



FERN Database: Data on vegetation across forest edges from the Forest Edge Research Network

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Poster Session Online



Presented at:

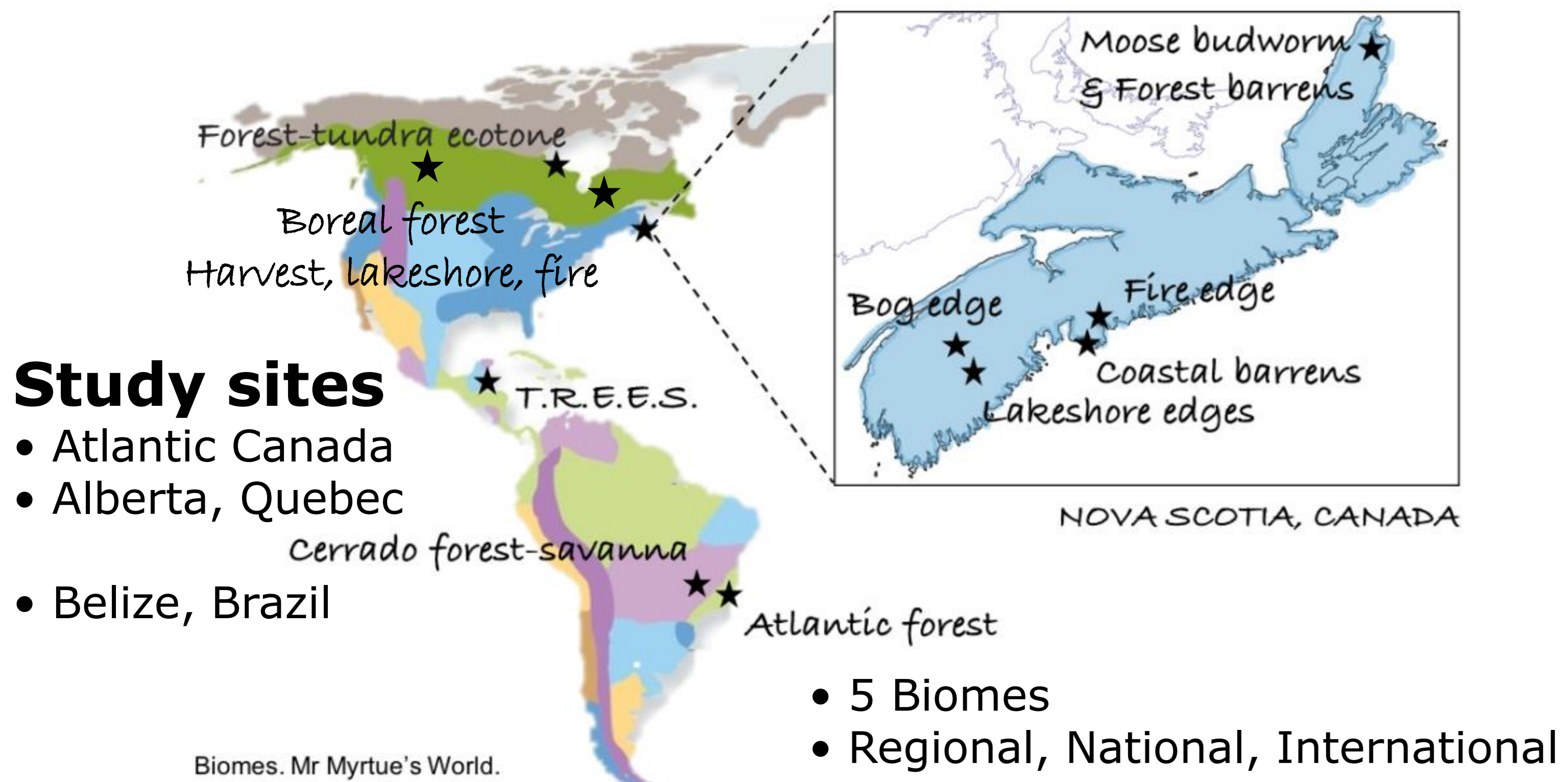


Background Story

Six years ago I taught Environmental Informatics. One theme of the course was to encourage proper data entry and storage to facilitate data sharing. I used my PhD data from the late 1990s as an example of poor data entry – at that time we did not expect anyone else to use our data! The course made me realize the importance of data sharing.

After the course I decided to hire one of the students to begin the task of compiling all my data on vegetation at forest edges. This was a major task that involved reformatting and re-entering a lot of my older datasets. After four assistants and several years, the FERN database is almost complete and ready to add data from other edge researchers.

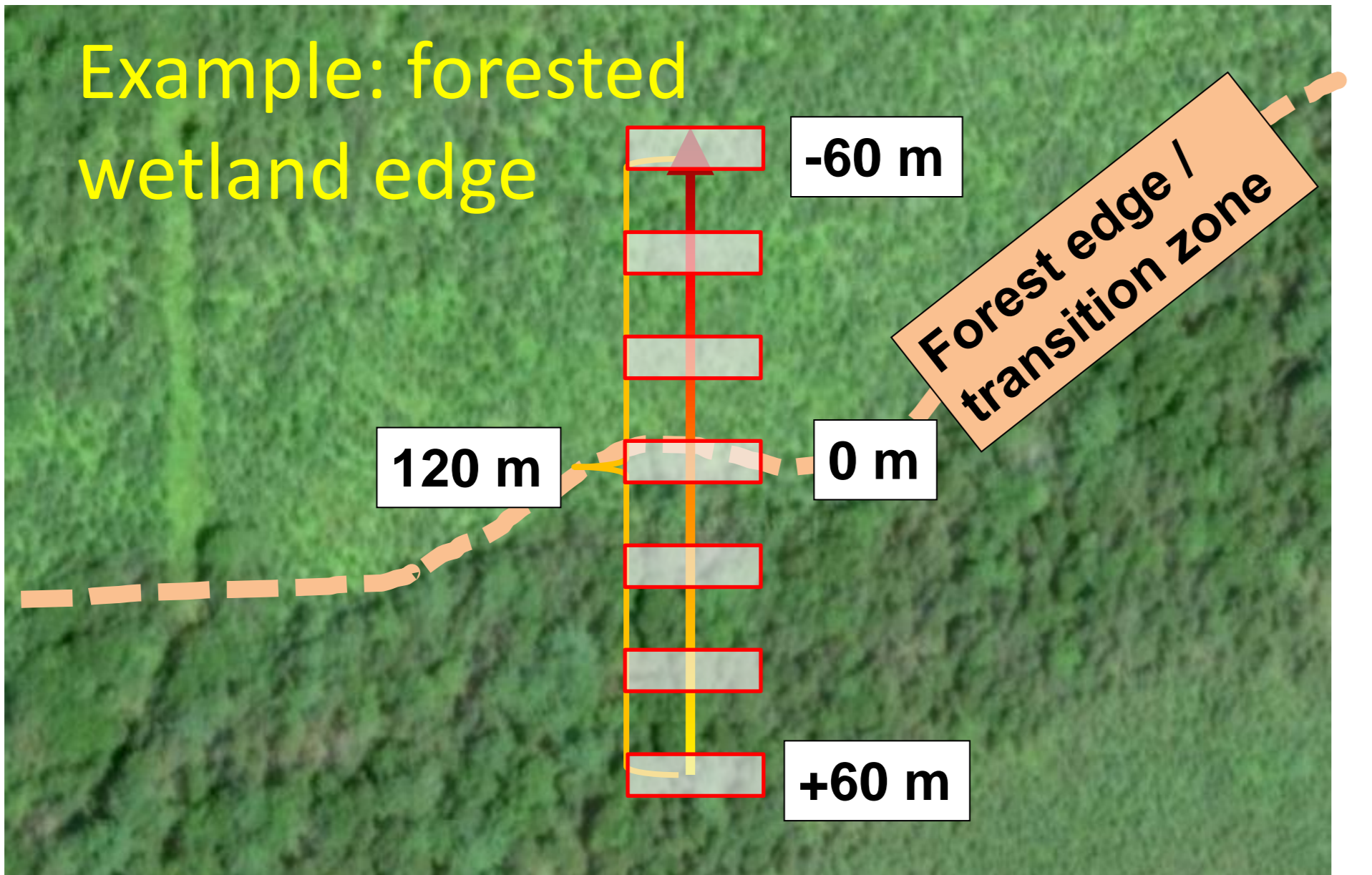
OBJECTIVE: To create a database of plant-related variables along transects across edges from my studies as an introduction to the FERN



Methods

- Transects perpendicular to forest edges, variable length
- Vegetation sampled in quadrats, variable size and number, either contiguous or at set distances
- More than 20 studies, 300 transects, 350 plant species

- Variables:**
- cover of plants, lichens, mosses, canopy cover
 - size, decay of live and dead trees
 - density of saplings
 - tree and shrub max. height, canopy height
 - cover of plants at different heights



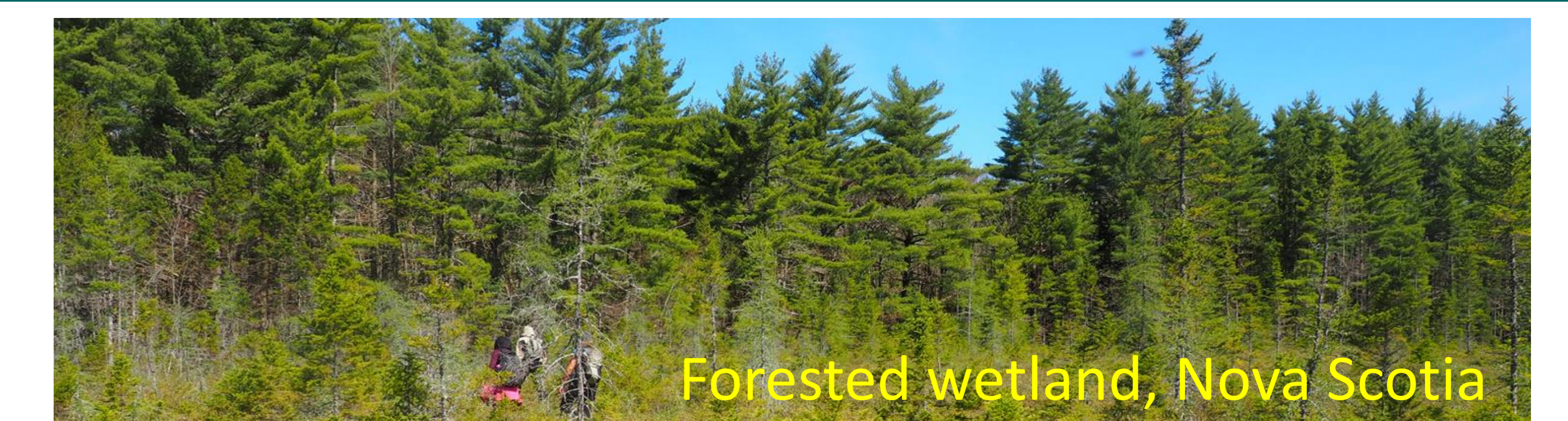
Harvested landscape, Alberta



Cerrado, Brazil



Riparian forest Belize

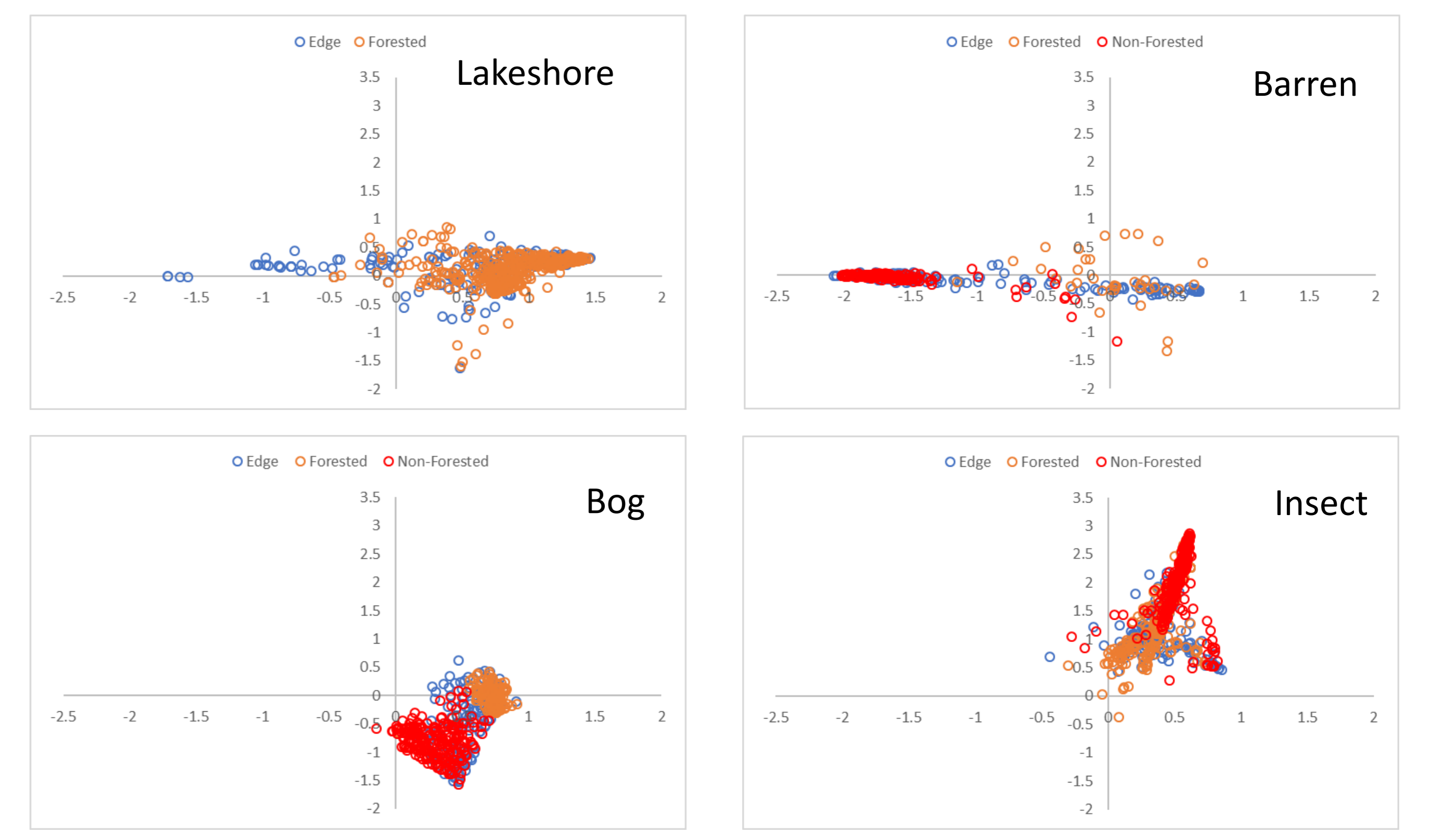


Forested wetland, Nova Scotia

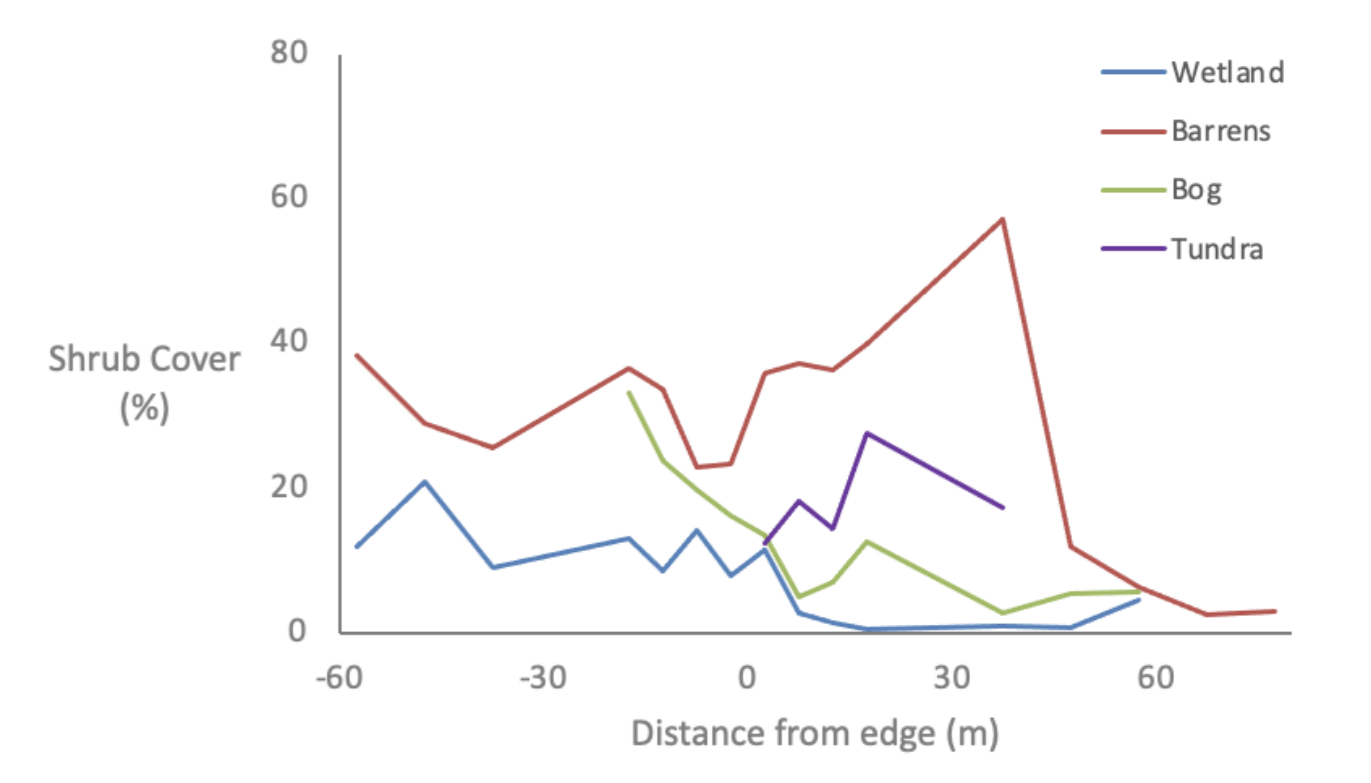
Studies using the dataset

This database has been used for undergraduate student projects including an examination of plant species composition across different types of natural forest edges in Nova Scotia, Canada, and on the patterns of shrub abundance across natural forest edges in Canada.

Plant composition at natural edges (Mindy-Lee Romo)



Shrub cover across natural edges (Carly Naundorff)



iFERN: An Invitation

The FERN database provides extensive data on many variables that can be used for further study including meta-analyses, which can assist in determining answers to questions important to conservation efforts such as how the distance of edge influence from created edges is affected by different factors. I plan to expand this database with subsequent studies and I invite others to contribute to make this a more global database. An International Forest Edge Research Network or iFERN global database will greatly facilitate global syntheses and meta-analyses of edge studies and contribute to edge theory.

Do YOU have edge data?

If so, please contact me!
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Data Sets: METADATA

STUDY	BIOME	COUNTRY	PROVINCE	EDGE_TYPE	NON_FOREST	FOREST	TRANSECTS
Alberta cut	Boreal Forest / Taiga	Canada	Alberta	Created	Cut	Populus mixedwood	38
Alberta fire	Boreal Forest / Taiga	Canada	Alberta	Created	Fire	Populus mixedwood	8
Alberta lakeshore	Boreal Forest / Taiga	Canada	Alberta	Inherent	Lakeshore	Populus mixedwood	12
Belize riparian	Tropical Moist Broadleaf Forest	Belize	Stann Creek	Inherent	Riparian	Broadleaf moist forest	11
Brazil Atlantic forest	Brazilian Atlantic forest	Brazil	São Paulo	Created	Agricultural	Brazilian Atlantic forest	24
Brazil cerrado	Tropical Grasslands & Savannas	Brazil	São Paulo	Created	Agricultural	Cerrado	72
Churchill krummholz	Boreal Forest / Taiga	Canada	Manitoba	Inherent	Tundra	Black spruce boreal forest	12
Churchill treeline	Boreal Forest / Taiga	Canada	Manitoba	Inherent	Tundra	Black spruce boreal forest	4
Labrador krummholz	Boreal Forest / Taiga	Canada	Nfld&Labrador	Inherent	Tundra	Black spruce boreal forest	12
NS barrens	Boreal Forest / Taiga	Canada	Nova Scotia	Inherent	Barrens	Acadian Forest	4
Nove Scotia budworm	Boreal Forest / Taiga	Canada	Nova Scotia	Created	Insect outbreak	Acadian Forest	6
NS coastal	Temperate Mixed Forest	Canada	Nova Scotia	Inherent	Coast	Coastal forest barrens	3
NS cut	Temperate Mixed Forest	Canada	Nova Scotia	Created	Cut	Forested wetland	10
NS fire	Temperate Mixed Forest	Canada	Nova Scotia	Created	Fire	Acadian Forest	3
NS forested wetlands	Temperate Mixed Forest	Canada	Nova Scotia	Inherent	Wetland	Acadian Forest	10
NS lakeshore bog spruce	Temperate Mixed Forest	Canada	Nova Scotia	Inherent	Lakeshore	Acadian Forest	8
NS lakeshore hemlock	Temperate Mixed Forest	Canada	Nova Scotia	Inherent	Lakeshore	Old growth Hemlock forest	5
Ontario fire contiguous	Boreal Forest / Taiga	Canada	Ontario	Created	Fire	Populus mixedwood	4
Quebec cut 2002	Boreal Forest / Taiga	Canada	Quebec	Created	Cut	Populus mixedwood	7
Quebec cut 2003	Boreal Forest / Taiga	Canada	Quebec	Created	Cut	Black spruce boreal forest	10
Quebec cut 2005	Boreal Forest / Taiga	Canada	Quebec	Created	Cut	Populus mixedwood	4
Quebec cut spruce	Boreal Forest / Taiga	Canada	Quebec	Created	Cut	Black spruce boreal forest	20
Quebec fire	Boreal Forest / Taiga	Canada	Quebec	Created	Fire	Black spruce boreal forest	20
Quebec fire contiguous	Boreal Forest / Taiga	Canada	Quebec	Created	Fire	Black spruce boreal forest	2

Data Files: COVER, TREES, DENSITY, HEIGHT, VERTICAL

• Column headings

TRANSECT_ID	DISTANCE_M	PLOT_NOTES	SUBPLOT	FUNCTIONAL_GROUP	SPECIES	COVER				
TRANSECT_ID	DISTANCE_M	PLOT_NOTES	STRUCTURE	SPECIES	DIAMETER_CM	CANOPY_POS	HEIGHT_M	BREAK_STATUS	DECAY_CLASS	BARK
TRANSECT_ID	DISTANCE_M	PLOT_NOTES	SUBPLOT	SPECIES	SIZE_CLASS	COUNT				
TRANSECT_ID	DISTANCE_M	PLOT_NOTES	SUBPLOT	FUNCTIONAL_GROUP	SPECIES	HEIGHT_M				
TRANSECT_ID	DISTANCE_M	PLOT_NOTES	FUNCTIONAL_GROUP	SPECIES	HEIGHT_M	COUNT	COVER			



I thank Logan Gray, Carly Naundorff, Michael Smith and Cole Vail for putting together the database over the past several years, and many students and research assistants for collecting the data over the past few decades. The main source of funding is the Natural Sciences and Engineering Research Council of Canada, with additional sources of funding for the studies. The FERN logo was designed by Andrée Clément.



Informatics, databases, tools and new technologies
Karen Harper

