79379 Prepare GIS and Hofn module for 2degrees (New Zealand)

NT2_GEO_POLYGON_newzealand

- 1Water, 2Coastline, 7Highway

readme

- Hofn_type 1(Water):
  - filter: keep water bodies with an area > 70000(m^2)
  - filter: keep water bodies with area_perimeter_ratio > 0.1
- Hofn_type 2(coastline):
  - The two main islands(north island & south island) are seperated by 300(Km)
  - filter: keep costlines with a length > 5000(meters)
  - manually modify coastlines on the cross-ocean bridge
- Hofn_type 7(highway):
  - Road level 1-5

procedure

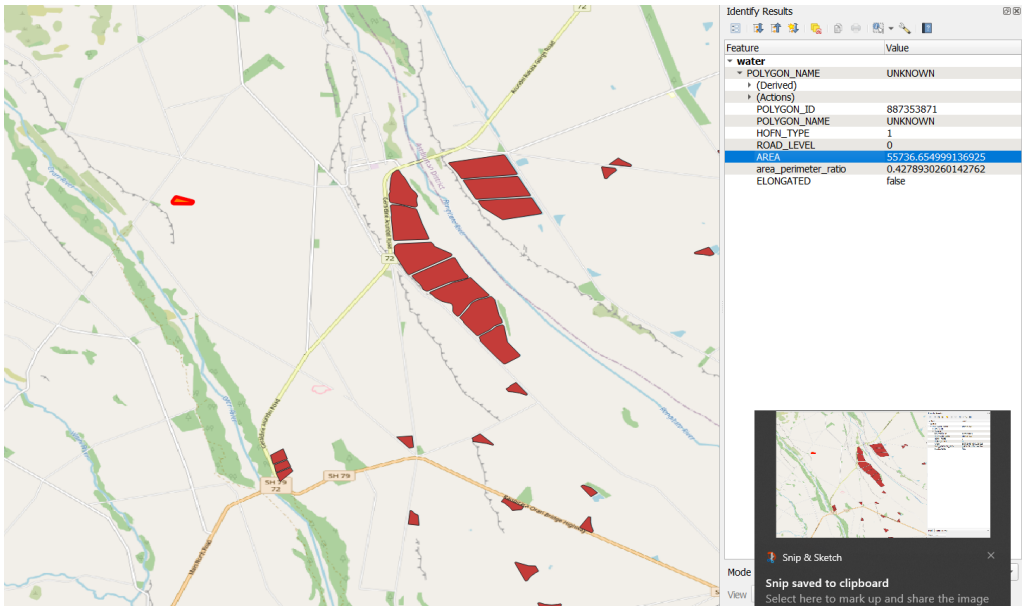
1. add New Zealand information into `OSM_offline_parser`
   - `./resource/config.yaml` line 132 add NewZealand

```
NewZealand:
mcc: "530"
relation: "556706"
```

   - `./src/attributes.py` line 86 add NewZeland

```
NewZealand = country_config.get("NewZealand").get("mcc"),
country_config.get("NewZealand").get("relation")
```

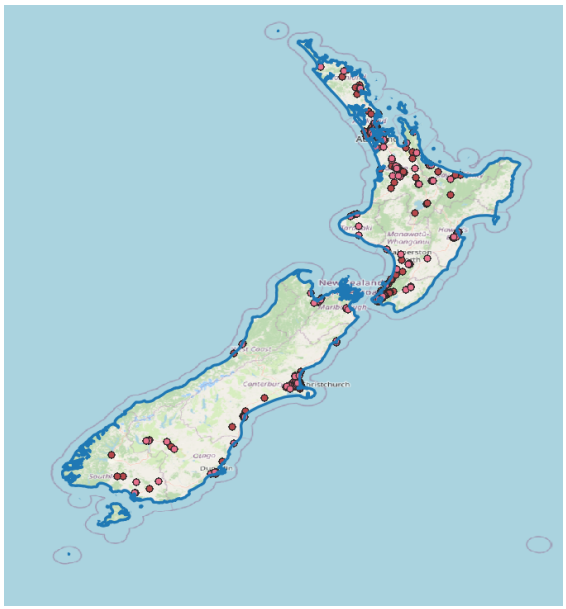
2. Road 1-5
3. Water
   - filter (3195 rows -> 1534 rows)
     - drop area < 70000(m^2)



- drop area_perimeter_ratio < 0.1

4. Coastline:

  - find NT2_antenna_[tech] file to determine which coastline is necessery to keep
    - all cells are include in two main land

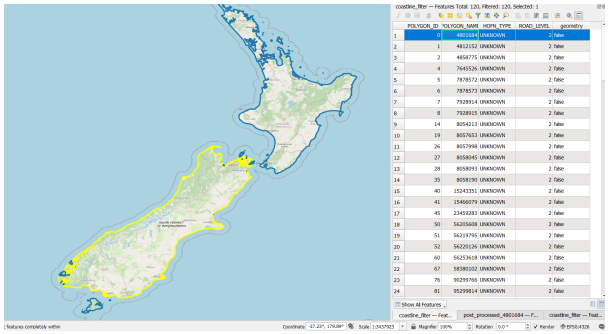
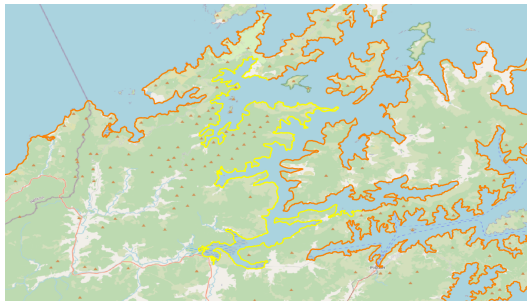


  - filter: keep costlines with a length > 5000 (meter)
    - coastline length distribution

```
length
(0, 10000]              485
(10000, 20000]           25
(20000, 30000]           11
(30000, 40000]            4
(40000, 50000]            3
(50000, 60000]            1
(60000, 70000]            1
(70000, 80000]            2
(130000, 140000]          2
(150000, 160000]          1
(160000, 170000]          1
(200000, 210000]          1
(230000, 240000]          1
(370000, 380000]          1
(410000, 420000]          1
(680000, 690000]          1
(5960000, 5970000]        1
Name: count, dtype: int64
```

- 543 coastlines-> 120 coastlines

- cut north island & south island coastline in threashole = 300 (Km)

Relation id	300m
	

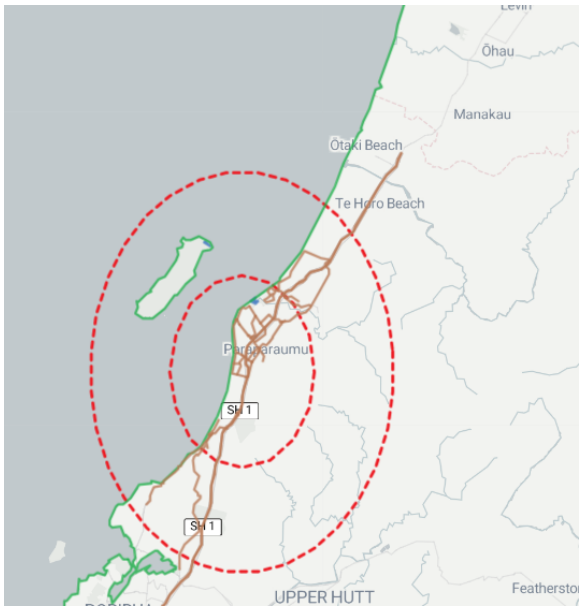
- 120 coastlines -> 171 coastlines

- manually adjust cross oction bridge

before	after
	

5. Concat `highway.tsv`, `coastline.tsv` and `water.tsv`

6. **Validation**



81068 Africa 14 countries GIS landusage

Add 14 countries' information into program

- ./resource/config.yaml
  - find relation
    - link: https://nominatim.openstreetmap.org/ui/search.html
OSM	relation 192796
Place Id	68786512 (on this server)
Wikipedia	en:Uganda
Calculated	

```
Tanzania:
    mcc: "640"
    relation: "195270"
Uganda:
    mcc: "641"
    relation: "192796"
Nigeria:
    mcc: "621"
    relation: "192787"
etc...
```

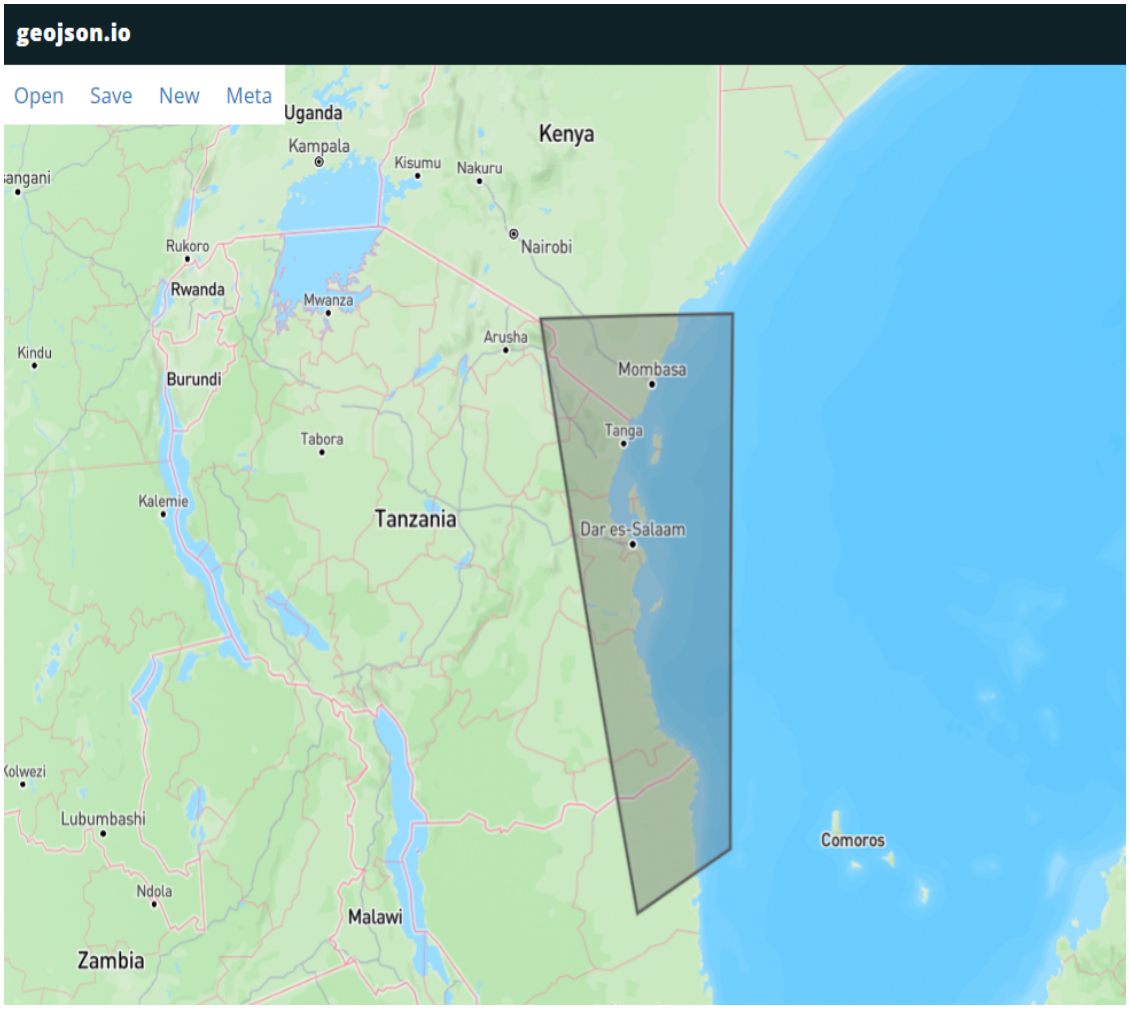
- ./src/attributes.py

```
Tanzania = country_config.get("Tanzania").get("mcc"),
country_config.get("Tanzania").get("relation")
Uganda = country_config.get("Uganda").get("mcc"),
```

```
country_config.get("Uganda").get("relation")
Nigeria = country_config.get("Nigeria").get("mcc"),
country_config.get("Nigeria").get("relation")
etc...
```

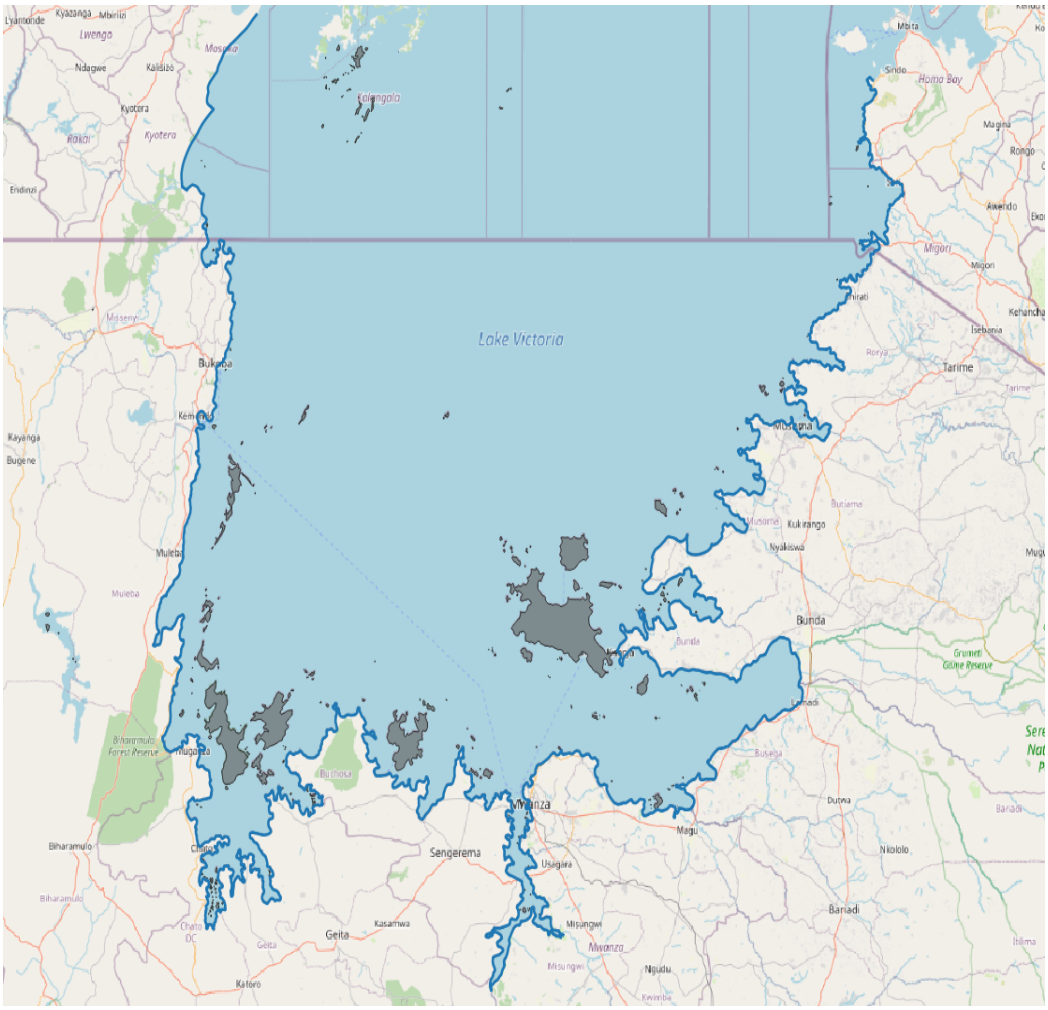
TZ (Tanzania)

NT2_GEO_POLYGON_Tanzania

- 1 water, 2 coast line, 7 highway, 11 village
- 1 water
- (in prograss) 2 coastline
    - draw an area manually in https://geojson.io/#map=2/0/20
        - locate .geojson in path: `./data/output/Tanzania/limit_polygon/custom`
        - name as: `limit_polygon.geojson`
        - 

1. coastline
    - download whole Africa data `africa-lastest.osm.pbf`
    - command: `python osm_offline_parser.py ./data/input/{}.osm.pbf 640 2 -locli`

2. 3 areas at lack in the country boundry

- command: `python osm_offline_parser.py ./data/input/tanzania-latest.osm.osm.pbf 640 1 -relation 2606941 -locli`
  - `./data/output/Tanzania/water/custom/raw_processed/water_relation_[2606941].tsv`
  - `./data/output/Tanzania/water/custom/raw_processed/island.tsv`
  - 

- 7 highway
- 11 village