



**HAL**  
open science

# Biogeographical characteristics of the avifauna of the Nunavik

Gaël Sarrazin, L. Godet

► **To cite this version:**

Gaël Sarrazin, L. Godet. Biogeographical characteristics of the avifauna of the Nunavik. International Symposium of LabEx DRIIHM 2023, Jun 2023, Strasbourg, France. , 2023, 10.34972/driihm-833e18 . hal-04171154

**HAL Id: hal-04171154**

**<https://hal.science/hal-04171154>**

Submitted on 26 Jul 2023

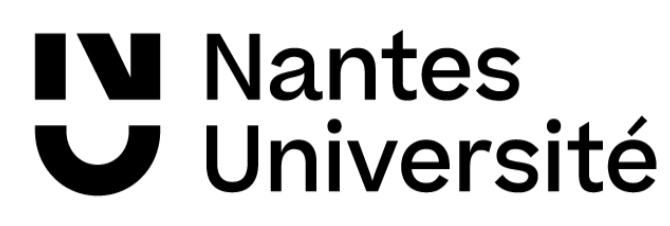
**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# Biogeographical characteristics of the Nunavik avifauna

Gaël Sarrazin<sup>1,2</sup>, Laurent Godet<sup>1</sup>

<sup>1</sup>CNRS, Nantes Université, UMR LETG <sup>2</sup>Université Toulouse Jean Jaurès, Toulouse, France

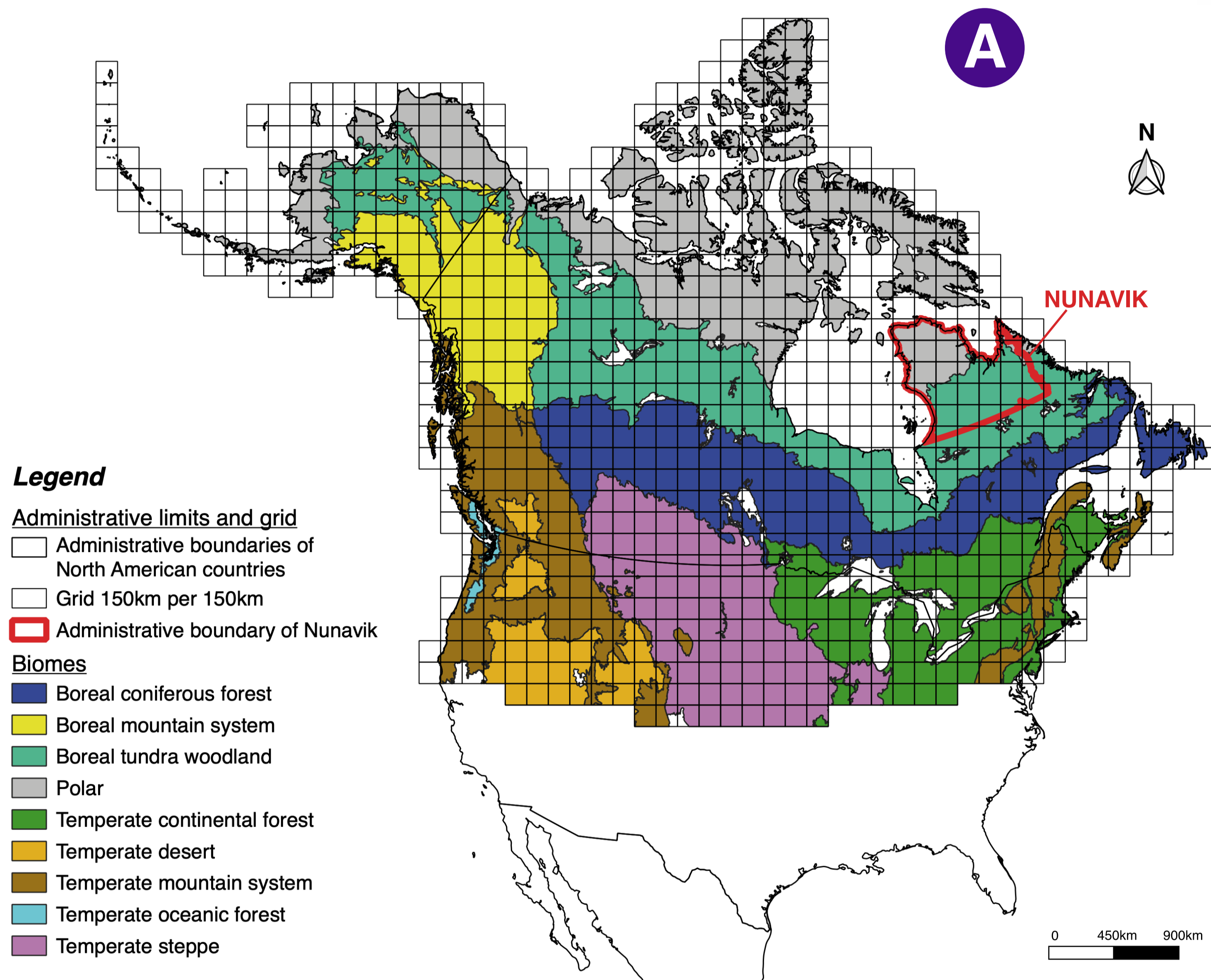


## Introduction

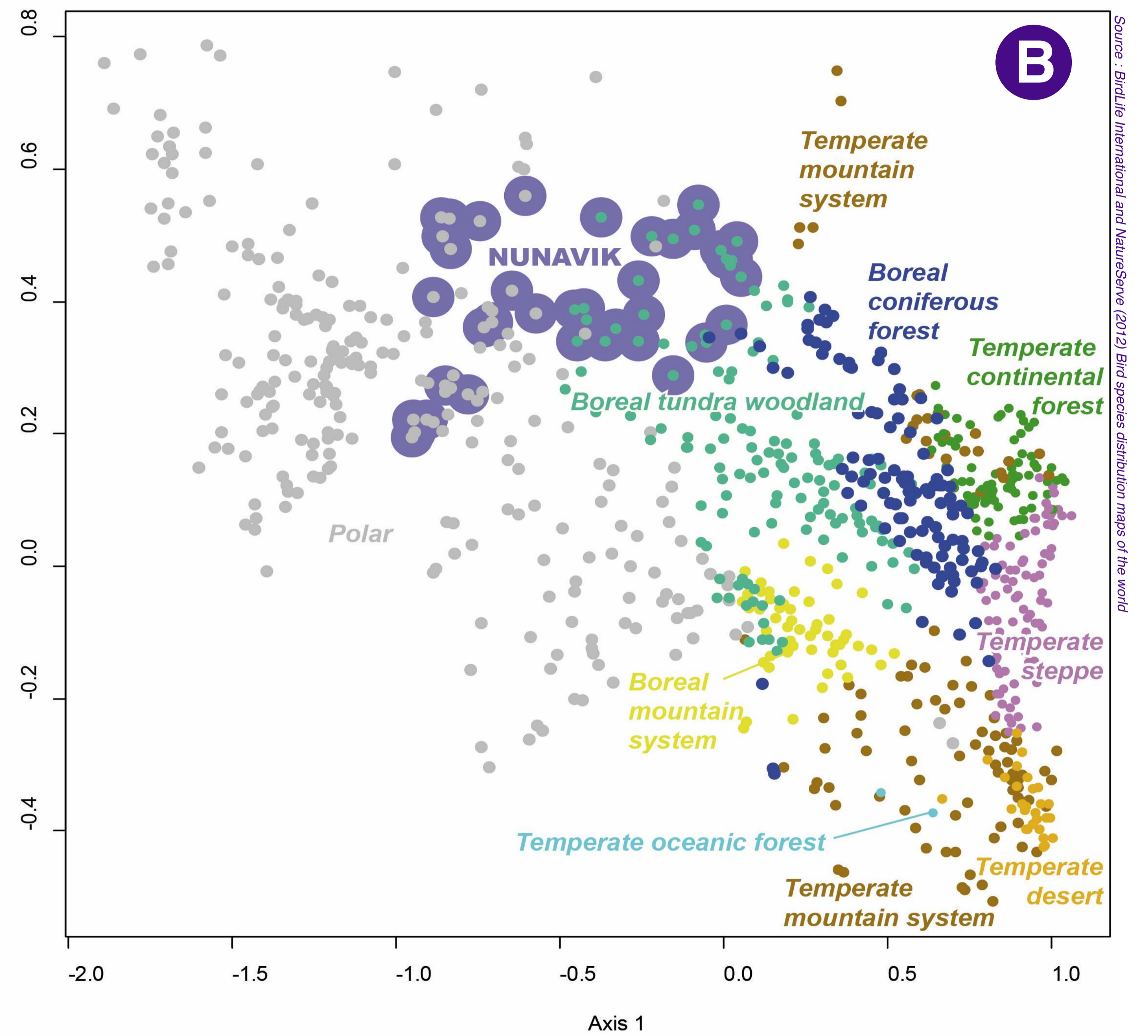
Nunavik is a Quebec territory located beyond the 55th parallel north. 13.500 inhabitants live in this 450.000 km<sup>2</sup> area relatively unexplored by naturalists and whose biogeography remains difficult to characterize. We propose to describe the bird biogeographic originality of this area both at the community and species levels.

## Nunavik is a transition facies between polar and boreal tundra woodland bird communities

Biomes of North America



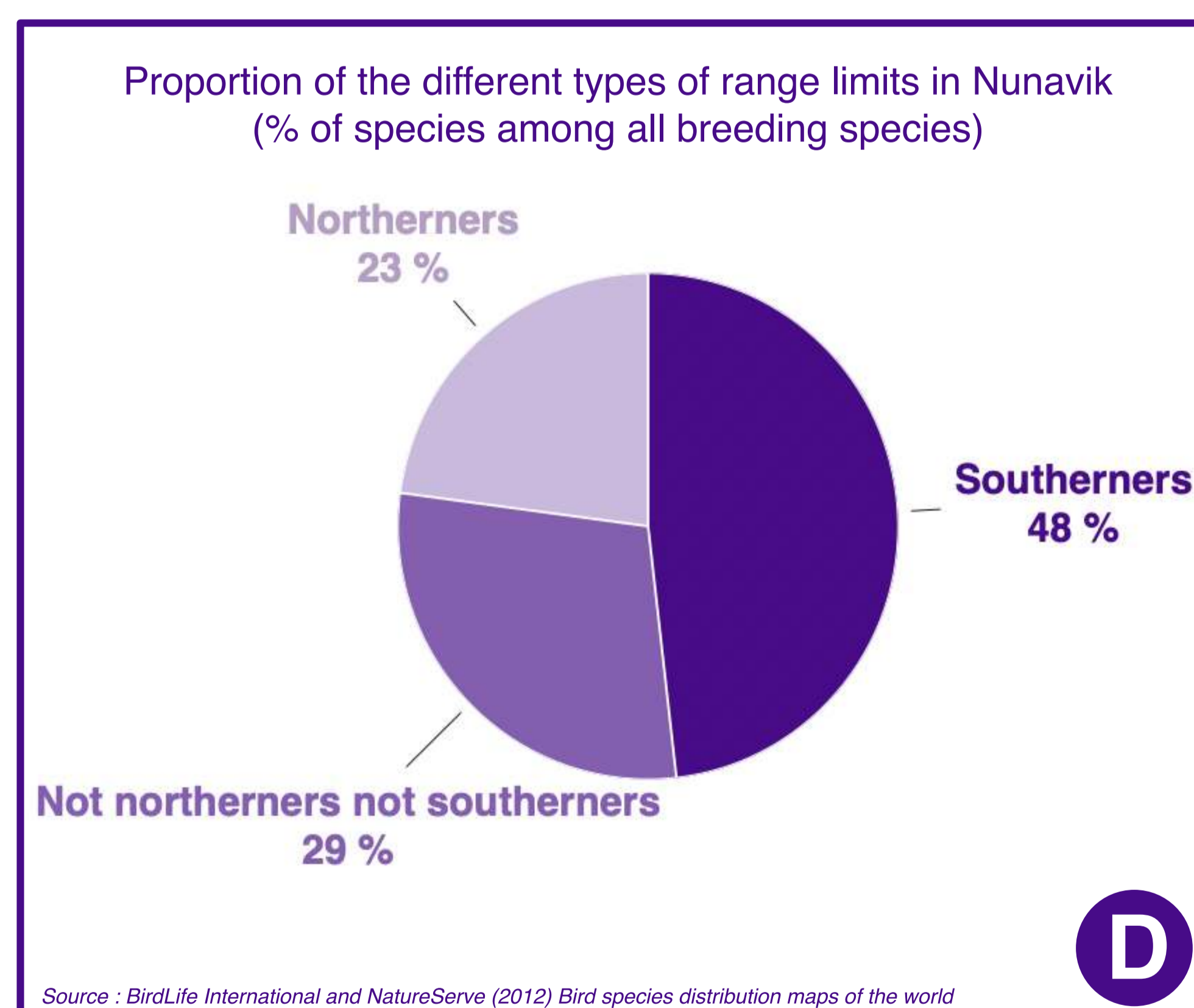
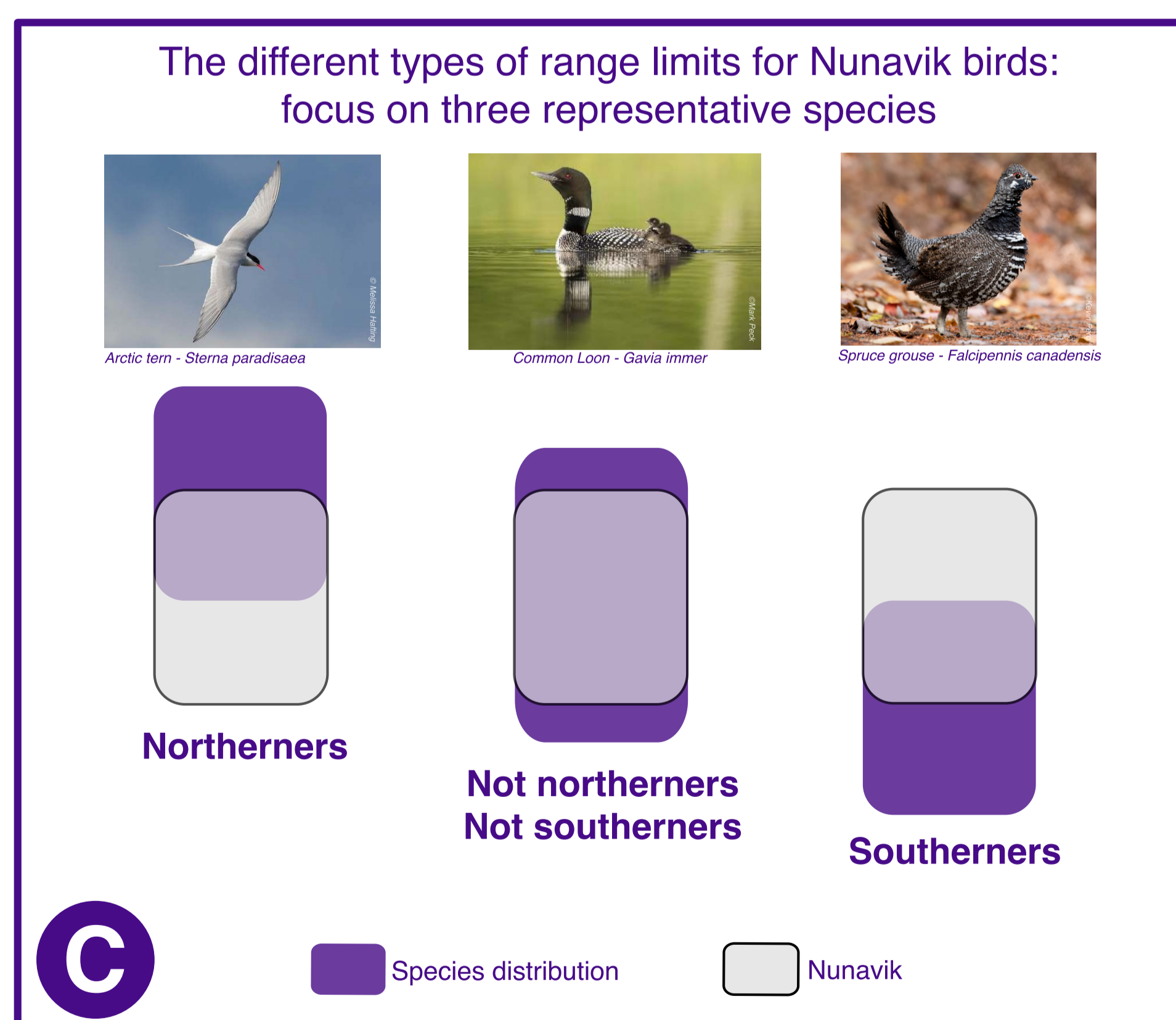
Structure of North American bird assemblages



Above the latitude of 40°N, nine main different biomes are present in North America (Figure A). Nunavik is covered both by the boreal tundra woodland on its southern half and the polar biome on its northern half.

We crossed the spatial distribution of breeding birds extracted from BirdLife & Nature Serve (2022) with a regular grid (cells of 150 km X 150 km) to obtain the presence-absence of each species in each cell. Figure B is a MDS based on a Bray-Curtis index on the presence-absence of these species in each cell. Each point represents therefore the breeding bird assemblage of a grid cell. The closer the points are to each other on the MDS, the more similar the assemblages are and vice versa. The colors correspond to the biomes that are dominant in the grid cell, and cells located in Nunavik are circled in purple. The MDS shows that Nunavik bird assemblages can be characterized as transitional facies between polar and boreal tundra woodland bird assemblages.

## 71% of birds breeding in Nunavik reach their distribution limit in this area



Based on the spatial distribution of breeding birds extracted from BirdLife & Nature Serve (2022), we counted the number of species whose range reached their northern limit ("southerners") and their southern limit ("northerners") in Nunavik (Figure C). The remaining species were classified as "neither southern nor northern". Almost half of the species (48%) are southerners, almost the quarter (23%) are northerners (Figure D). In other words, 71% of the breeding bird species of the Nunavik reach their distribution limit in this area.

## Conclusion

Nunavik is a biogeographic transition region hosting bird assemblages of both the boreal tundra woodland and the polar area. In the context of climate change, the ranges of species distributions are experiencing a latitudinal shift. Because most of the species breeding in Nunavik are at their distribution limit, we therefore expect that bird communities will change a lot in the coming years with a rapid species turnover in favor of southerners.