Elk Island National Park

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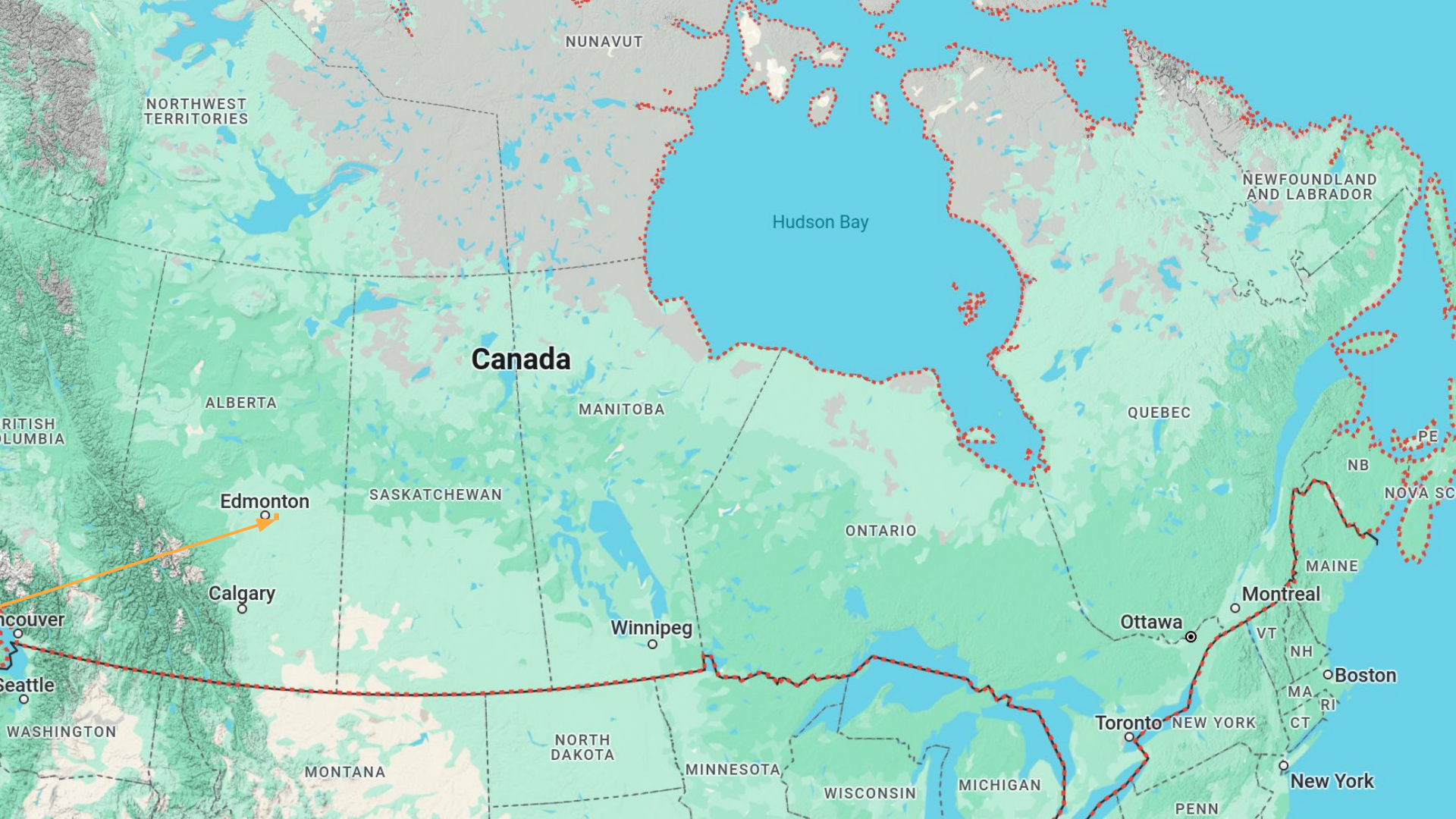
Goals of the Project

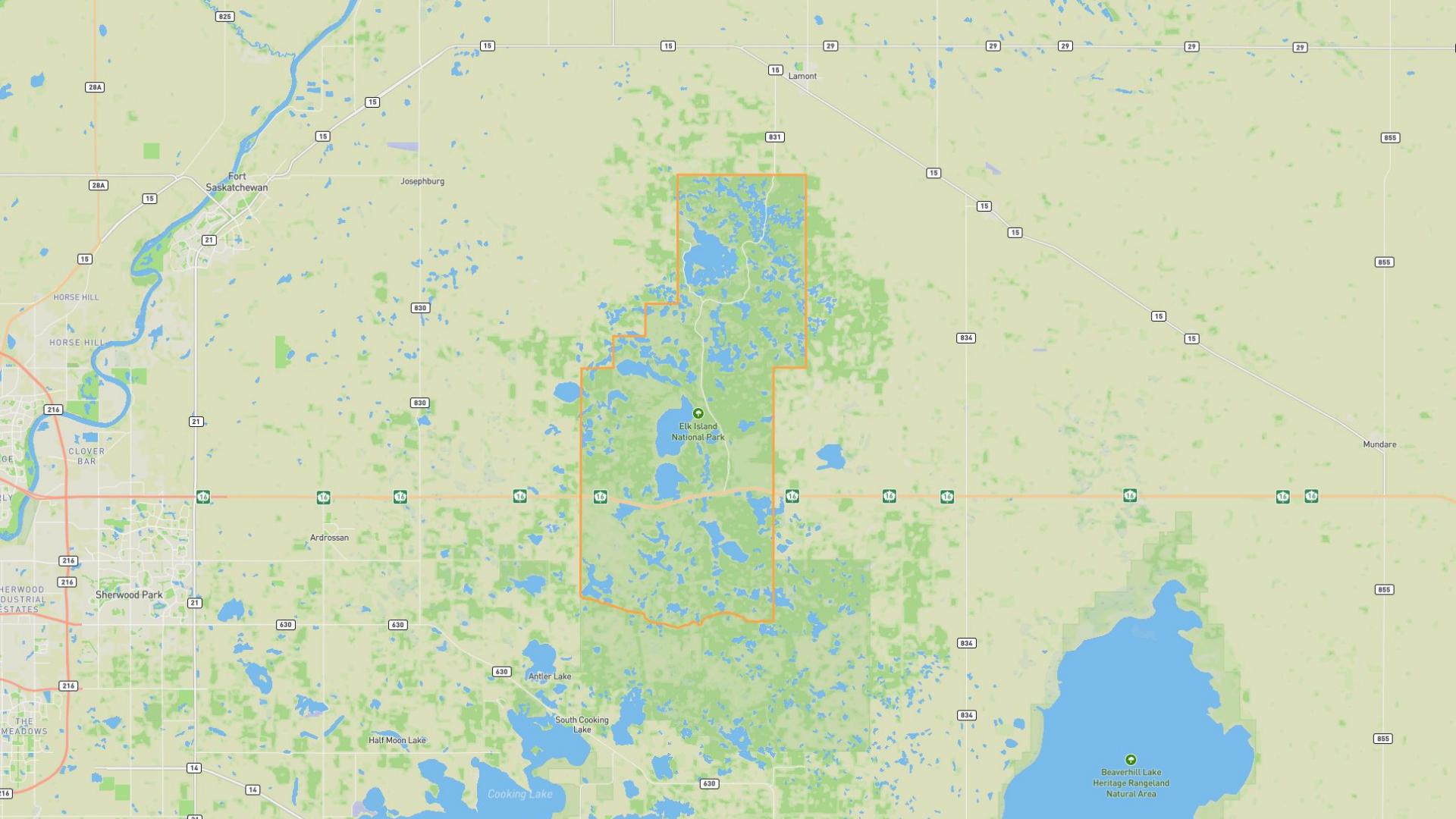
- Simulate animal behaviour in the park to be able to react better to situations.
- Determination of the ***carrying capacity***.

Elk Island National Park

- Canadian National Park
- 194 km² area
- approx. 400,000 visitors annually
- home to over 42 species of mammals
- especially bison and moose


NUNAVUT
NORTHWEST TERRITORIES
Hudson Bay
NEWFOUNDLAND AND LABRADOR
Canada
ALBERTA
MANITOBA
QUEBEC
SASKATCHEWAN
ONTARIO
Edmonton
Calgary
Winnipeg
Ottawa
Montreal
Toronto
Boston
New York
Seattle
WASHINGTON
MONTANA
NORTH DAKOTA
MINNESOTA
WISCONSIN
MICHIGAN
NEW YORK
MAINE
VT
NH
MA
RI
CT
NB
PE
PENN


ALBERTA
Swan Hills
Athabasca
Lac La Biche
Lakeland Provincial Recreation Area
Cold Lake
Cold Lake
Pierceland
Bonnyville
Whitecourt
Blue Ridge
Barrhead
Mayerthorpe
Legal
Redwater
St. Paul
Onion Lake No. 119
Onion Lake Cree Nation
Bon Accord
Bruderheim
Star
St. Albert
Edmonton
Elk Island National Park
Androssan
Stony Plain
Amber Lake
South Cooking Lake
Beaverhill Lake
Vegreville
Dewberry
Islay
Beaumont
Calmar
Leduc
New Sarepta
Thorsby
Drayton Valley
Blackfoot
Lloydminster
Lashburn
Paradise Valley
Camrose
Wetaskiwin
Sedgewick
Ponoka
Rimbey


Lamont
Fort Saskatchewan
Josephburg
HORSE HILL
HORSE HILL
CLOVER BAR
Elk Island National Park
Mundare
Ardrossan
Sherwood Park
Antler Lake
South Cooking Lake
Half Moon Lake
Cooking Lake
Beaverhill Lake Heritage Rangeland Natural Area

What was our goal for this milestone

- Animals walk through the park
- Food and water consumption
- Calculate NDVI data from satellite images
- Differentiate between the three animal species
- Better understand the behaviour and characteristics of the different animals and analyse real data

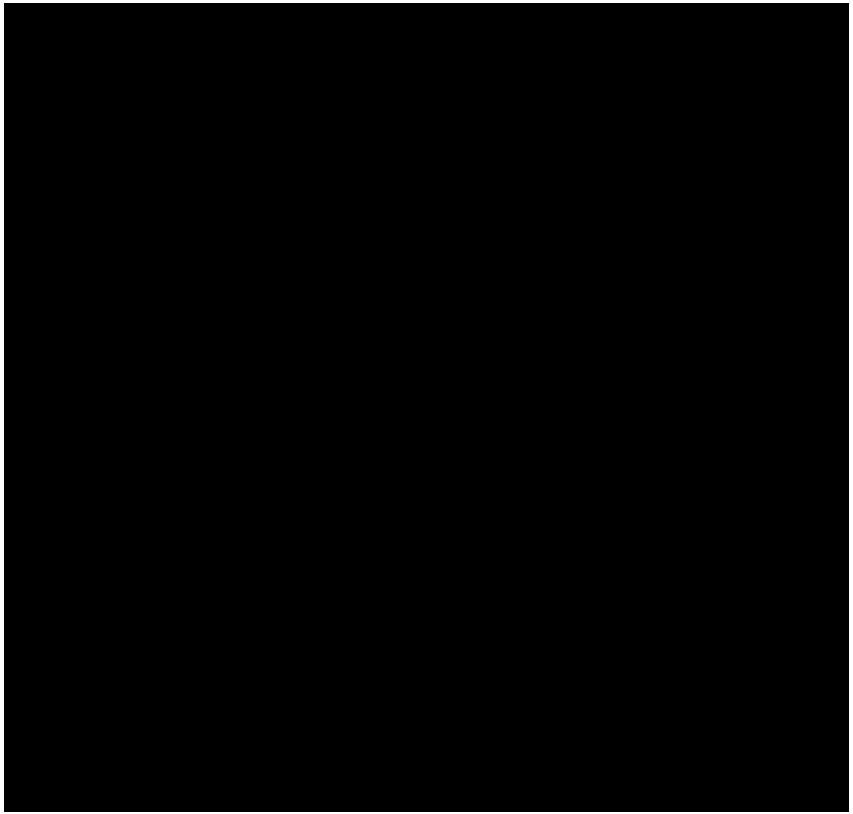
Layers

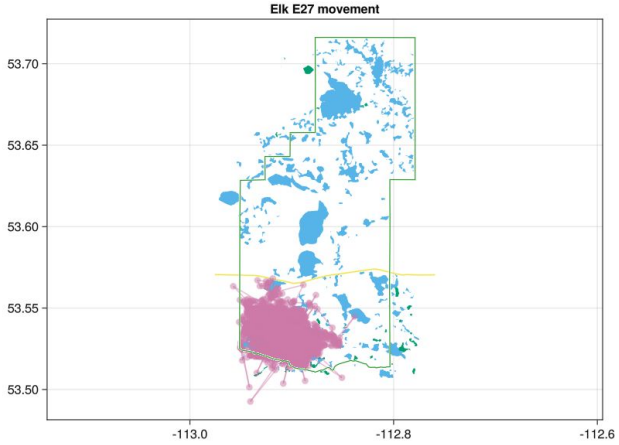
- Water Layer
  - GeoJson data from EINP
  - Water intake near a water spot is increased.
  - Animals must not run into the water.
- Vegetation Layer
  - NDVI data
  - Greener areas = more food
  - Read out the values only
- Temperature Layer
  - Data in CSV format from https://open-meteo.com/en/docs/historical-weather-api
  - Collected from 2018-11-18 to 2023-11-18
- Altitude Layer
  - Altitude data

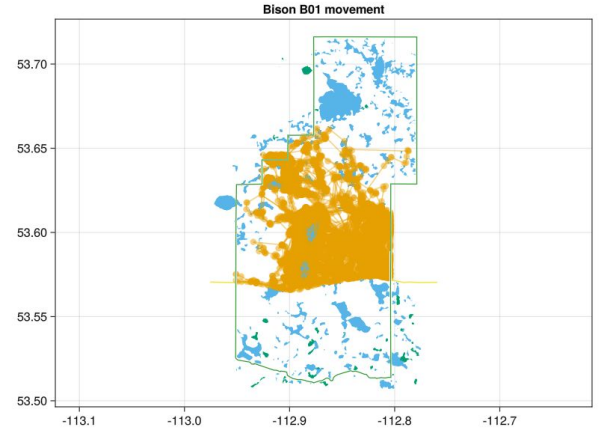
Agents

- Bison
- Elk
- Moose

Echtdaten




Elk E27 movement
53.70
53.65
53.60
53.55
53.50
-113.0
-112.8
-112.6


Bison B01 movement
53.70
53.65
53.60
53.55
53.50
-113.1
-113.0
-112.9
-112.8
-112.7


53.7
53.6
53.5
latitude
-113.0
-112.9
-112.8
longitude
species
Plains Bison
Wood Bison
Elk

Was sind unsere Ziele für den nächsten Meilenstein

- Reproduction
- Group dynamics
- Logic with Altitude Layer
- Unit Tests