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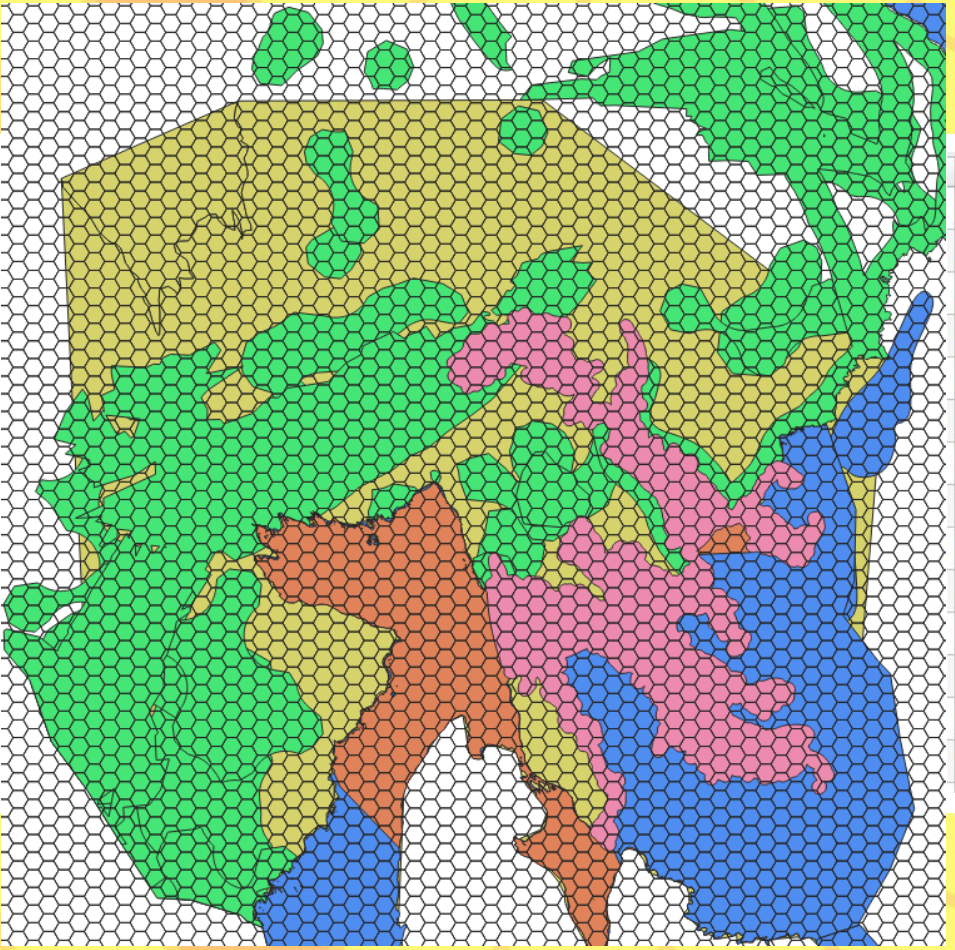
Nunavunmi Parnaiyiit
Nunavut Planning Commission
Commission d'Aménagement du Nunavut

- Nunavut Planning Commission https://www.nunavut.ca/
- “The NPC is responsible for the development, implementation and monitoring of land use plans that guide and direct resource use and development in... Nunavut”
- https://www.nunavut.ca/land-use-plans/draft-nunavut-land-use-plan
- https://www.nunavut.ca/land-use-plans/interactive-maps
- https://lupit.nunavut.ca/portal/registry.php

- Adrian Gerhartz Planner /GIS (867) 979-8255 Agerhartz@nunavut.ca

- Marxan – A decision support software for conservation planning
  - https://marxansolutions.org/
  - Useful tool but takes data in a particular format
  - Uses a hexagonal grid and specific file formats instead of ingesting geospatial data directly



GROUP_	ID	NAME	Shape_Leng	Shape_Area
Birds	208	Key Migratory Bird Habitats Class 3 - Frozen …	1251631.5…	687451954…
Marine Areas	258	Ecologically and Biologically Significant Area…	1229232.6…	125492441…
Marine Areas	259	Ecologically and Biologically Significant Area…	855433.18…	734005774…
Marine Areas	256	Ecologically and Biologically Significant Area…	441651.07…	390757082…
Marine Areas	257	Ecologically and Biologically Significant Area…	7259887.4…	294611384…
Marine Areas	262	Ecologically and Biologically Significant Area…	1027406.4…	361205936…
Caribou	212	Caribou Winter Ranges	8642915.0…	132479919…
Marine Areas	260	Ecologically and Biologically Significant Area…	790949.49…	941987218…
Marine Areas	261	Ecologically and Biologically Significant Area…	221853.61…	830634028…
Caribou	210	Caribou Migration Corridors	22738900.…	214789212…
Conservation Areas	302	Canadian Heritage Rivers - River Kazan and …	1127837.0…	319870326…
Caribou	211	Caribou Summer and Late Summer Areas	19123266.…	468312506…
Caribou	209	Caribou Rutting Areas	13847205.…	202603047…
Whale	213	Bowhead Calving Areas	13614659.…	113248234…

- Each Hexagon has a Planning Unit ID (PUID)
- Each Conservation Feature (eg. caribou habitat, bird migration route, etc) has a CFID
- What is the area of overlap of each CFID with each PUID?
- This makes a big table with PUID as rows and CFID as columns

Goal: Automate the process of preparing data for use in the conservation planning software Marxan

Create a planning unit hexagonal grid with user input on hexagon size and grid size and position. Autopopulate a planning unit ID (PUID) field

- Take input on which planning unit(s) the proponent project will occupy (this can be clicking on a map, providing a shapefile/kml/etc or PUIDs)
- Allow user to select planning layers to load (or point to folder containing all of them).
- Load planning layers
- Enable user query of relevant planning features (query by area or by Group for example) to use in the analysis
- Ensure a consistent and appropriate CRS is being used
- For each project PUID, calculate the area of overlap with the each conservation feature (CF) from the planning layer and record this in a csv - a sparse matrix of PUID (rows) vs CFID (cols) with overlap area as values.
- Reorganize the file so it can be ingested by Marxan (listing PUID-CFID pairs).