ASSESSING THE BIODIVERSITY IMPACT OF UBC'S FOOD PROCUREMENT ACTIVITIES

Replicating the Nature Positive Universities framework

Vanessa Amorocho, Amy Bu, Aleah Wong

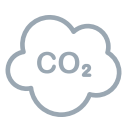
Food production contributes disproportionately to biodiversity decline and is responsible for:

70% of freshwater use

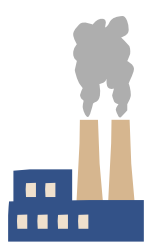
40% of all land converted for ag

90% of deforestation

Large organizations like universities have significant environmental footprints



Oxford's GHG footprint ≈ GHG of Saint Lucia (Caribbean nation)



As a part of the **Nature Positive Universities** global network, UBC has committed to assessing and monitoring its biodiversity footprint

WHAT WE DID

Analyzed data from UBC Food Services

For food procurement in 2022, documenting data availability

Quantified environmental impacts of UBC's food procurement

Using Oxford's assessment methods (Bull et al. 2018, Taylor et al. 2022)

Evaluated replicability of Oxford's framework

And provided suggestions for robust future studies at additional universities

Created recommendations

For UBC to reduce its food-related biodiversity impacts

HOW WE DID IT

1. Matched UBC food products with foods in Oxford's **environmental impacts of food database** using:

open FOOD facts — Poore and Nemecek 2018 database and Clark et al. 2022 methods

2. Calculated **mid-point** impacts

3. Converted to **end-point** impacts using model ReCiPe

Mid-Point Environmental Impacts

- Greenhouse gas emissions
- Land use
- Water use
- Eutrophication
- Acidification (atmosphere)

End-Point Impacts

Cumulative proportion of local species loss as a result of mid-point impacts

RESULTS

- UBC procured the most grocery and beverage products by weight
- Grocery and dairy categories had the highest mid-point and biodiversity impacts
- Meat, poultry and dairy had the highest per-kilo impacts

We were able to replicate Oxford's framework with some **challenges**

- Only 1 year of procurement data
- No consumption or waste data
- Imperfect and/or impossible matches

Land use had the greatest impact on biodiversity loss, led by grocery and dairy

Recommendations:

- Better organization + documentation of procurement data, e.g. groceries → specific categories
- Change RFP for vendors to require more information about food products
- Expansion of food impacts database to increase local nuance
- Engage students on consumption choices, especially re: meat, poultry and dairy impacts
- Investigate the benefits of buying local and/or organic
- Consumption and waste analysis for smarter procurement; analysis of sectors beyond food

Bull, J.W., Taylor, I., Biggs, E., Grub, H.M.J., Yearley, T., Waters, H. & Milner-Gulland, E.J. (2022a). Analysis: the biodiversity footprint of the University of Oxford. Nature, 604, 420–424. **Clark**, Michael, Marco Springmann, Mike Rayner, Peter Scarborough, Jason Hill, David Tilman, Jennie I. Macdiarmid, Jessica Fanzo, Lauren Bandy, and Richard A. Harrington. "Estimating the environmental impacts of 57,000 food products." Proceedings of the National Academy of Sciences 119, no. 33 (2022): e2120584119. **Poore**, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. Science, 360(6392), 987–992. https://doi.org/10.1126/science.aaq0216 . **Taylor**, I., J. Bull, B. Ashton, E. Biggs, M. Clark, N. Gray, H. Grub, C. Stewart, and E. Milner-Gulland. Nature-positive goals for an organisation's food consumption. Nature Food (2023). https://www.nature.com/articles/s43016-022-00660-2