

Community Resource List of Researchers and Research Equipment

**Focused on Research at the Human-
Environment Nexus at the University of
Winnipeg.**

**Compiled by Danica Dumore, with Bryanne Lamoureux and Ryan Bullock
from the Environment and Society Co-Lab at the University of Winnipeg.**

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Intent of Document

This is a directory of professionals, equipment, tools, services, and tests at The University of Winnipeg in the areas of Biology, Community-Based Research, Environment Studies and Sciences, Geography, and Indigenous Studies. It is intended to be a guide for community partners engaging in research with researchers at The University of Winnipeg. Please note that this is not a complete document, and it may not include all equipment, tools, services, and tests at The University of Winnipeg that may be of use to community research partners. We also did not cover resources available in areas beyond those listed above. More information can be found at The University of Winnipeg's website: <https://www.uwinnipeg.ca/>.

The document is organized by topic with i) people and groups; ii) tools and equipment; and iii) services and tests. Each of these topic lists are within different research topics. Some people are listed in more than one category if their expertise falls within multiple topics. Contacts are listed alongside pieces of equipment - please note that the people fulfilling these roles may change (verify this website as needed: <https://www.uwinnipeg.ca/>)

Record Document Creation and Edits Record

This document was first created by Danica Dumore in the winter of 2025 with support from Bryanne Lamoureux and Dr. Ryan Bullock of the Environment and Society Co-Lab.

This is the first edition of this directory and may be updated in the future. Please contact Dr. Ryan Bullock, Director of the Environmental & Society Co-Lab, at r.bullock@uwinnipeg for more information.

Website: <https://esrguwinnipeg.ca>

Table of Contents

Climate.....	4
Groups & People.....	4
Select Tools & Equipment.....	5
Select Services & Tests.....	5
Community Research.....	6
Groups & People.....	6
Select Tools & Equipment.....	7
Select Services & Tests.....	7
Environmental Law.....	9
Groups & People.....	9
Food Systems.....	9
People & Groups.....	9
Forests & Vegetation.....	10
Groups & People.....	10
Select Tools & Equipment.....	11
Select Services & Tests.....	11
Indigenous Governance.....	12
Groups & People.....	12
Mapping.....	13
Groups & People.....	13
Select Tools & Equipment.....	13
Select Services/Tests.....	13
Soil.....	14
Groups & People.....	14
Select Tools & Equipment.....	15
Select Services & Tests.....	15
Sustainability.....	16
People & Groups.....	16
Select Tools & Equipment.....	16
Water.....	17
Groups & People.....	17
Select Tools/Equipment.....	18
Select Services & Tests.....	18
Wildlife.....	19
Groups & People.....	19
Select Tools & Equipment.....	20
Select Services & Tests.....	20
Glossary.....	22

Climate

Groups & People

Prairie Climate Centre

Website: <https://prairieclimatecentre.ca/>

Climate atlas website: <https://climateatlas.ca/>

A research centre dedicated to researching climate and climate change and how it affects people in Canada. They have many projects, reports, publications, and resources. One resource is the Climate Atlas of Canada, a database of climate across Canada.

Dr. Danny Blair, The University of Winnipeg, Department of Geography; Professor, Co-Director of the Prairie Climate Centre

Studies climatology (climate over a long period of time), meteorology (weather), natural hazards (tornados, floods, etc.) and how they can impact human and natural environments.

Contact: d.blair@uwinnipeg.ca

Dr. Jay Maillet, The University of Winnipeg, Department of Geography, Instructor

Studies climate change, earth sciences, and atmospheric sciences.

Contact: j.maillet@uwinnipeg.ca

Select Tools & Equipment

Item	Description	Contact
Anemometer	A handheld device used to measure wind speed.	Paul Mann – Geo-Chemical Technician p.mann@uwinnipeg.ca
Thermometer	Used to measure temperature.	
Kestrel Unit	A handheld miniature weather station that can measure information such as wind speed and direction, temperature, and humidity.	

Select Services & Tests

Item	Description	Contact
Climate Atlas of Canada	Can search climate data for any municipality in Canada.	Prairie Climate Centre Danny Blair d.blair@uwinnipeg.ca
Data from Environment and Climate Change Canada	Able to compile data from ECCC that may be difficult to find or download.	

Community Research

Groups & People

Community Based Research Training Centre (CBRTC), The University of Winnipeg

Provides resources, training, and other supports for getting involved with community-based research, including free events and workshops.

Website: <https://www.uwinnipeg.ca/cbrtc/>

Contact: Holly Scotland: h.scotland@uwinnipeg.ca

Institute of Urban Studies (IUS), The University of Winnipeg, Department of Geography

An academic and applied research centre that studies urban development.

Website: <https://www.uwinnipeg.ca/ius/>

Contact: Scott McCullough s.mccullough@uwinnipeg.ca

Dr. Ryan Bullock, The University of Winnipeg, Department of Environmental Studies and Sciences, Professor, Canada Research Chair in Human-Environment Interactions, head of the Environment and Society Research Group

Studies how people interact with their environments, focusing on northern communities and ecosystems.

Contact: r.bullock@uwinnipeg.ca

Website: <https://esrguwinnipeg.ca/>

Dr. Kirit Patel, The University of Winnipeg, Department of Environmental Studies and Sciences, Department Chair

Studies food security, environmental justice, and community empowerment.

Contact: k.patel@uwinnipeg.ca

Dr. Marc Vachon, The University of Winnipeg, Department of Geography, Associate Professor

Studies how urban areas such as cities are developed and used, as well as how people interact with their environments (human geography).

Contact: m.vachon@uwinnipeg.ca

Select Tools & Equipment

Item	Description	Contact
NVIVO	Qualitative Analytic Software for analyzing documents, interviews, and other written and recorded information.	Ryan Bullock – Environment and Society Research Group r.bullock@uwinnipeg.ca
Research Space: Computer Work Stations		
Research Space: Project Meeting Room	Capacity 6-8 with conferencing capability.	

Select Services & Tests

Item	Description	Contact
Training in Community-Based Research	Arts-based research methods. Could include film, theatre, photography.	Holly Scotland - Community Based Research Training Centre (CBRTC) h.scotland@uwinnipeg.ca
	Community-based research process: from idea to research design and implementation.	
	Conducting focus groups.	
	Conducting interviews.	
	Data analysis software.	
	Ethical issues in community-based research.	
	How to write an ethics proposal.	
	Indigenous research methods.	
	Introduction to community-based research.	
	Knowledge mobilization. Could include videos, websites, podcasts.	
	Qualitative methods in community-based research.	
	Quantitative methods in community-based research.	
	Research and social action.	
Research as a tool for social justice.		

	Using research for public policy advocacy.	
Public Engagement and Workshop Facilitation		Ryan Bullock – Environment and Society Research Group r.bullock@uwinnipeg.ca
Qualitative Data Analysis	Includes interview and document gathering and analysis.	
Research Assistance	Research proposal development and review. Research design, case study, and archival research.	
Stakeholder and Rightsholder Partnerships Development		
Social Research	Using qualitative methods.	Scott McCullough – Institute of Urban Studies s.mccullough@uwinnipeg.ca

Environmental Law

Groups & People

Danika Littlechild, LL.M., The University of Winnipeg, Department of Environmental Studies and Sciences, Associate Professor

Interested in Indigenous laws, protocols, and practices. Has practiced law for 20 years and has primarily worked with Indigenous peoples and organizations. Teaches Law and the Environment. Has experience in social sciences.

Contact: d.littlechild@uwinnipeg.ca

Food Systems

People & Groups

Dr. Shailesh Shukla, The University of Winnipeg, Department of Indigenous Studies, Associate Professor and Department Chair

Studies Indigenous knowledge systems, including knowledge of traditional foods and food systems

Contact: s.shukla@uwinnipeg.ca

Dr. Stephen Penner, The University of Winnipeg, Department of Indigenous Studies, Assistant Professor

Studies Indigenous food systems and what a healthy food system looks like.

Contact: s.penner@uwinnipeg.ca

Dr. Kirit Patel, The University of Winnipeg, Department of Environmental Studies and Sciences, Department Chair

Studies food security, environmental justice, and community empowerment.

Contact: k.patel@uwinnipeg.ca

Forests & Vegetation

Groups & People

Centre for Forest Interdisciplinary Research (C-FIR), The University of Winnipeg

Research group dedicated to interdisciplinary research, education, and training in forest science, policy and management.

C-FIR was established primarily as a research centre designed to promote interdisciplinary research and education in sustainable forest management, natural ecosystems management and associated areas of environmental impact and assessment such as climate change.

Website: <https://www.uwinnipeg.ca/cfir/>

Contact: Richard Westwood r.westwood@uwinnipeg.ca

Dr. Jay Maillet, The University of Winnipeg, Department of Geography, Instructor

Studies tree rings (dendrochronology) and how to learn about past climates from them (dendroclimatology) in the boreal forest.

Contact: j.maillet@uwinnipeg.ca

Dr. Katherine Dearborn, The University of Winnipeg, Department of Environmental Studies and Sciences, Postdoctoral Fellow

Studies boreal and alpine forests and their ecology.

Contact: k.dearborn@uwinnipeg.ca

Website: <https://katherinedearbornresearch.wordpress.com/>

Dr. Rafael Otfinowski, The University of Winnipeg, Department of Biology, Associate Professor, Curator of the Richard J. Staniforth Herbarium

Studies relationships between plants and soil, including soil nematodes (microscopic organisms) with a focus on tall-grass prairie ecosystems.

Contact: r.otfinowski@uwinnipeg.ca

Website: <http://prairielab.ca/>

Dr. Richard Westwood, The University of Winnipeg, Department of Environmental Studies and Sciences, Professor

Studies prairie and boreal forest ecosystems as well as urban forests.

Contact: r.westwood@uwinnipeg.ca

Select Tools & Equipment

Item	Description	Contact
Biltmore stick	Used to measure tree diameter.	Pam Delorme – Biology Department Assistant p.delorme@uwinnipeg.ca
Caliper	Used to measure tree diameter.	
Clinometer	Used to measure tree height.	
Densiometer	Used to determine the density of forest crown cover.	
Diameter tape	Used to measure tree diameter.	
Hip Chain	Used to measure and create boundaries for sampling plots.	
Increment borer	Used to collect core samples from trees.	
Laser rangefinder	Used to determine the distance and/or angle from an object, can be used to measure tree height.	
Measuring Tapes	Used to measure sampling plots, for example.	
Quadrat	Used to assess the plants or animals located in a small area.	
Wedge prism	Used to determine basal area of trees.	

Select Services & Tests

Item	Description	Contact
Dendroarchaeology	Used to date old wooden artifacts or structures.	Jay Maillet j.maillet@uwinnipeg.ca
Dendroclimate analysis	Provides information regarding tree growth-climate relationships. Information can be leveraged for adaptive management plans.	
Velmex/ Stereomicroscope	Equipment and software used to count and measure tree rings.	
Herbarium	A library of plant specimens, access to the reference plant collection, help with plant identification, and support in the collection of voucher plant specimen.	Rafael Otfinowski r.otfinowski@uwinnipeg.ca

Indigenous Governance

Groups & People

Danika Littlechild, LLM, The University of Winnipeg, Department of Environmental Studies and Sciences, Associate Professor

Interested in Indigenous laws, protocols, and practices. Has practiced law for 20 years and has primarily worked with Indigenous peoples and organizations. Has experience in social sciences.

Contact: d.littlechild@uwinnipeg.ca

Dr. Shailesh Shukla, The University of Winnipeg, Department of Indigenous Studies, Associate Professor and Department Chair

Studies Indigenous knowledge systems, including participatory governance and learning with Indigenous knowledge systems. Uses mixed research methods, incorporating Indigenous knowledge.

Contact: s.shukla@uwinnipeg.ca

Dr. Stephen Penner, The University of Winnipeg, Department of Indigenous Studies, Assistant Professor

Studies Indigenous politics and governance

Contact: s.penner@uwinnipeg.ca

Mapping

Groups & People

Brad Russell, The University of Winnipeg, Department of Geography, Map Librarian

Is responsible for running and curating The University of Winnipeg's map library.

Contact: b.russell@uwinnipeg.ca

Dr. Christopher Storie, The University of Winnipeg, Department of Geography, Professor

Studies how people use space (human geography) as well as mapping with GIS and remote sensing.

Contact: c.storie@uwinnipeg.ca

Select Tools & Equipment

Item	Description	Contact
Compass	An instrument that shows the magnetic north of the earth; used for navigation	Paul Mann – Geo-Chemical Technician p.mann@uwinnipeg.ca
GPS Device	Global Positioning System; used for navigation	

Select Services/Tests

Item	Description	Contact
Digital Mapping and Analysis	Using ArcGIS Software	Brad Russel b.russell@uwinnipeg.ca
Map Library	Collection of maps https://www.uwinnipeg.ca/map-library/	Brad Russel b.russell@uwinnipeg.ca

Soil

Groups & People

Dr. Bill Buhay, The University of Winnipeg, Department of Geography, Professor

Studies physical geography, how the earth varies over space. Studies soil (aka dirt): what it's made of, what lives in it, and how it can be used for human activities such as farming and engineering buildings. Studies natural hazards, such as tornados and floods, and asks how these hazards can impact human and natural environments.

Contact: b.buhay@uwinnipeg.ca

Dr. Darshani Kumaragamage, The University of Winnipeg, Department of Environmental Studies and Sciences, Professor

Studies soil, its importance in the environment, and its use in agriculture and nutrients.

Contact: d.kumaragamage@uwinnipeg.ca

Website: <https://newion.uwinnipeg.ca/~dkumarag/default.html>

Dr. Nora Casson, The University of Winnipeg, Department of Geography, Associate Professor, Canada Research Chair in Environmental Influences on Water Quality

Studies how water moves across the earth (hydrology) and how water and living things interact. Focuses on nutrient cycling and how different events impact water quality.

Contact: n.casson@uwinnipeg.ca

Paul Mann, The University of Winnipeg, Department of Geography, Geo-Chemical Technician

Technician for the soils lab. Assists in setting up and running experiments for student labs including soil science, soil-vegetation systems, minerology and petrology.

Contact: p.mann@uwinnipeg.ca

Dr. Rafael Otfinowski, The University of Winnipeg, Department of Biology, Associate Professor

Studies relationships between plants and soil, including soil nematodes (microscopic organisms) with a focus on tall-grass prairie ecosystems.

Contact: r.otfinowski@uwinnipeg.ca

Website: <http://prairielab.ca/>

Select Tools & Equipment

Item	Description	Contact
Isotope ratio mass spectrometer	Capable of analyzing carbon, nitrogen, oxygen, hydrogen and sulfur isotopes from a variety of organic, inorganic and compound specific samples that have a variety of geological, environmental, chemical and biological applications.	Bill Buhay b.buhay@uwinnipeg.ca
Centrifuge	Spins samples at high speeds, used for extractions and other experiments.	Paul Mann – Geo-Chemical Technician p.mann@uwinnipeg.ca
Electrical Conductivity Meter	Used to determine electrical conductivity of soil.	
Munsell Book of Colour	Uses hue, value, and chroma to determine colour of soil.	
pH Meter Electrode	Used to determine pH of soil.	
Soil Augers	Used to collect soil samples.	

Select Services & Tests

Item	Description	Contact
Drying ovens	Used to dry soil samples; (105 °C, 550 °C, 1000 °C).	Paul Mann – Geo-Chemical Technician p.mann@uwinnipeg.ca
Test to determine moisture content of soil	Can be done gravimetrically or volumetrically.	
Tests to determine carbonate content of soil	Can be done using the HCl method or using quantitative total carbonate content.	
Tests to determine soil texture	Can be done using apparent soil texture (ribbon method) or particle size analysis.	
Test to determine soil pH	Method using CaCl ₂ and a pH meter electrode.	
Test to determine soil salinity	Using electrical conductivity meter.	

Sustainability

People & Groups

The University of Winnipeg Campus Sustainability Office

Promotes sustainability on campus by sharing opportunities and resources and auditing the waste produced on campus.

Contact: Sara Campbell: s.campbell@uwinnipeg.ca

Website: <https://www.uwinnipeg.ca/sustainability/>

Select Tools & Equipment

Item	Description	Contact
Binders	Quantity: numerous	Sara Campbell – Campus Sustainability Office s.campbell@uwinnipeg.ca
Industrial Scale	Quantity: 2	
Kitchen Scale		
Garbage Grabbers	Quantity: 4	
Garden Shovel	28 inch	
Glassware Brush (50mL)	Quantity: 2	
Graduated Cylinder (50mL)	Quantity: 2	
Mason Jars	12 x 1L, 6 x 500ml, 12 x 250ml, 24 x 125ml	
Name Tag Lanyards	Quantity: numerous	
Plastic Sample Trays	Fridge organizers. Quantity: 5	
Tongs	Quantity: 4	
Trowel	Quantity: 4.	
Wash Bottle (250mL)	Quantity: 2.	

Water

Groups & People

Dr. Caleb Hasler, The University of Winnipeg, Department of Biology, Associate Professor

Studies fish biology and aquatic conservation, including how fish populations respond to abrupt changes in the environment.

Contact: c.hasler@uwinnipeg.ca

Marianne Geisler, The University of Winnipeg, Department of Biology, Instructor

Has a background in freshwater ecology and fisheries.

Contact: m.geisler@uwinnipeg.ca

Dr. Nora Casson, The University of Winnipeg, Department of Geography, Associate Professor, Canada Research Chair in Environmental Influences on Water Quality

Studies how water moves across the earth (hydrology) and how water and living things interact. Focuses on nutrient cycling and how different events impact water quality.

Contact: n.casson@uwinnipeg.ca

Select Tools/Equipment

Item	Description	Contact
Dissolved Oxygen Probe	Pro20 Dissolved Oxygen meter made by YSI. 30 m and 2 m cables. Requires maintenance, calibration, and batteries. *subject to availability and a fee	Caleb Hasler c.hasler@uwinnipeg.ca
OSMOS eDNA Water Sampler	Comes with a tripod and retractable arm to collect samples from shore or off a boat. 12 filter units available. Requires filter paper. https://halltech.ca/dir/products/osmos-edna-sampler/ *subject to availability and a fee	Caleb Hasler c.hasler@uwinnipeg.ca

Select Services & Tests

Item	Description	Contact
Aquatic eDNA	Quantification of a species eDNA in a water sample. *subject to availability and a fee	Caleb Hasler c.hasler@uwinnipeg.ca
Aquatic Macroinvert or Fish Identification	Quantification of abundance and diversity of aquatic macroinvertebrates or fish in a sample. *subject to availability and a fee	
Fish Aging	Aging of various calcified tissues in fish including otolith, fin rays, scales and opercles. Typically resin embedding and fine slicing are done before imaging for aging. *subject to availability and a fee	

Wildlife

Groups & People

Dr. Caleb Hasler, The University of Winnipeg, Department of Biology, Associate Professor

Studies fish biology and aquatic conservation, including how fish populations respond to abrupt changes in the environment.

Contact: c.hasler@uwinnipeg.ca

Website: <https://calebhasler.wordpress.com/>

Dr. Craig Willis, The University of Winnipeg, Department of Biology, Professor

Studies small mammals, particularly bats and how they are affected by the fungal infection called white nose syndrome.

Contact: c.willis@uwinnipeg.ca

Website: <http://www.willisbatlab.org/>

Dr. Jean-Pierre Desforges, The University of Winnipeg, Department of Environmental Studies and Sciences, Assistant Professor

Studies how toxins and other harmful chemicals affect the environment, particularly in arctic mammals such as polar bears. Contact for anything related to environmental pollution and wildlife health. Can work with partners to establish methods for biomarkers of interest. Can be point of contact to arrange chemical analysis and data analysis.

Contact: j.desforges@uwinnipeg.ca

Website: <https://desforgeslab.weebly.com/>

Dr. Katherine Dearborn, The University of Winnipeg, Department of Environmental Studies and Sciences, Postdoctoral Fellow

Studies the Poweshiek skipperling, an endangered butterfly that lives only in the tall-grass prairie ecosystem.

Contact: k.dearborn@uwinnipeg.ca

Website: <https://katherinedearbornresearch.wordpress.com/>

Marianne Geisler, The University of Winnipeg, Department of Biology, Instructor

Teaches the labs for principles of ecology and biology of vascular plants. Has a background in freshwater ecology and fisheries.

Contact: m.geisler@uwinnipeg.ca

Dr. Richard Westwood, The University of Winnipeg, Department of Biology and Department of Environmental Studies and Sciences, Professor

As a forest ecologist and entomologist (insect researcher), he studies the Poweshiek skipperling, an endangered butterfly that lives only in the tall-grass prairie ecosystem.

Contact: r.westwood@uwinnipeg.ca

Select Tools & Equipment

Item	Description	Contact
Acoustic Recording Units (ARUs)		
Handheld Units	Helpful for determining which bat species is using a known roost and great for demonstrations (e.g., night-time “bat-walks) to hear bats and identify calls to species.	Craig Willis c.willis@uwinnipeg.ca

Select Services & Tests

Item	Description	Contact
Aquatic eDNA	Quantification of a species eDNA in a water sample. *subject to availability and a fee.	
Aquatic Macroinvert or Fish Identification	Quantification of abundance and diversity of aquatic macroinvertebrates or fish in a sample. *subject to availability and a fee.	Caleb Hasler c.hasler@uwinnipeg.ca
Fish Aging	Aging of various calcified tissues in fish including otolith, fin rays, scales and opercles. Typically resin embedding and fine slicing are done before imaging for aging. *subject to availability and a fee.	
Acoustic Surveys	Assistance with design and analysis of acoustic surveys for bats, including endangered species; training on methods for acoustic surveys for bats.	Craig Willis c.willis@uwinnipeg.ca
DNA Barcoding	DNA barcoding from guano samples to identify which species are using particular roosts and characterize diets to better understand ecosystem services provided by bats.	

General Advice on Bats	Including humane exclusion of bats from buildings.	
Targeted Studies of Bat Species	Help with design, fieldwork and analysis for more targeted studies of bat species at risk and other bat species. Could include long-term mark-recapture monitoring studies and radiotelemetry to quantify homeranges and habitat selection.	
Cell Based Toxicity Assays		Jean-Pierre Desforages: j.desforages@uwinnipeg.ca
Ecological Modeling	Used to understand how wildlife can be affected by things like climate change, pollutants, and other human activities.	
Immunological Assays		
Molecular Analysis	Analysis of gene expression, DNA analysis, etc.	

Glossary

Albedo: The amount of sunlight that is reflected by a surface (such as planet Earth). Dark/black surfaces absorb high amounts of light and thus have a low albedo. Light/white surfaces reflect high amounts of light and thus have a high albedo.

Biodiversity: The variety of life of earth can be measured for example, in terms of genetic variability and by number of different species. Different areas have different levels of biodiversity.

Boreal Forest: A biome/ecosystem that grows in parts of the northern hemisphere with vegetation being primarily cold tolerant coniferous tree species. Much of Manitoba, especially Northern Manitoba is boreal forest.

Climate: The average weather conditions in a given area over time.

Climatology: The study of climate over a long period of time which examines local and global climates, particularly in how human forces impact climate.

Community-based research: A research approach that involves collaboration, partnership, or leadership by members of a community with the purpose of working towards research outcomes that directly benefit the community.

Conservation: The protection and management of natural environments.

Ecology: The study of ecosystems and how living organisms (plants, animals, fungi, bacteria, etc.) interact with one another and their environment.

Edaphology: A branch of soil science concerned with how soils impact living organisms, particularly plants.

Ethnoecology: The study of how groups of people interact with the ecosystems and environments around them.

Dendrochronology: The science of determining the age of trees from their growth rings.

Dendroclimatology: Constructing and determining what past climates were like based on tree rings.

Earth Sciences: The study of the earth, its physical makeup, and the systems that exist on it

GIS (Geographic Information Systems): A computer program used to create maps and analyze geographic information.

Human Geography: A branch of geography concerned with the study of human communities and cultures and their spatial relationships.

Hydrology: The study of water and its movement across the earth.

Meteorology: A branch of atmospheric science; the study of weather.

Natural Hazards: Environmental events such as floods, tornados, wildfires, earthquakes, landslides, avalanches, hurricanes, and severe storms that threaten or damage environments, people, and property.

Pedology: The study of soil, particularly about its formation and classification.

Physical Geography: A branch of geography concerned with the study of natural environments including the atmosphere, hydrosphere (water), geosphere (earth, rocks) and their spatial relationships.

Prairie: A temperate ecosystem with vegetation consisting of few trees and primarily grasses. Southern Manitoba used to be mostly prairie, but today less than 1% of it remains.

Remote Sensing: A technique of monitoring an object, such as the earth, from a distance. Satellites, aircraft, and drones are often used to monitor and collect remote sensing data.

Restoration Ecology: The study of restoring or repairing ecosystems that have been degraded, damaged, or destroyed.

Telemetry: A scientific technique where data is recorded and transmitted by an instrument. It can be used to remotely track the location of animals.

Toxicology: The study of how toxins and other harmful chemicals can affect living organisms in the environment.