SUSTAINABILITY RESEARCH AND DATA PORTAL

OVERVIEW

From urban biodiversity to food security and climate action, we invite you to explore this Research and Data Portal to learn about sustainability research, data and initiatives happening across the UBC Vancouver campus and potential collaboration opportunities.

This Portal serves as a directory of visual tools and resources that can enable learning about our campus assets, people, place, collaborations, and research.

SEEDS SUSTAINABILITY LIBRARY

View our SEEDS Sustainability Library here (link) to browse through the diversity of interdisciplinary, student-led research projects that use the Campus as a Living Lab. The SEEDS Sustainability Library is a comprehensive repository of applied student research and knowledge. Open access applied research reports contribute to a body of knowledge, learning and action to ignite sustainability ideas, policies and practices, and enable the broader community to learn, apply and build on previous research. Use the search bar to look for keywords, or use the advanced search to browse specific courses, authors and faculty.

INTERACTIVE SUSTAINABILITY VISUAL COLLECTIONS

Interactive sustainability visual collections serve as visual tools to enable learning about

our campus assets, people, place, collaborations, and research. They can foster knowledge exchange to enable greater collective impact in collectively working towards addressing critical societal issues using the Campus as a Living Laboratory.

BIODIVERSITY MAPPING RESOURCES [H2]:

[Insert expander]

The University of British Columbia (UBC) Vancouver campus is host to a multitude of biodiversity assets and ecosystem services. Located along the Pacific Flyway— an important bird migratory route— and neighbouring 800 hectares of second growth forest at Pacific Spirit Park, the Vancouver campus is home to:

UBC Botanical Garden, a living museum of local and international plant species Beaty Biodiversity Museum, a natural history museum with a collection of over 2 million specimens

World-renowned centres of innovative research and education including the Biodiversity Research Centre, the Centre for Sustainable Food Systems at UBC Farm, and the Faculty of Forestry

Learn about urban biodiversity through campus and regional biodiversity data visualization tools below.

UBC Campus Biodiversity Data Hub [H3]

Stewarded by the Campus Biodiversity Initiative: Research and Demonstration (CBIRD), this map provides centralized spatial information and visualizations of UBC's urban biodiversity, as well as research initiatives, groups, people, using a variety of data sources from UBC's Vancouver Campus. These sources include: UBC Vancouver campus landscape data, student-led research facilitated by the SEEDS Sustainability Program, and data visualizations created in collaboration with CBIRD. The Campus Biodiversity Data Hub is a tool to help people learn more about UBC's urban biodiversity, collaborate and share resources, and inform future research opportunities.

[Map: https://experience.arcgis.com/experience/fca927497e9a43cc96a0d2f775d066d5/?draft=true

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How to use the Data Hub:

Main Page

- Need to access campus biodiversity and ecological data? On the bookmark titled “Access Data Resources” users can browse through a number of different open source platforms that contain different types of spatial, ecological, and biodiversity data relevant to UBC’s vancouver campus.
    - Know about a dataset that should be included? Use the qualtrics survey linked at the bottom of the page to provide a name and link to suggested database or platform
- Curious about how to collaborate with urban biodiversity initiatives? Use the bookmark “Biodiversity Knowledge” to learn how to connect with different UBC community members with experience related to campus urban biodiversity and stewardship
- Want to visualize biodiversity on UBC campus? Use the “Maps and Visualizations” bookmark to see the abundance of biodiversity found on UBC’s Vancouver campus.
    - To Navigate between different maps using the arrows in the bottom right corner to view different visualizations created from open access and citizen science data, student-led reports and community resources.
    - Click on the layer bar in the upper right of the 2D map to display or hide a specific map layer.
    - Expand the attribute table in the middle bottom of the map to select/filter/focus attributes shown on the map.

Campus Biodiversity Knowledge Network Map [H3]

Stewarded by the Campus Biodiversity Initiative: Research and Demonstration (CBIRD), and Climate Crisis in Urban Biodiversity (CCUB), this map provides centralized information about people (practitioners, researchers, instructors, students), networks and initiatives [Embed links to Research Priorities and Initiatives [L2] CBIRD, CCUB SC’s and Action Teams, FSP Biodiverse Action team, other networks] connected to urban biodiversity conservation and stewardship.

It’s a tool to help people connect with others, to enable greater collaboration across our campus through bridging efforts across campus operations and academia, helping people connect to work to accelerate action on the ecological crisis, interconnected ecological and climate crises, and eco-human health.

[EMBED MAP]

View our UBC Campus Biodiversity Knowledge Networks.

[Map: https://kumu.io/seedsbiodiversitycoordinator/cbird-stakeholders-and-partners#cbird-stakeh

olders-and-partners]

How to use the map:

User menu:

- To rearrange the map layout, you can click and drag individual circles to new locations.
- If you want to see detailed information on individuals, organizations, or committees on the map, click on the icon to showcase information.
- To view the whole map again, click on the map background to close the information.
- If you want to see an individual, organization, or committees connections hover over the circle to highlight them.
- Curious about how to find a specific individual or organization? Click on the search bar in the upper left of the map.
- If you want to high multiple individuals on the map, use the “tags”, “affiliation”, “element type”, or “connection type” in the top right to filter based on research, professional expertise, or affiliation.
- To hide/show the side bar, press “tab” on your keyboard

Want to learn more, or notice something you want to add/change? Contact seeds.info@ubc.ca

Food System Mapping Resources [H2]:

[Insert expander]

Campus Food System

The UBC Vancouver campus food system is expansive and spans various food system components from food production to food recovery.

Campus Food System Knowledge Network Map [H3]

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Stewarded by the Food Systems Project (https://sustain.ubc.ca/teaching-applied learning/seeds-sustainability-program/ubc-food-system-project) , this map provides centralized information about people (practitioners, researchers, instructors, students) and initiatives [Embed links to Research Priorities and Initiatives [L2] UBCFSP SC +

Action Teams, FSI, other networks] connected to food system sustainability and food security on campus.

It’s a tool to help people connect with others, to enable greater collaboration across our campus through bridging efforts across campus operations and academia, helping people connect to work to accelerate action on the great transition towards a resilient, sustainable, just and secure food system.
Learn more about people and efforts underway at UBC to collectively transform our food systems and get connected with others to share resources, promote, collaborate and innovate on food system sustainability and food security.

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Food Systems Project, UBC’s collaborative,

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Search
New issue

CURRENT VIEW

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CURRENT VIEW tags

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academics, operations, and research to further advance UBC’s food sustainability ideas, plans and practices.

SIZE BY select a field

This map provides centralized information about

people COLOR BY Element Type

(practitioners, researchers, instructors, students) and

initiatives SHAPE BY select a field

connected to food system sustainability and food security on

CONNECT BY select a field

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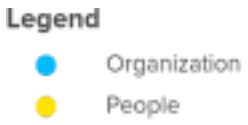
Want to learn more, or notice something you want to add/change? Contact seeds.info@ubc.ca



SWITCH TO ADVANCED EDITOR
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(https://kumu.io/-/213630#map-uVLi6Pat)
(https://kumu.io)

Help

HOW TO USE THE MAP

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VC(HTTP://MAILTO:seeds.info@ubc.ca)

METRO VANCOUVER FOOD ASSET MAP (HTTP://WWW.VCH.CA/PUBLIC HEALTH/NUTRITION/FOOD-ASSET-MAP) [H3]

Vancouver Coastal Health public health dietitians have partnered with Vancouver Neighbourhood Food Networks, North Shore Table Matters Network, Squamish Food Policy Council, UBC Land and Food Systems students and instructors, the City of Vancouver and Fresh Roots to create Food Asset Maps. These Food Asset Maps highlight food related resources located in a selection of local communities in BC's Lower Mainland. Food assets are places where people can grow, prepare, share, buy, receive or learn about food. Community organizations and schools are included on the map they are places where community members can get support with learning and health or connect with others in their community.

DATA DICTIONARIES [H1]

Data Dictionaries support student-led research. From internal UBC data hubs to external citizen science hubs, this section of the document serves as a centralized platform of open data sources. These sources each provide useful download options to support a variety of secondary analysis.

OPEN DATA PORTALS [H2]

National and Regional Data Portals

Metro Vancouver Biodiversity Maps [H3]

UBC's Data Science Institute in partnership with Metro Vancouver created a project to

develop a baseline inventory of Metro Vancouver's species based on data collected via citizen science. Two mapping tools were created using GBIF data. The first mapping tool is an app that organizes biodiversity data by using the nomenclature of the taxonomic tree. Users can create polygons on the map with the hexagon tool in the left of the viewer to explore how many species have been recorded for a given location. Users can also explore whether endangered species are found in a given region of interest.

A second mapping tool plotted species distribution maps that show the probability of occurrence of species in Metro Vancouver. Users can pick a species and evaluate the probabilities of where this species is likely to be found (ranging from 0= not found to 1= 100% probability that it is found in that pixel). Most of the species distribution models were developed for avian species, but other taxa are also included. To browse species, users have to pick their scientific names in Latin from the drop down menu and can also pick the modeling algorithm.

i-Tree Landscape [H3]

i-Tree Landscape is an online database and interactive map that allows you to explore tree canopy information and land cover characteristics in a location of your choosing. The purpose of this tool is to show how trees provide intangible benefits to their surroundings, such as removal of atmospheric carbon dioxide and pollution, stormwater reduction, temperature modification, and more. With the information provided by i-Tree Landscape, you will learn about the benefits of trees in your selected location, and see how planting trees will increase the benefits provided.

UBC Vancouver Campus Data Portals

Sustainability Dashboard (UBC Sustainability Hub))

The platform summarizes progress made to meet ambitious goals for GHG emissions, transportation, curriculum, housing, childcare, and more.

Users can explore datasets and visualizations to understand sustainability trends and download the latest open data for further exploration and analysis. This resource provides greater transparency than

ever before about UBC's sustainability actions, and opportunities for students, faculty, staff, regional organizations and industry partners to access and use UBC's sustainability data.

Data.sustain (Urban Data Lab)

Stewarded by the Urban Data Lab, a research initiative that uses Campus as a Living Lab to collect in-depth, data-focused research on sustainability, Data.sustain (https://data.sustain.ubc.ca/) is an open data portal that provides open access to a variety of campus sustainability data for researchers and machine learning projects. Spanning topics such as transportation, biodiversity, greenhouse gas emissions, the database offers a variety of data types and formats, including GEOJSON, CSV, XML and others for download.

UBC Botanical Garden Plant Collections

The mission of UBC Botanical Garden (est. 1916) is to assemble, curate and maintain a documented collection of temperate plants for the purposes of research, conservation, education, community outreach and public display. The Garden Explorer tool (https://collections.botanicalgarden.ubc.ca/default.aspx) is intended to achieve this mission by providing detailed information on the plants within the Garden's collections and grounds through interactive mapping and search tools online.

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Centre for Sustainable Food Systems at UBC Farm Dataverse

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Part of the Faculty of Land and Food Systems (https://www.landfood.ubc.ca/) , the Centre for Sustainable Food System (CSFS) at UBC Farm (https://ubcfarm.ubc.ca/) is a teaching and research centre and local-to-global food hub working towards a more sustainable, food-secure future. CSFS supports the development of innovations in agroecosystem management for food security and ecosystem services, while honouring, respecting, and protecting diverse ecosystems and knowledge pathways within Indigenous and agrarian food systems. The UBC Farm, a 24-hectare integrated production farm, is CSFS's main teaching and learning space. The UBC Farm comprises cultivated annual crop fields, perennial hedgerows and orchards, pasture, teaching gardens, and forest stands.

The (https://dataverse.scholarsportal.info/dataverse/UBC_CSFS) Centre for Sustainable Food Systems at UBC Farm Dataverse (https://dataverse.scholarsportal.info/dataverse/UBC_CSFS) stores UBC Farm research data, operations/management data, and data collected as part of the UBC Farm Long Term Agroecological Research Station, as well as data that CSFS researchers have collected as part of research projects in other locations. You can browse and download a variety of CSFS datasets including data for the UBC Farm Long Term Biodiversity Monitoring Program (https://dataverse.scholarsportal.info/dataset.xhtml?persistentId=doi:10.5683/SP2/XCFR9T) , (https://dataverse.scholarsportal.info/dataset.xhtml?persistentId=doi:10.5683/SP2/HZVXDU) Water Sustainability at UBC Farm (https://dataverse.scholarsportal.info/dataset.xhtml?persistentId=doi:10.5683/SP2/HZVXDU) and (https://dataverse.scholarsportal.info/dataset.xhtml?persistentId=doi:10.5683/SP2/QOP670) UBC Farm Soil Amendment Records (https://dataverse.scholarsportal.info/dataset.xhtml?persistentId=doi:10.5683/SP2/QOP670) .

Externally-Based Data Portals [H3]

Metro Vancouver Open Data Portal

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The Metro Vancouver Open Data Portal (https://opendata.vancouver.ca/explore/?q=data)

allows you to explore City of Vancouver public data using tables, maps, and charts. Export it in many formats for more analysis. Access it via API. Put your public data to work: answer questions, create meaning, form insights, and inspire action.

CITIZEN SCIENCE DATASETS [H2]

Citizen science is the practice of conducting scientific research in collaboration between trained scientists and interested parties to address public concerns and increase scientific knowledge. It is a valuable asset in research at a variety of different scales - from our local campus environment to worldwide research, especially in assessing biodiversity. A curated selection and overview of openly accessible citizen science datasets at international, national and provincial scales can be found below. Want to learn more about contributing to citizen science? View our citizen science toolkit here. <---- link missing

Other citizen science projects can be found here link (https://en.wikipedia.org/wiki/List_of_citizen_science_projects)

International

Global Biodiversity Information Facility (GBIF)

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GBIF (https://www.gbif.org/) is a big data aggregator that has vastly increased the public availability of species occurrence records. With more than 1.3 billion records across all taxonomic groups, from plants to insects to mammals. Data is georeferenced and organized according to the Linnean taxonomic classification system. Species are listed in their latin scientific names.

iNaturalist

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iNaturalist (https://www.inaturalist.org/) is a public repository of citizen science biodiversity data. It currently has >28 million of observations of >240,000 species. iNaturalist is also an app designed to collect observations for biodiversity in an user-friendly way. An observation records an encounter with an individual organism at a particular time and location. This includes encounters with signs of organisms like tracks, nests. With iNaturalist, users can explore millions of wildlife observations shared by naturalists from around the world. Tutorials for using the app to record observations and for exploring existing data are found here: https://www.inaturalist.org/pages/getting+started (https://www.inaturalist.org/pages/getting+started) .

EBird

EBird (https://ebird.org/home) calls itself the “world’s largest birding community” and its data of bird counts and observations that can be used for research, conservation, and education. eBird is also an app that gathers unprecedented volumes of information on where and when birds occur in the world. Half a billion observations have been contributed so far. eBird collects ‘complete checklist (http://help.ebird.org/customer/portal/articles/1006361) ‘ data, providing year round information on all bird species at high spatial and temporal resolutions.

National Watch Nature

NatureWatch (https://www.naturewatch.ca/) is a Canadian-based citizen science initiative developed in partnership with Environment Canada and the environmental NGO Nature Canada. Using online maps and simple entry data forms users enter their observations to help monitor plants, frogs, ice, worms, and milkweed in Canadian landscapes. Data is used by Canadian scientists to monitor Canadian wildlife.

Bumble Bee Watch

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Bumble Bee Watch (https://www.bumblebeewatch.org/) is a collaborative effort to track and conserve North America's bumble bees. This citizen science project allows people to upload photos of bumble bees, to identify bumble bees in the photos and get scientists to verify the identification. Bumble bee watch also helps researchers locate endangered species and monitor bumble bee populations.

Provincial

BC BigTree Registry

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In 2010, the Faculty of Forestry at the University British Columbia became the custodian of the BC BigTree Registry (https://bigtrees.forestry.ubc.ca/) database. The BC BigTree Registry thrives "to identify, describe, monitor, and conserve the largest trees of each species within British Columbia, and to educate and enlist the help of its citizens in this task". Through its online registration platform, users can nominate tree candidates, search existing big tree champions and learn more about forestry conservation practices in British Columbia.

Biodiversity of BC [insert expader+]

The Biodiversity of BC (https://ibis.geog.ubc.ca/biodiversity/BiodiversityDatabases.html) website provides an introduction to biodiversity in British Columbia--what it is and how it is influenced. It is also a portal to the two biogeographic atlases of the province: E-FloraBC (http://eflora.bc.ca/) and E-Fauna BC (http://efauna.bc.ca/) . [/toggle