

Terwillegar Park - Edmonton, Alberta

Site Information and Background:

General Information:

Name: Terwillegar Park

Location: 10 Rabbit Hill Rd NW, Edmonton, AB T6R 0R7

Year of Identification: 2022

Responsible Authority: North Saskatchewan Riverkeeper/Swim Drink Fish Canada

Monitoring Points:

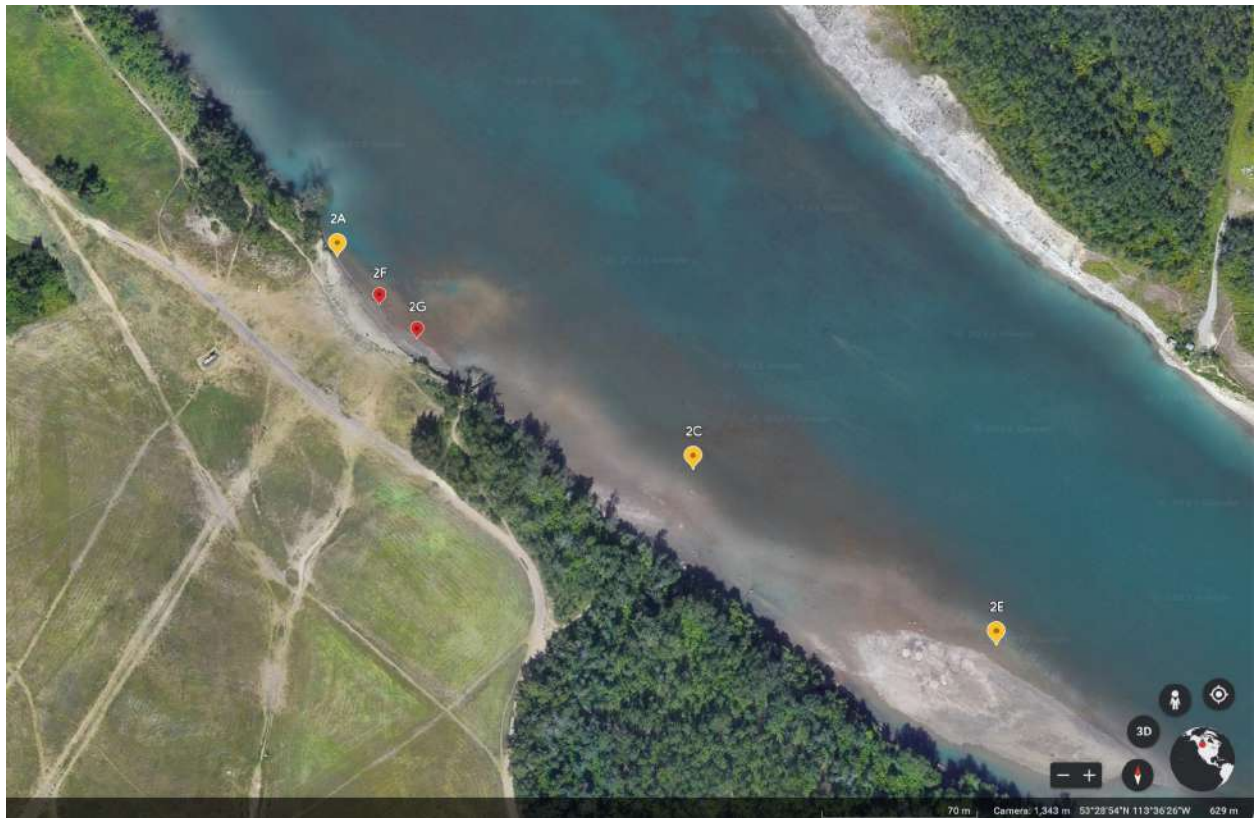


Figure 1a: The sampling points for Terwillegar Park in 2023 will be along the main beachfront of the park. Three samples will be taken along the beach here - one at the beginning, one in the middle, and one at the end (2A, 2F, and 2G). These three samples will help account for any change in water quality across the beachfront of the park as well as if this area is experiencing contamination from upstream stormwater outfalls. As the water levels can fluctuate in the river valley throughout the season, an additional sand bar may become accessible periodically throughout the sampling season. If this area is accessible during sampling days, two additional samples will be collected along this area as people also access this area of the beach when it is

available (2C and 2E). 2A, 2C, and 2E are historical sampling points and are in yellow. The sampling points 2F and 2G were added for the 2023 sampling season and are in red.



Figure 1b: Zones of influence for the Terwillegar Park sampling sites. Purple area indicates zone of influence for sampling points 2A, 2F, and 2G. The yellow zone of influence for points 2C and 2E is only used for sampling when the river is low and 2C and 2E are accessible.

Waterbody Information:

Waterbody type: River

Watershed: Strawberry Subwatershed of the North Saskatchewan River Watershed

Drainage Area (km²): 2996.62 km²

Annual Precipitation for Watershed (mm): 476.9mm in Edmonton on average

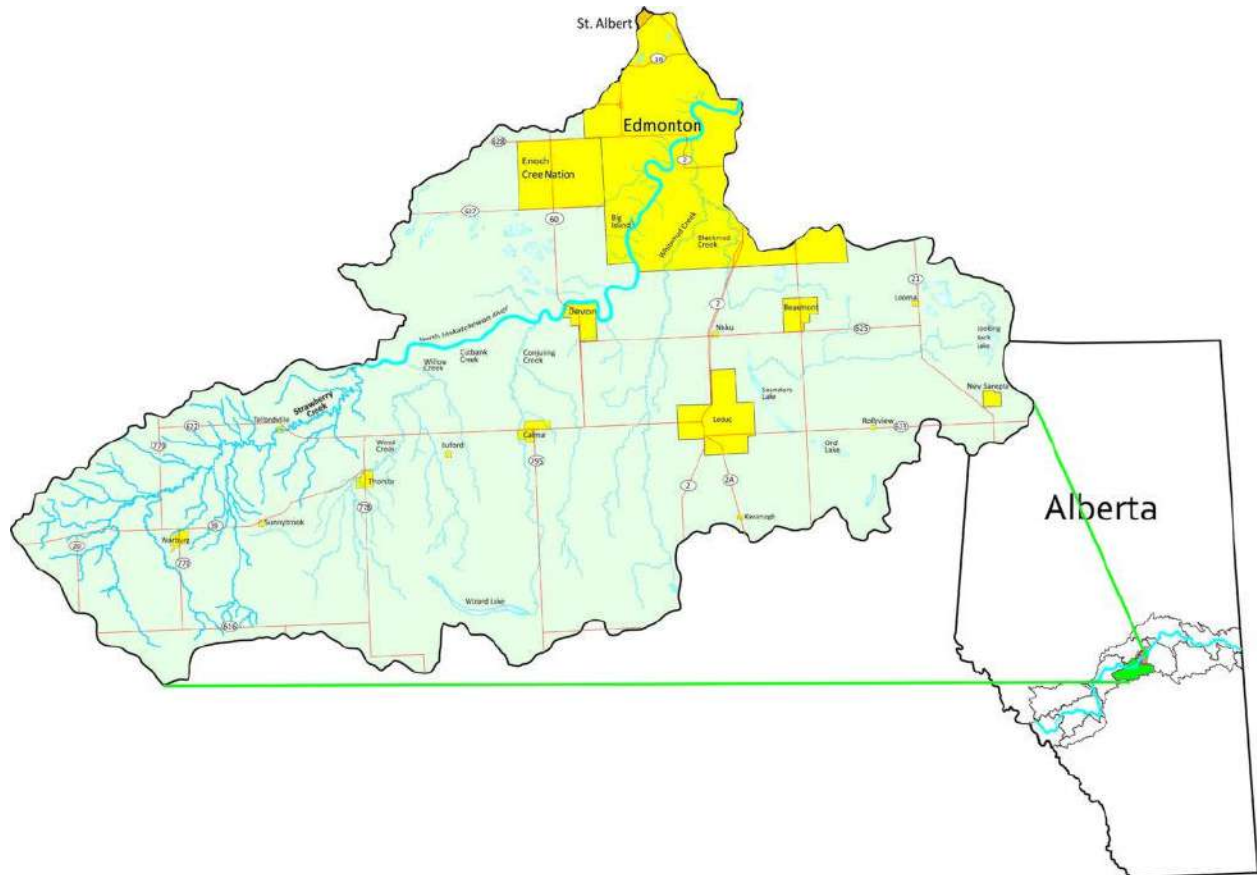


Figure 2: Terwillegar Park is located in the Strawberry Subwatershed of the North Saskatchewan Watershed. This Map was created by Billie Milholland and was accessed through the North Saskatchewan Watershed Alliance (<https://www.nswa.ab.ca/subwatershed/strawberry/>)

Surrounding Land Use:

- Residential areas
- Commercial (Restaurants, grocery stores, gas stations)
- Golf course

Summarize the surrounding land use here including relevant information that could impact water quality (e.g. there are 5 fast food chains near the site which could increase the input of litter in the water)

Upstream from the city of Edmonton, Terwillegar Park is primarily used as a dog park and recreation site. The beach area is a common launch point for recreational water users such as kayakers, canoers, and stand up paddleboarders. Along the river there are also motor boats and jetskis during the summer. Within the 1.5km² park there are walking, hiking, and mountain biking trails and a footbridge connecting it to River Valley Oleskiw. The park is surrounded by residential areas with small commercial areas with restaurants, gas stations, and grocery stores.

List Commercial Buildings, Industrial Buildings, Institutional Buildings etc. and provide addresses if possible

Upstream, there is the E.L. Smith Water Treatment Plant which is one of two water treatment plants that treat Edmonton's drinking water. Along the river valley there are several golf courses. Just across from Terwillegar Park is the Edmonton Country Club where there could be potential water contamination from pesticide, herbicide, fertilizer, and chemical use

Upstream Pollution Risks:

Based on your watershed, discuss the potential upstream risks (i.e. is there a lot of stormwater runoff, does a river flow into this site that has environmental concerns, is there a farm upstream that could input fertilizers into the water etc.?)

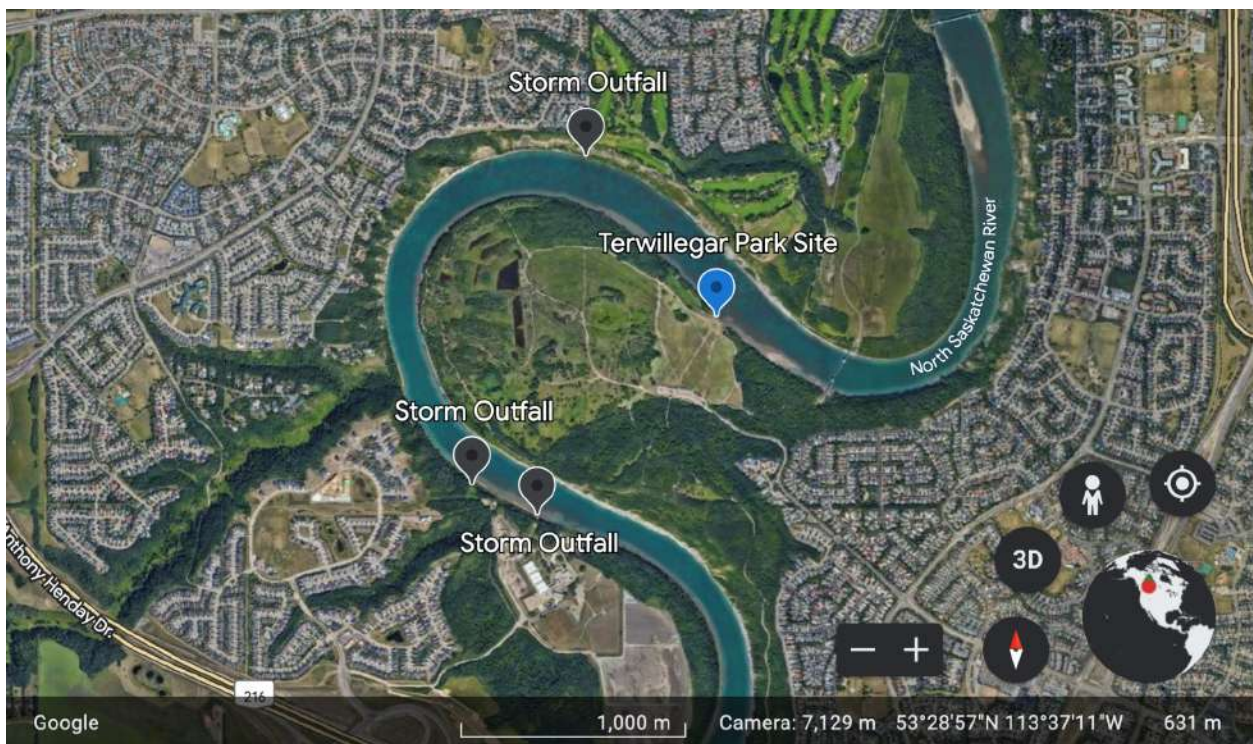


Figure 3: Map of storm outfalls upstream of Terwillegar Park site. Data obtained from City of Edmonton open datasets ([Drainage \(Map View\): Outfall | Edmonton - Open Data Portal](#)).

Upstream of the river access point at Terwillegar Park there is one stormwater outfall that is approximately 900m upstream in addition to two more outfalls further upstream (Figure 3). These outfalls could be discharging faecal, chemical, or other types of contamination, which may have an effect on water quality at the beach. Further upstream of Edmonton is a long stretch of rural farmland that could be contributing to elevated levels of faecal contamination and/or elevated

levels of fertilizers and pesticides. Wildlife in the area could also be contributing to elevated levels of faecal contamination.

Since Terwillegar Park is an off leash dog park, the beach is frequented by many dogs and owners that step into the water. Edmonton's Open Water Swimming group launches from this point, so during the warmer months this location is used for swimming. Families often come to this beach and float down the long sand and gravel bar that forms in late August. Diverse bird species at this beach including mallards, seagulls, canada geese, crows, chickadees, and more that could be potential sources of fecal contamination.

Potential Sources of Pollution:

1. Microbiological Hazard Assessment

Overall Risk from Microbiological Hazards:

Birds: **LOW**

- There were not very many birds directly along the beach, which could be a result of how many dogs/people were along the beach. Faecal contamination from birds was determined to be a low risk for this site.

Pets: **HIGH**

- This location is a popular location for pet-owners to bring their dogs to the park and to the beach. There were lots of dogs along both in and along the beach at this location. Therefore, the risk of faecal contamination from dogs at this site is rated as high.

Stormwater outfalls: **MEDIUM**

- There is one stormwater outfall just upstream from Terwillegar park and across the river and two more further upstream (Figure 3). These could be potential sources of faecal, chemical, or other types of contamination, which may have an impact on the water quality of the beach. This risk will likely increase following rainfall events.

Stormwater runoff from beach and surrounding facilities (e.g. parking): **LOW**

- The parking lot is approximately 345m away from the beach and is separated from the beach by a large field. Therefore, risk of contamination from the parking lot and vehicles is low.

Swimmers: **MEDIUM**

- No primary water users were observed using this site for swimming activities during our sampling time. However, this is the location that the Edmonton River Swimmers go

swimming in the river. The frequency of how often they swim here and whether they have or will swim at this location in 2023 is unknown.

2. Chemical Hazards

Overall Risk from Chemical Hazards:

Stormwater runoff from urban and residential areas: **MEDIUM**

- The stormwater outfalls upstream of the site (Figure 3) could potentially carry chemical contaminants from surrounding urban and residential areas during rainfall events.

Potential contamination from golf course run-off: **LOW**

- Potential risk of chemical contamination from the golf course across the river. Rated as low-risk given the river current which would likely carry any contaminants from this downstream.

Potential contamination from pesticide/herbicide/fertilizer application in the park: **MEDIUM**

- If pesticides/herbicides are used in the park it could be a potential risk for runoff contamination to the beach. Rated as medium risk given the close proximity of the park to the beach and the slope of the hill down to the waterfront.

Potential contamination from motorized-watercraft: **LOW**

- Potential risk of chemical contamination from motorized watercraft appeared to be low at this location. The beach is not equipped to be a boat launch for motorized boats given the steep slope down to the beach-front. Any chemical contamination from this would likely be from watercraft passing by the beach on the river.

3. Other Biological Hazards

There were no observations of cyanobacterial blooms or large numbers of aquatic plants at this site. The presence of Swimmer's Itch is unknown but unlikely at this site.

Overall Risk from Other Biological Hazards:

Cyanobacterial Blooms: **LOW**

- No cyanobacteria observed at this site.

Schistosomes (Swimmer's Itch): **LOW**

- The presence of Schistosomes or Swimmer's Itch is unknown at this location. However, it is most commonly found in still freshwater bodies such as lakes and ponds.

Large number of aquatic plants: **LOW**

- No aquatic plants observed at this location.

4. Physical Hazards and Aesthetic Considerations

The main physical hazards at this site are steep slopes and a strong current. The beach area is clean and free from litter and debris. Automobiles are not permitted near the beach area. Recreational watercraft like paddle boards and kayaks are permitted on the beach.

Overall Risk from Physical Hazards:

Steep slopes: **HIGH**

- There is a steep hill that leads down to the main beach from Terwillegar Park. This is hazardous when wet and may affect accessibility of the beach during both dry and wet conditions.
- There are lots of steep slopes and trails that lead off of the main trail in the forest down to the riverside. These trails are very hazardous and steep and are unmaintained.

Depths greater than 4.5 meters: **LOW**

- The water along the beach that people were using for recreation was relatively shallow.

Large rocks: **LOW**

- No large rocks are present at this site.

Slippery or uneven bottom: **LOW**

- Bottom was not slippery or uneven but it does sink a bit as you walk which could be a potential hazard.

Strong Currents: **MEDIUM**

- The river currents are relatively fast and strong at this location which is why it is rated as a medium risk.

Undertow : **MEDIUM**

- There is a sign at the beach that warns of strong undertows near the bridge that is downstream. This is not directly at the beach which is why it was given a risk rating of medium.

Litter on beach: **LOW**

- There was no litter present on the beach area that was visible at the time of sampling.

Floating Debris: **LOW**

- No floating debris was visible at the time of sampling.

Broken Glass: **LOW**

- No broken glass was present at the time of sampling.

Medical Waste: **LOW**

- No medical waste was present at the time of sampling.

Facilities and Provisions:

Facilities:

Toilets: 2 washroom facilities. They are not accessible but are gender neutral.

Showers: None

Drinking Water Fountains: 0

Litter Bins: 1

Recycling Bins: 0

Access for Persons with Disabilities: this beach is potentially inaccessible to Persons with Disabilities due to the steep slopes that lead down to the water.

Safety Provisions:

Lifeguard Station: 0

Life Saving Equipment: 0

Emergency Telephone: No

First Aid Station: No

Beach Postings/Suitability for Swimming:
Yes

Is there information for reporting Municipal or Industrial Spills/Discharges/Treatment Bypasses? No

Emergency Contact Information? No

Is there information for reporting waterborne disease outbreaks? No

Other Information:

Reporting Mechanisms:

- For concerns about water in your area call Environmental Public Health at 1-833-476-4743
- To report a spill release or emergency that could damage the environment, call Alberta Environmental Hotline 1-800-222-6514

Where to find the water quality results:

- Swim Guide: <https://www.theswimguide.org/beach/9383>

Contact Details for EHSS information:

Contact coordinators: Abigail Brown (778) 228-4994, Shaugn Coggins (780) 246-0703.

Appendix:

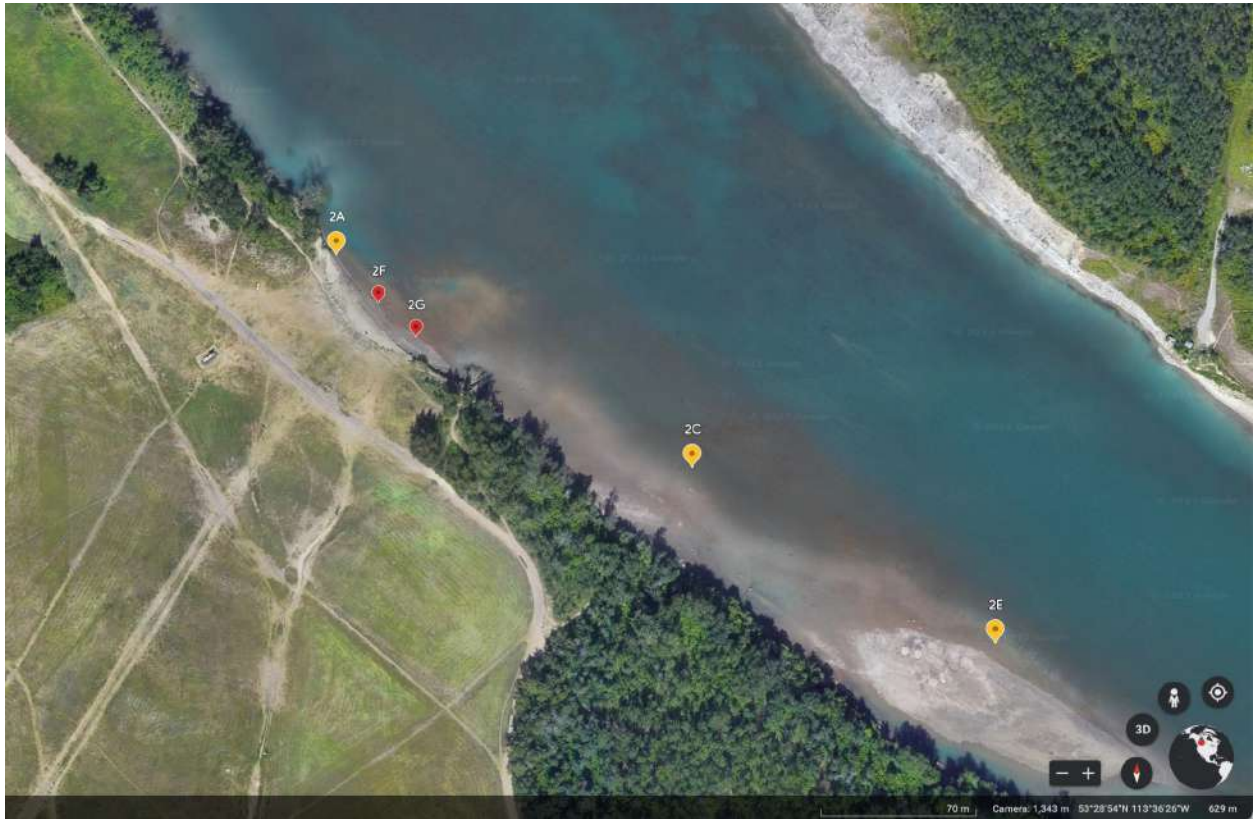


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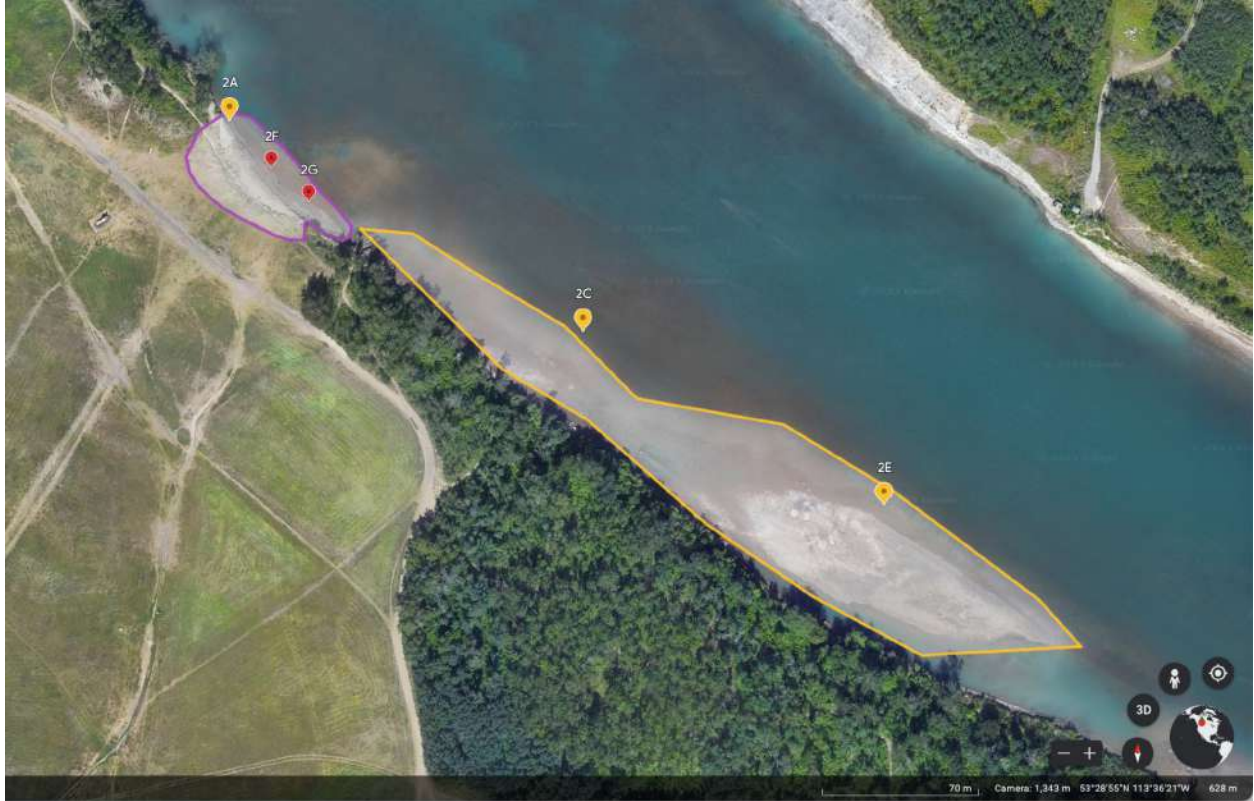


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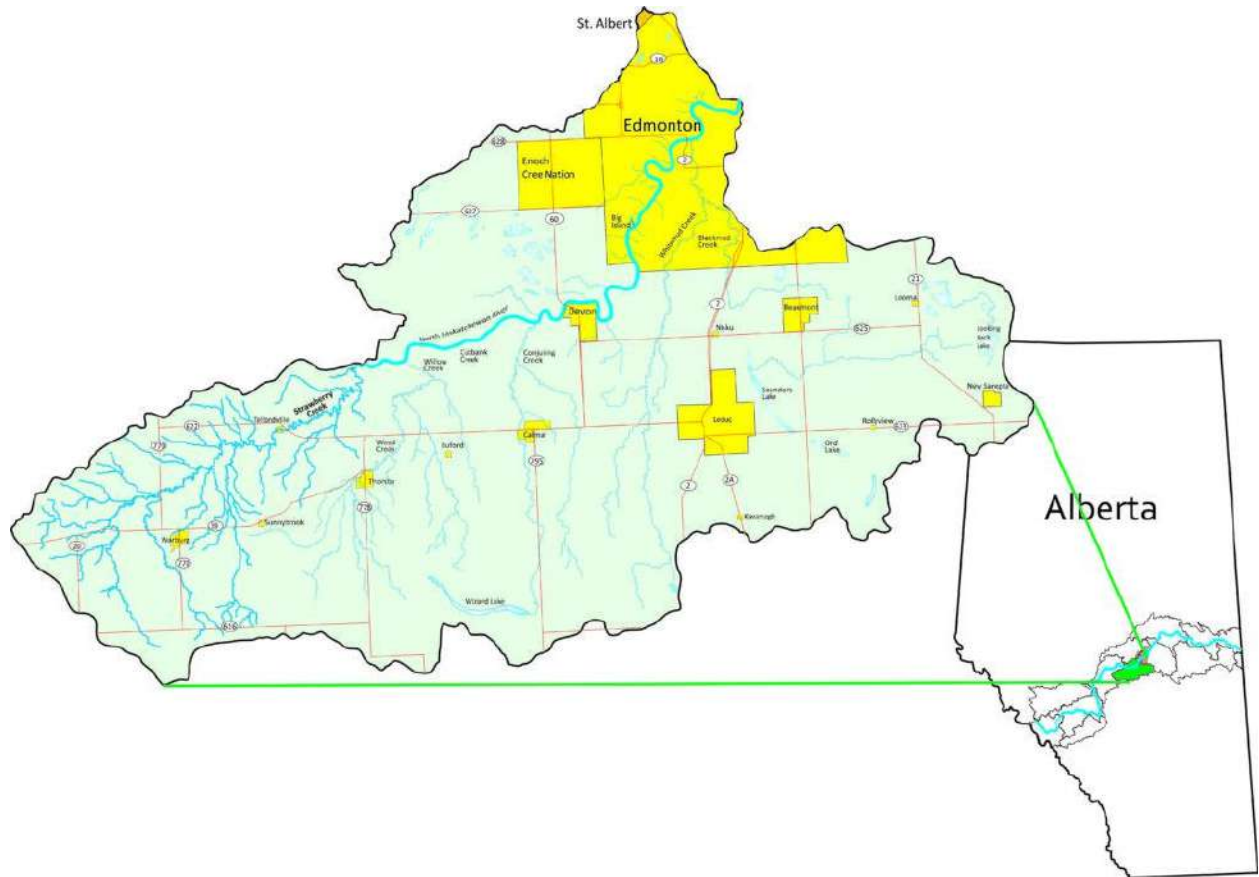


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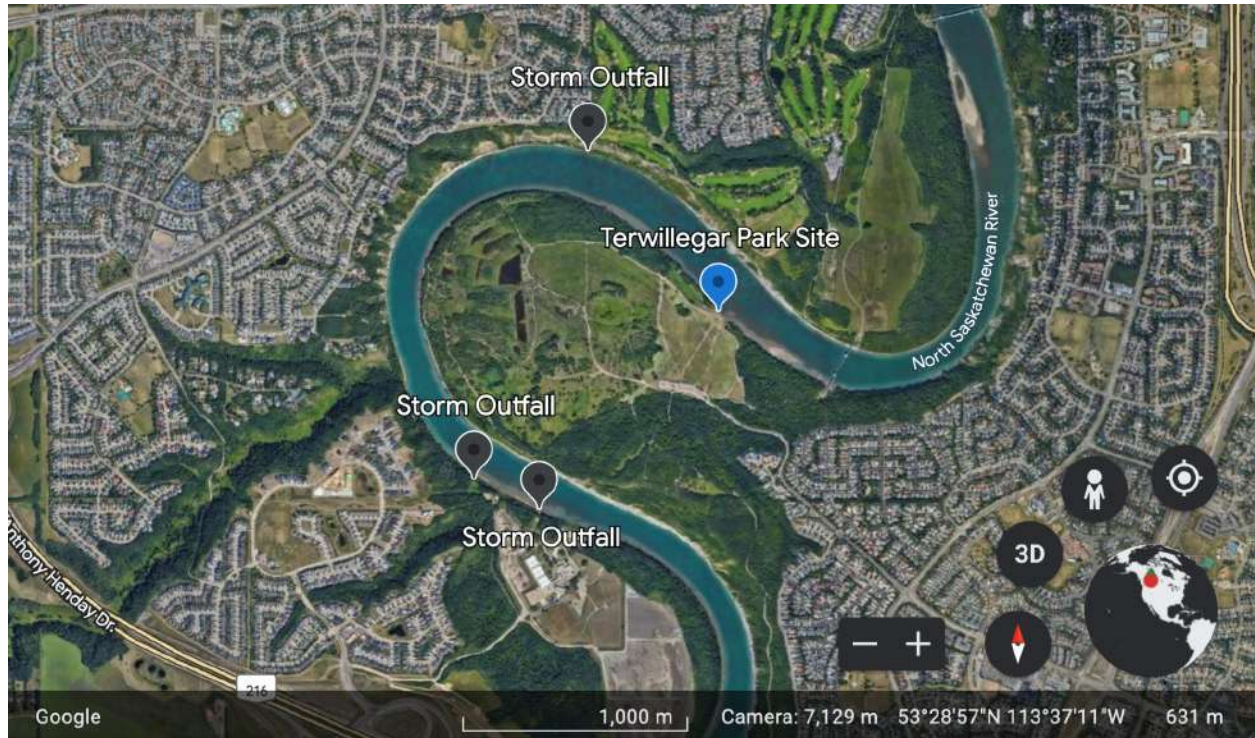


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