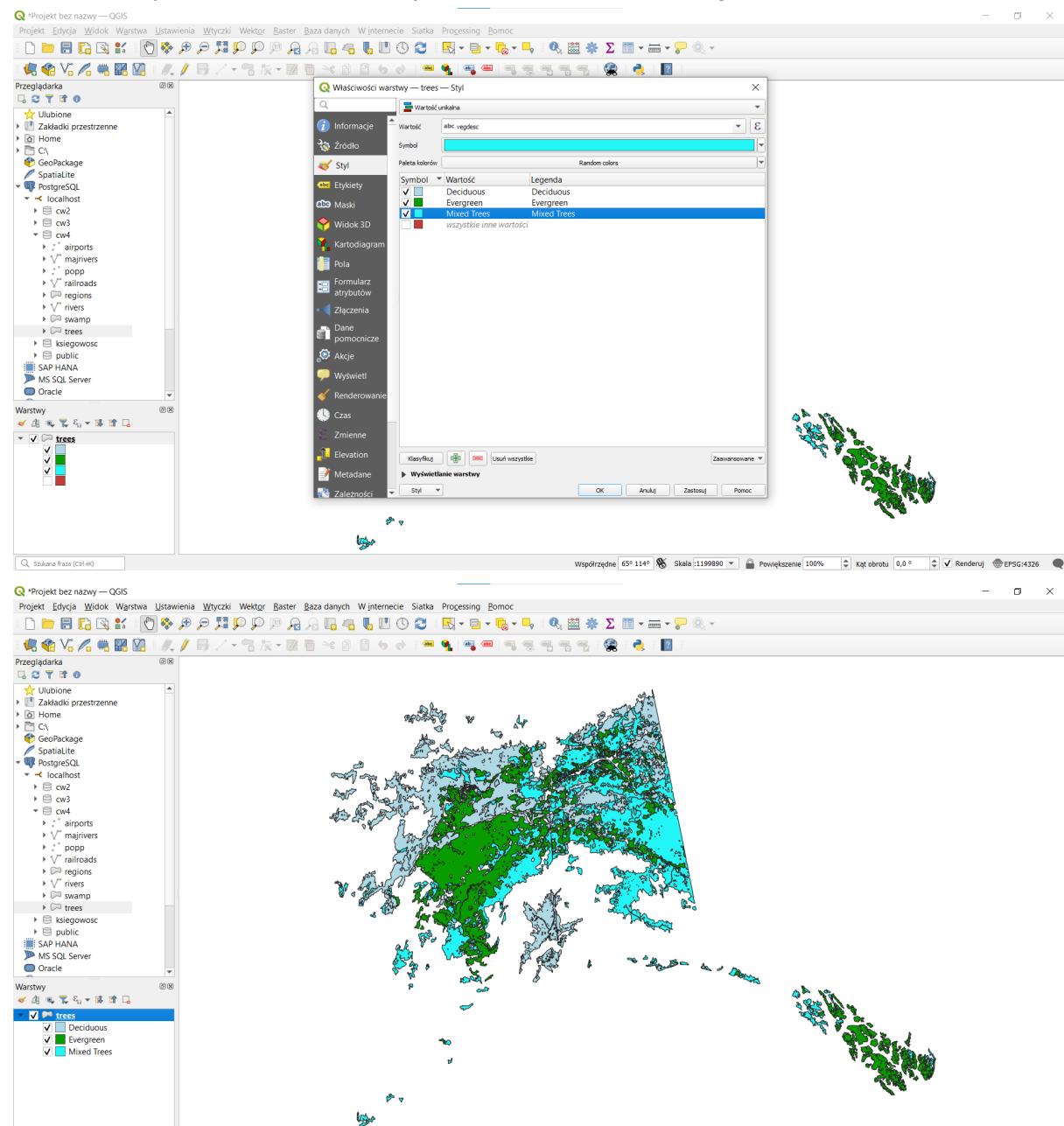


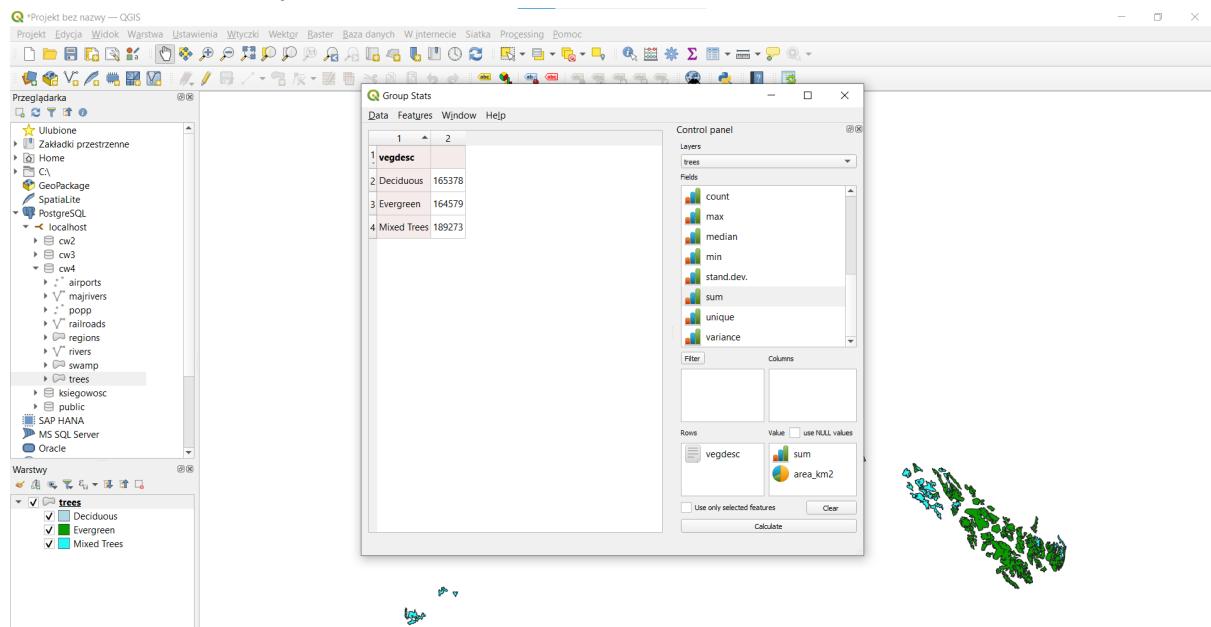
```
shp2pgsql -s 4326 C:\qgis_sample_data\shapefiles\rivers.shp cw4.rivers | psql -h localhost -p 5432 -d baza_testowa -U postgres
```

1.

Warstwa trees -> Właściwości warstwy -> Styl -> Wartość unikalna 'vegdesc' -> Dodanie warstw ikoną plusa -> nadanie różnych kolorów i wartości w legendzie



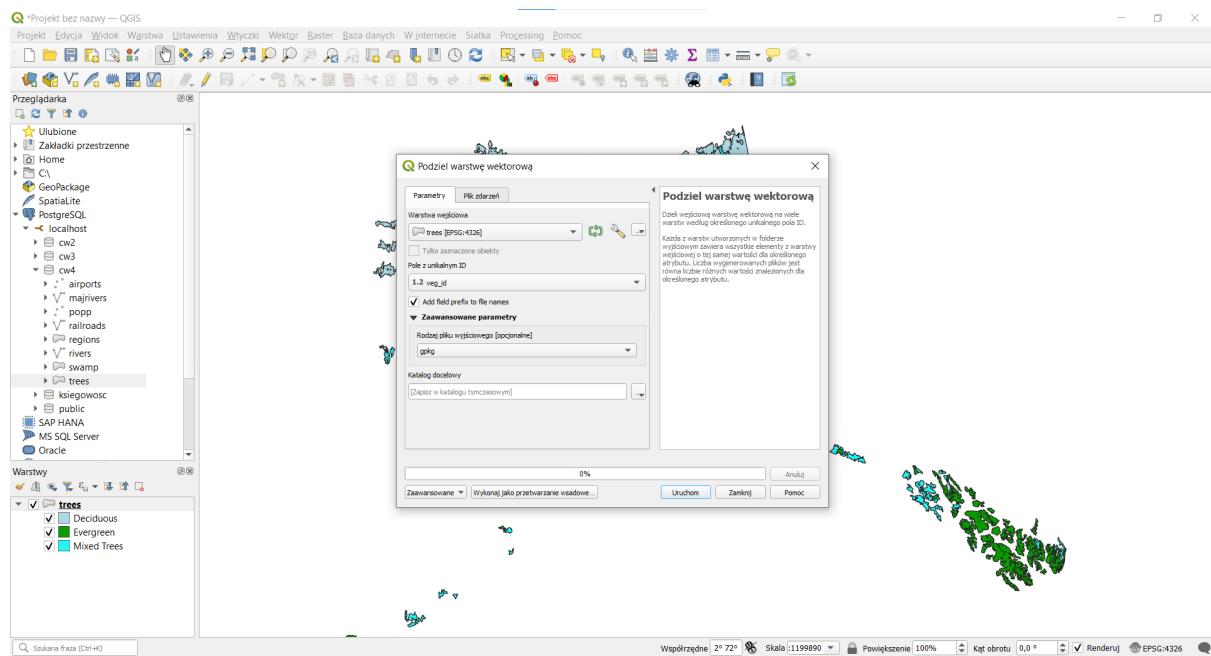
Obliczenie pola -> wtyczka Group Stats



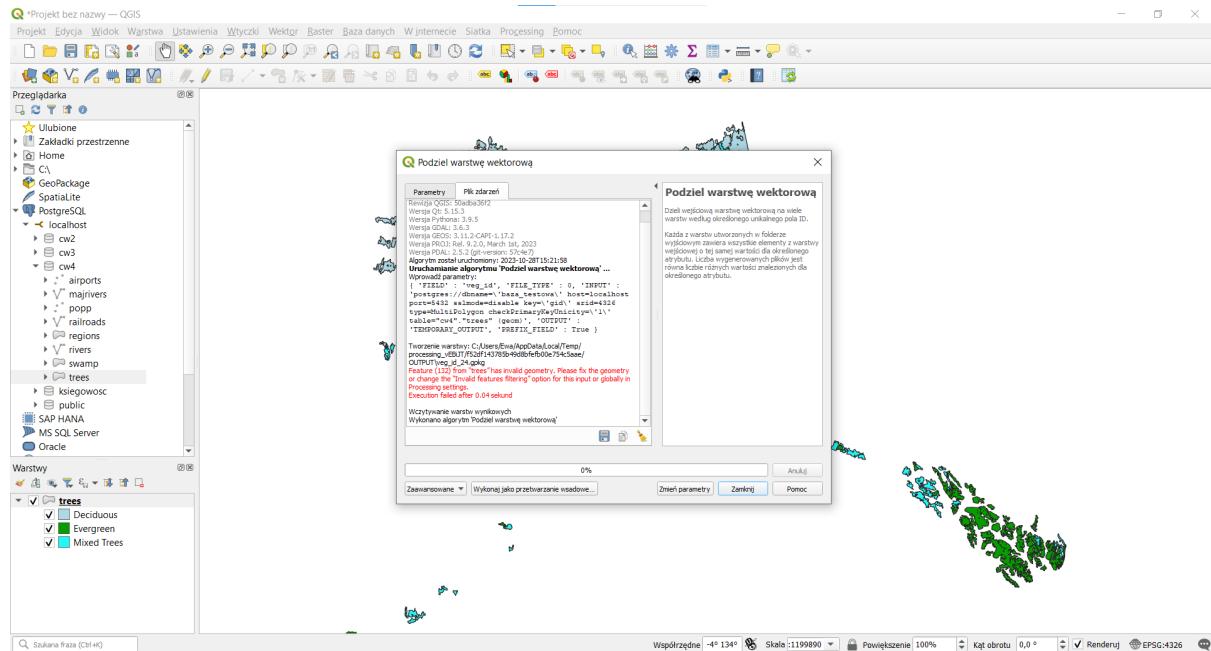
Pole dla 'Mixed Trees': **189273 jednostek**

2.

Zakładka 'Wektor' -> Narzędzia zarządzania danymi -> Podziel warstwę wektorową -> wg parametru 'veg_id'

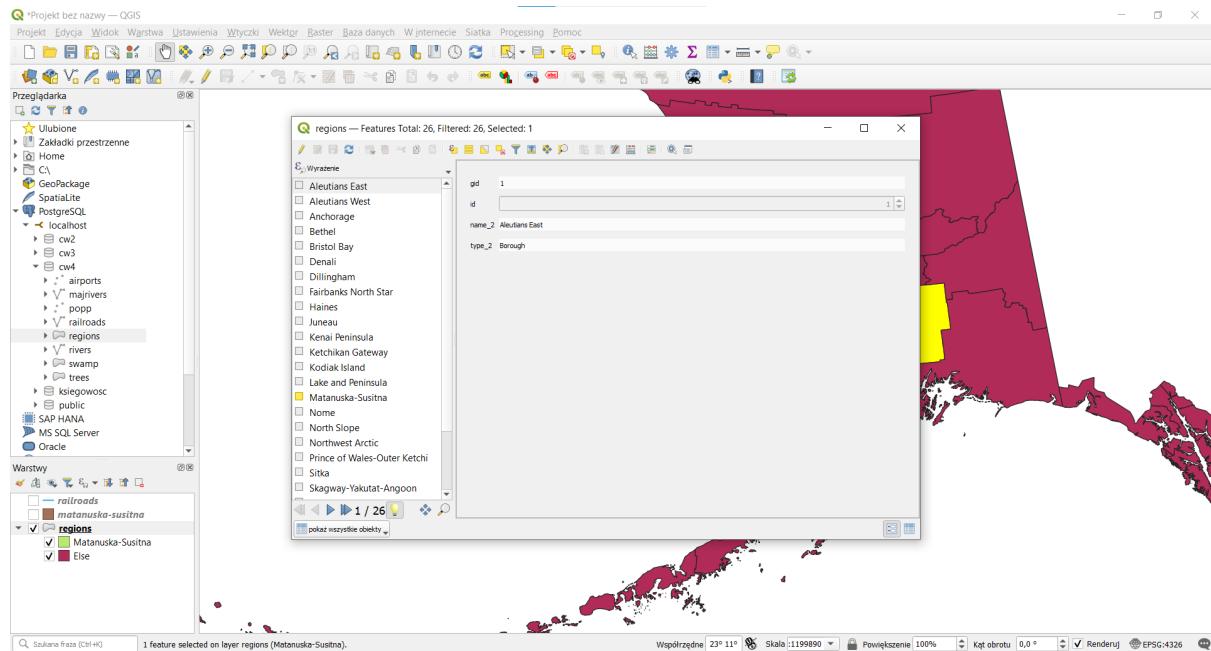


błąd podczas wykonywania:

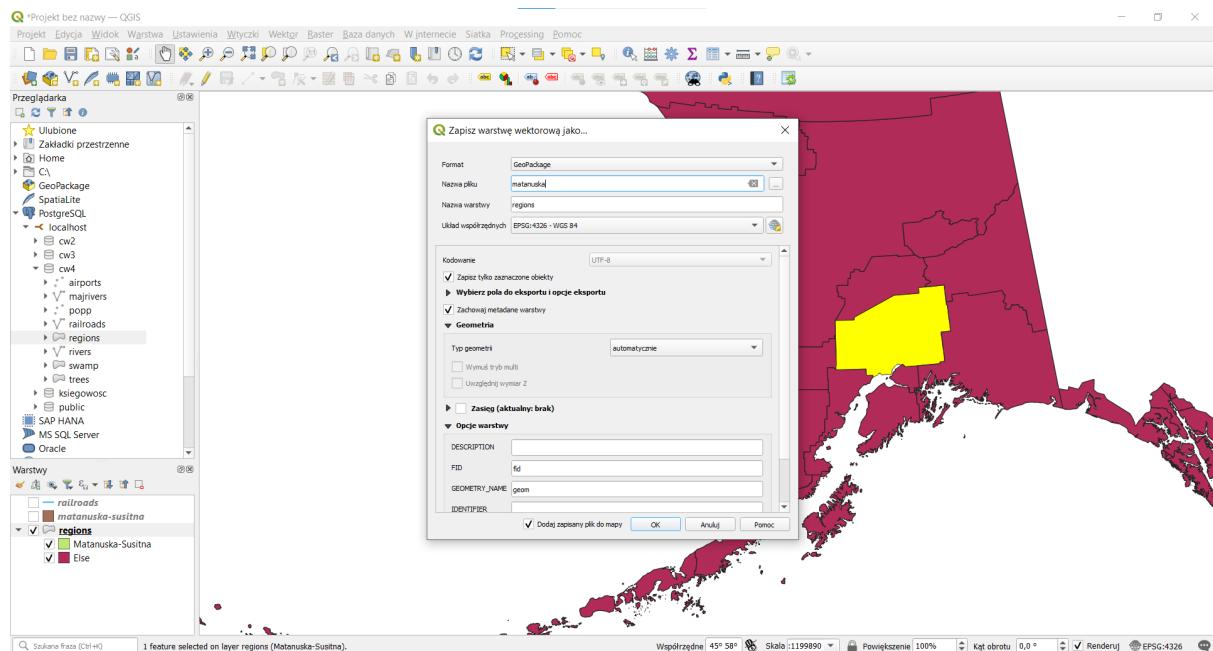


3.

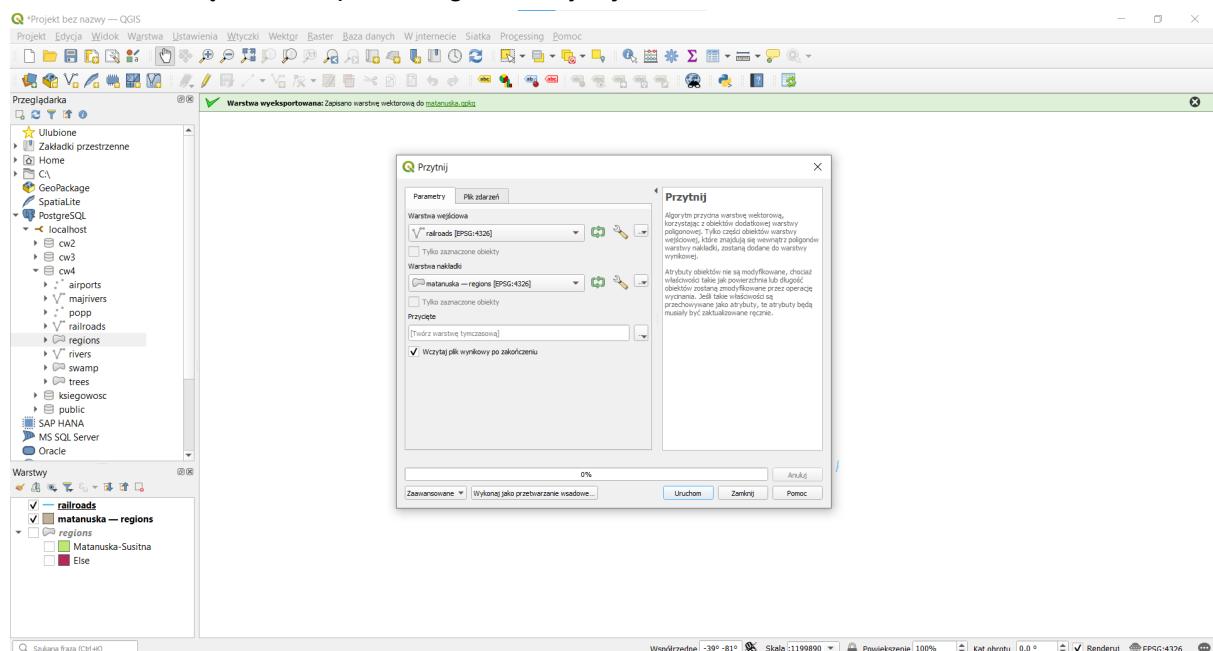
Tabela atrybutów -> Zaznaczenie warstwy Matanuska-Susitna



Eksport -> Zapisz wybrane obiekty jako



Wektor -> Narzędzia Geoprosesingu -> Przytnij



Obliczenie długości:

Tabela atrybutów przyciętej warstwy -> Kalkulator pól -> Utwórz nowe pole 'length' + wybór funkcji \$length

Błędny wynik wychodzi dla układu współrzędnych 4326

The screenshot shows the QGIS interface with a table window open. The table is titled "railroads_cut — przycięte" and contains 22 features. The columns are: fid, gid, cat, exsdesc, f_code, f_codedesc, fcodesc, and length. The data shows various railroad segments with IDs ranging from 1 to 16. All segments are categorized as "Operational" (AN010) and are labeled as "Railroad" with "Single" geometry. The length column shows values such as -2147483648, which is a negative value representing a coordinate error.

fid	gid	cat	exsdesc	f_code	f_codedesc	fcodesc	length
1	1	1	1 Operational	AN010	Railroad	Single	-2147483648
2	2	2	2 Operational	AN010	Railroad	Single	-2147483648
3	3	3	3 Operational	AN010	Railroad	Single	-2147483648
4	4	4	4 Operational	AN010	Railroad	Single	-2147483648
5	5	5	5 Operational	AN010	Railroad	Single	-2147483648
6	6	6	6 Operational	AN010	Railroad	Single	-2147483648
7	7	7	7 Operational	AN010	Railroad	Single	-2147483648
8	8	8	8 Operational	AN010	Railroad	Single	-2147483648
9	9	29	29 Operational	AN010	Railroad	Single	-2147483648
10	10	30	30 Operational	AN010	Railroad	Single	-2147483648
11	11	31	31 Operational	AN010	Railroad	Single	-2147483648
12	12	32	32 Operational	AN010	Railroad	Single	-2147483648
13	13	33	33 Operational	AN010	Railroad	Single	-2147483648
14	14	34	34 Operational	AN010	Railroad	Single	-2147483648
15	15	53	53 Operational	AN010	Railroad	Single	-2147483648
16	16	54	54 Operational	AN010	Railroad	Single	-2147483648

Należy zmienić układ współrzędnych przyciętej warstwy na 2964, wtedy wynik to:

The screenshot shows the QGIS interface with a table window open. The table is titled "Przycięte" and contains 22 features. The columns are: gid, cat, exsdesc, f_code, f_codedesc, fcodesc, and len. The data shows various railroad segments with IDs ranging from 1 to 16. All segments are categorized as "Operational" (AN010) and are labeled as "Railroad" with "Single" geometry. The length column shows values such as 34882, 19610, 14893, etc., which are positive values representing correct distances.

gid	cat	exsdesc	f_code	f_codedesc	fcodesc	len
1	1	1 Operational	AN010	Railroad	Single	34882
2	2	2 Operational	AN010	Railroad	Single	19610
3	3	3 Operational	AN010	Railroad	Single	14893
4	4	4 Operational	AN010	Railroad	Single	21399
5	5	5 Operational	AN010	Railroad	Single	1013
6	6	6 Operational	AN010	Railroad	Single	8794
7	7	7 Operational	AN010	Railroad	Single	5265
8	8	8 Operational	AN010	Railroad	Single	1858
9	29	29 Operational	AN010	Railroad	Single	1376
10	30	30 Operational	AN010	Railroad	Single	10038
11	31	31 Operational	AN010	Railroad	Single	5061
12	32	32 Operational	AN010	Railroad	Single	4134
13	33	33 Operational	AN010	Railroad	Single	1723
14	34	34 Operational	AN010	Railroad	Single	7188
15	53	53 Operational	AN010	Railroad	Single	10111
16	54	54 Operational	AN010	Railroad	Single	14473

A następnie zsumować wartości w kolumnie 'len'

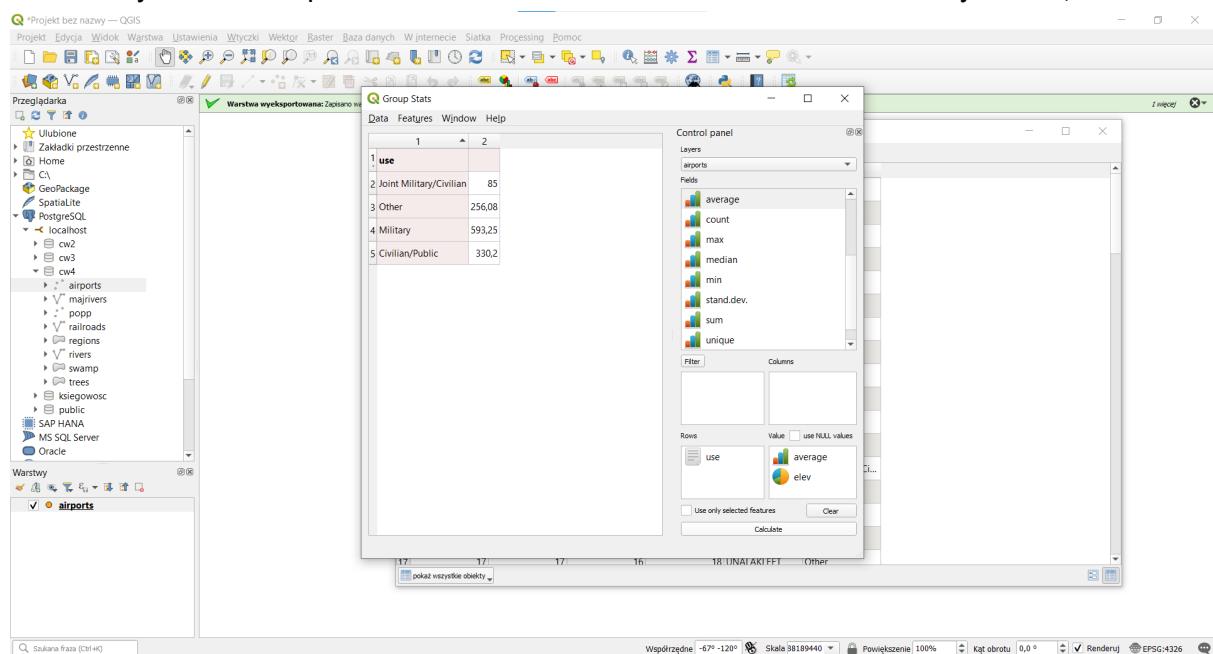
The screenshot shows the QGIS interface with the following details:

- Project Bar:** Shows the current project is "Projekt bez nazwy — QGIS".
- Table of Contents:** Shows the "Przycięte" layer is selected.
- Table View:** Shows a table with columns: gid, cat, exsdesc, f_code, f_code, and Railroad. The "Przycięte" layer is highlighted in brown.
- Context Menu:** The "Przycięte — Kalkulator pól" option is highlighted.
- Przycięte — Kalkulator pól Dialog:**
 - Only update 0 selected feature(s)**
 - Twórz nowe pole** (Create new field) is checked.
 - Nazwa** (Name): sum
 - Typ** (Type): 1.2 Liczba dziesiętna (real)
 - Długość pola wynikowego** (Length of result field): 10
 - Dokładność** (Precision): 3
 - Wyrażenie** (Expression): `sum($length)`
 - Funkcje agregujące** (Aggregate functions): sum, aggregate.
 - Ostatnio użyte (field...)**: sum(\$length)
 - Tablice**: array_sum

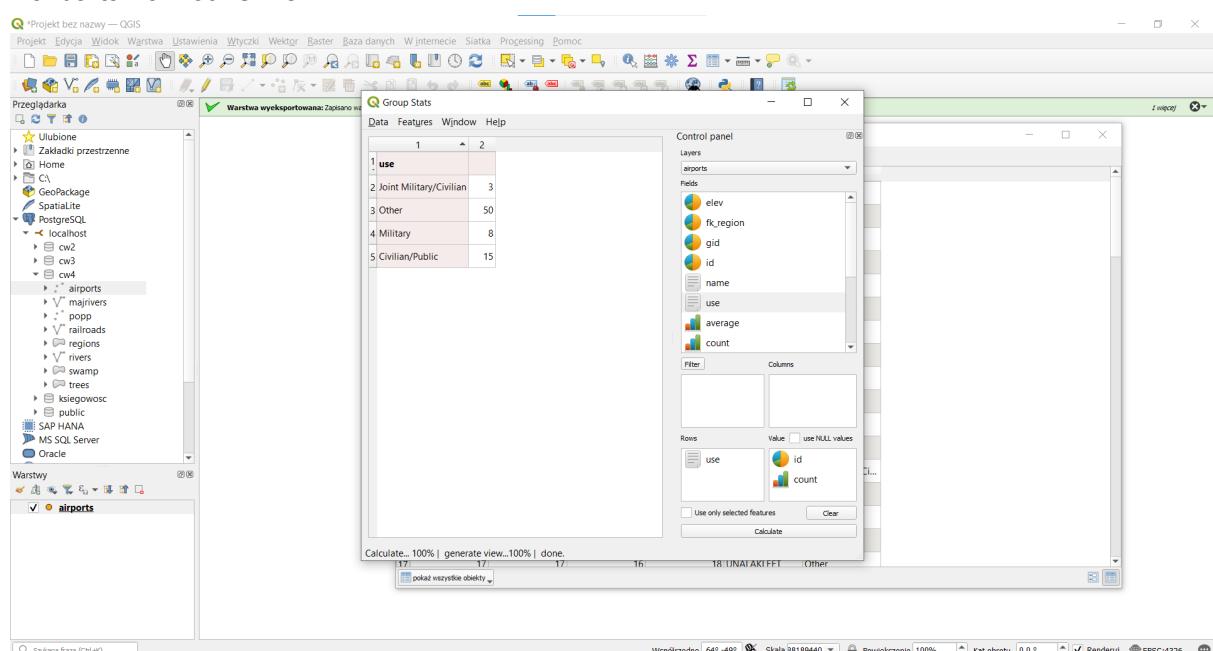
Suma długości to: **268204**

4.

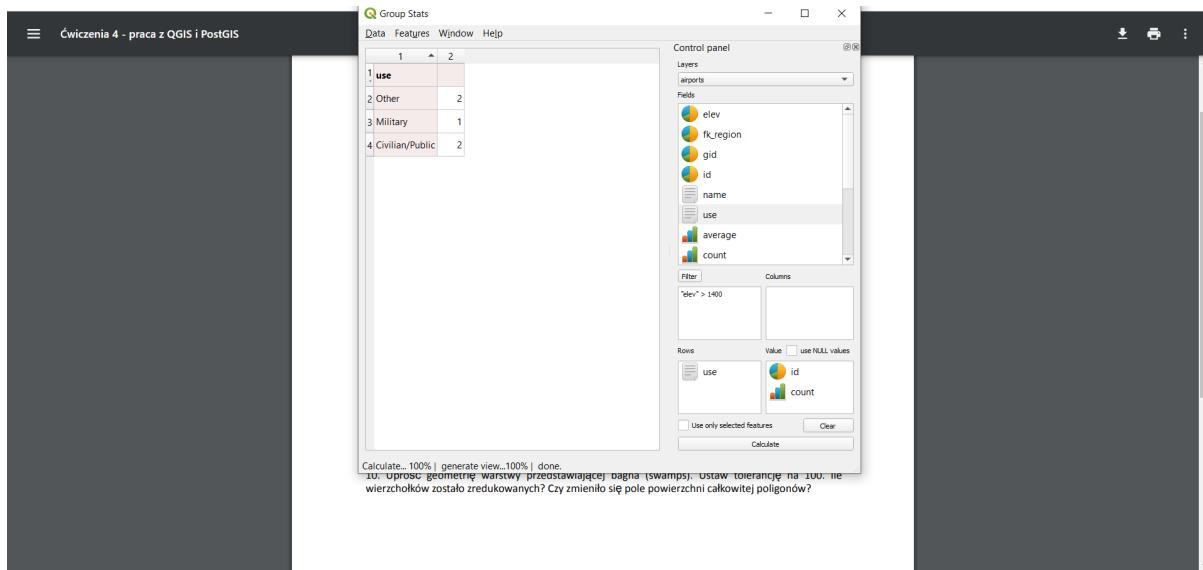
Średnia wysokość nad poziomem morza dla lotnisk o charakterze militarnym: **593,25**



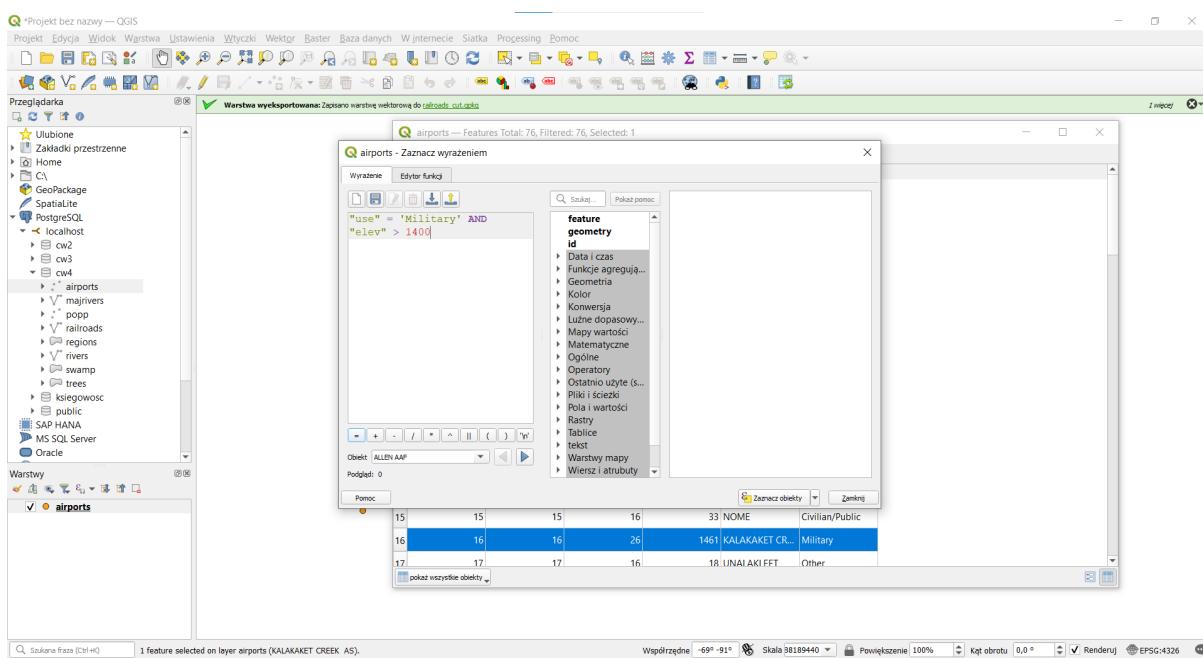
Liczba takich lotnisk: **8**

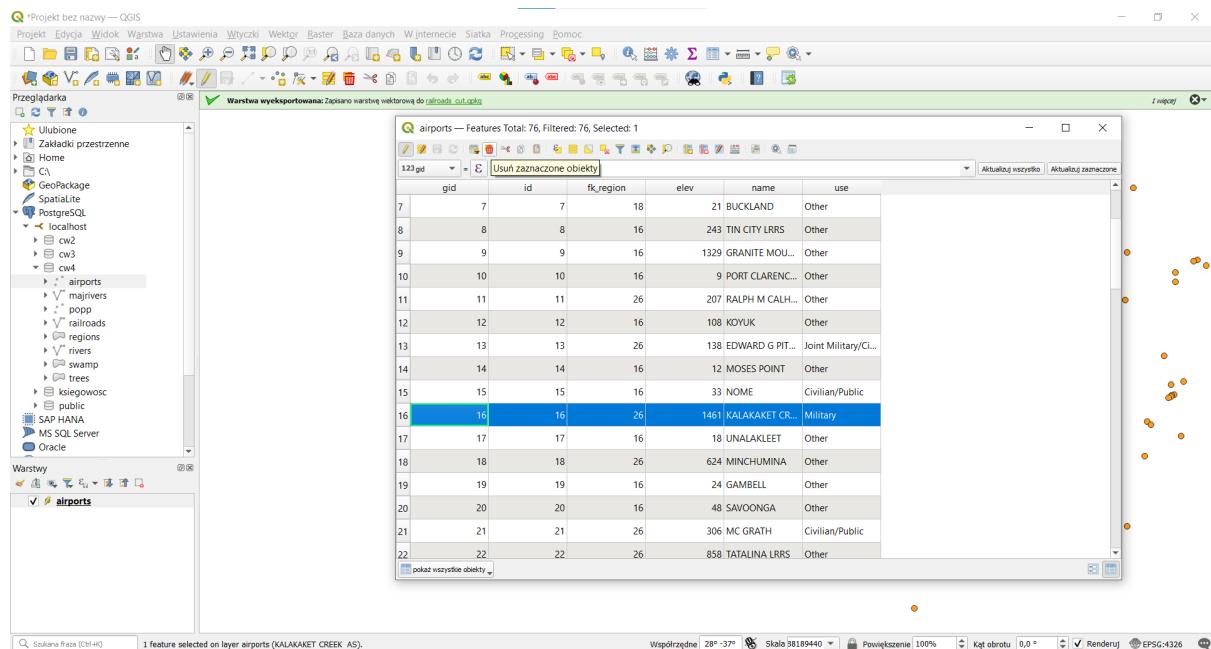


Liczba lotnisk typu "Military" powyżej 1400 m n.p.m: 1

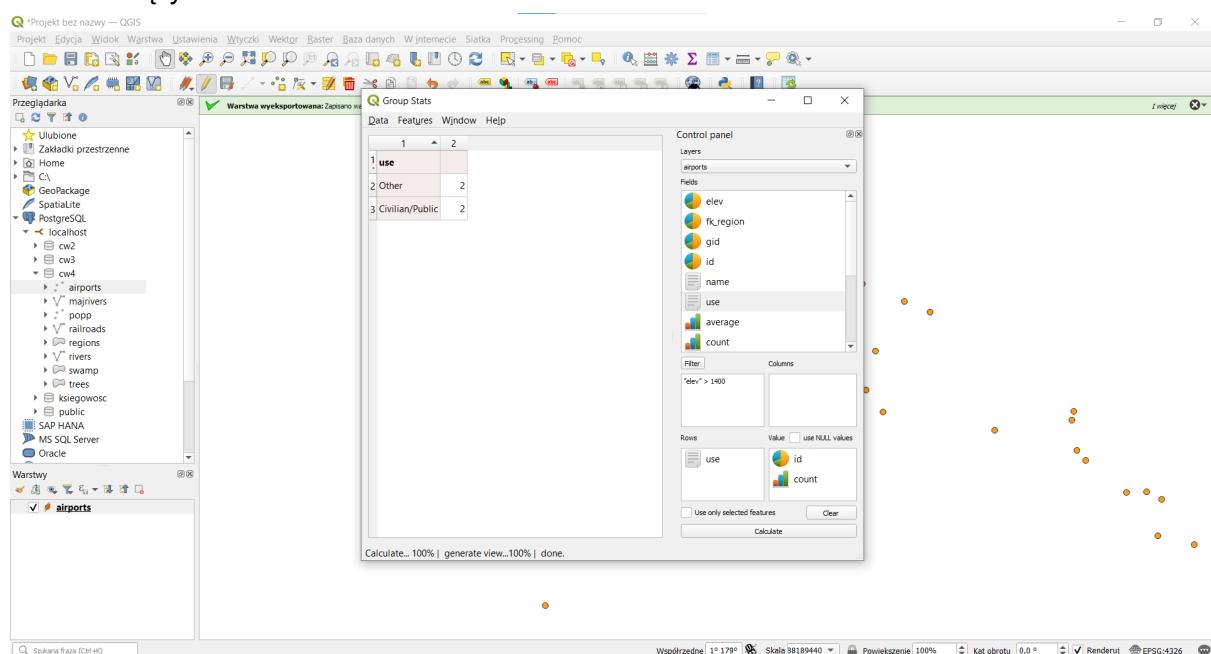


Usuwanie takich obiektów: Tabela atrybutów -> Zaznaczenie obiektów -> ikona ołówka -> ikona kosza:



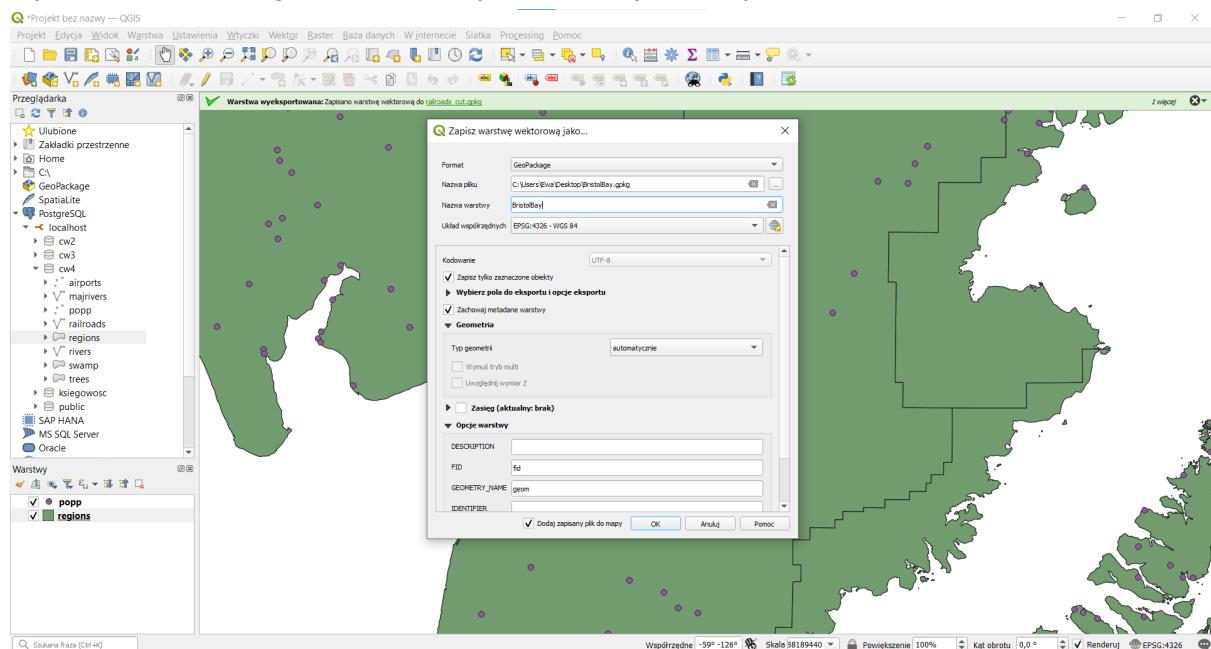


Brak usuniętych obiektów:

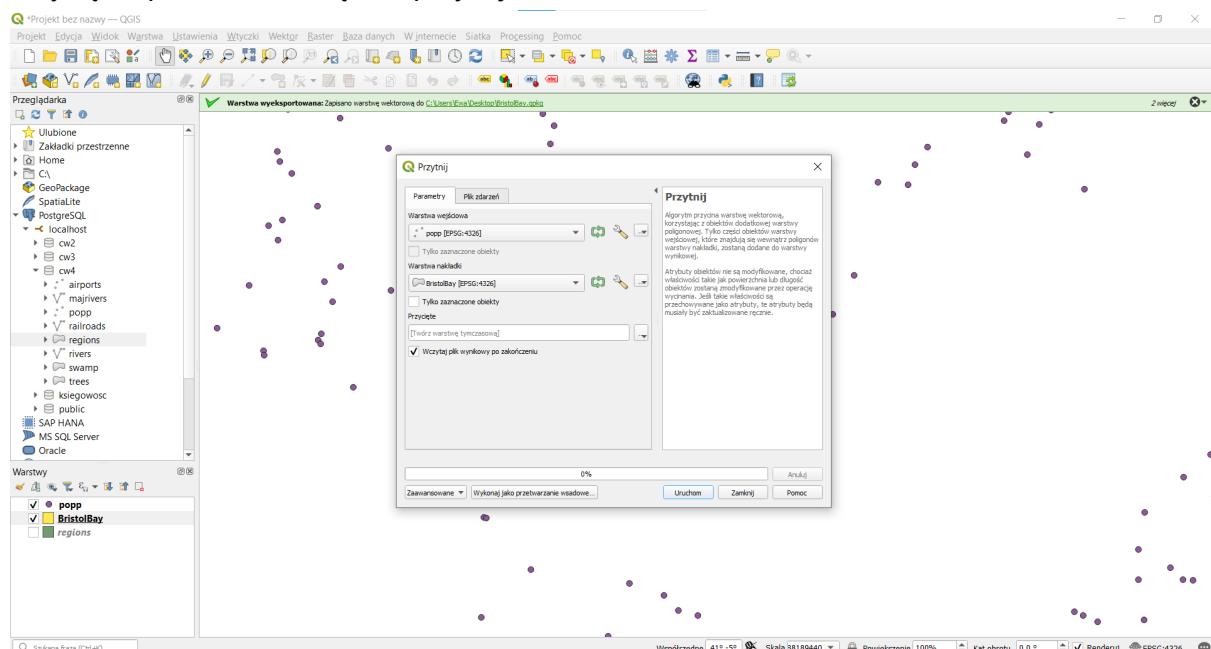


5.

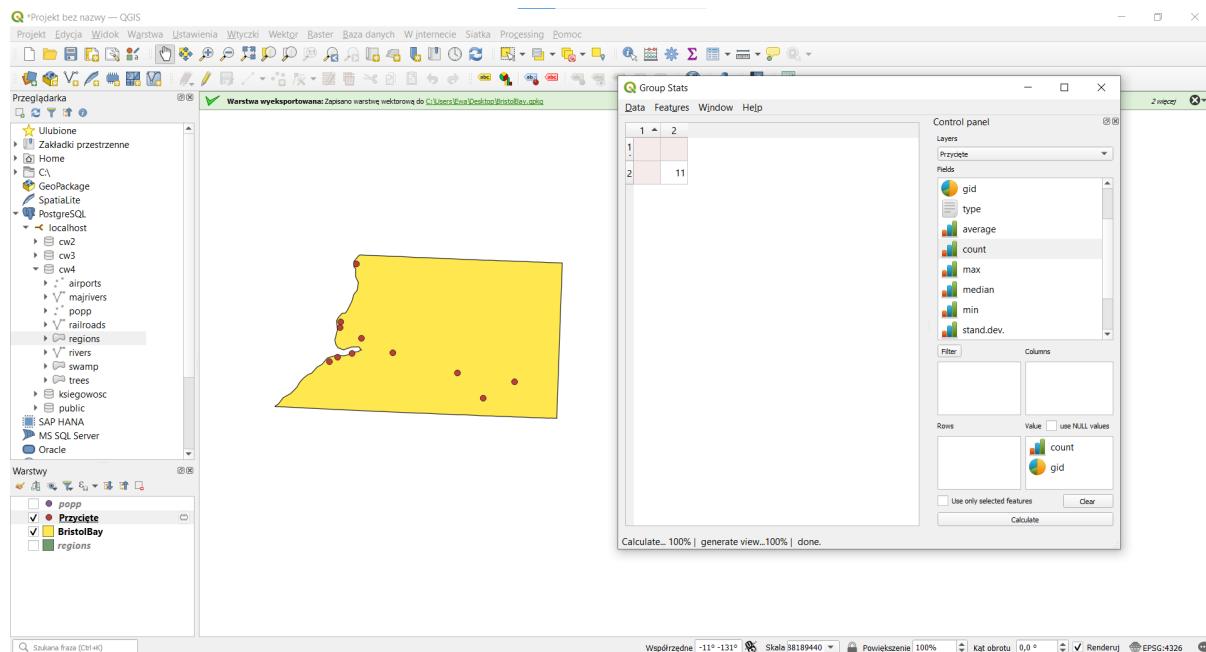
Wyeksportowanie regionu Bristol Bay do osobnej warstwy



Przycięcie punktów: Narzędzie przytnij

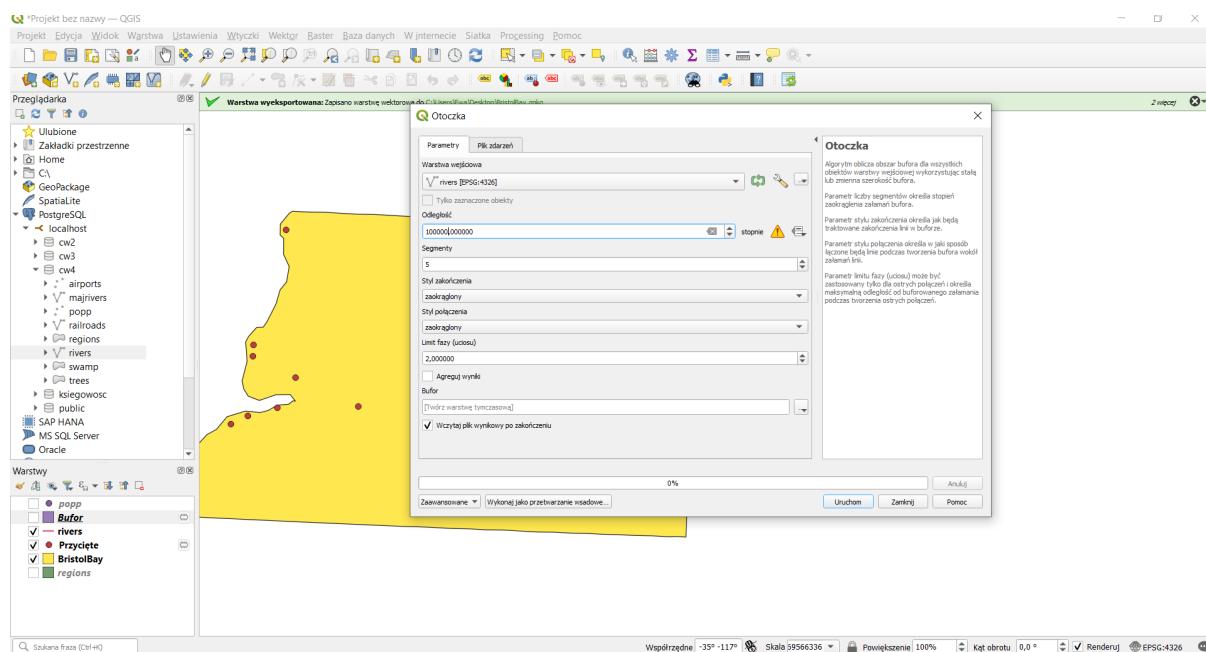


Liczba punktów: 11

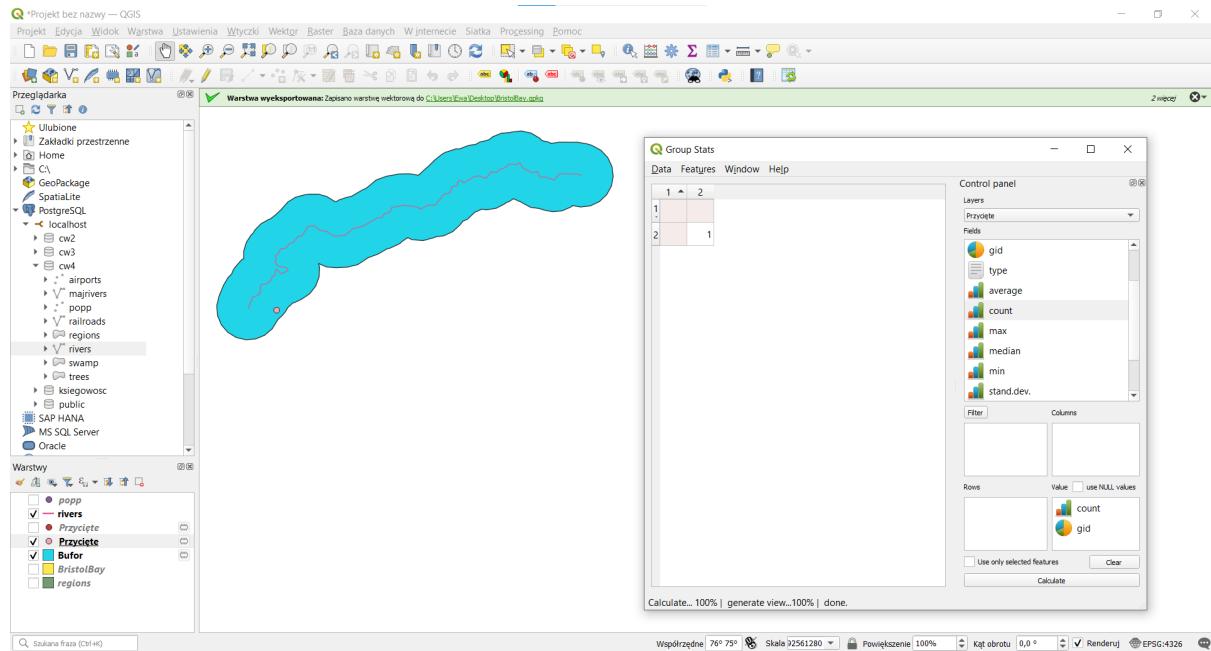


6.

Dodanie buforu do rzek: Narzędzie Otoczka

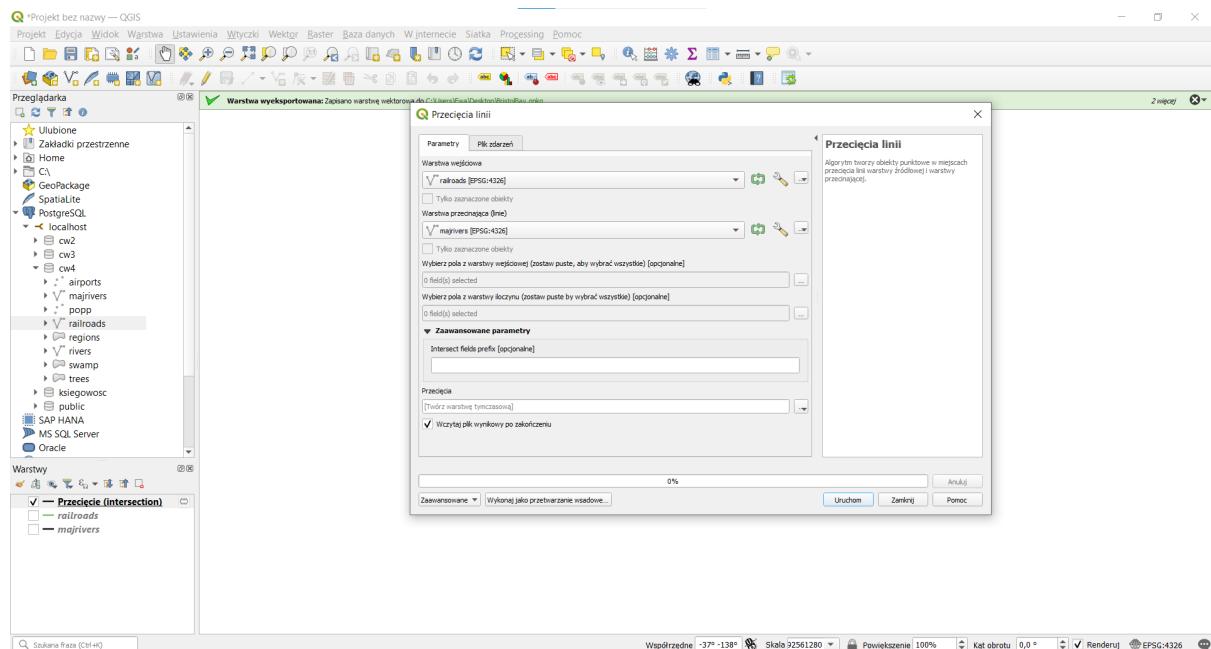


Liczba punktów w zasięgu bufora: 1

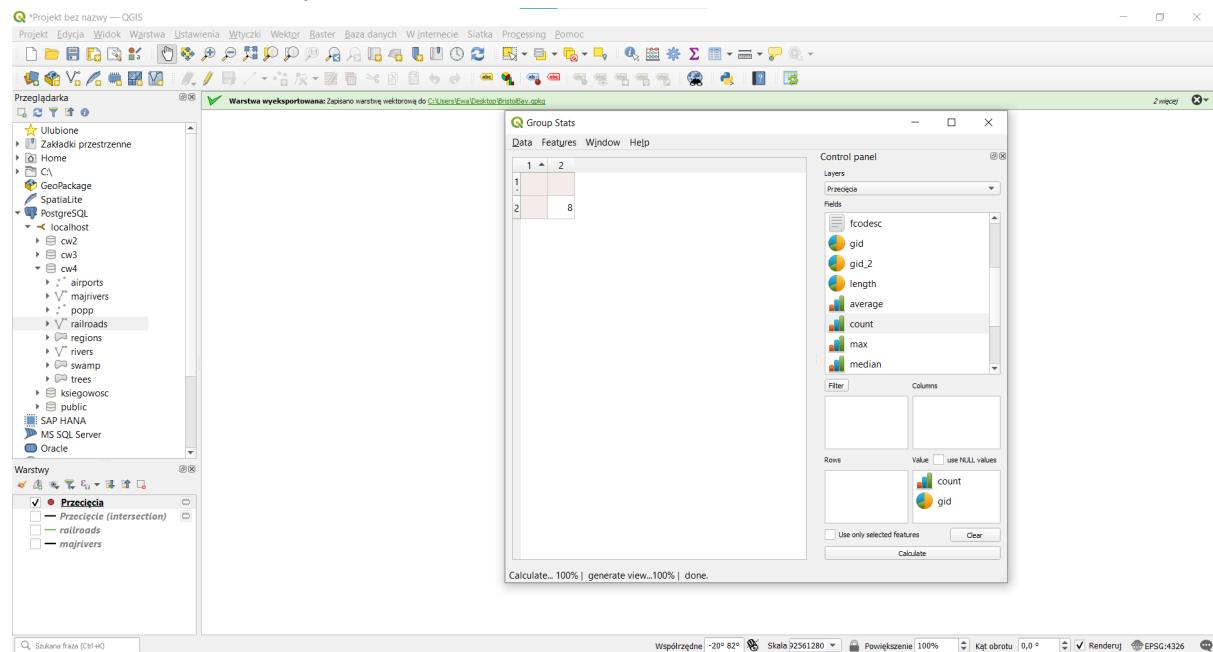


7.

Punkty przecięcia: Narzędzie Przecięcia linii

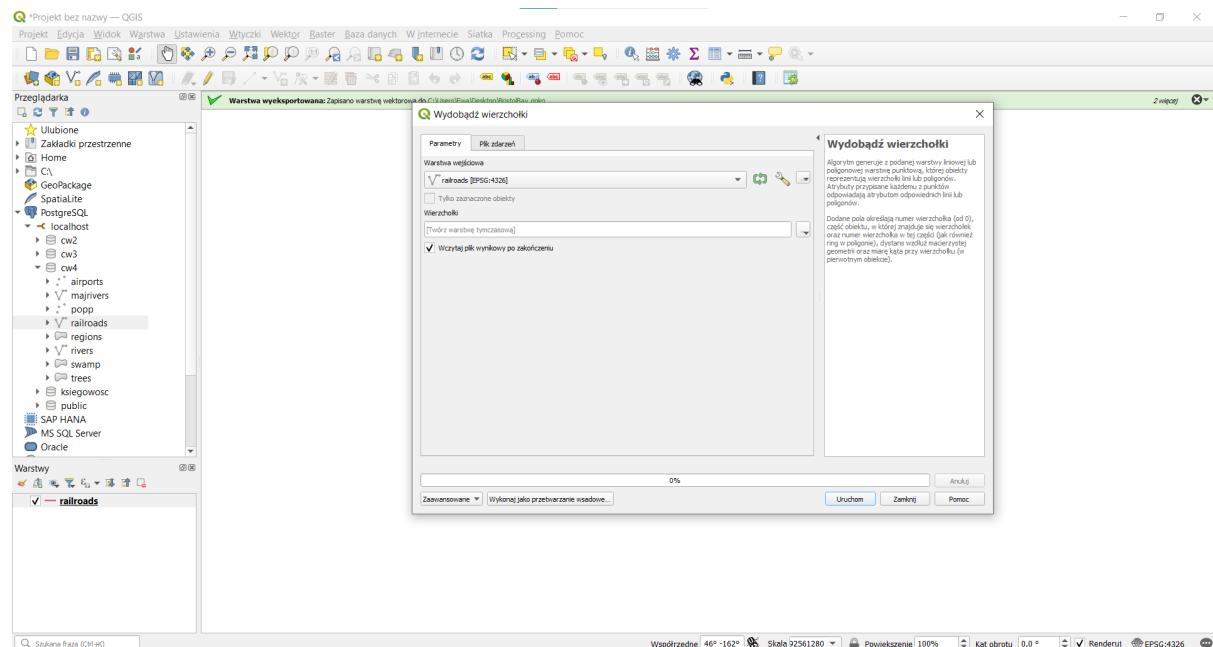


Liczba punktów przecięcia: 8

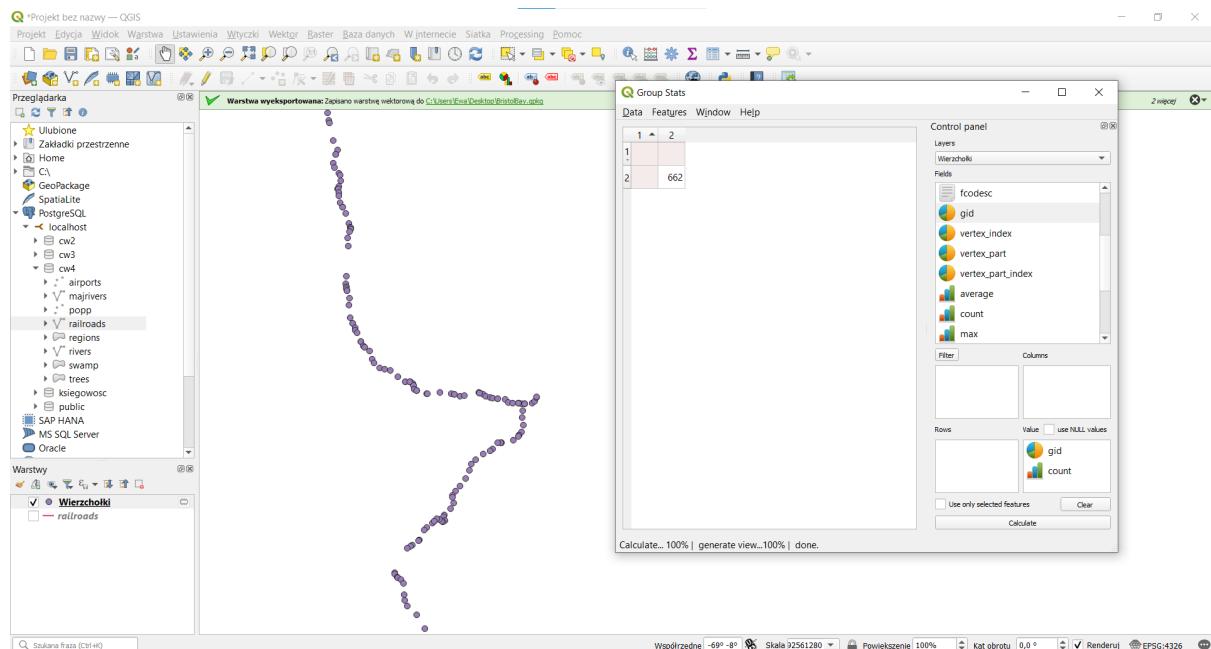


8.

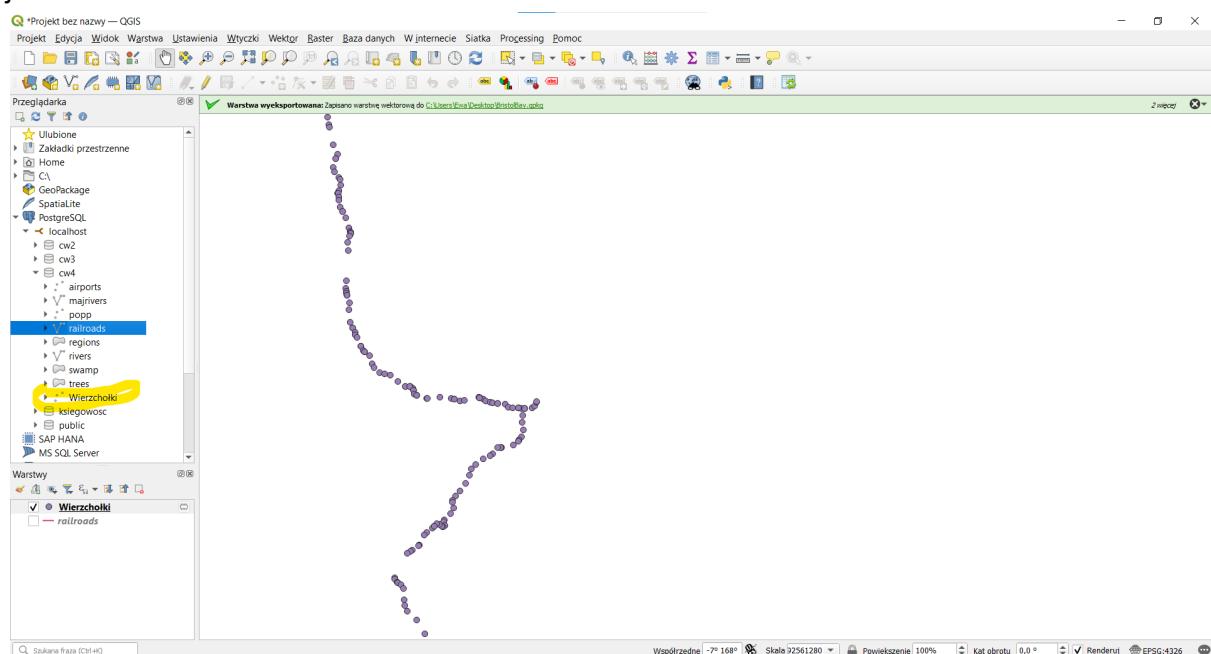
Narzędzie Wydobądź wierzchołki



Liczba wierzchołków: **662**



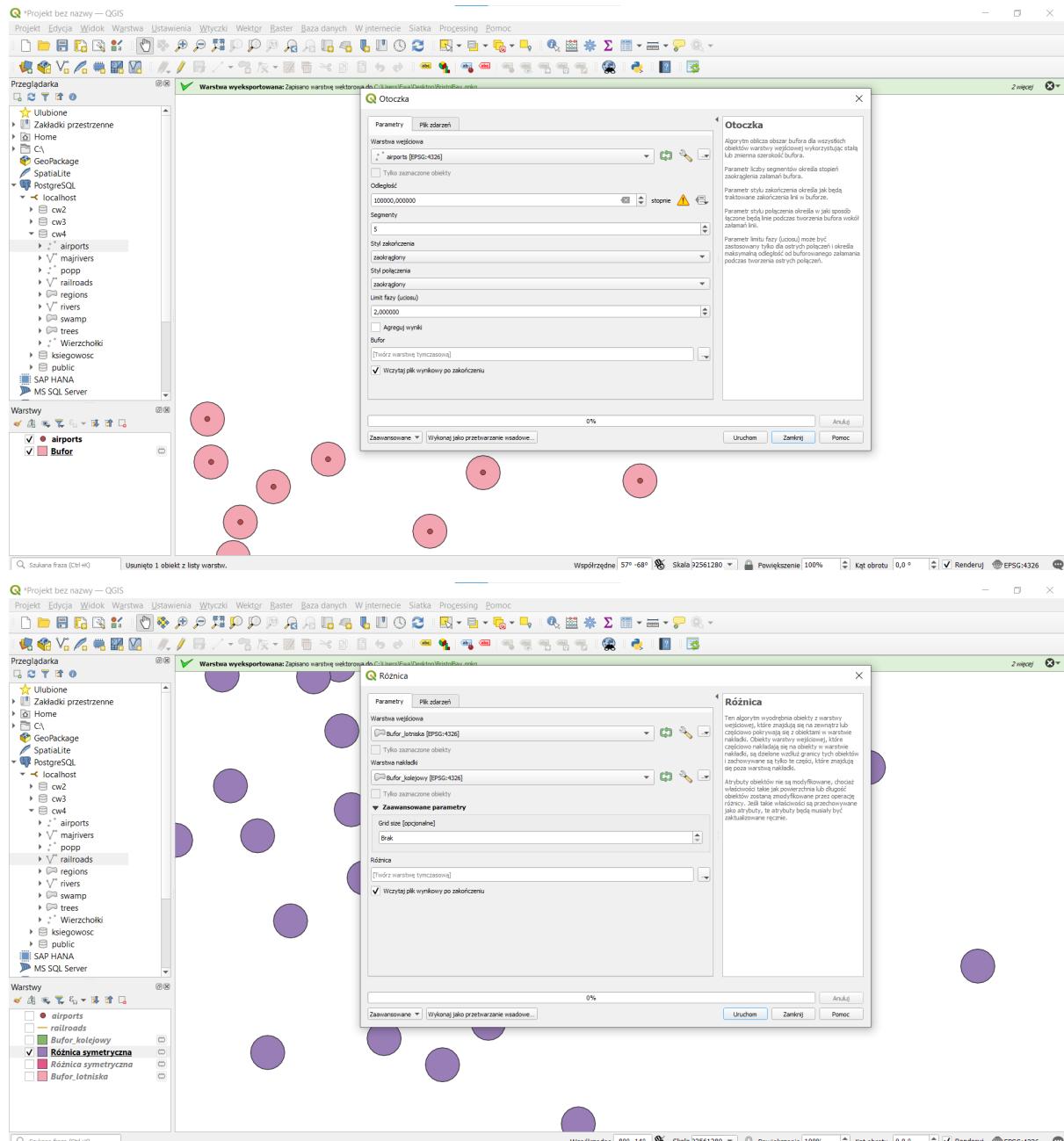
Przeciągnięcie warstwy 'Wierzchołki' do obszaru bazy danych, powoduje zapisanie warstwy jako tabeli w bazie

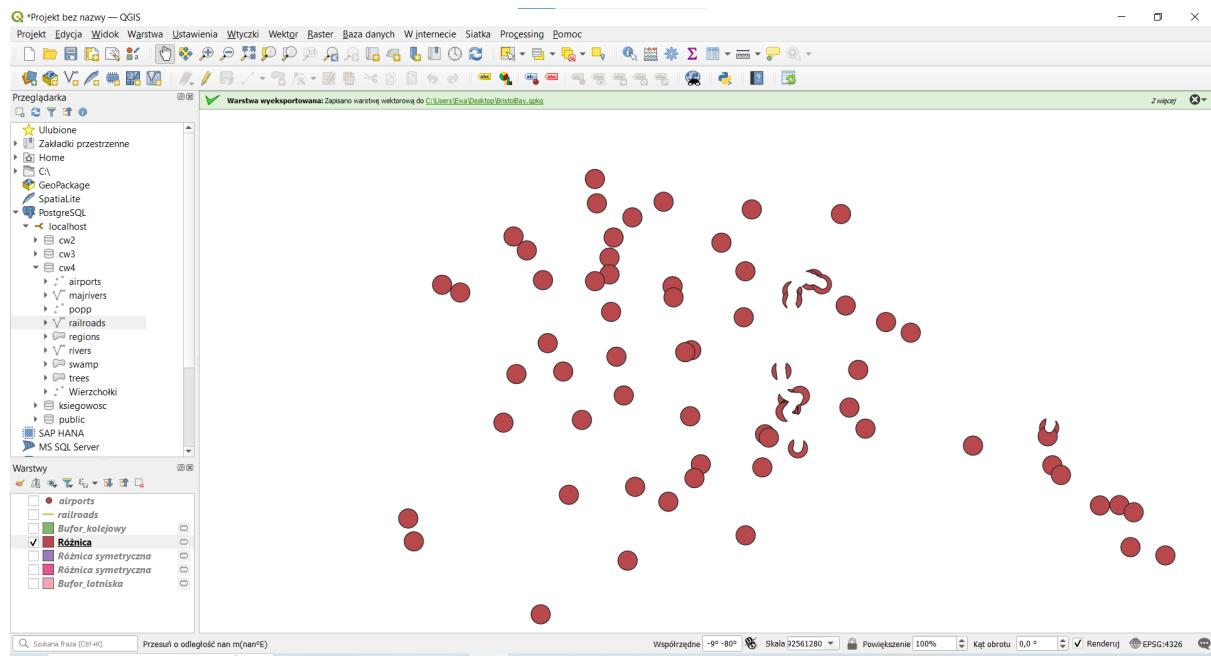


9.

Różnica między buforem: lotniskowym i kolejowym

Narzędzie Różnica

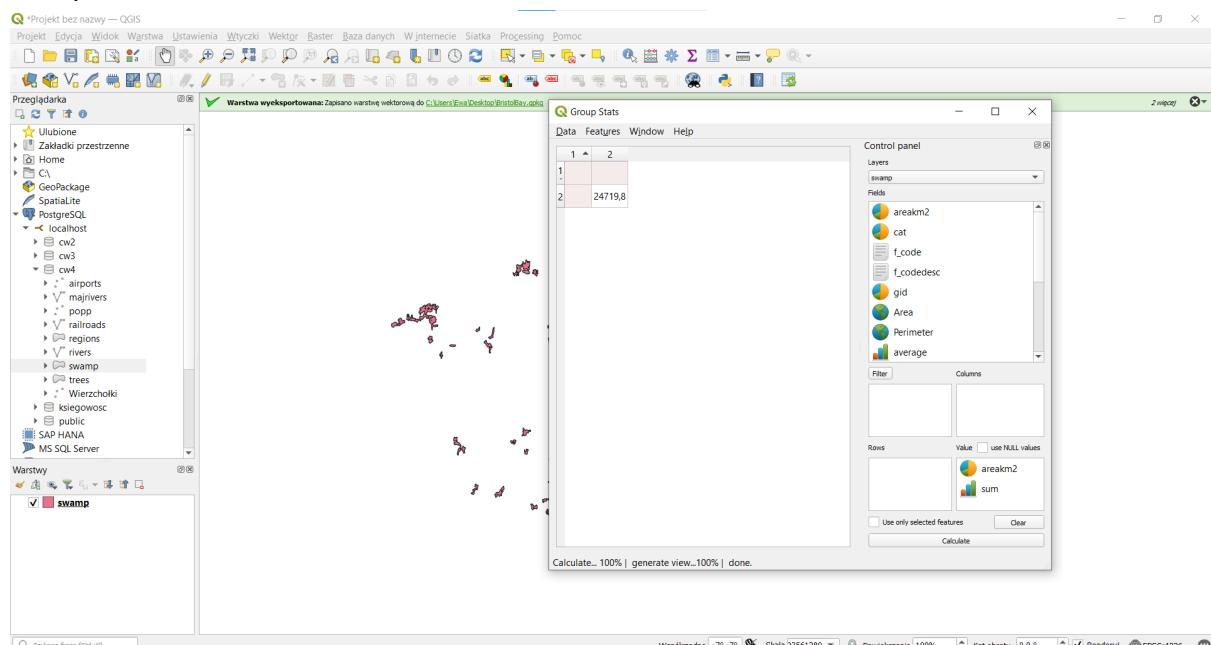




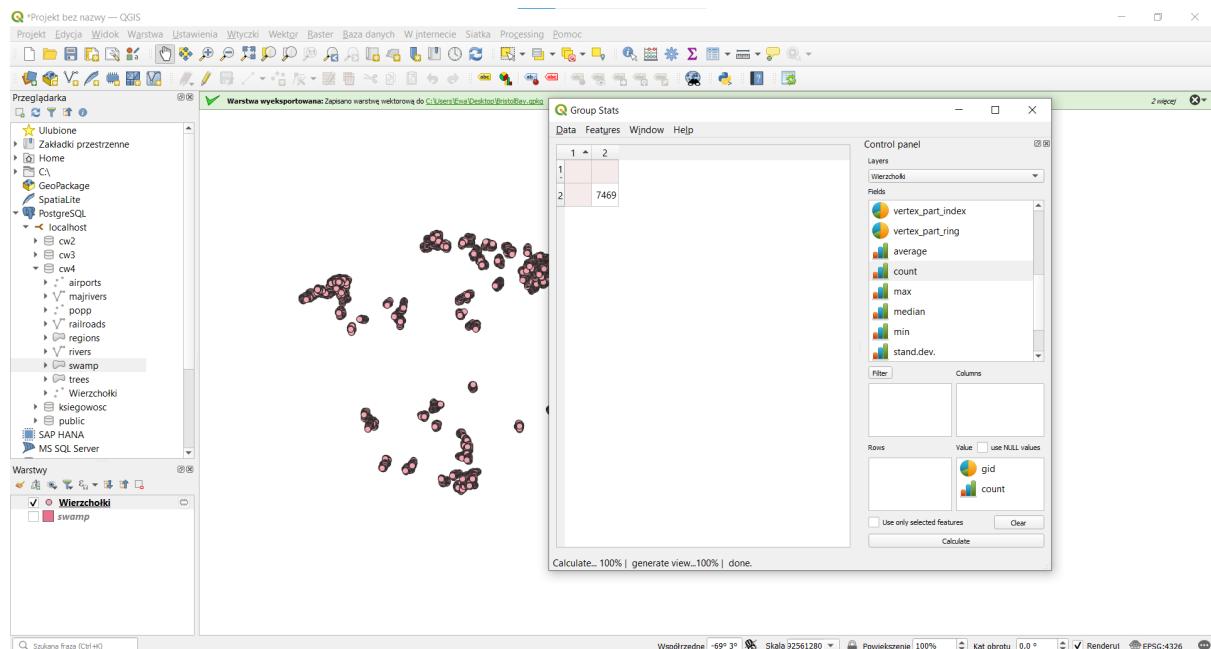
10.

Przed uproszczeniem

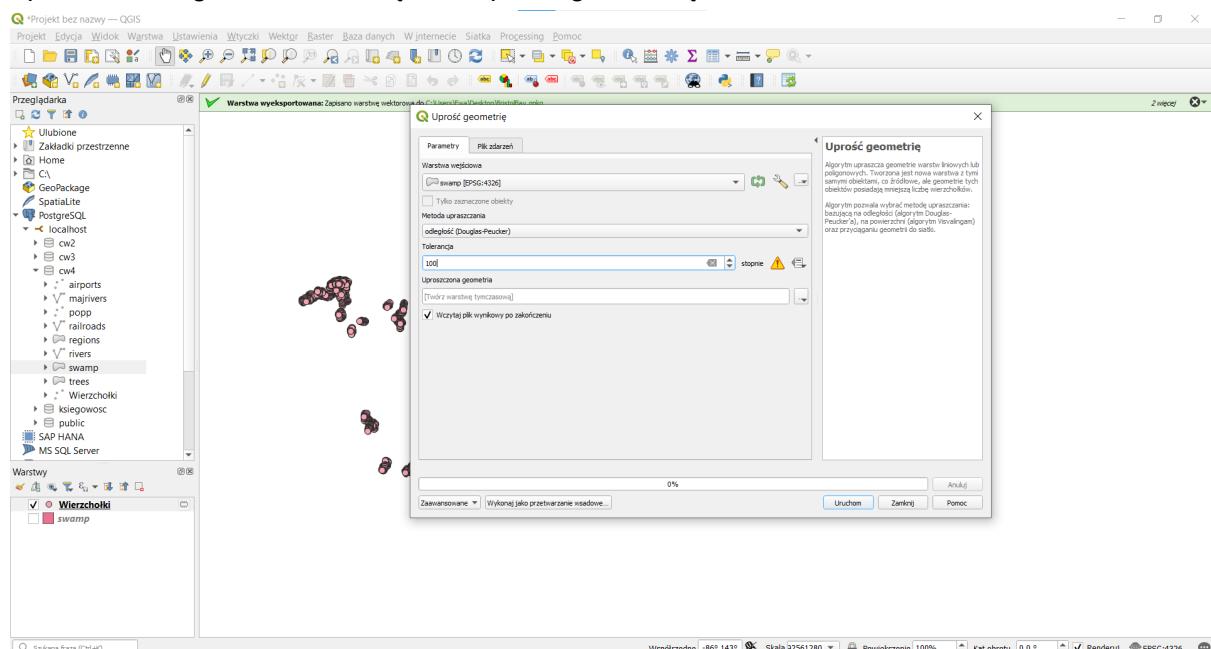
Pole powierzchni: **24719,8**



Liczba wierzchołków: 7469

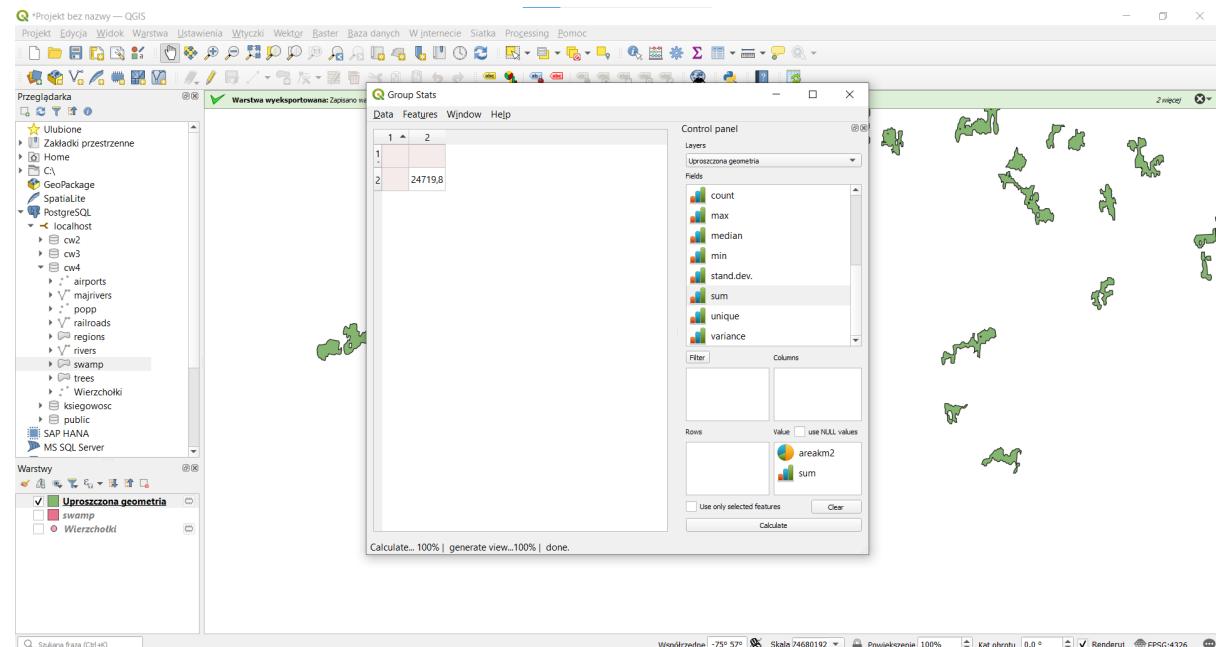


Uproszczenie geometrii: Narzędzie Uprość geometrię



Po uproszczeniu geometrii

Pole powierzchni: **24719,8**



Liczba wierzchołków: **6661**

