I wrote the remote sensing component. We presented this report to senior management and decision makers in the CWS. Our report was well received and informed the CWS about new habitat monitoring techniques, alongside code to conduct this analysis in Google Earth Engine.

Employment

2014 – 2020 | Alba Ecology: Summer fieldworker

- Conducted a range of surveys including freshwater pearl mussel surveys, upland and woodland bird surveys, butterfly transects, and protected mammal surveys. Most surveys conducted solo in remote upland environments.
- Led on a write up of a 28-page commissioned report for Forestry Commission Scotland.

2018 -2019 | Coding Club: Mentor

- Coding Club is a weekly peer-based workshop where I helped undergraduates, graduates, and faculty develop their R coding skills in a friendly and non-intimidating environment.
- I taught tutorial topics including basic R skills, advanced R skills, data visualisation using ggplot2, data manipulation, and statistical modelling.

2019-2020 | Forest Mapping Intern at the Cairngorms National Park Authority

- Using high resolution air photos and GIS, I mapped the location of every tree and regenerating area for over half of the National Park.
- This work is currently informing reforestation initiatives in the National Park and provides a spatially explicit baseline upon which forest change can be based.

2020-2021 | The University of British Columbia. Graduate Research Assistantship and Teaching Assistant

- Graduate Research Assistantship – Adapted the course Advanced Remote Sensing for Ecosystem Management (Masters level course) for online learning and designed the intro to coding component of the course.
- Lead TA Teaching Assistant (TA) for Advanced Remote Sensing for Ecosystem Management -where I instructed all the computer labs.
- TA for Observing the Earth from Space (First year undergrad level)

Volunteering

2017 | Field assistant for Team Shrub in The Yukon, Canada

- I helped conduct various bird, vegetation, and plant phenology surveys in the boreal forest and tundra, including a four-day expedition to collect plant trait data at the remote Pika Camp.
- I helped organise and run a logistically complex field expedition. This involved planning food provisions for the team, purchasing, and assigning field equipment, data collection rotas, and organising travel plans - all within time and budget.

2013-2016 | EUROPARC Youth+ Council member

- With the help of other youth representatives, I led the creation of The Aiguestortes Declaration (<https://tinyurl.com/AigueDec>) which is the foundation for the recently launched EUROPARC Youth Manifesto.

- I helped run a meet up in Latvia of young people from national parks across Europe. This involved creating activity programmes, idea sharing sessions, and facilitating youth advocacy training.
- I worked with many young people, professionals, and stakeholders during my time on the Council to promote the voice of young people across European national parks.
- I wrote press releases and helped produce promotional resources for Youth+ (e.g. short films and blog posts).

2013 – 2014 | Chairperson of The Highland Youth Parliament

- Helped organise and run two conferences for >100 people a year, to promote youth engagement in politics and youth consultation.
- Engaged with a range of stakeholders to bring about positive change for young people in the Highlands. The issues I worked on included; mental health provisions, LGBT+ inclusion, employment and education opportunities for young Highlanders, and youth led environmental advocacy.

Relevant Skills

Coding, Data, and GIS

- I am experienced R user with 5 years' experience and can competently manipulate and clean large datasets. I have a good understanding of statistical analysis, including regression-based approaches, mixed effect and hierarchical modeling, forest growth modeling, habitat modeling, and telemetry-based animal movement models.
- I work with Github for version control, collaborative coding, and for practicing open science.
- I am very competent working with remote sensing and GIS data. I have experience with a wide range of GIS software (esri products, QGIS, Google Earth Engine, ENVI etc.)

Fieldwork Skills

- I can identify all British birds and terrestrial mammals and have significant experience wildlife watching in the UK and overseas.
- I am a competent navigator and an experienced hillwalker.
- I hold a PADI Advanced Open Water scuba diving certificate
- I have an active Remote Wilderness First Aid Certificate

Publications

- Cosgrove, P., McInnes, N., Dolby, S., Gunn, D., Shields, D., & **Cosgrove, C.** (2017). Forest management and freshwater pearl mussels. *Scottish Forestry*, 71(1), 14–21.
- Cosgrove, P., Shields, D., Anderson, D., Massey, K., **Cosgrove, C.**, & Sime, I. (2022). The Impact of a Drought on Key Freshwater Pearl Mussel (*Margaritifera Margaritifera*) Populations in Scotland. *Journal of Conchology*, 44, 241.
- Cosgrove, P., Shields, D., **Cosgrove, C.**, Farquhar, J., Jarrett, D., Jancke, S., Mitchell, A., & Moggach, R. (2014). Population size, structure and distribution of an unexploited freshwater pearl mussel *Margaritifera margaritifera* (L.) population in Scotland. *Journal of Conchology*, 41, 541–552.
- Cosgrove, P., Watt, J., Hastie, L., Sime, I., Shields, D., **Cosgrove, C.**, Brown, L., Isherwood, I., & Bao, M. (2016). The status of the freshwater pearl mussel *Margaritifera margaritifera* in Scotland: Extent of change since 1990s, threats and management implications. *Biodiversity and Conservation*, 25(11), 2093–2112. <https://doi.org/10.1007/s10531-016-1180-0>
- Tompalski, P., Coops, N. C., Achim, A., **Cosgrove, C. F.**, Lapointe, E., & Brochu-Marier, F. (2022). Modeling site index of selected poplar clones using airborne laser scanning data. *Canadian Journal of Forest Research*, 52(7), 1088–1097. <https://doi.org/10.1139/cjfr-2021-0257>