

2 30'0"W

2 20'0"W

2 10'0"W

2 0'0"W

Euclidean distance raster to the city center of  
Aberdeen, United Kingdom  
eFUA\_ID: 3949  
at 1 km resolution

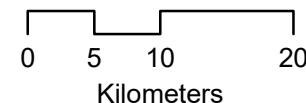
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

#### DisLevel

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

8 40'0"E

8 50'0"E

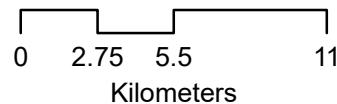
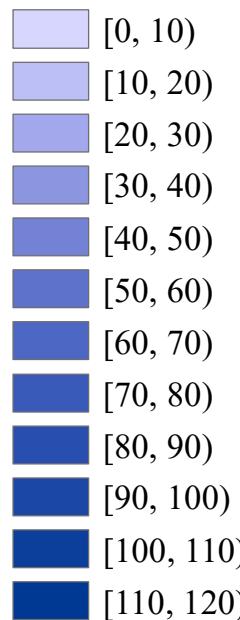
Euclidean distance raster to the city center of  
Ajaccio, France  
eFUA\_ID: 4653  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

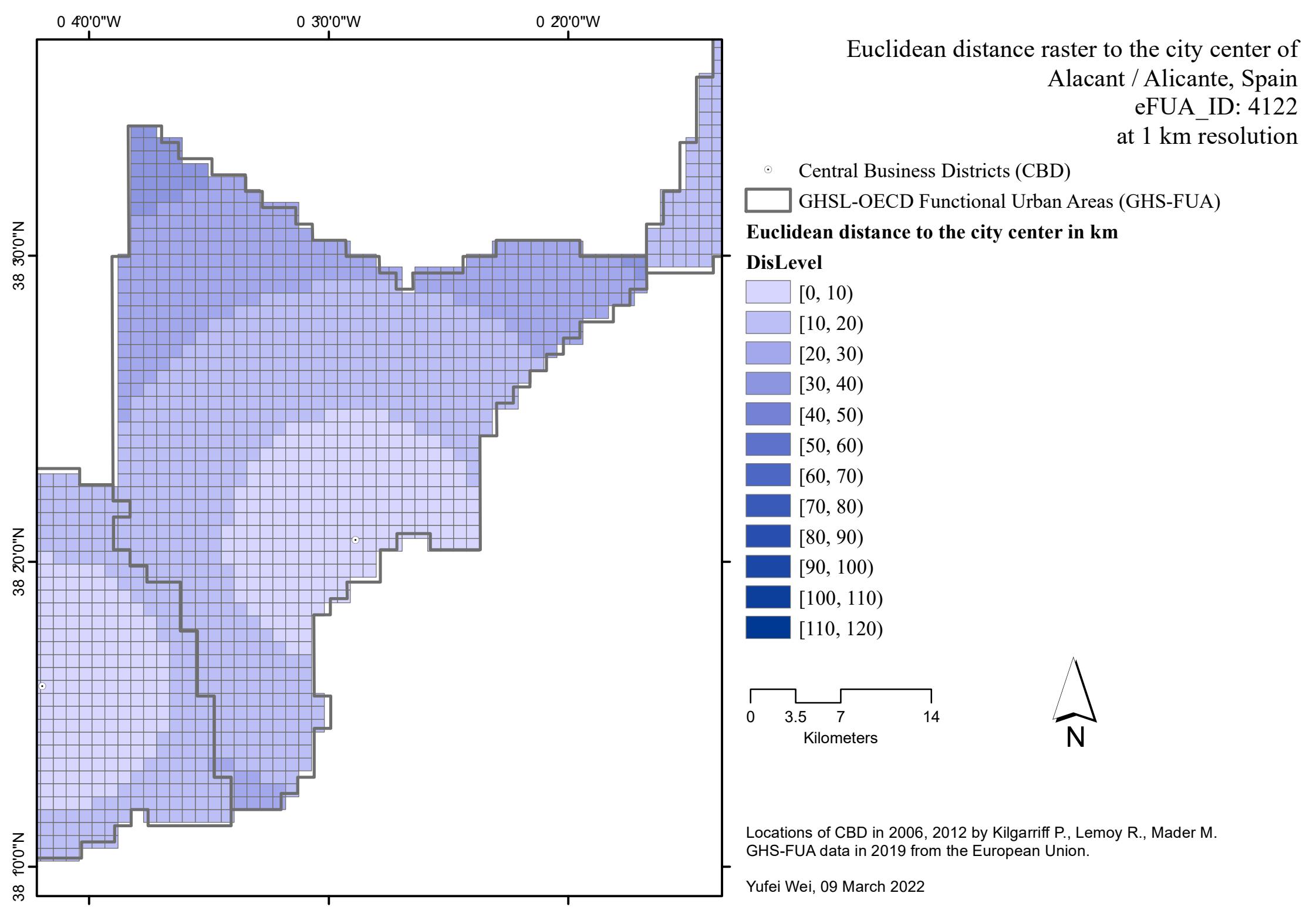
**Euclidean distance to the city center in km**

**DisLevel**

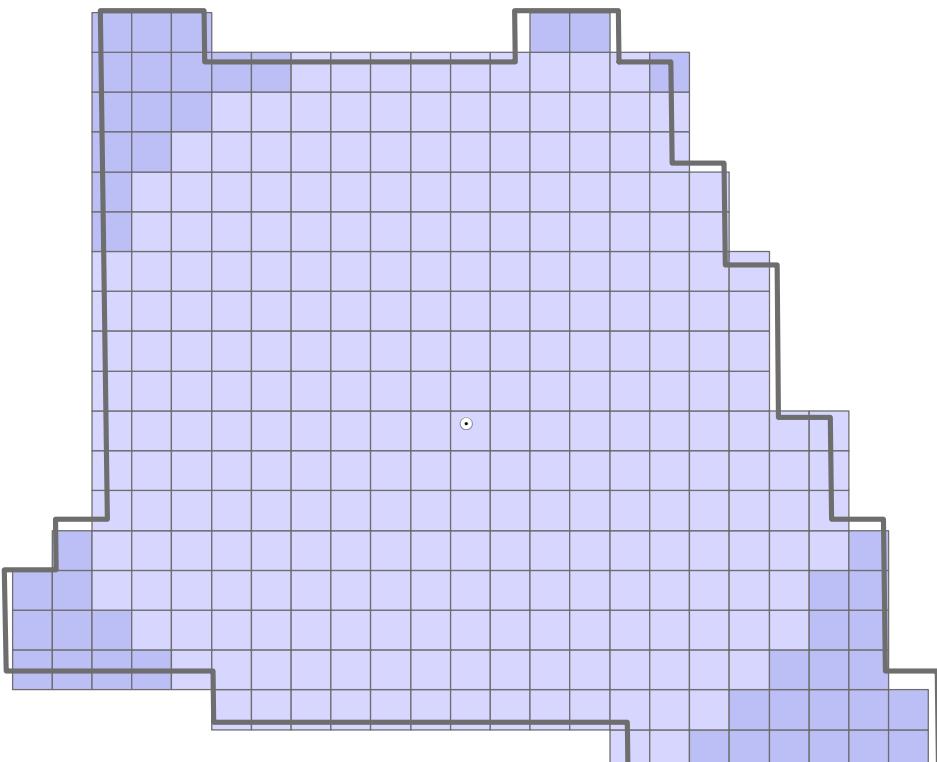


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



1 50'0"W



Euclidean distance raster to the city center of  
Albacete, Spain  
eFUA\_ID: 3757  
at 1 km resolution

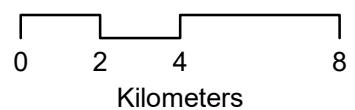
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

8 30'0"E

8 40'0"E

Euclidean distance raster to the city center of  
Alessandria, Italy  
eFUA\_ID: 841  
at 1 km resolution

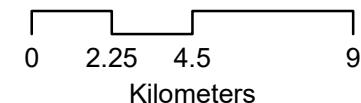
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

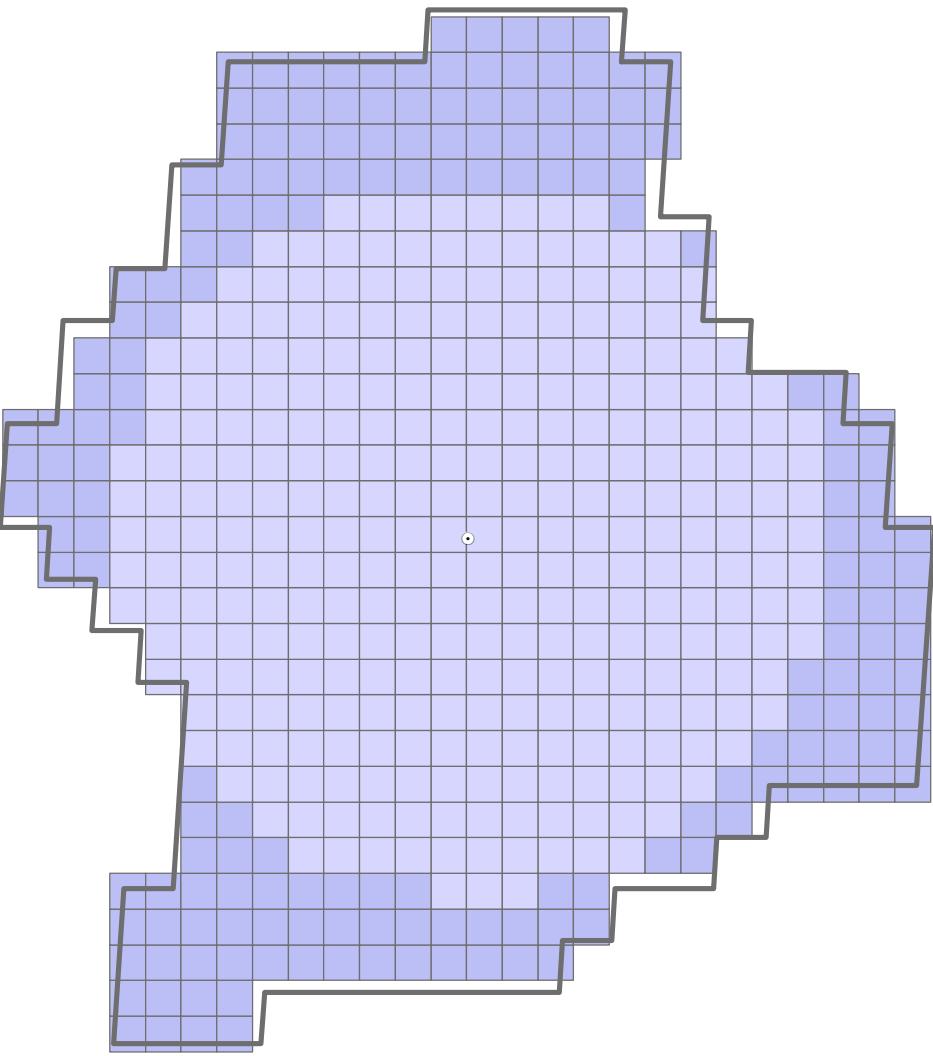


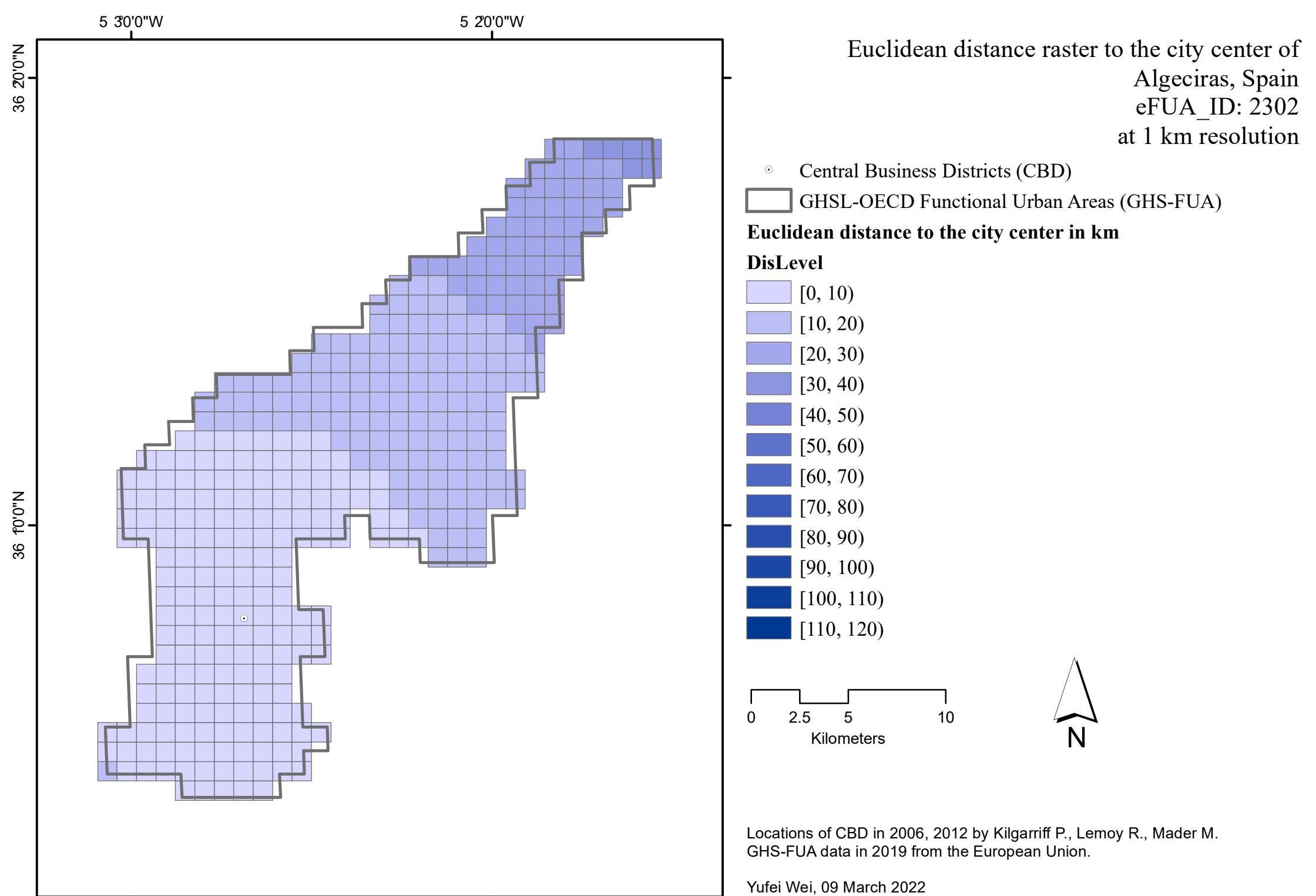
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

45 00'N

44 50'N





2 30'0"W

2 20'0"W

2 10'0"W

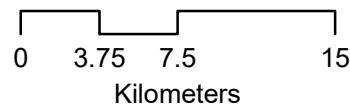
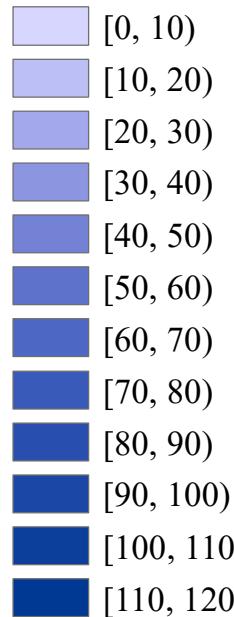
Euclidean distance raster to the city center of  
Almeria, Spain  
eFUA\_ID: 3626  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

16°30'0"E

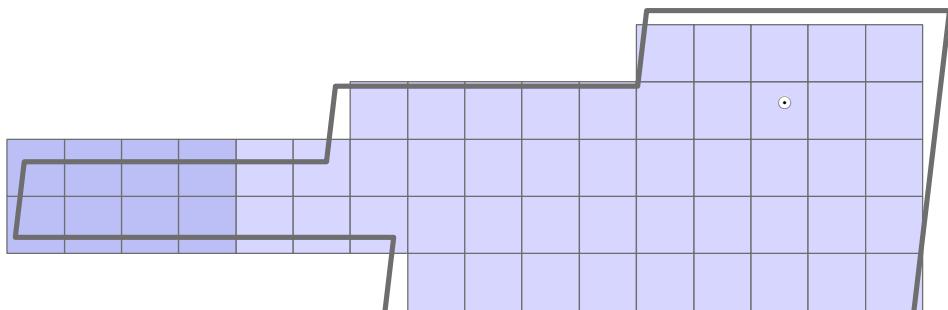
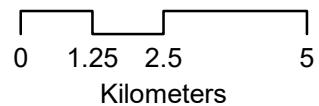
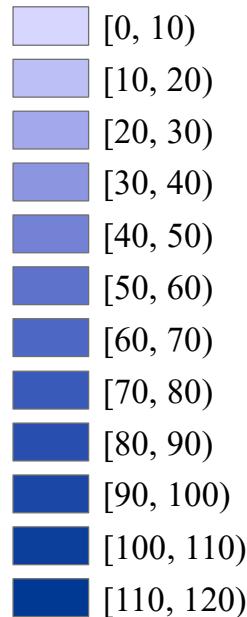
Euclidean distance raster to the city center of  
Altamura, Italy  
eFUA\_ID: 4979  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

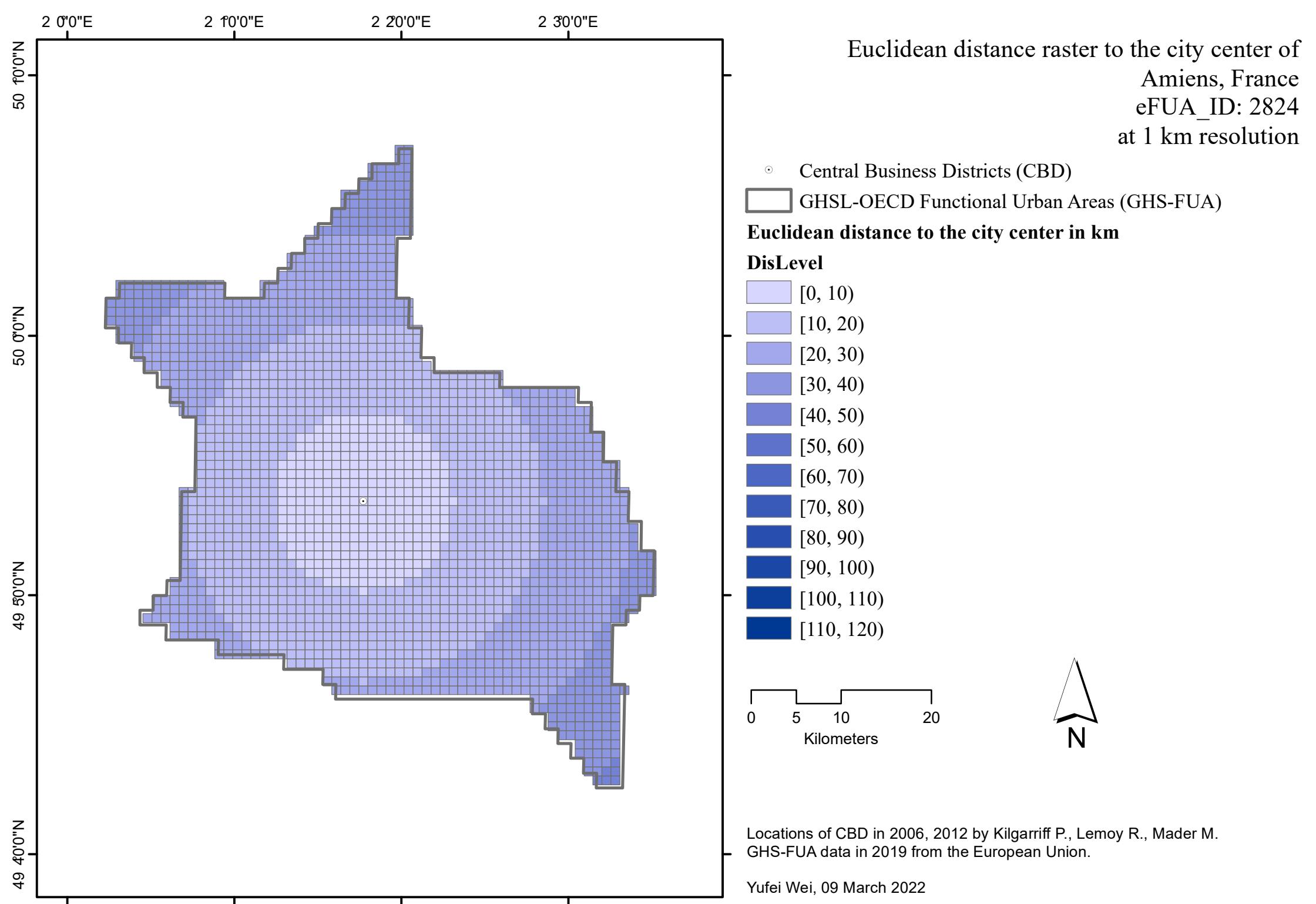
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



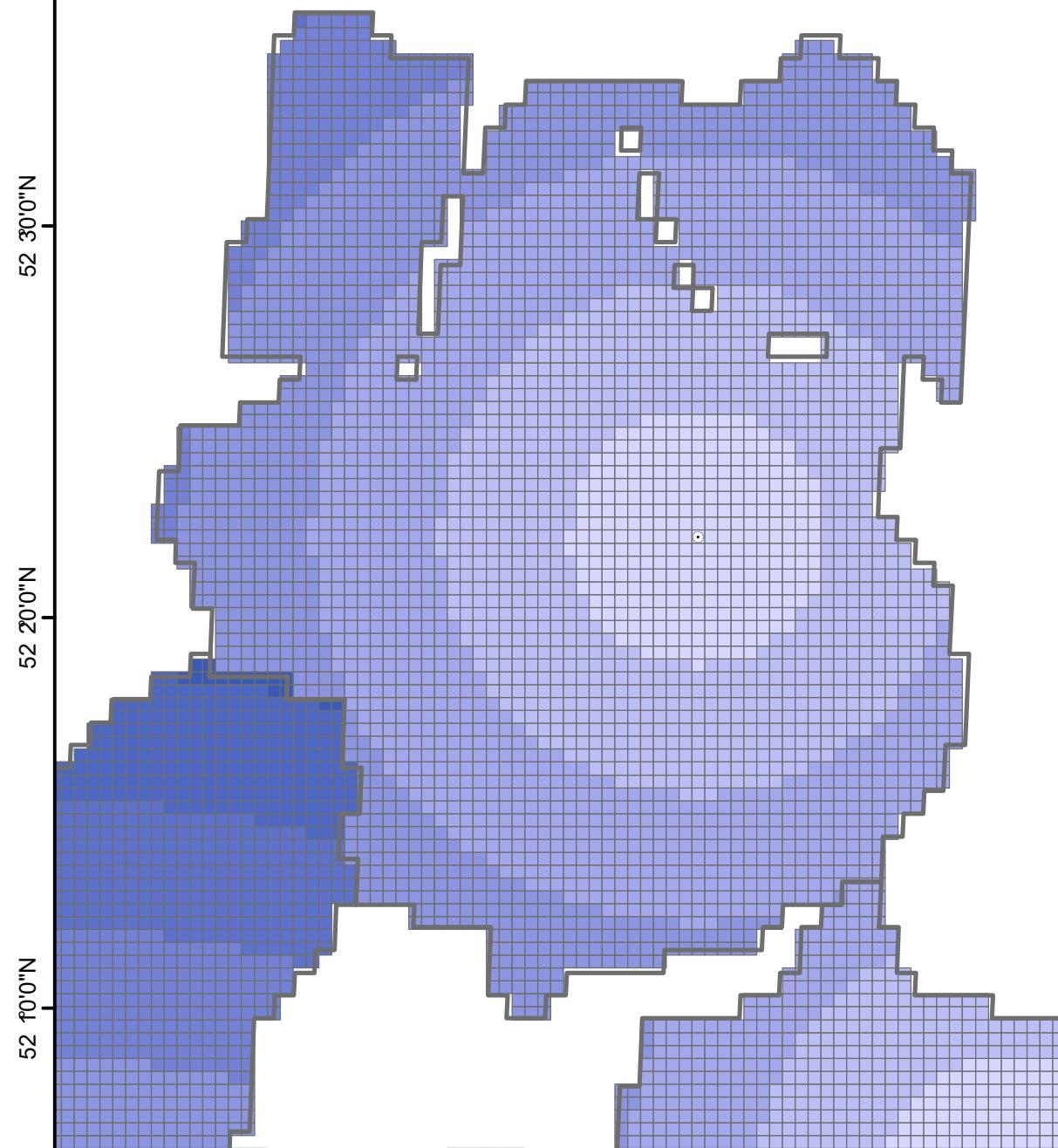
4 30'0"E

4 40'0"E

4 50'0"E

5 0'0"E

Euclidean distance raster to the city center of  
Amsterdam, Netherlands  
eFUA\_ID: 1427  
at 1 km resolution



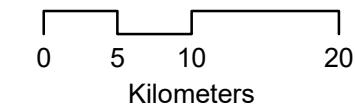
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

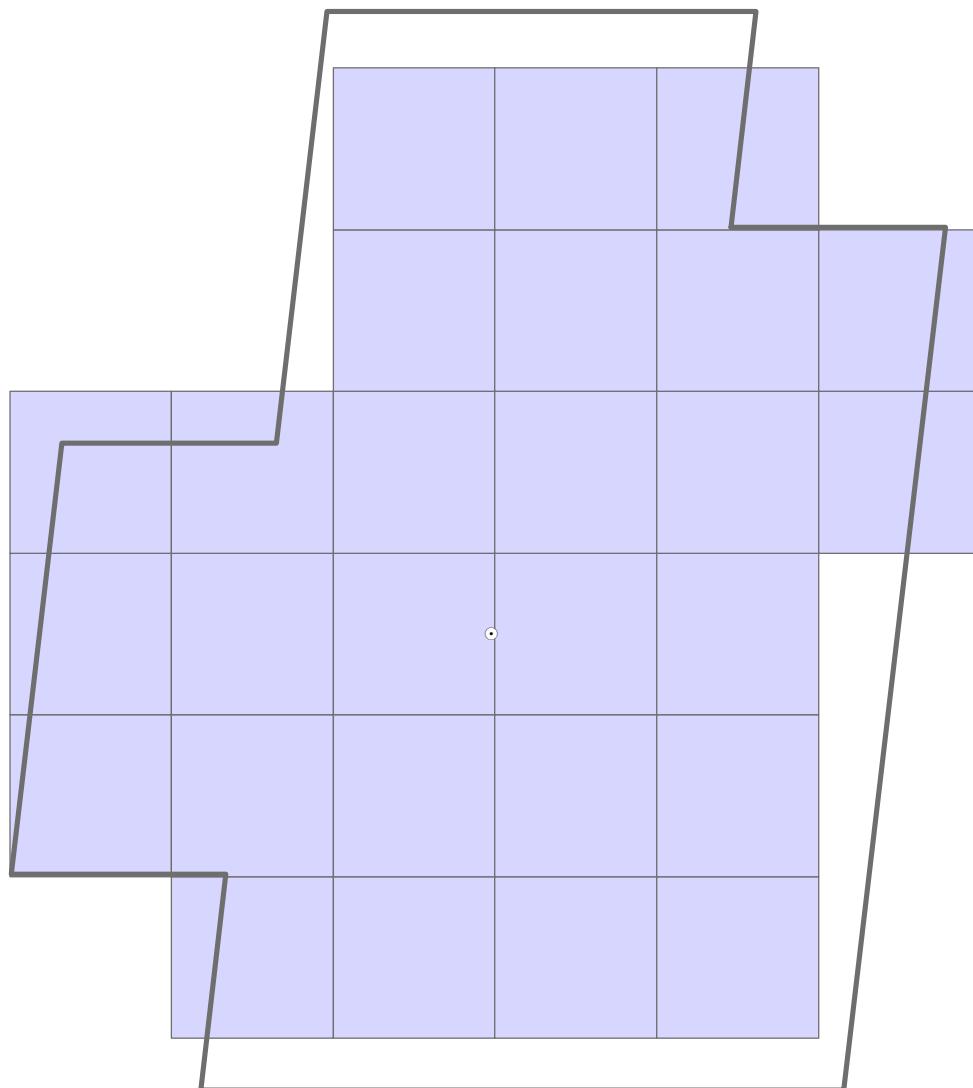
[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

Euclidean distance raster to the city center of  
Andria, Italy  
eFUA\_ID: 4846  
at 1 km resolution



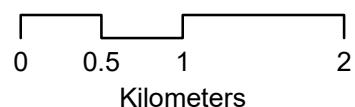
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

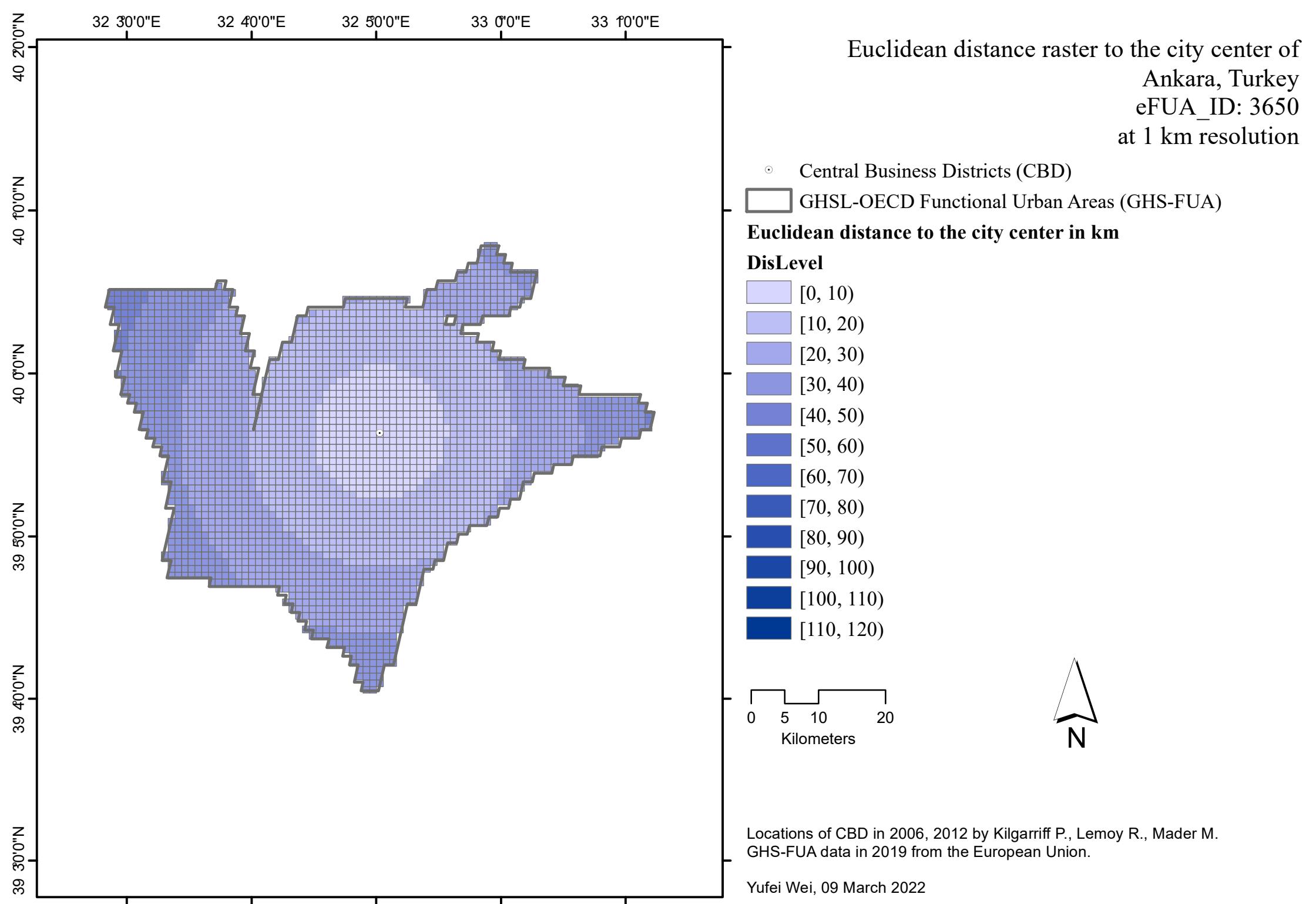
**DisLevel**

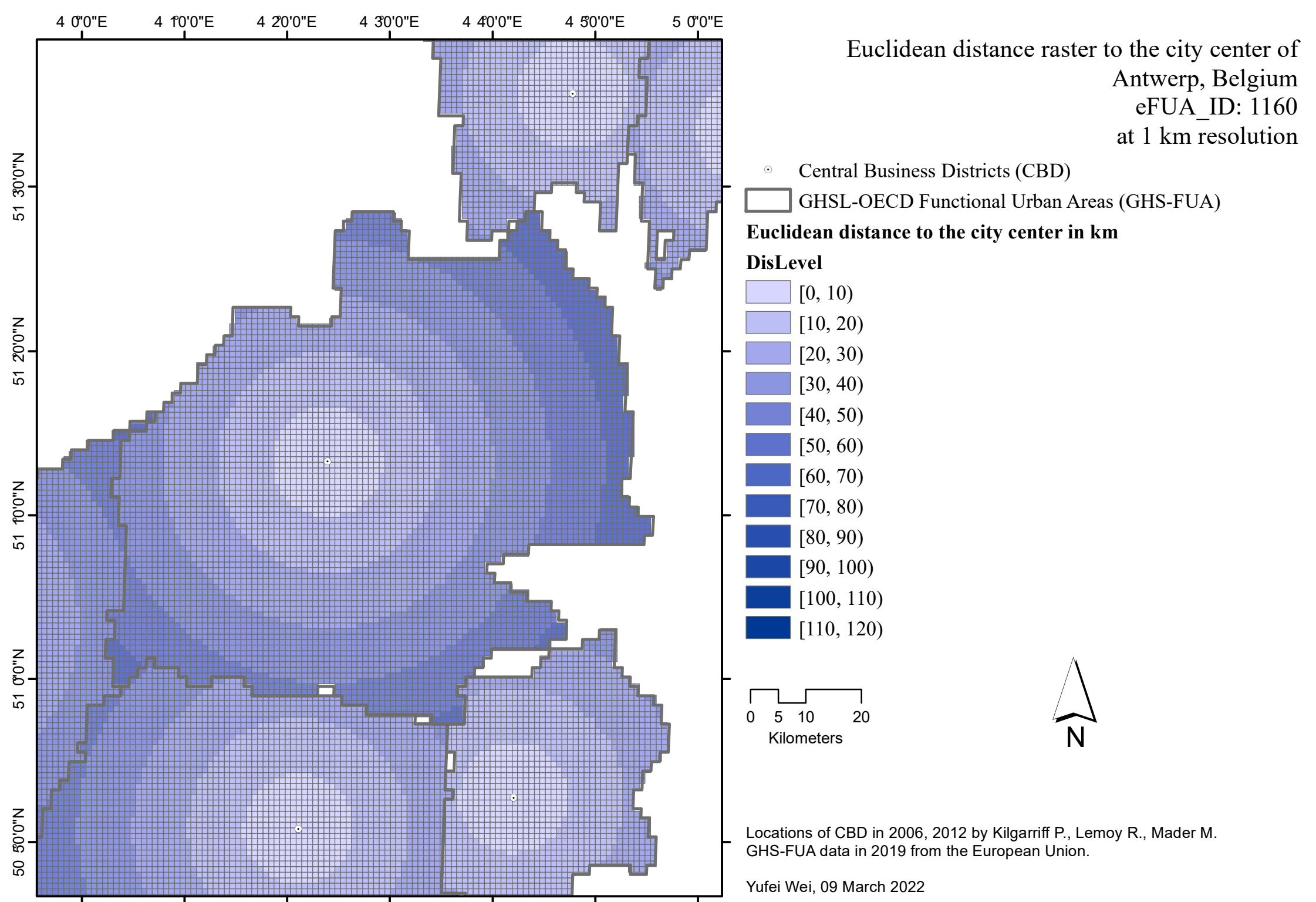
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

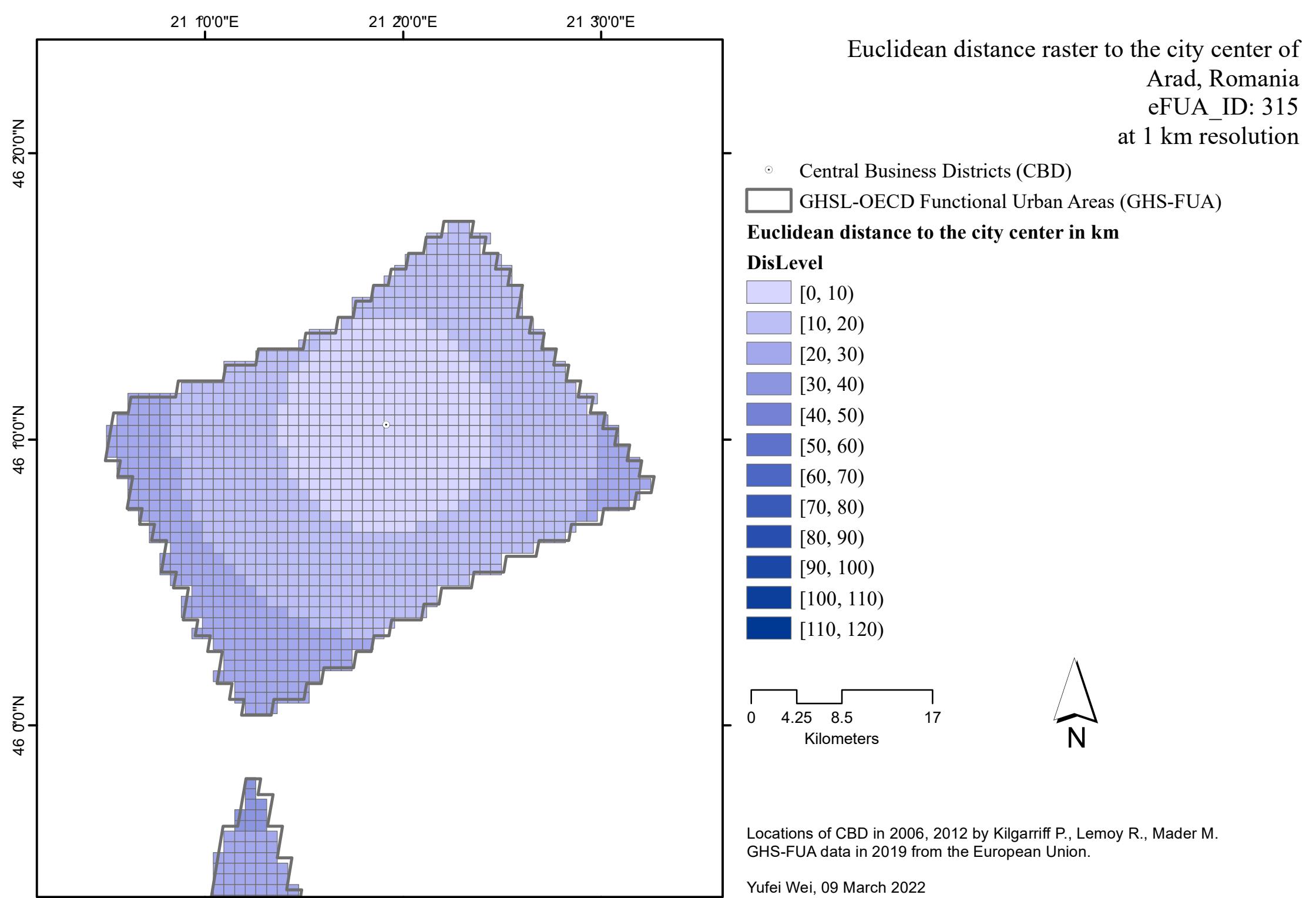


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022







11 50'0"E

12 0'0"E

Euclidean distance raster to the city center of  
Arezzo, Italy  
eFUA\_ID: 3407  
at 1 km resolution

○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)

[10, 20)

[20, 30)

[30, 40)

[40, 50)

[50, 60)

[60, 70)

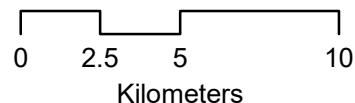
[70, 80)

[80, 90)

[90, 100)

[100, 110)

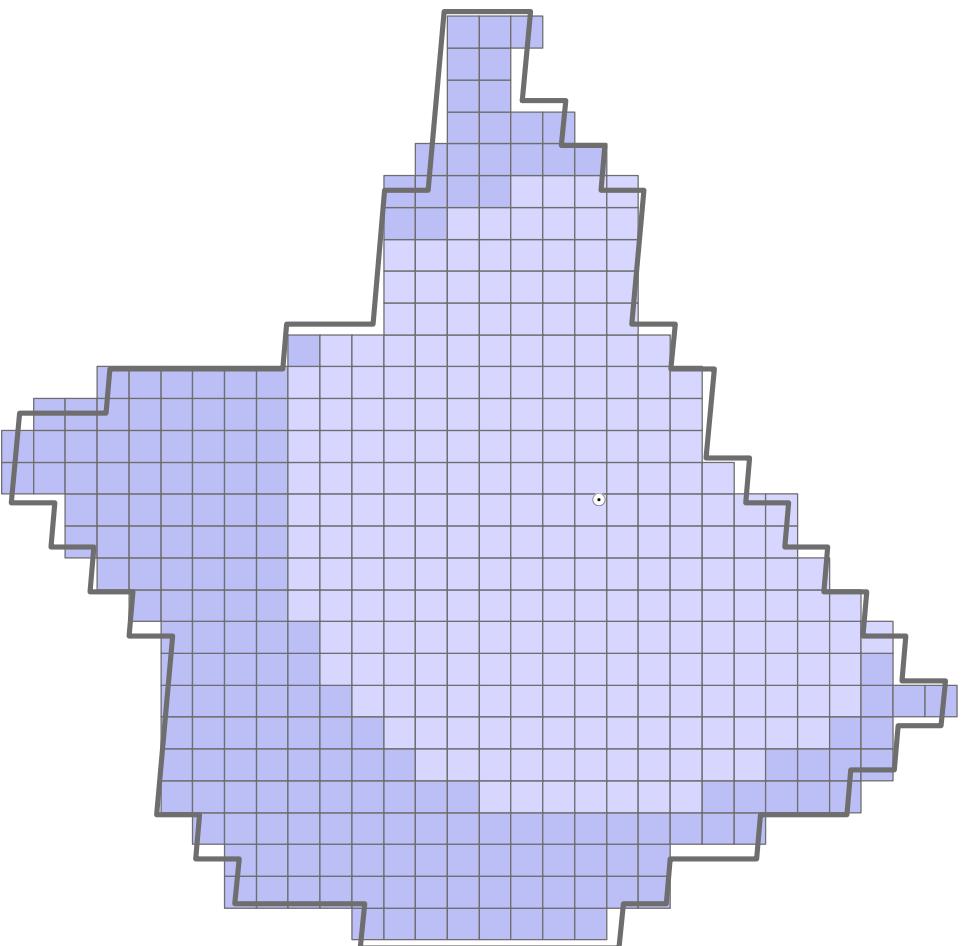
[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

43 30'0"N  
43 20'0"N



5 30'0"E

5 40'0"E

5 50'0"E

6 0'0"E

6 10'0"E

6 20'0"E

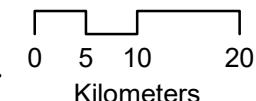
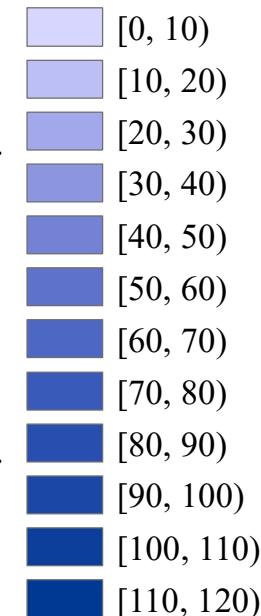
Euclidean distance raster to the city center of  
Arnhem, Netherlands  
eFUA\_ID: 2659  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

#### DisLevel



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

13°40'0"W

13°30'0"W

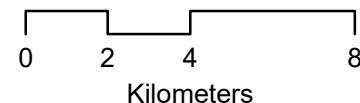
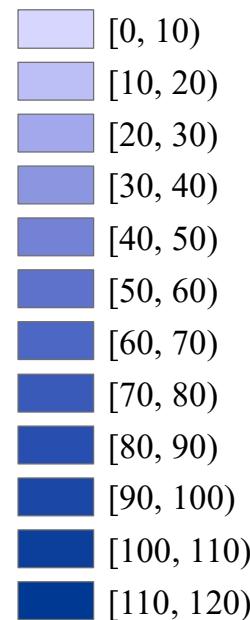
Euclidean distance raster to the city center of  
Arrecife, Spain  
eFUA\_ID: 821  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

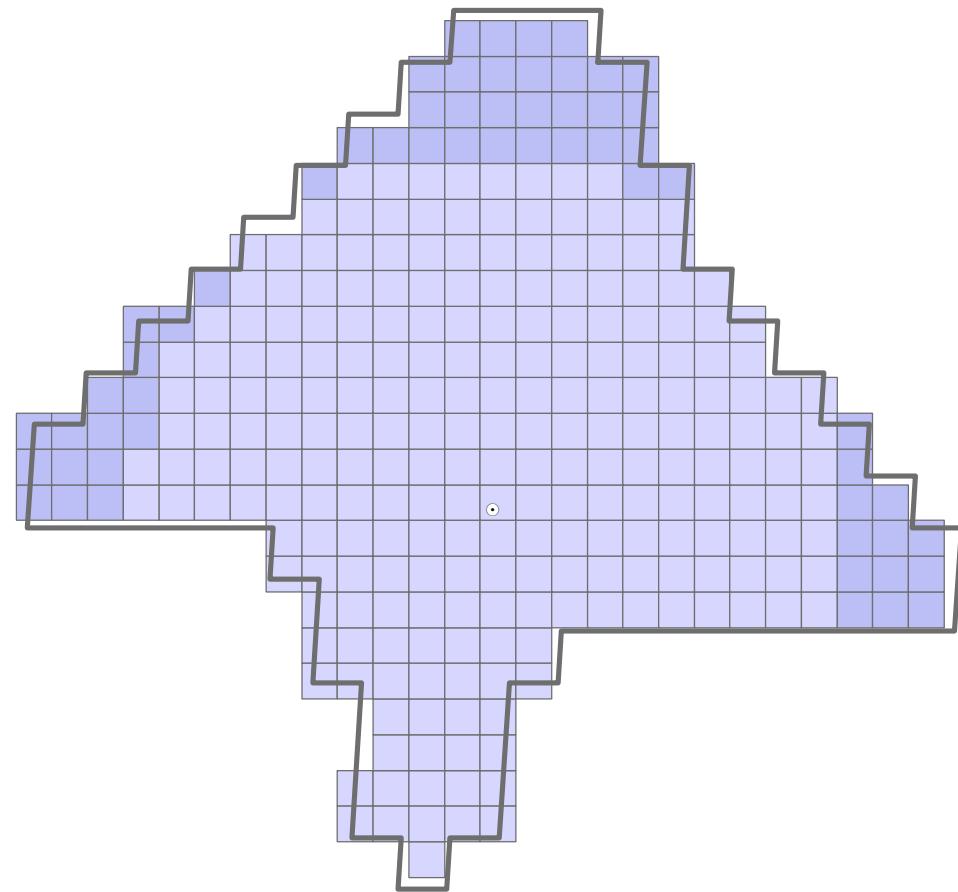
Yufei Wei, 09 March 2022

8 10'0"E

8 20'0"E

Euclidean distance raster to the city center of  
Asti, Italy  
eFUA\_ID: 420  
at 1 km resolution

45 0'0"N



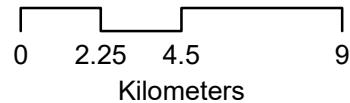
○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

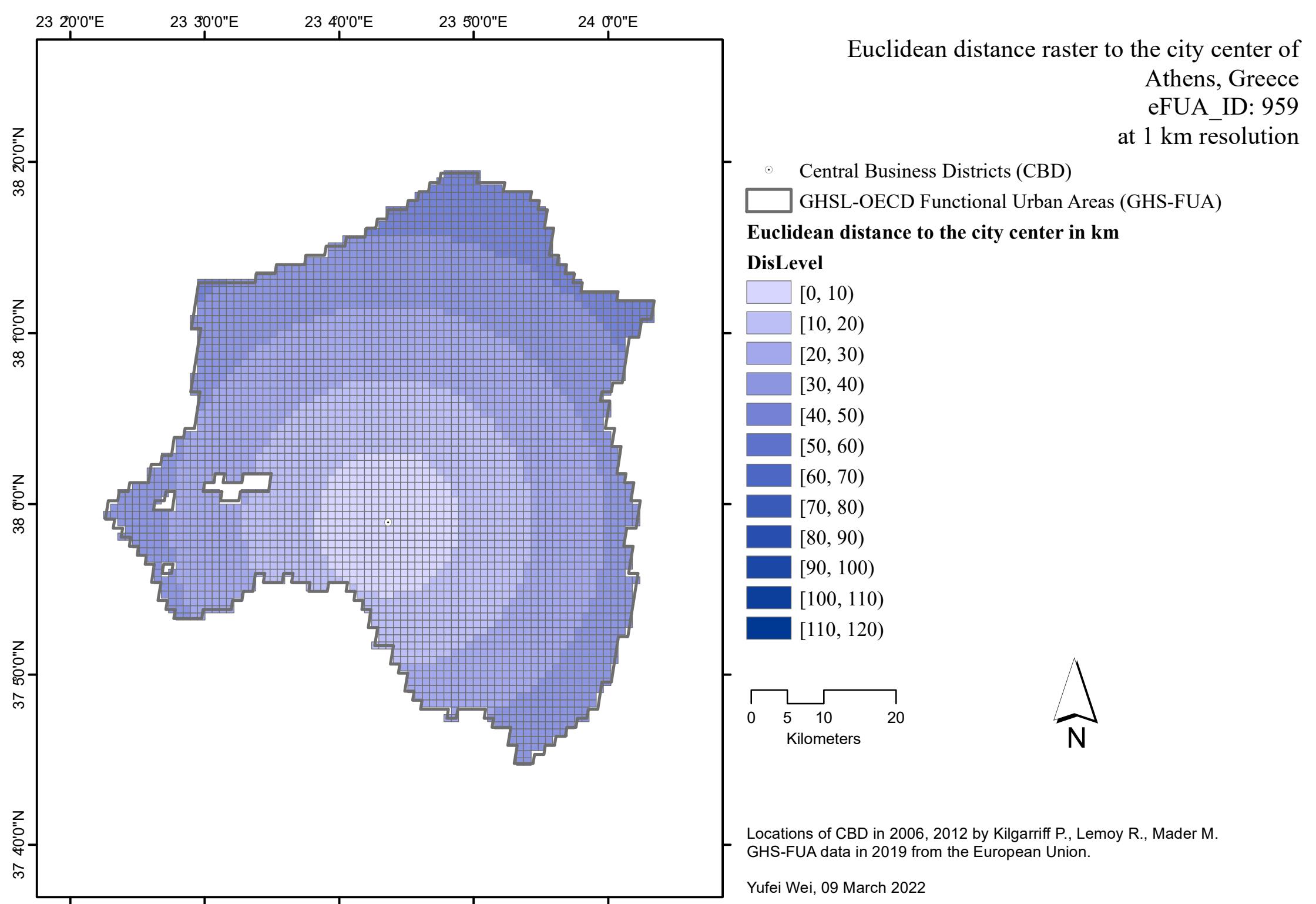
**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



10 40'0"E

10 50'0"E

11 0'0"E

11 10'0"E

Euclidean distance raster to the city center of  
Augsburg, Germany  
eFUA\_ID: 4520  
at 1 km resolution

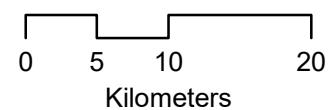
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)  
[10, 20)  
[20, 30)  
[30, 40)  
[40, 50)  
[50, 60)  
[60, 70)  
[70, 80)  
[80, 90)  
[90, 100)  
[100, 110)  
[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

14°50'0"E

Euclidean distance raster to the city center of  
Avellino, Italy  
eFUA\_ID: 4465  
at 1 km resolution

41°0'N

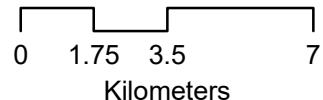
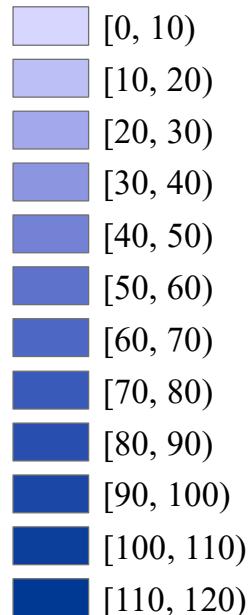
40°50'0"N

○ Central Business Districts (CBD)

GHSL-OECD Functional Urban Areas (GHS-FUA)

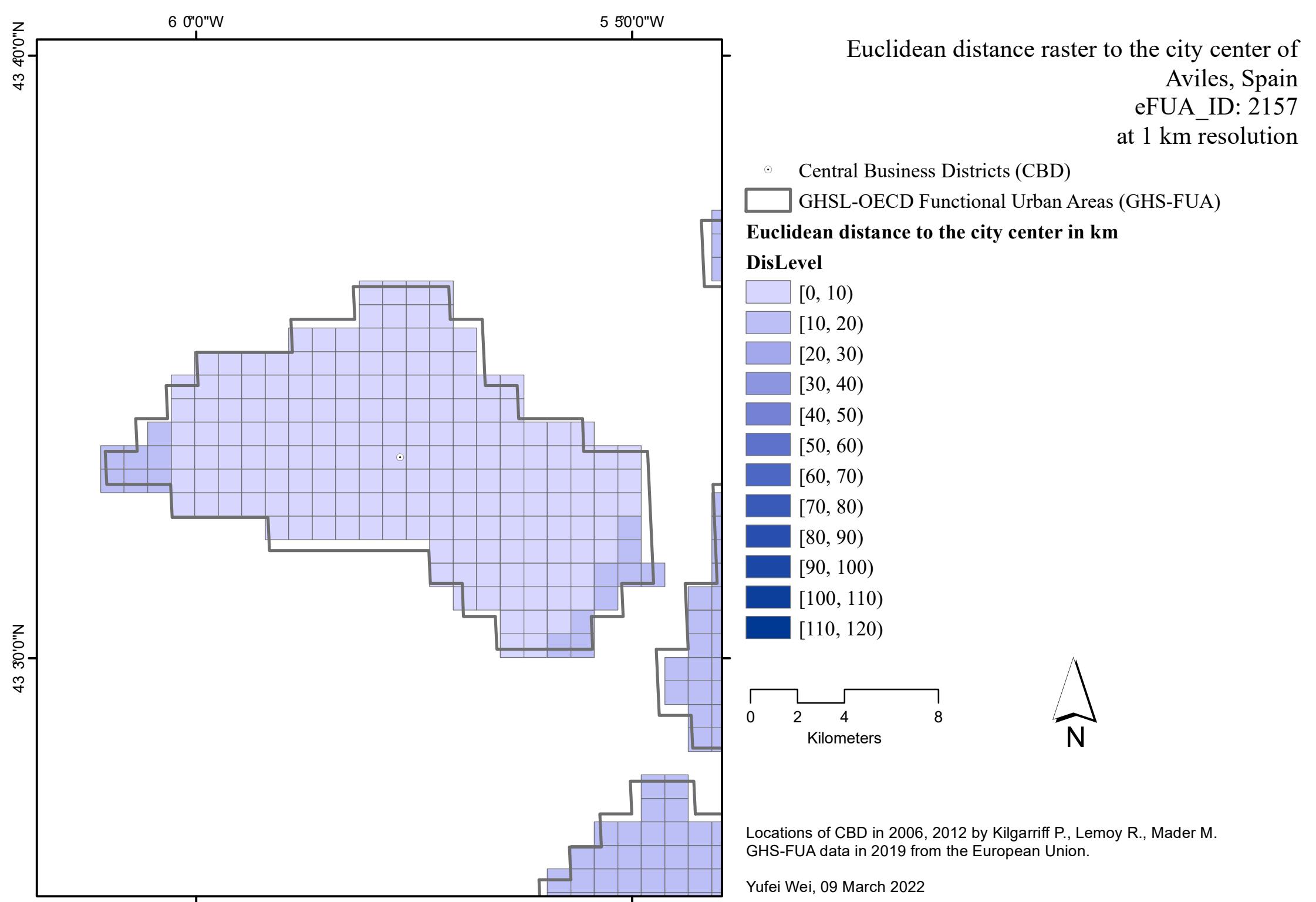
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



26 40'0"E

26 50'0"E

27 0'0"E

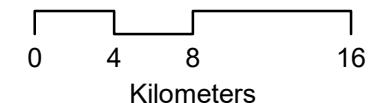
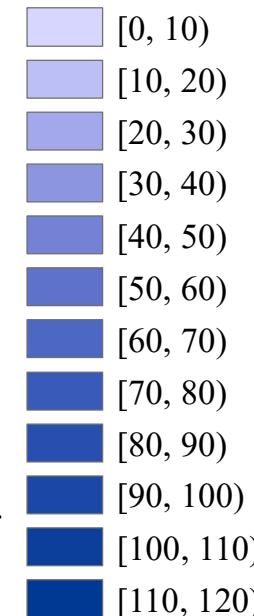
Euclidean distance raster to the city center of  
Bacau, Romania  
eFUA\_ID: 2261  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

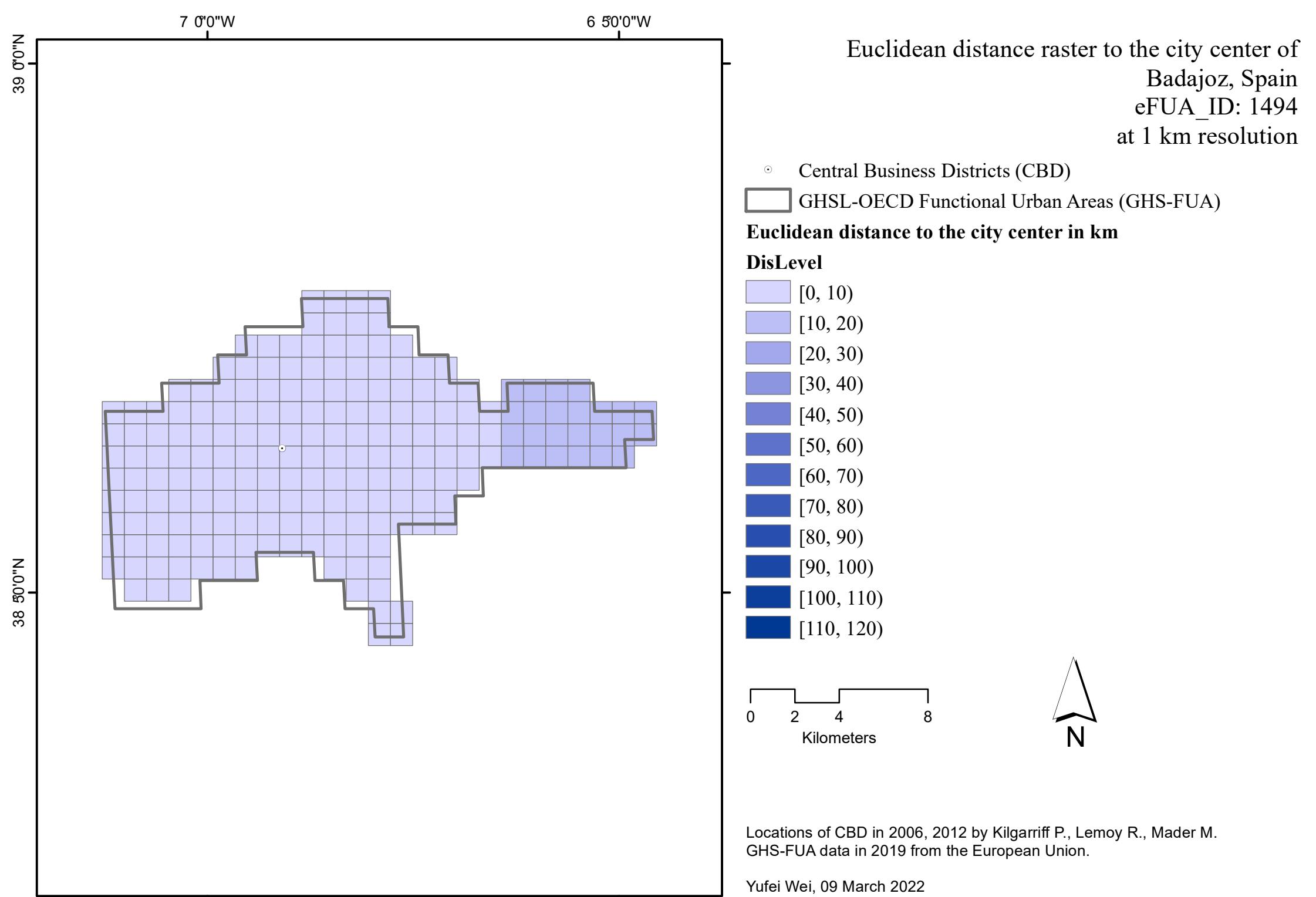
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



27 50'0"E

28 0'0"E

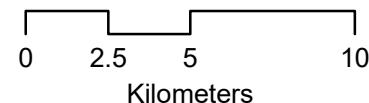
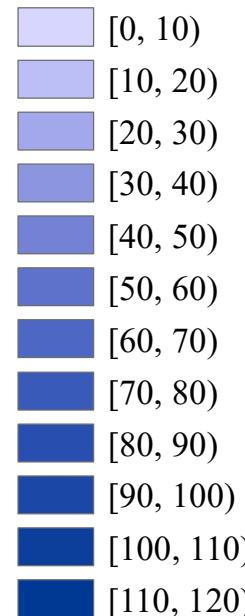
Euclidean distance raster to the city center of  
Balikesir, Turkey  
eFUA\_ID: 1353  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

27 50'0"E

28 0'0"E

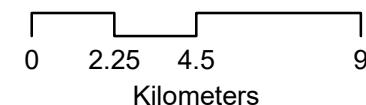
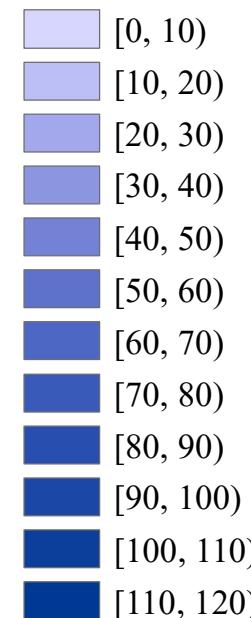
Euclidean distance raster to the city center of  
Bandirma, Turkey  
eFUA\_ID: 1140  
at 1 km resolution

○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

19 10'0"E

19 20'0"E

Euclidean distance raster to the city center of  
Banska Bystrica, Slovakia  
eFUA\_ID: 623  
at 1 km resolution

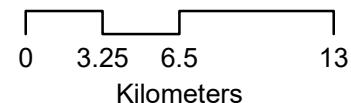
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

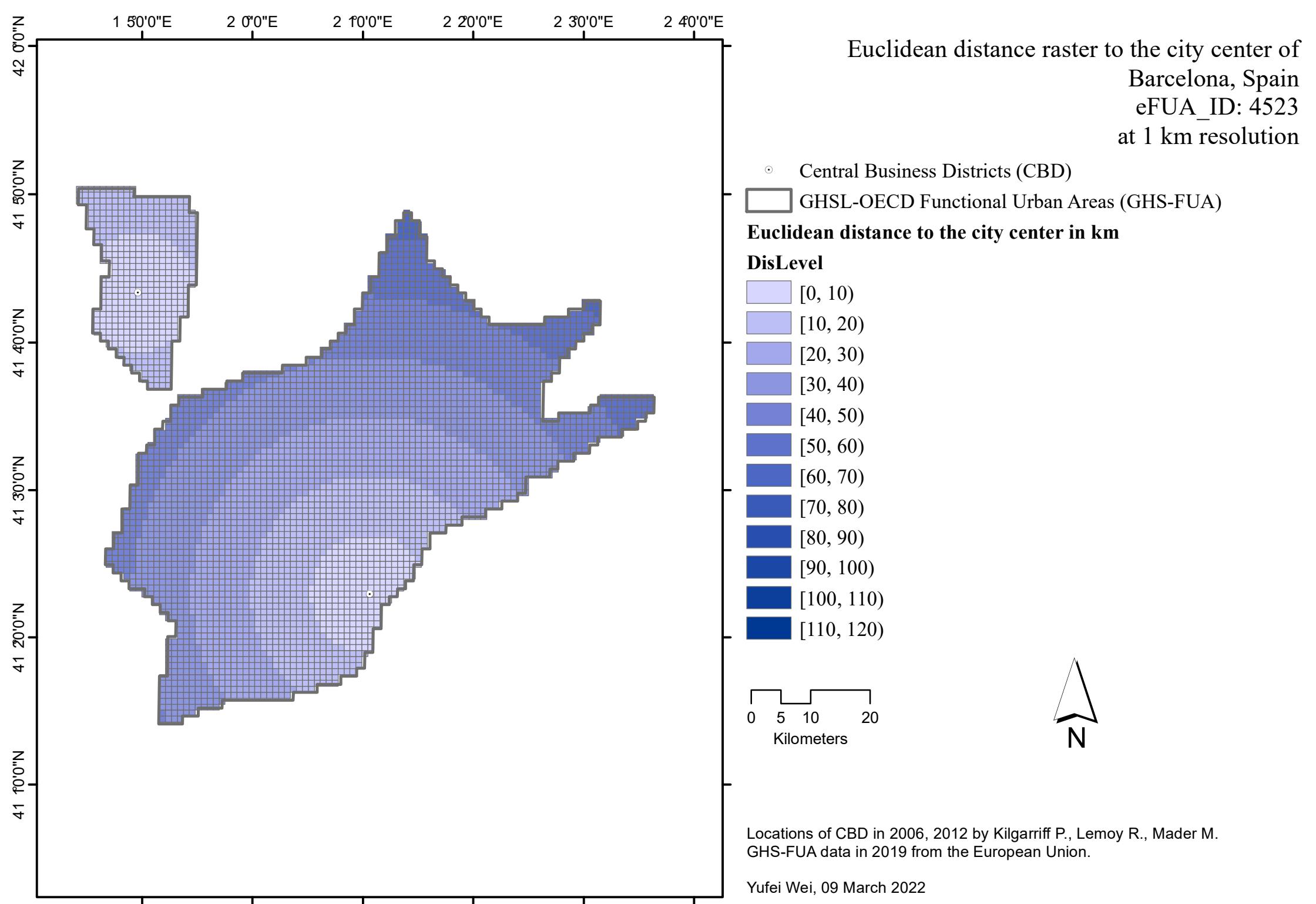
**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



16 40'0"E

16 50'0"E

17 0'0"E

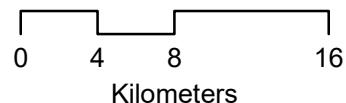
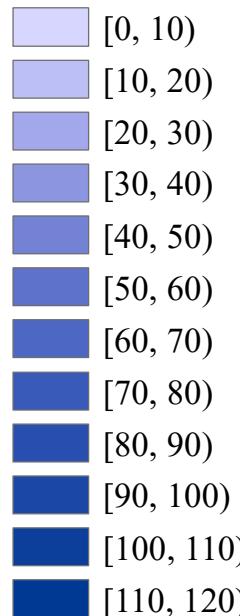
Euclidean distance raster to the city center of  
Bari, Italy  
eFUA\_ID: 5004  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

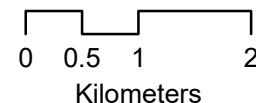
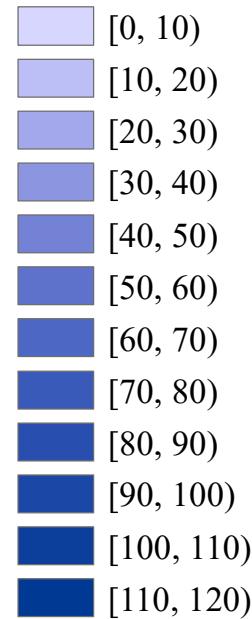
Yufei Wei, 09 March 2022

Euclidean distance raster to the city center of  
Barletta, Italy  
eFUA\_ID: 4821  
at 1 km resolution

- Central Business Districts (CBD)
- ◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

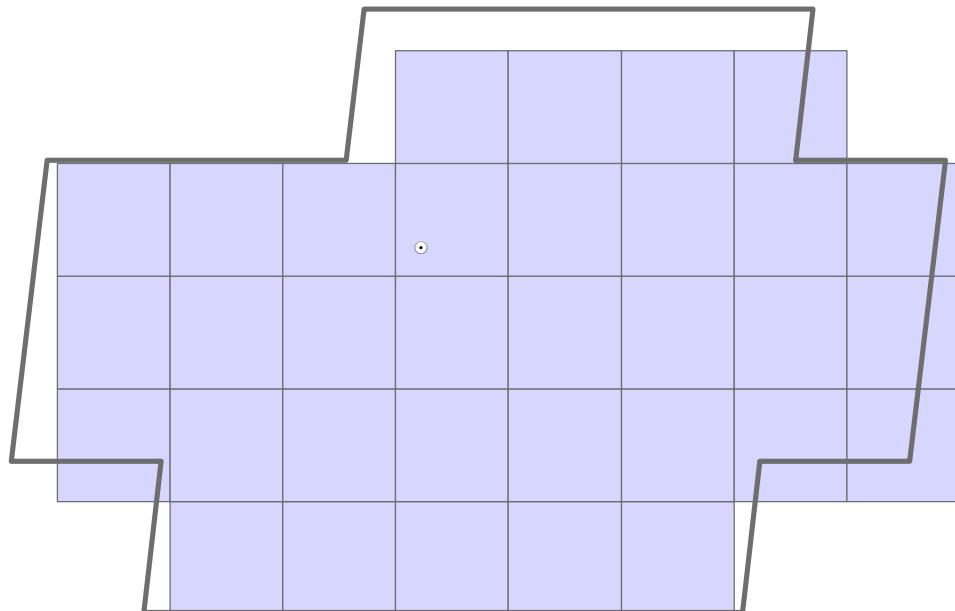
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



7 30'0"E

7 40'0"E

7 50'0"E

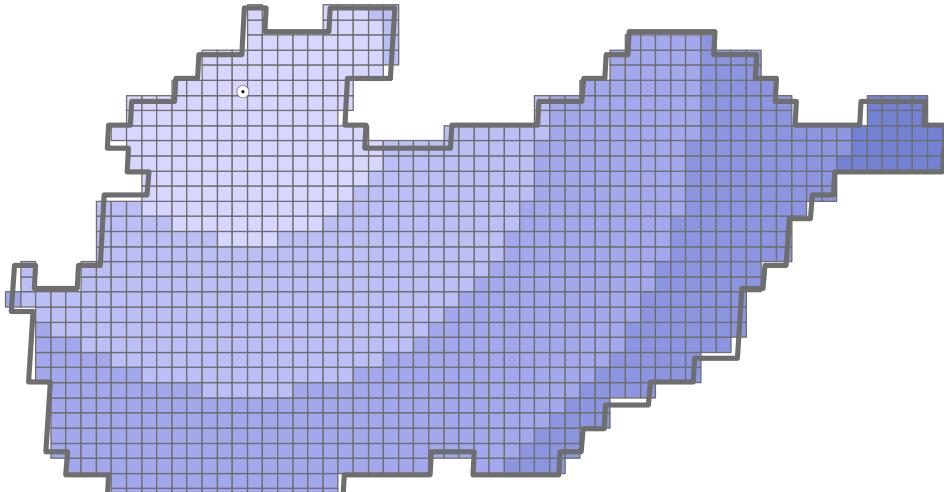
8 0'0"E

Euclidean distance raster to the city center of  
Basel, Switzerland  
eFUA\_ID: 935  
at 1 km resolution

47 40'0"N

47 30'0"N

47 20'0"N



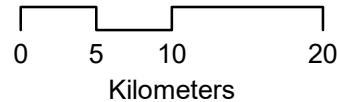
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

6 30'0"W 6 20'0"W 6 10'0"W 6 0'0"W 5 50'0"W 5 40'0"W

54 50'0"N  
54 40'0"N  
54 30'0"N  
54 20'0"N  
54 10'0"N

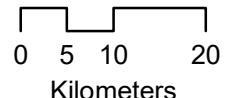
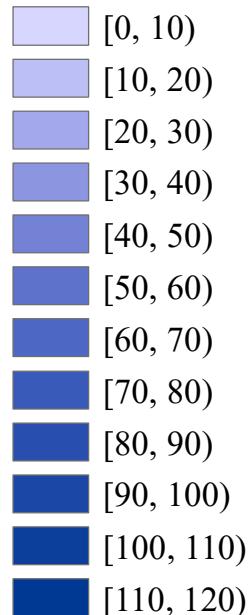
Euclidean distance raster to the city center of  
Belfast, United Kingdom  
eFUA\_ID: 242  
at 1 km resolution

○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

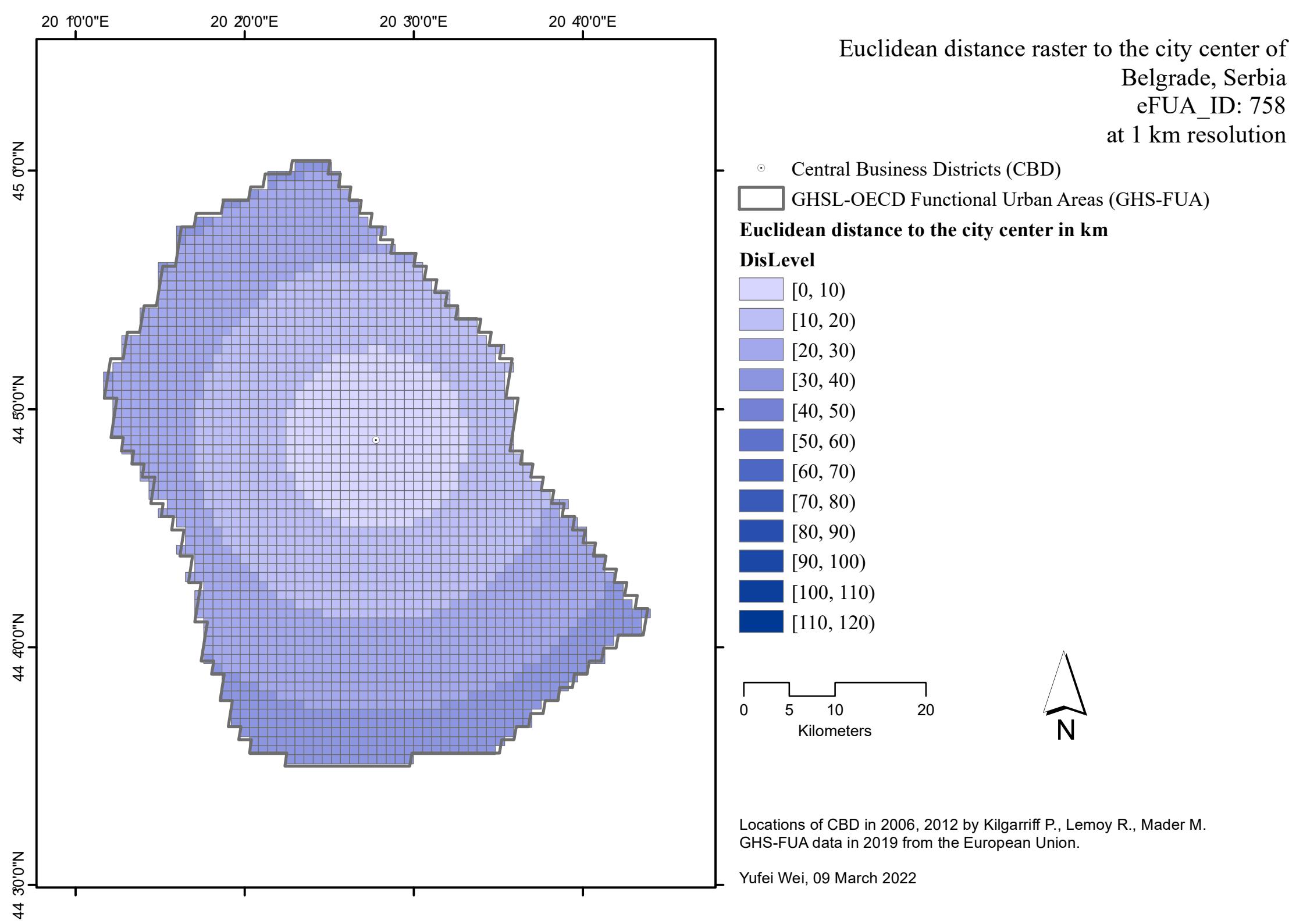
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



0 10'0"W

0 0'0"

Euclidean distance raster to the city center of  
Benidorm, Spain  
eFUA\_ID: 4224  
at 1 km resolution

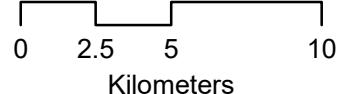
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

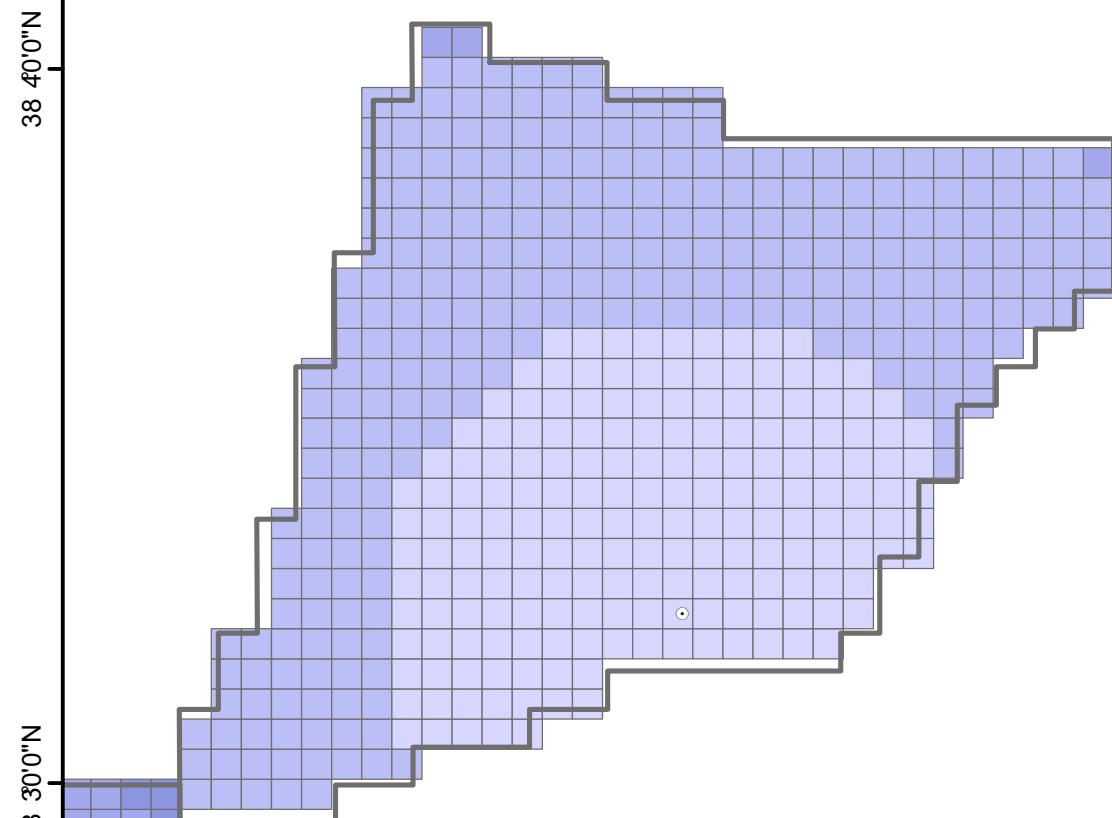
**DisLevel**

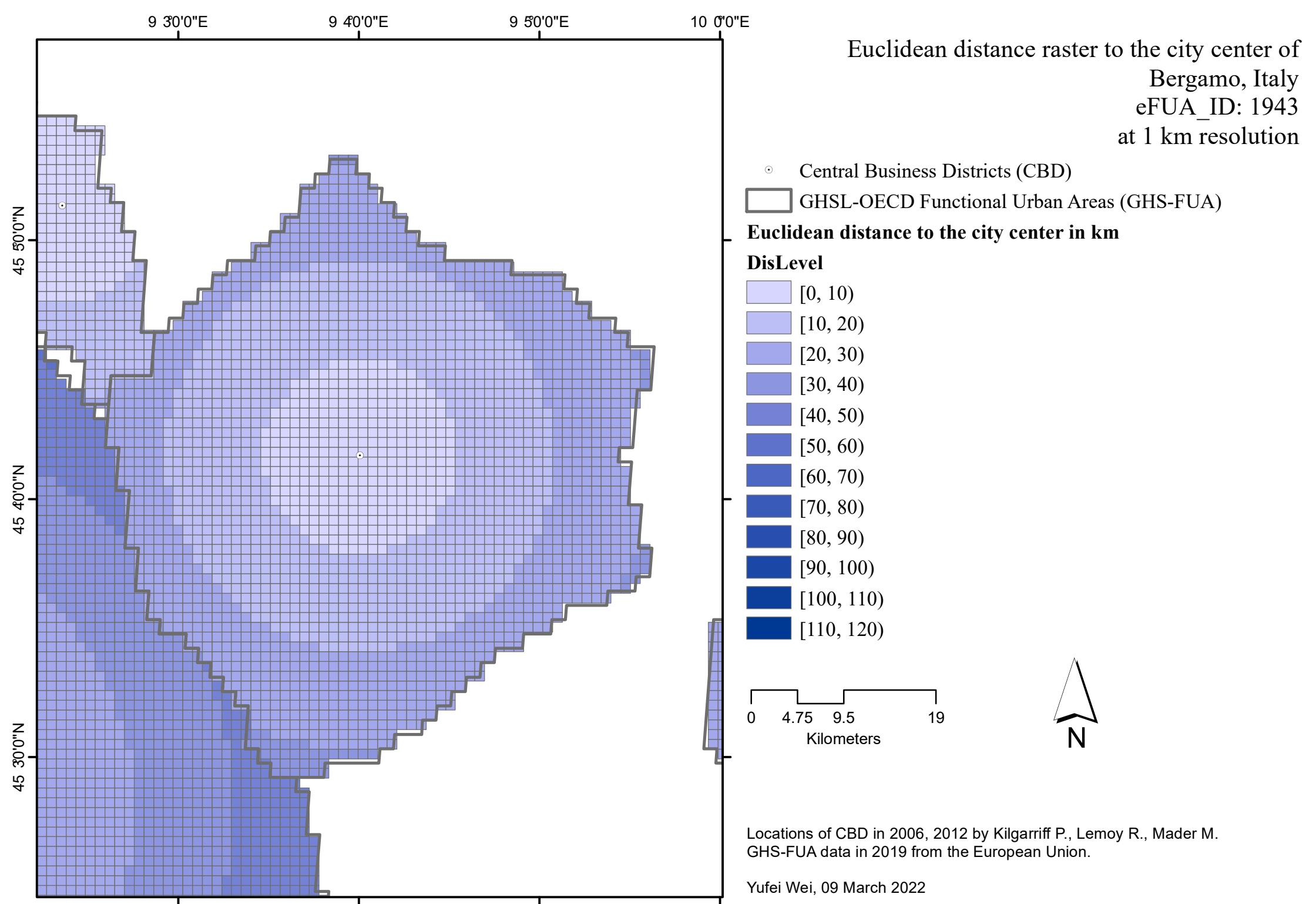
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

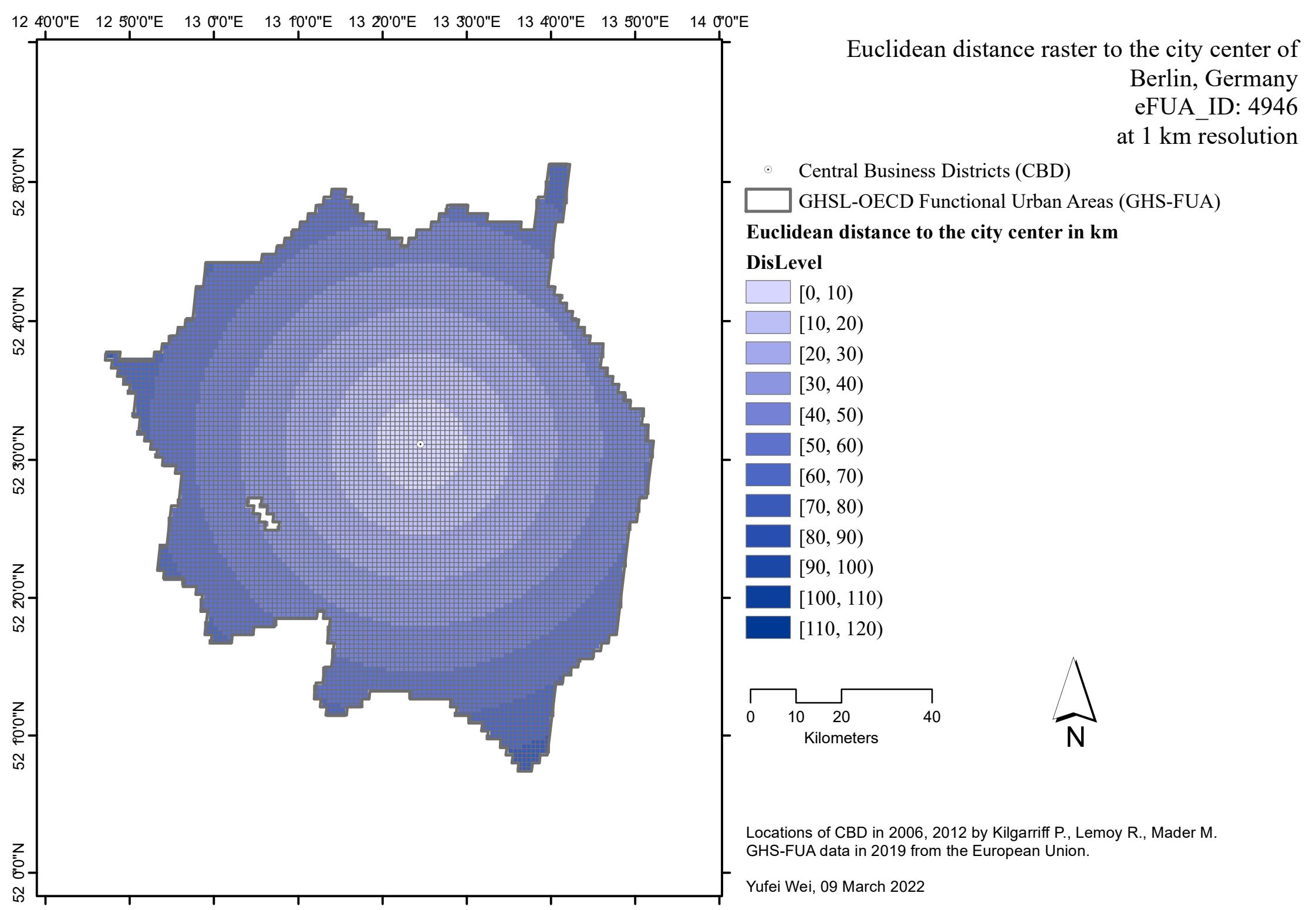


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022







7 10'0"E

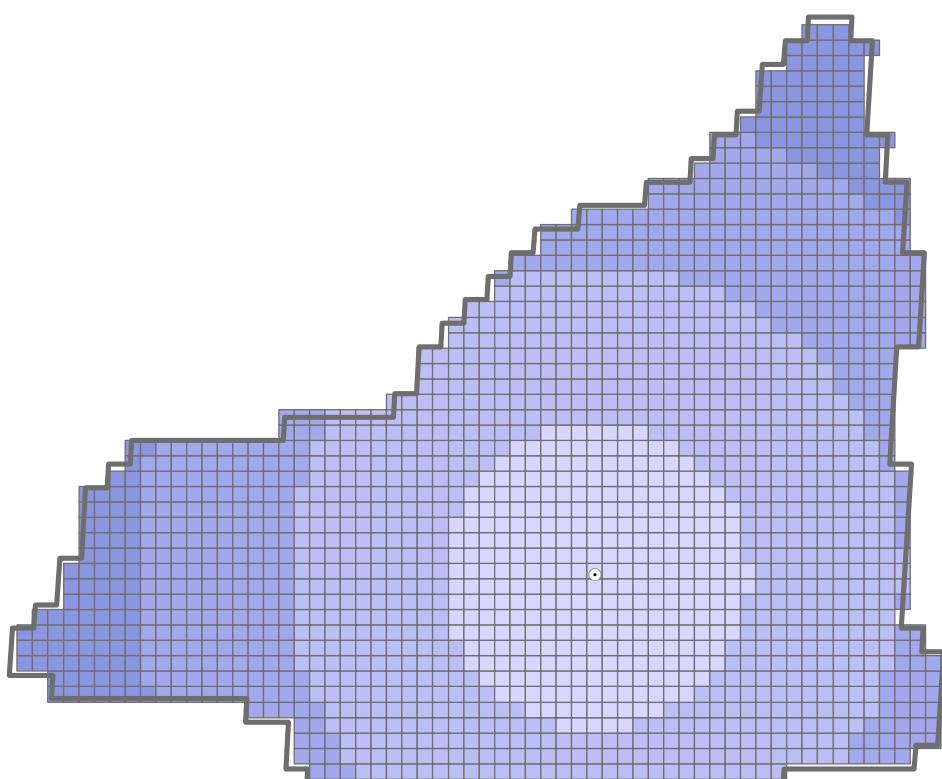
7 20'0"E

7 30'0"E

7 40'0"E

Euclidean distance raster to the city center of  
Bern, Switzerland  
eFUA\_ID: 805  
at 1 km resolution

47 10'0"N  
47 00'N  
46 50'0"N



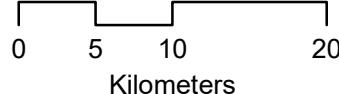
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

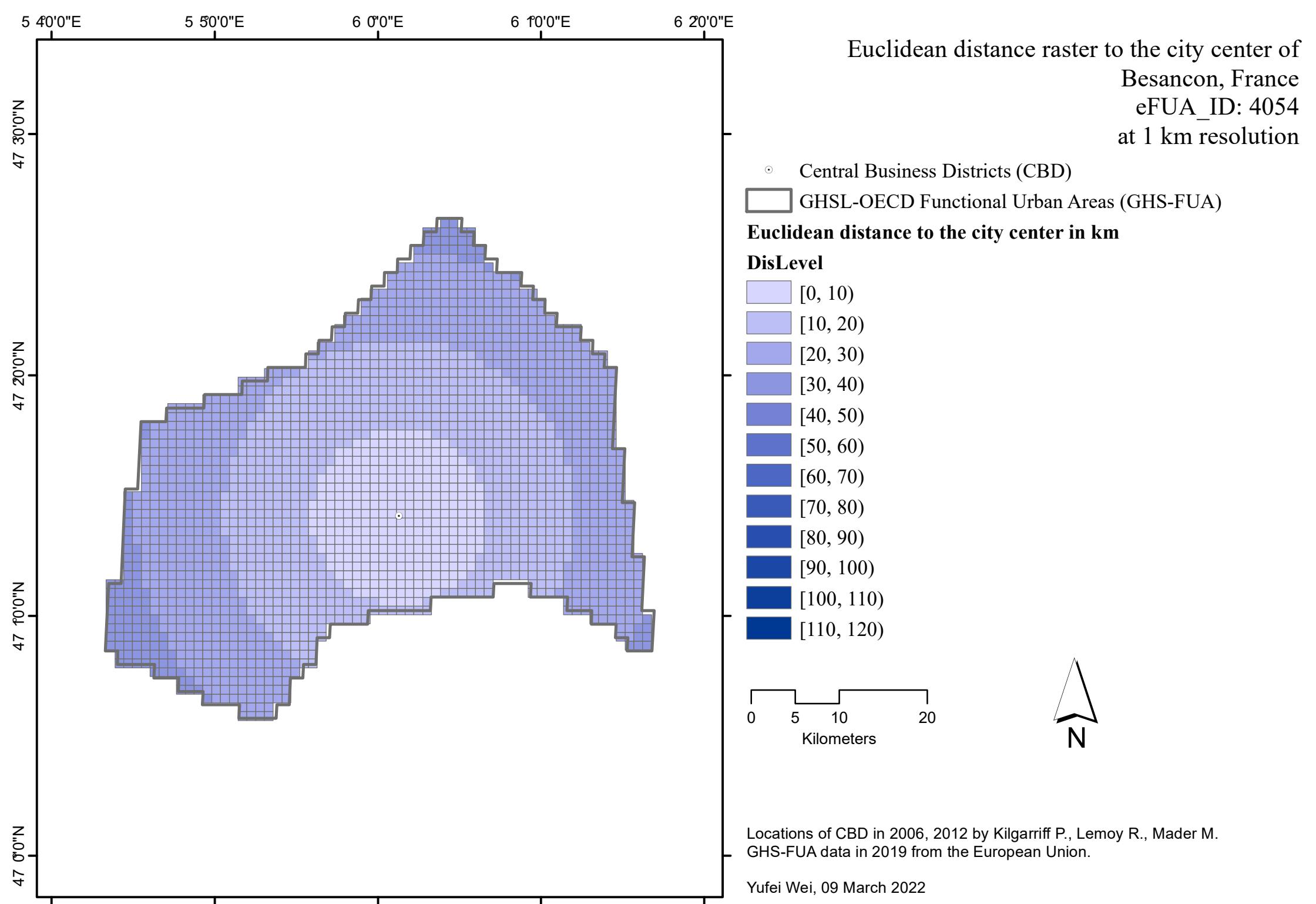
**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



22 50'0"E

23 0'0"E

23 10'0"E

23 20'0"E

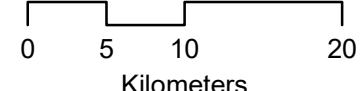
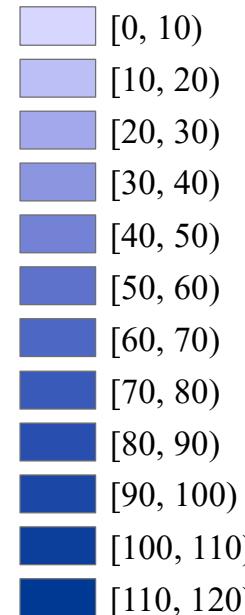
Euclidean distance raster to the city center of  
Bialystok, Poland  
eFUA\_ID: 3601  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

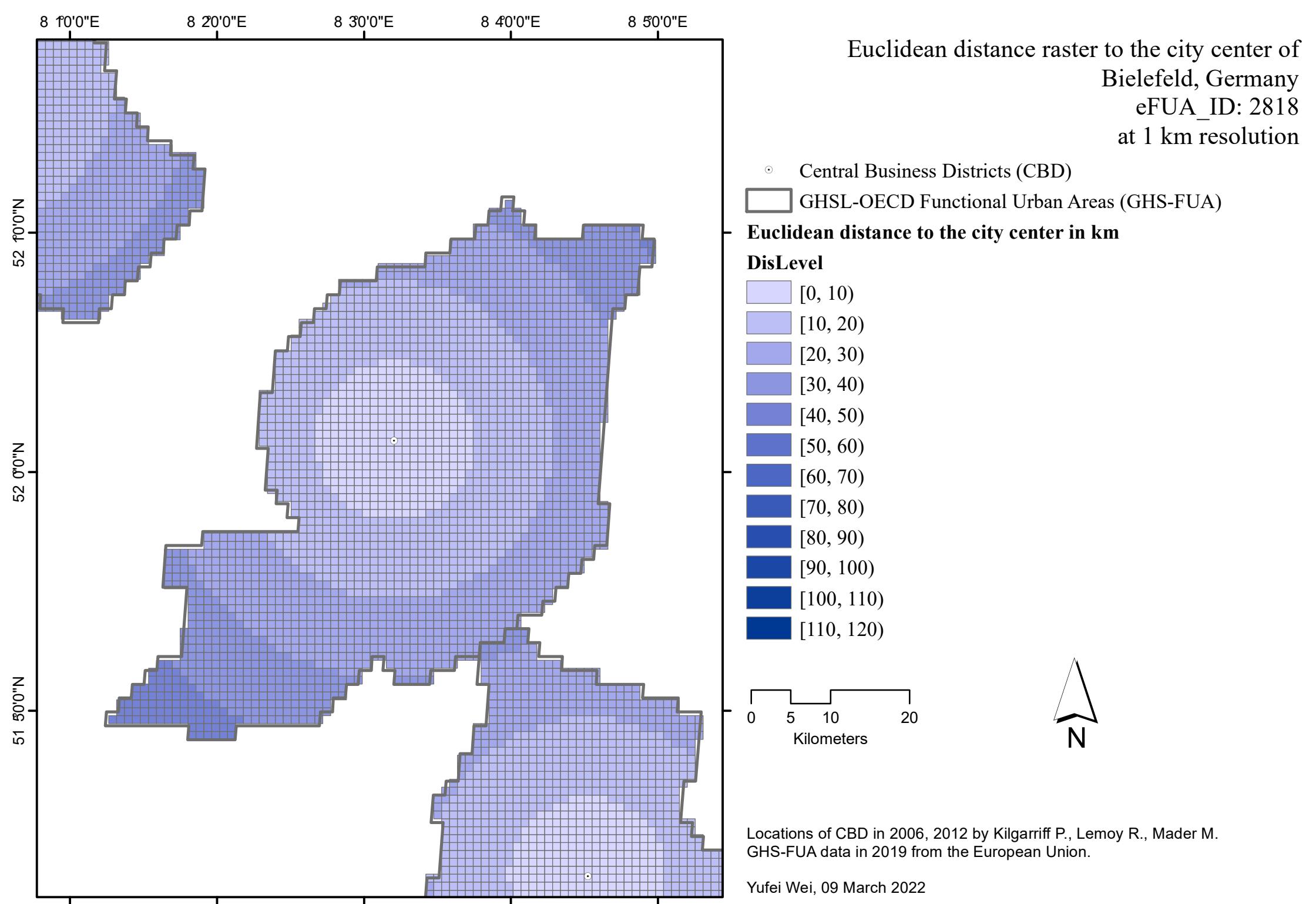
**Euclidean distance to the city center in km**

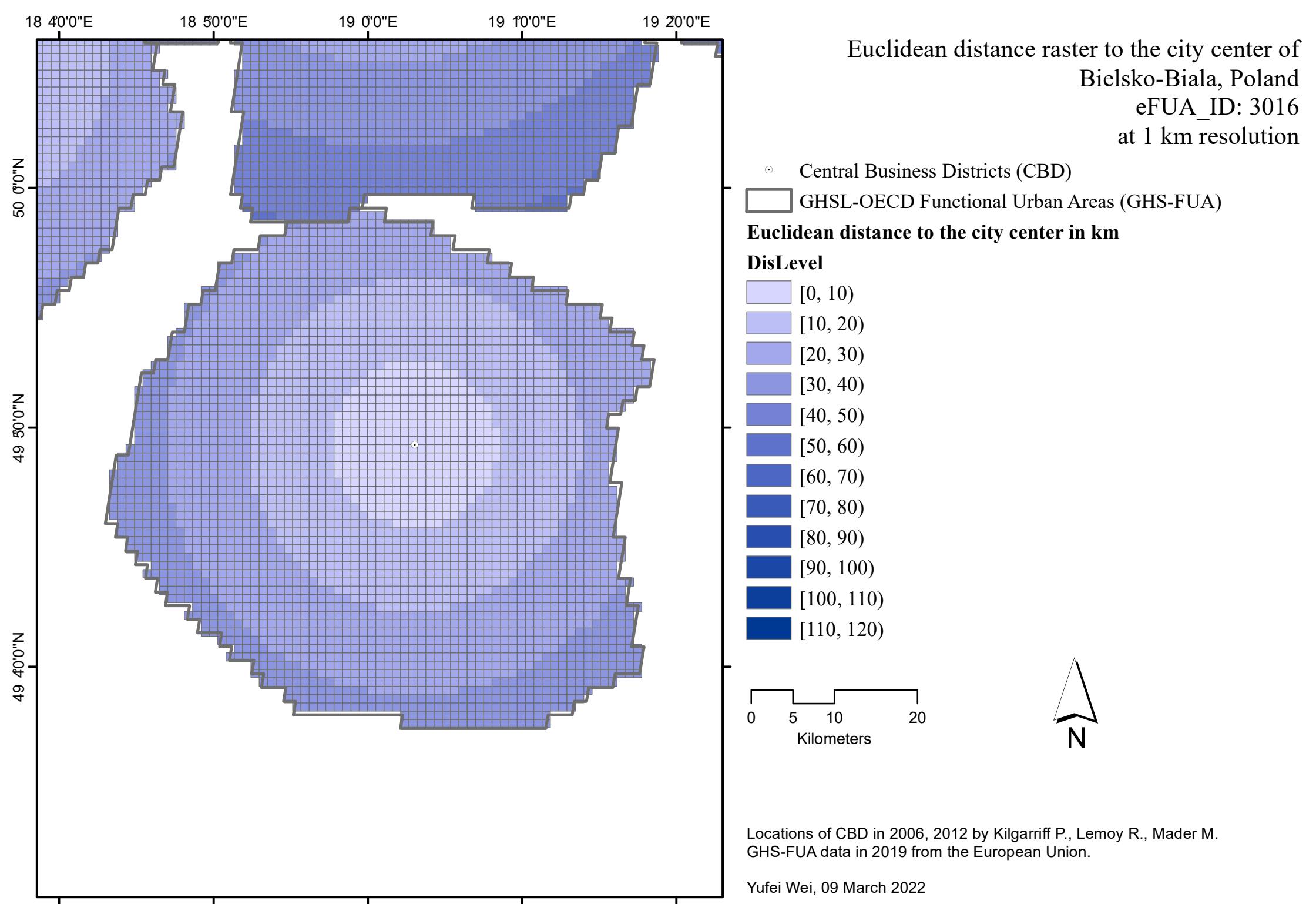
**DisLevel**

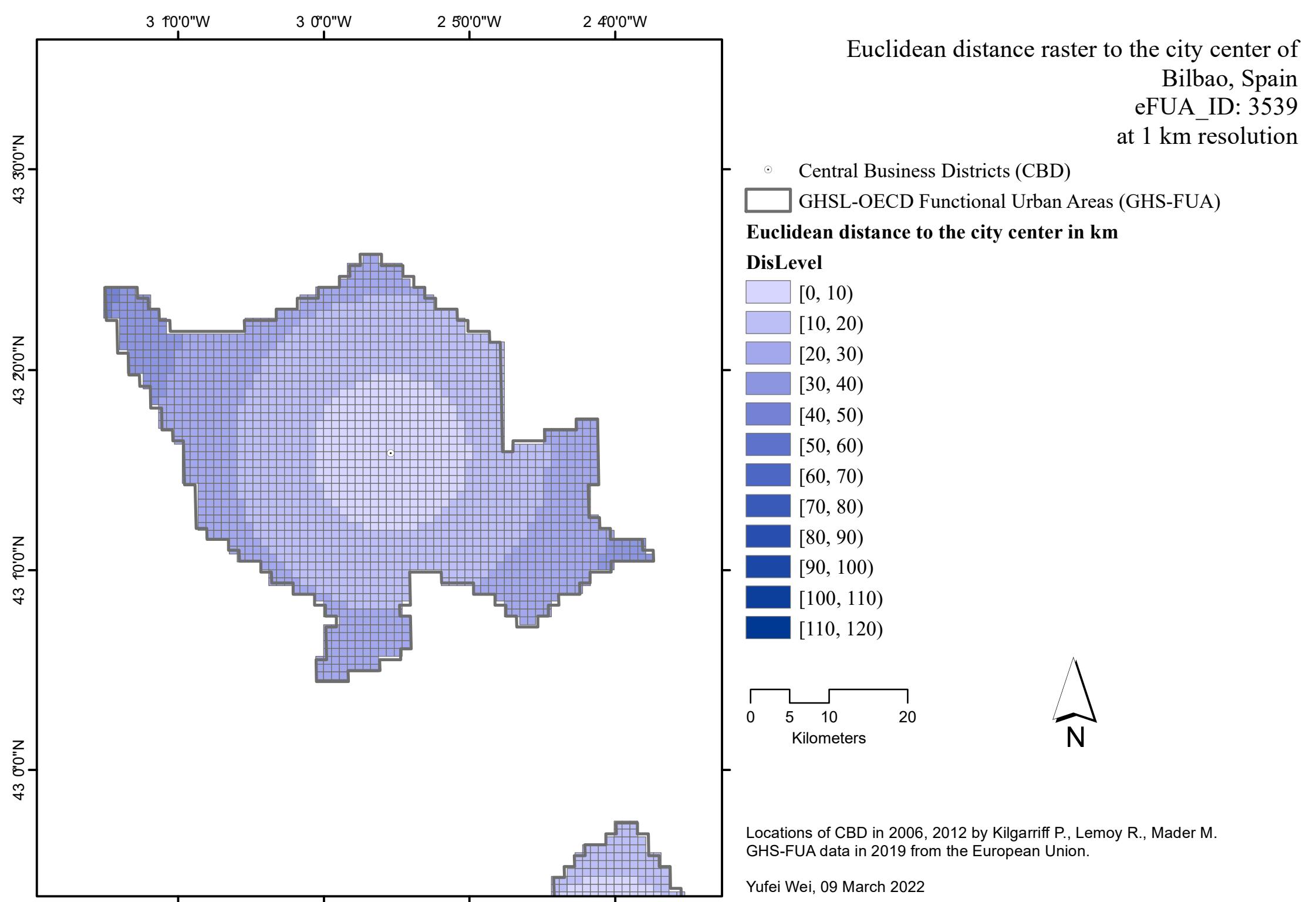


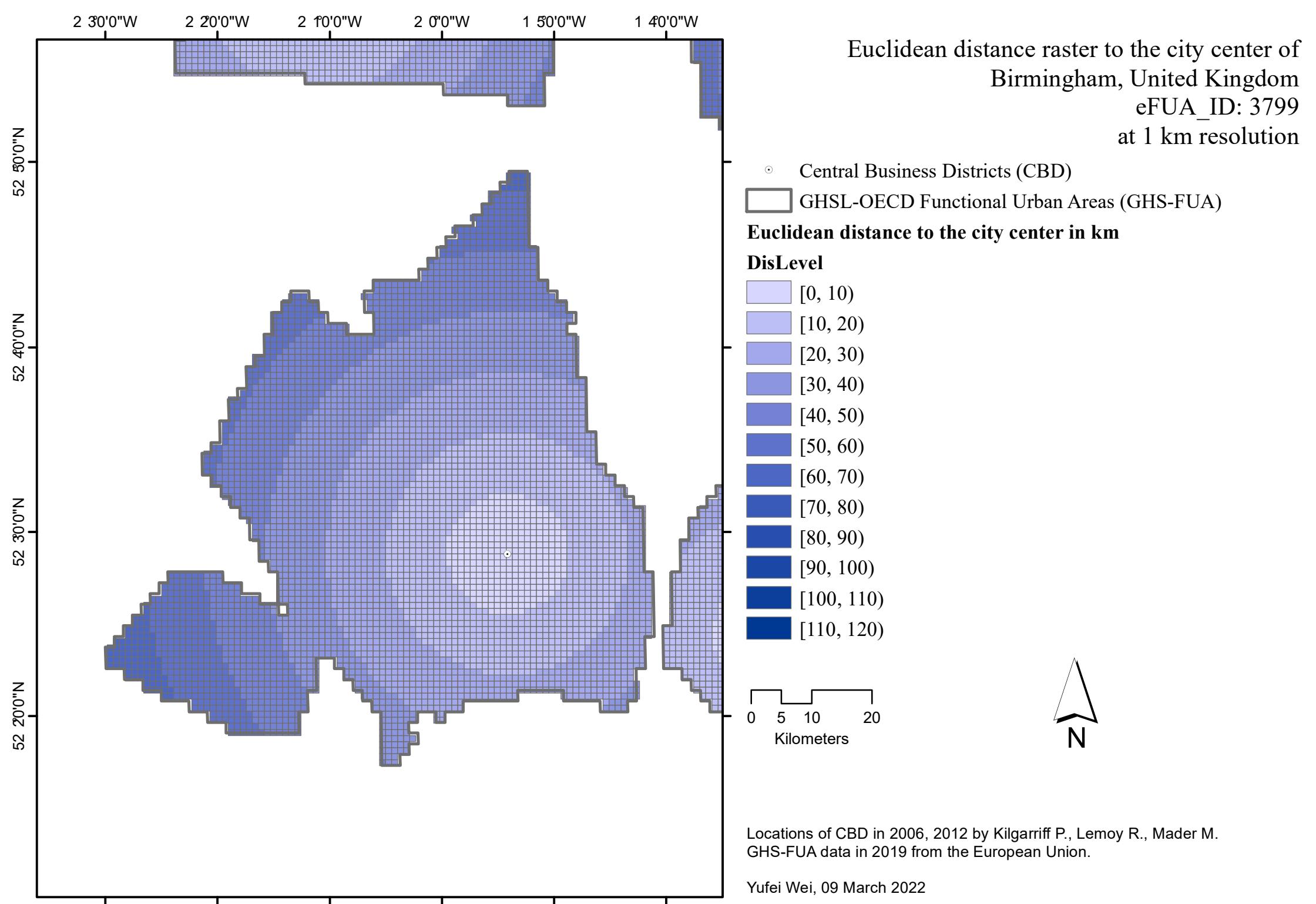
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022









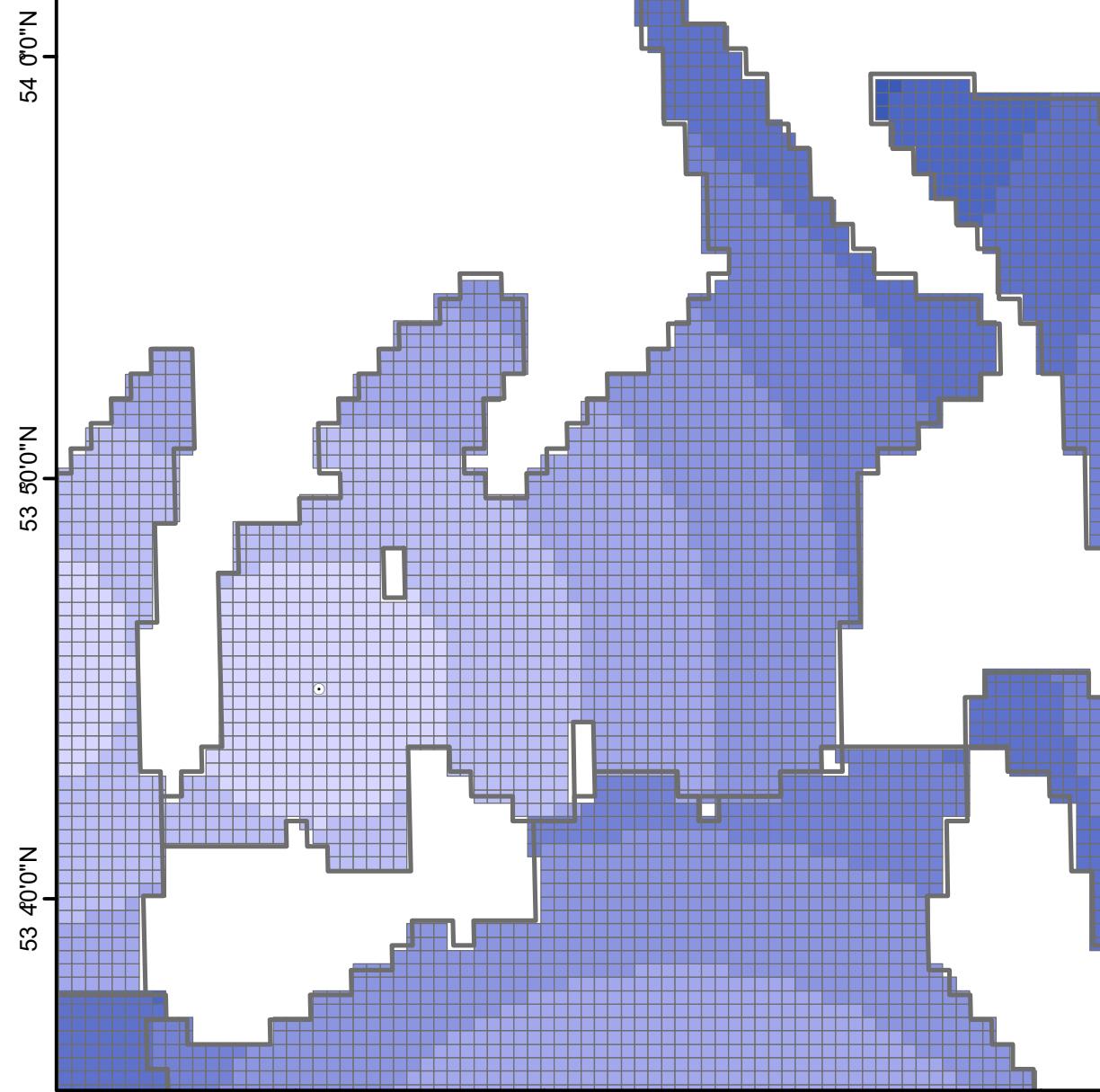
2 30'0"W

2 20'0"W

2 10'0"W

2 0'0"W

Euclidean distance raster to the city center of  
 Blackburn, United Kingdom  
 eFUA\_ID: 3401  
 at 1 km resolution



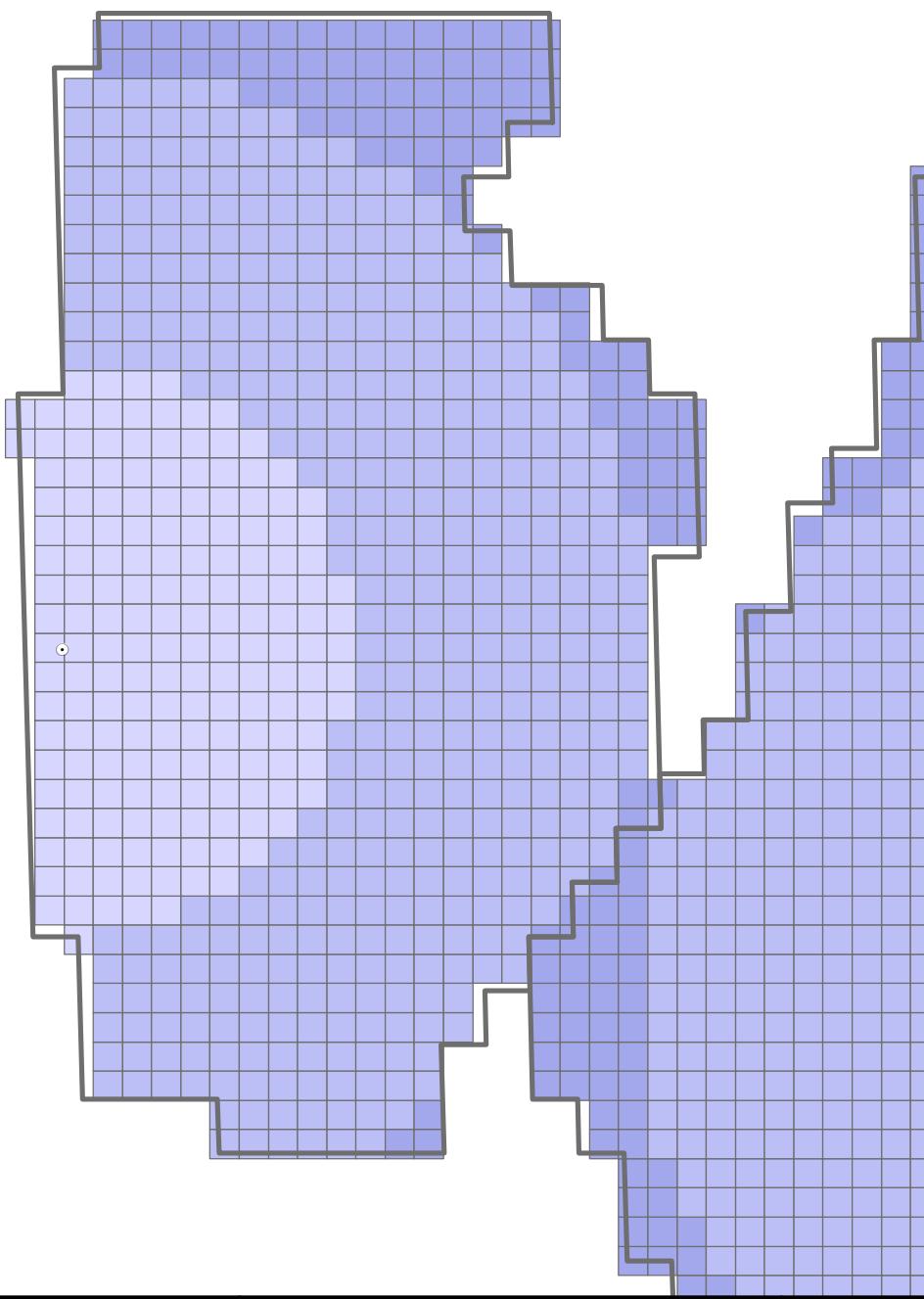
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
 GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

3 0' 0"W

2 50' 0"W

Euclidean distance raster to the city center of  
Blackpool, United Kingdom  
eFUA\_ID: 2574  
at 1 km resolution



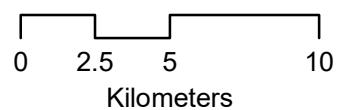
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

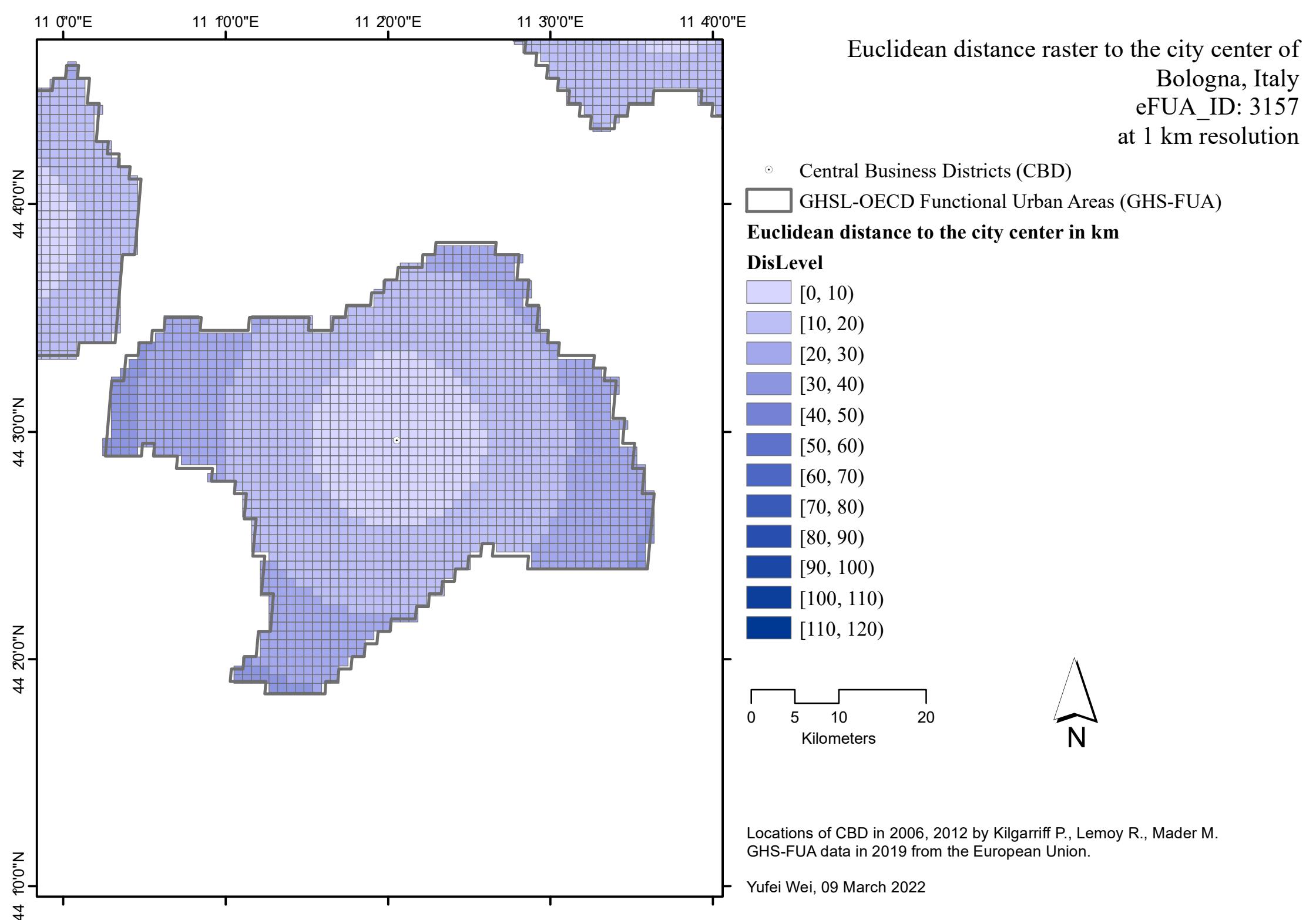
**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

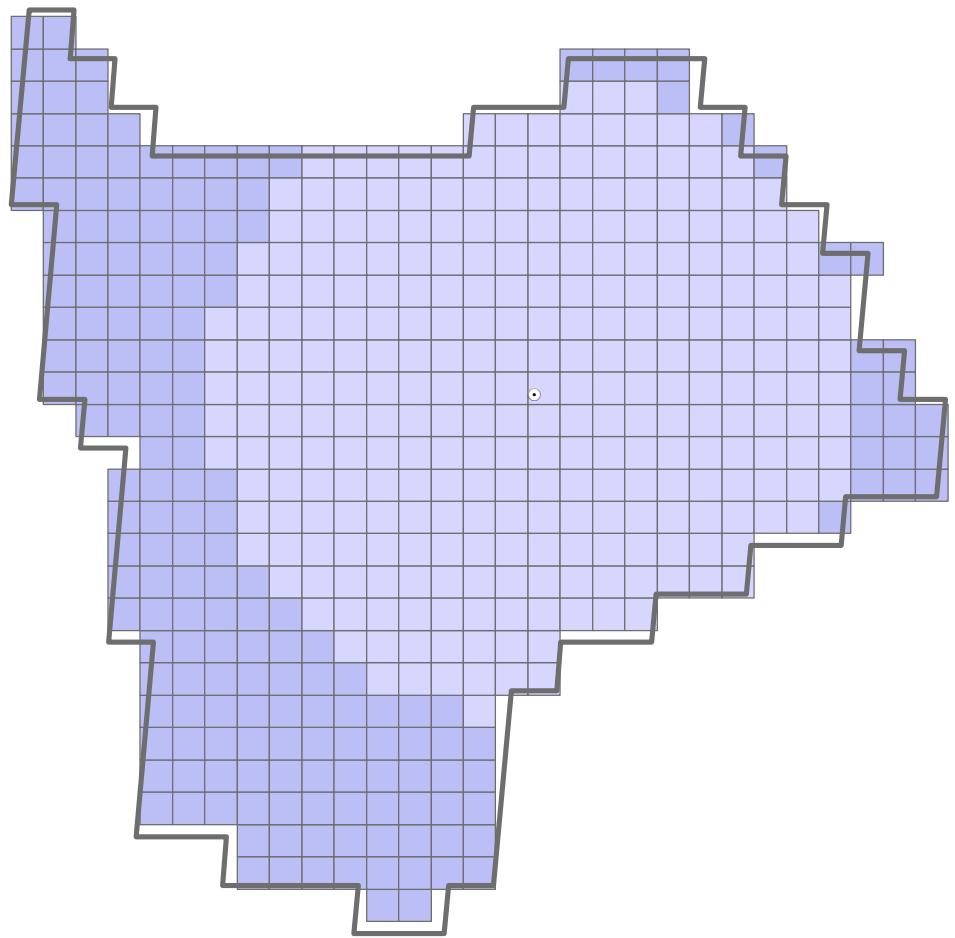
Yufei Wei, 09 March 2022



11 20'0"E

11 30'0"E

Euclidean distance raster to the city center of  
Bolzano - Bozen, Italy  
eFUA\_ID: 3002  
at 1 km resolution



○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 2.5 5 10  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

1 0'0"W

0 50'0"W

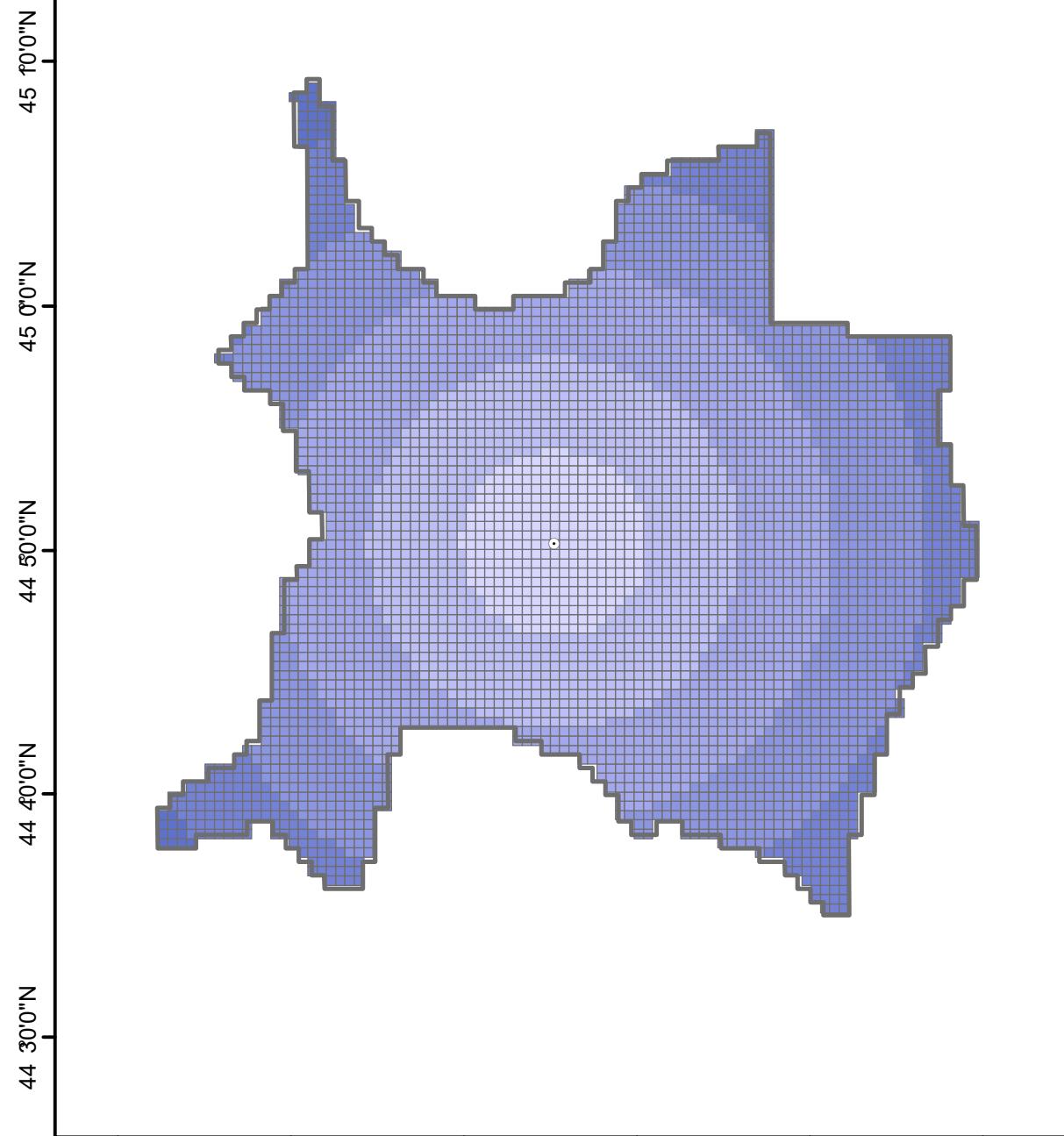
0 40'0"W

0 30'0"W

0 20'0"W

0 10'0"W

Euclidean distance raster to the city center of  
Bordeaux, France  
eFUA\_ID: 1397  
at 1 km resolution



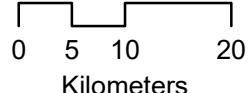
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

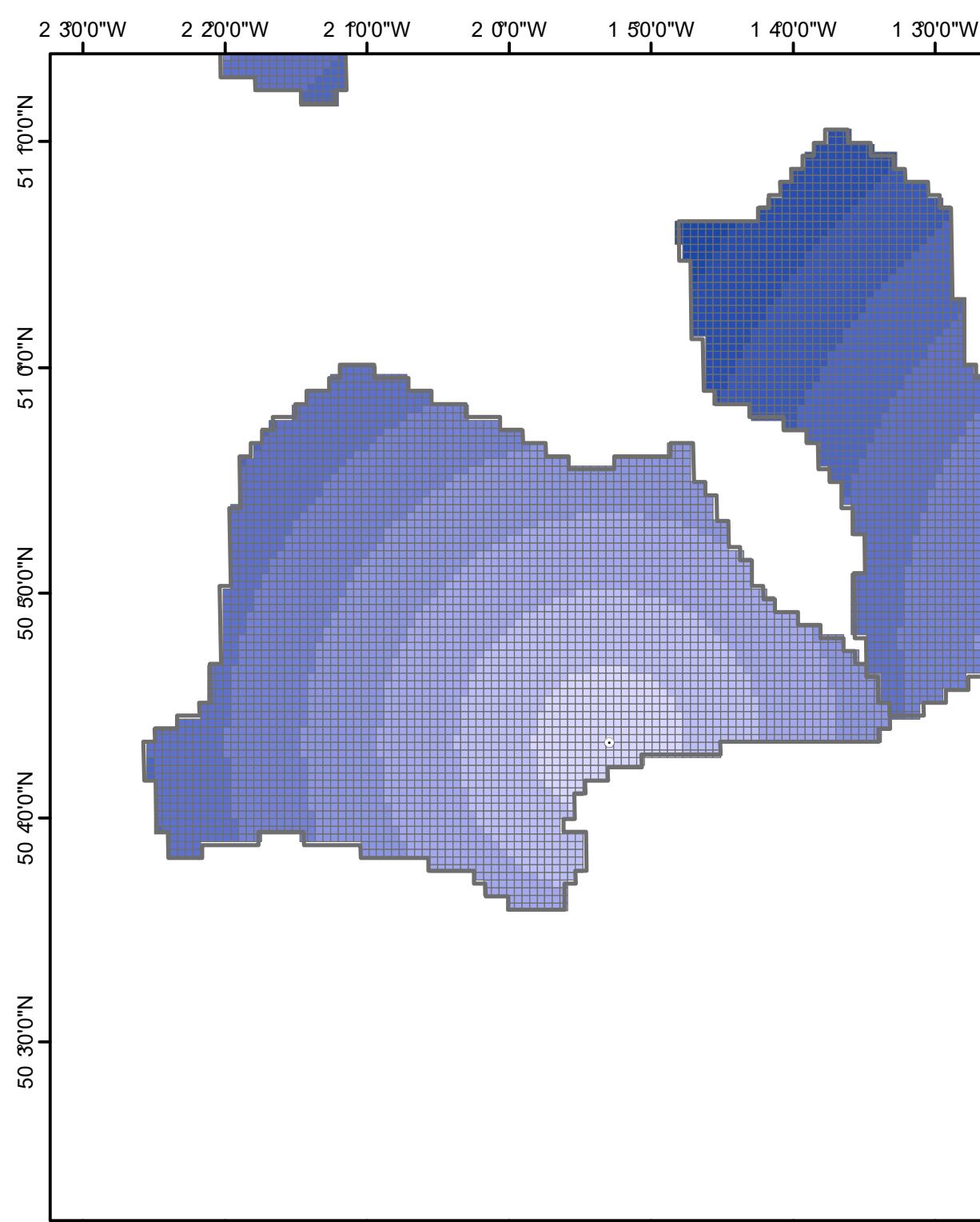
**DisLevel**

[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

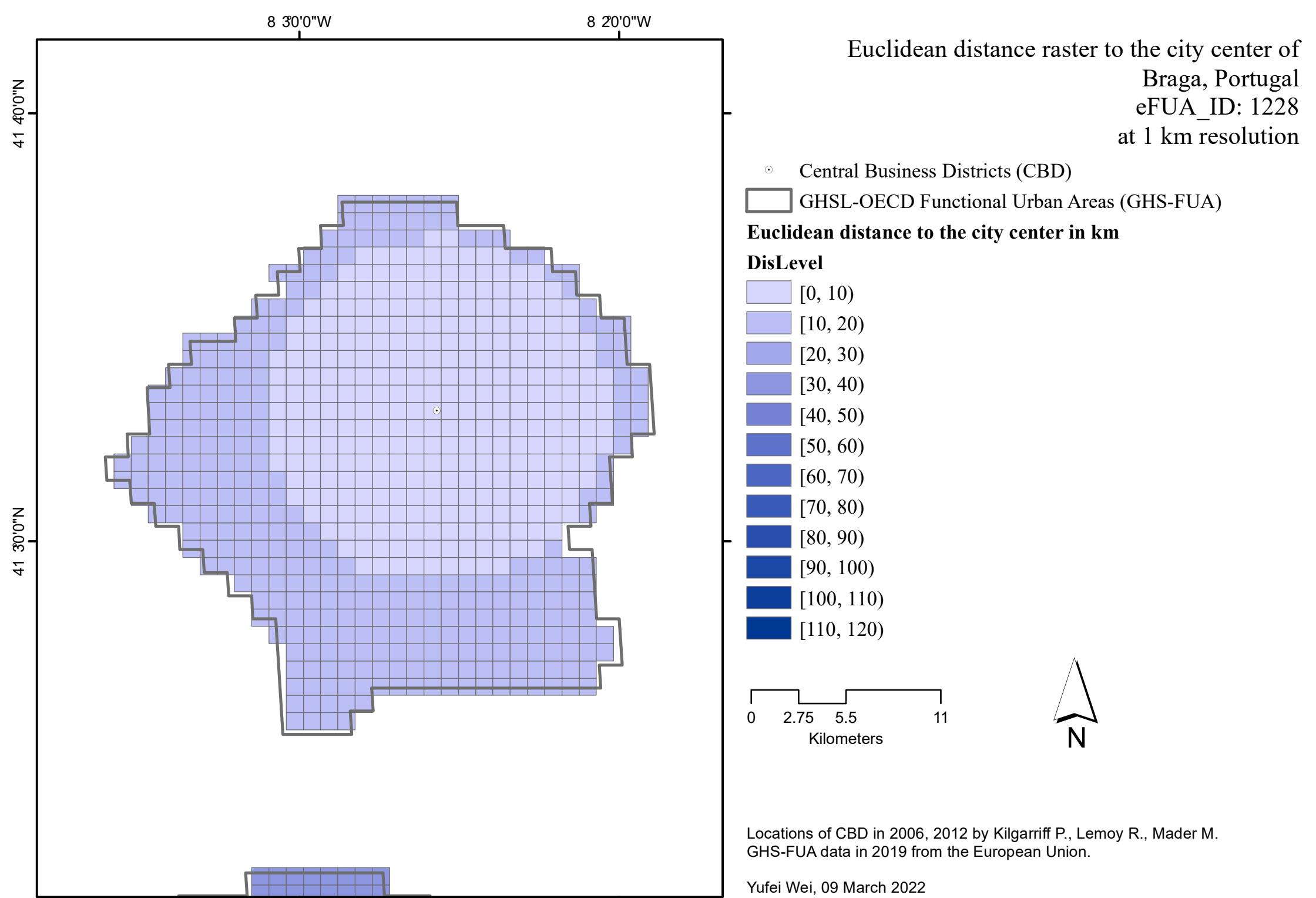
Yufei Wei, 09 March 2022



Euclidean distance raster to the city center of  
Bournemouth, United Kingdom  
eFUA\_ID: 3912  
at 1 km resolution

Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



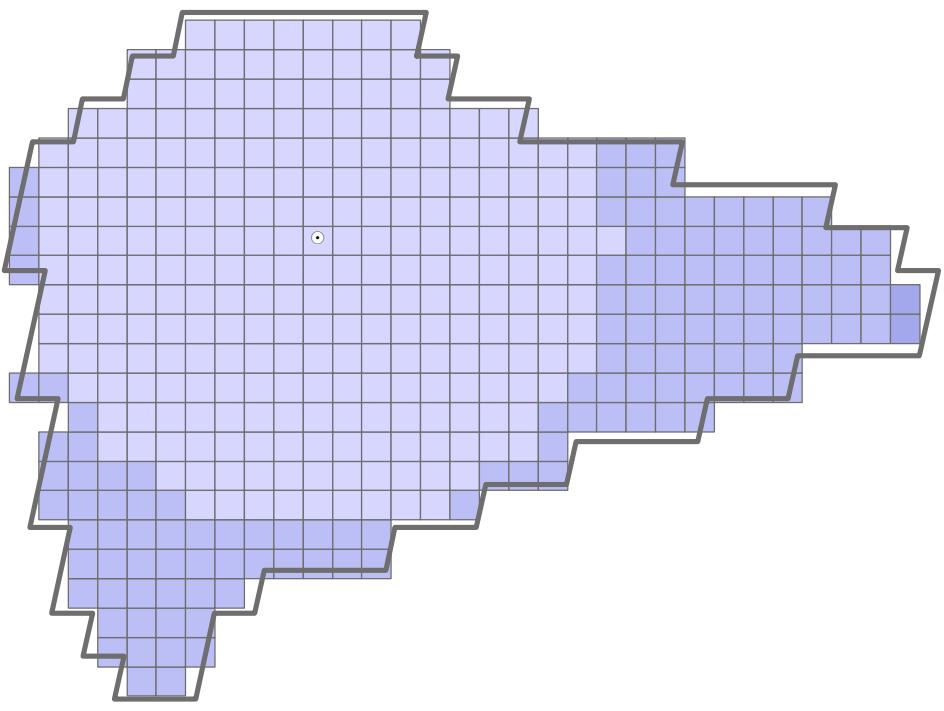
28 0°0"E

28 10'0"E

Euclidean distance raster to the city center of  
Braila, Romania  
eFUA\_ID: 2727  
at 1 km resolution

45 20'0"N

45 10'0"N



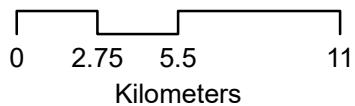
○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

17 0'0"E

17 10'0"E

17 20'0"E

17 30'0"E

Euclidean distance raster to the city center of  
Bratislava, Slovakia  
eFUA\_ID: 163  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)

[10, 20)

[20, 30)

[30, 40)

[40, 50)

[50, 60)

[60, 70)

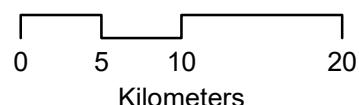
[70, 80)

[80, 90)

[90, 100)

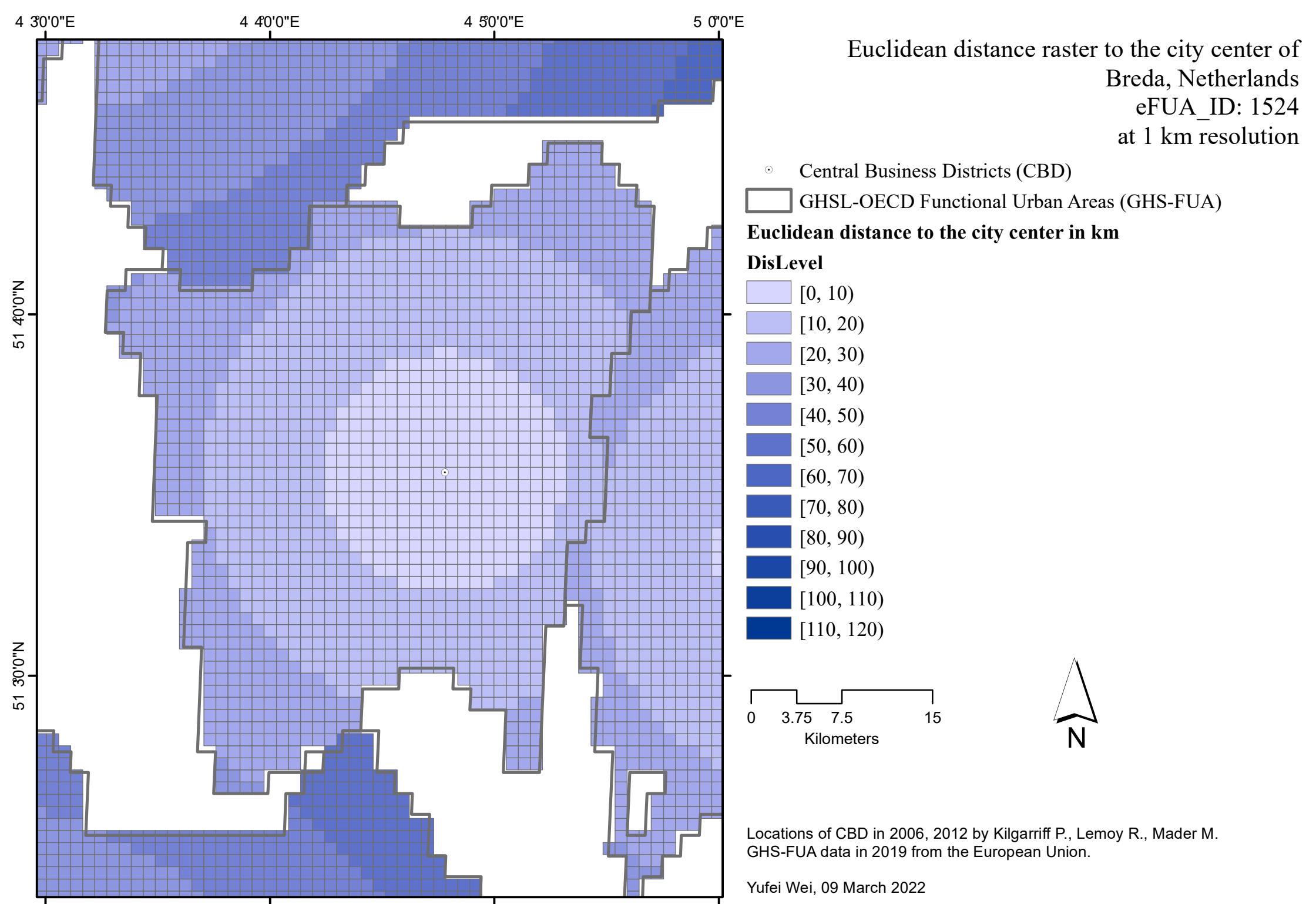
[100, 110)

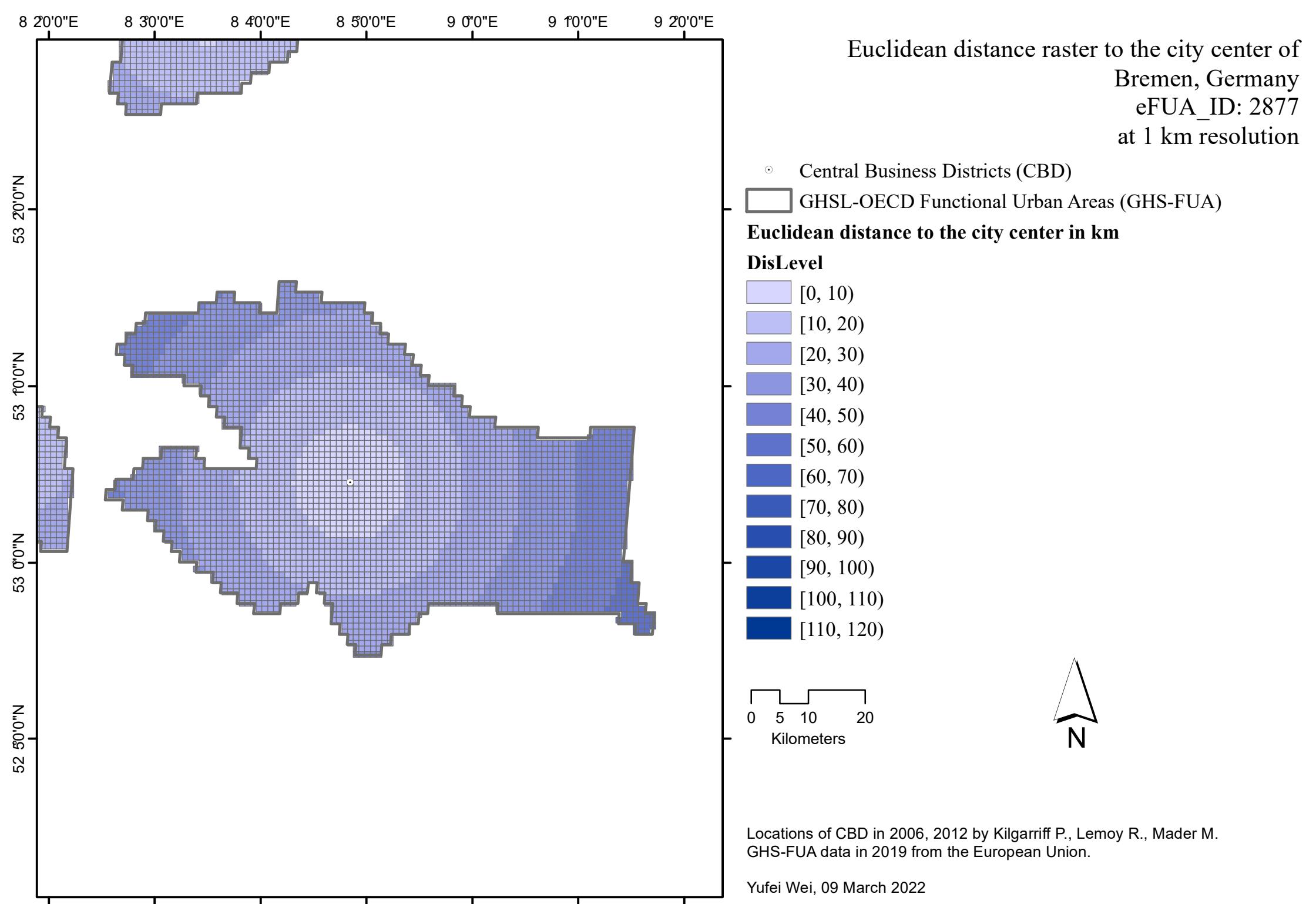
[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022





8 30'0"E

8 40'0"E

Euclidean distance raster to the city center of  
Bremerhaven, Germany  
eFUA\_ID: 2501  
at 1 km resolution

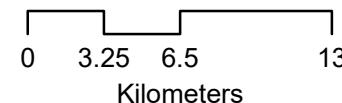
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

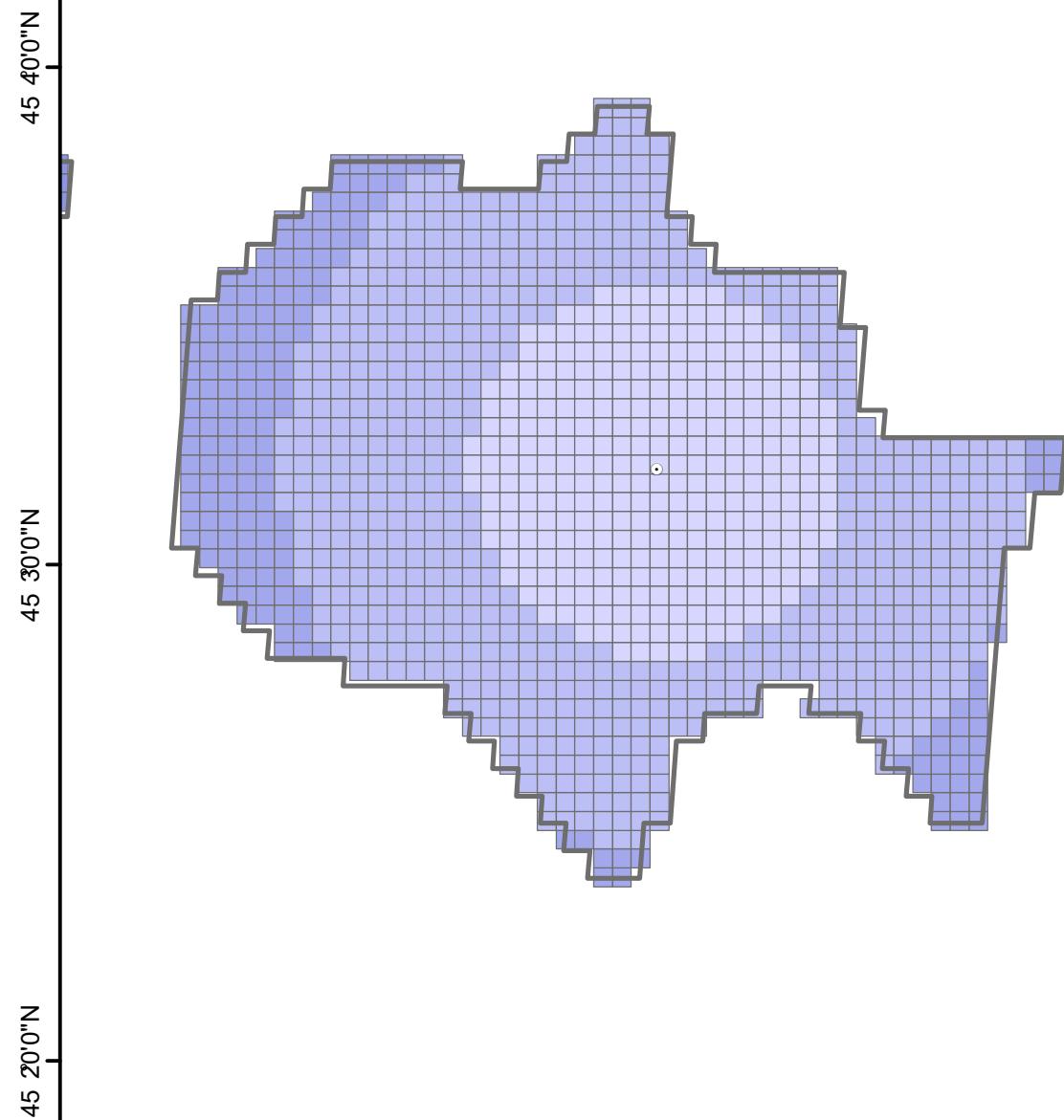
Yufei Wei, 09 March 2022

10 0'0"E

10 10'0"E

10 20'0"E

Euclidean distance raster to the city center of  
Brescia, Italy  
eFUA\_ID: 2312  
at 1 km resolution



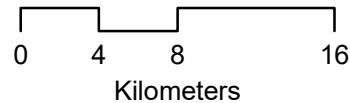
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

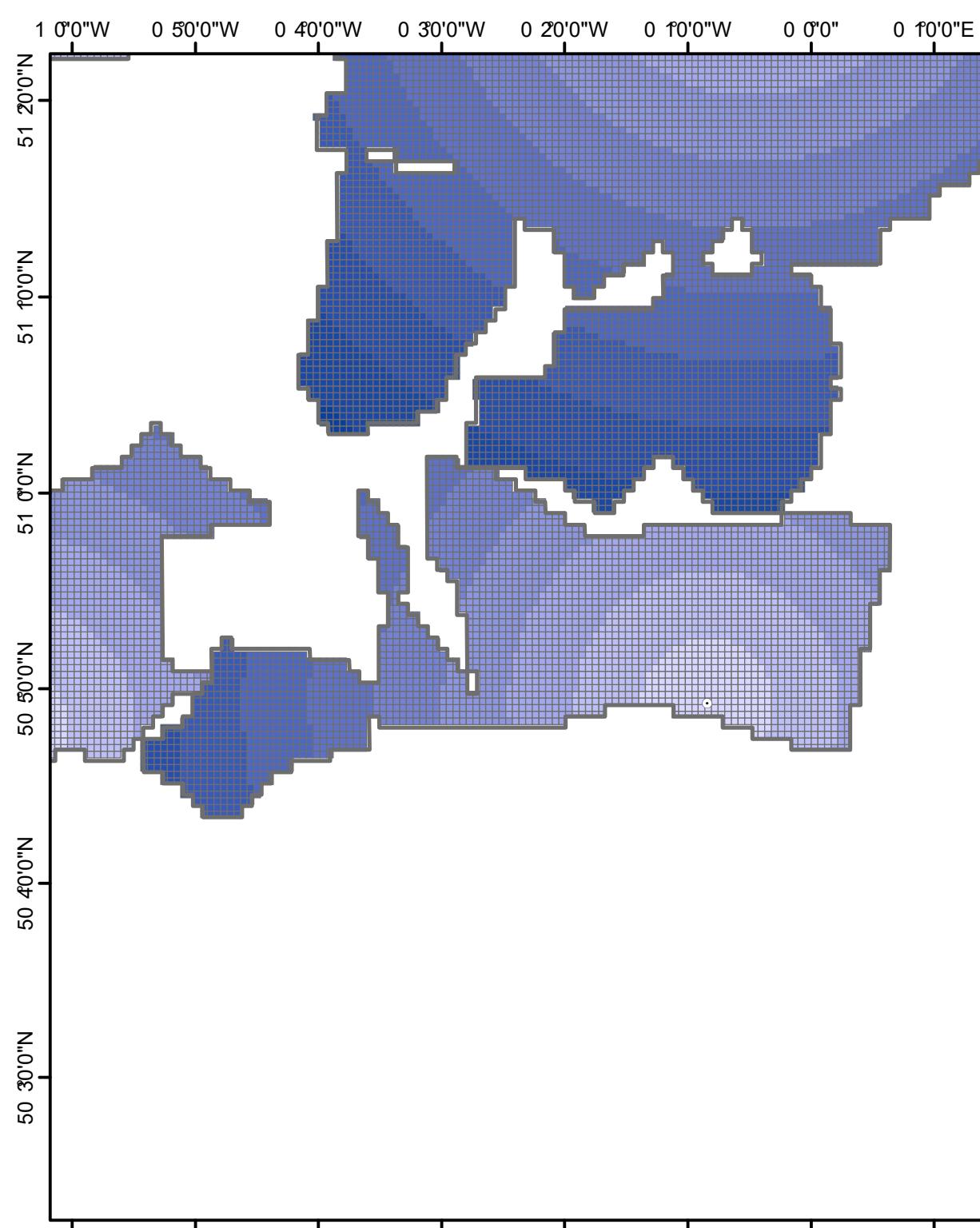
**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

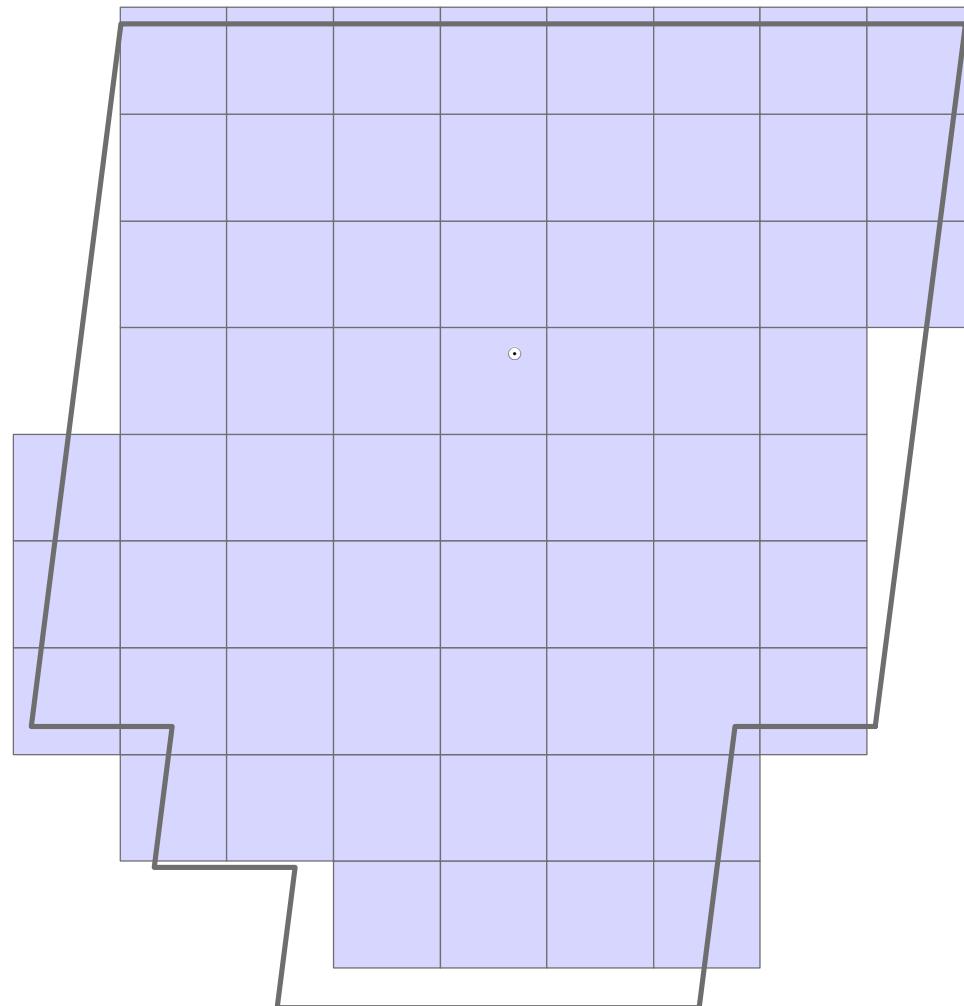
Yufei Wei, 09 March 2022



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

Euclidean distance raster to the city center of  
Brindisi, Italy  
eFUA\_ID: 5051  
at 1 km resolution



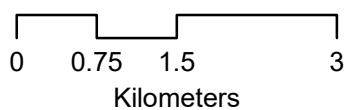
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

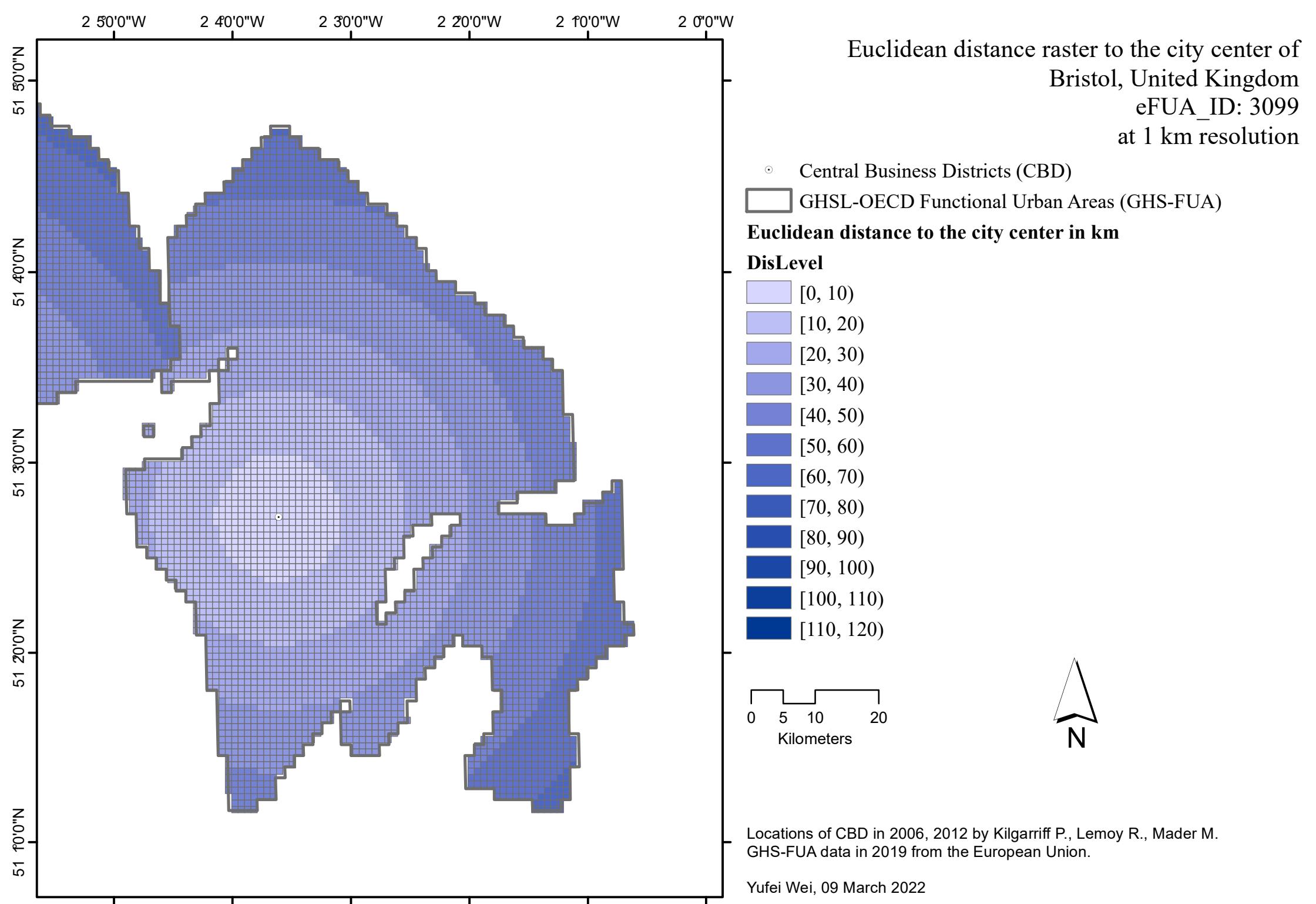
#### DisLevel

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



16 20'0"E

16 30'0"E

16 40'0"E

16 50'0"E

17 0'0"E

49 30'0"N

49 20'0"N

49 10'0"N

49 0'0"N

48 50'0"N

Euclidean distance raster to the city center of  
Brno, Czech Republic  
eFUA\_ID: 1177  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)

[10, 20)

[20, 30)

[30, 40)

[40, 50)

[50, 60)

[60, 70)

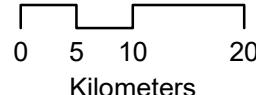
[70, 80)

[80, 90)

[90, 100)

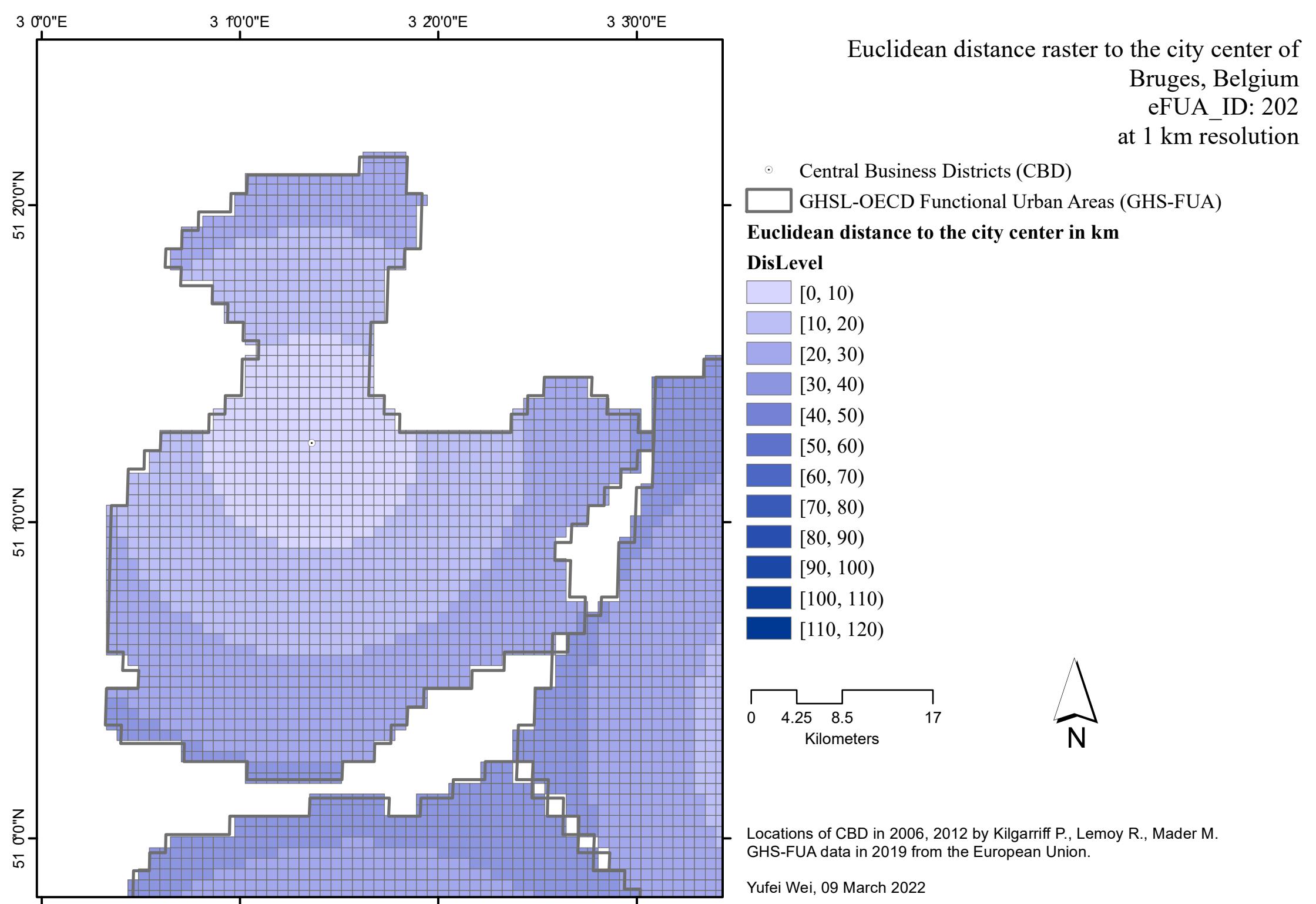
[100, 110)

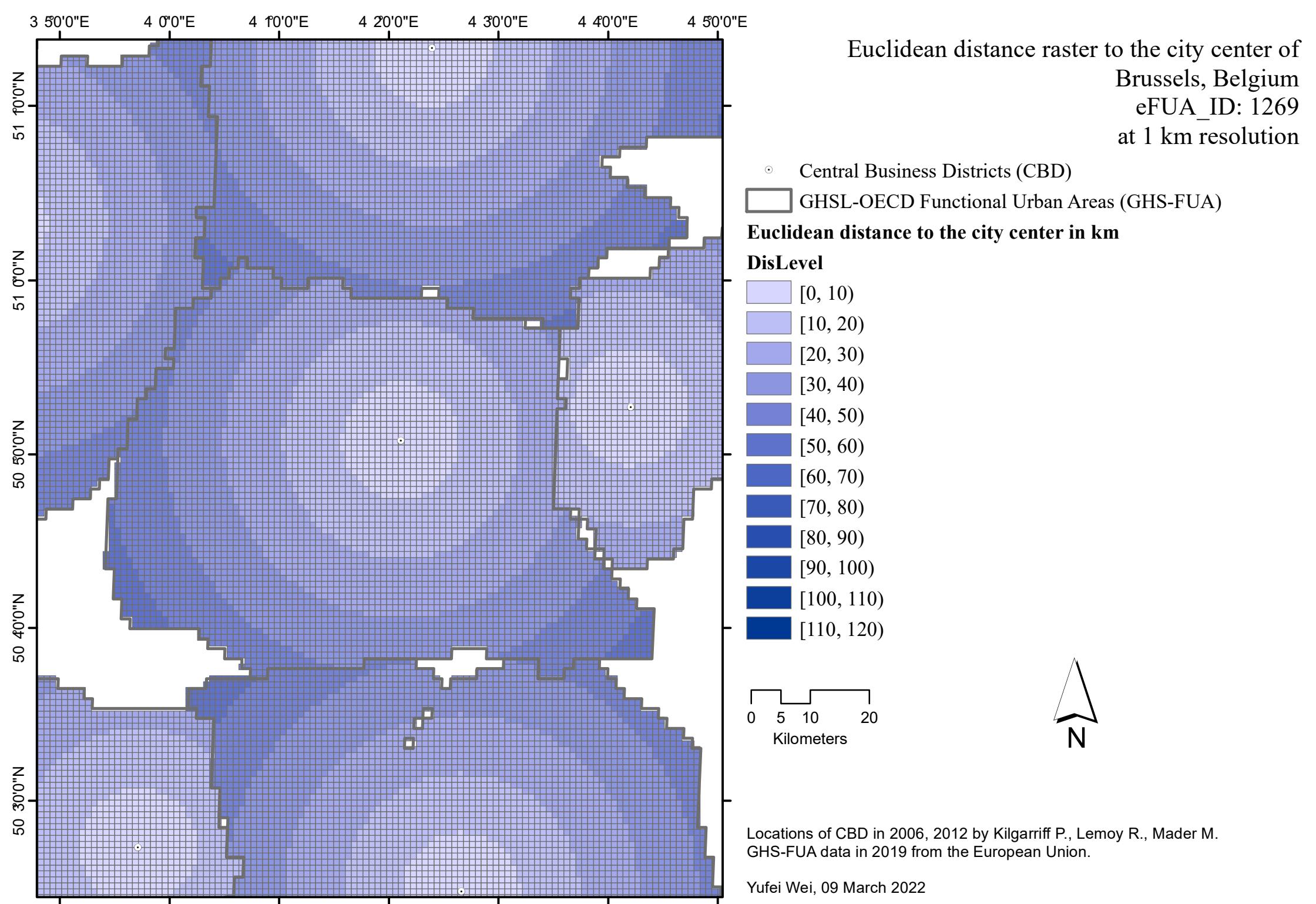
[110, 120)

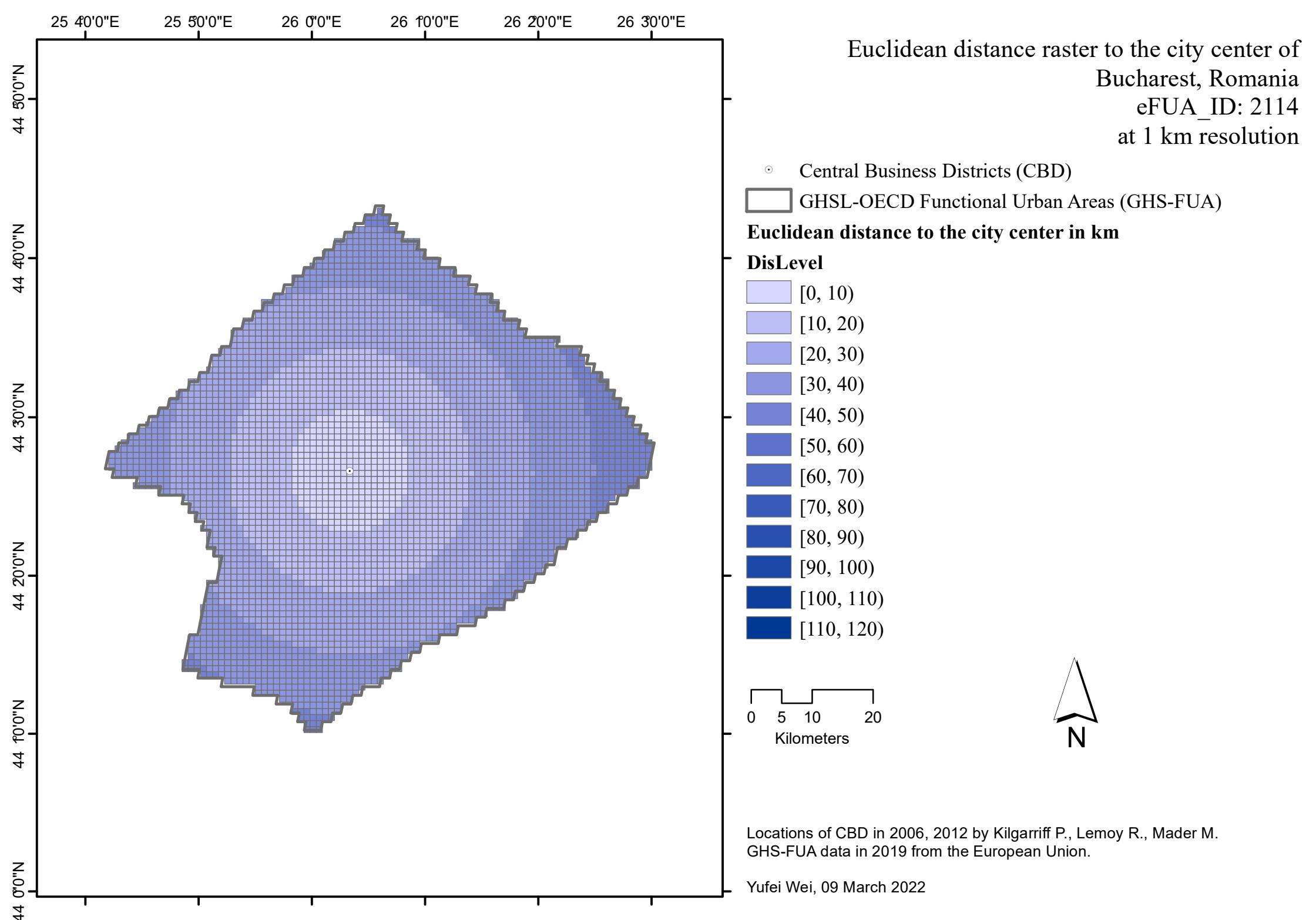


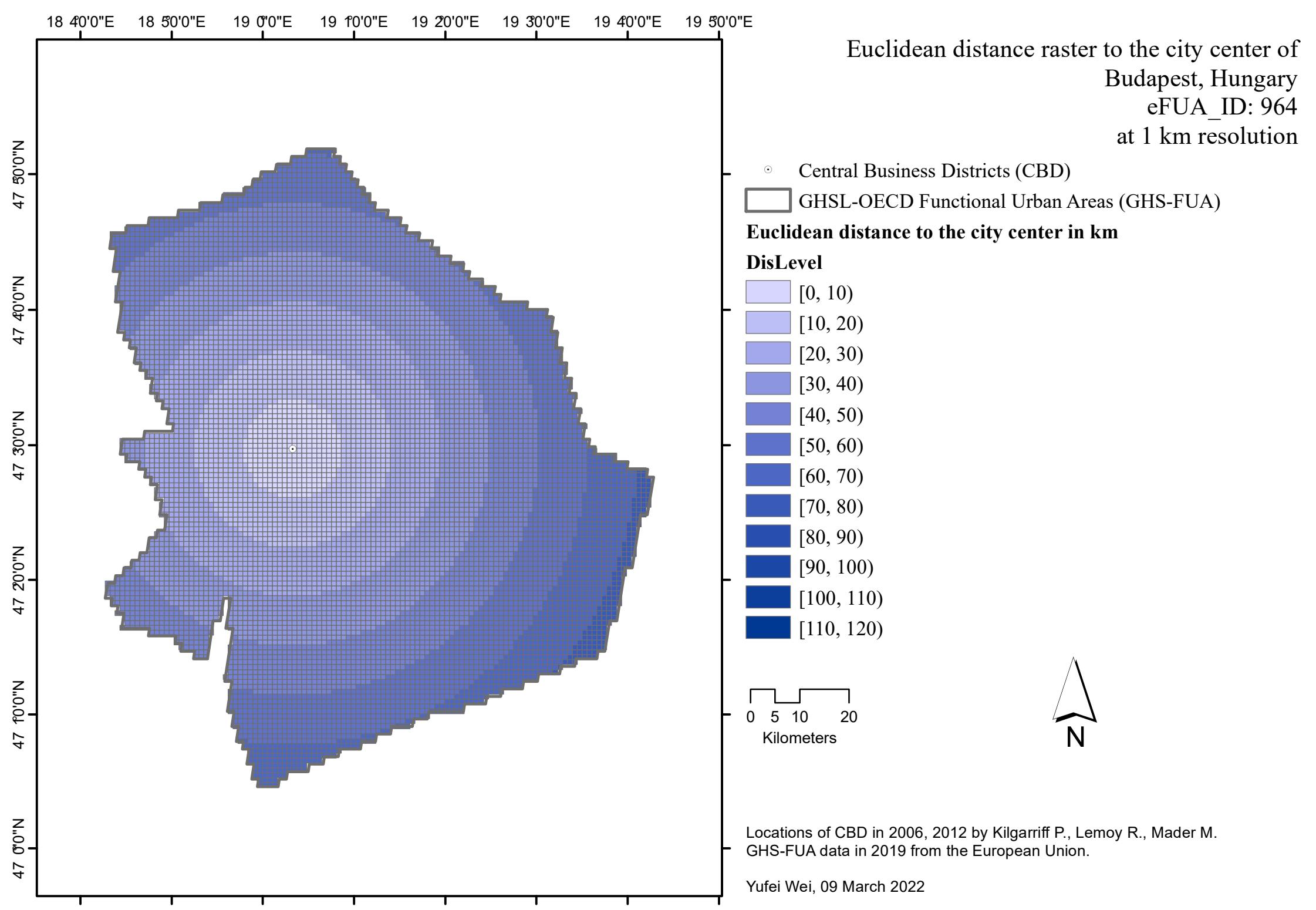
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022





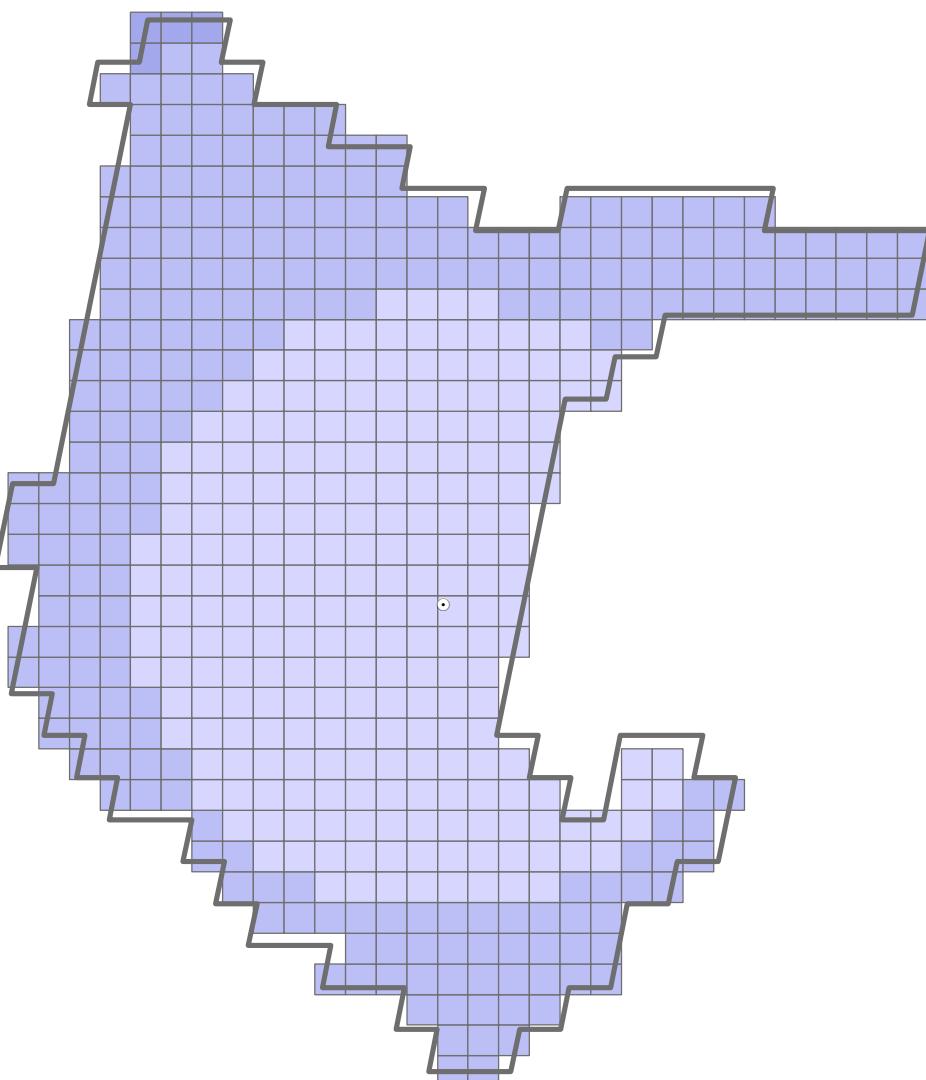




27 20'0"E

27 30'0"E

Euclidean distance raster to the city center of  
Burgas, Bulgaria  
eFUA\_ID: 797  
at 1 km resolution



○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

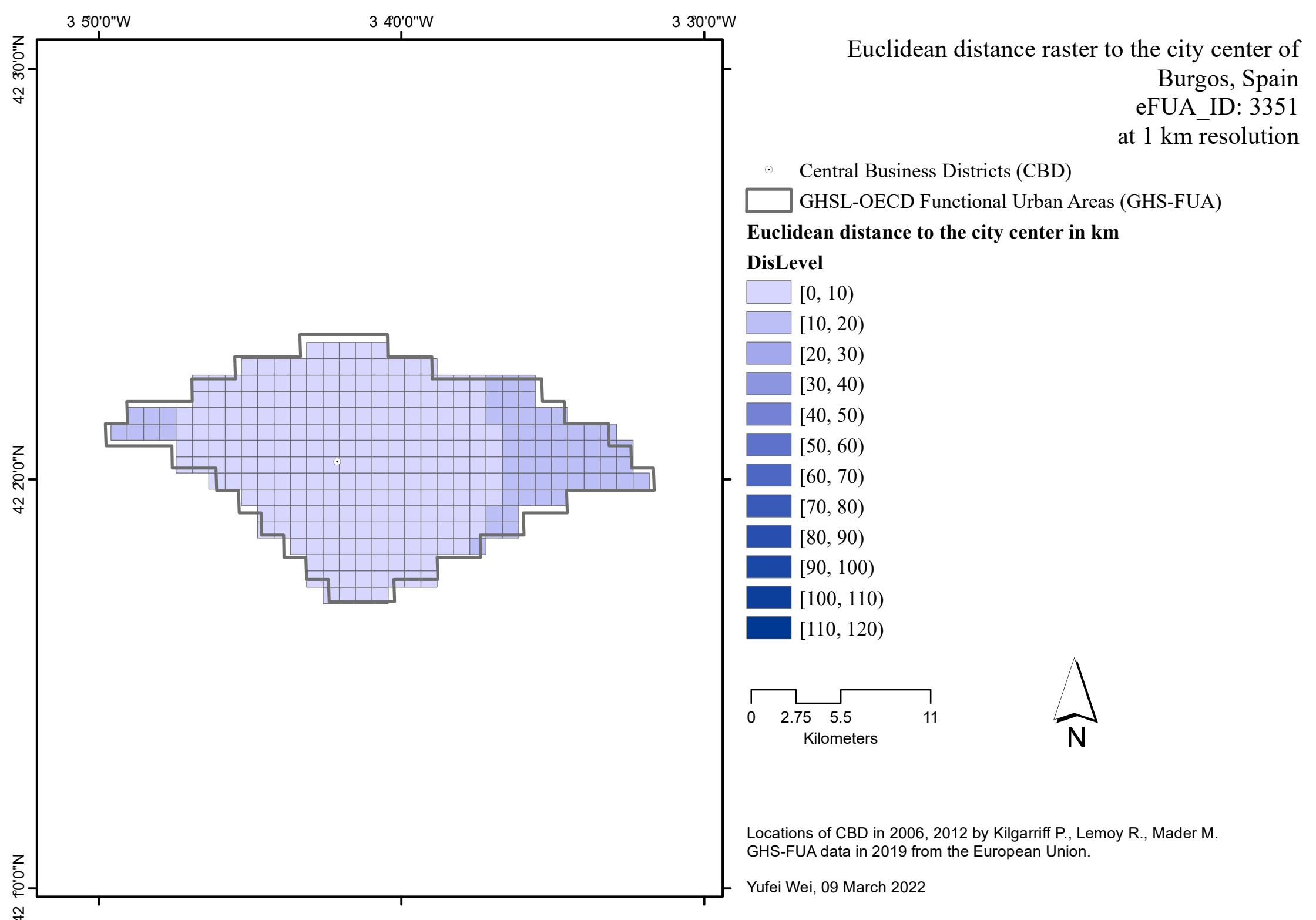
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

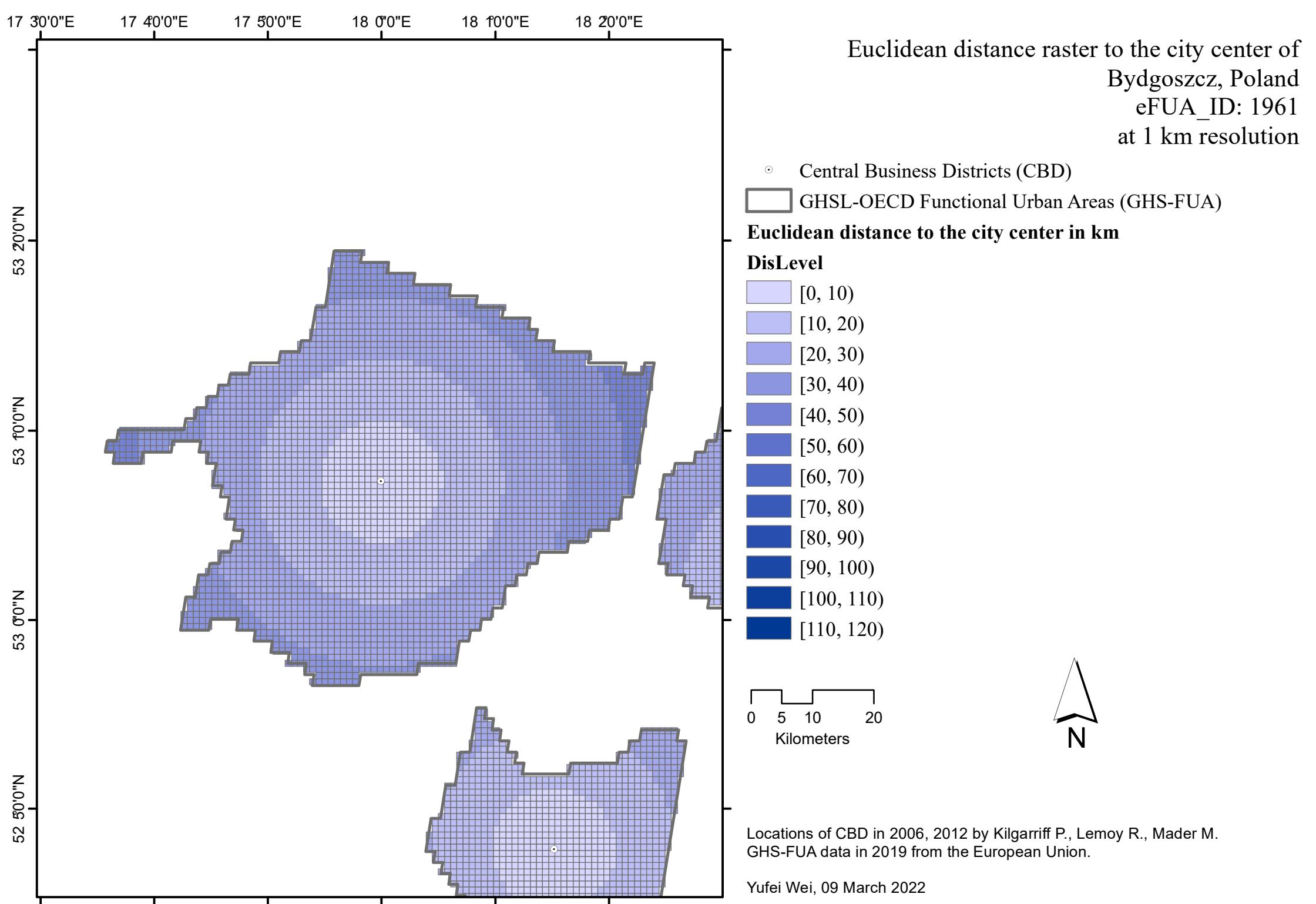
0 2.5 5 10  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

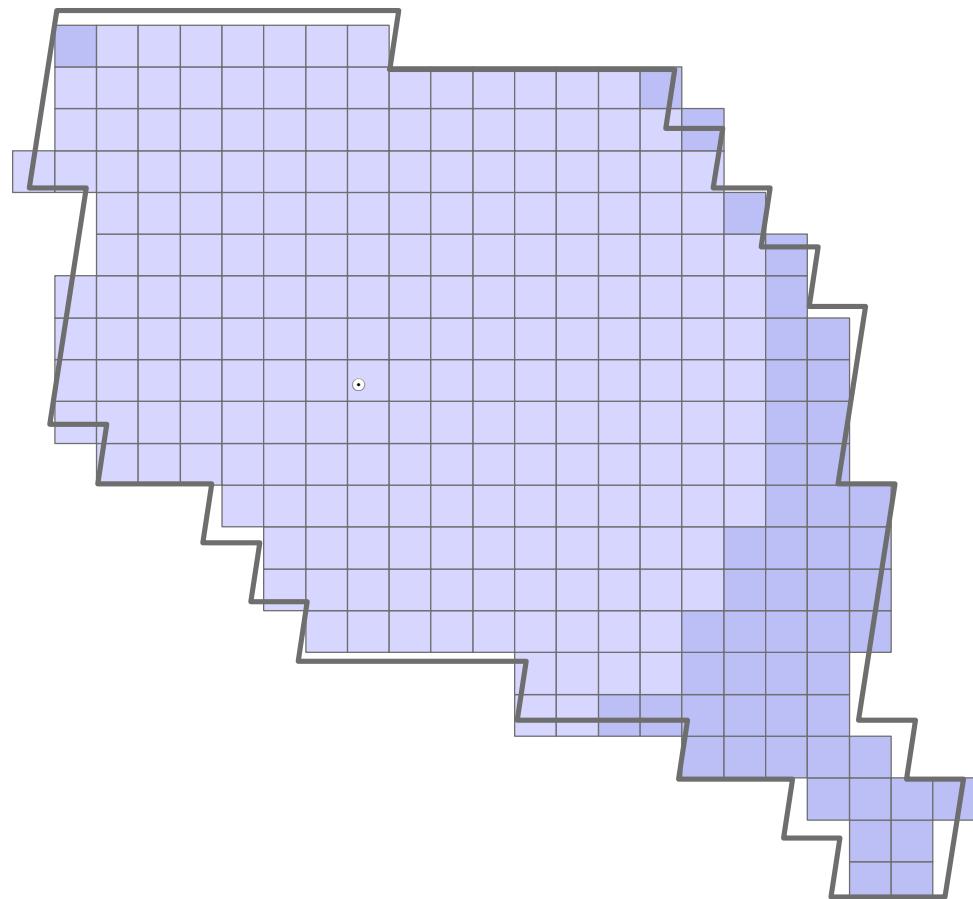




20 20'0"E

20 30'0"E

Euclidean distance raster to the city center of  
Cacak, Serbia  
eFUA\_ID: 890  
at 1 km resolution



○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)

0 1.75 3.5 7  
Kilometers



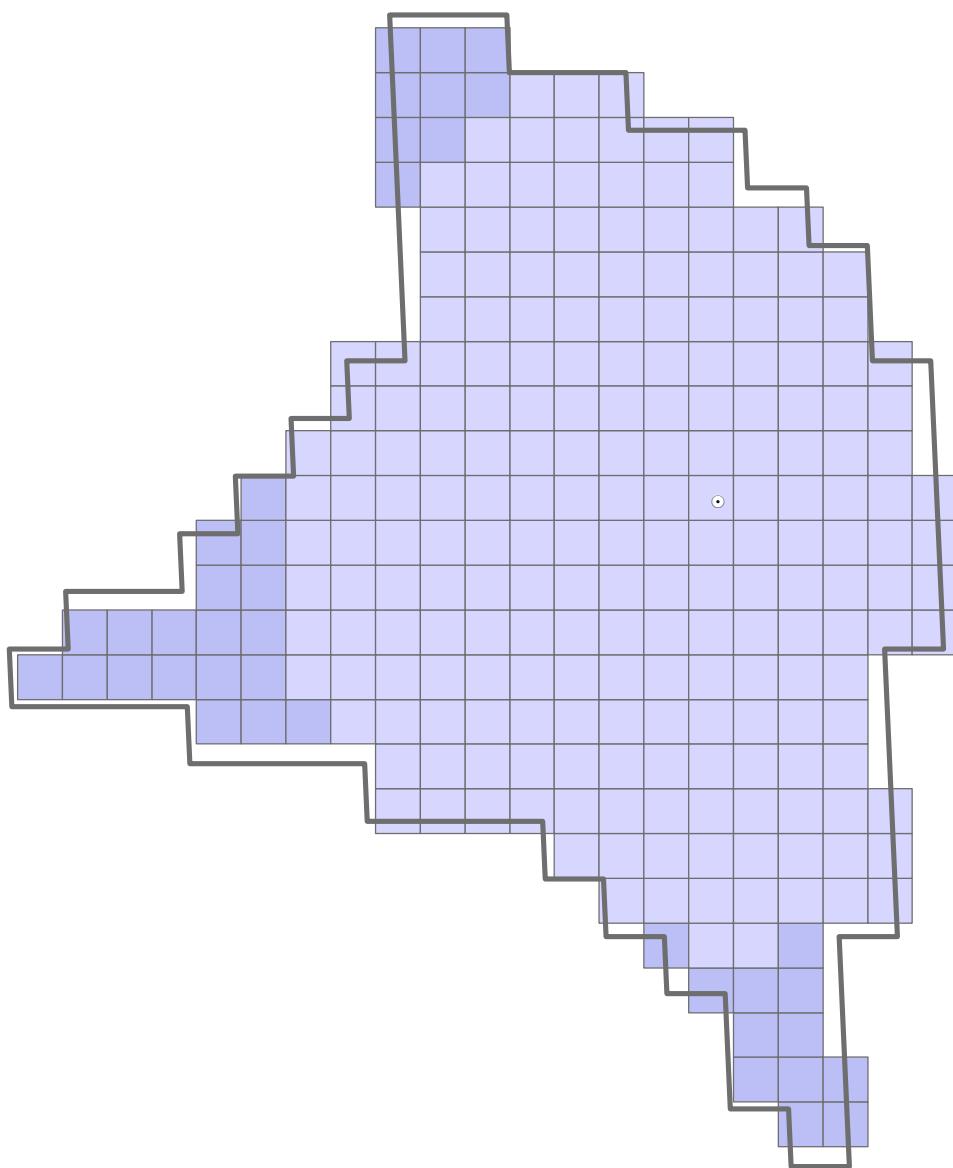
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

6 30'0"W

6 20'0"W

Euclidean distance raster to the city center of  
Caceres, Spain  
eFUA\_ID: 1766  
at 1 km resolution



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

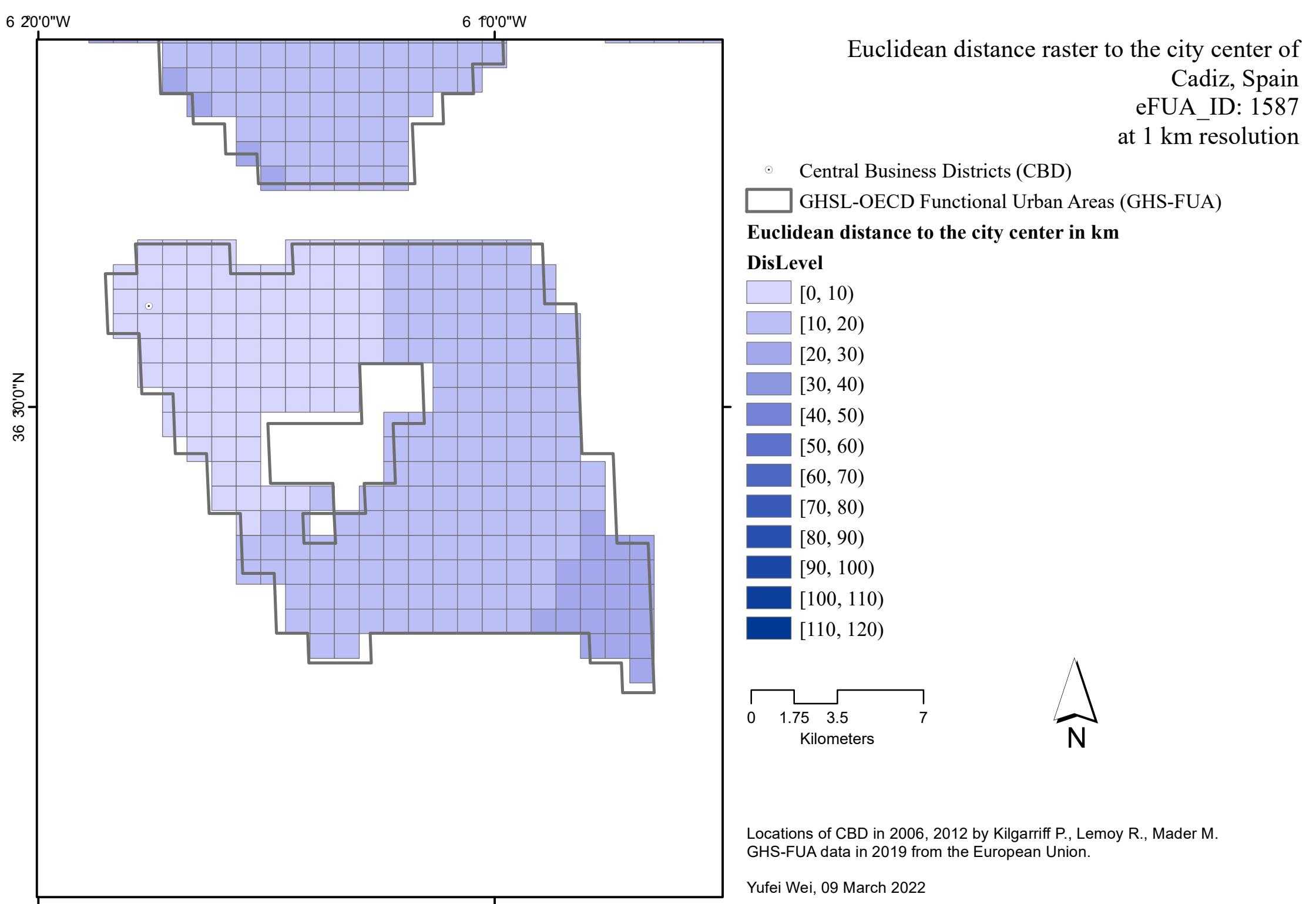
[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)

0 1.75 3.5 7  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



0 40'0"W

0 30'0"W

0 20'0"W

0 10'0"W

0 0'0"

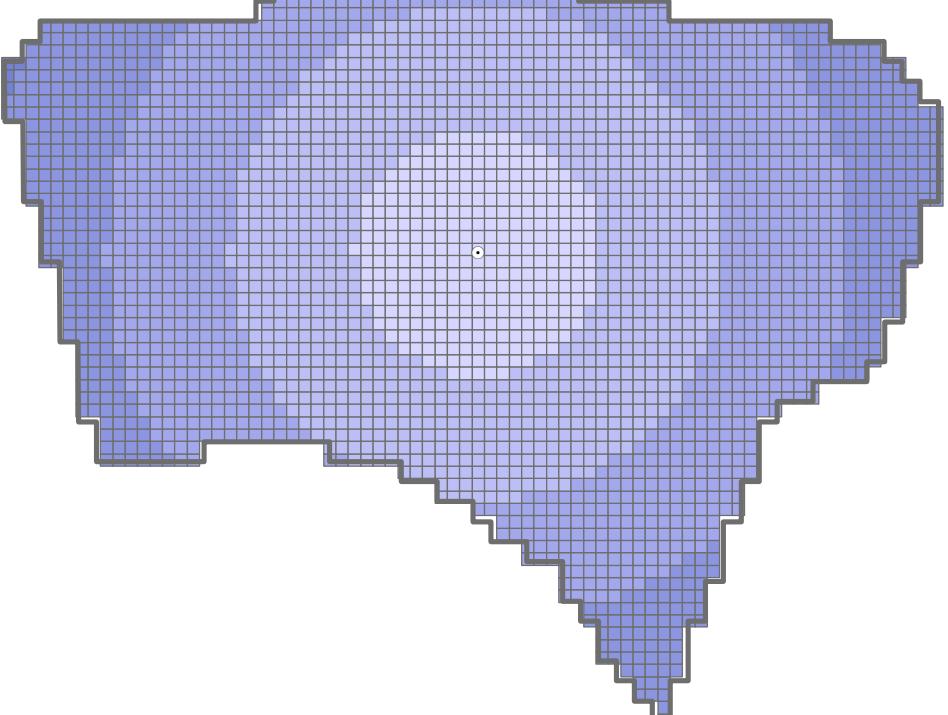
Euclidean distance raster to the city center of  
Caen, France  
eFUA\_ID: 1680  
at 1 km resolution

49 20'0"N

49 10'0"N

49 0'0"N

48 50'0"N



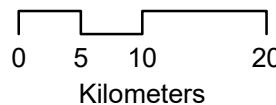
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

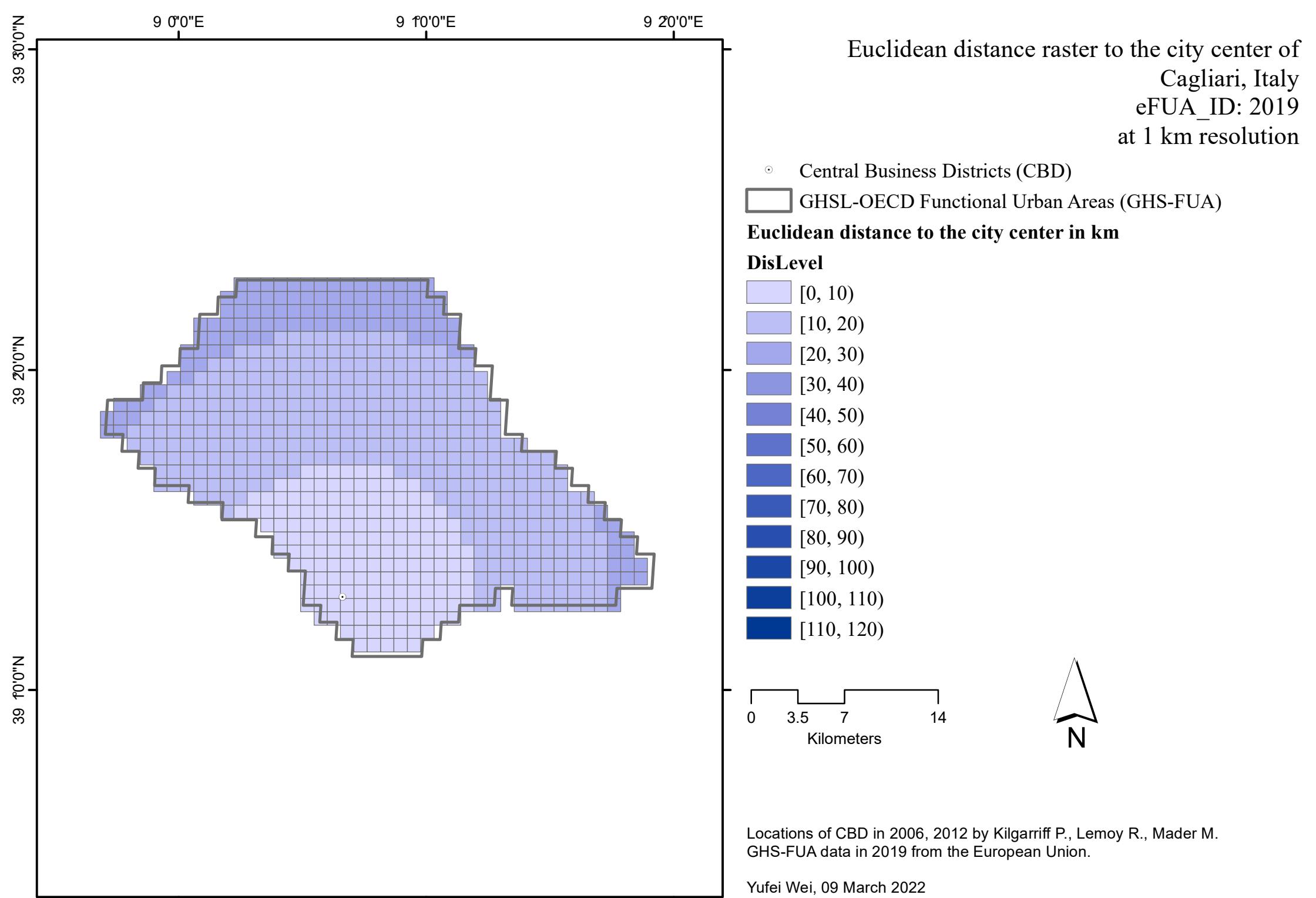
**DisLevel**

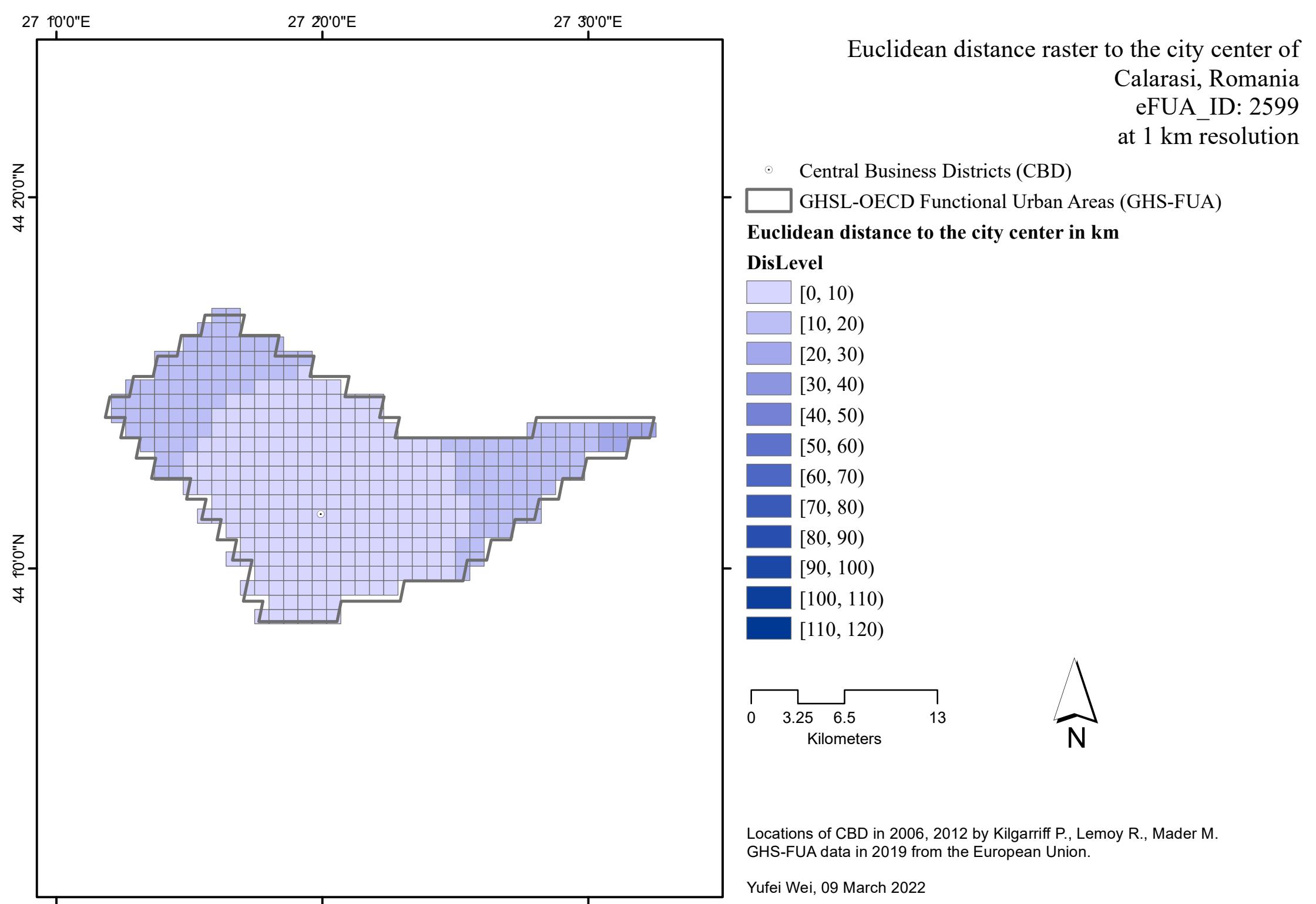
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022





0 10'0"W

0 0'0"

0 10'0"E

0 20'0"E

0 30'0"E

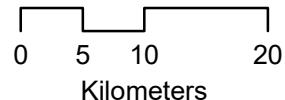
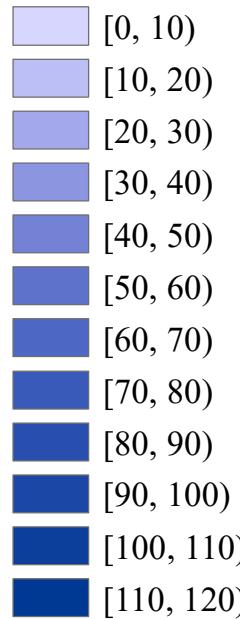
Euclidean distance raster to the city center of  
Cambridge, United Kingdom  
eFUA\_ID: 5550  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

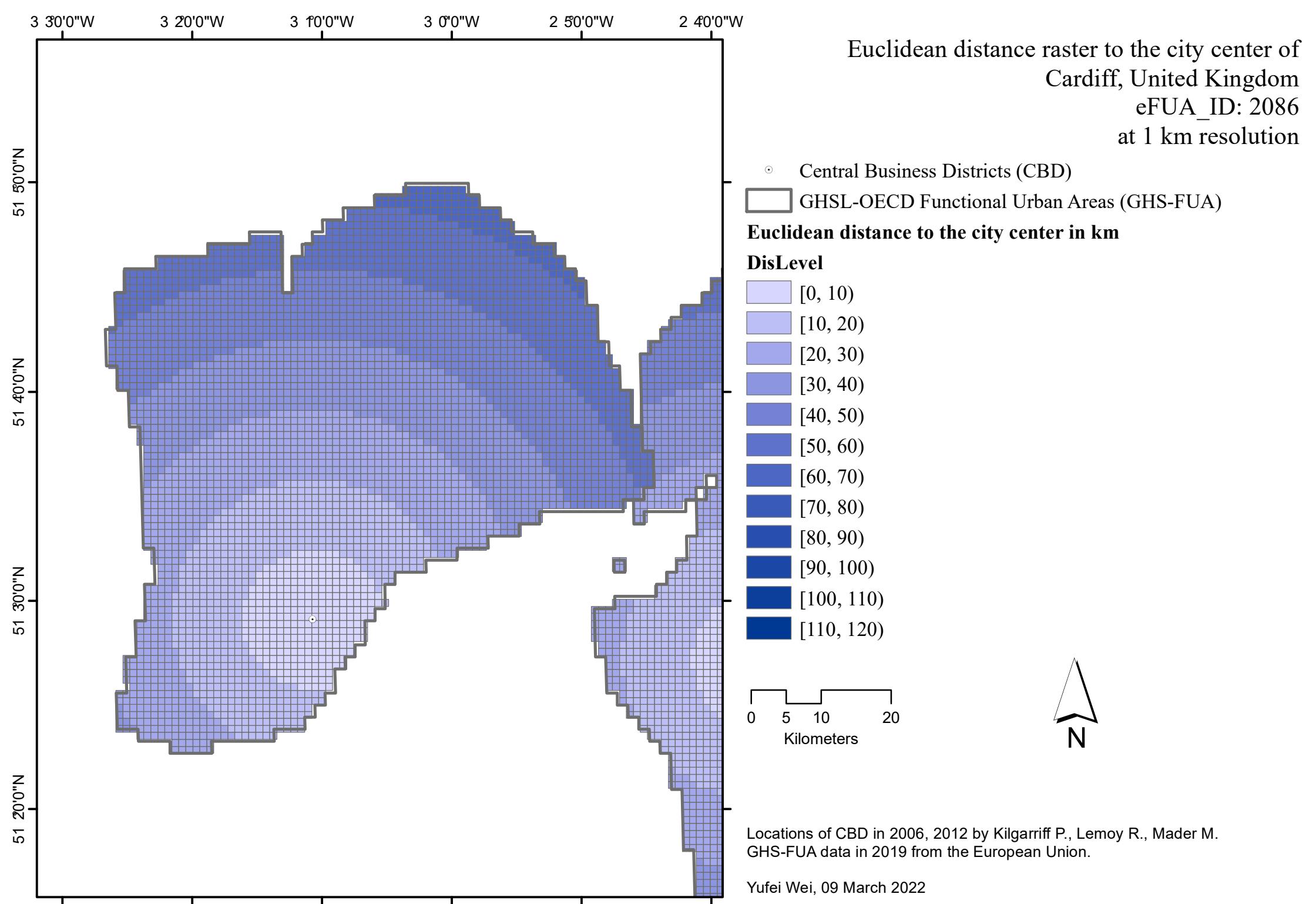
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



1 0°0'W

0 50'0"W

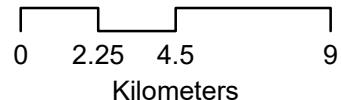
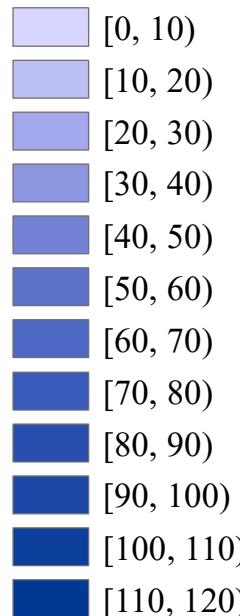
Euclidean distance raster to the city center of  
Cartagena, Spain  
eFUA\_ID: 3946  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

0 10'0"W

0 0'0"

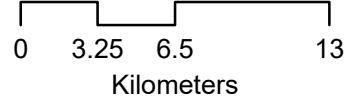
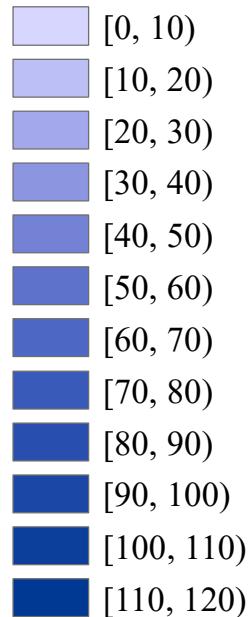
Euclidean distance raster to the city center of  
Castellon de la Plana, Spain  
eFUA\_ID: 4258  
at 1 km resolution

40 0'0"N  
39 50'0"N

- Central Business Districts (CBD)
- ◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

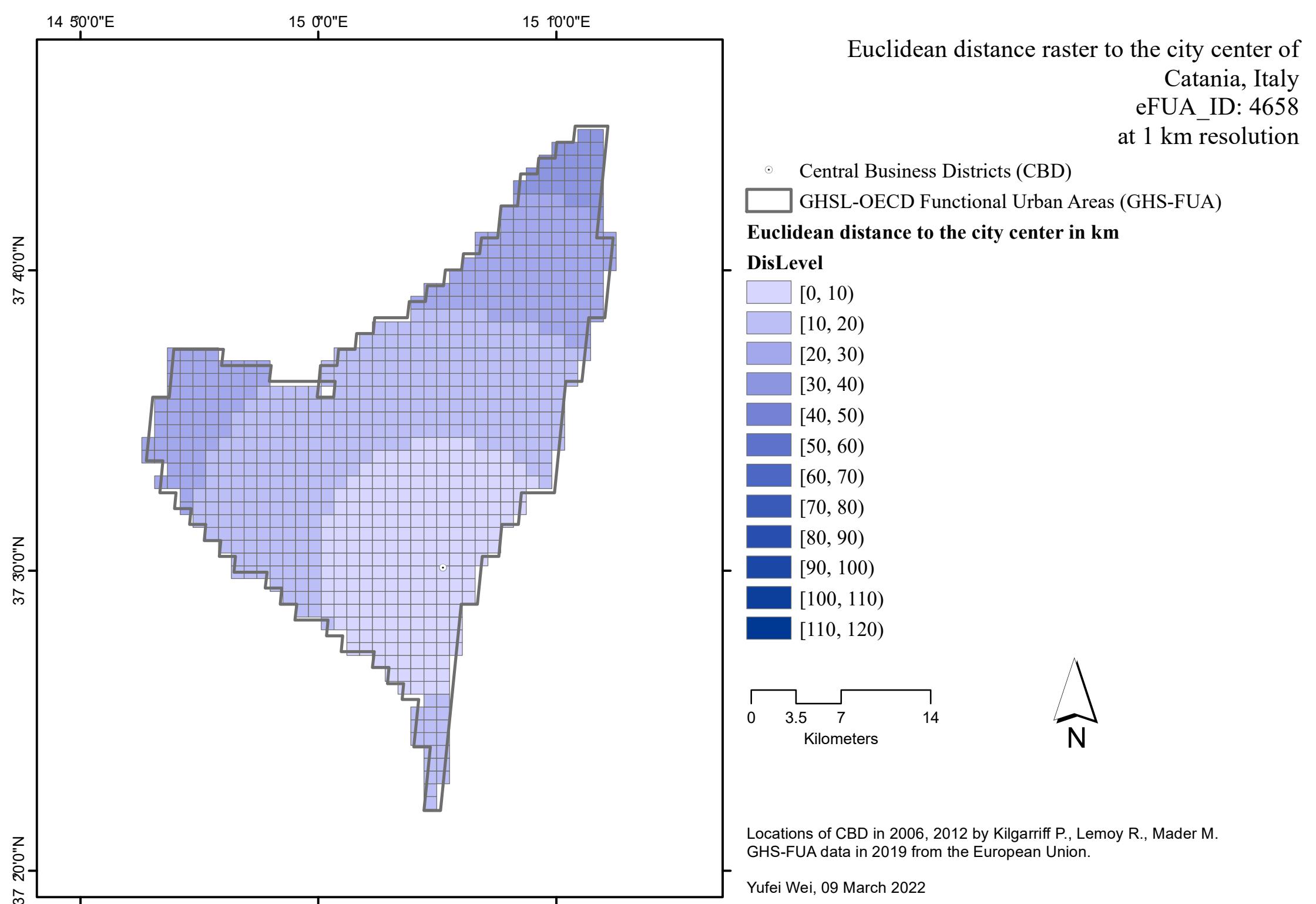
### Euclidean distance to the city center in km

#### DisLevel



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



14 20'0"E

14 30'0"E

14 40'0"E

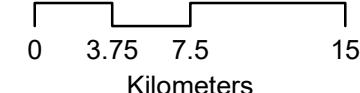
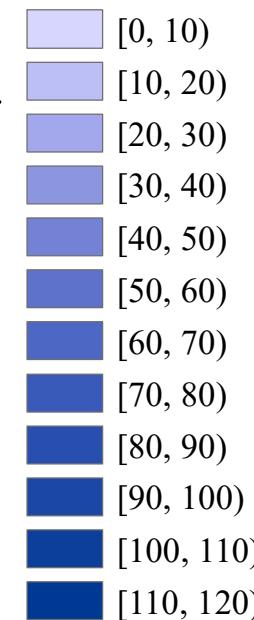
Euclidean distance raster to the city center of  
Ceske Budejovice, Czech Republic  
eFUA\_ID: 678  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

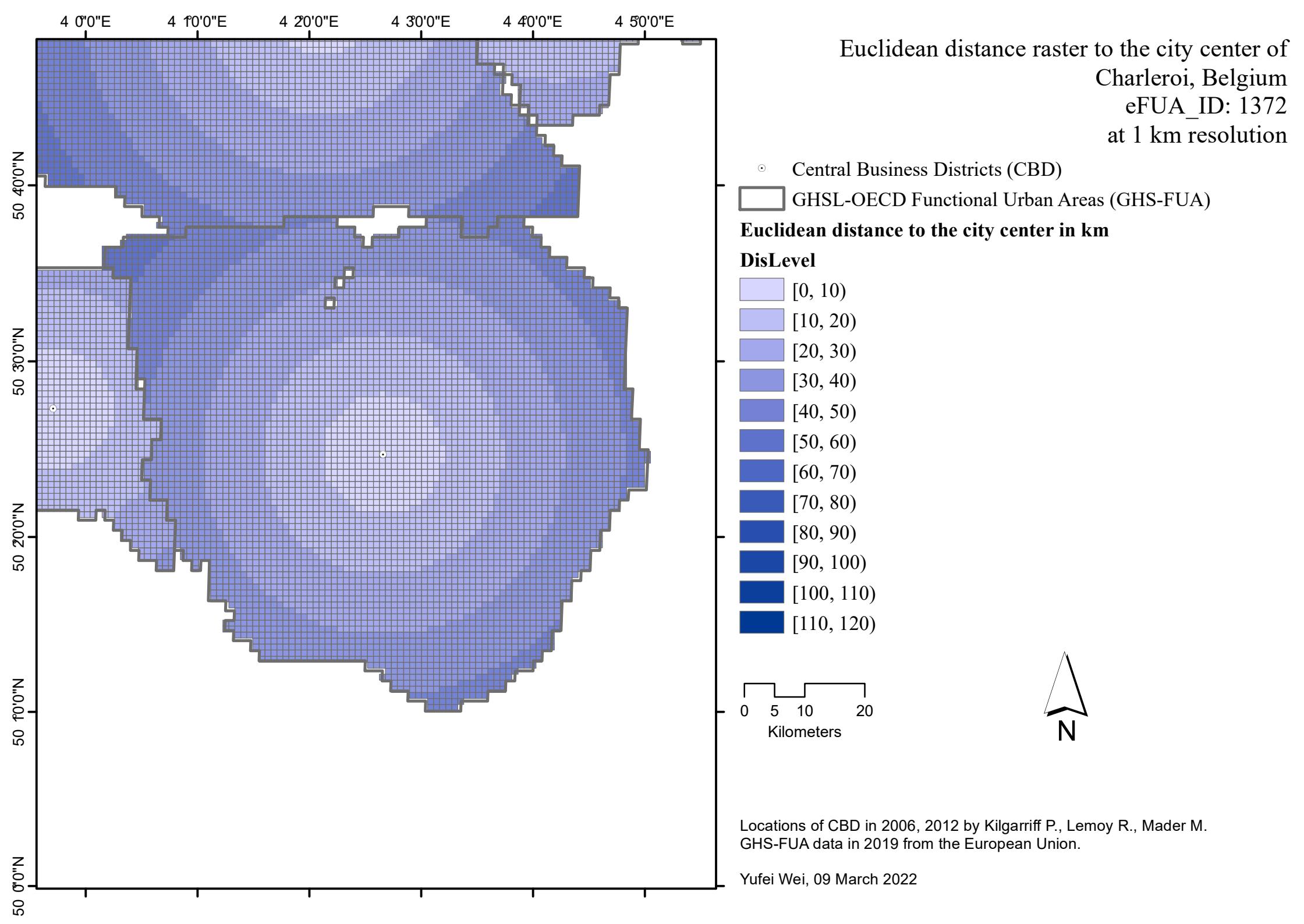
**Euclidean distance to the city center in km**

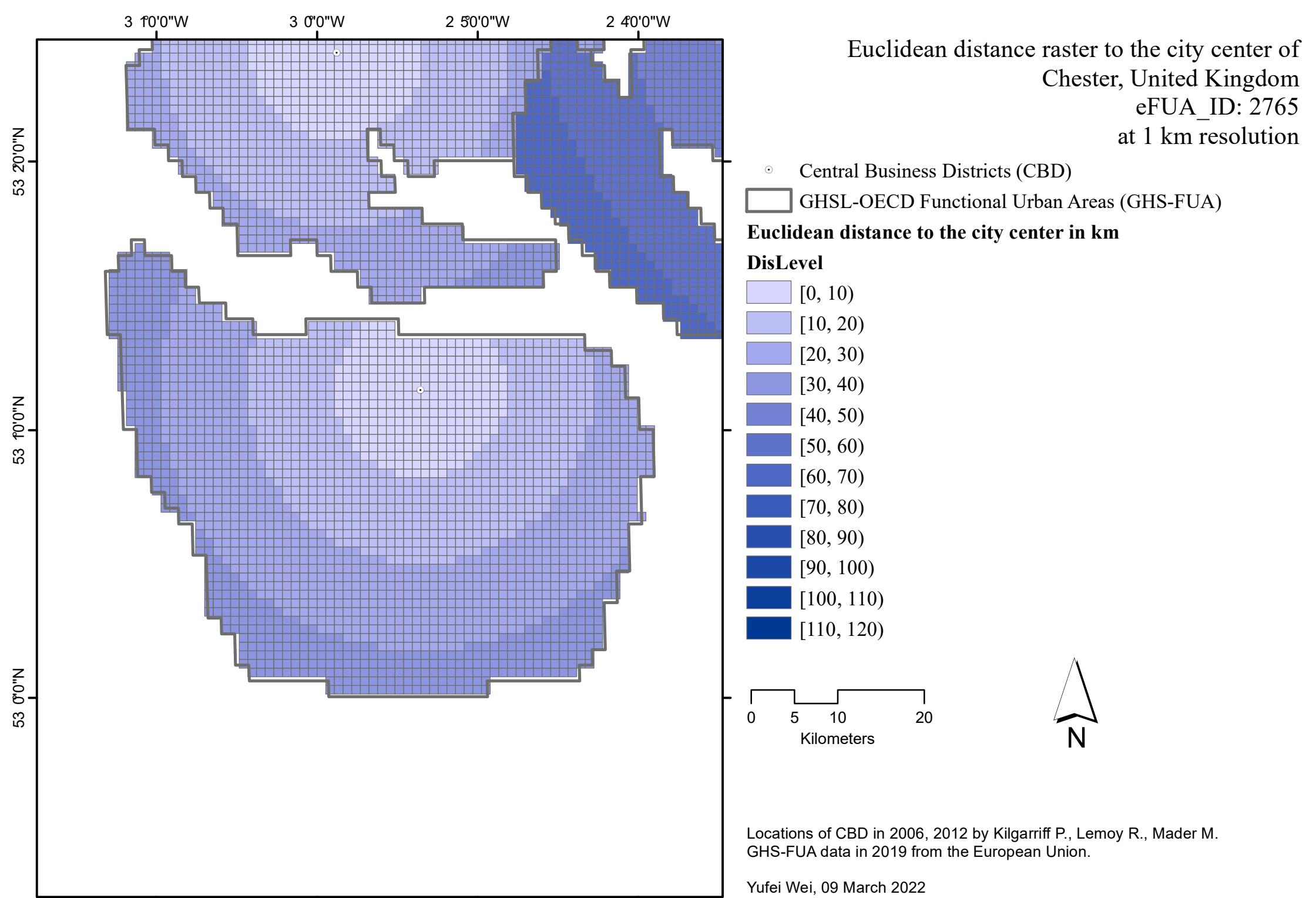
**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022





4 0'0"W

3 50'0"W

Euclidean distance raster to the city center of  
Ciudad Real, Spain  
eFUA\_ID: 3044  
at 1 km resolution

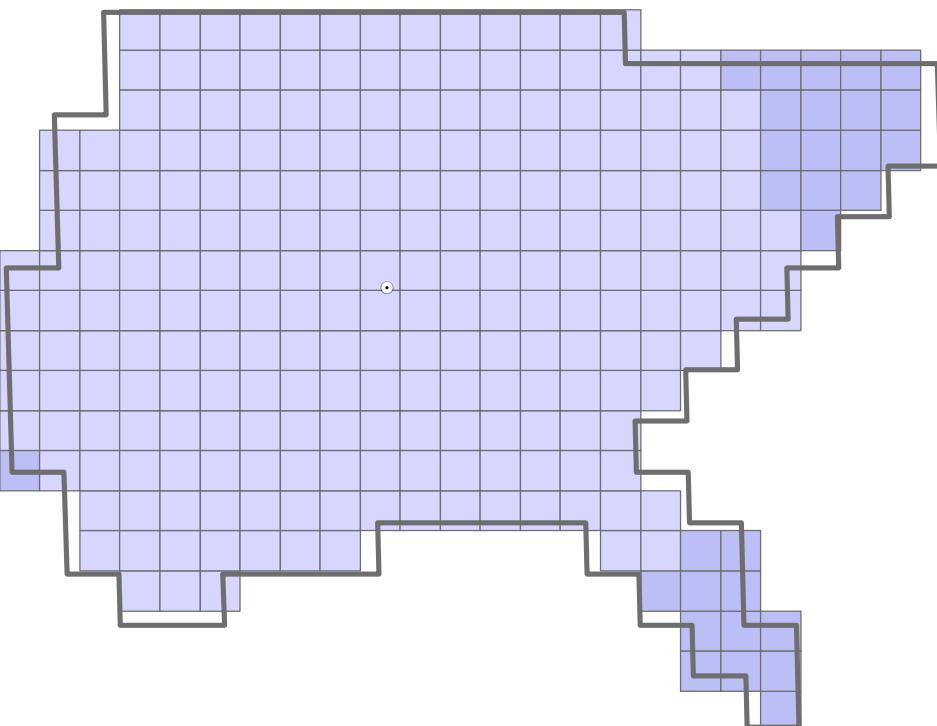
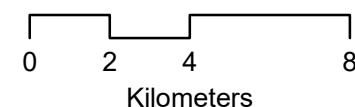
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

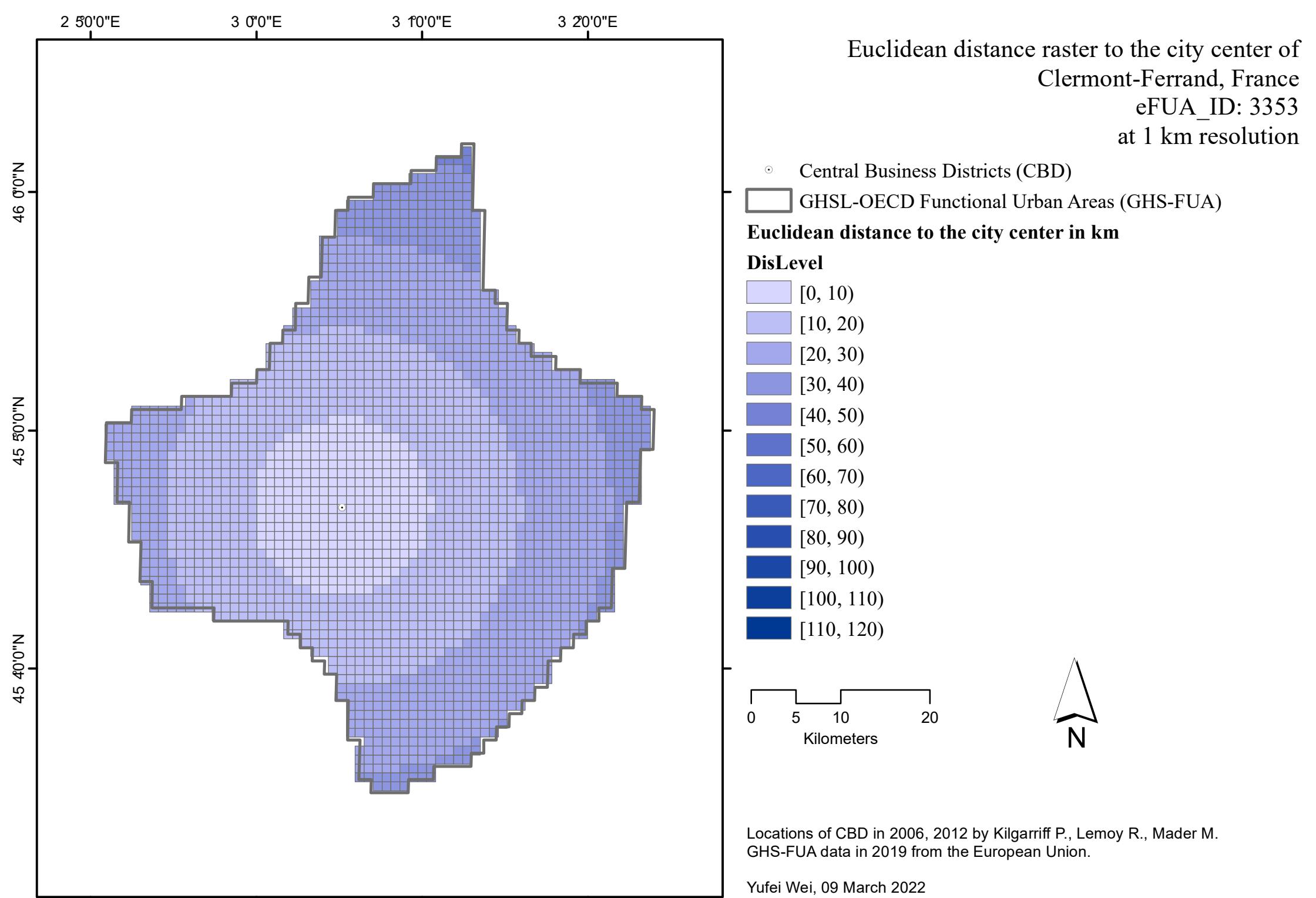
**DisLevel**

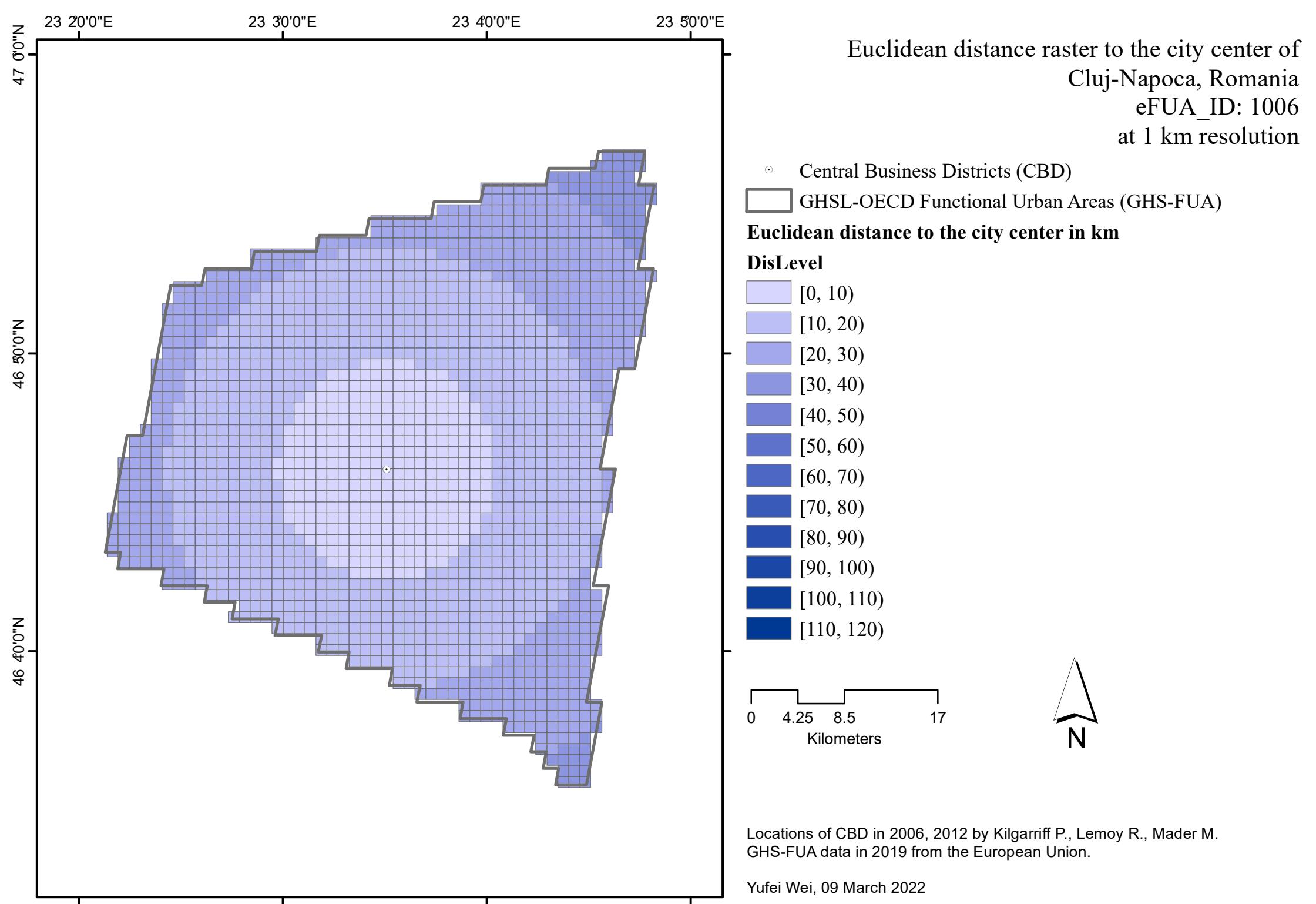
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

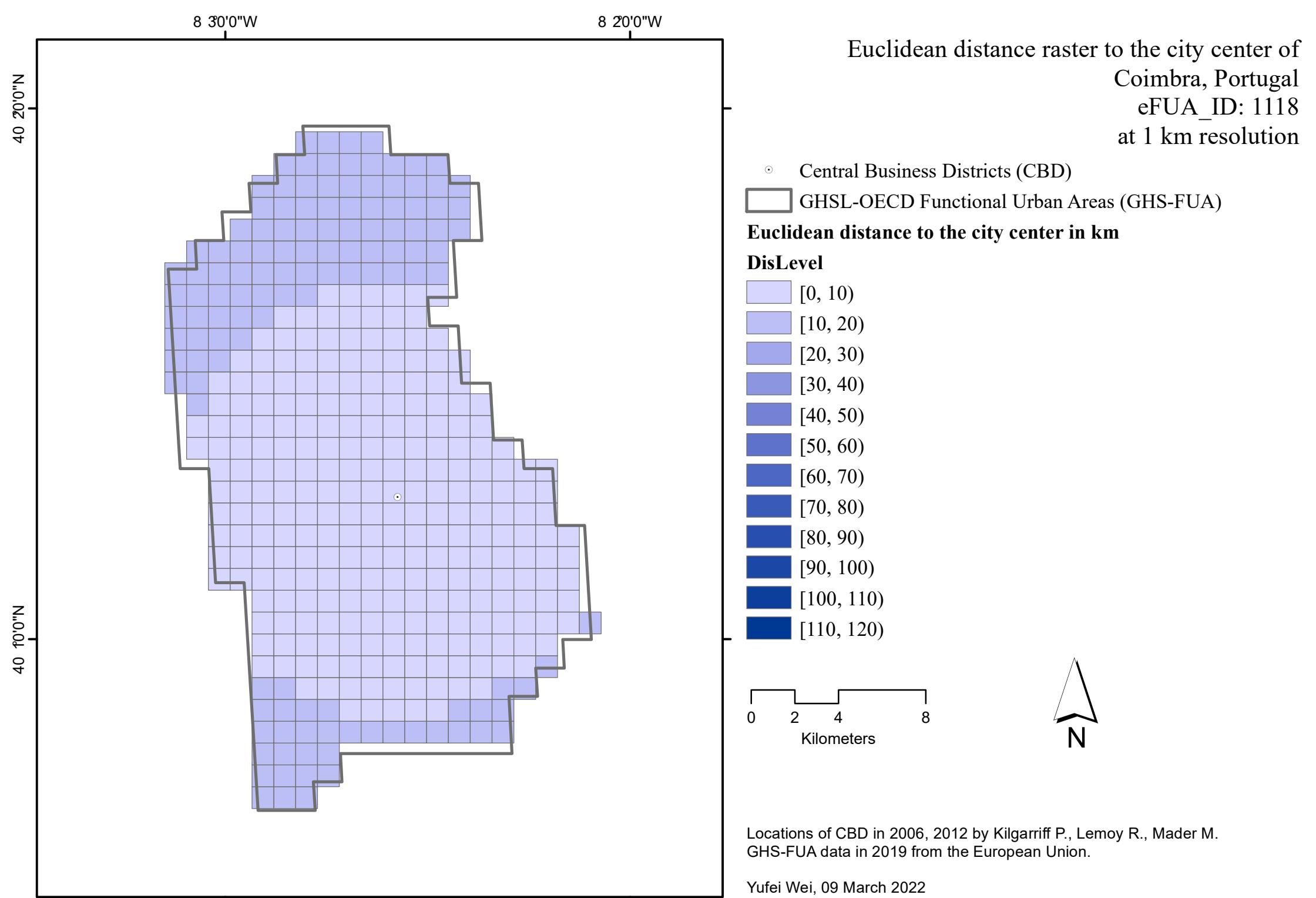


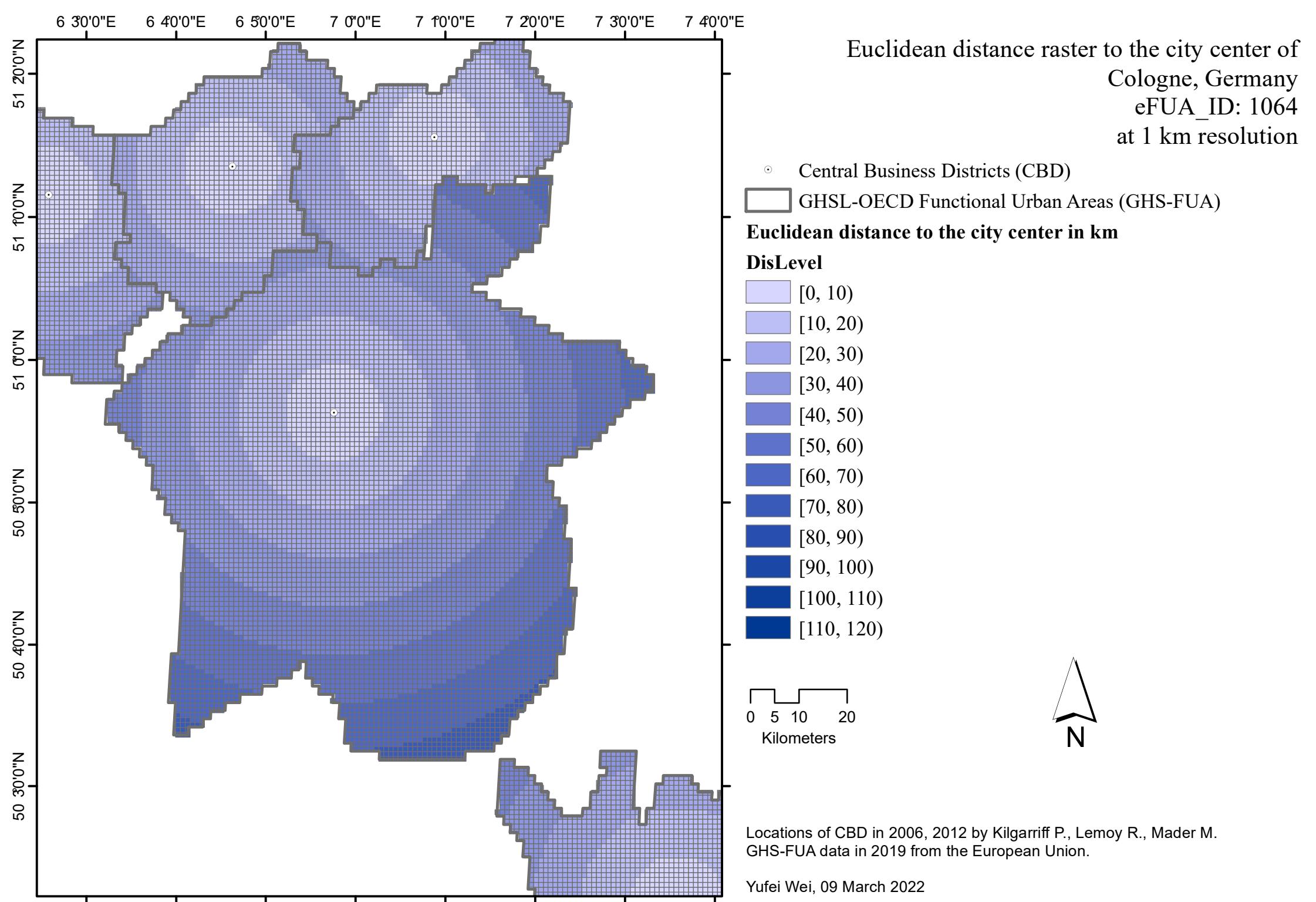
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

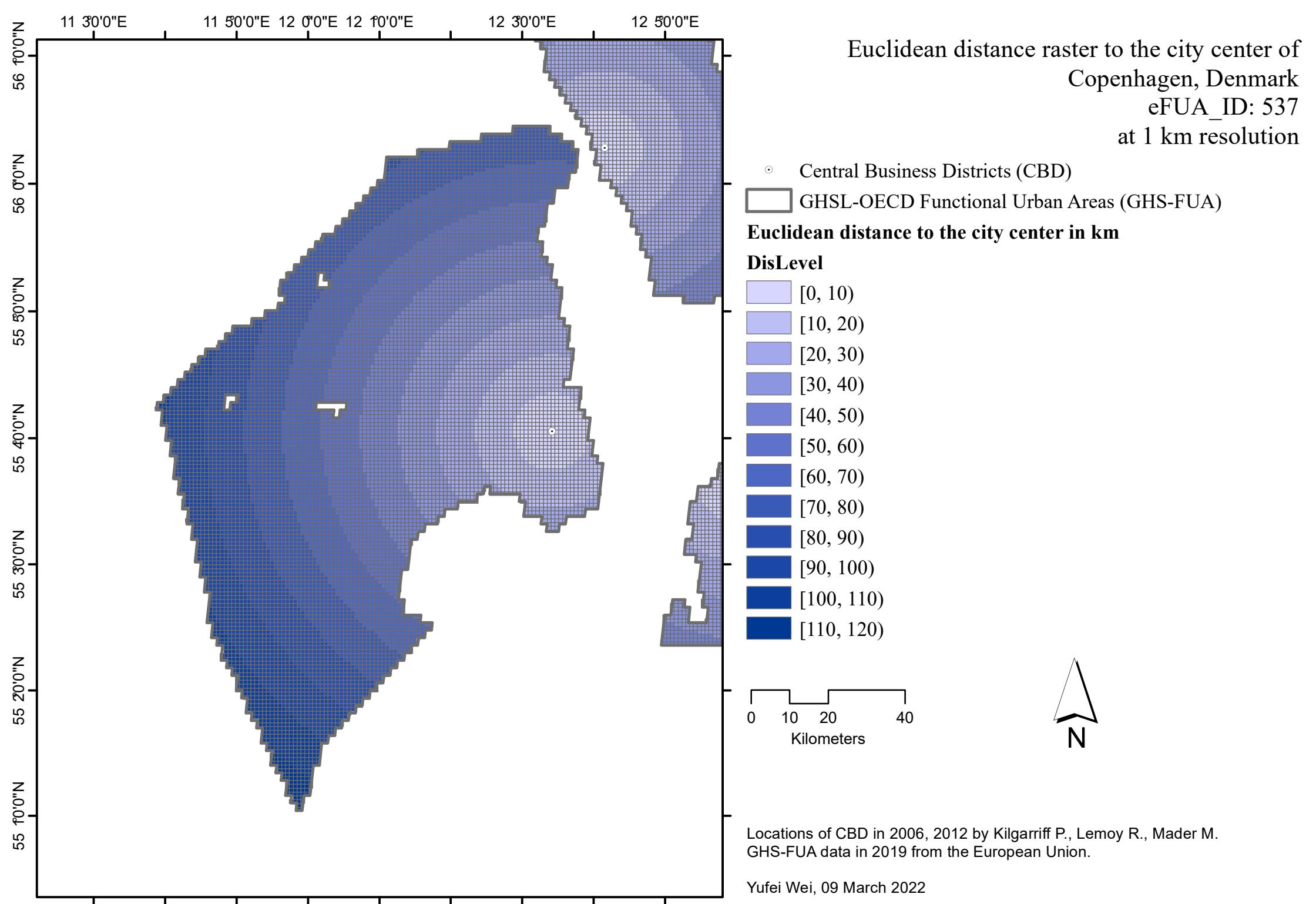
Yufei Wei, 09 March 2022











4 50'0"W

4 40'0"W

Euclidean distance raster to the city center of  
Cordoba, Spain  
eFUA\_ID: 2700  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)

[10, 20)

[20, 30)

[30, 40)

[40, 50)

[50, 60)

[60, 70)

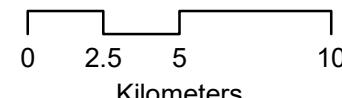
[70, 80)

[80, 90)

[90, 100)

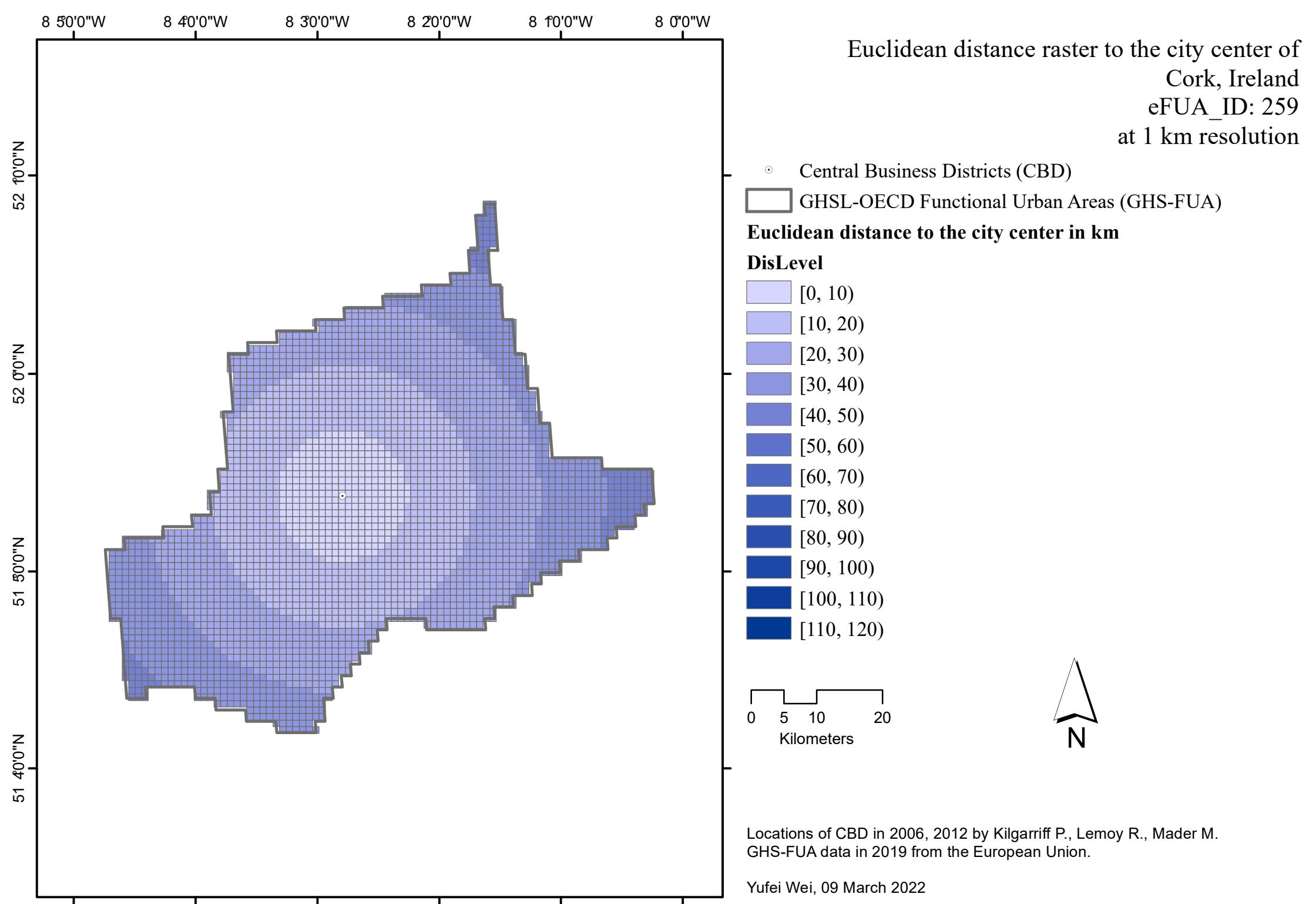
[100, 110)

[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



16 10'0"E

16 20'0"E

Euclidean distance raster to the city center of  
Cosenza, Italy  
eFUA\_ID: 4929  
at 1 km resolution

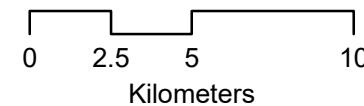
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

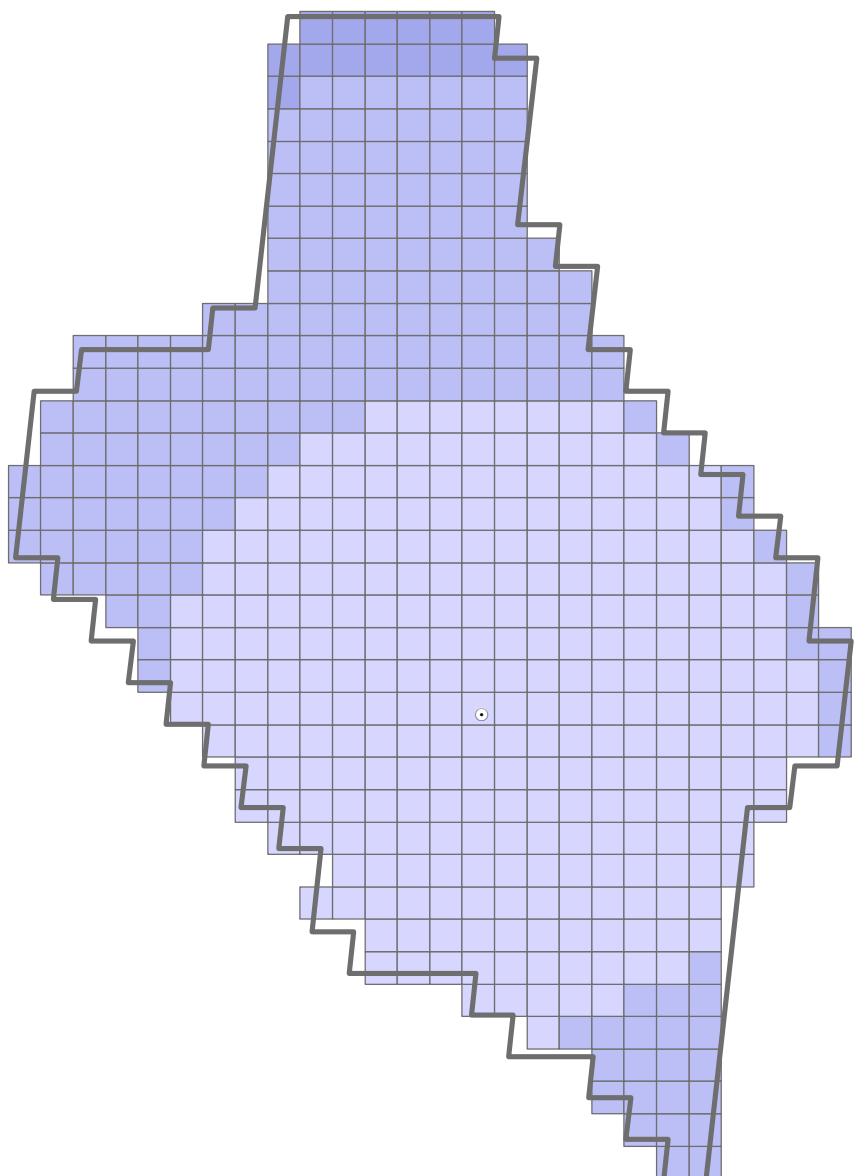
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

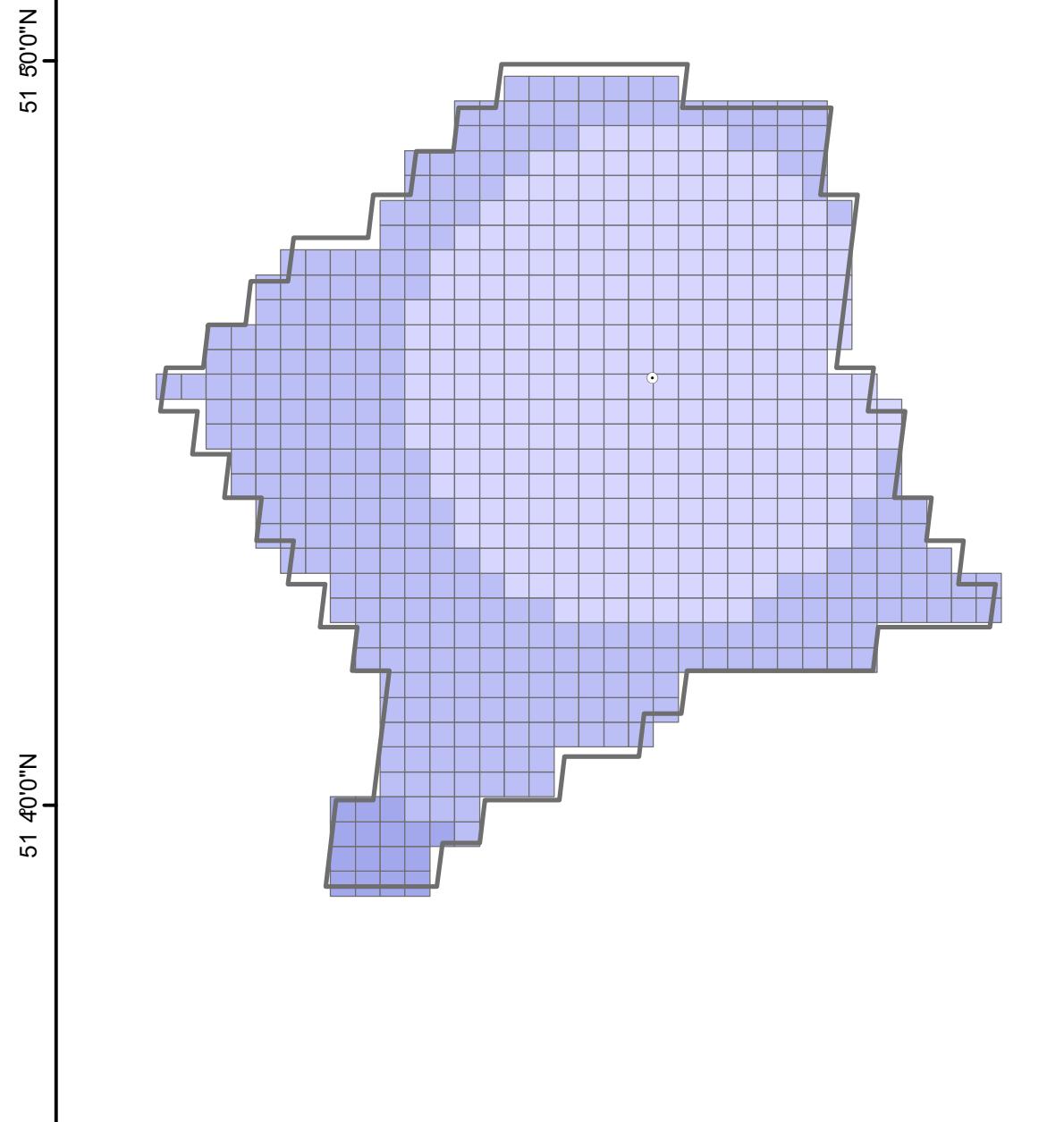
39 20'0"N  
39 10'0"N



14 10'0"E

14 20'0"E

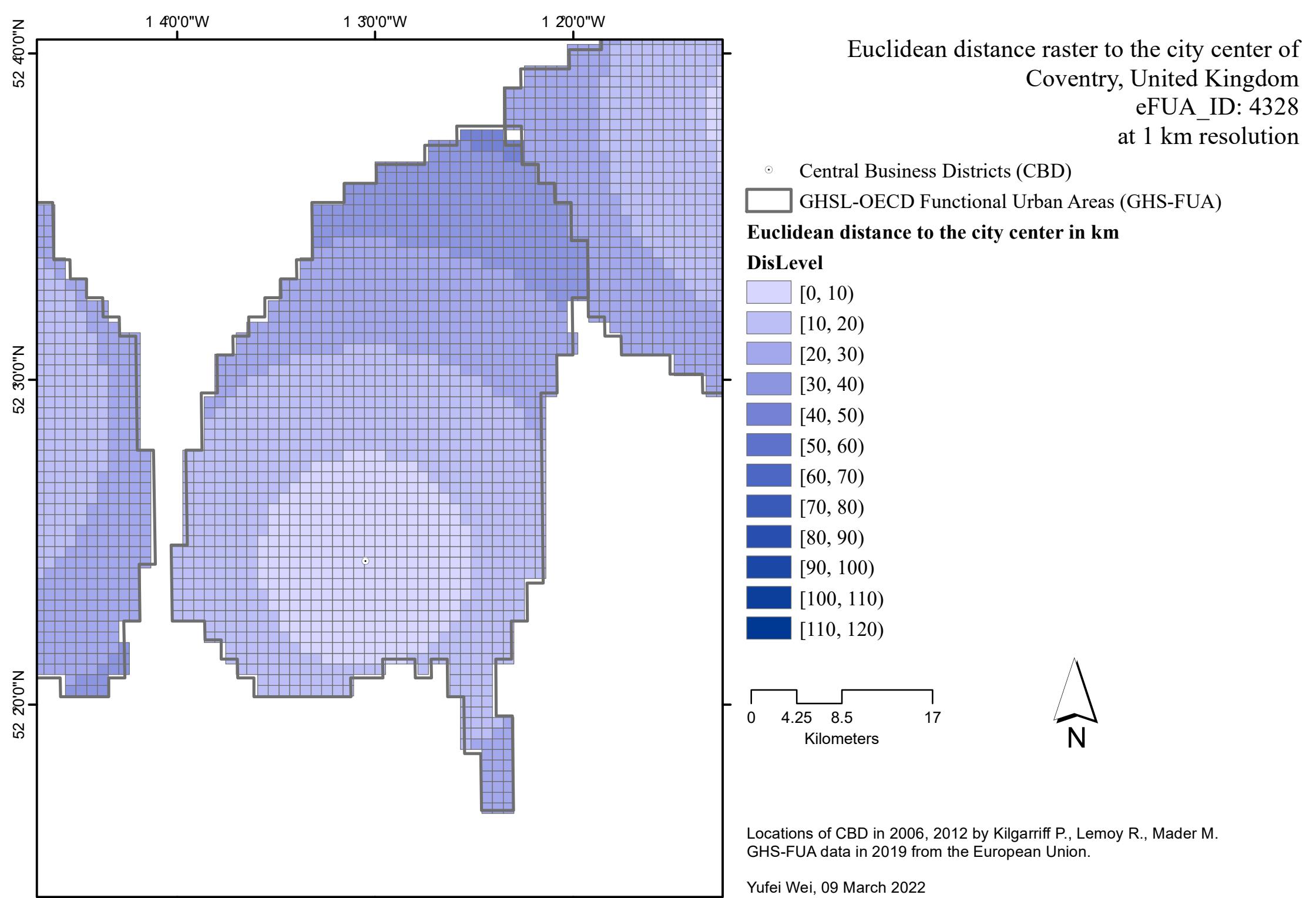
Euclidean distance raster to the city center of  
Cottbus, Germany  
eFUA\_ID: 5020  
at 1 km resolution



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022





23 40'0"E

23 50'0"E

24 0'0"E

Euclidean distance raster to the city center of  
Craiova, Romania  
eFUA\_ID: 1231  
at 1 km resolution

44 30'0"N

44 20'0"N

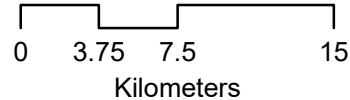
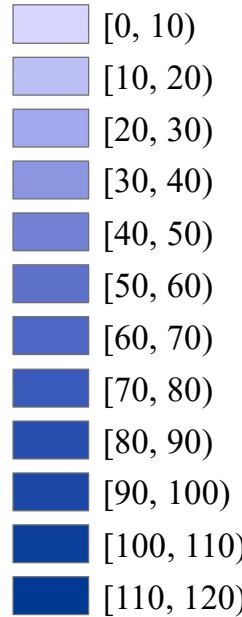
44 10'0"N

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

#### DisLevel



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

10 0'0"E

Euclidean distance raster to the city center of  
Cremona, Italy  
eFUA\_ID: 2242  
at 1 km resolution

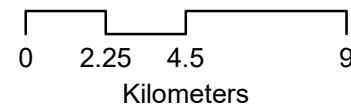
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

18 50'0"E

19 0'0"E

19 10'0"E

19 20'0"E

19 30'0"E

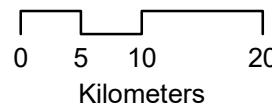
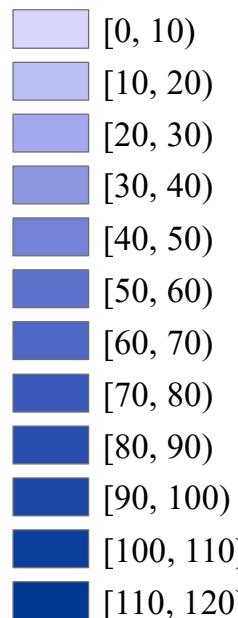
Euclidean distance raster to the city center of  
Czestochowa, Poland  
eFUA\_ID: 2725  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

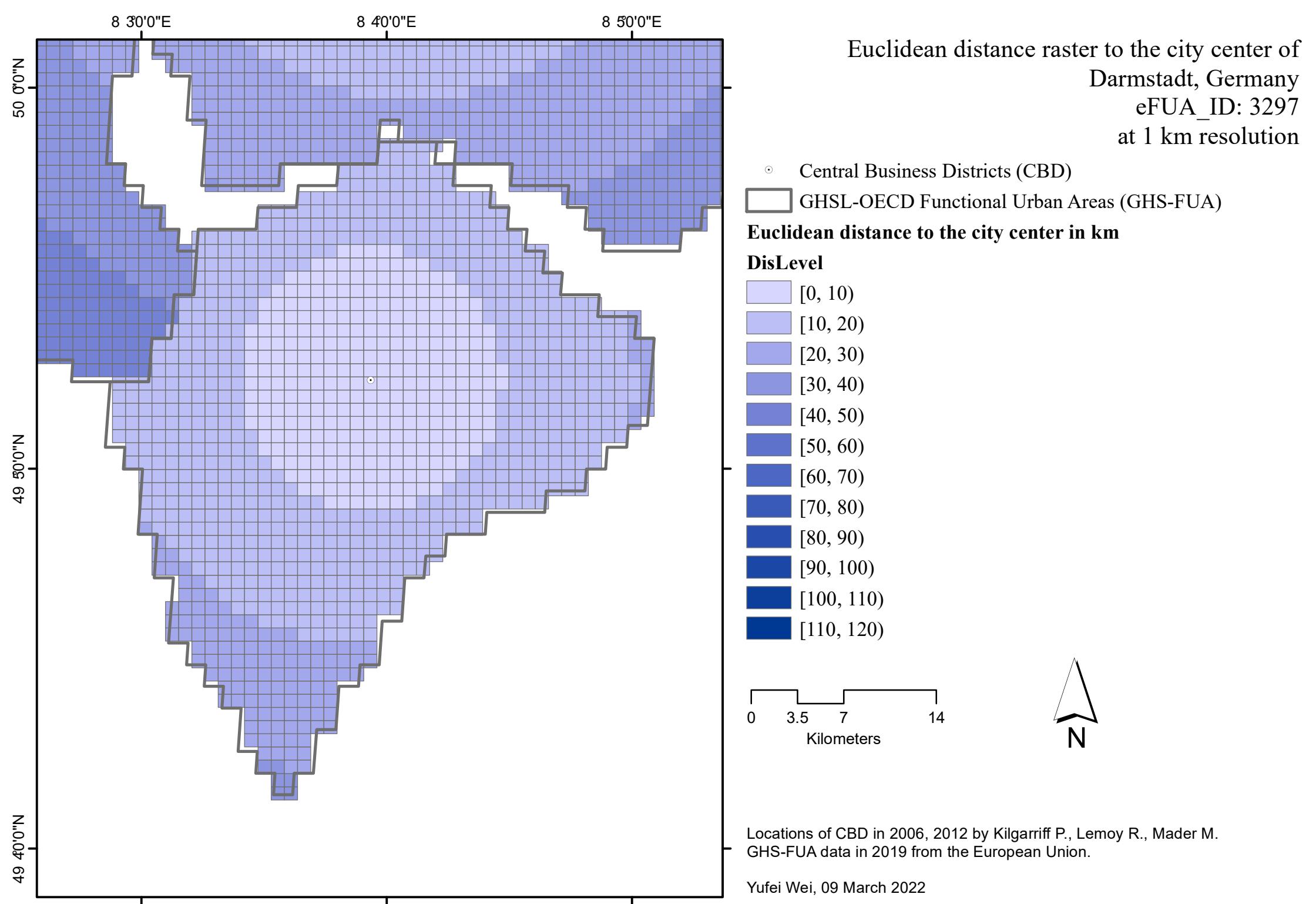
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



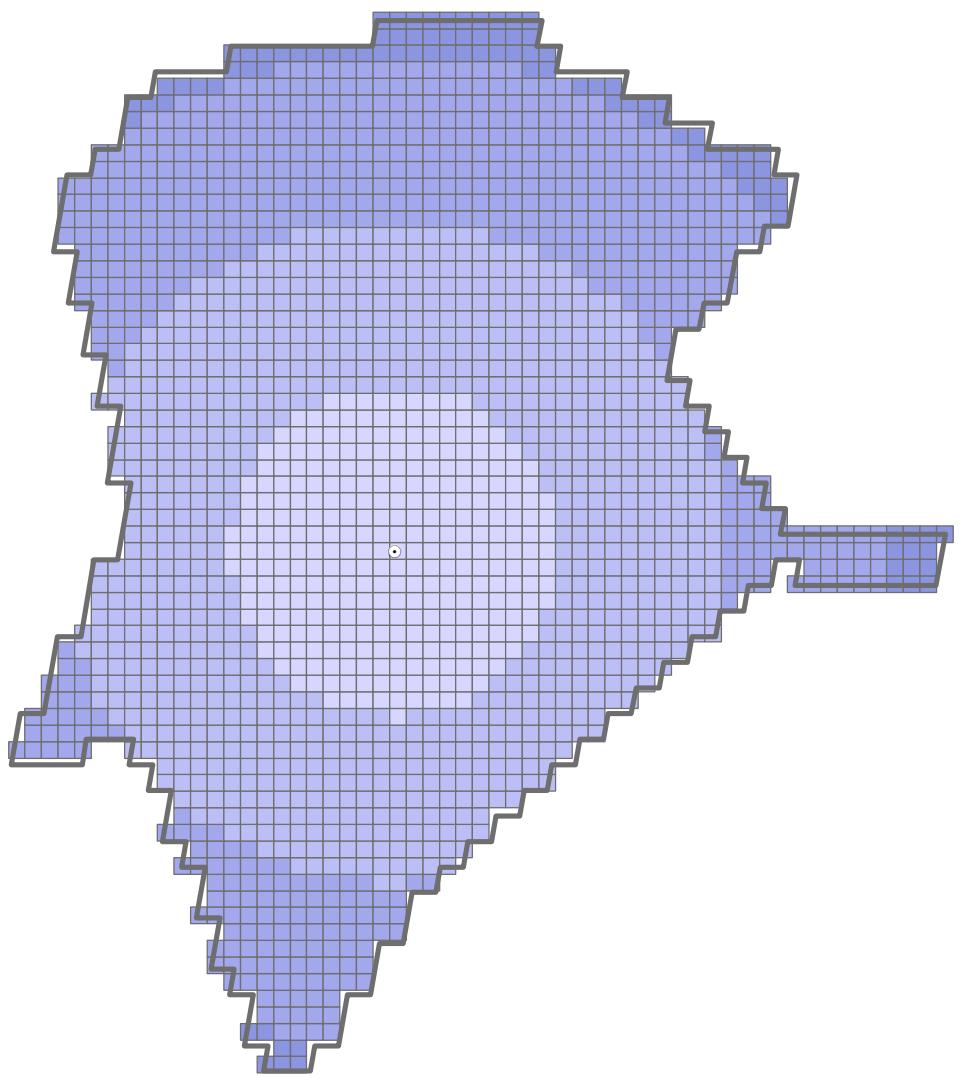
21 30'0"E

21 40'0"E

21 50'0"E

Euclidean distance raster to the city center of  
Debrecen, Hungary  
eFUA\_ID: 1404  
at 1 km resolution

47 40'0"N  
47 30'0"N  
47 20'0"N



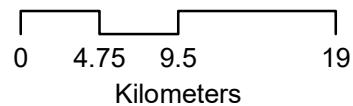
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

4 50'0"E

5 0'0"E

5 10'0"E

5 20'0"E

Euclidean distance raster to the city center of  
Dijon, France  
eFUA\_ID: 3798  
at 1 km resolution

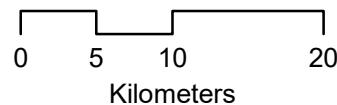
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

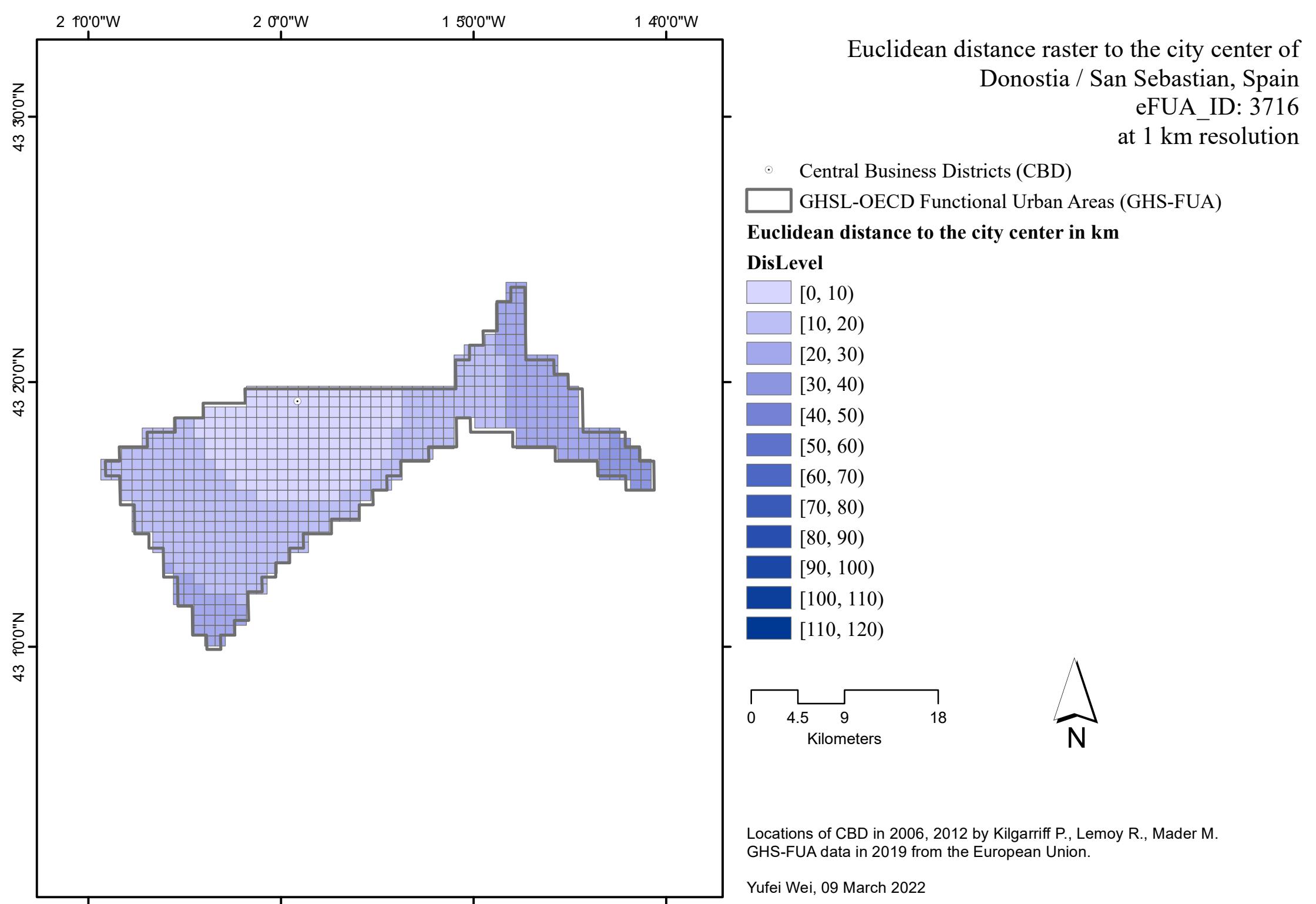
#### DisLevel

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



13 20'0"E 13 30'0"E 13 40'0"E 13 50'0"E 14 0'0"E

N  
51 20'0"N

N  
51 10'0"N

N  
51 0'0"N

N  
50 50'0"N

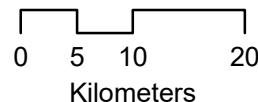
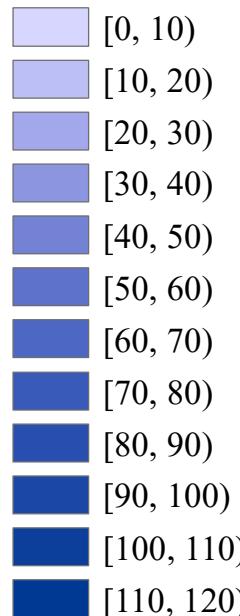
Euclidean distance raster to the city center of  
Dresden, Germany  
eFUA\_ID: 4996  
at 1 km resolution

○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

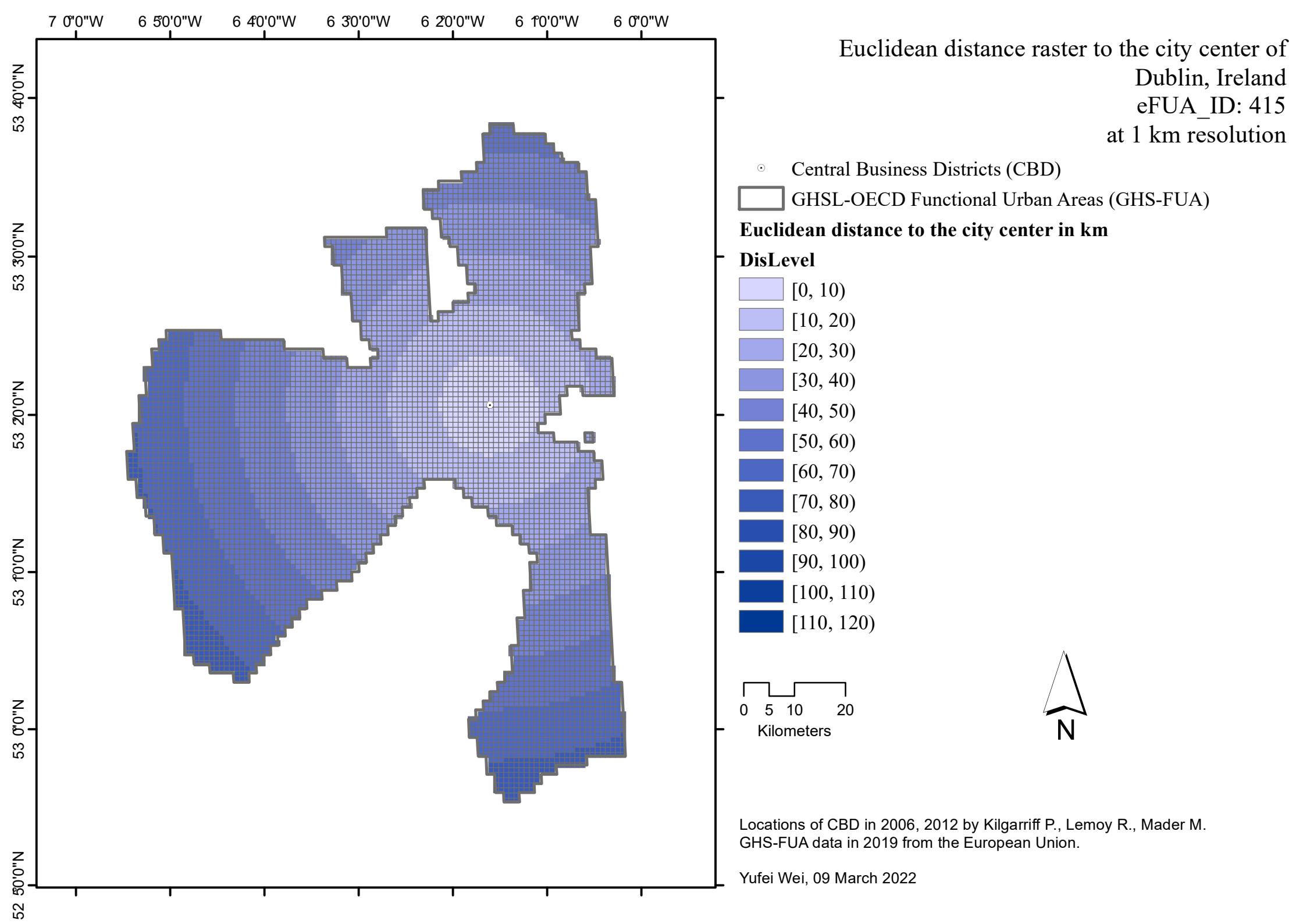
**Euclidean distance to the city center in km**

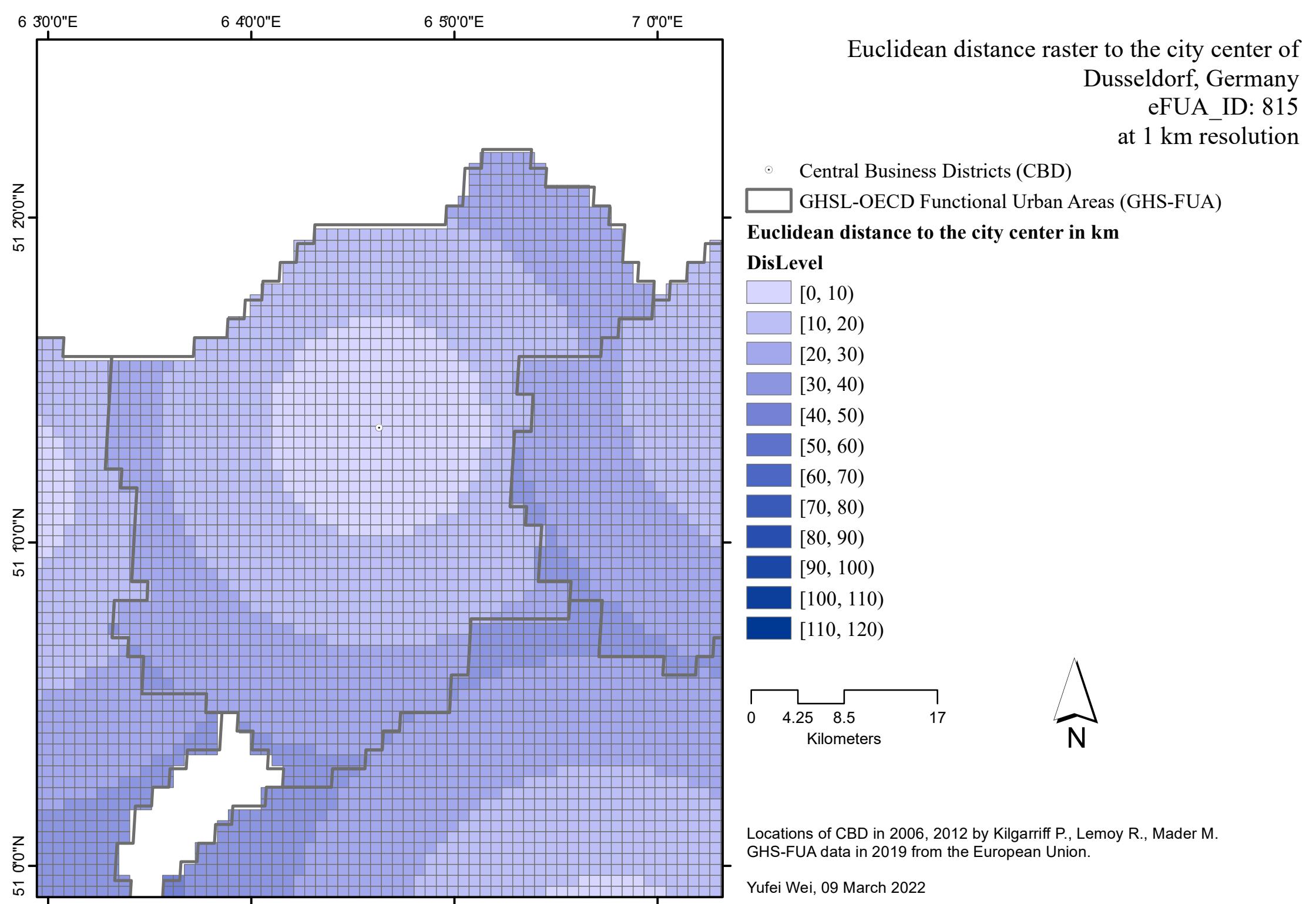
**DisLevel**

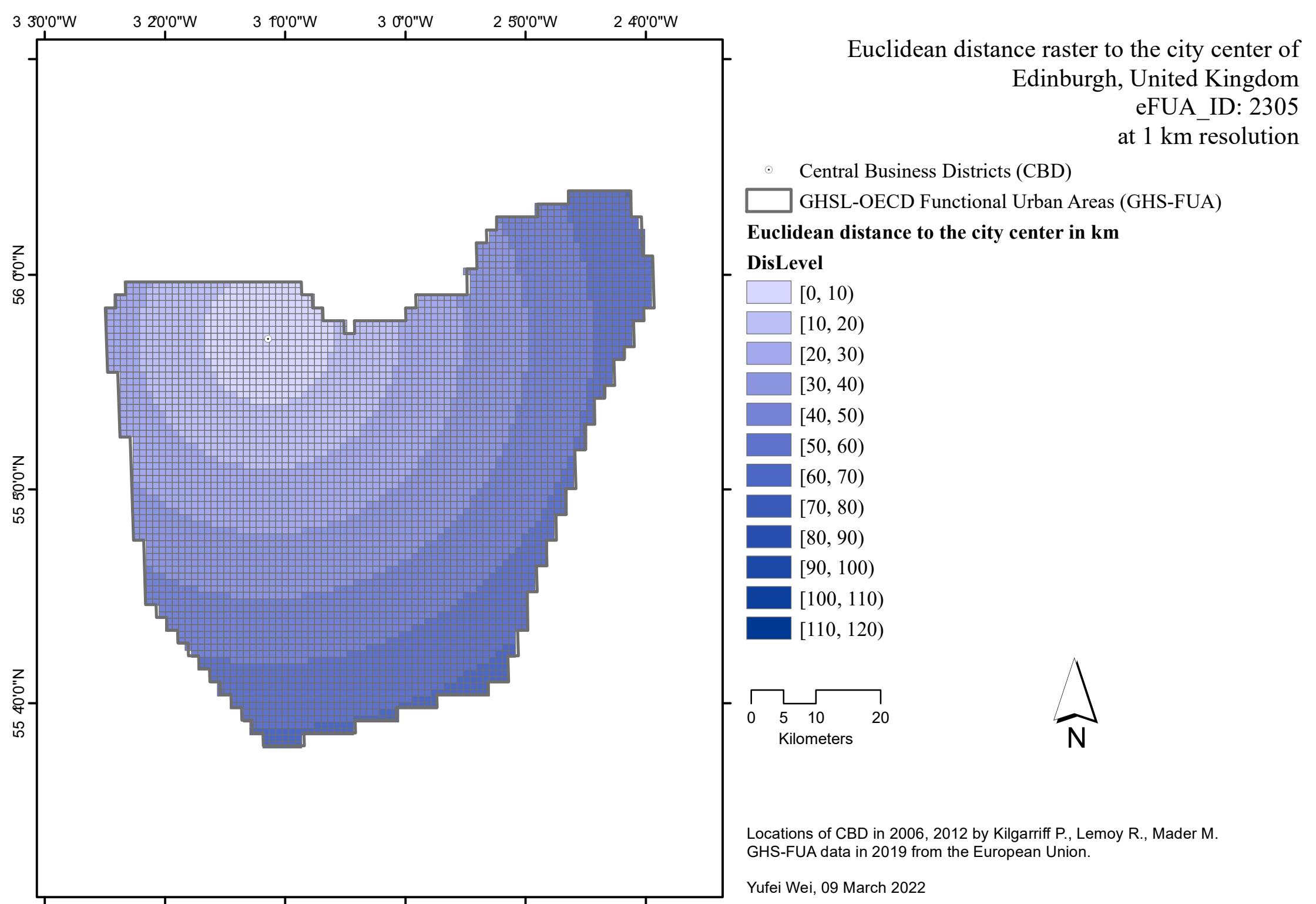


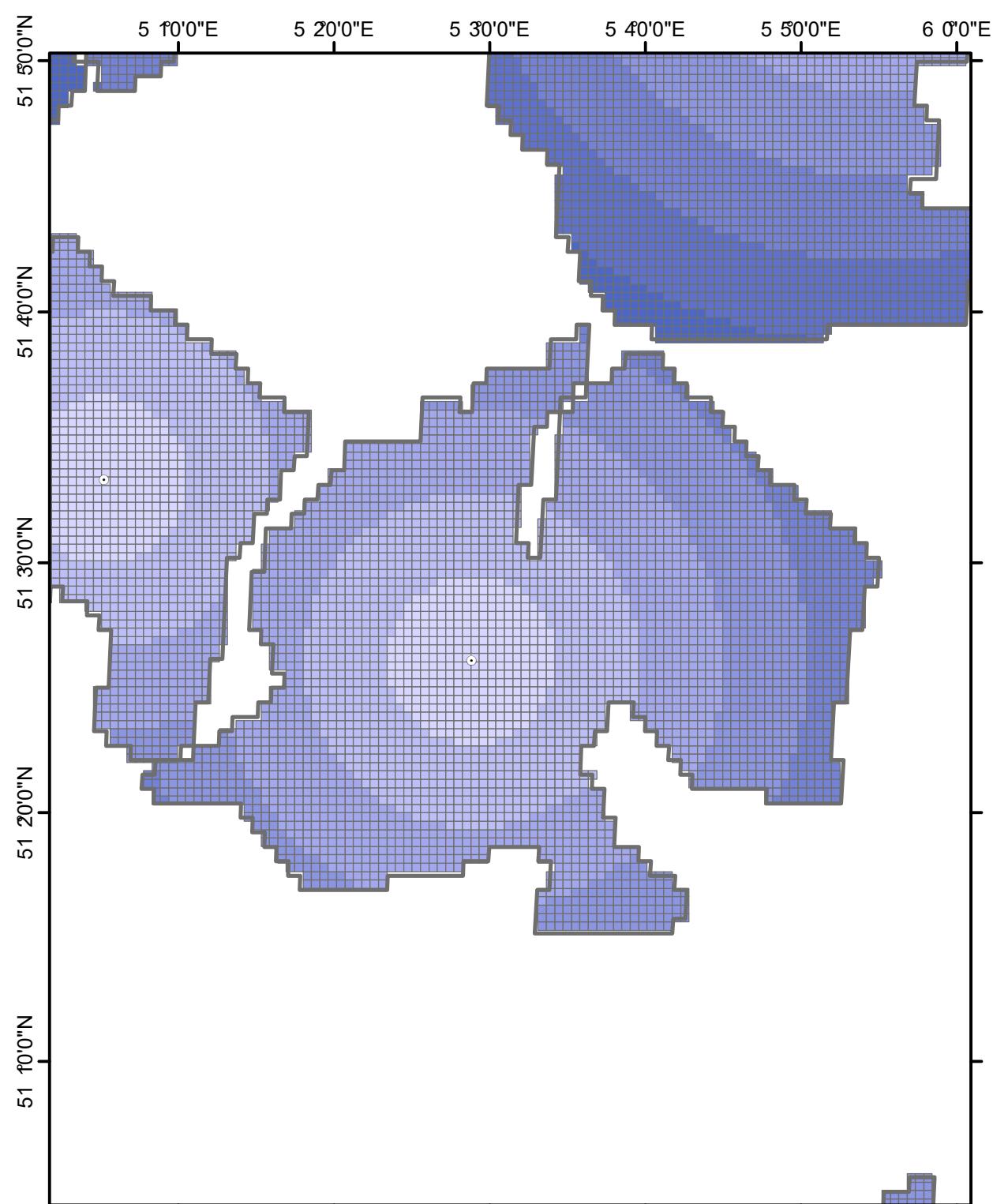
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022









Euclidean distance raster to the city center of  
Eindhoven, Netherlands  
eFUA\_ID: 2254  
at 1 km resolution

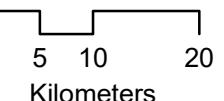
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

22 20'0"E

22 30'0"E

Euclidean distance raster to the city center of  
Elk, Poland  
eFUA\_ID: 3513  
at 1 km resolution

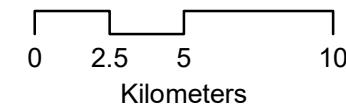
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

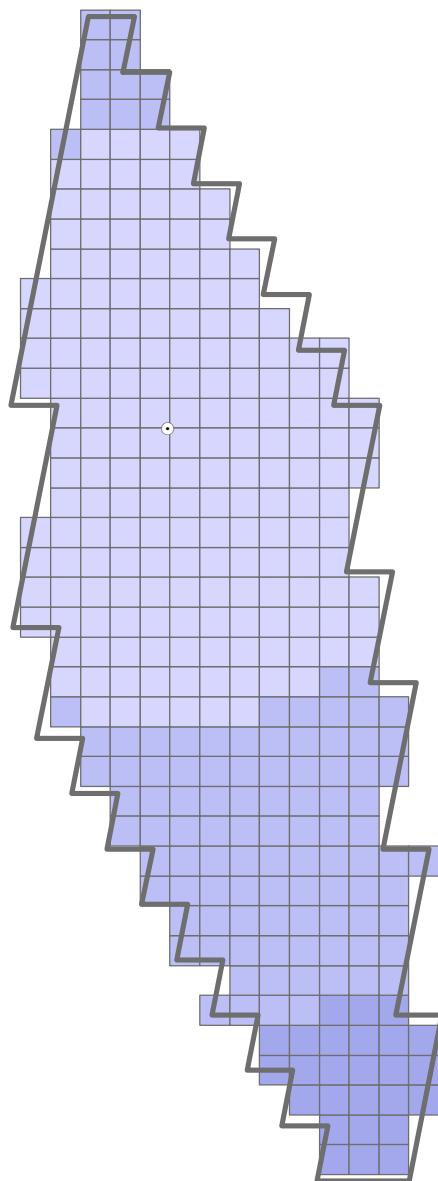
**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



0 50'0"W

0 40'0"W

Euclidean distance raster to the city center of  
Elx / Elche, Spain  
eFUA\_ID: 4052  
at 1 km resolution

38 20'0"N

38 10'0"N

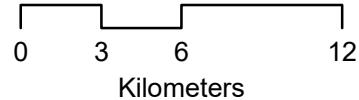
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

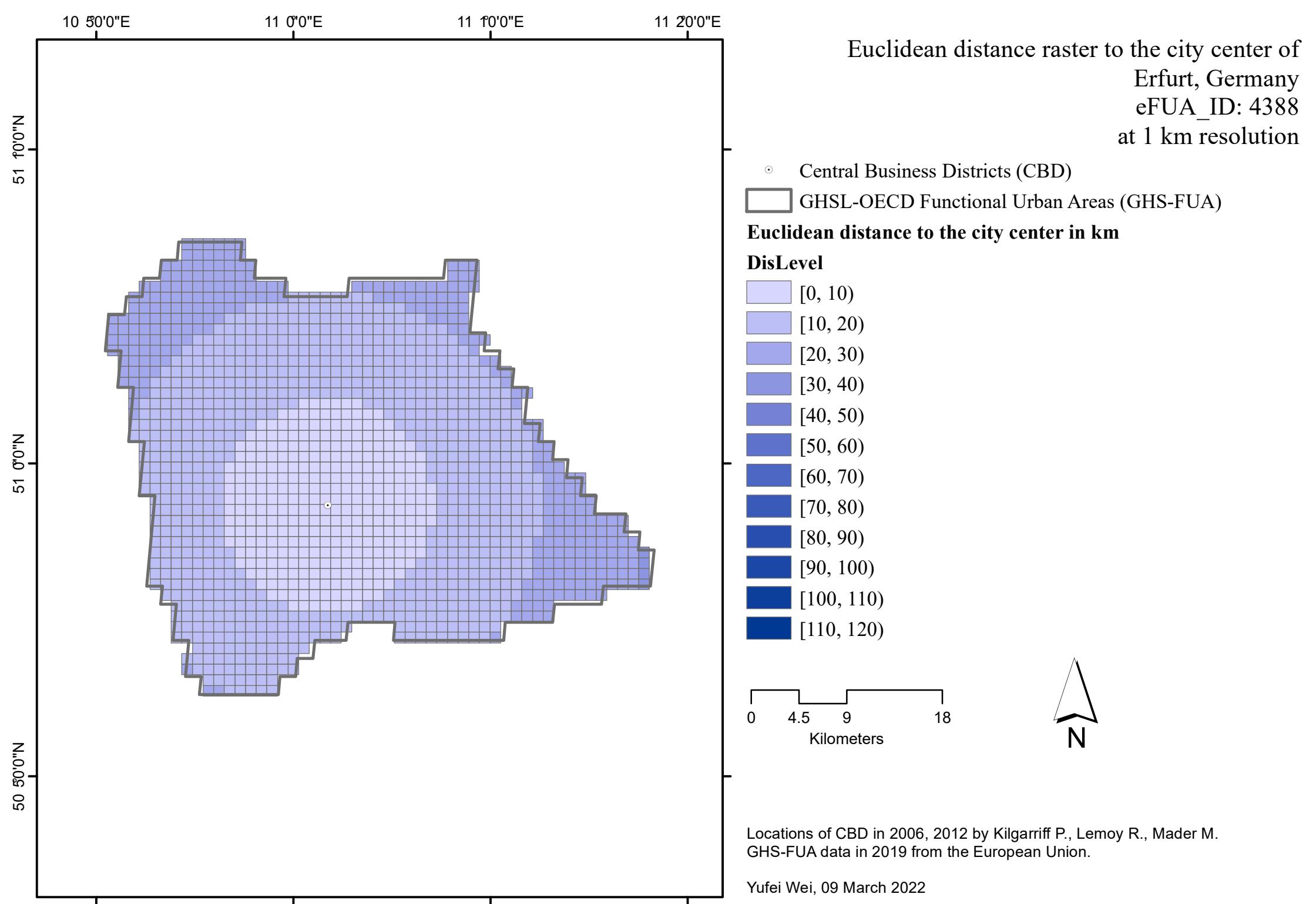
**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



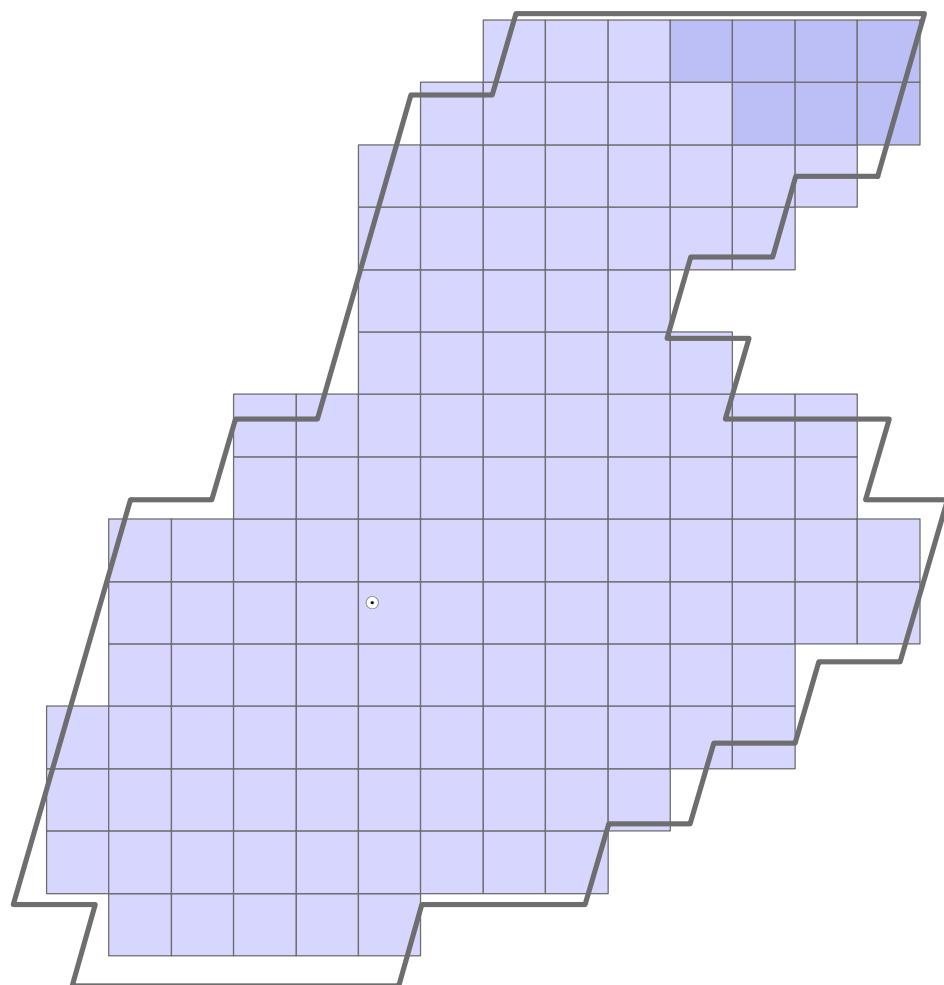
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



41°20'0"E

Euclidean distance raster to the city center of  
Erzurum, Turkey  
eFUA\_ID: 5462  
at 1 km resolution



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

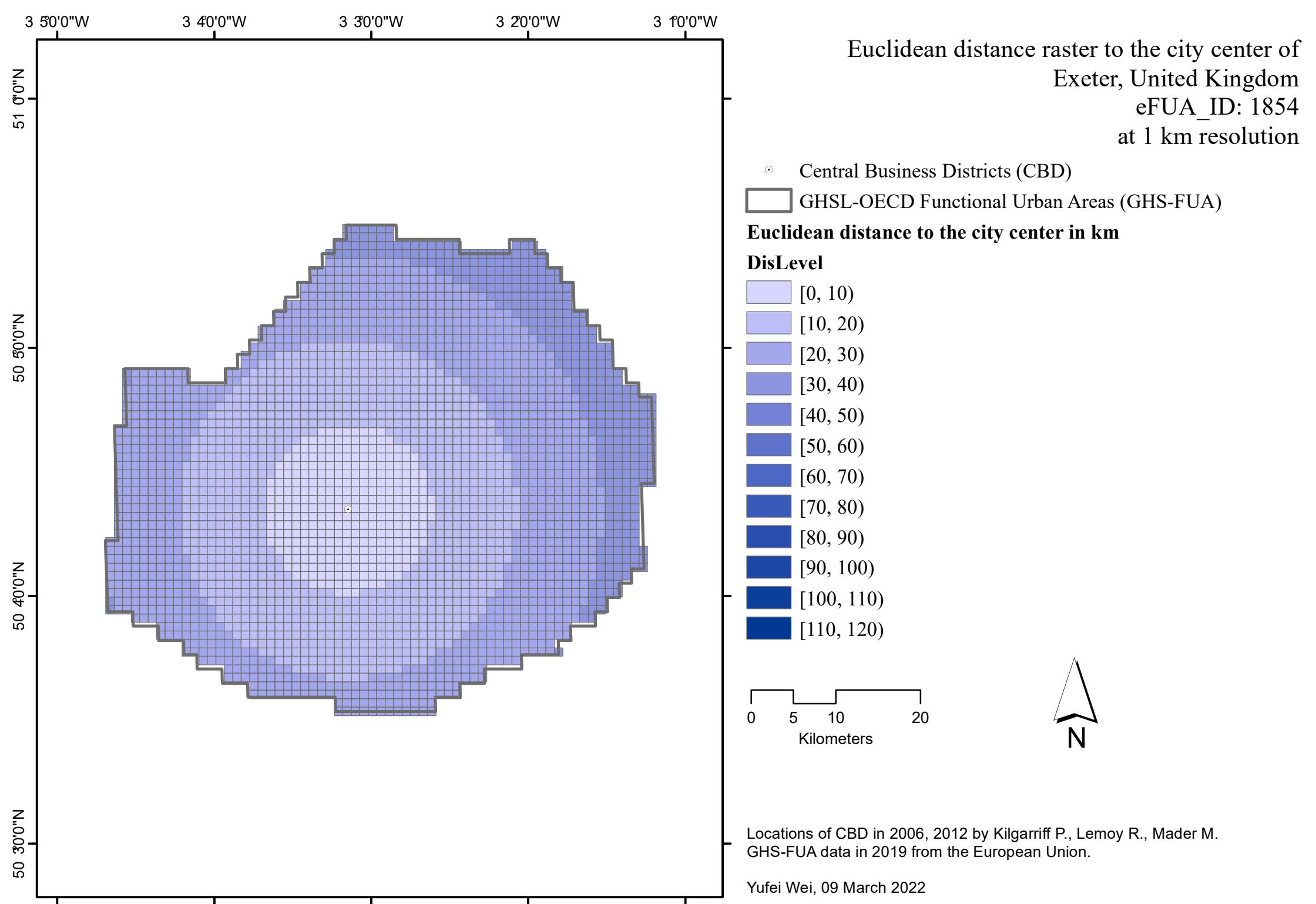
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 1.25 2.5 5  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



11 30'0"E

11 40'0"E

Euclidean distance raster to the city center of  
Ferrara, Italy  
eFUA\_ID: 3311  
at 1 km resolution

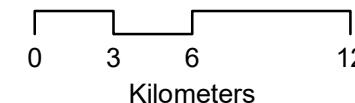
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

8 20'0"W

8 10'0"W

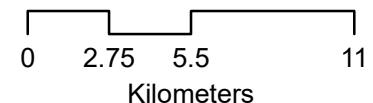
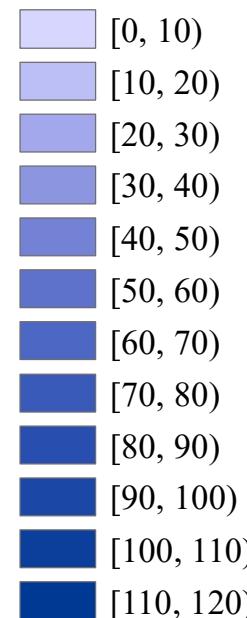
Euclidean distance raster to the city center of  
Ferrol, Spain  
eFUA\_ID: 1183  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

11 0°0"E

11 10'0"E

11 20'0"E

11 30'0"E

Euclidean distance raster to the city center of  
Florence, Italy  
eFUA\_ID: 3106  
at 1 km resolution

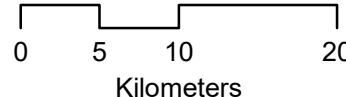
○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

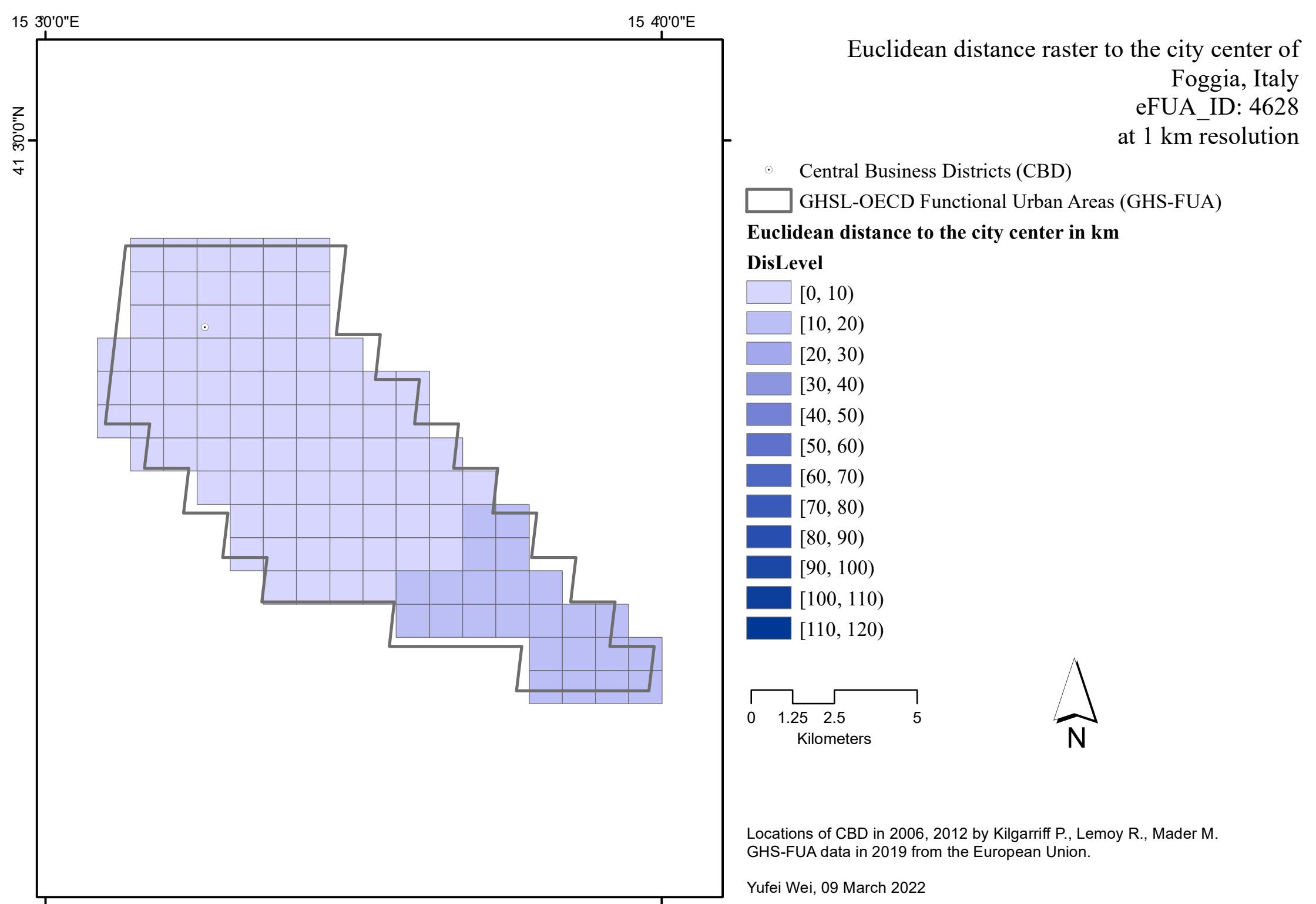
#### DisLevel

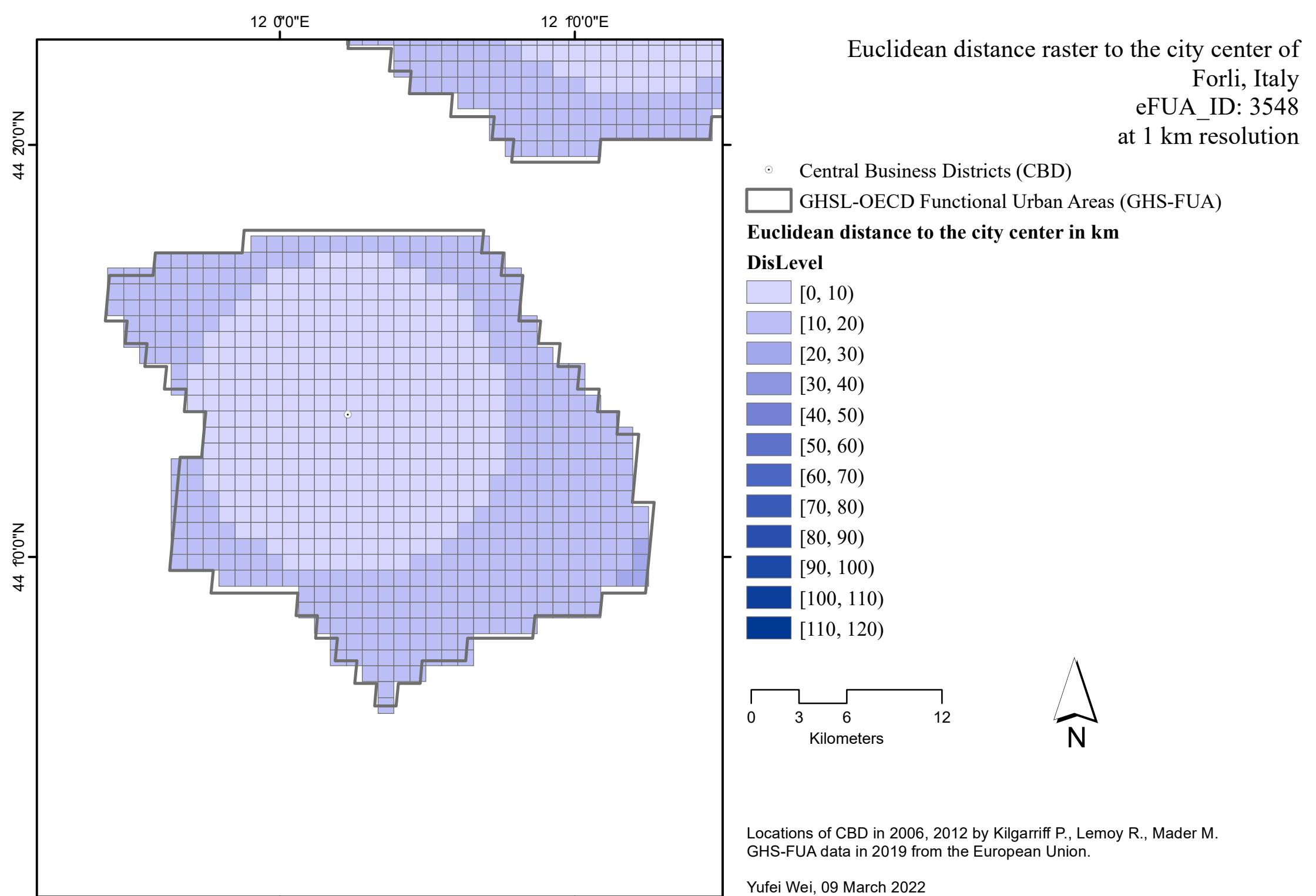
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

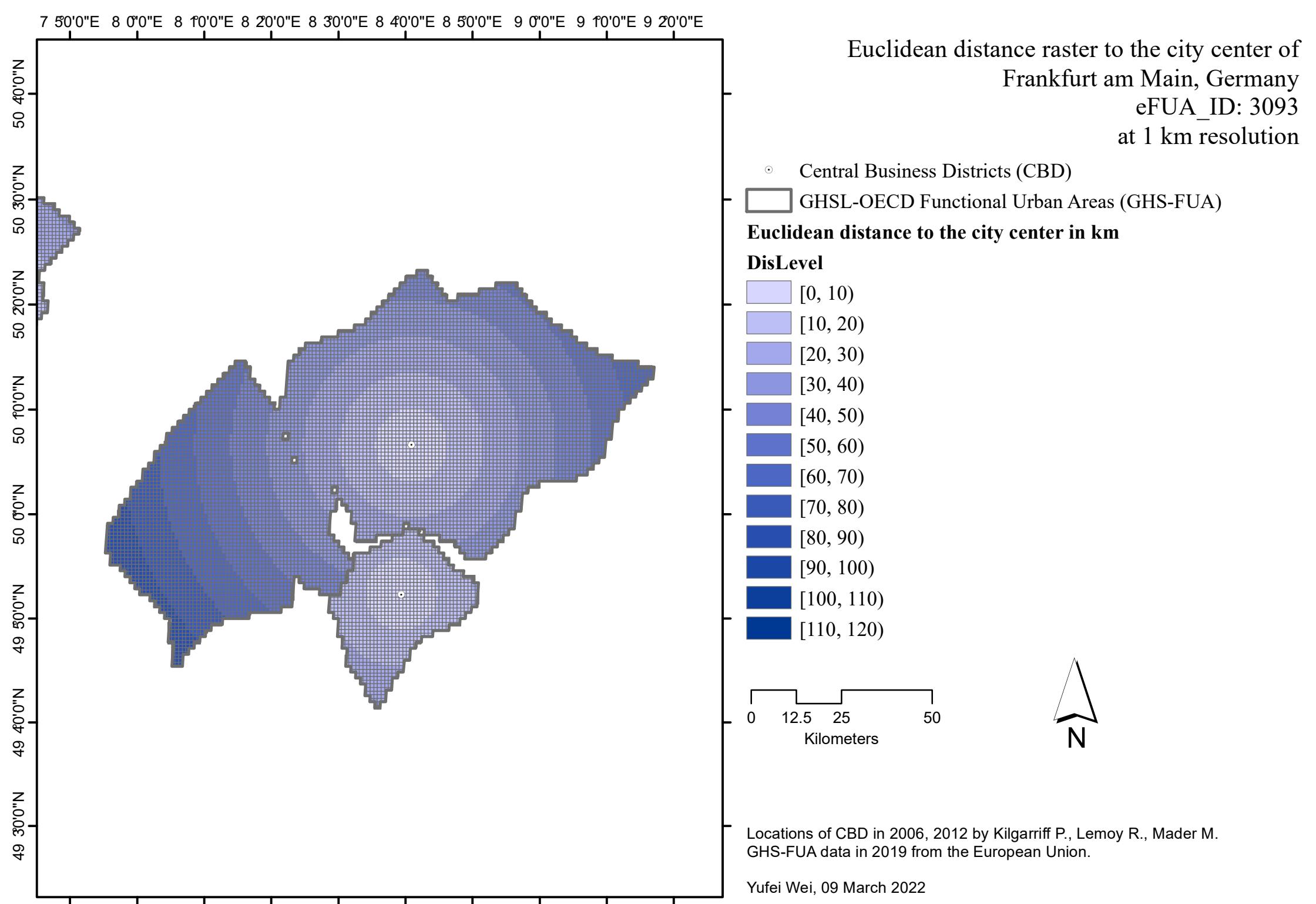


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022







7 40'0"E

7 50'0"E

8 0'0"E

8 10'0"E

Euclidean distance raster to the city center of  
Freiburg im Breisgau, Germany  
eFUA\_ID: 2435  
at 1 km resolution

48 10'0"N

48 0'0"N

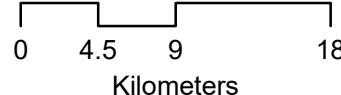
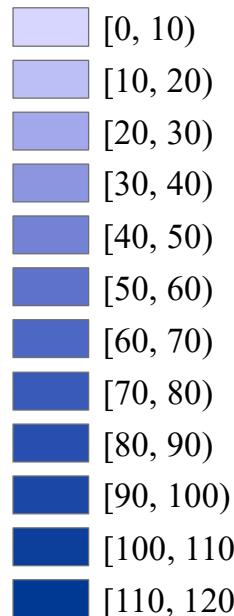
47 50'0"N

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

#### DisLevel

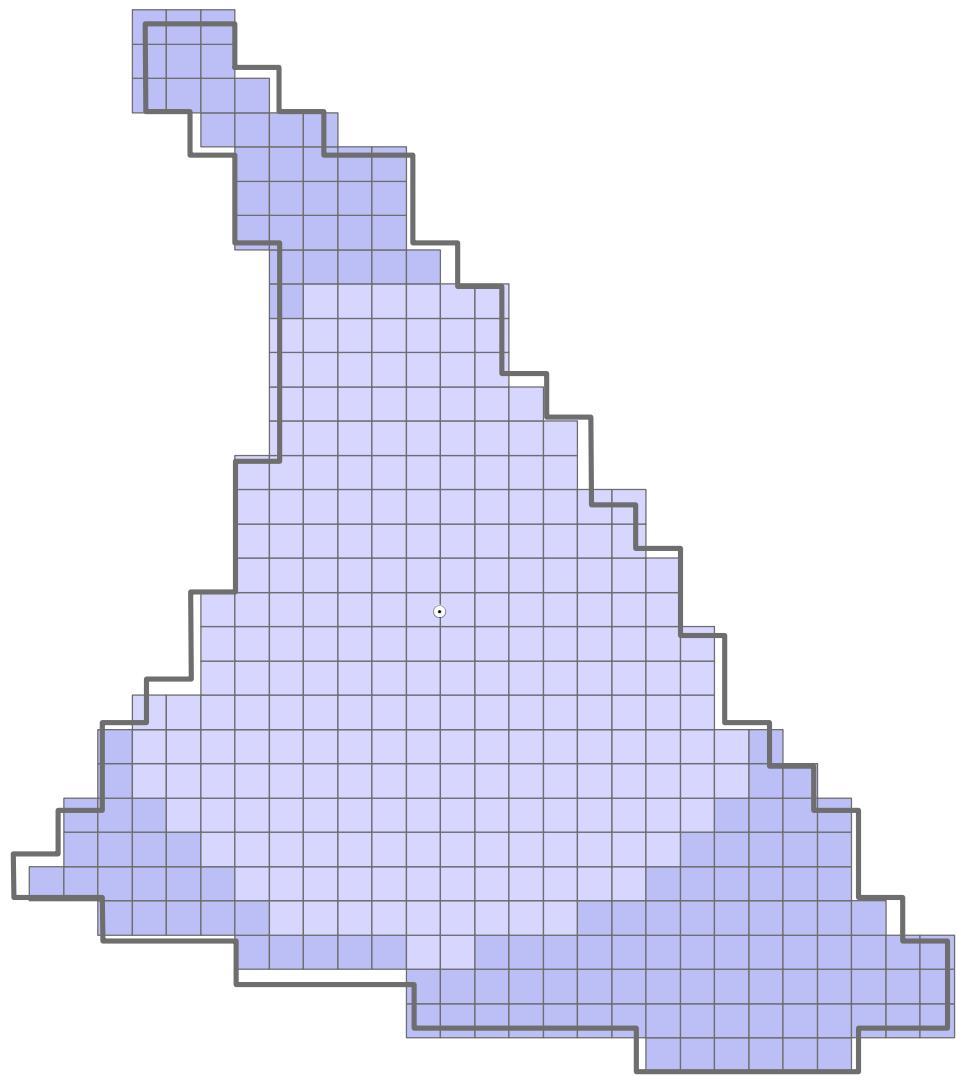


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

0 10'0"W

Euclidean distance raster to the city center of  
Gandia, Spain  
eFUA\_ID: 4190  
at 1 km resolution



○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)

0 2.25 4.5 9  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

18 10'0"E 18 20'0"E 18 30'0"E 18 40'0"E 18 50'0"E 19 0'0"E

54 40'0"N  
54 30'0"N  
54 20'0"N  
54 10'0"N  
54 0'0"N

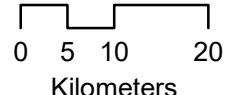
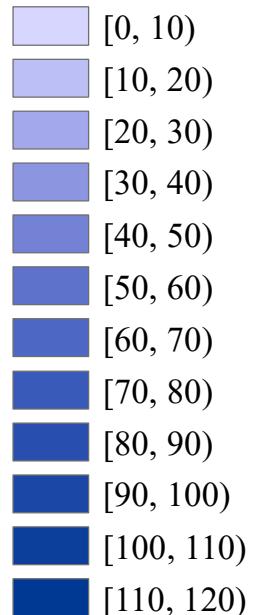
Euclidean distance raster to the city center of  
Gdansk, Poland  
eFUA\_ID: 2037  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

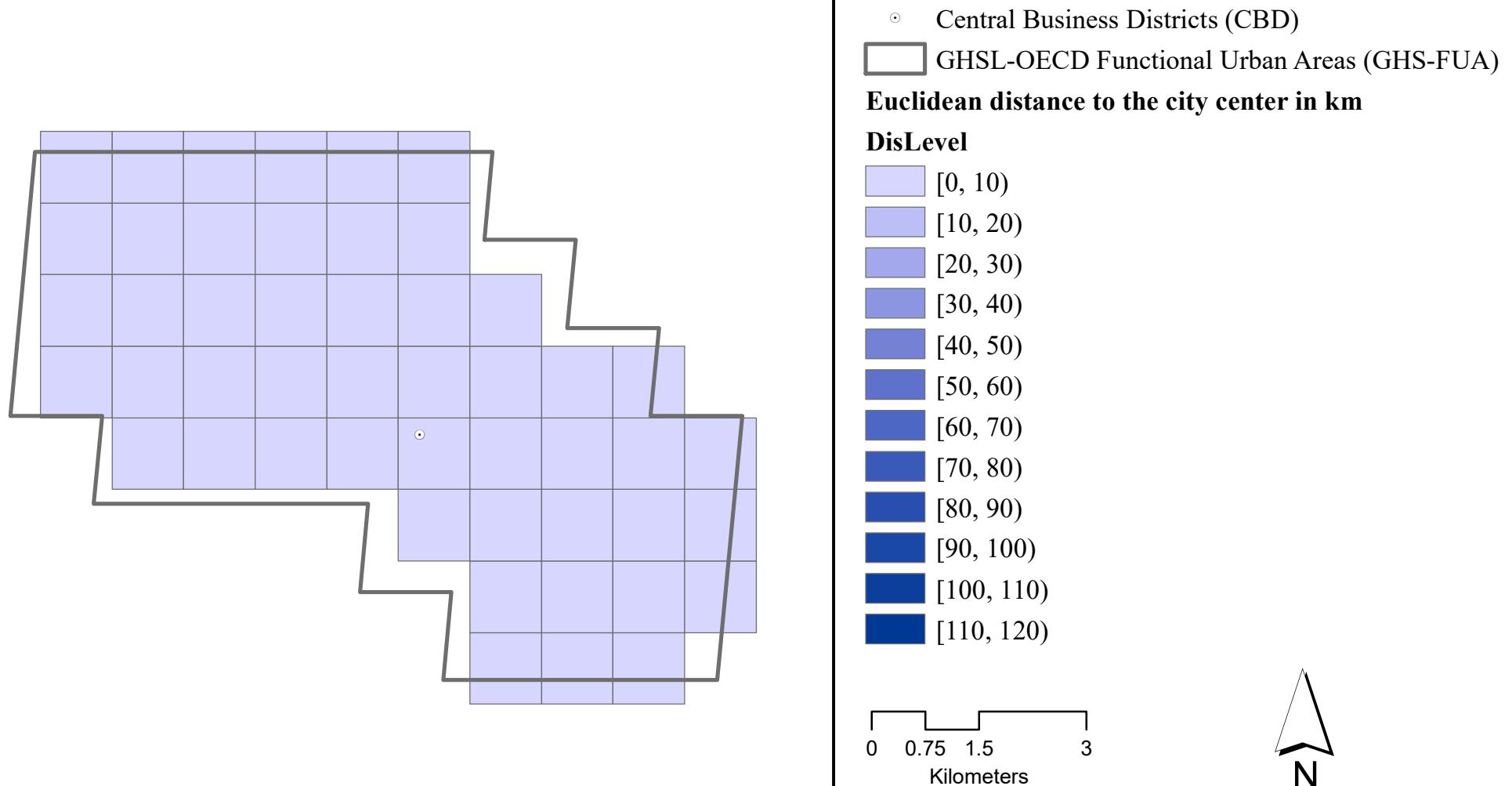
**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

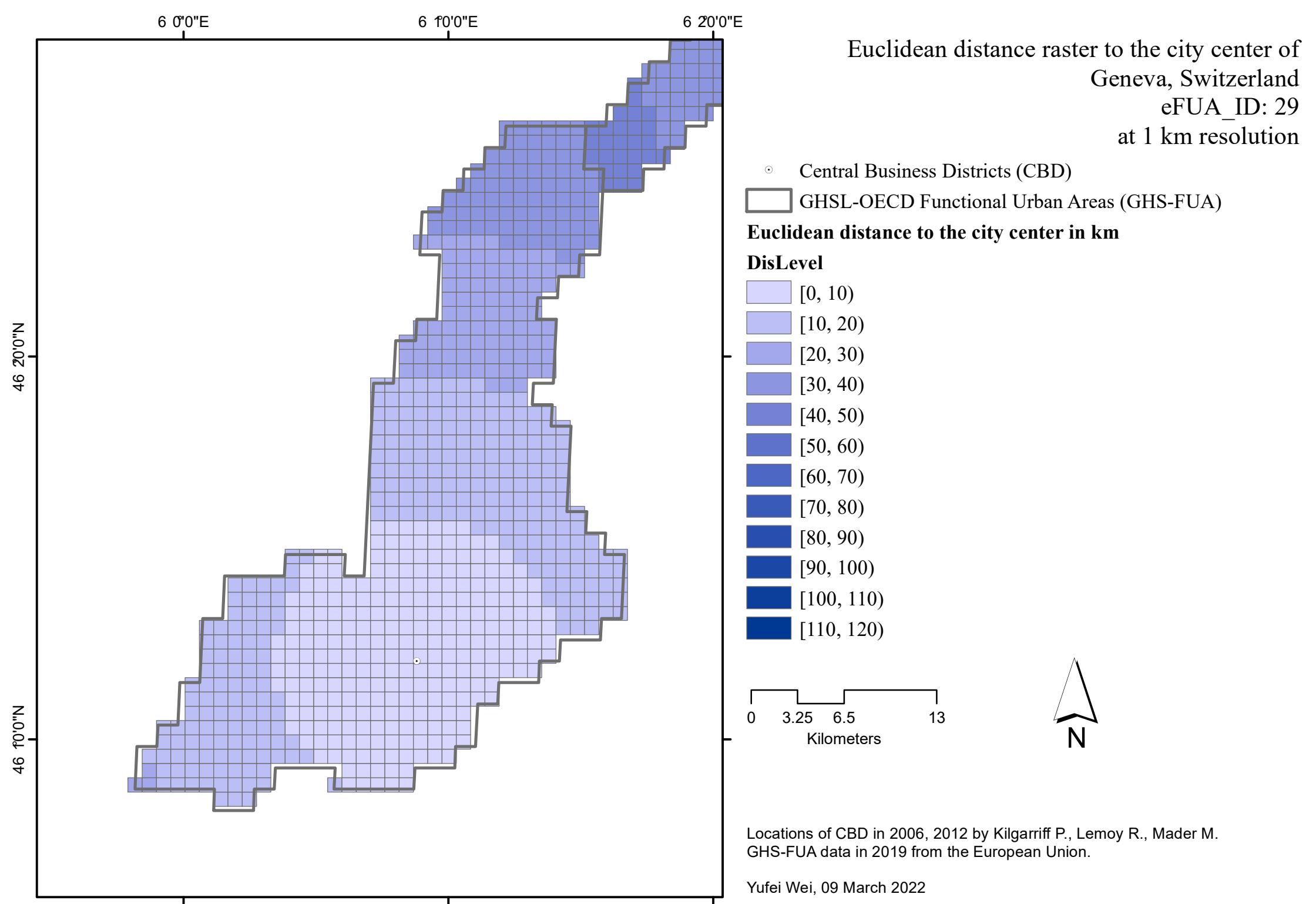
Yufei Wei, 09 March 2022

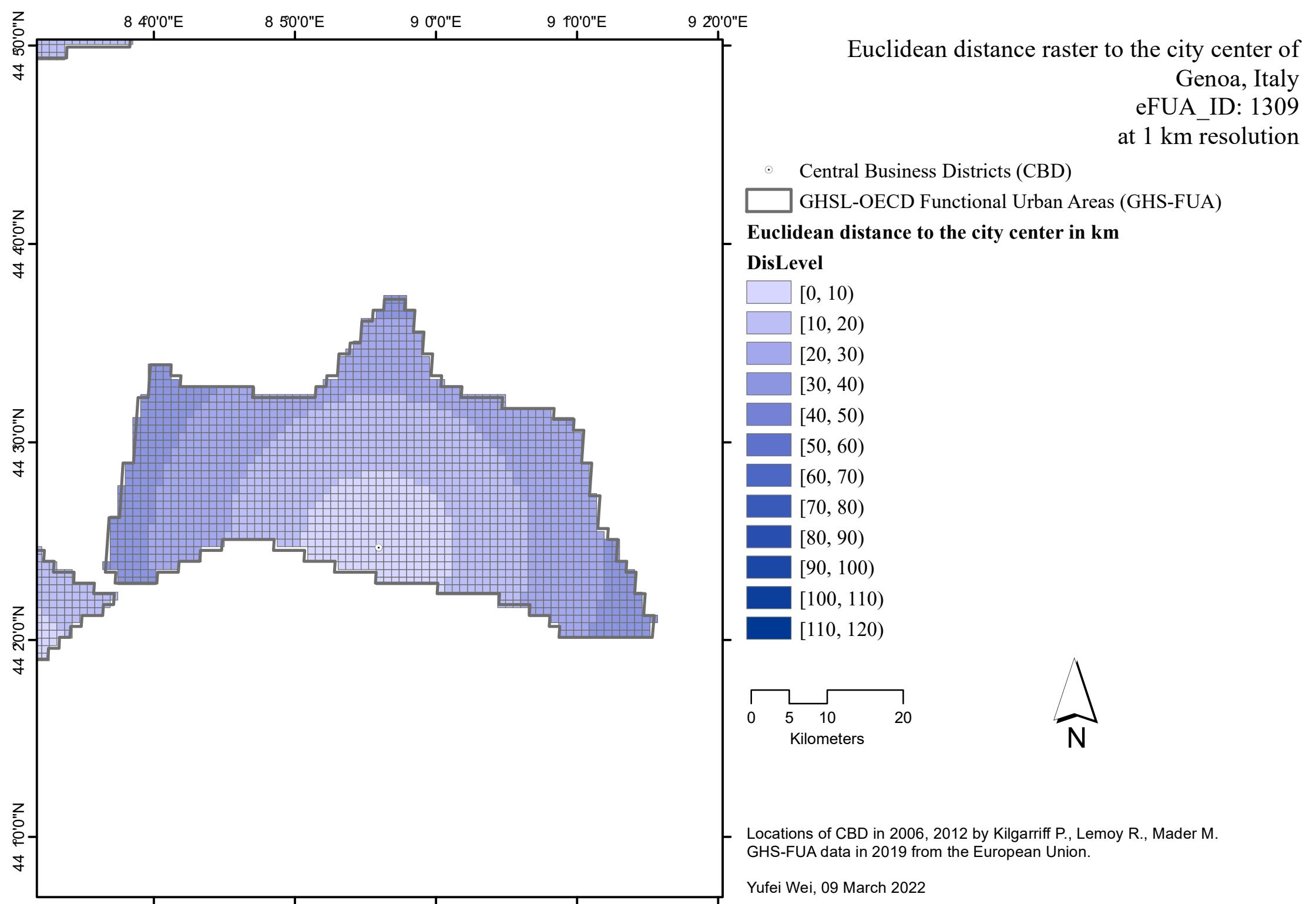
Euclidean distance raster to the city center of  
Gela, Italy  
eFUA\_ID: 4432  
at 1 km resolution



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



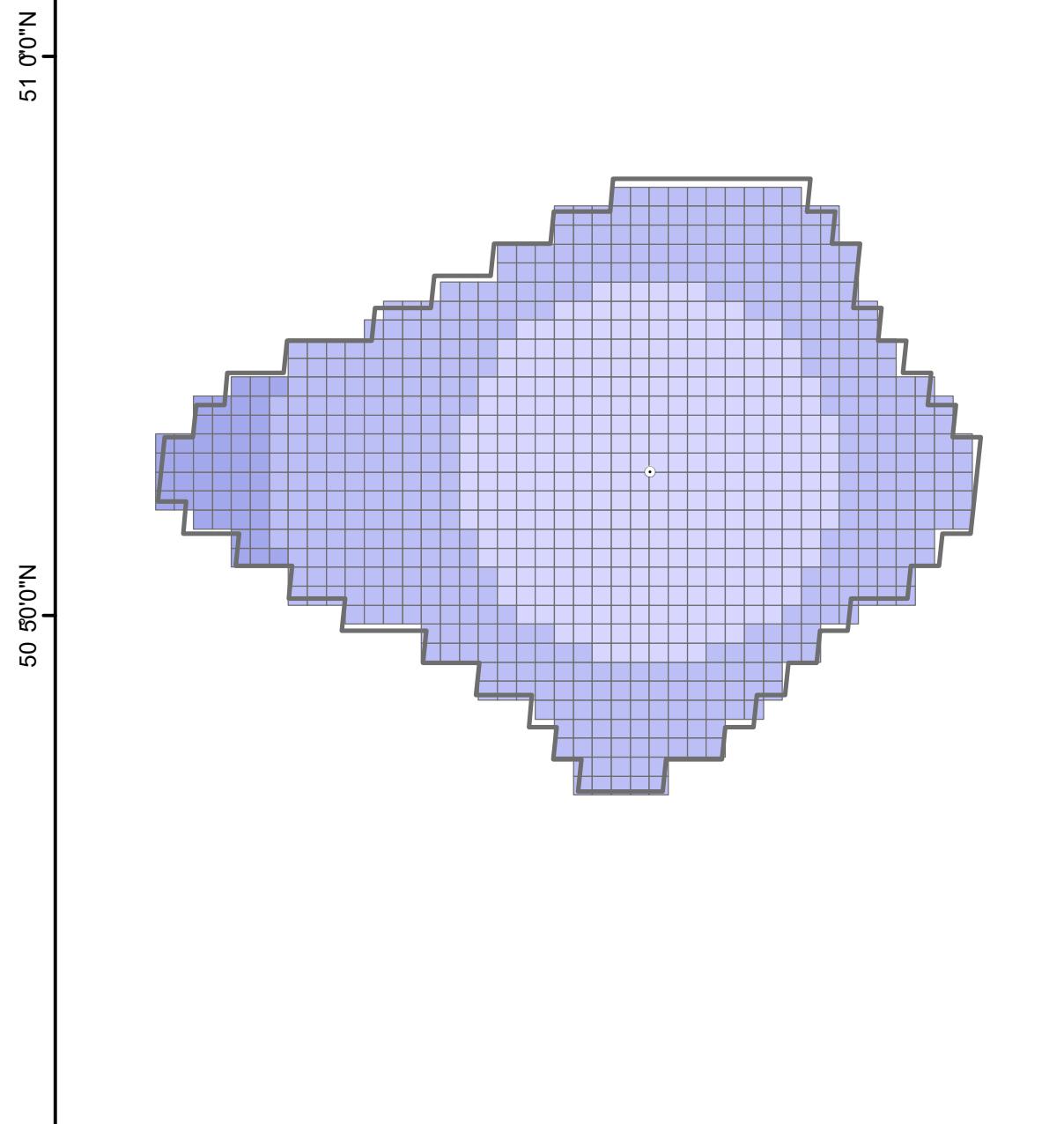


11 50'0"E

12 0'0"E

12 10'0"E

Euclidean distance raster to the city center of  
Gera, Germany  
eFUA\_ID: 4763  
at 1 km resolution



○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

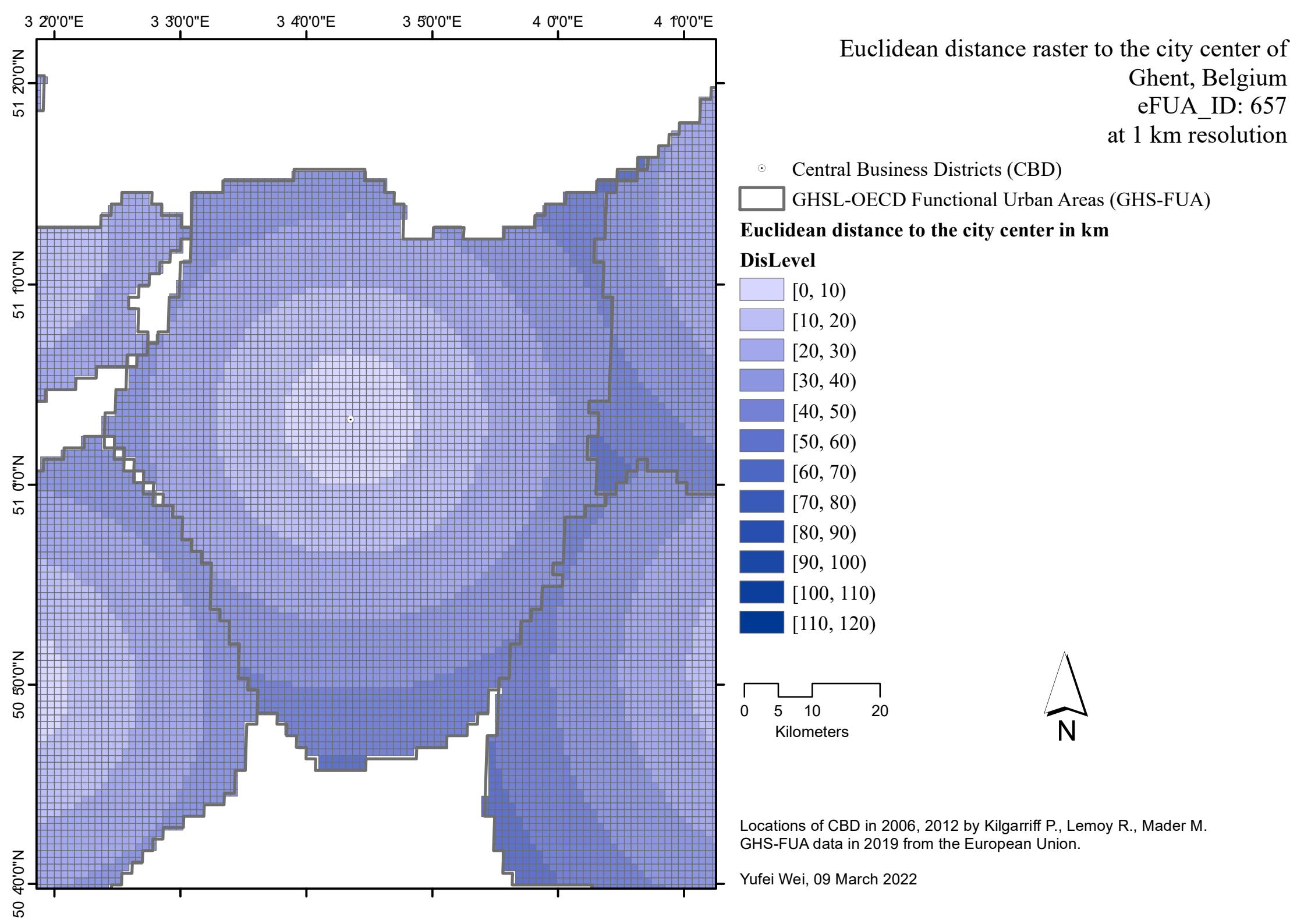
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

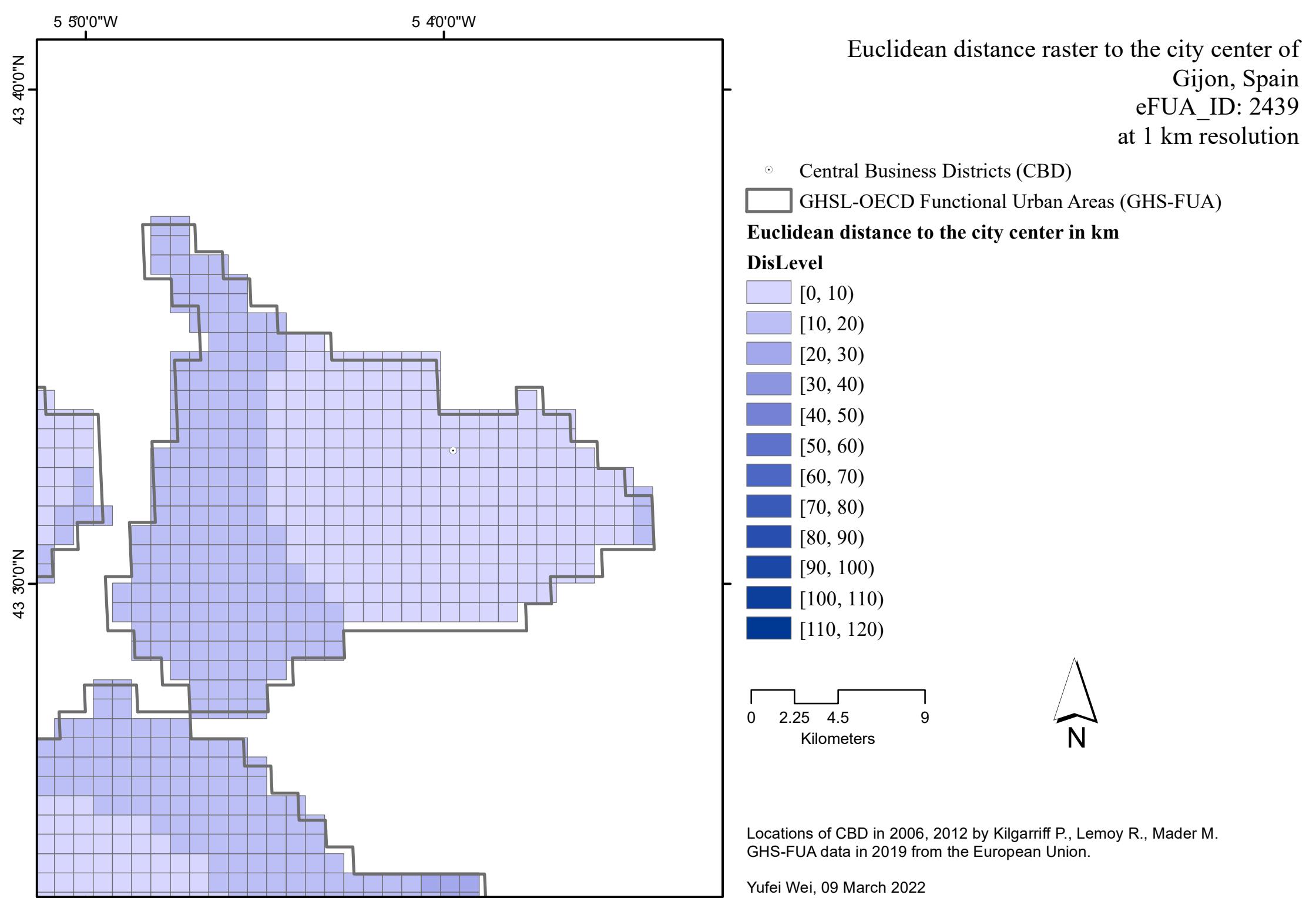
0 3.75 7.5 15  
Kilometers

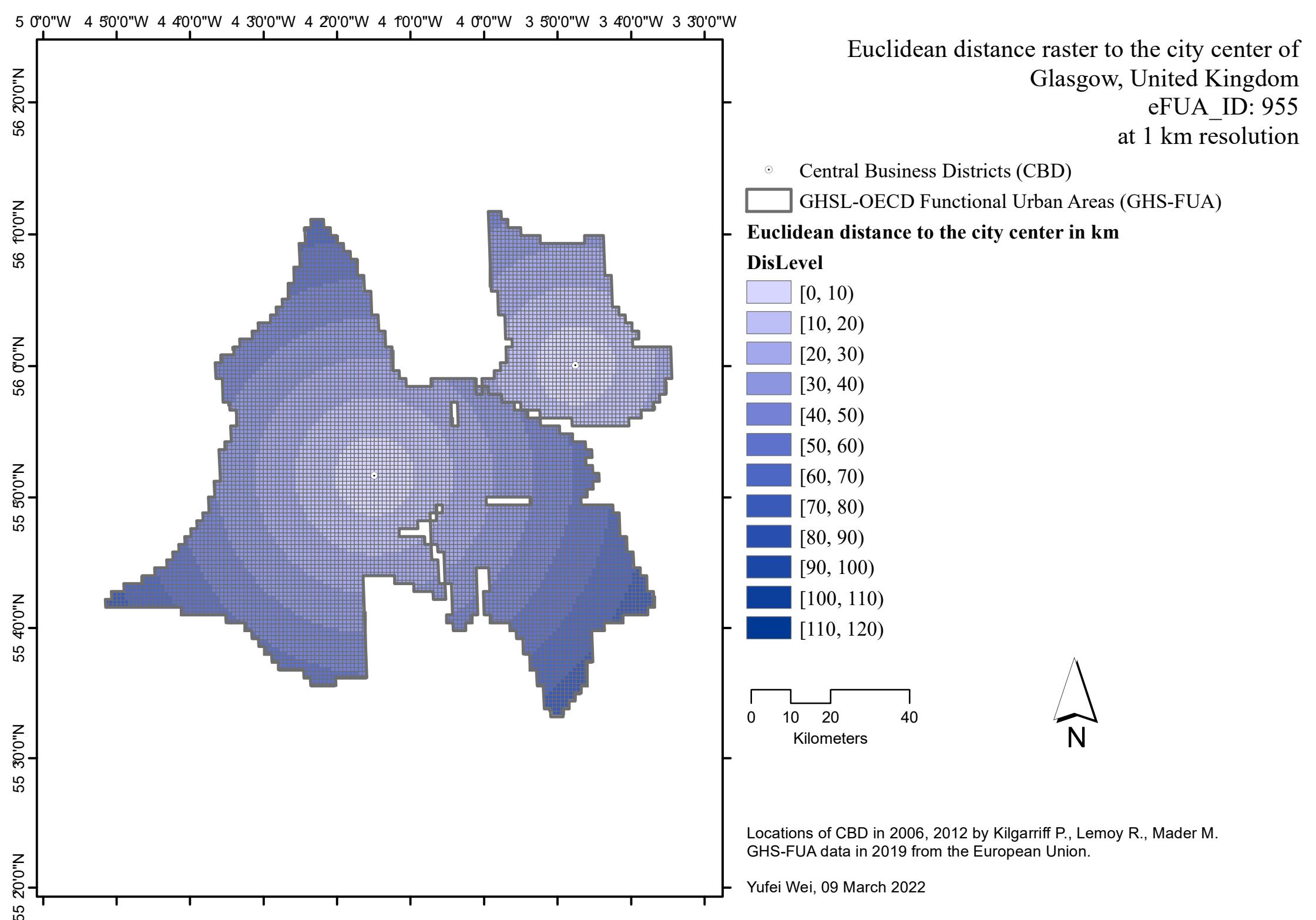


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022







17 30'0"E

17 40'0"E

17 50'0"E

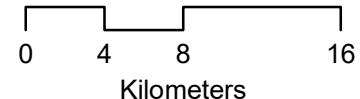
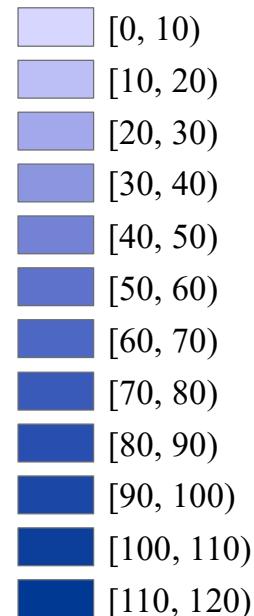
Euclidean distance raster to the city center of  
Gniezno, Poland  
eFUA\_ID: 1798  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

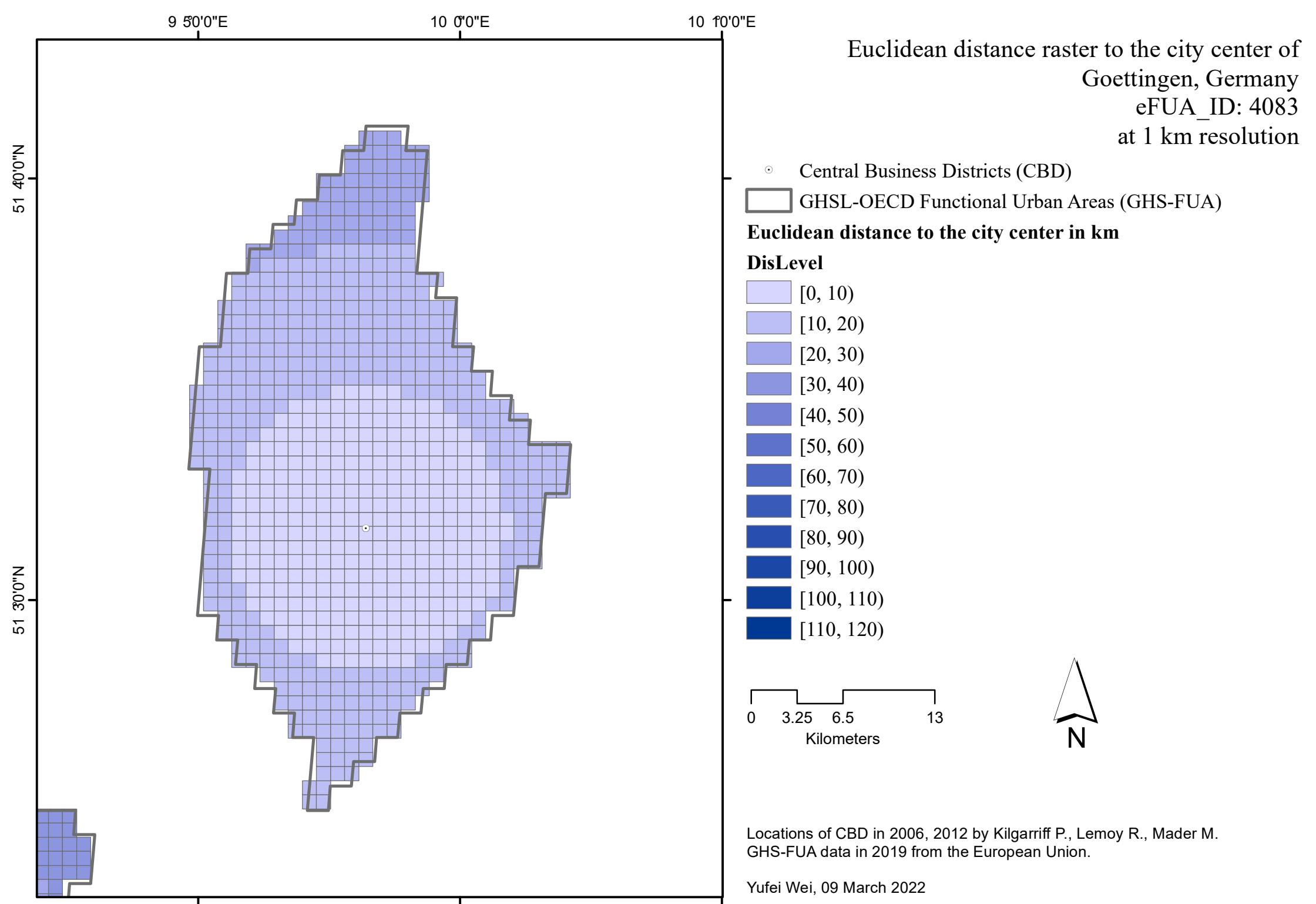
### Euclidean distance to the city center in km

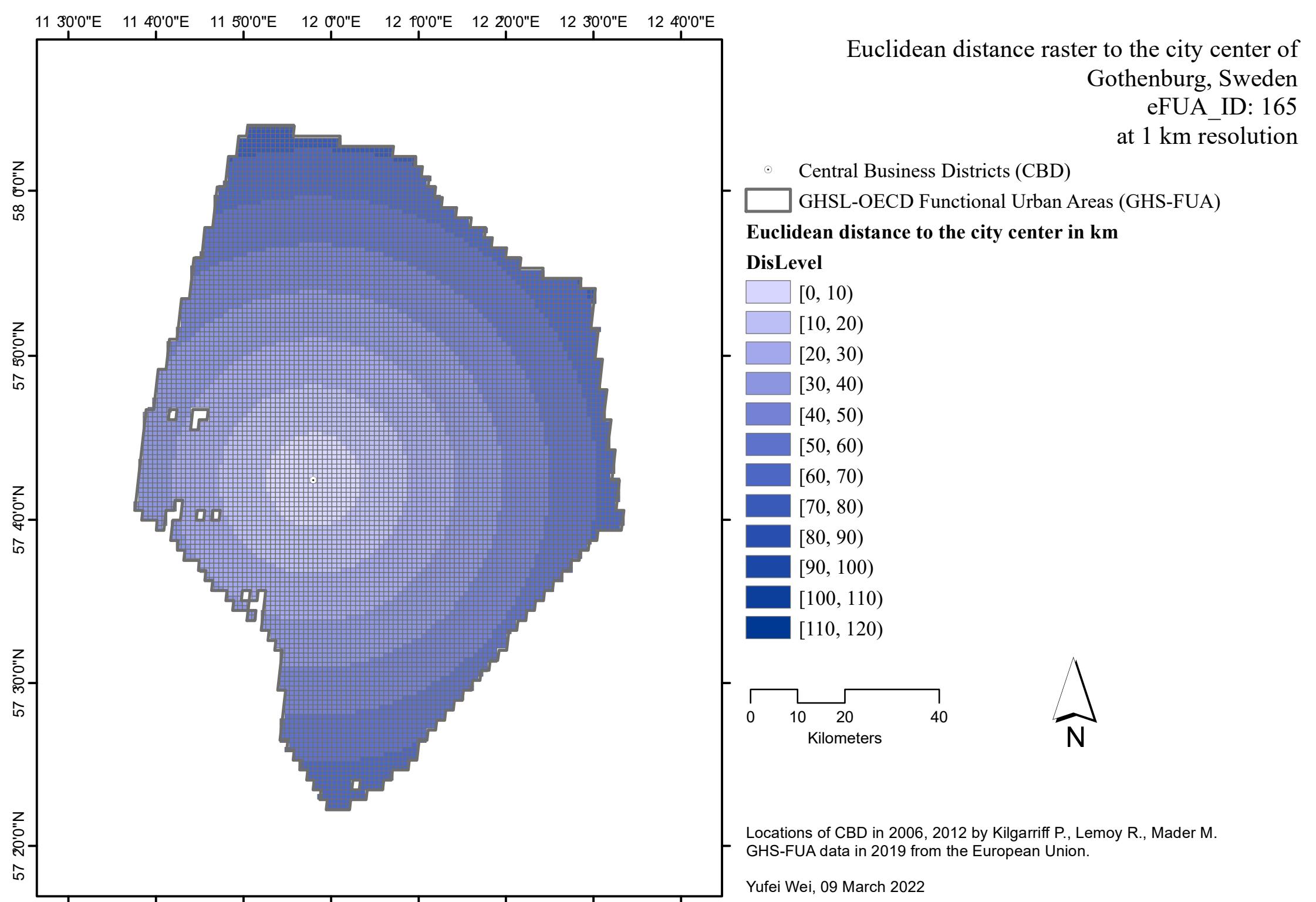
#### DisLevel

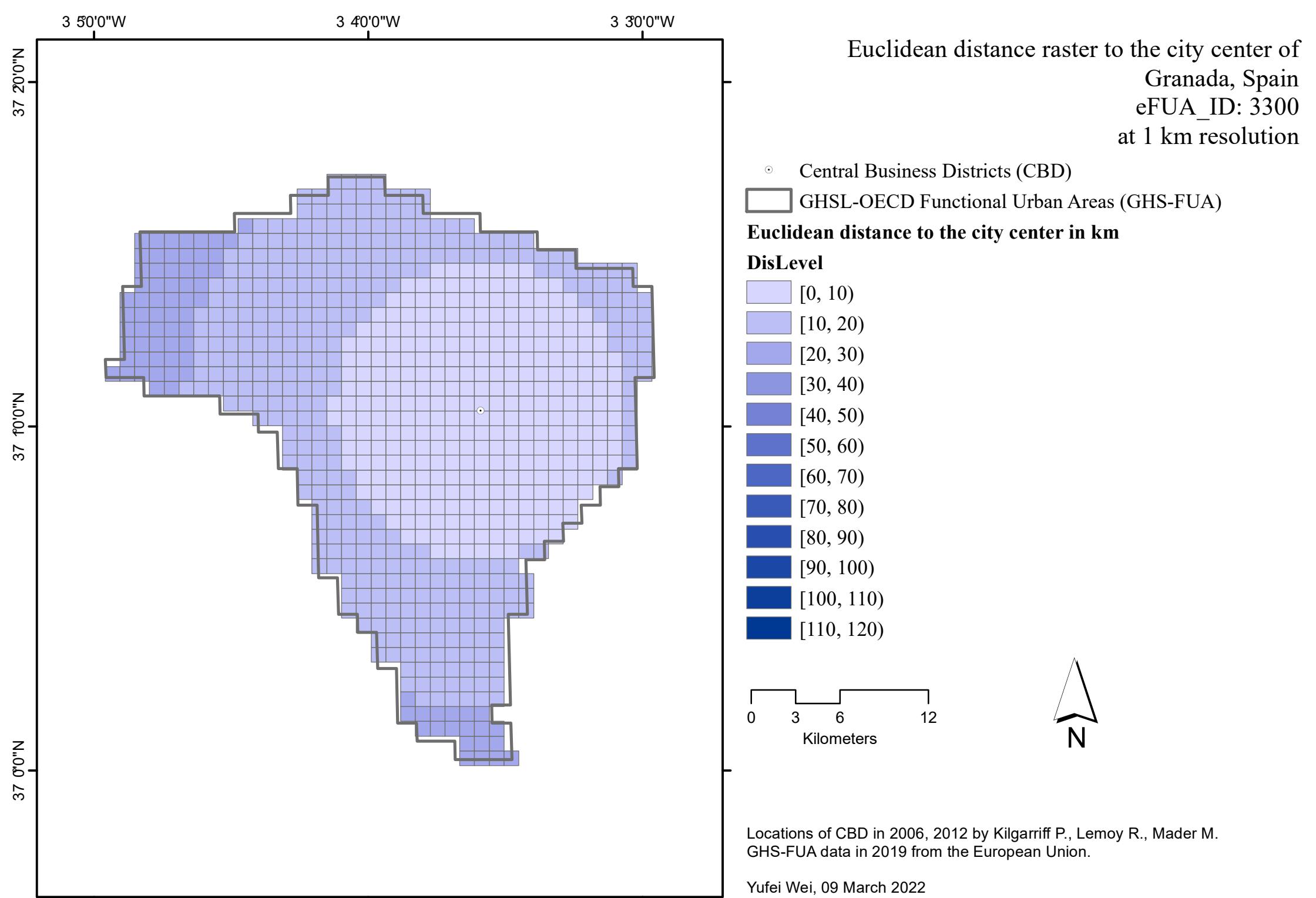


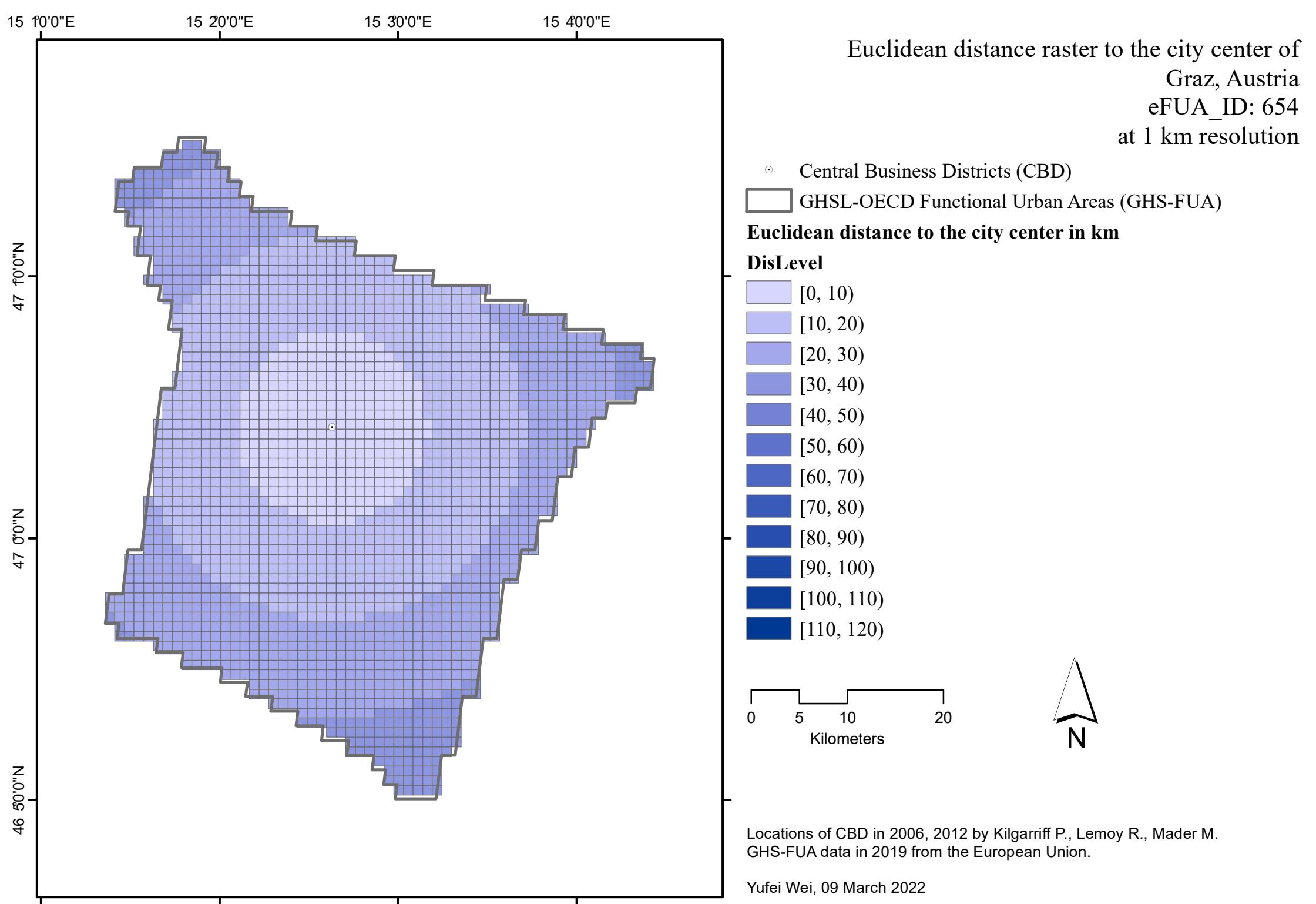
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022









5 30'0"E

5 40'0"E

5 50'0"E

6 0'0"E

Euclidean distance raster to the city center of  
Grenoble, France  
eFUA\_ID: 3984  
at 1 km resolution

45 20'0"N

45 10'0"N

45 0'0"N

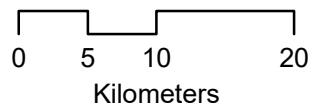
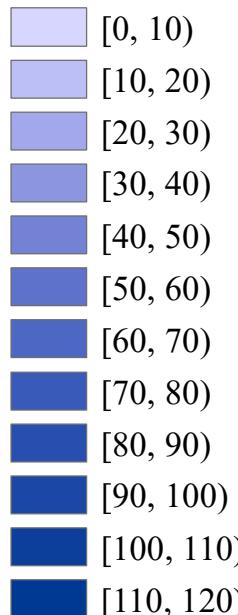
44 50'0"N

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

6 20'0"E

6 30'0"E

6 40'0"E

6 50'0"E

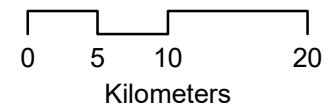
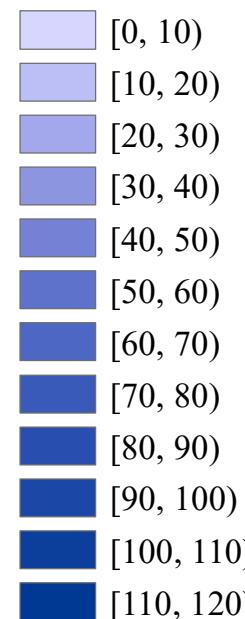
Euclidean distance raster to the city center of  
Groningen, Netherlands  
eFUA\_ID: 3116  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

19 20'0"E

19 30'0"E

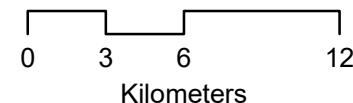
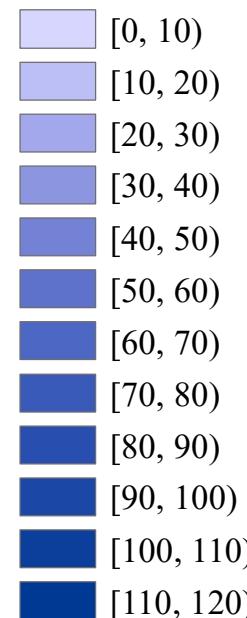
Euclidean distance raster to the city center of  
Gronowo Gorne, Poland  
eFUA\_ID: 2531  
at 1 km resolution

○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

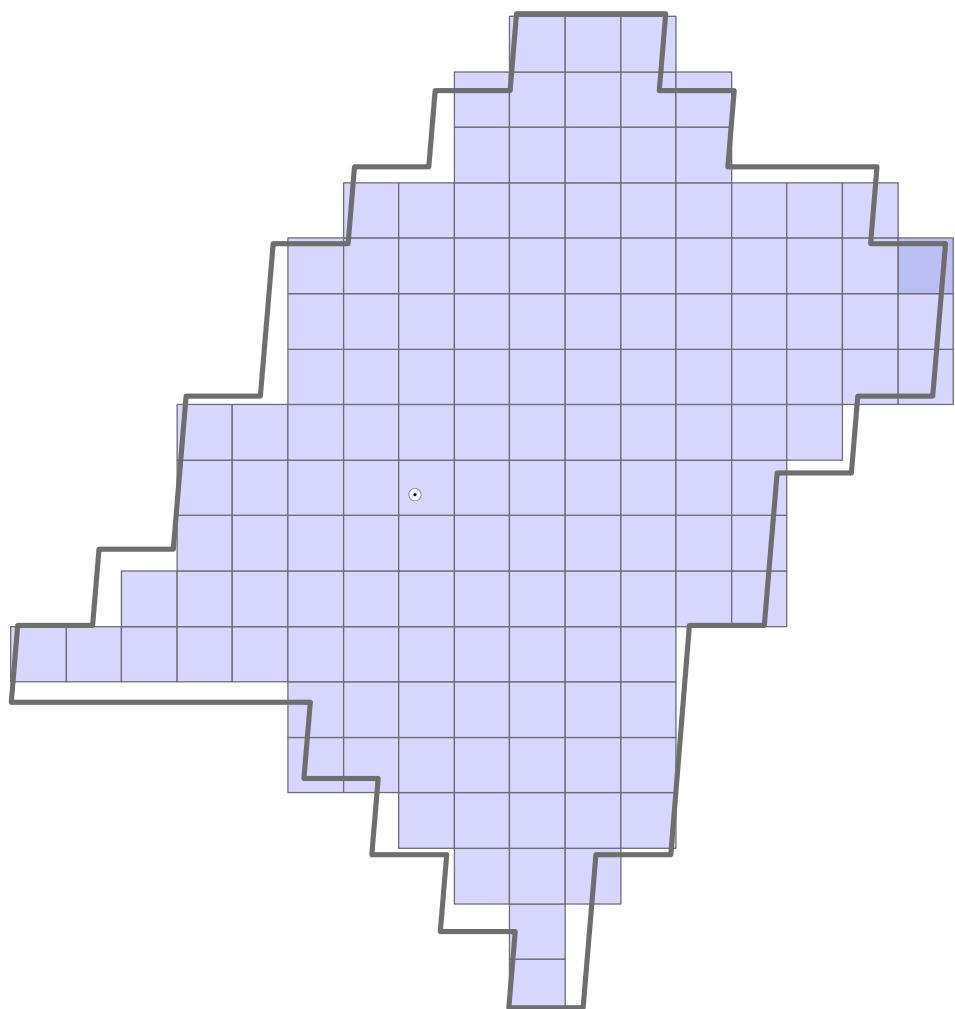


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

11°10'0"E

Euclidean distance raster to the city center of  
Grosseto, Italy  
eFUA\_ID: 3208  
at 1 km resolution



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

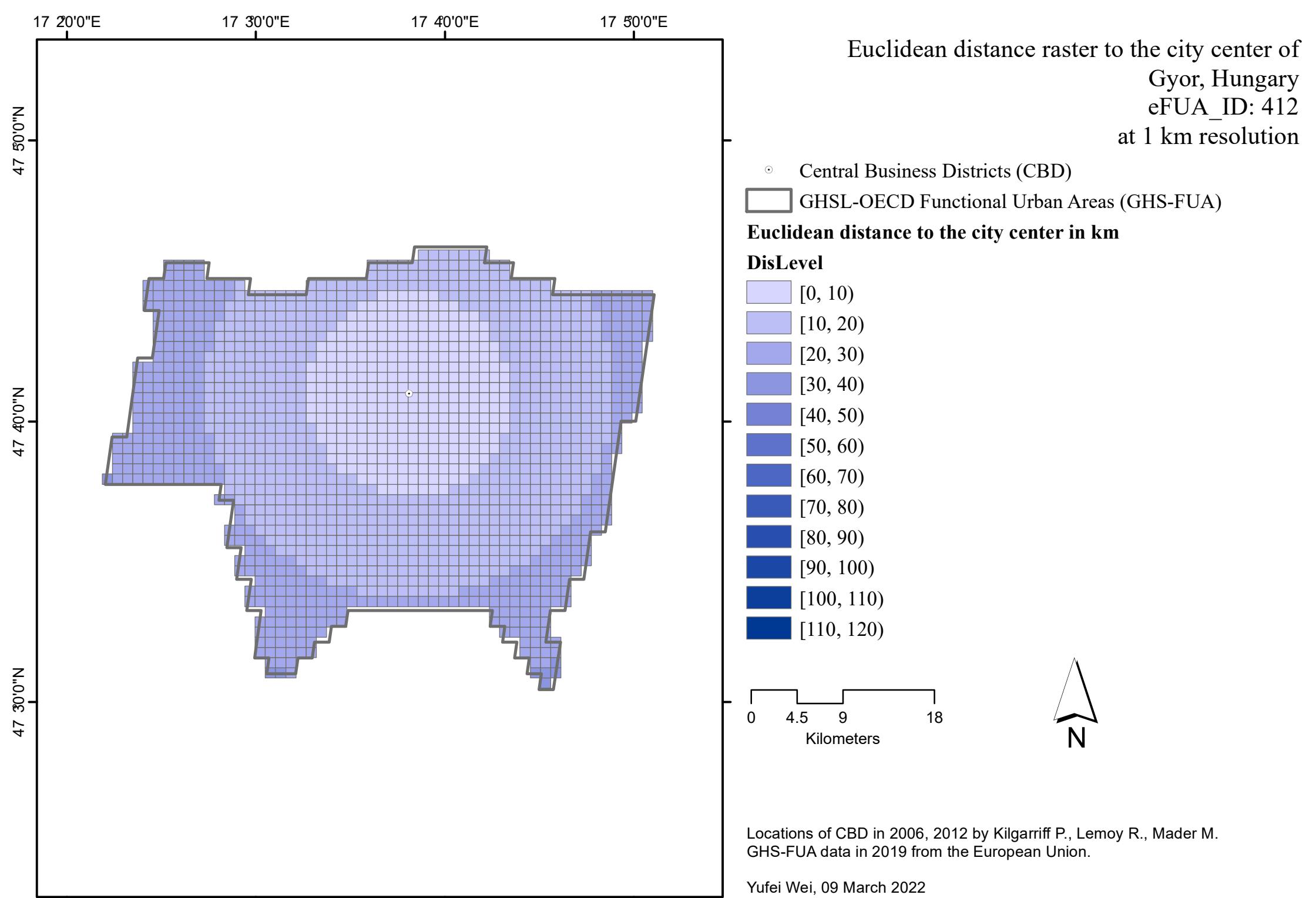
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 1.5 3 6  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



11 50'0"E

12 0'0"E

12 10'0"E

Euclidean distance raster to the city center of  
Halle (Saale), Germany  
eFUA\_ID: 4708  
at 1 km resolution

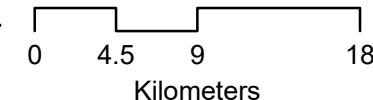
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

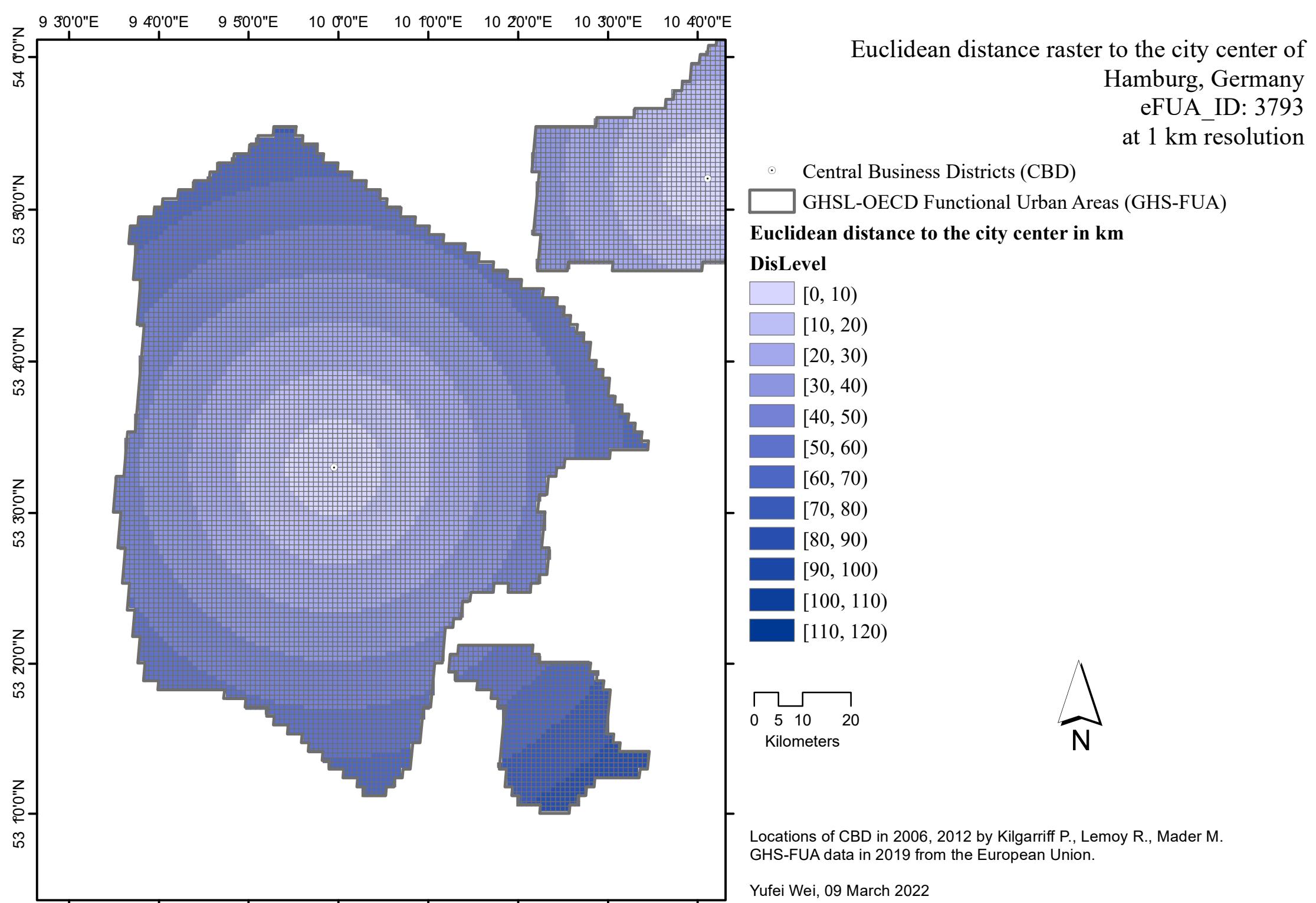
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

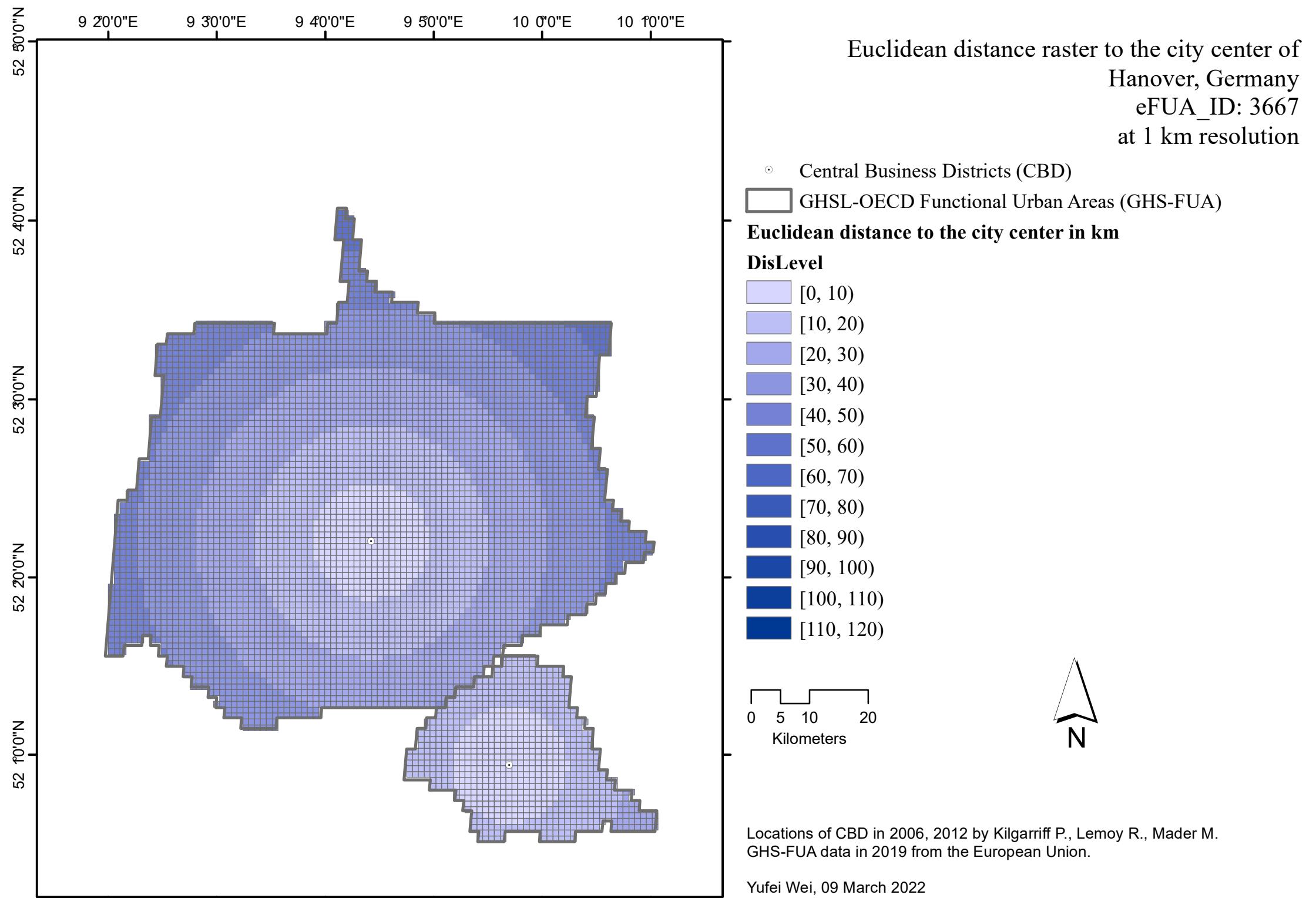


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

Euclidean distance raster to the city center of  
Hamburg, Germany  
eFUA\_ID: 3793  
at 1 km resolution





5 50'0"E

6 0'0"E

6 10'0"E

Euclidean distance raster to the city center of  
Heerlen, Netherlands  
eFUA\_ID: 2901  
at 1 km resolution

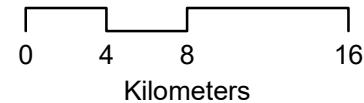
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

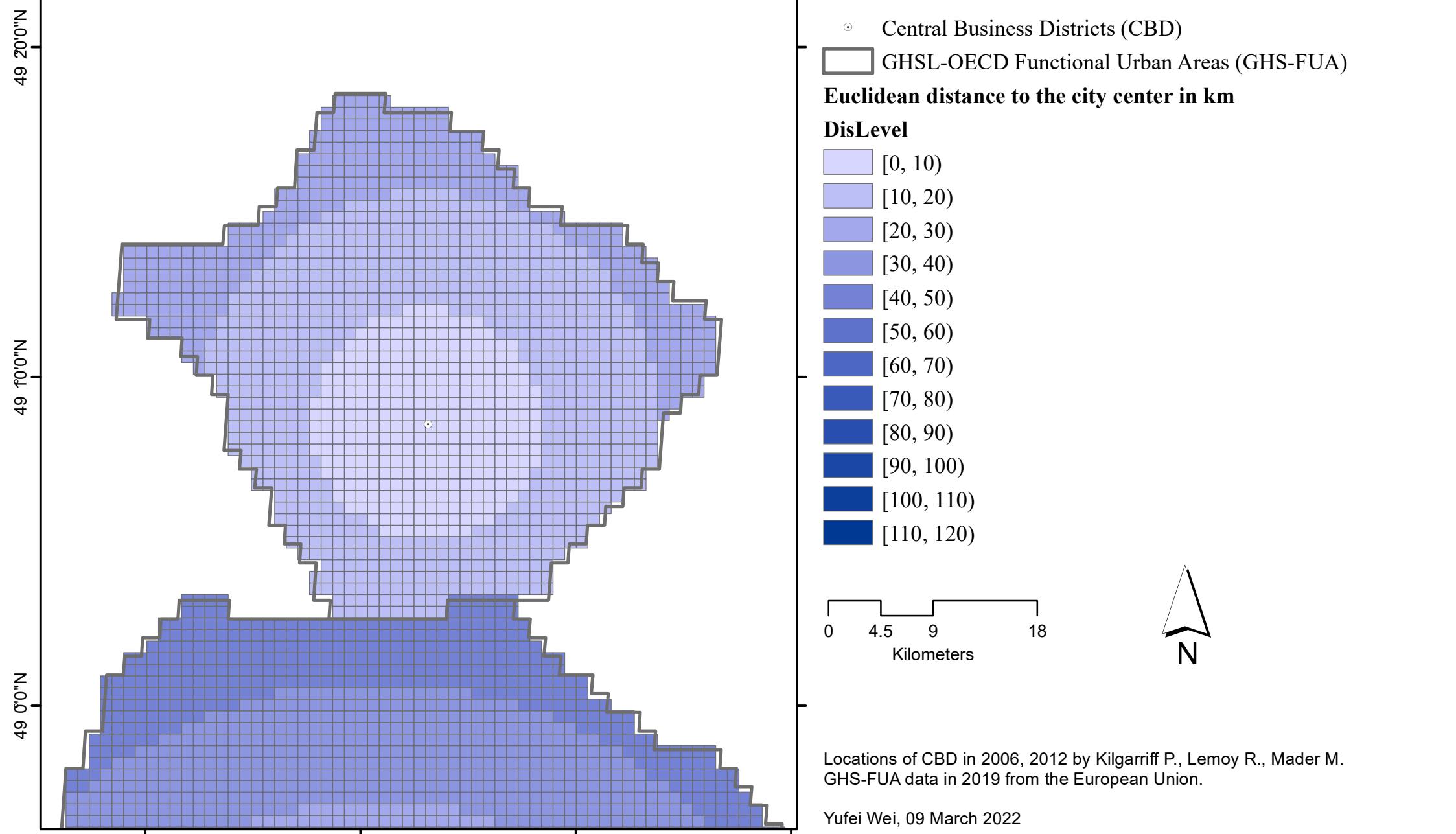
9 0°0"E

9 10°0"E

9 20°0"E

9 30°0"E

Euclidean distance raster to the city center of  
Heilbronn, Germany  
eFUA\_ID: 3754  
at 1 km resolution



12 30'0"E

12 40'0"E

12 50'0"E

13 0'0"E

13 10'0"E

Euclidean distance raster to the city center of  
Helsingborg, Sweden  
eFUA\_ID: 329  
at 1 km resolution

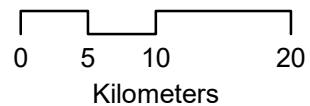
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

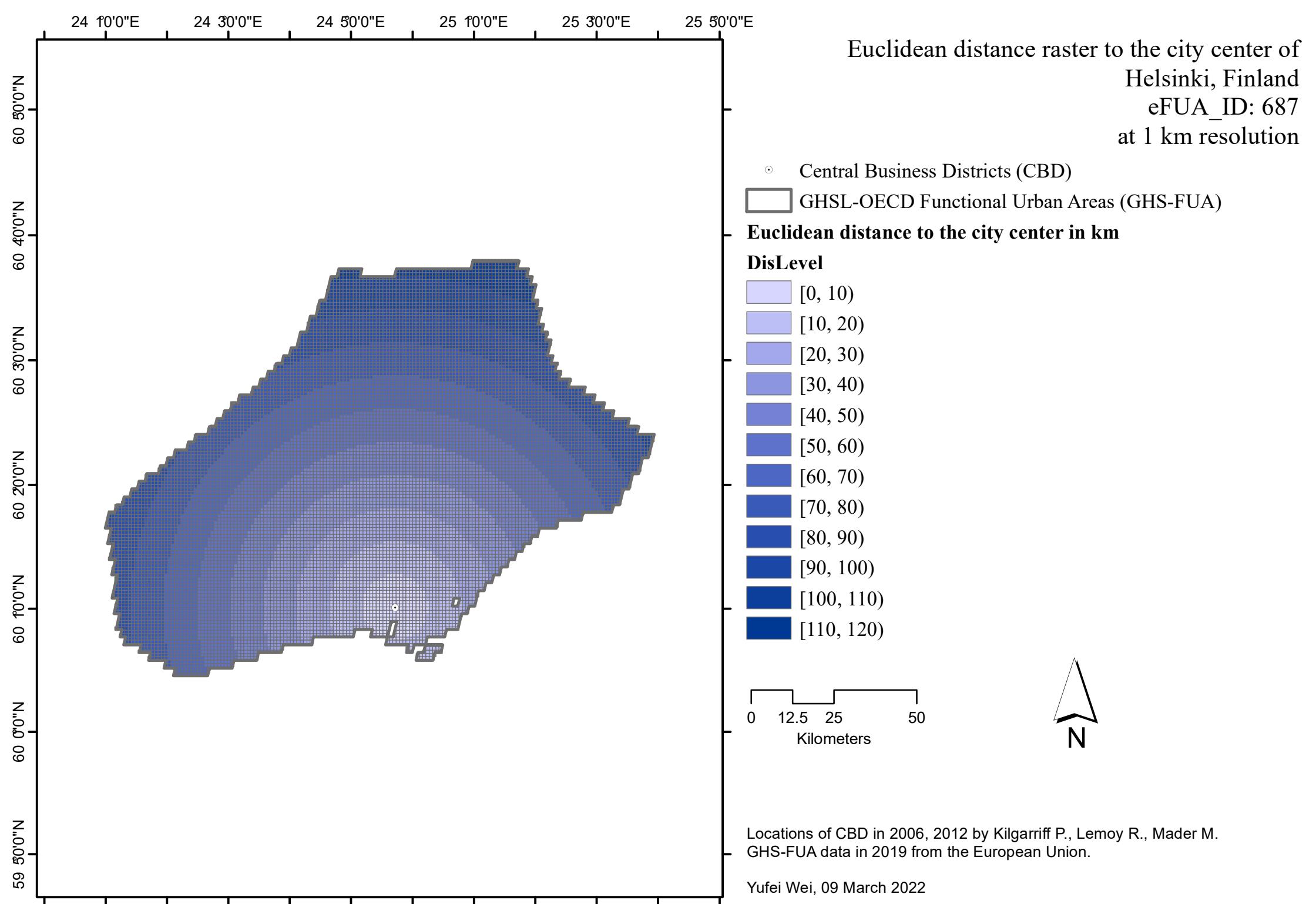
#### DisLevel

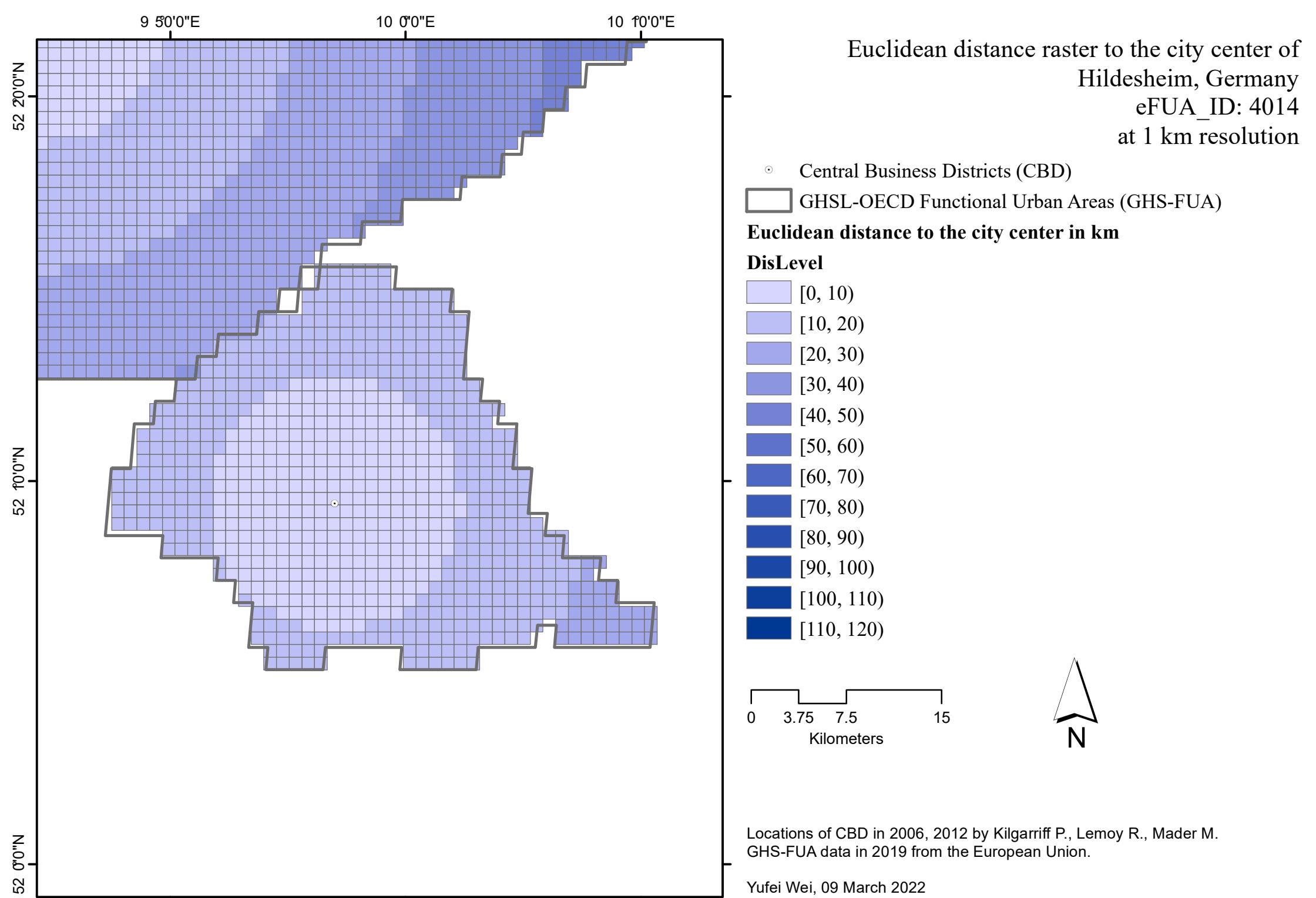
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022





15 40'0"E

15 50'0"E

16 0'0"E

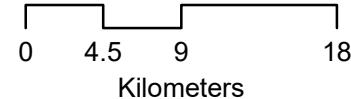
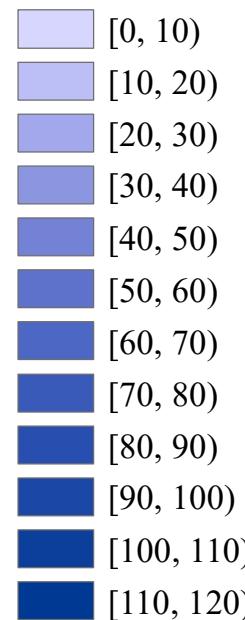
Euclidean distance raster to the city center of  
Hradec Kralove, Czech Republic  
eFUA\_ID: 1063  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

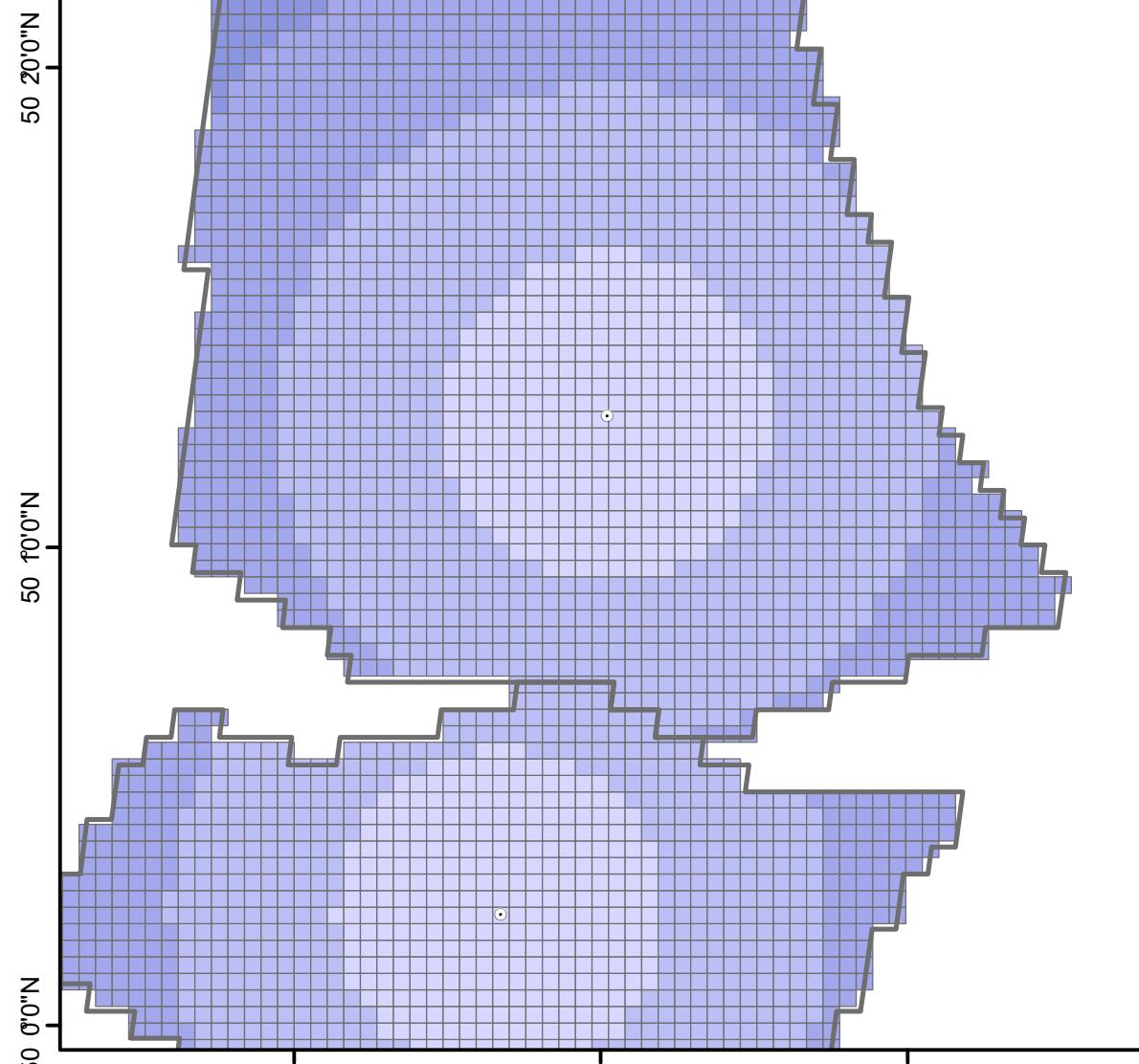
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



7 0'0"W

6 50'0"W

Euclidean distance raster to the city center of  
Huelva, Spain  
eFUA\_ID: 1395  
at 1 km resolution

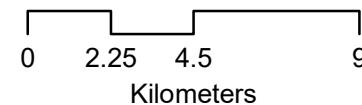
37 20'0"N  
37 10'0"N

- Central Business Districts (CBD)
- ◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

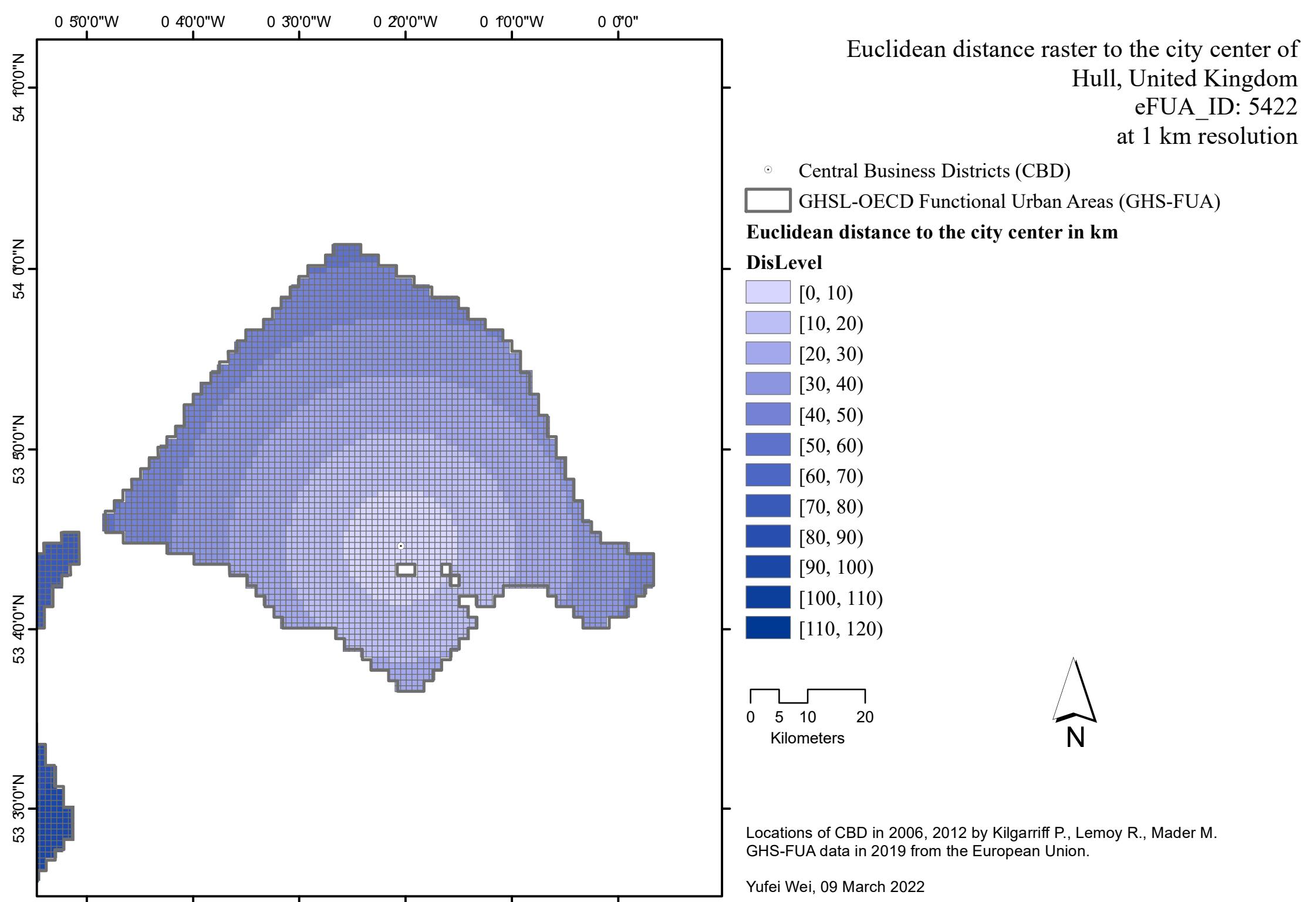
#### DisLevel

[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



120°E

39°N

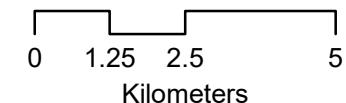
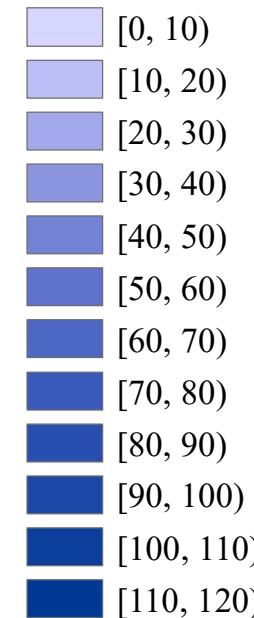
Euclidean distance raster to the city center of  
Ibiza, Spain  
eFUA\_ID: 4391  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

11 20'0"E

11 30'0"E

11 40'0"E

Euclidean distance raster to the city center of  
Ingolstadt, Germany  
eFUA\_ID: 4679  
at 1 km resolution

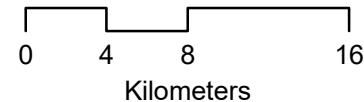
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

11 10'0"E

11 20'0"E

11 30'0"E

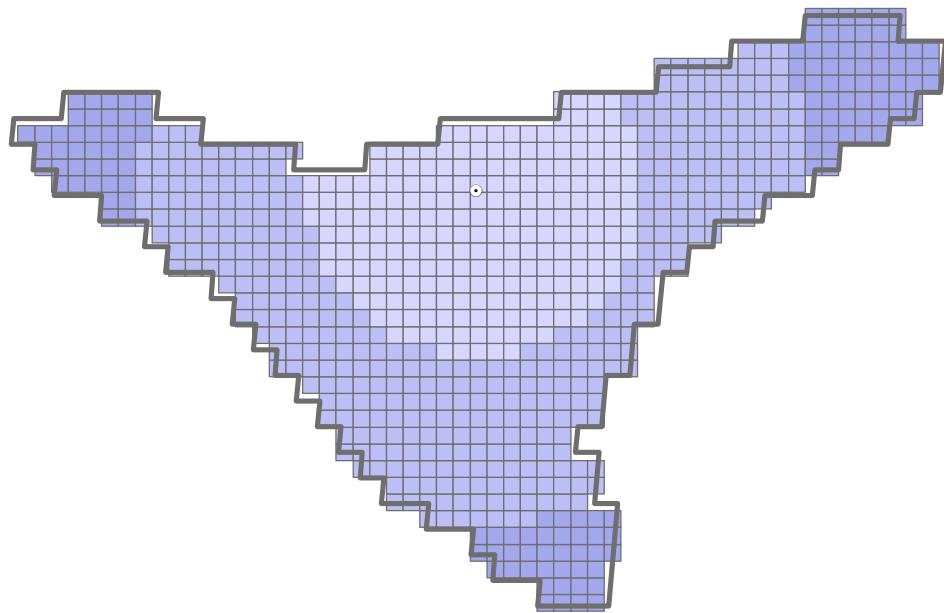
11 40'0"E

Euclidean distance raster to the city center of  
Innsbruck, Austria  
eFUA\_ID: 8  
at 1 km resolution

47 20'0"N

47 10'0"N

47 0'0"N



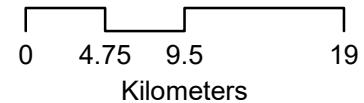
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

18 10'0"E

18 20'0"E

18 30'0"E

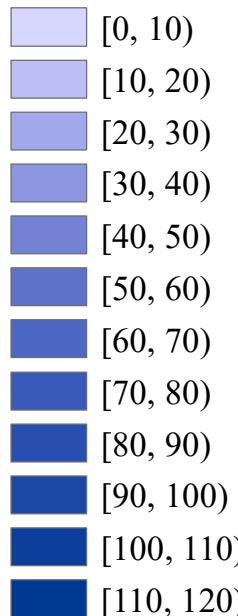
Euclidean distance raster to the city center of  
Inowroclaw, Poland  
eFUA\_ID: 2186  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

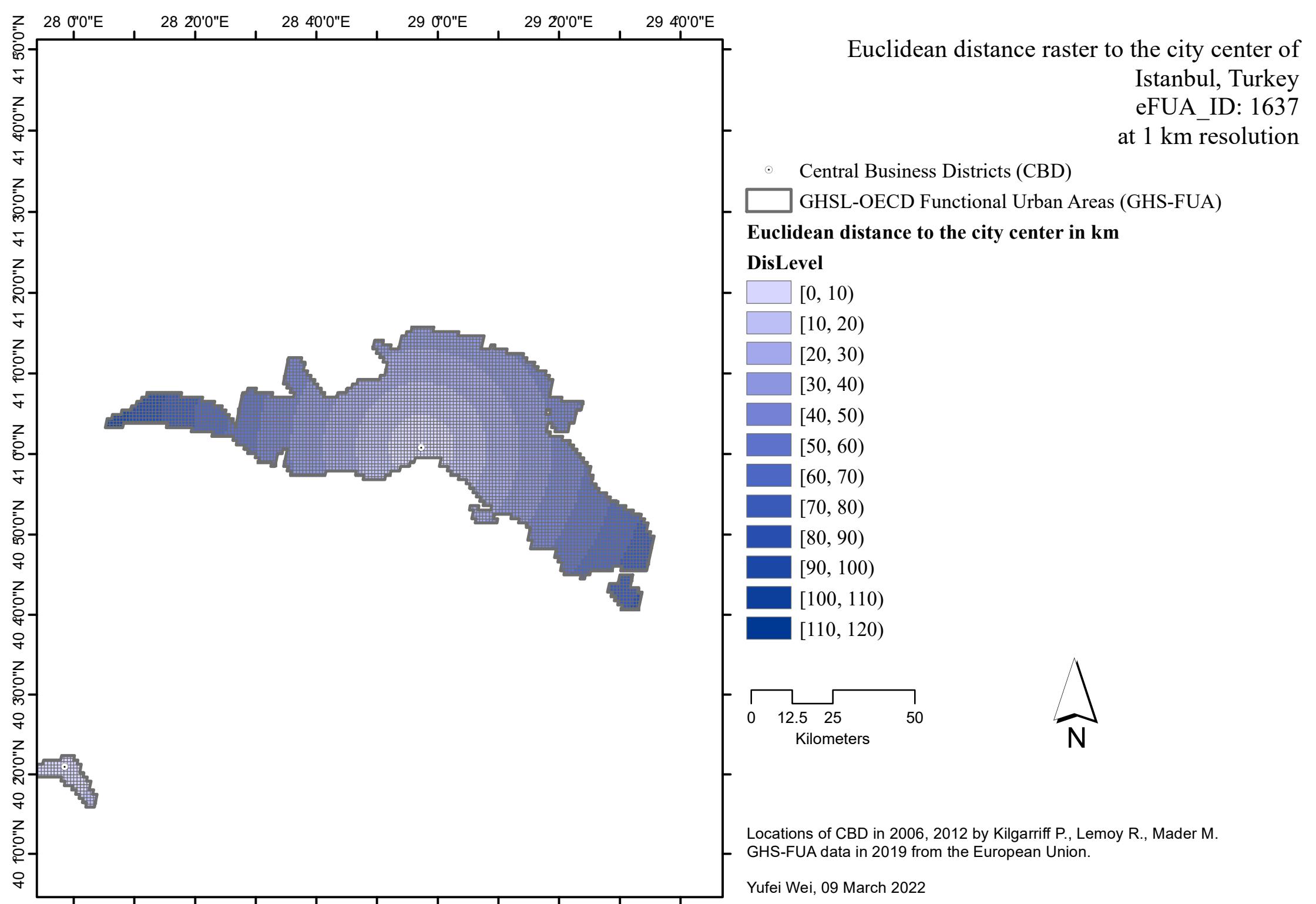
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



3 50'0"W

3 40'0"W

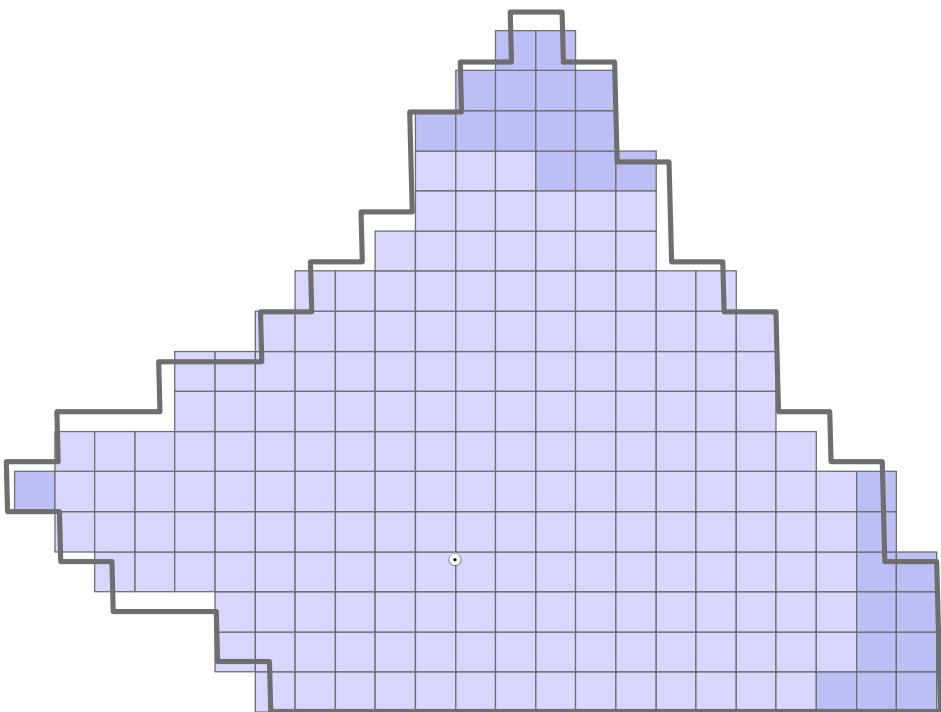
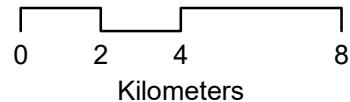
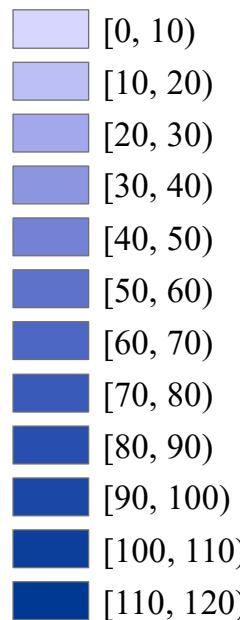
Euclidean distance raster to the city center of  
Jaen, Spain  
eFUA\_ID: 3198  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

15 40'0"E

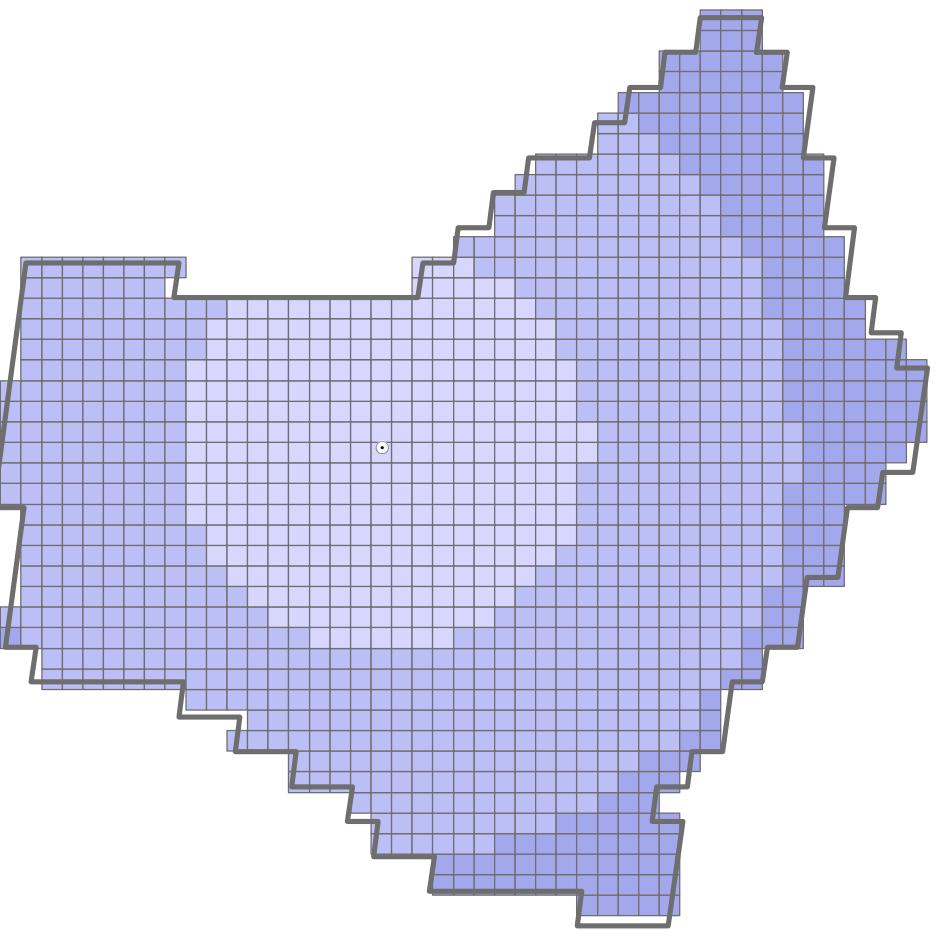
15 50'0"E

16 0'0"E

Euclidean distance raster to the city center of  
Jelenia Gora, Poland  
eFUA\_ID: 876  
at 1 km resolution

51 0'0"N

50 50'0"N



○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

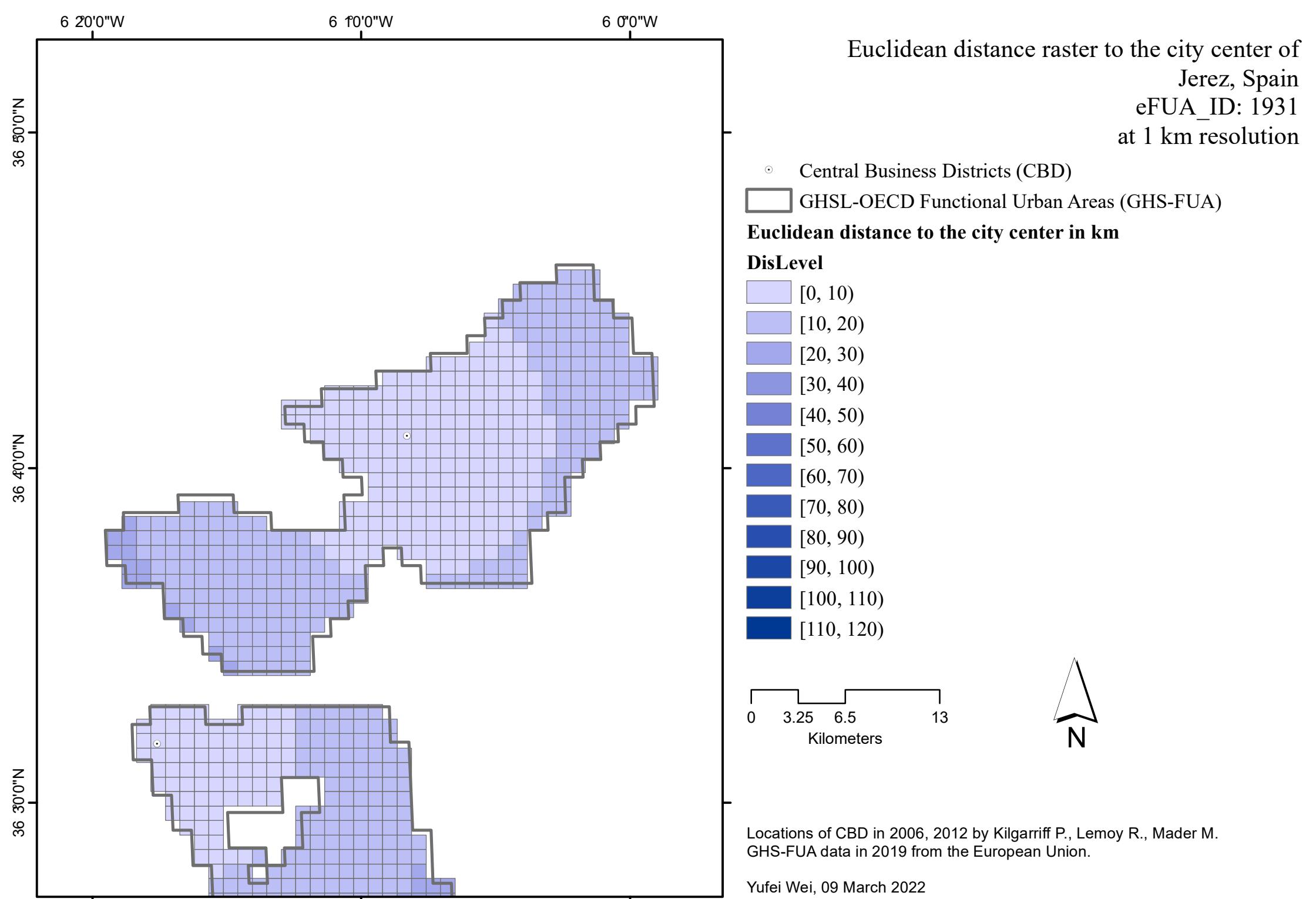
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 3.75 7.5 15  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



18 0'0"E

18 10'0"E

18 20'0"E

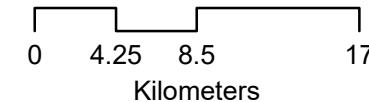
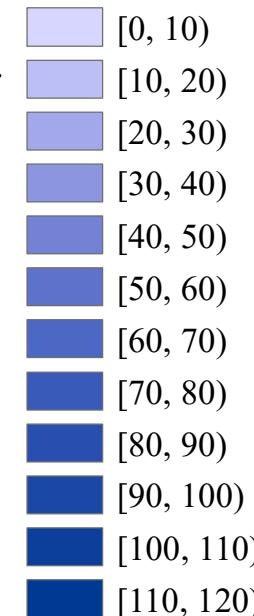
Euclidean distance raster to the city center of  
Kalisz, Poland  
eFUA\_ID: 2259  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

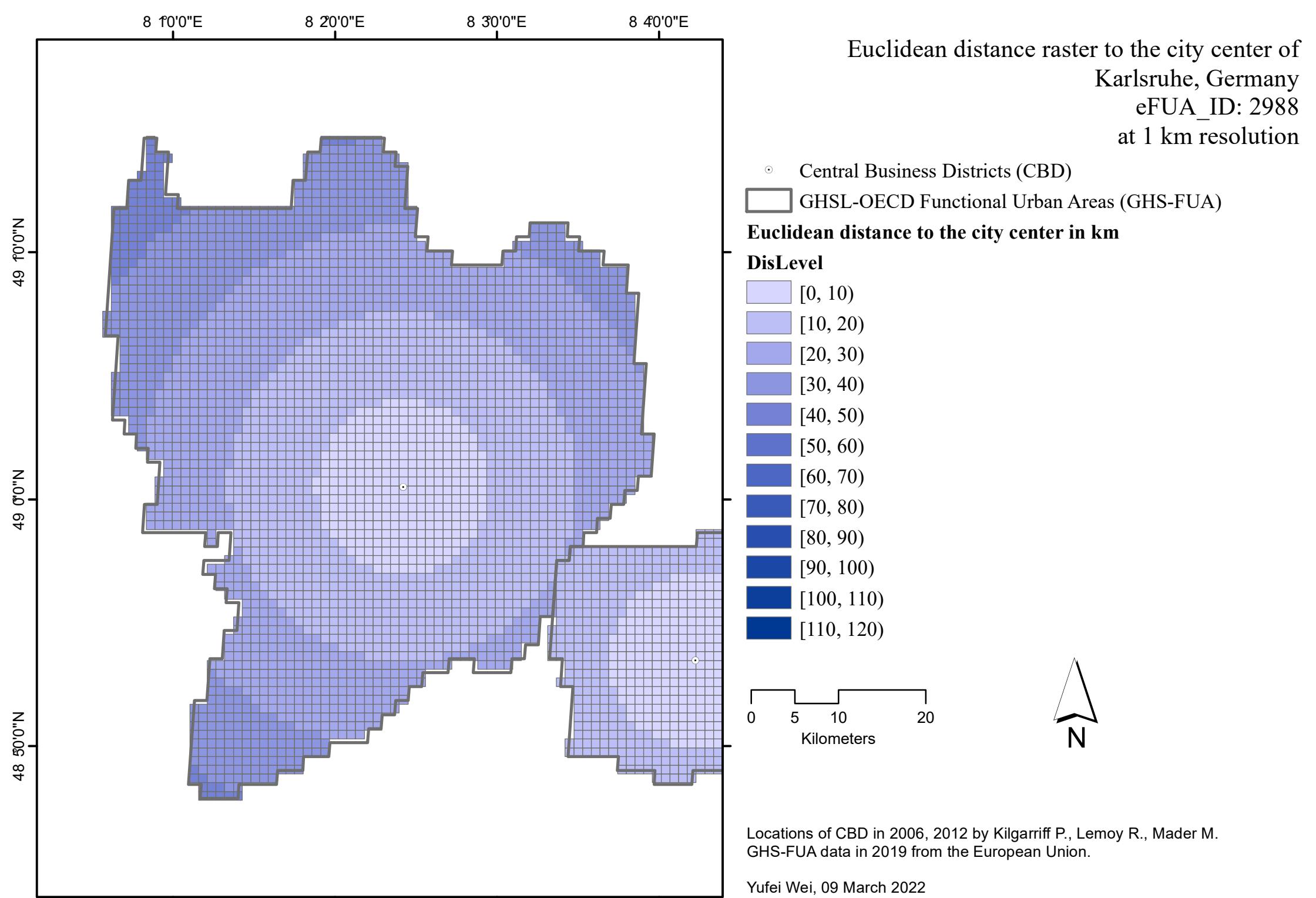
**Euclidean distance to the city center in km**

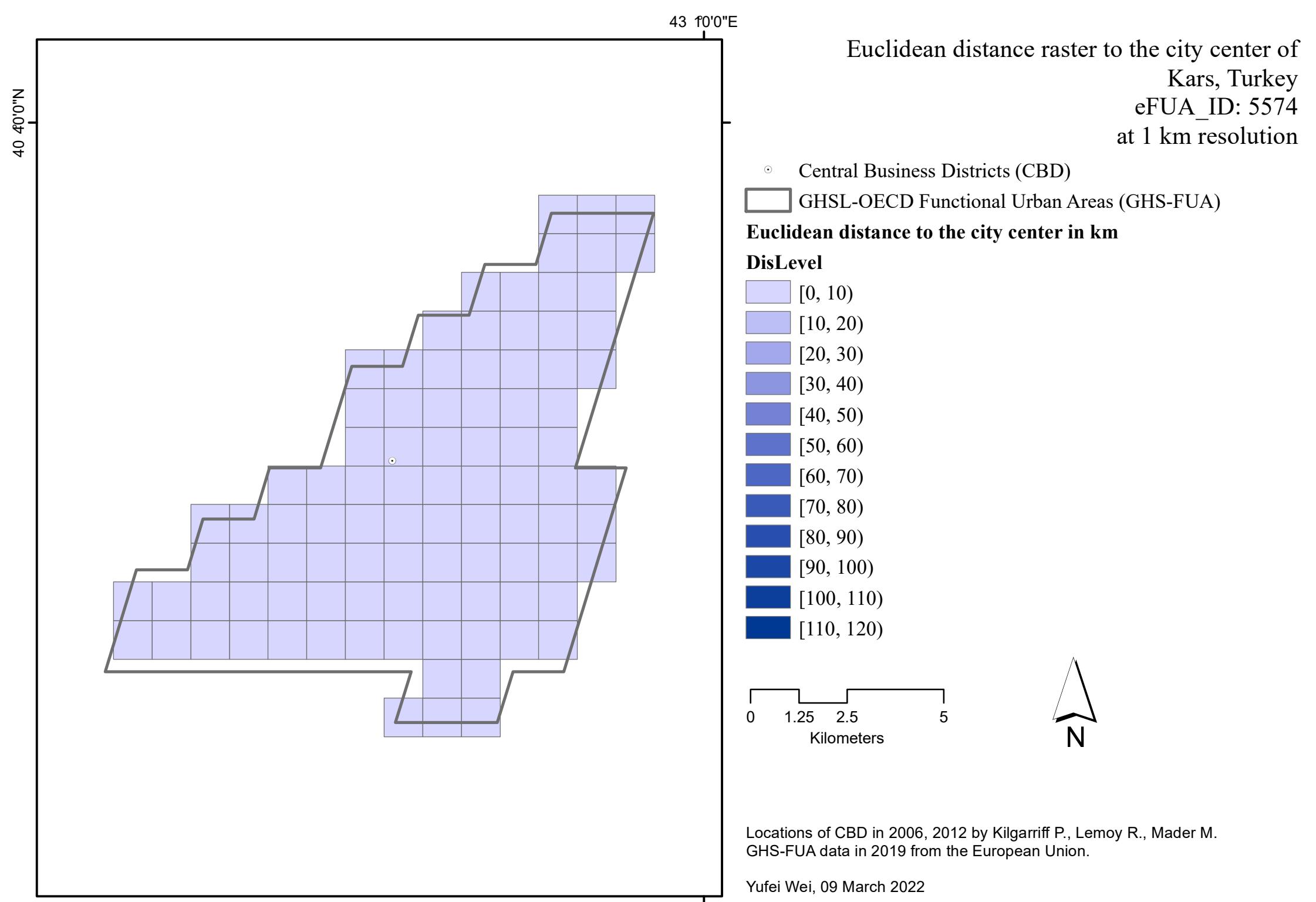
**DisLevel**

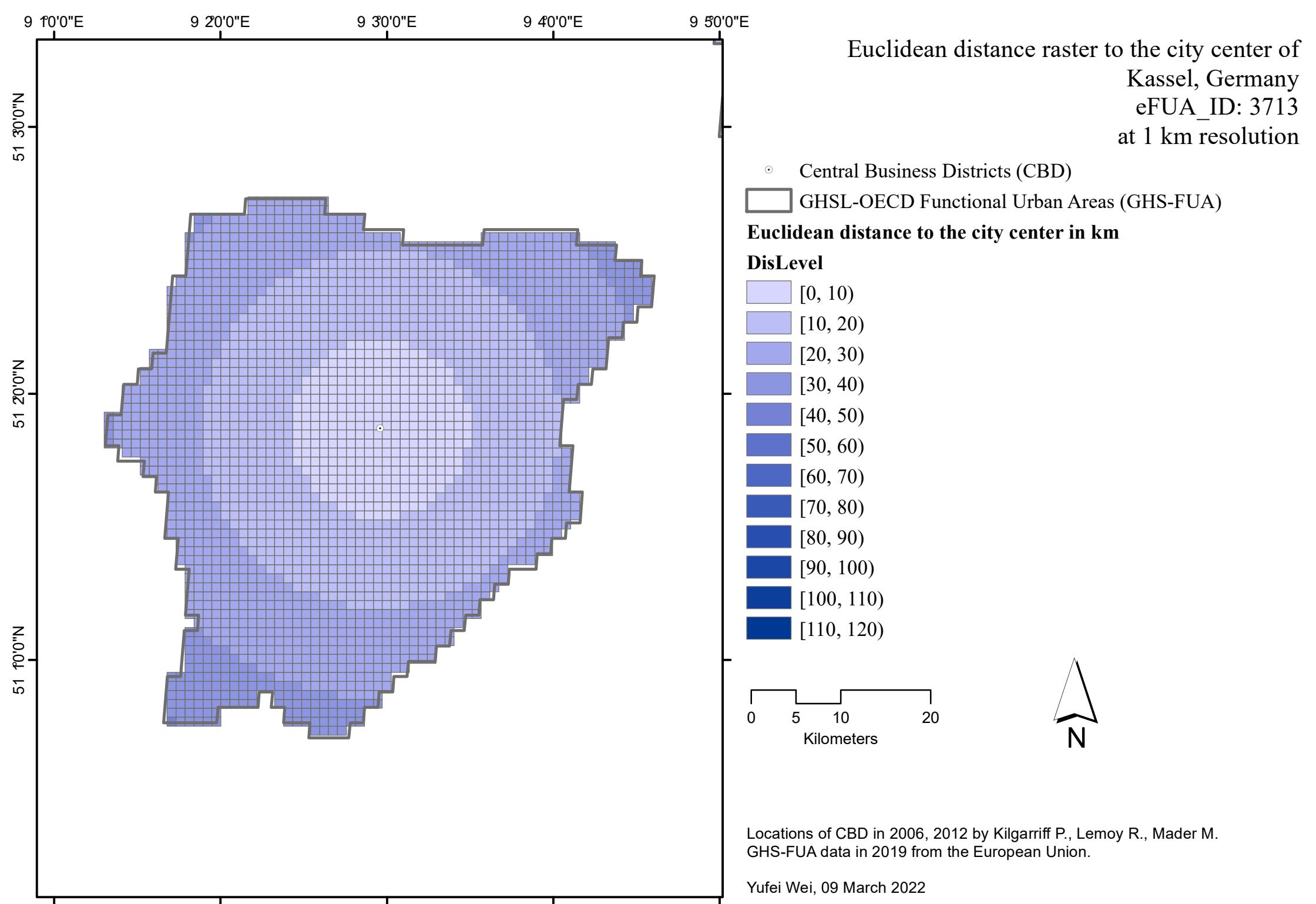


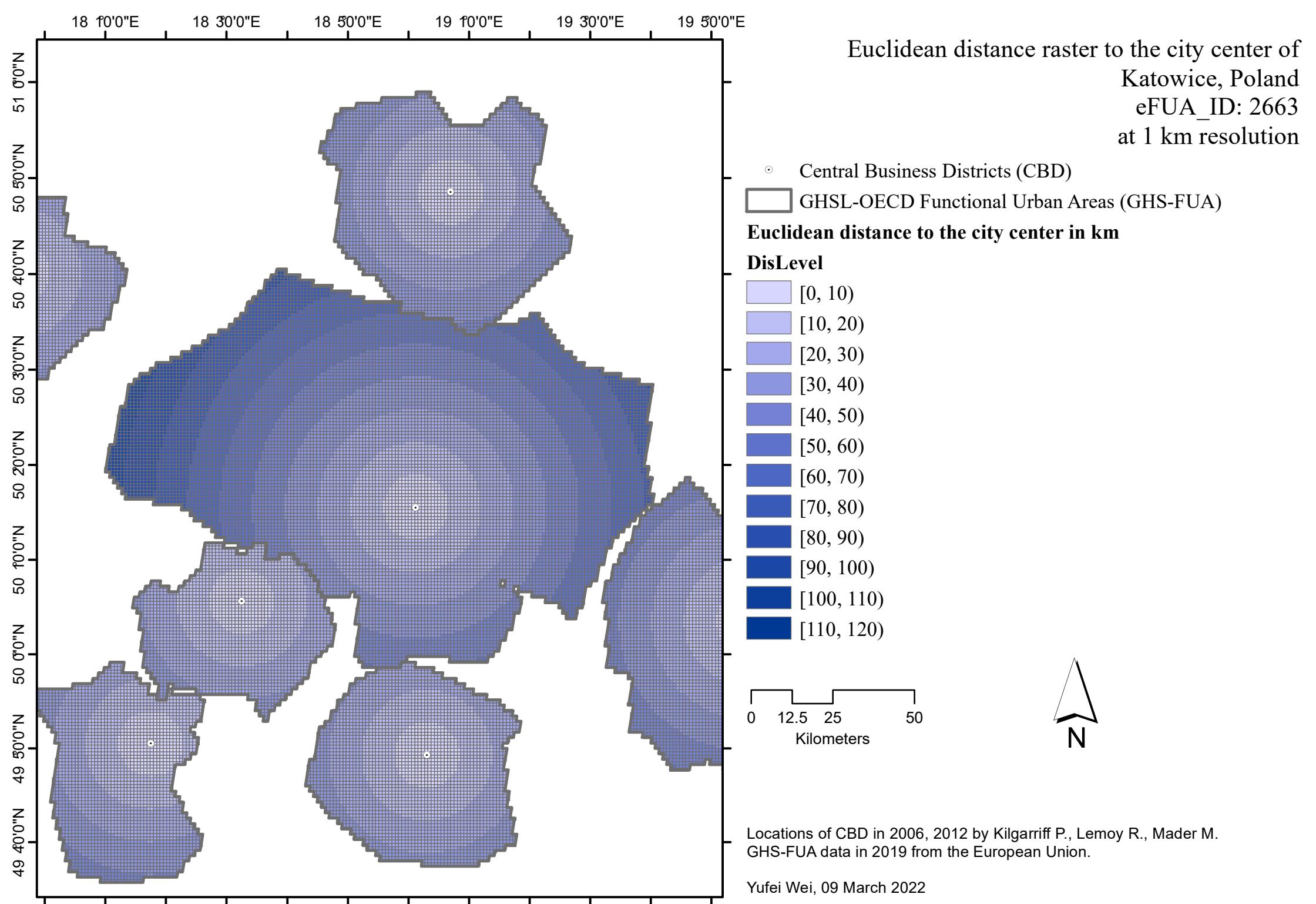
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

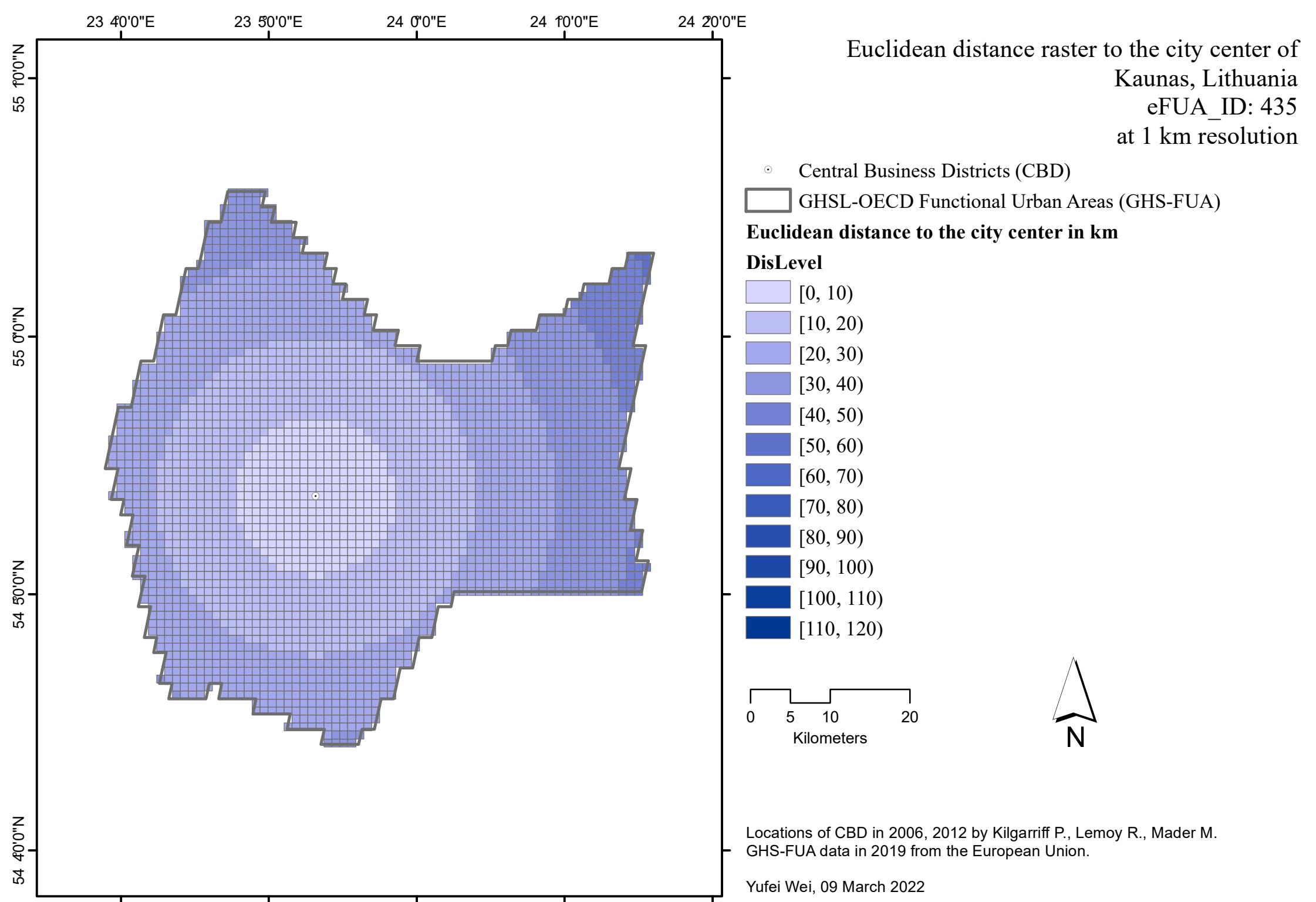
Yufei Wei, 09 March 2022

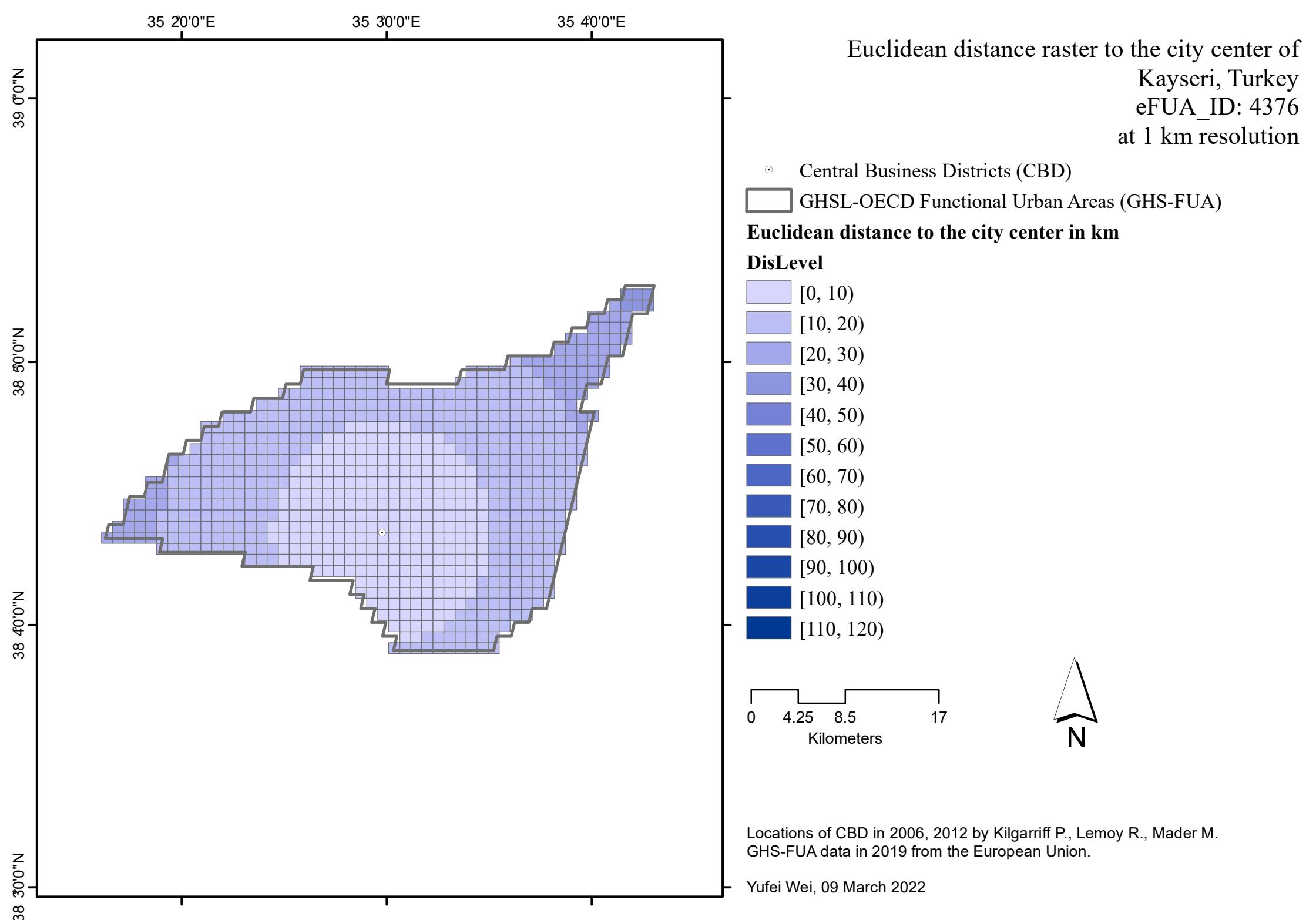












9 50'0"E

10 0'0"E

10 10'0"E

10 20'0"E

54 30'0"N

54 20'0"N

54 10'0"N

Euclidean distance raster to the city center of  
Kiel, Germany  
eFUA\_ID: 3942  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)

[10, 20)

[20, 30)

[30, 40)

[40, 50)

[50, 60)

[60, 70)

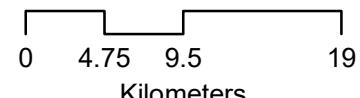
[70, 80)

[80, 90)

[90, 100)

[100, 110)

[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

20 30'0"E

20 40'0"E

20 50'0"E

Euclidean distance raster to the city center of  
Kielce, Poland  
eFUA\_ID: 3323  
at 1 km resolution

51 0'0"N

50 50'0"N

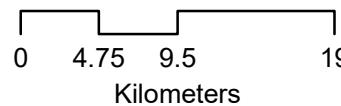
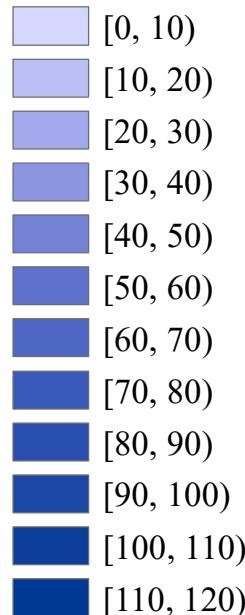
50 40'0"N

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

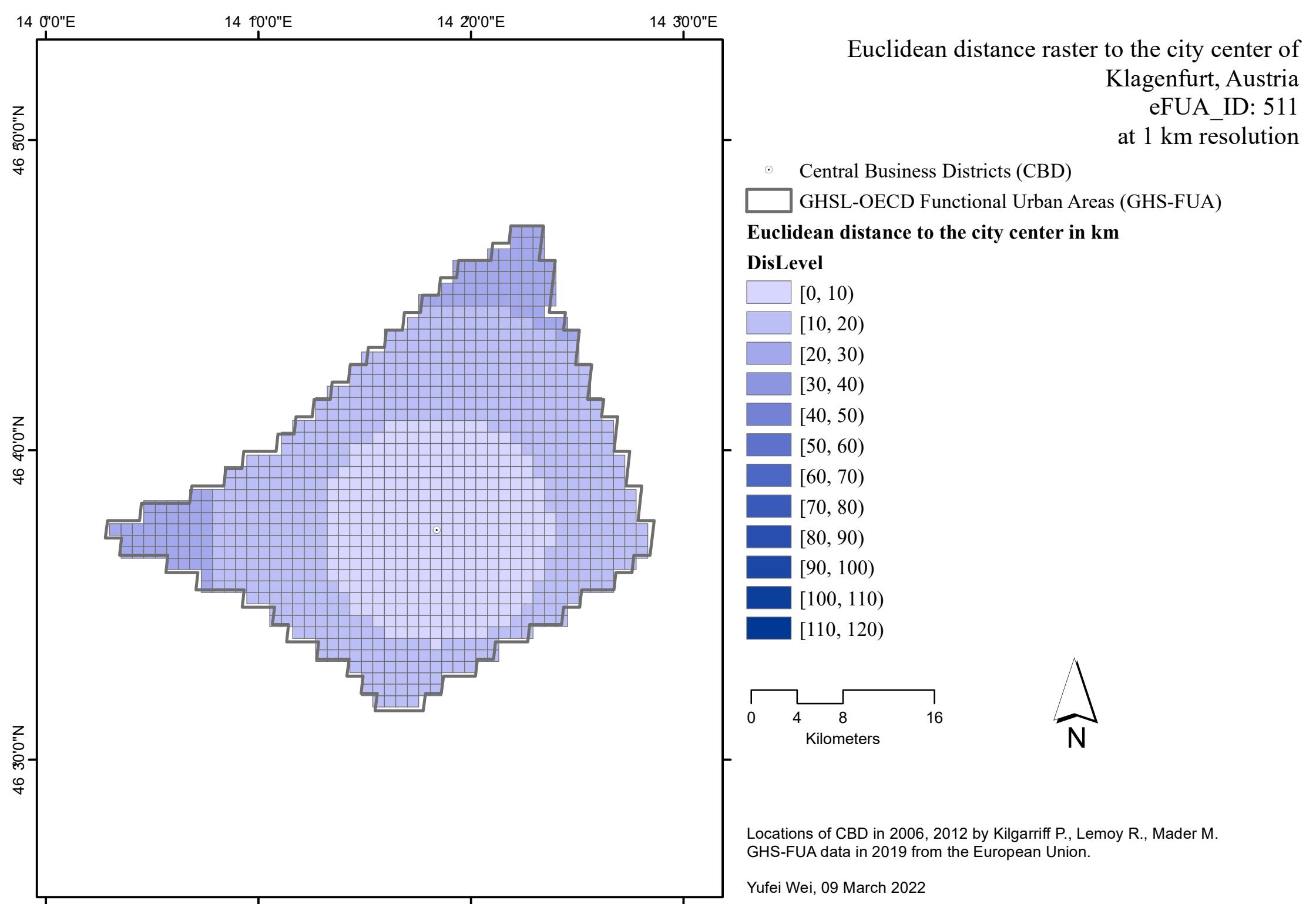
**Euclidean distance to the city center in km**

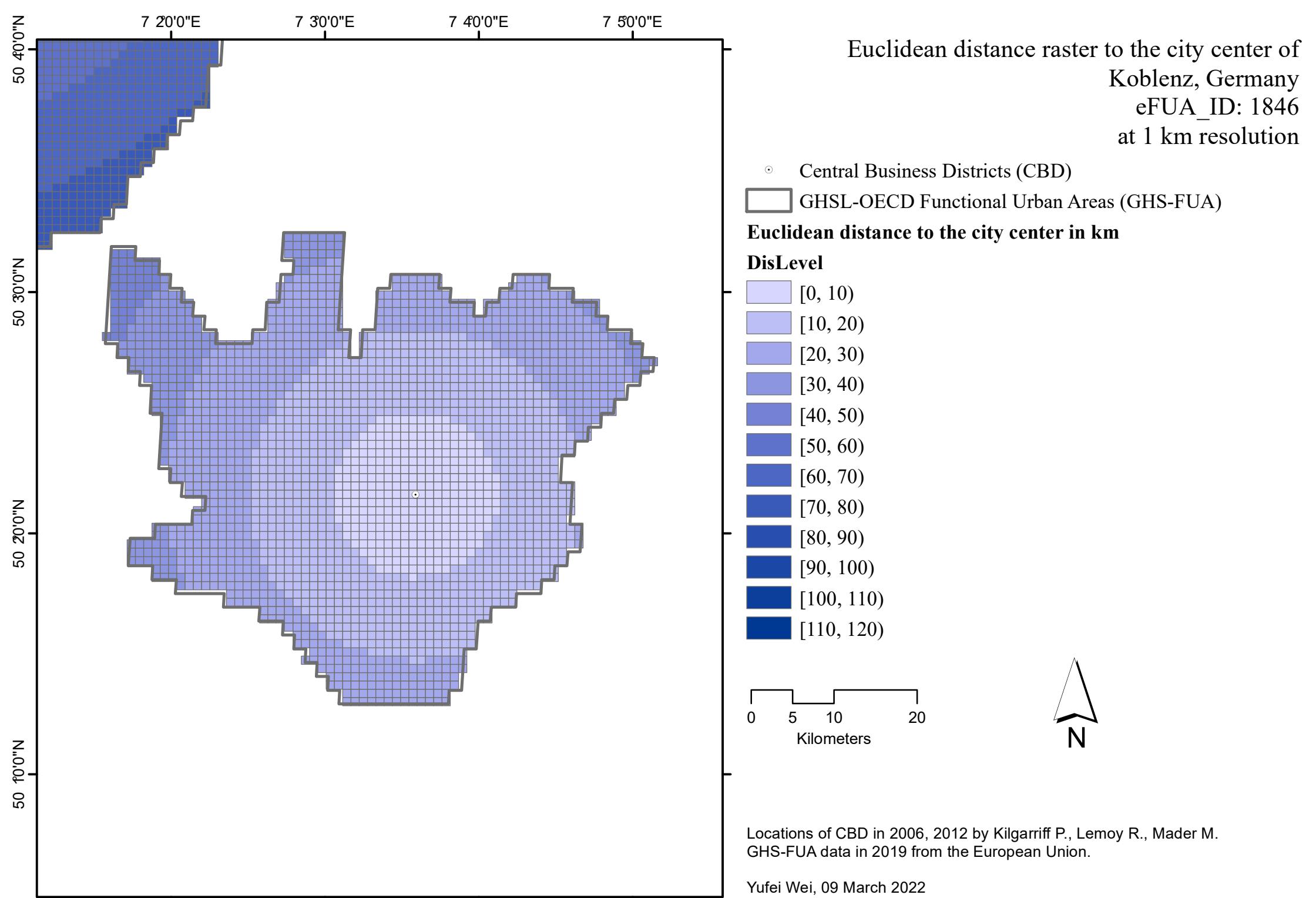
**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022





3 0°0'E

3 10°0'E

3 20°0'E

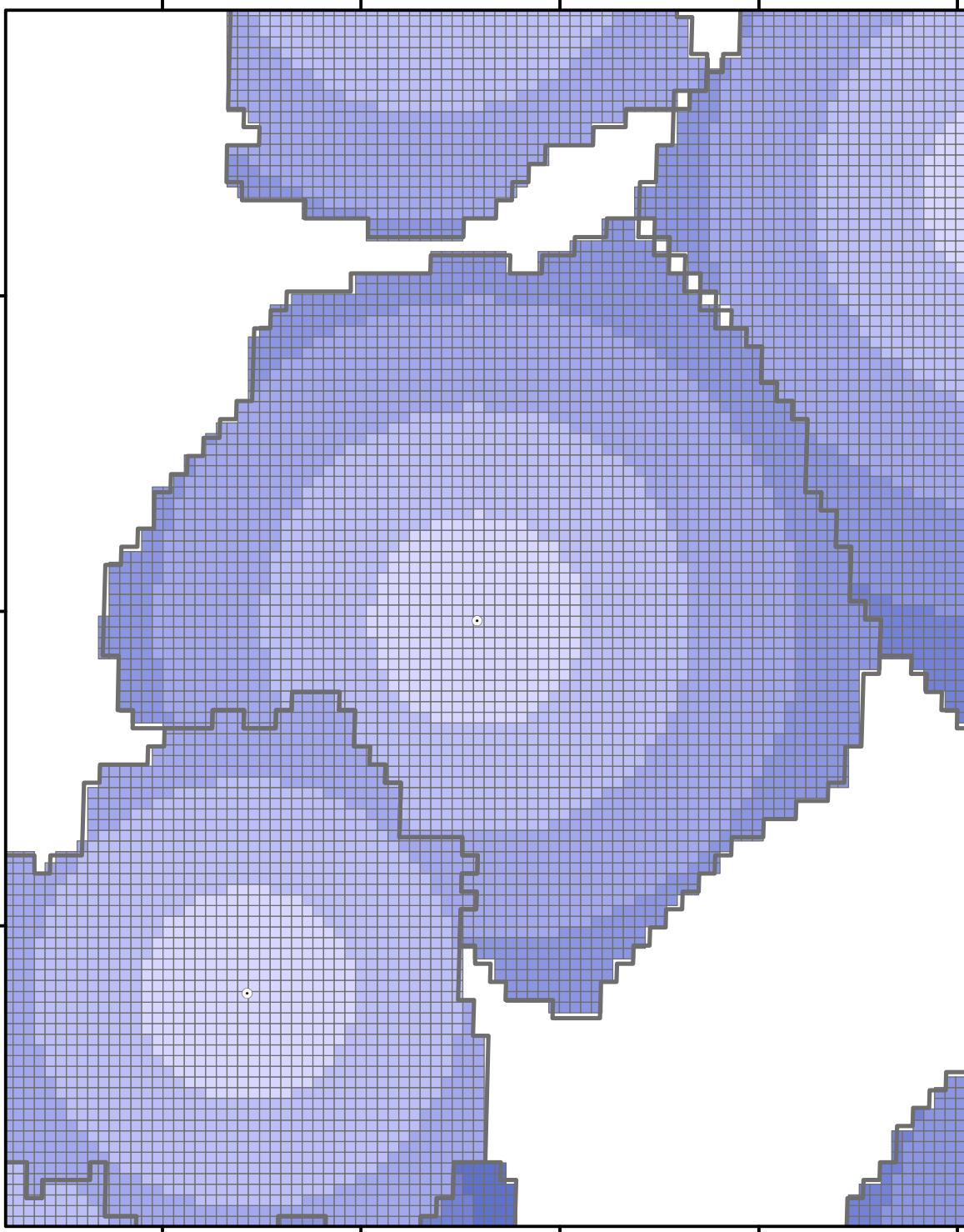
3 30°0'E

3 40°0'E

51 0'0"N

50 50'0"N

50 40'0"N



Euclidean distance raster to the city center of  
Kortrijk, Belgium  
eFUA\_ID: 514  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)

[10, 20)

[20, 30)

[30, 40)

[40, 50)

[50, 60)

[60, 70)

[70, 80)

[80, 90)

[90, 100)

[100, 110)

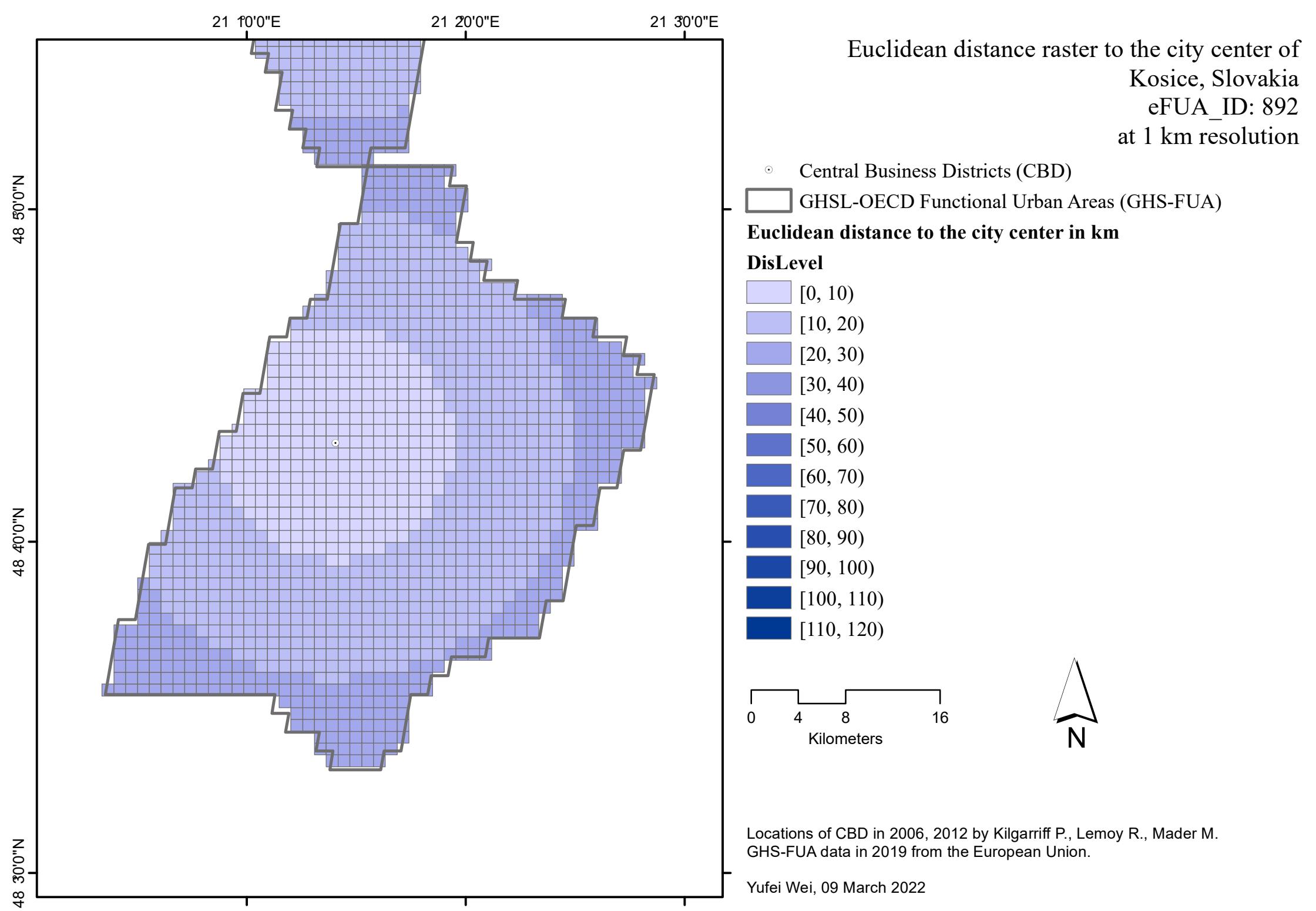
[110, 120)

0 5 10 20  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

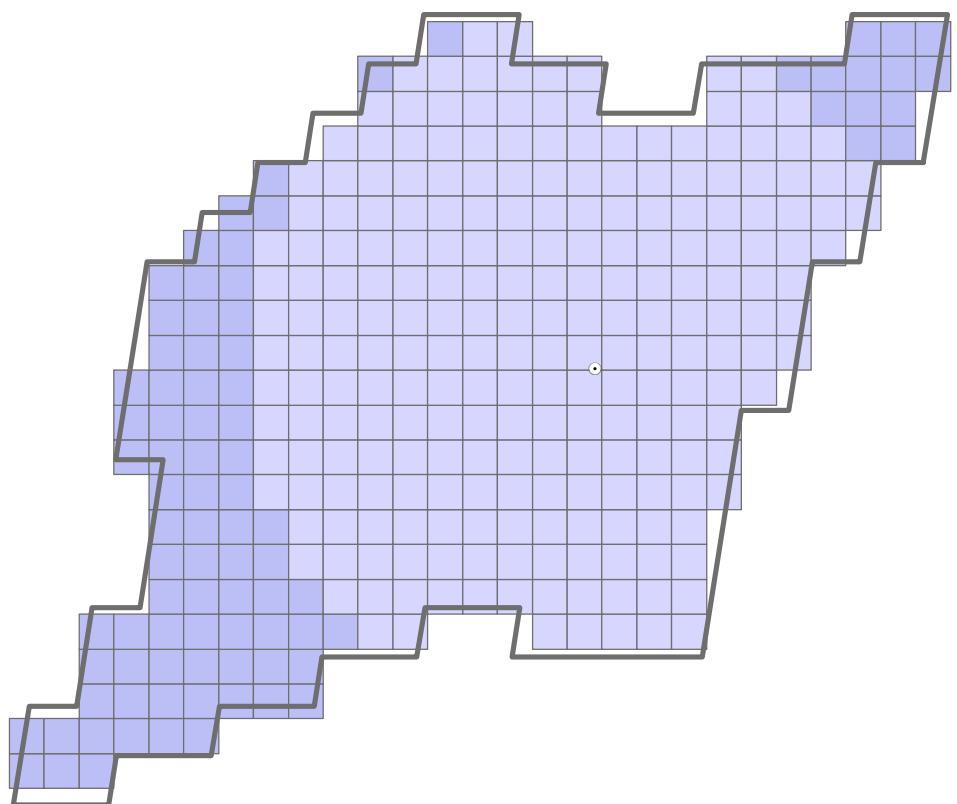
Yufei Wei, 09 March 2022



20 50'0"E

21 0'0"E

Euclidean distance raster to the city center of  
Kragujevac, Serbia  
eFUA\_ID: 1343  
at 1 km resolution



○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

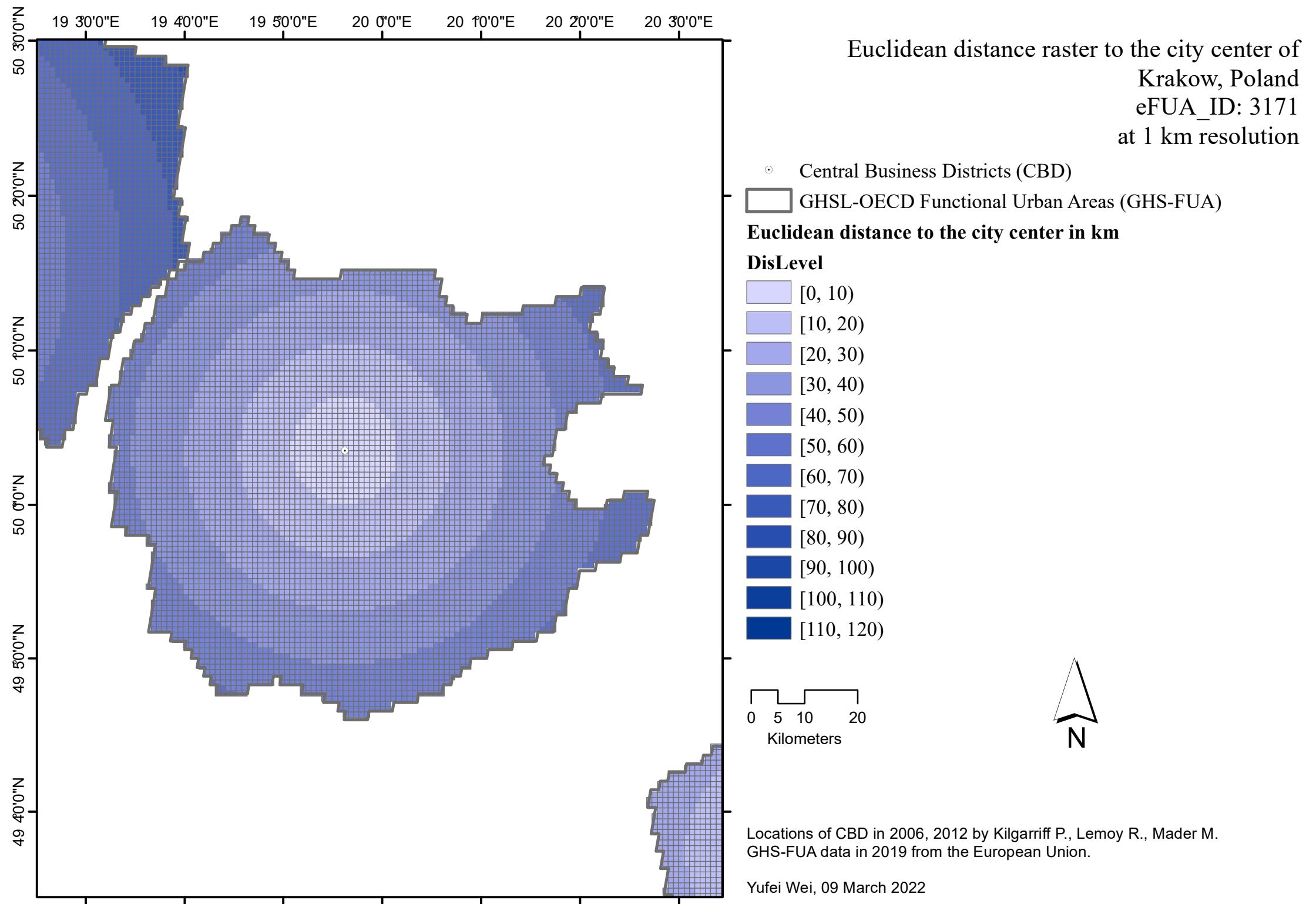
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 2.25 4.5 9  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022



9 50'0"E

10 0'0"E

Euclidean distance raster to the city center of  
La Spezia, Italy  
eFUA\_ID: 2168  
at 1 km resolution

○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)

[10, 20)

[20, 30)

[30, 40)

[40, 50)

[50, 60)

[60, 70)

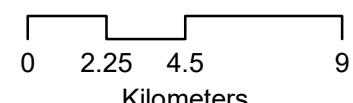
[70, 80)

[80, 90)

[90, 100)

[100, 110)

[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

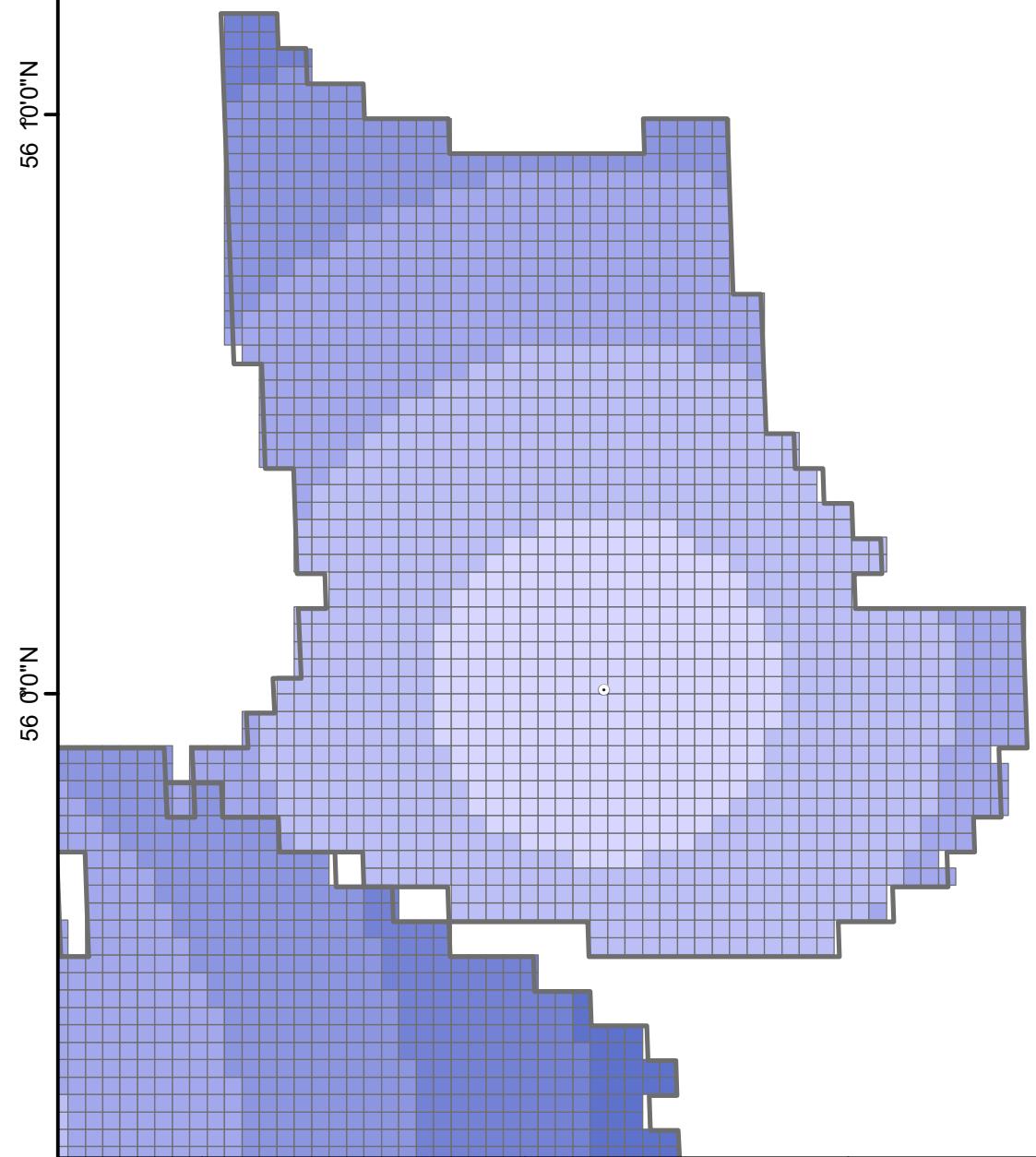
Yufei Wei, 09 March 2022

4 0'0"W

3 50'0"W

3 40'0"W

Euclidean distance raster to the city center of  
Larbert, United Kingdom  
eFUA\_ID: 1934  
at 1 km resolution



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 4.25 8.5 17  
Kilometers



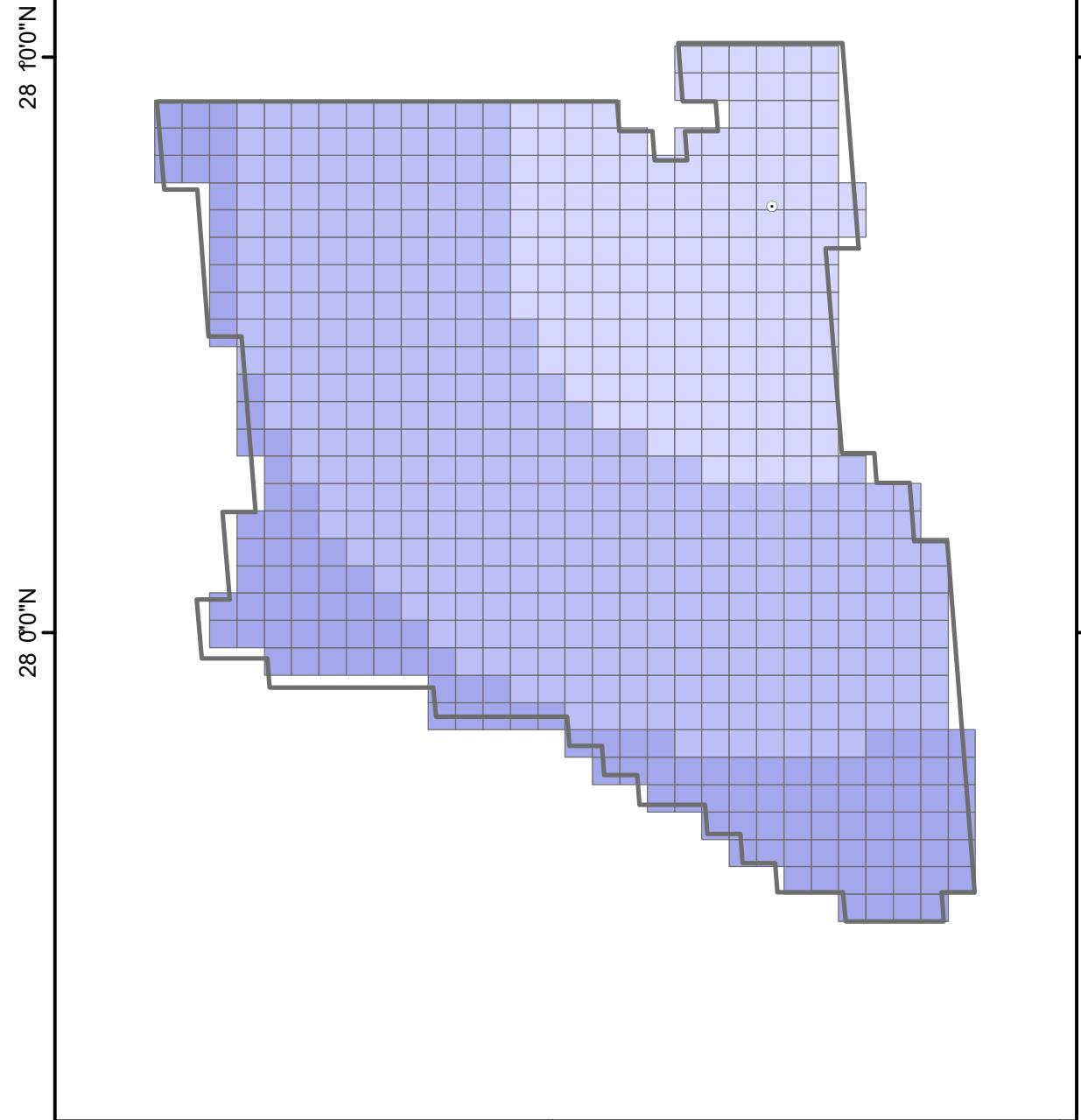
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

15 30'0"W

15 20'0"W

Euclidean distance raster to the city center of  
Las Palmas de Gran Canaria, Spain  
eFUA\_ID: 543  
at 1 km resolution



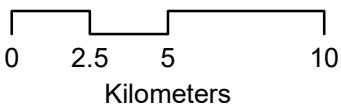
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

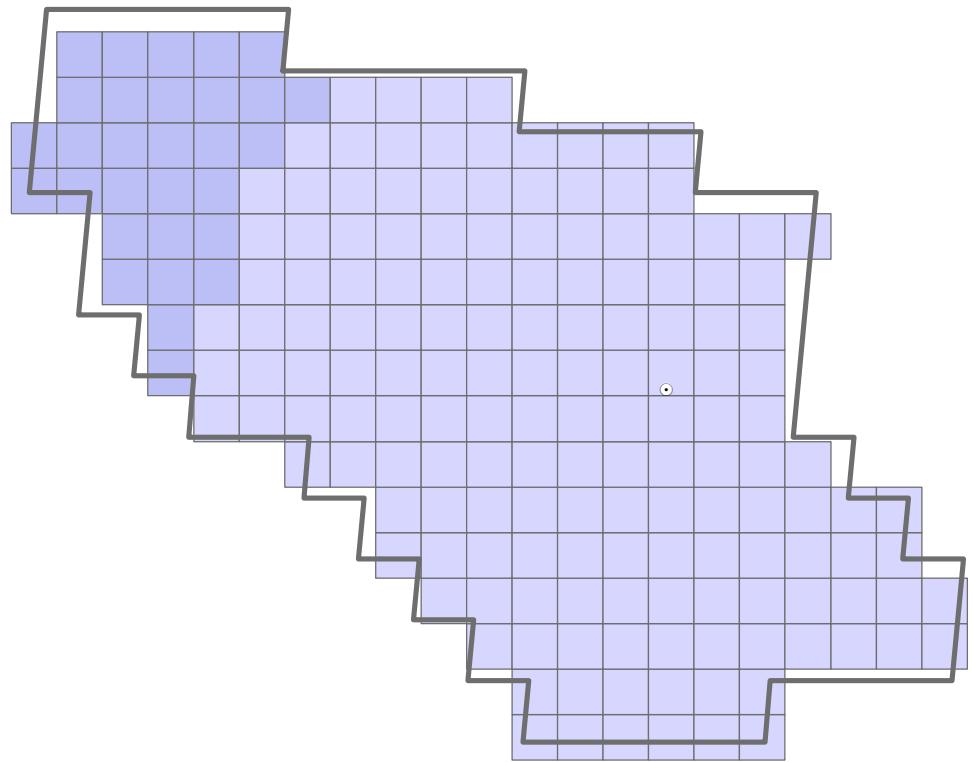


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 09 March 2022

12°50'0"E

Euclidean distance raster to the city center of  
Latina, Italy  
eFUA\_ID: 4094  
at 1 km resolution



○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

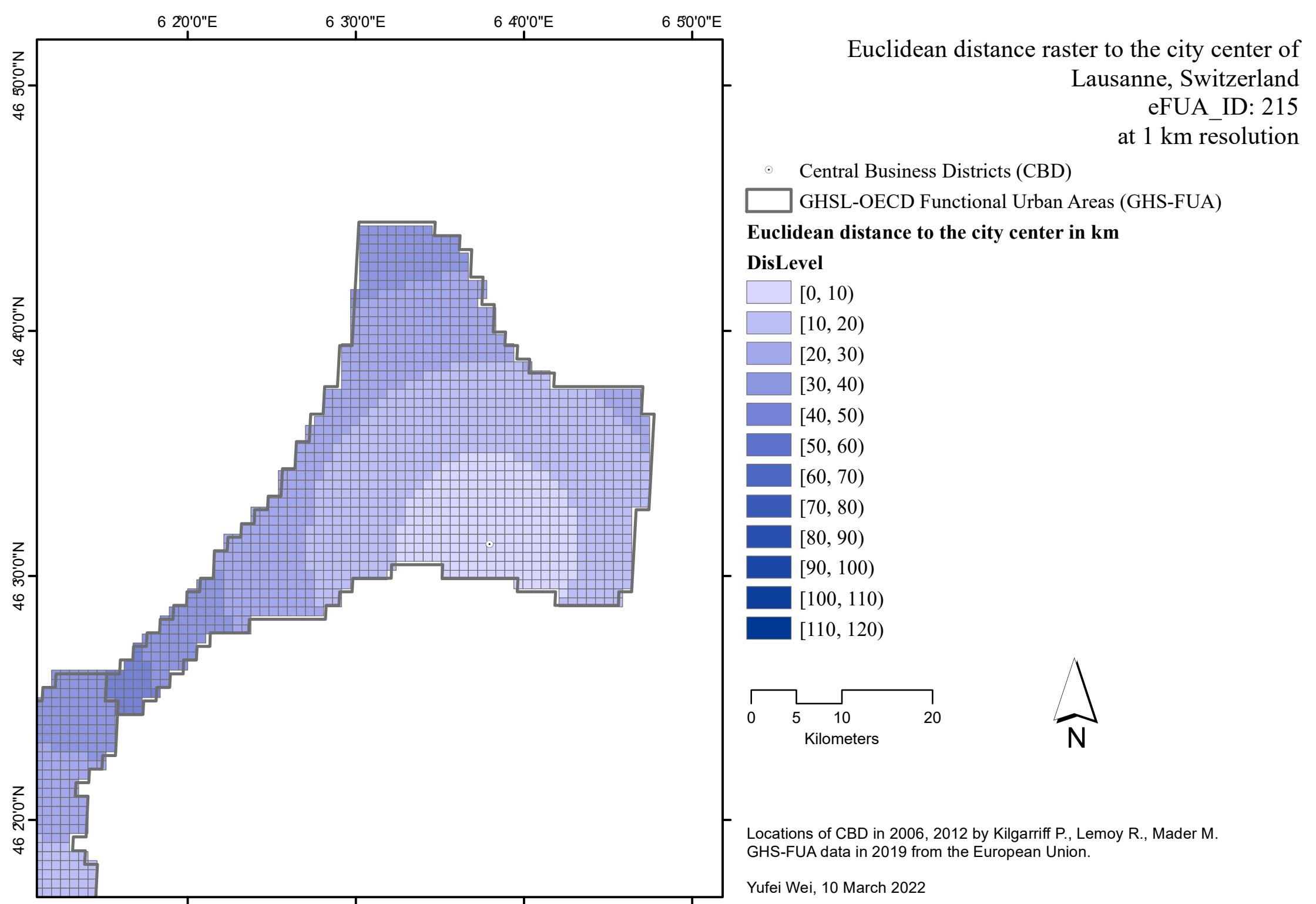
[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)

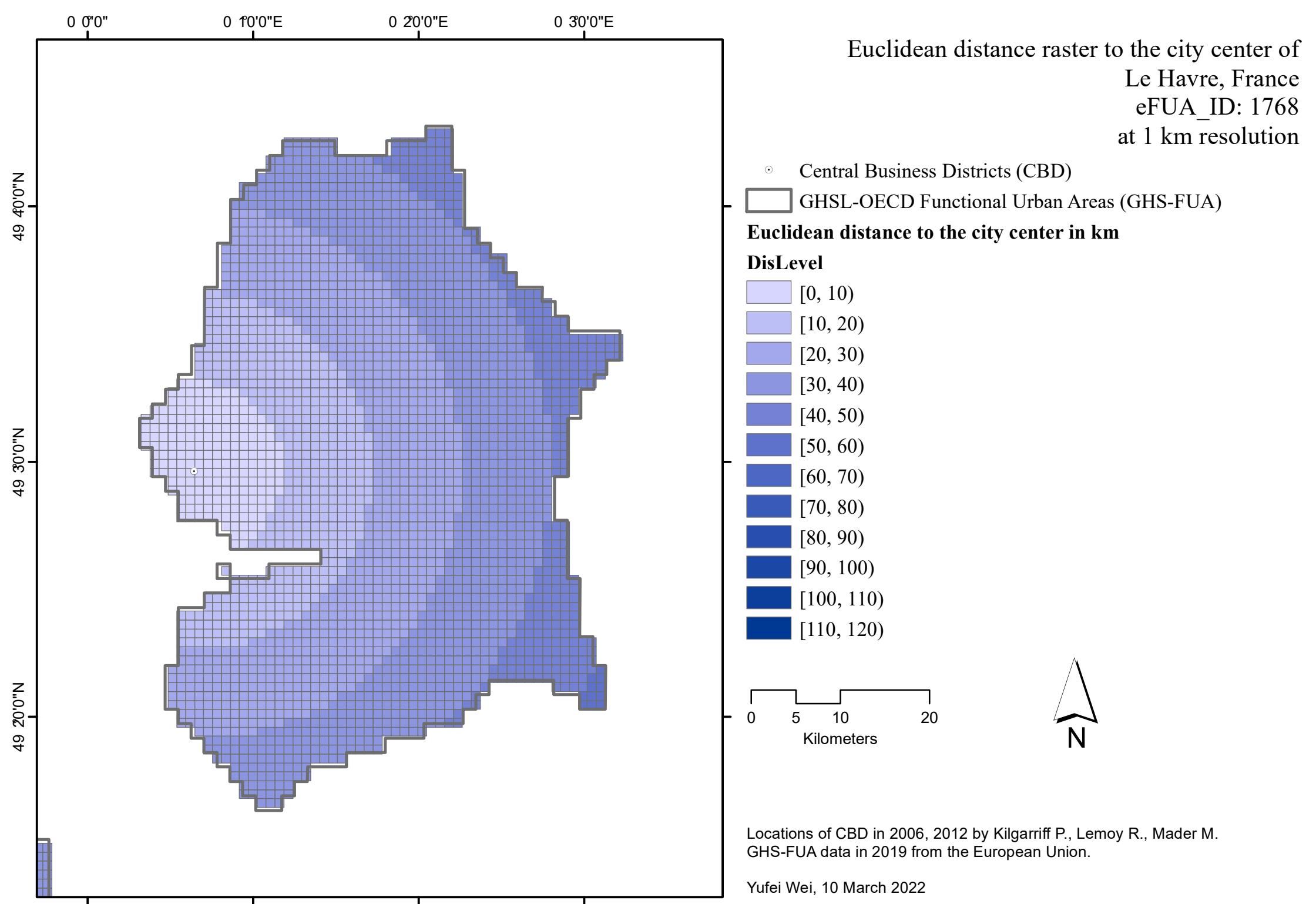
0 1.75 3.5 7  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

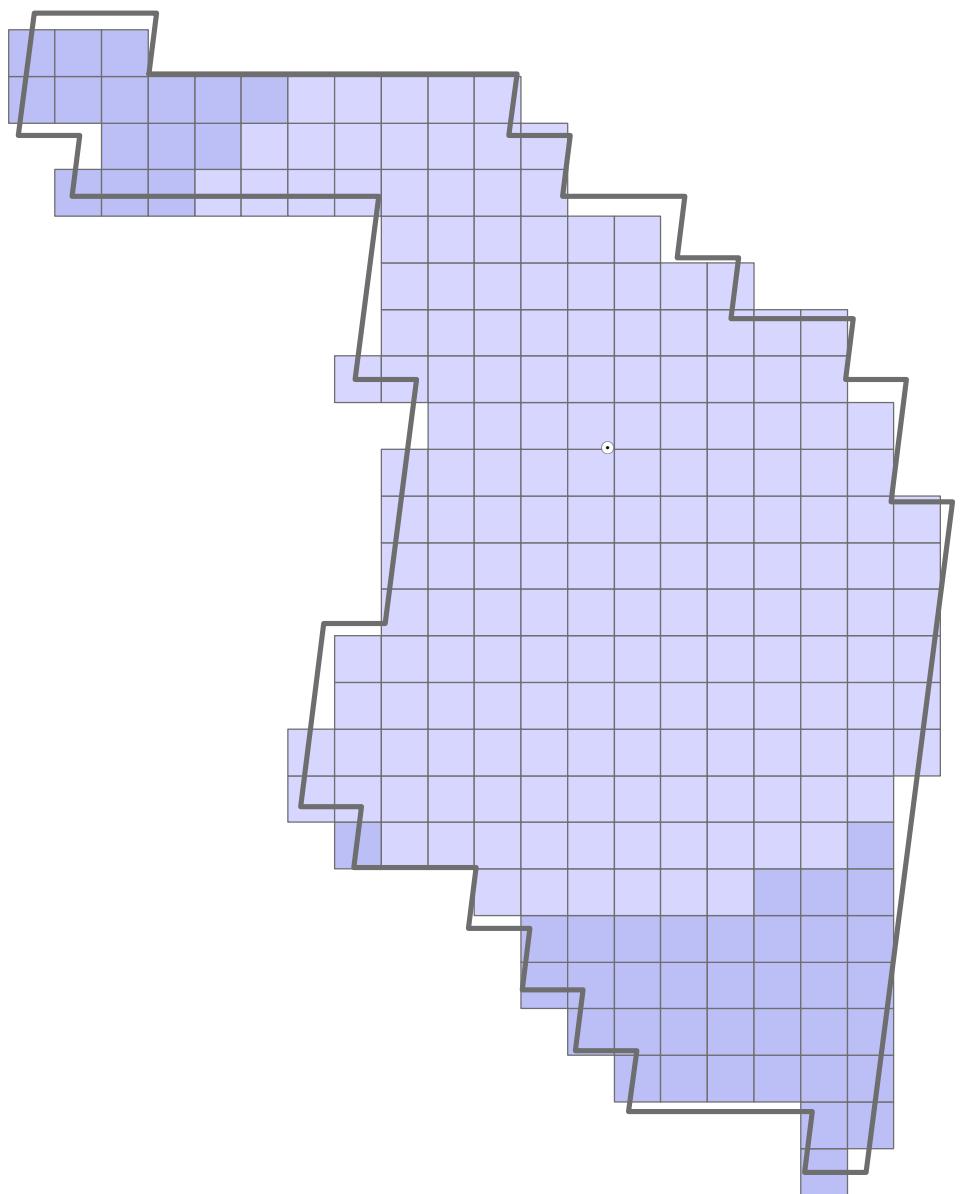
Yufei Wei, 10 March 2022





18°10'0"E

Euclidean distance raster to the city center of  
Lecce, Italy  
eFUA\_ID: 5071  
at 1 km resolution



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)

0 1.75 3.5 7  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

9 20'0"E

9 30'0"E

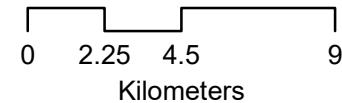
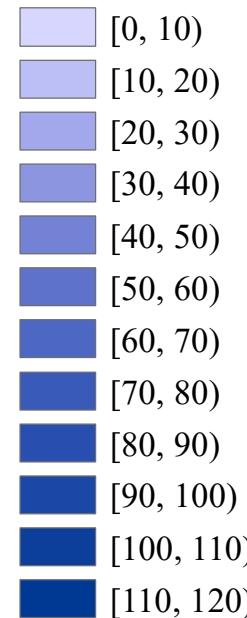
Euclidean distance raster to the city center of  
Lecco, Italy  
eFUA\_ID: 1863  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

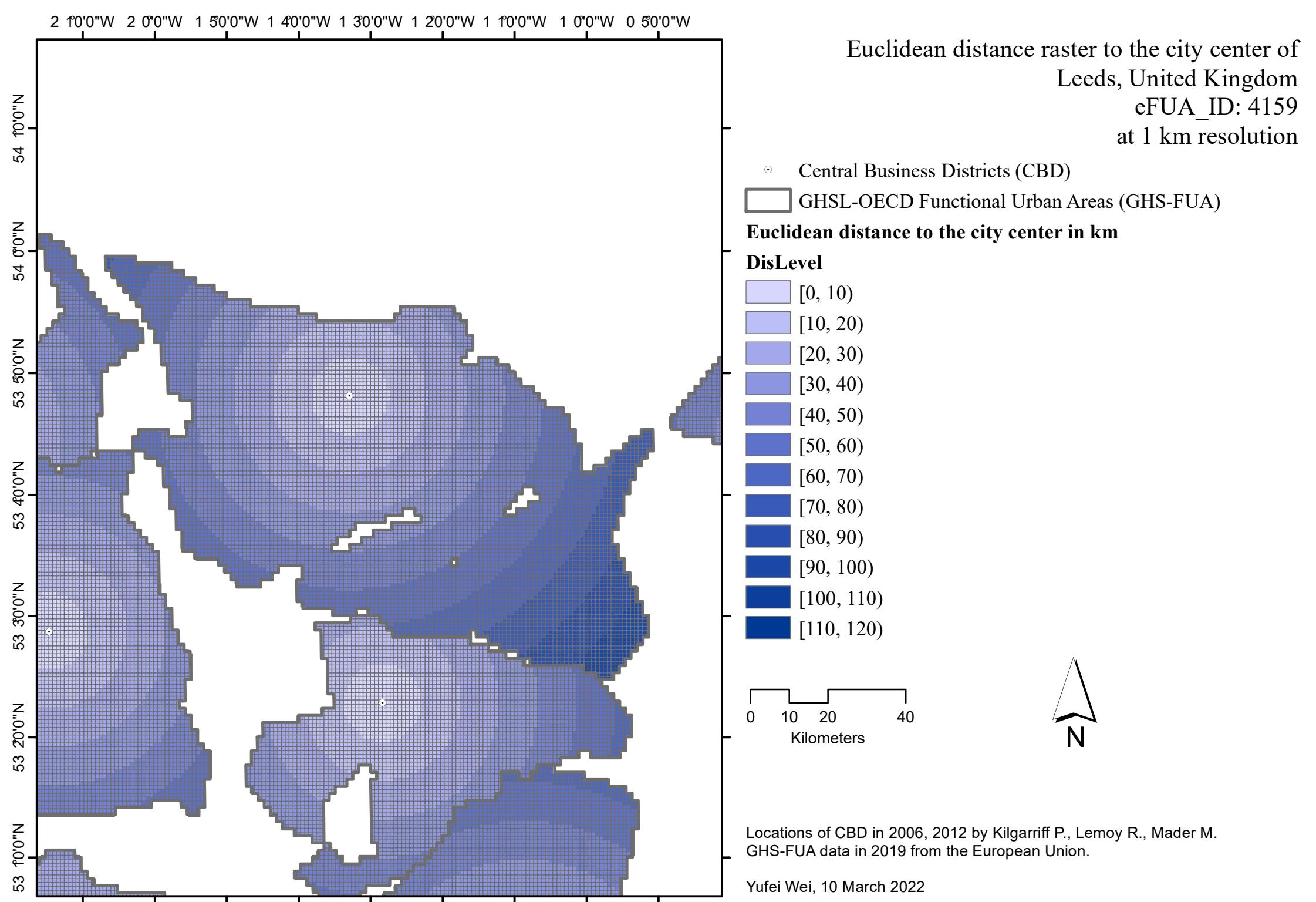
**Euclidean distance to the city center in km**

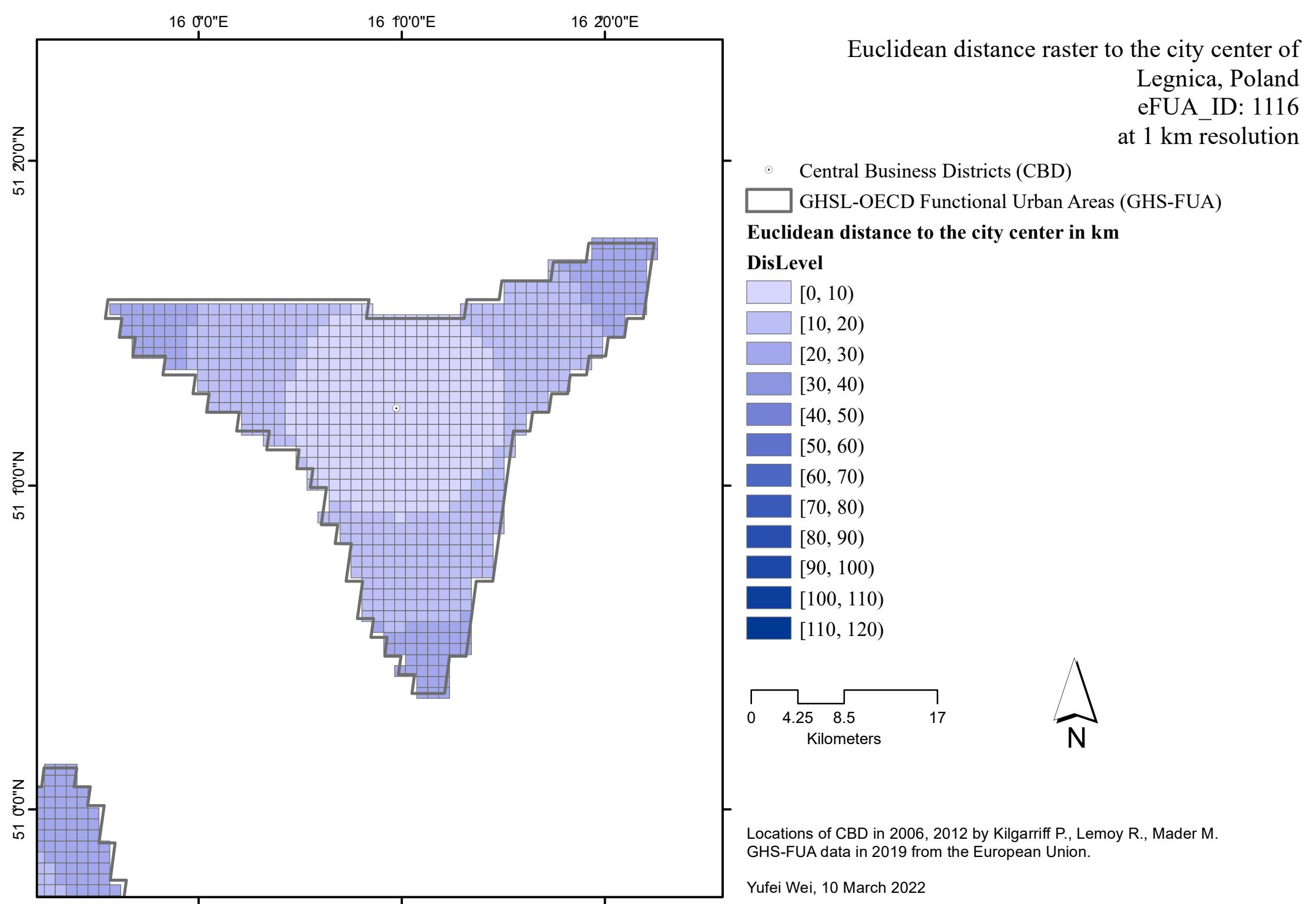
**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022





1 20'0"W

1 10'0"W

1 0'0"W

0 50'0"W

52 50'0"N

52 40'0"N

52 30'0"N

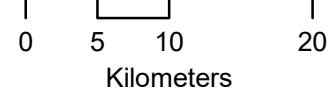
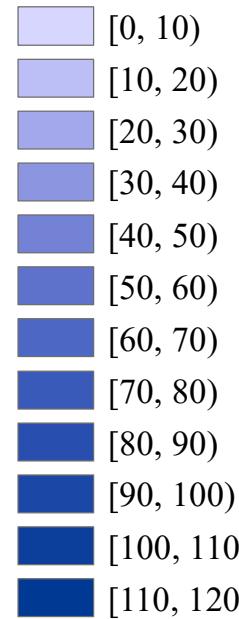
Euclidean distance raster to the city center of  
Leicester, United Kingdom  
eFUA\_ID: 4925  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

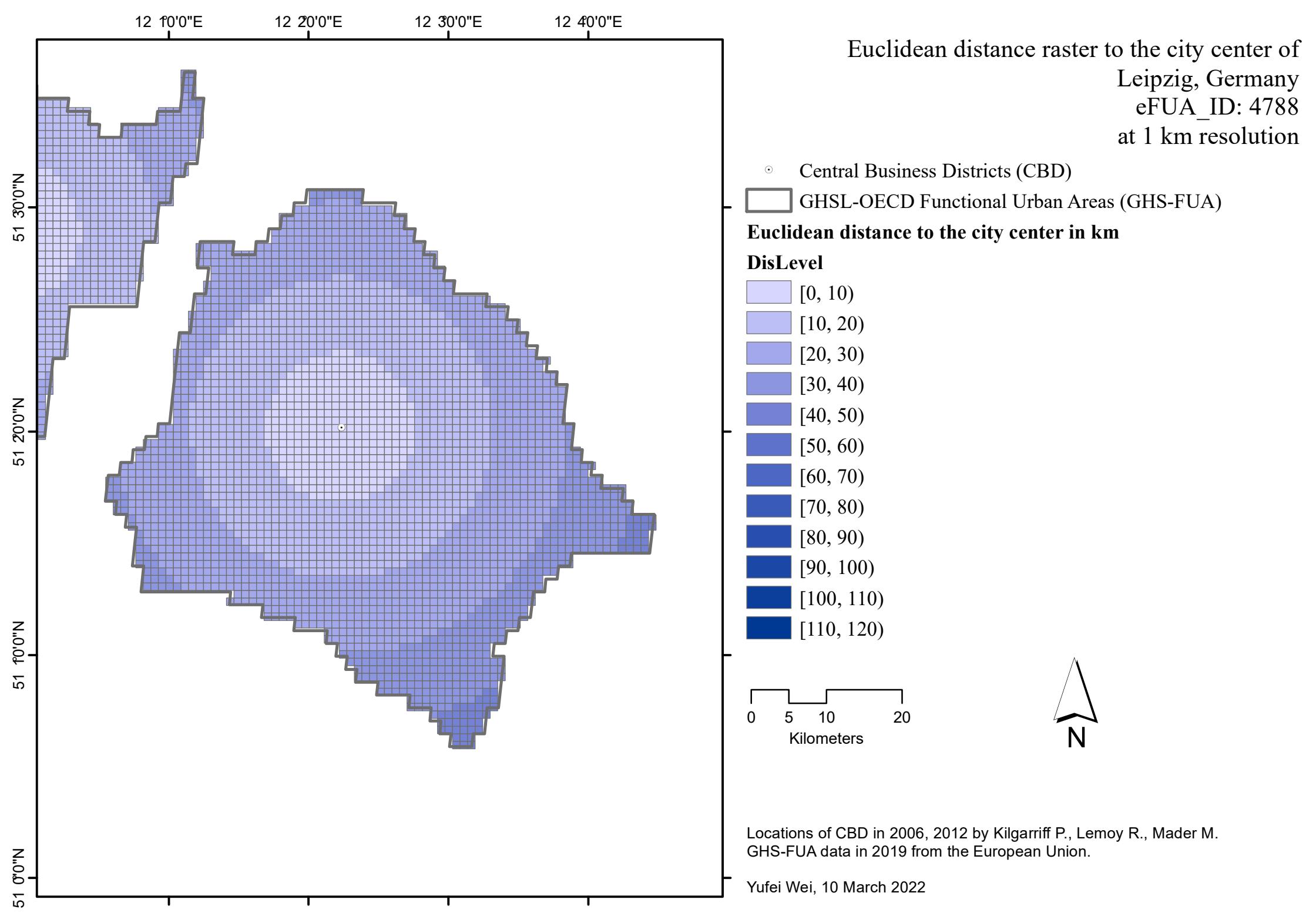
**Euclidean distance to the city center in km**

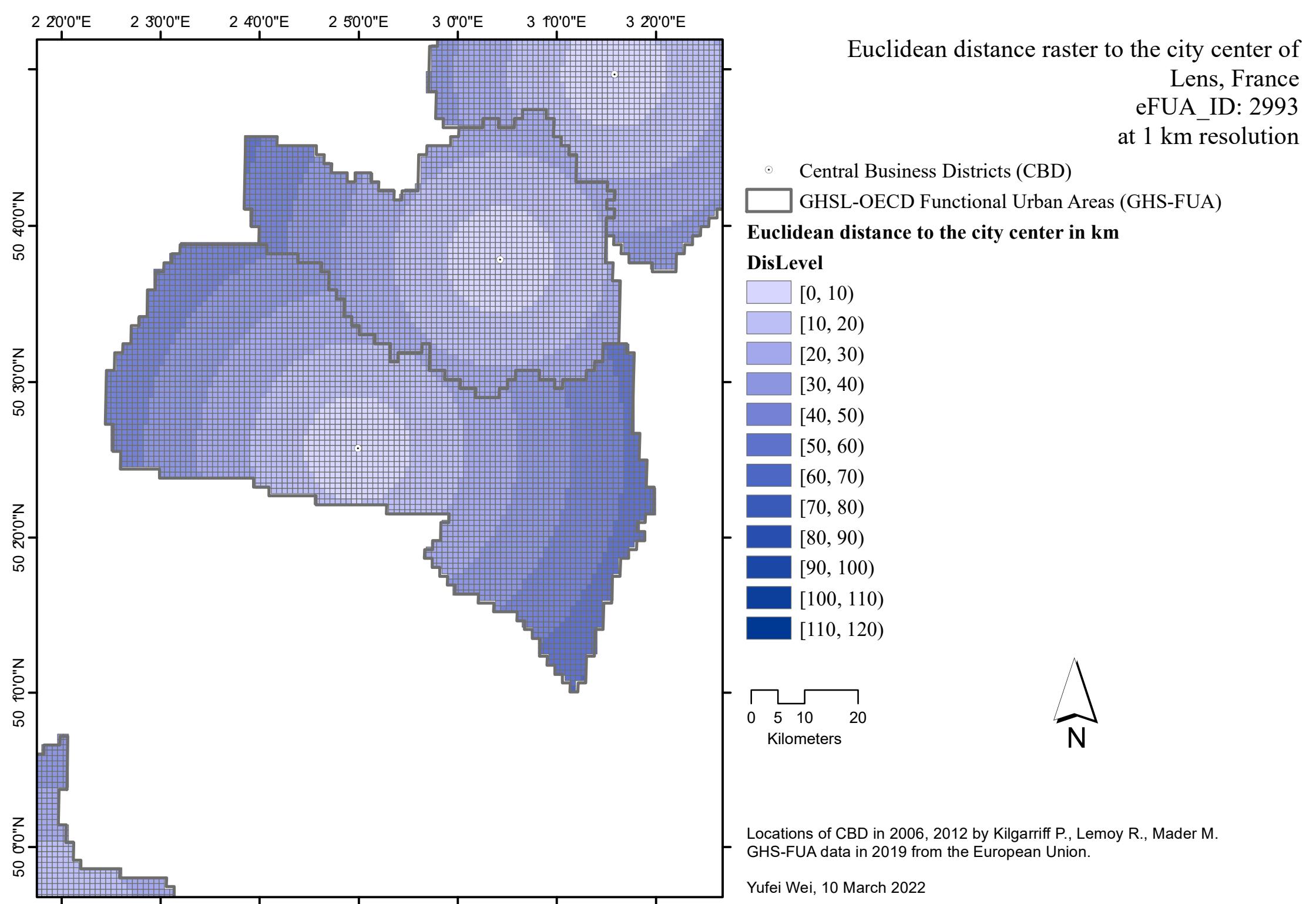
**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022





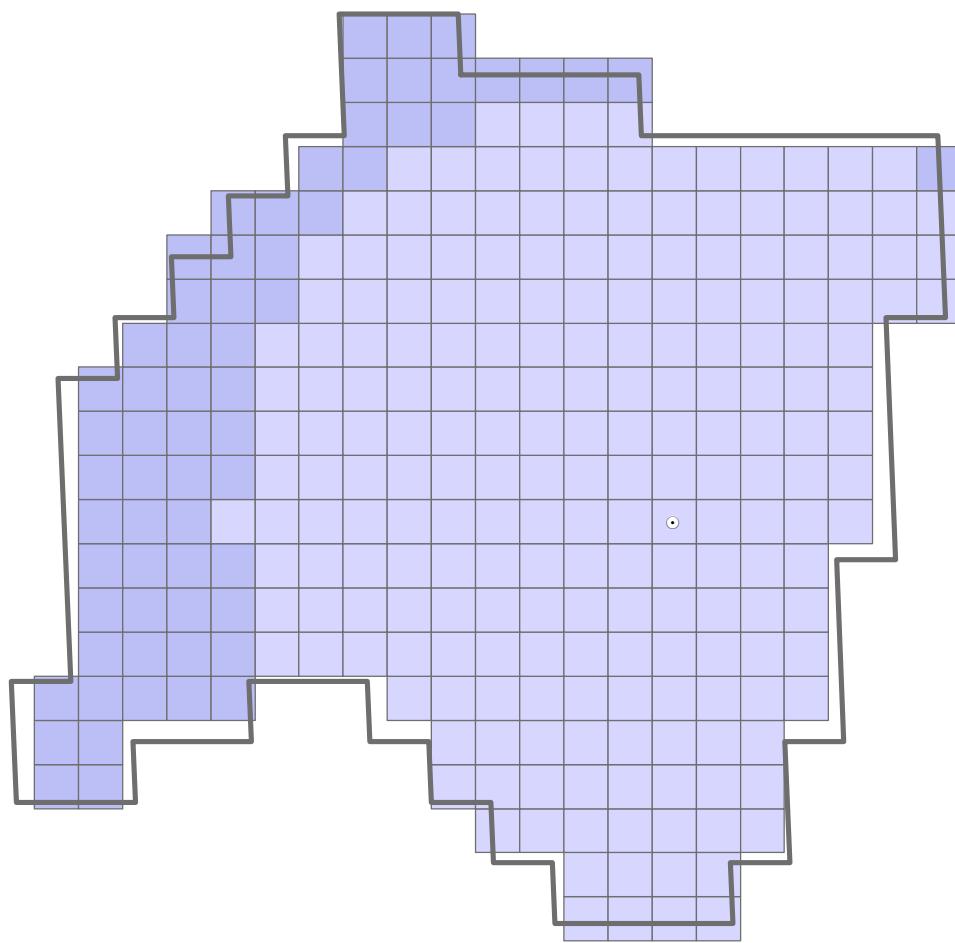
5 40'0"W

5 30'0"W

Euclidean distance raster to the city center of  
Leon, Spain  
eFUA\_ID: 2571  
at 1 km resolution

42 40'0"N

42 30'0"N



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 1.75 3.5 7  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

4 40'0"E

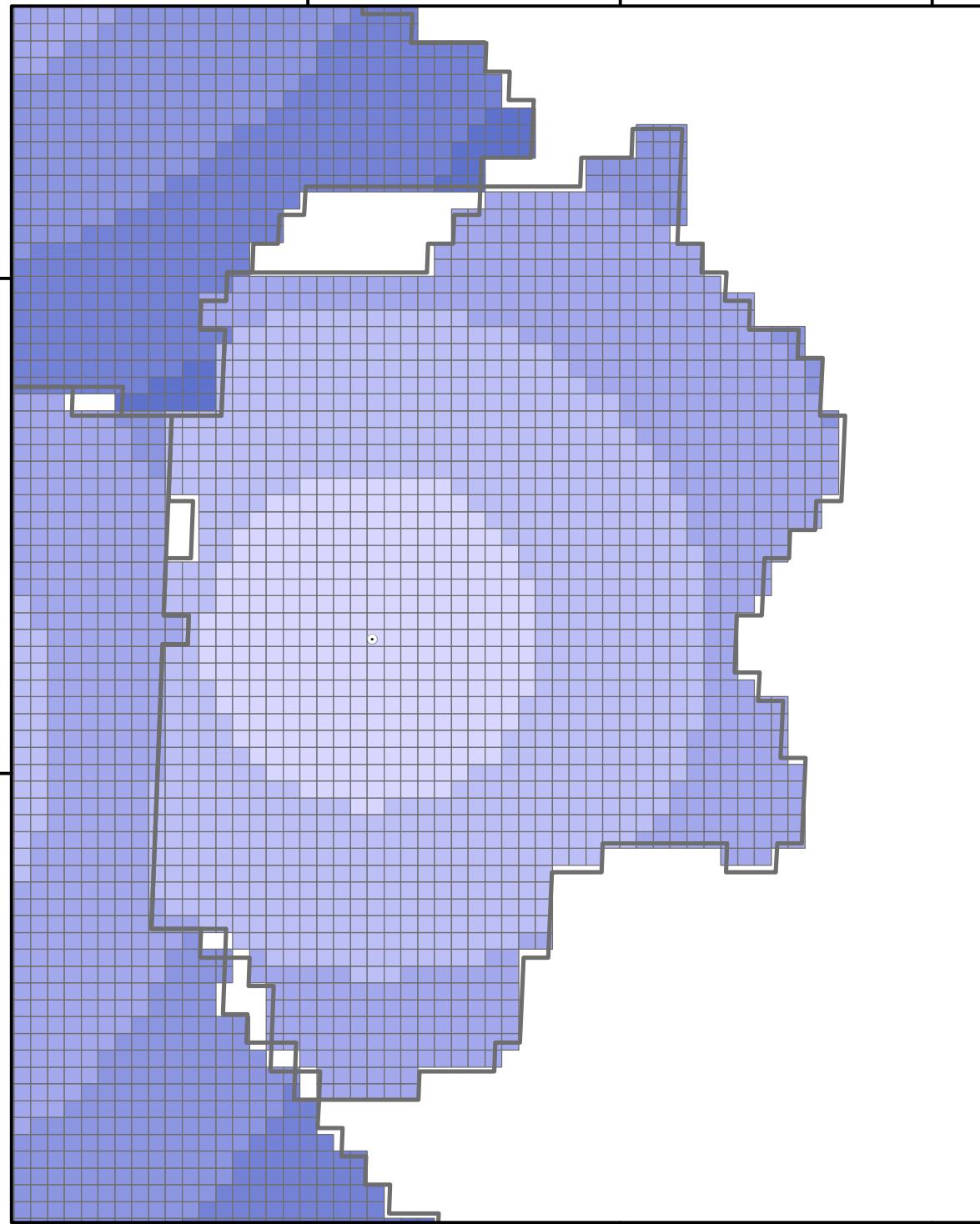
4 50'0"E

5 0'0"E

Euclidean distance raster to the city center of  
Leuven, Belgium  
eFUA\_ID: 1565  
at 1 km resolution

51 0'0"N

50 50'0"N



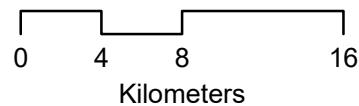
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

14 50'0"E

15 0'0"E

15 10'0"E

15 20'0"E

Euclidean distance raster to the city center of  
Liberec, Czech Republic  
eFUA\_ID: 814  
at 1 km resolution

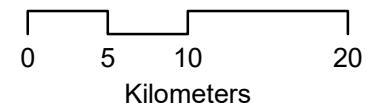
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

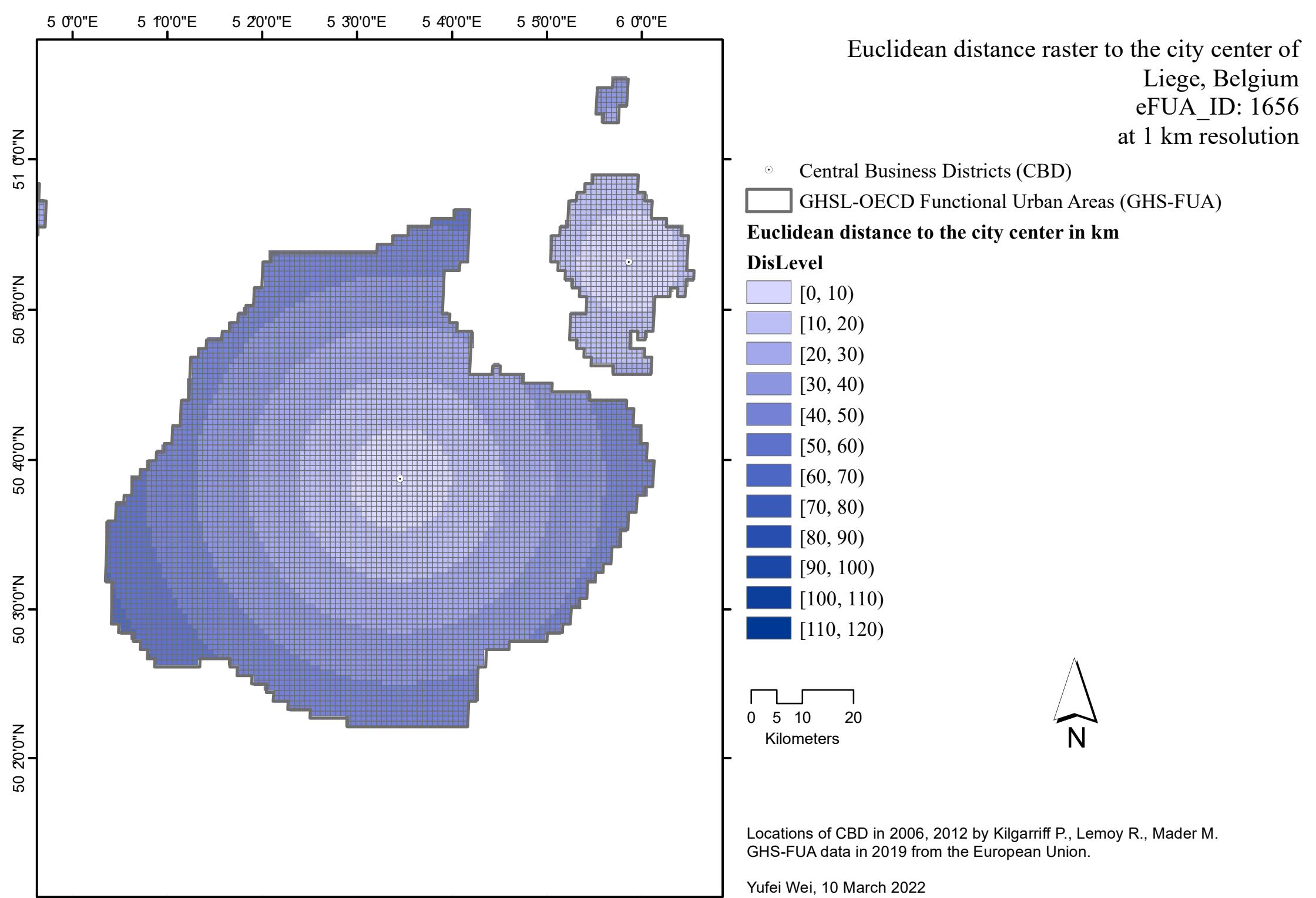
#### DisLevel

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



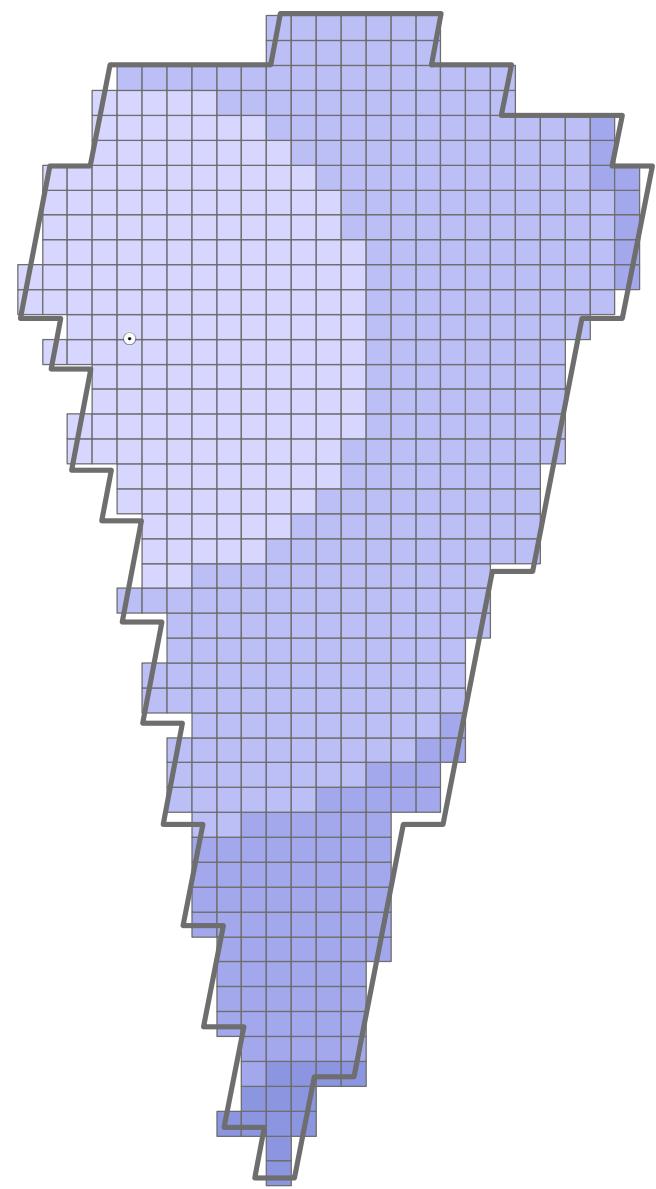
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



21 0'0"E

21 10'0"E



Euclidean distance raster to the city center of  
Liepaja, Latvia  
eFUA\_ID: 104  
at 1 km resolution

○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 3.25 6.5 13  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

2 40'0"E

2 50'0"E

3 0'0"E

3 10'0"E

3 20'0"E

Euclidean distance raster to the city center of  
Lille, France  
eFUA\_ID: 3200  
at 1 km resolution

50 50'0"N  
50 40'0"N  
50 30'0"N  
50 20'0"N

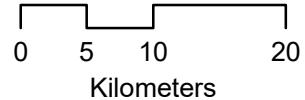
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

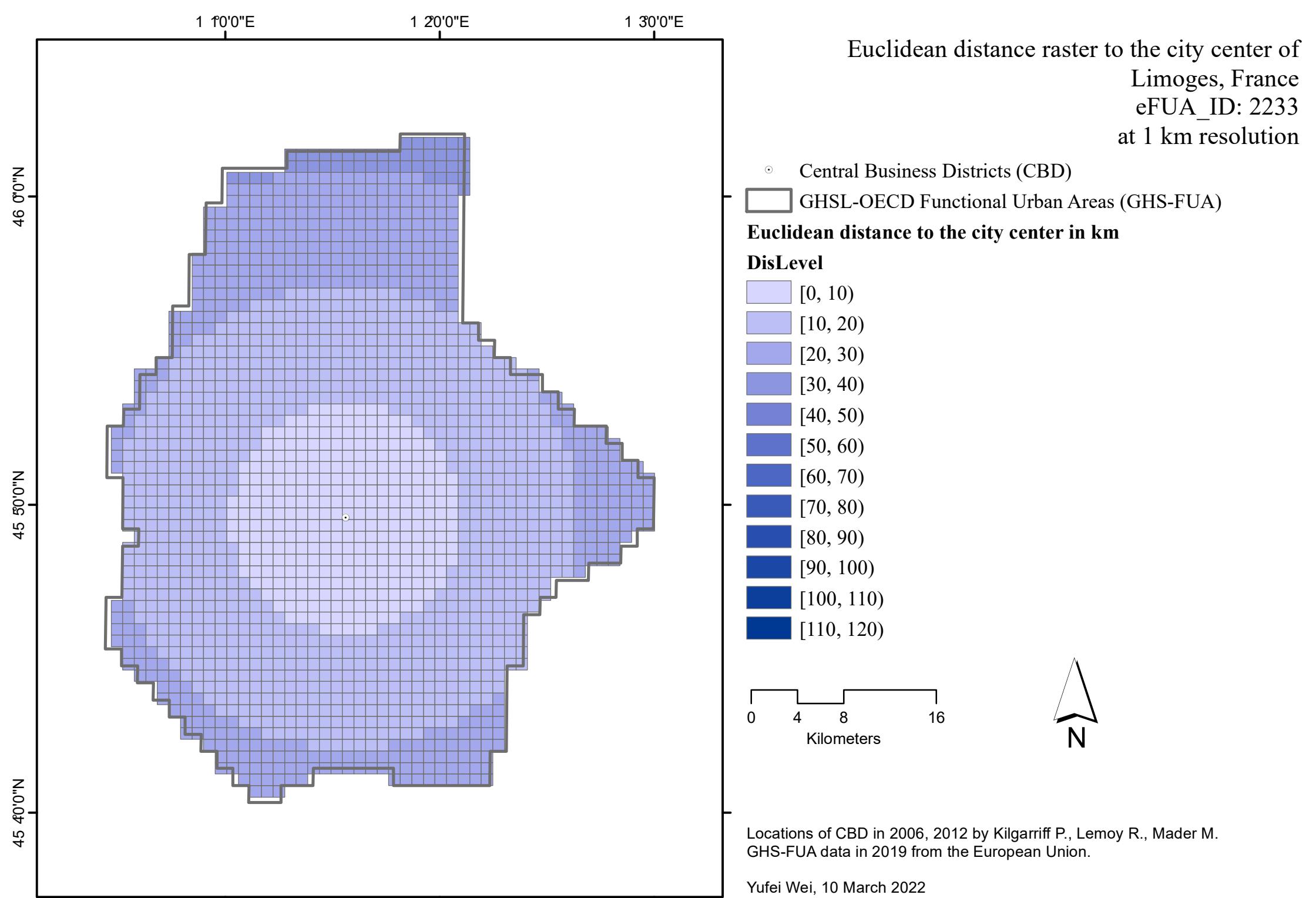
**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



14 10'0"E

14 20'0"E

14 30'0"E

48 30'0"N

48 20'0"N

48 10'0"N

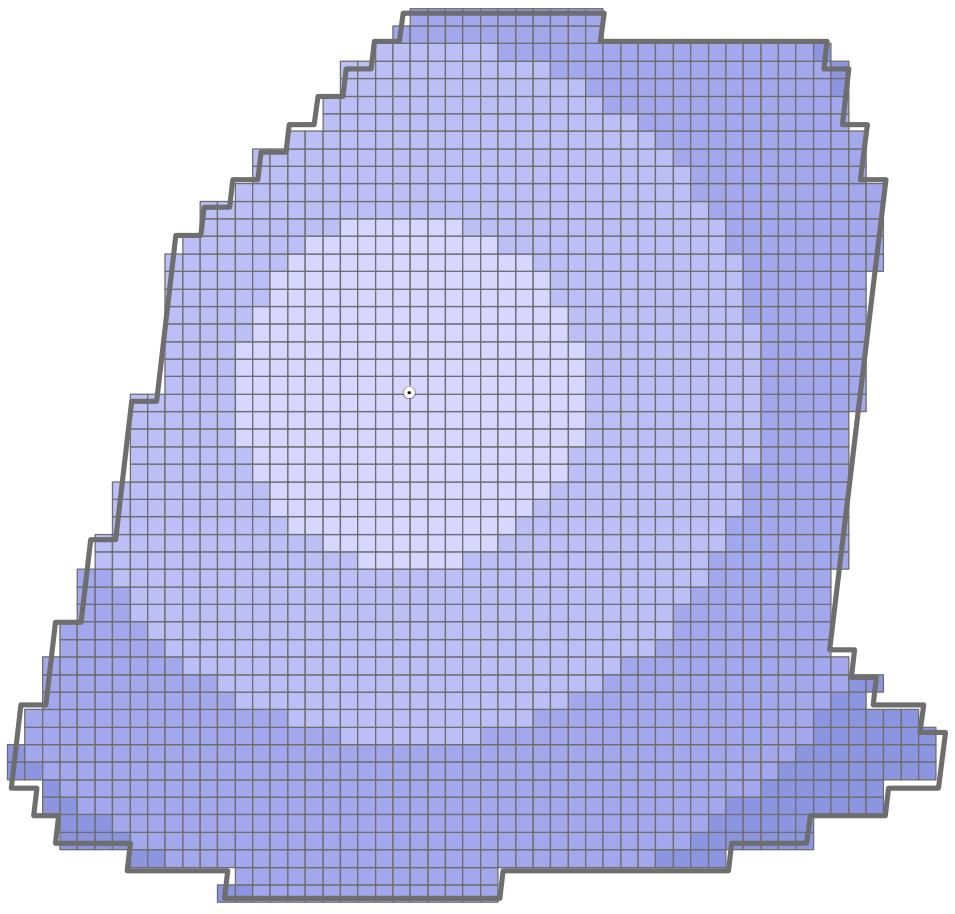
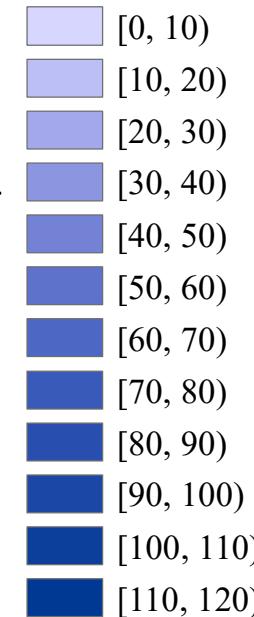
Euclidean distance raster to the city center of  
Linz, Austria  
eFUA\_ID: 361  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

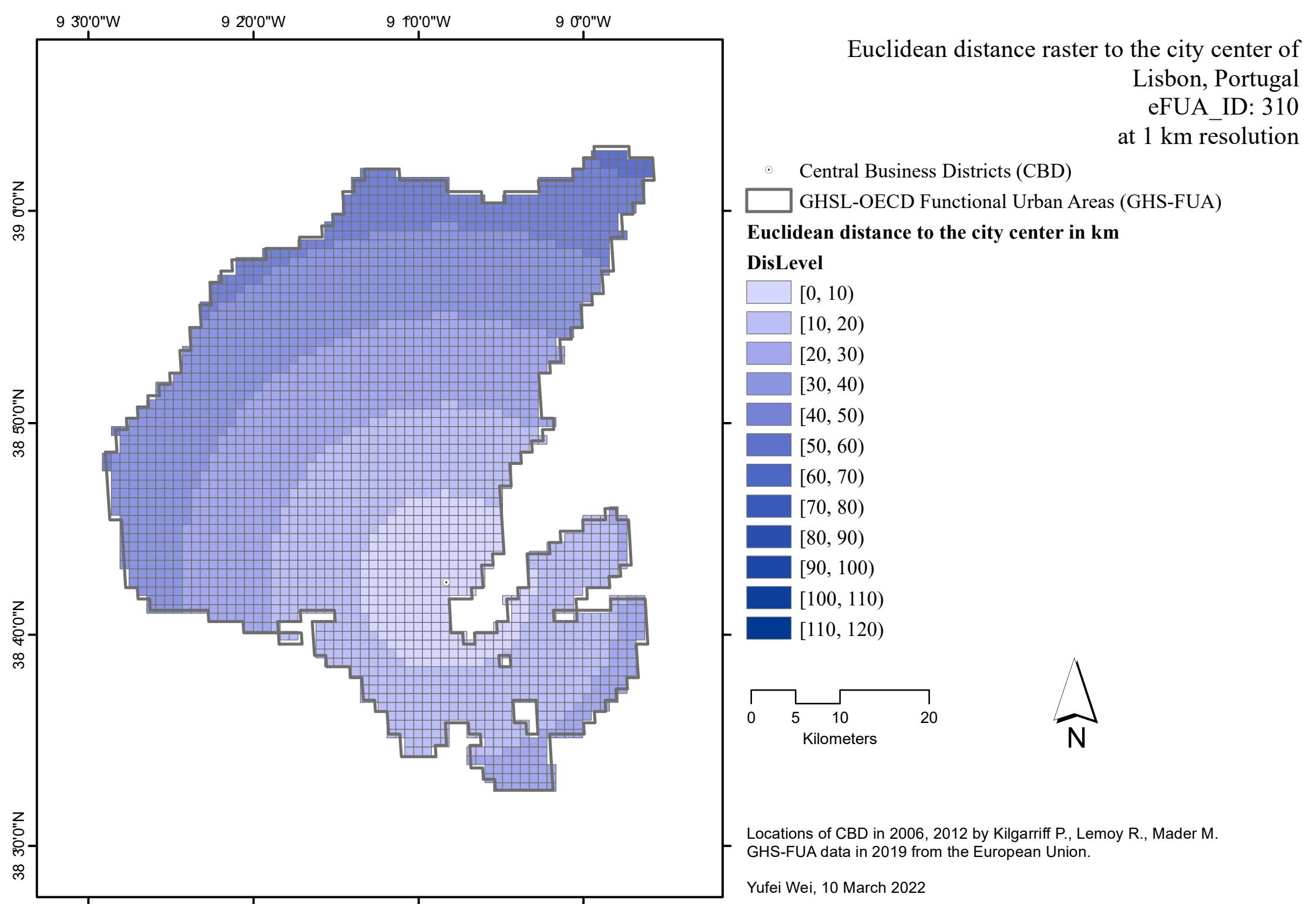
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



3 10'0"W

3 0'0"W

2 50'0"W

2 40'0"W

2 30'0"W

53 40'0"N

53 30'0"N

53 20'0"N

53 10'0"N

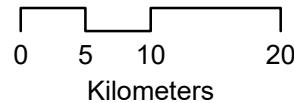
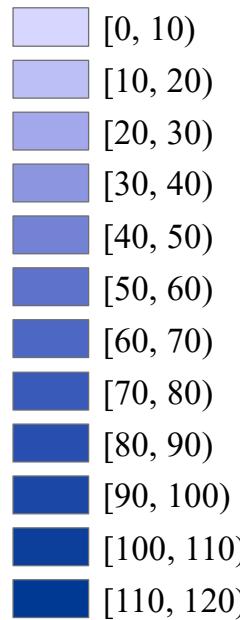
Euclidean distance raster to the city center of  
Liverpool, United Kingdom  
eFUA\_ID: 2374  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

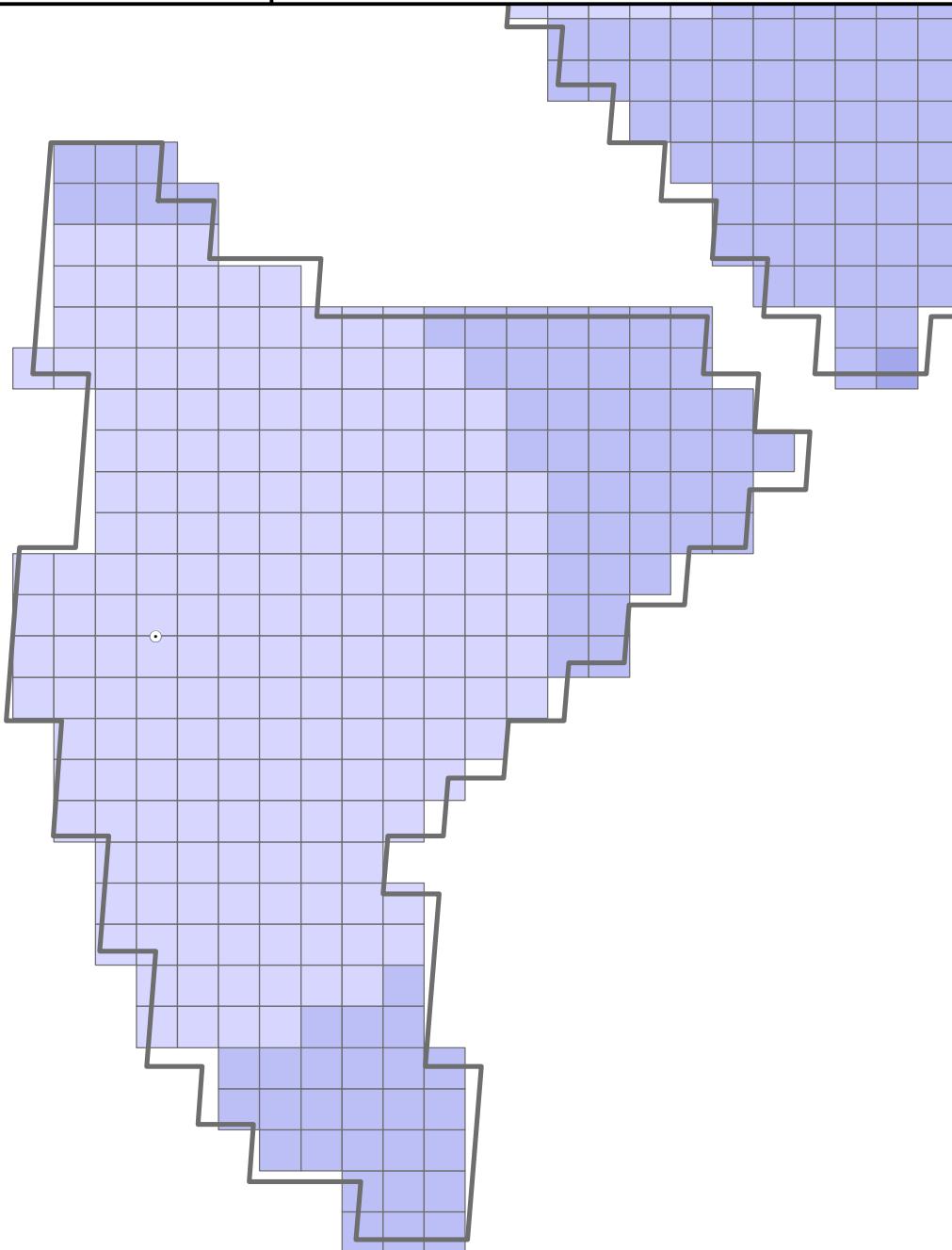


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

10 20'0"E

Euclidean distance raster to the city center of  
Livorno, Italy  
eFUA\_ID: 2581  
at 1 km resolution



○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 1.75 3.5 7  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

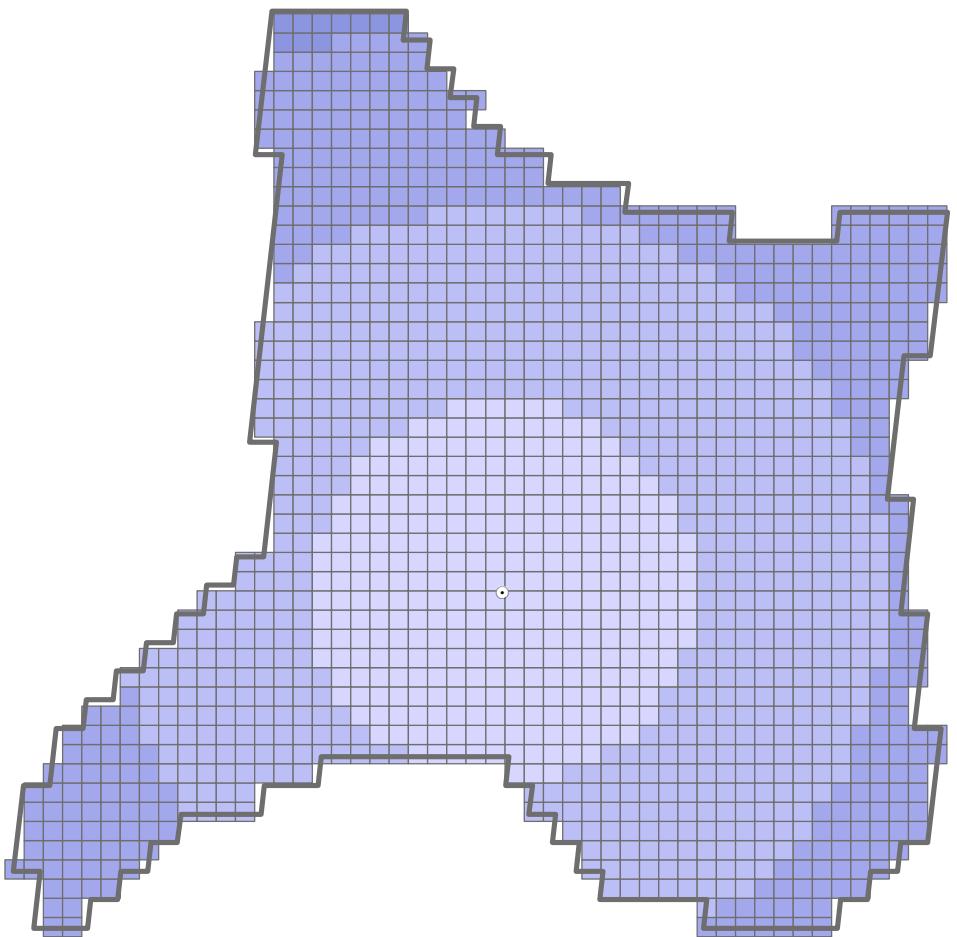
Yufei Wei, 10 March 2022

14 20'0"E

14 30'0"E

14 40'0"E

Euclidean distance raster to the city center of  
Ljubljana, Slovenia  
eFUA\_ID: 164  
at 1 km resolution



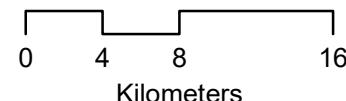
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

0 30'0"E

0 40'0"E

0 50'0"E

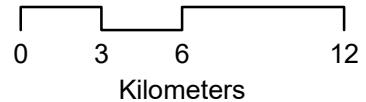
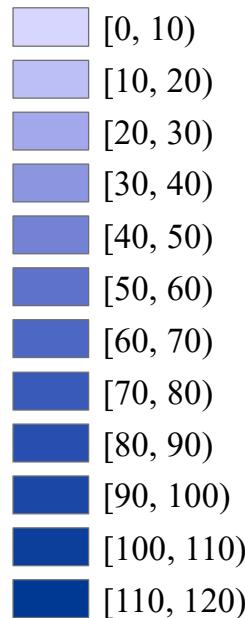
Euclidean distance raster to the city center of  
Lleida, Spain  
eFUA\_ID: 4291  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

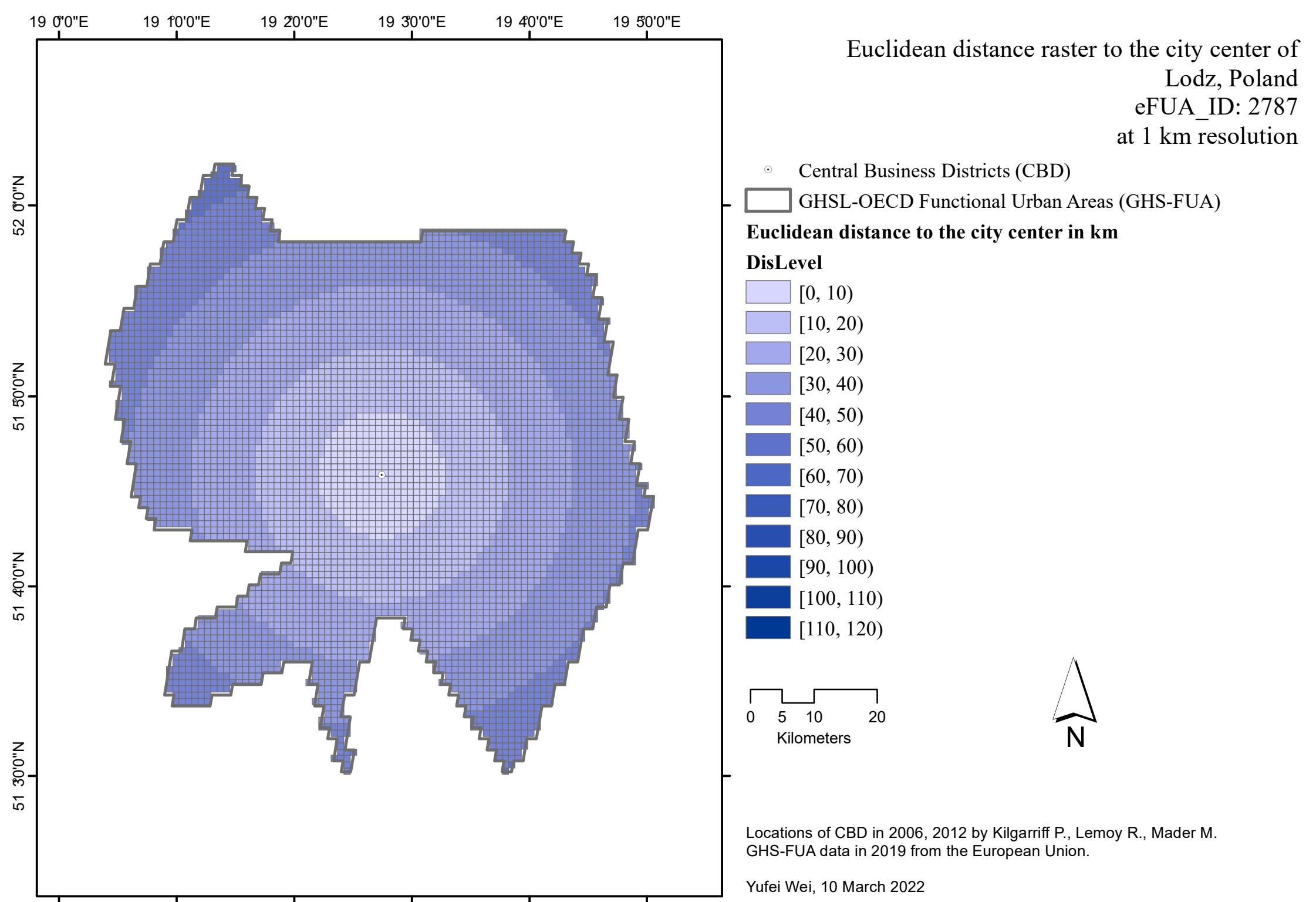
**Euclidean distance to the city center in km**

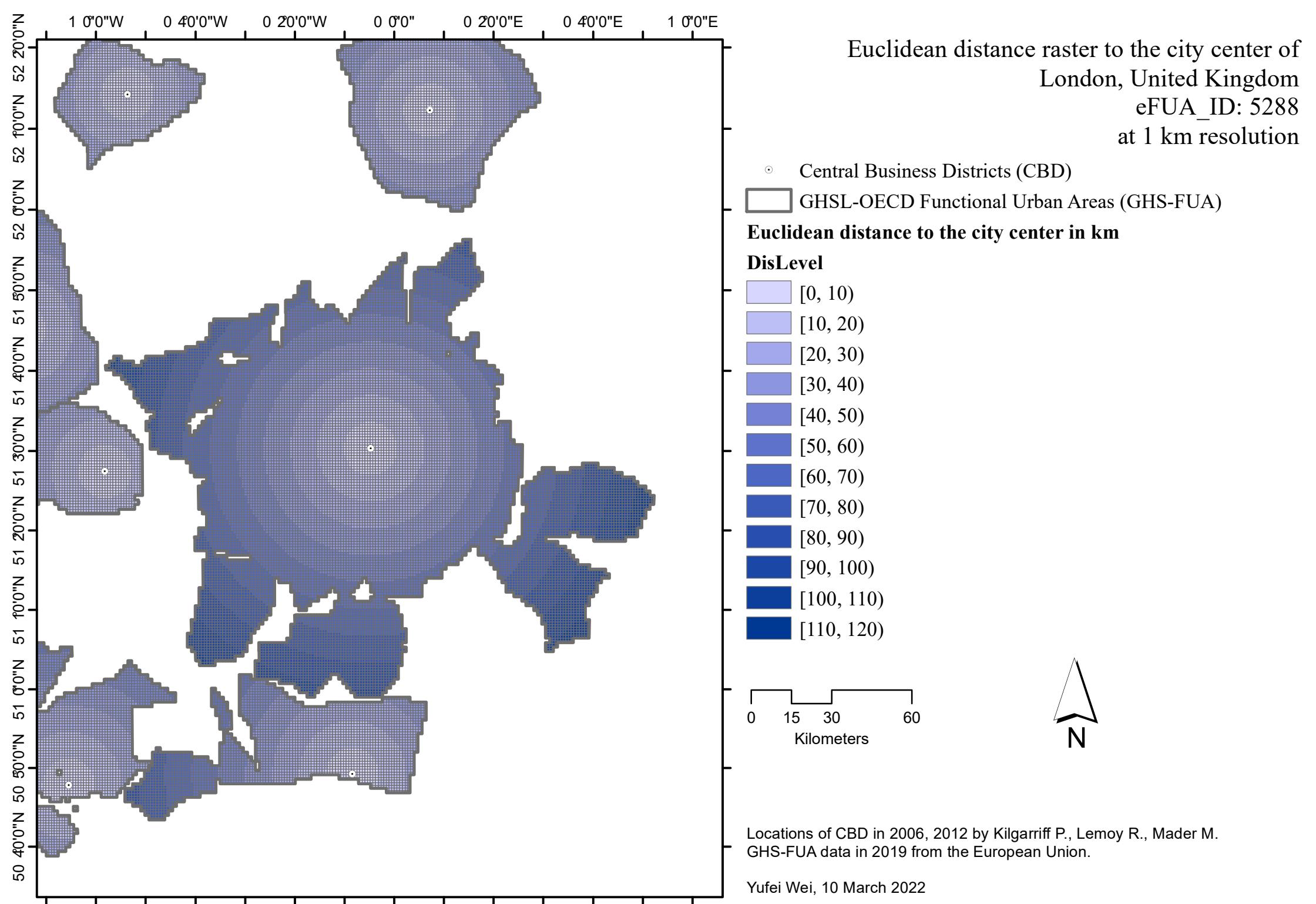
**DisLevel**

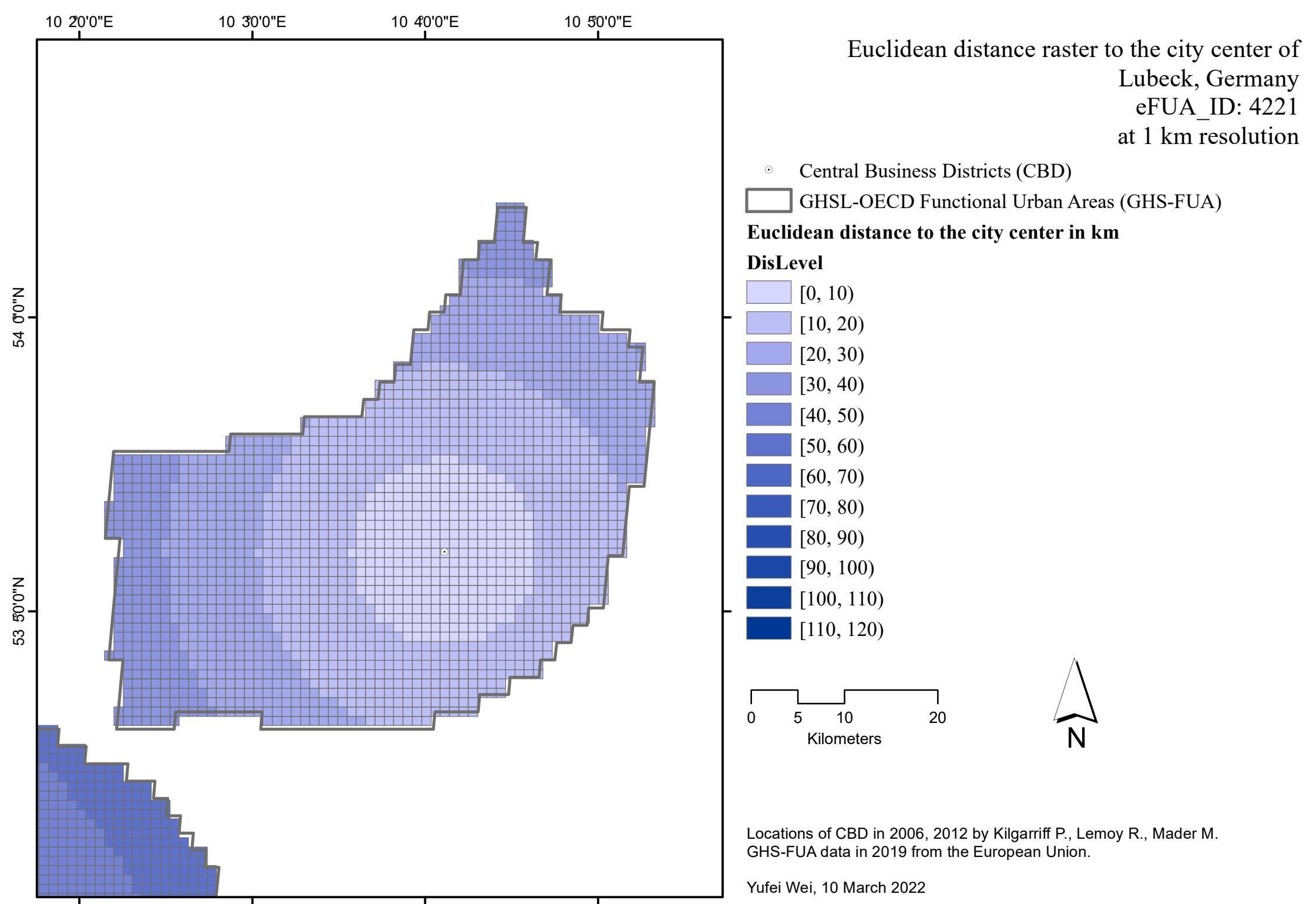


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022







22 10'0"E

22 20'0"E

22 30'0"E

22 40'0"E

22 50'0"E

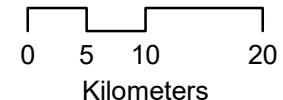
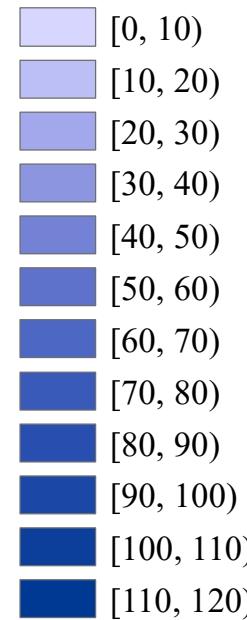
Euclidean distance raster to the city center of  
Lublin, Poland  
eFUA\_ID: 3644  
at 1 km resolution

○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

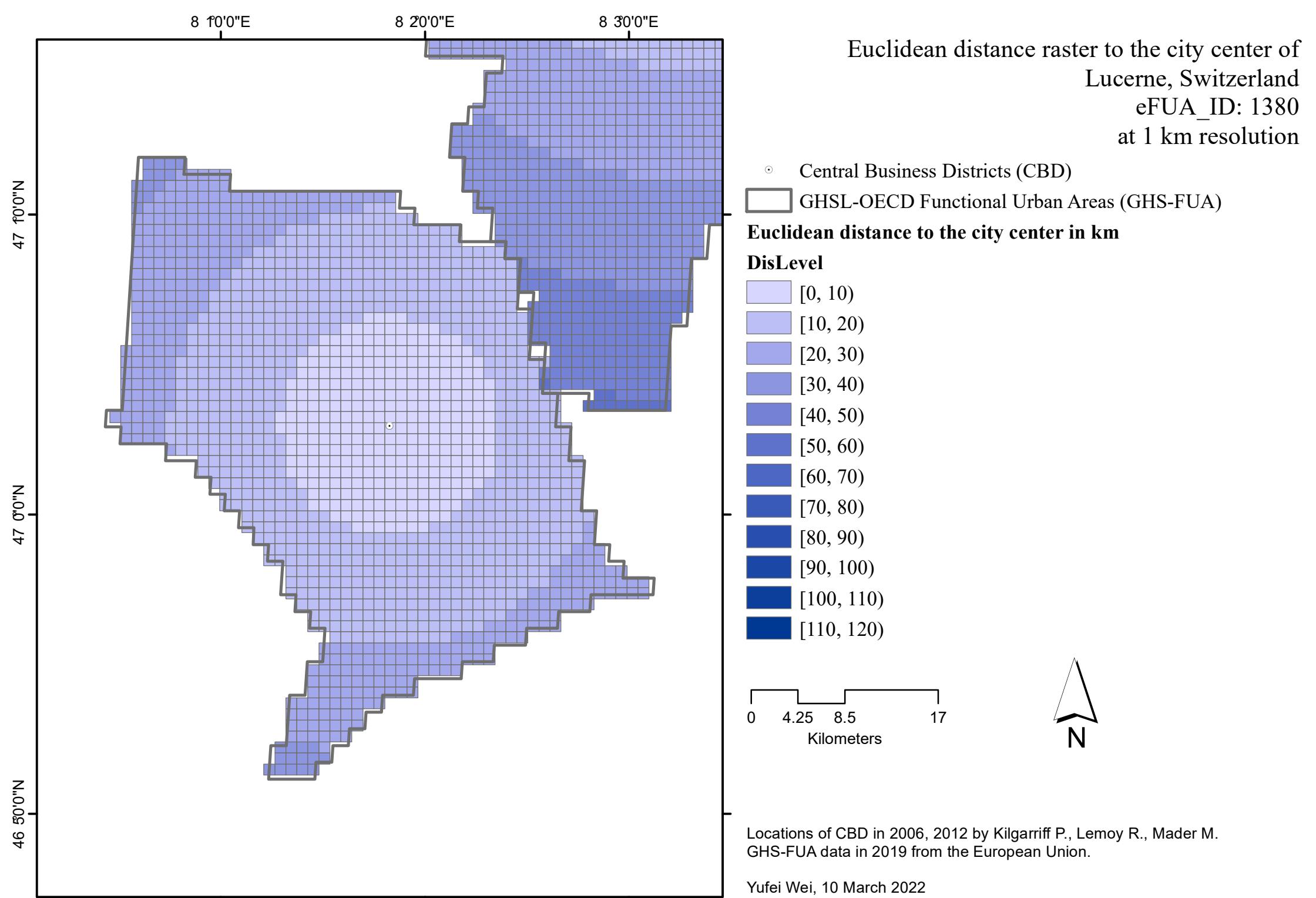
**Euclidean distance to the city center in km**

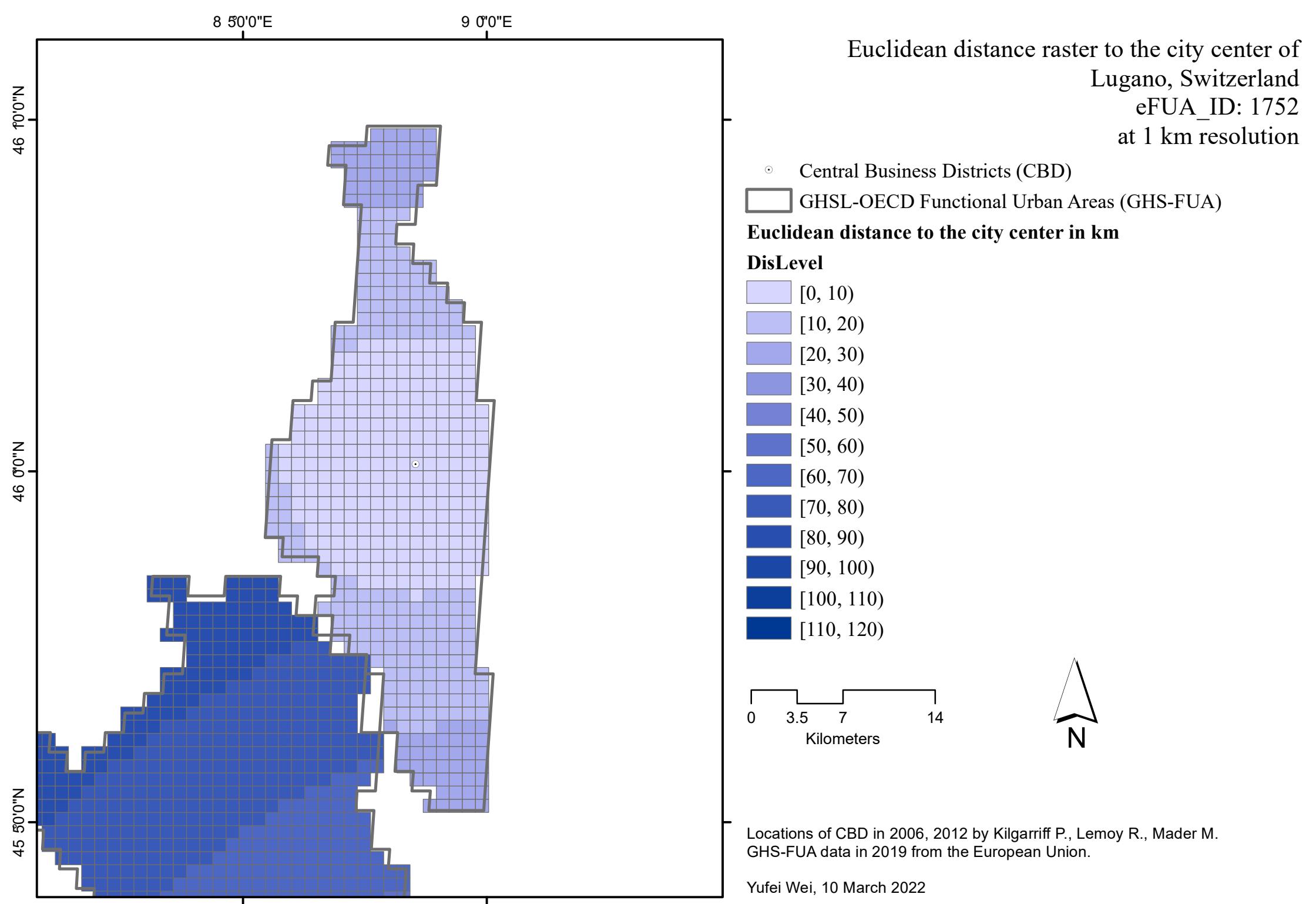
**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022





5 50'0"E

6 0'0"E

6 10'0"E

6 20'0"E

Euclidean distance raster to the city center of  
Luxembourg, Luxembourg  
eFUA\_ID: 103  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)

[10, 20)

[20, 30)

[30, 40)

[40, 50)

[50, 60)

[60, 70)

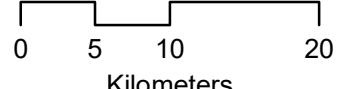
[70, 80)

[80, 90)

[90, 100)

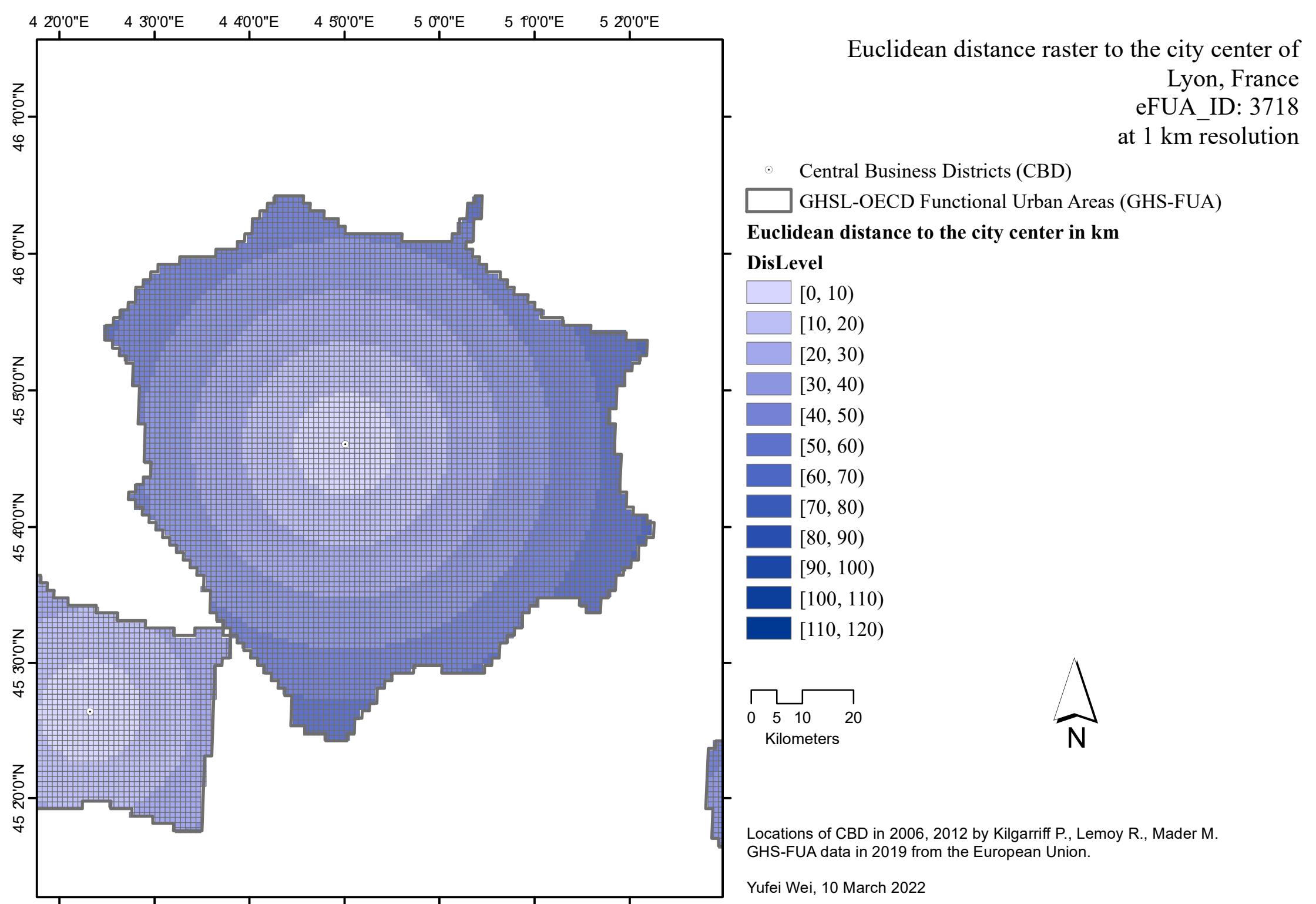
[100, 110)

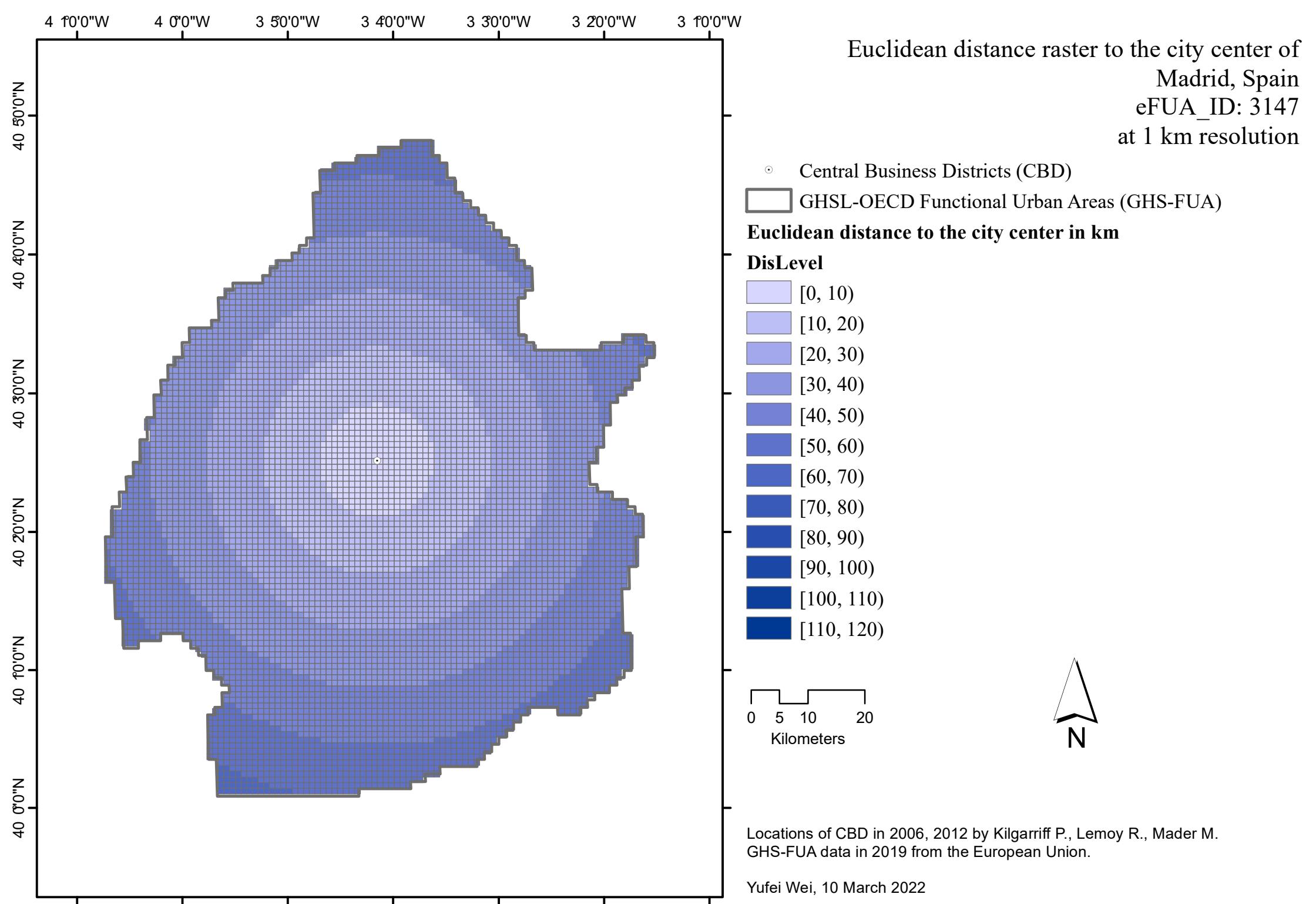
[110, 120)

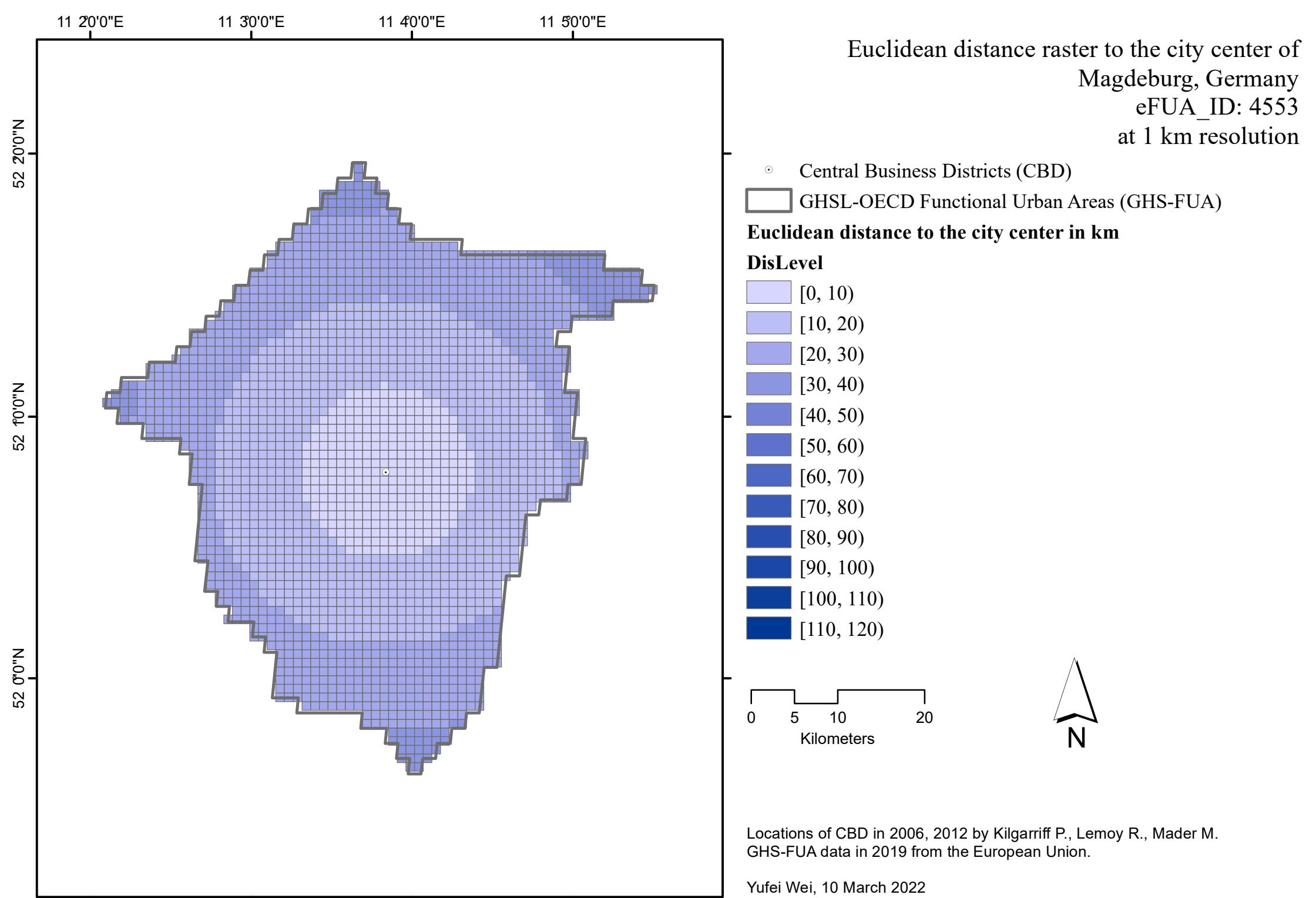


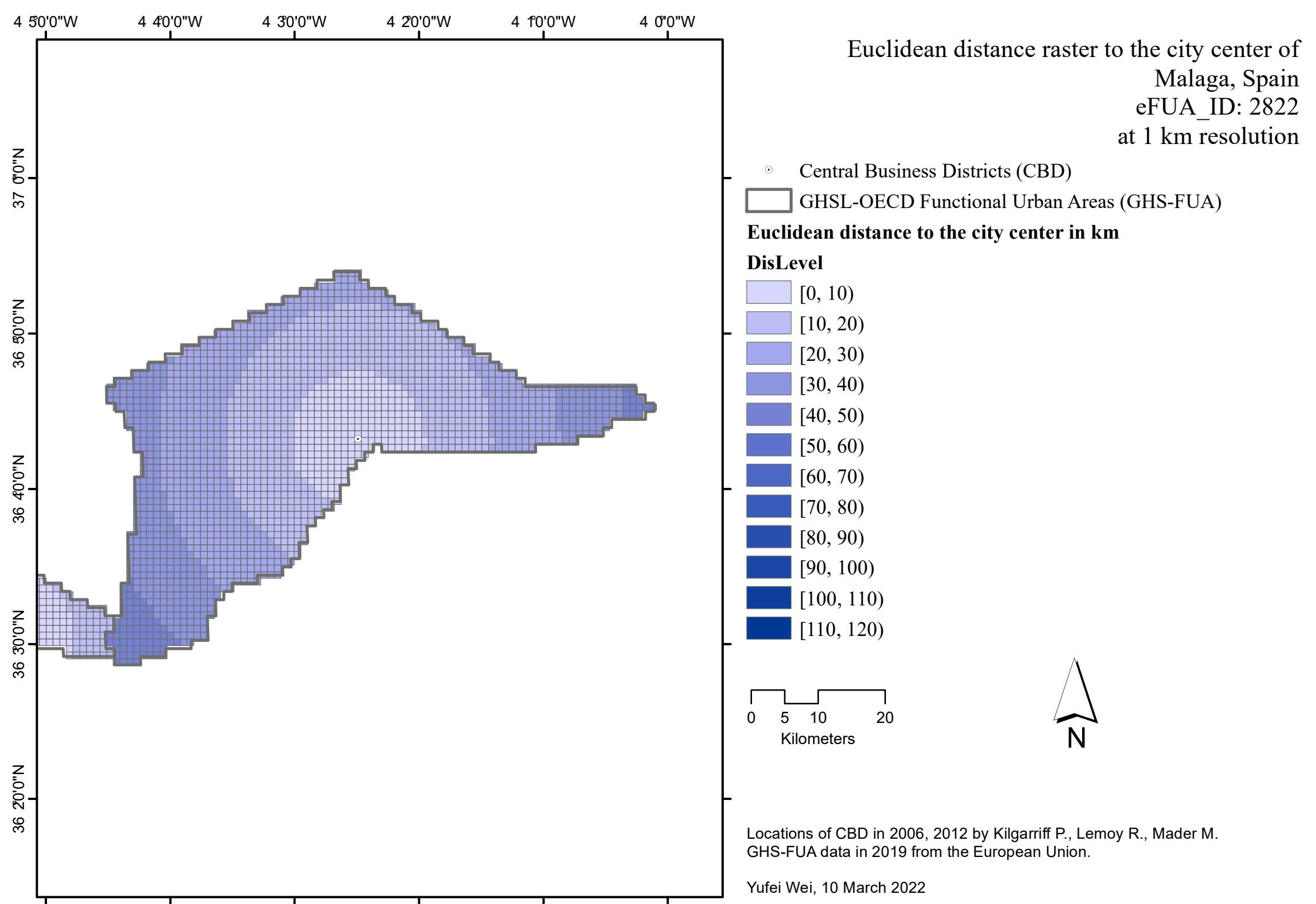
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022









12 50'0"E

13 0'0"E

13 10'0"E

13 20'0"E

Euclidean distance raster to the city center of  
Malmo, Sweden  
eFUA\_ID: 481  
at 1 km resolution

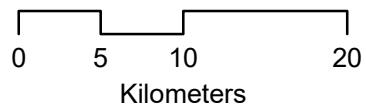
○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

#### DisLevel

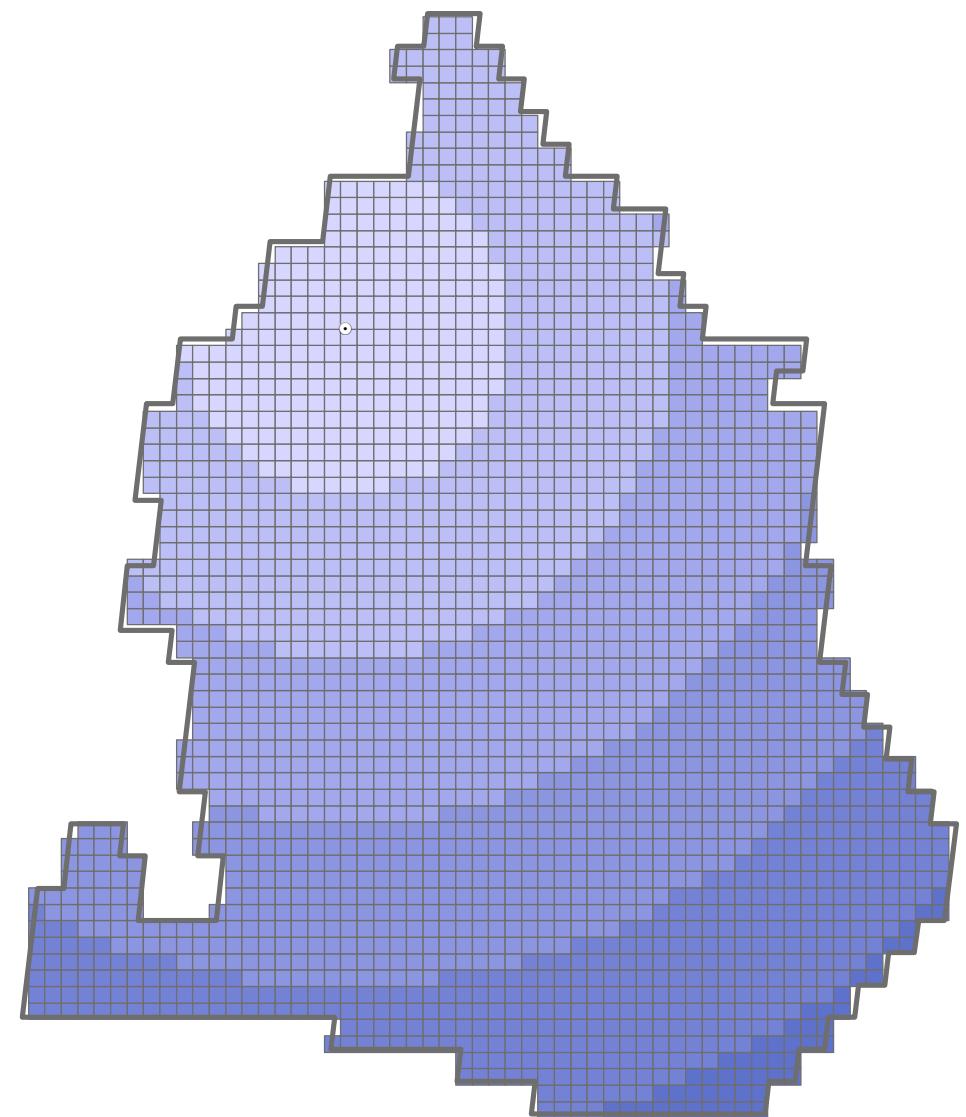
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

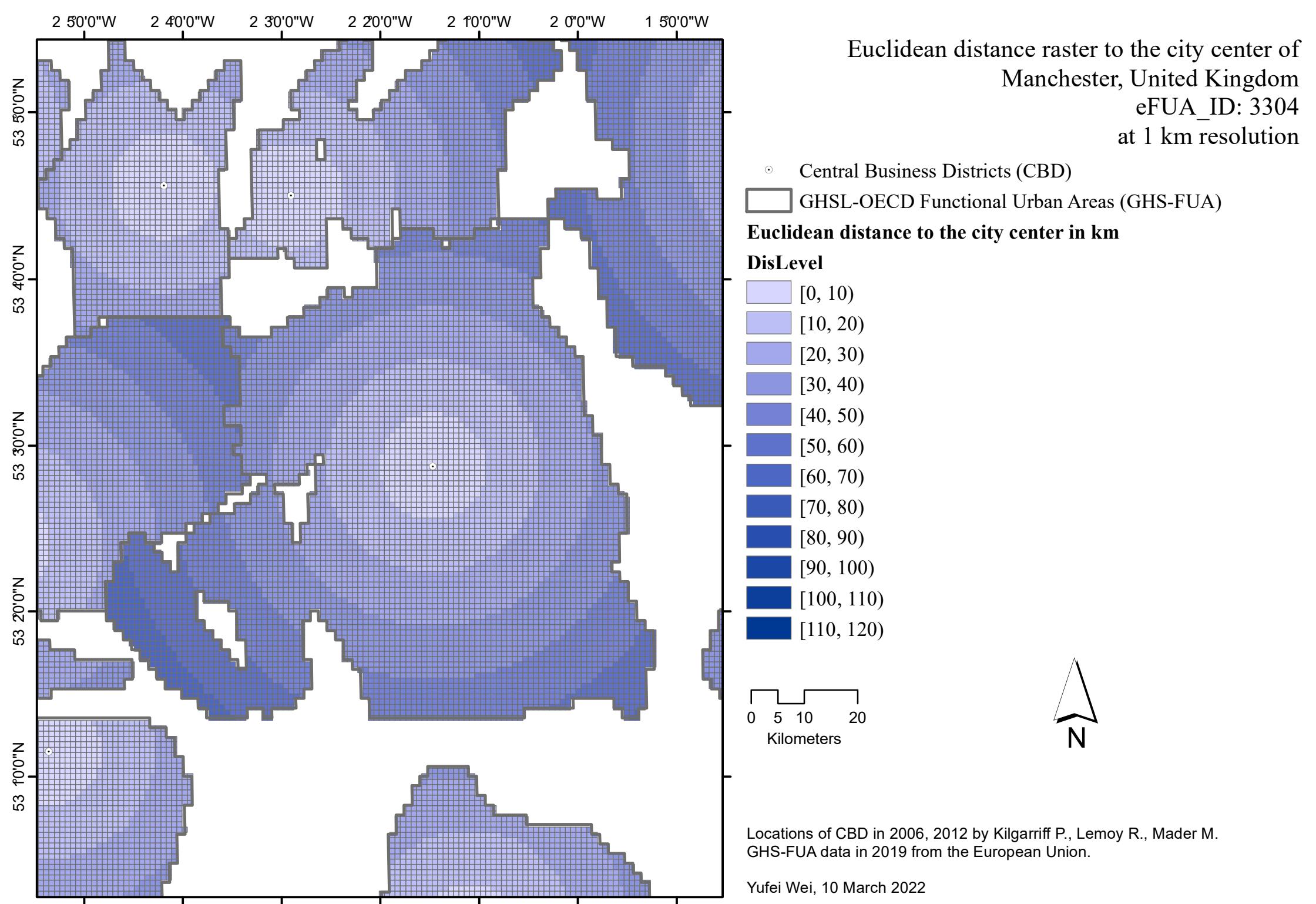


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

55 40'0"N  
55 30'0"N  
55 20'0"N





1 50'0"E

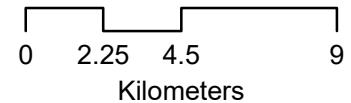
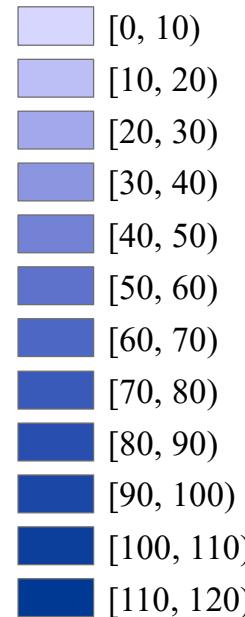
Euclidean distance raster to the city center of  
Manresa, Spain  
eFUA\_ID: 4490  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

5°10'0"W

5°0'0"W

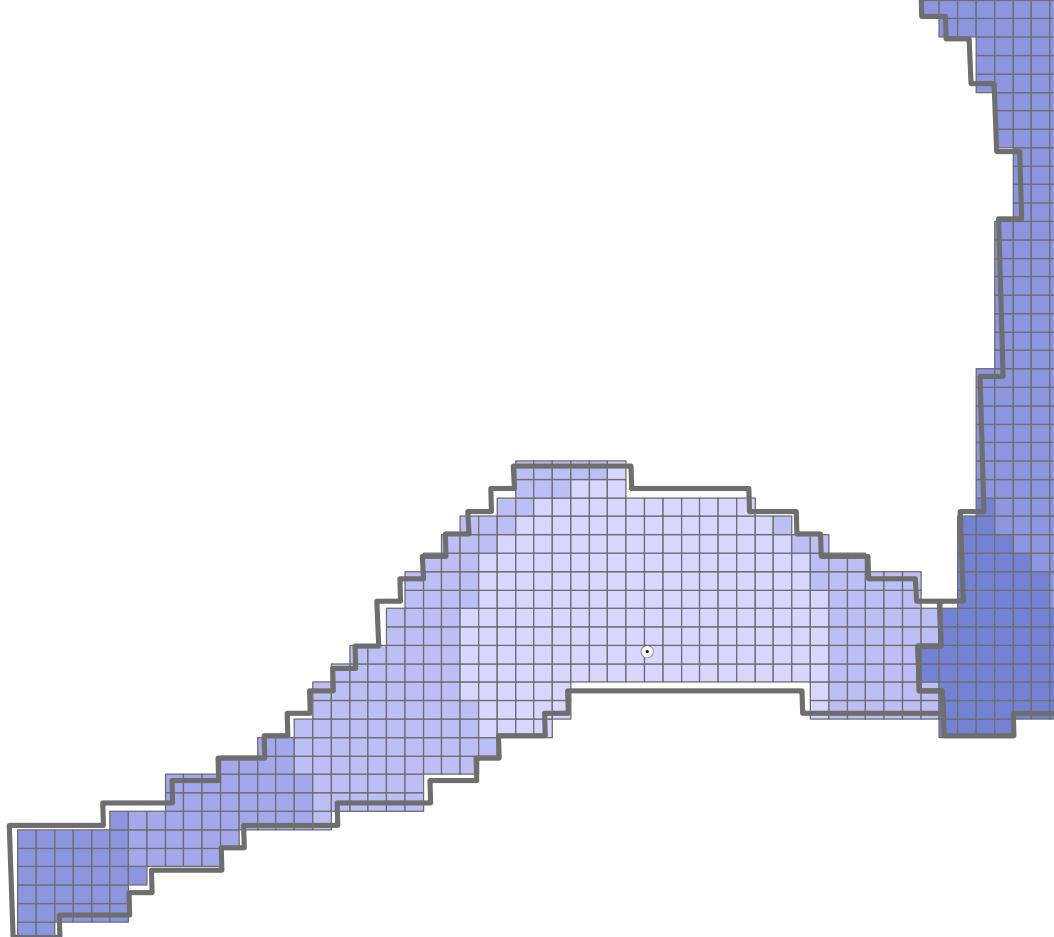
4°50'0"W

Euclidean distance raster to the city center of  
Marbella, Spain  
eFUA\_ID: 2637  
at 1 km resolution

36°40'0"N

36°30'0"N

36°20'0"N



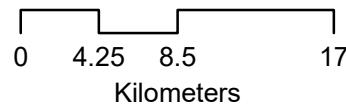
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

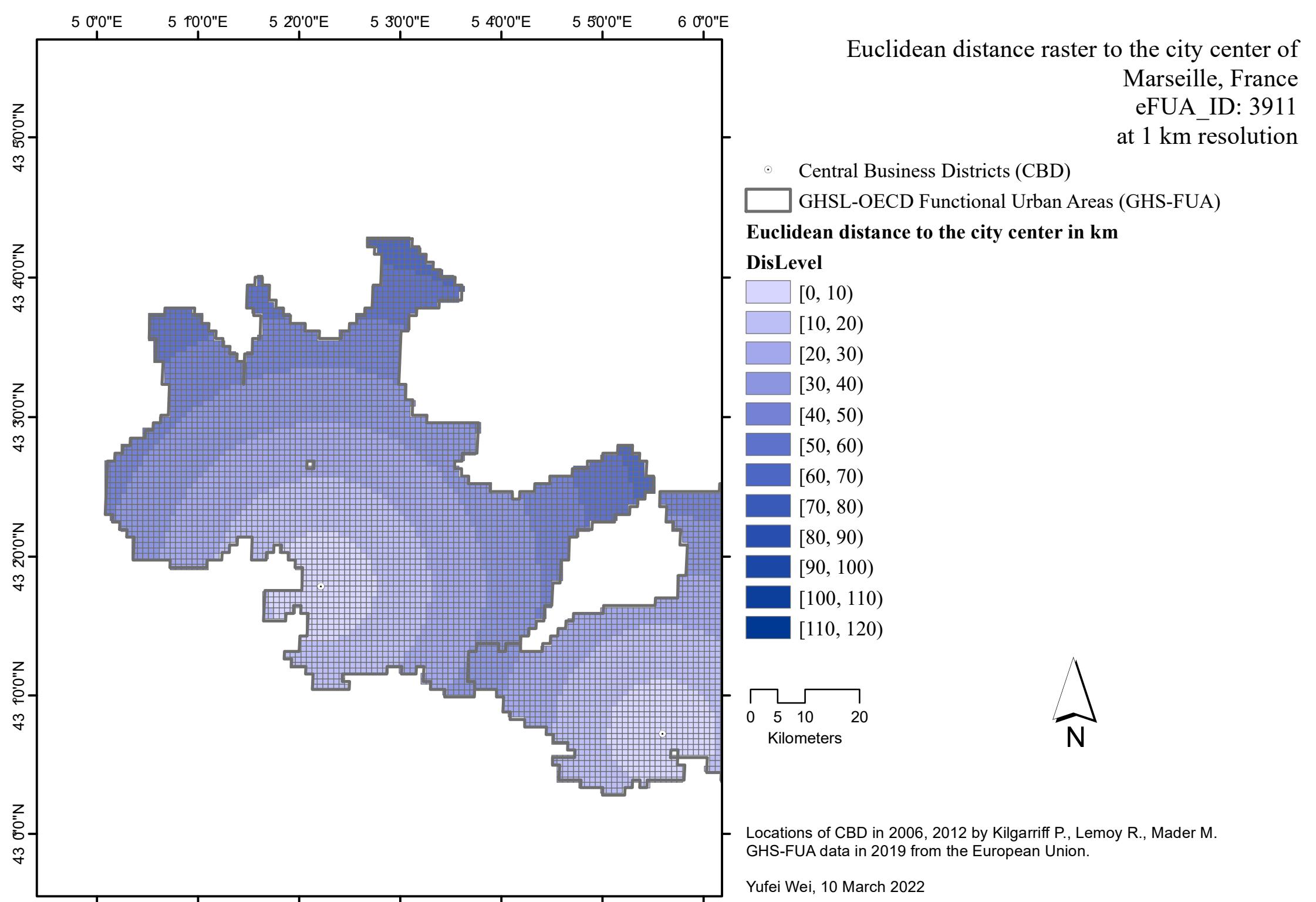
**DisLevel**

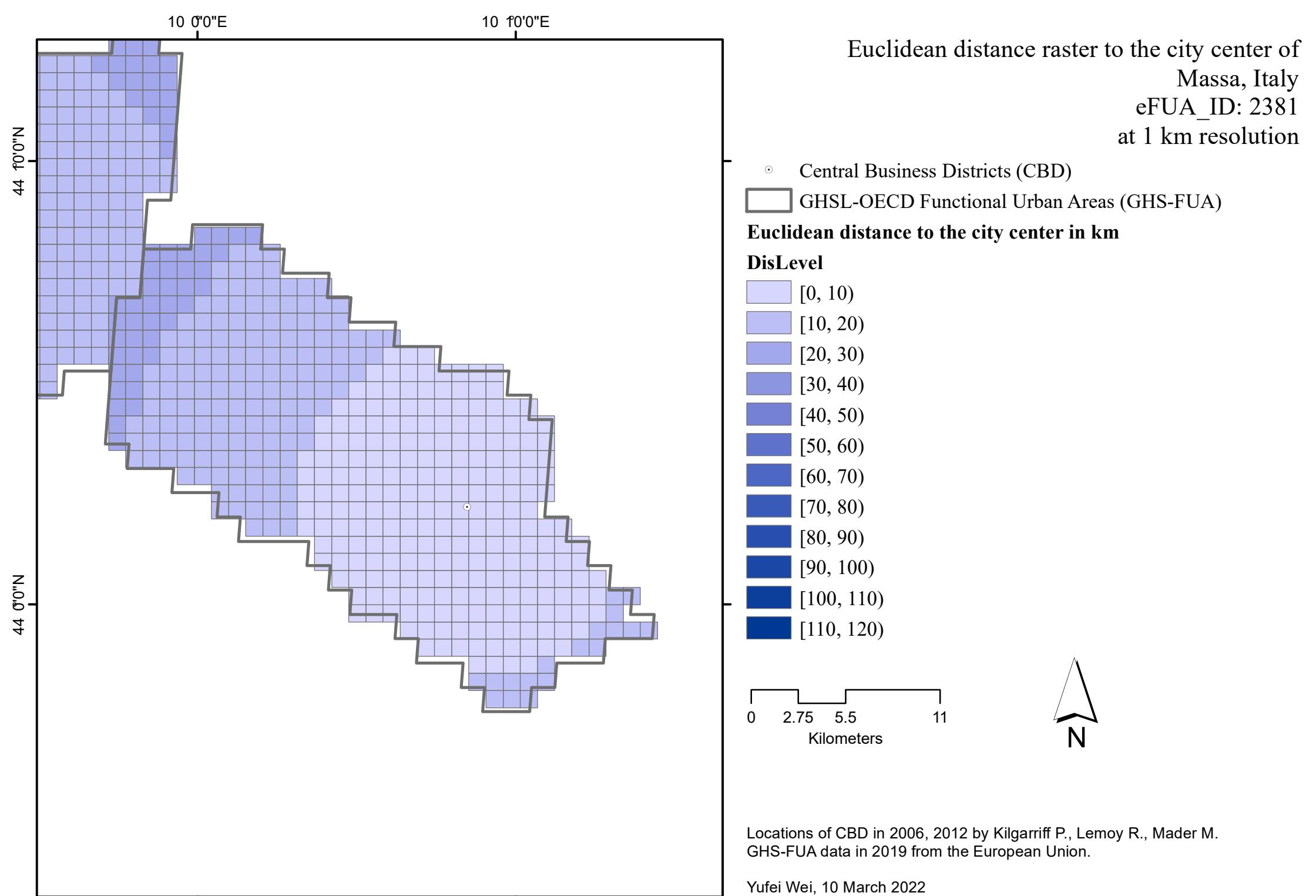
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

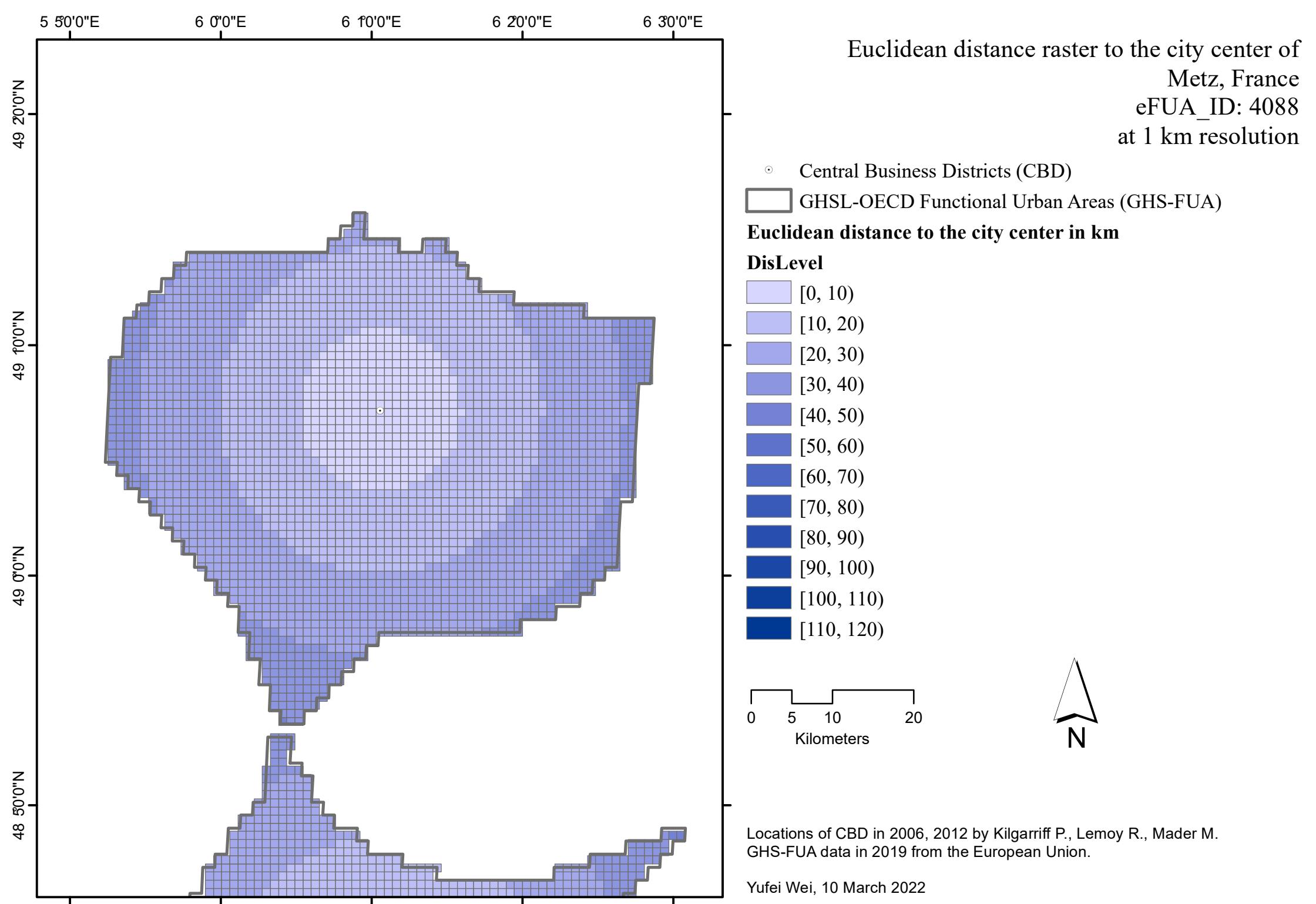


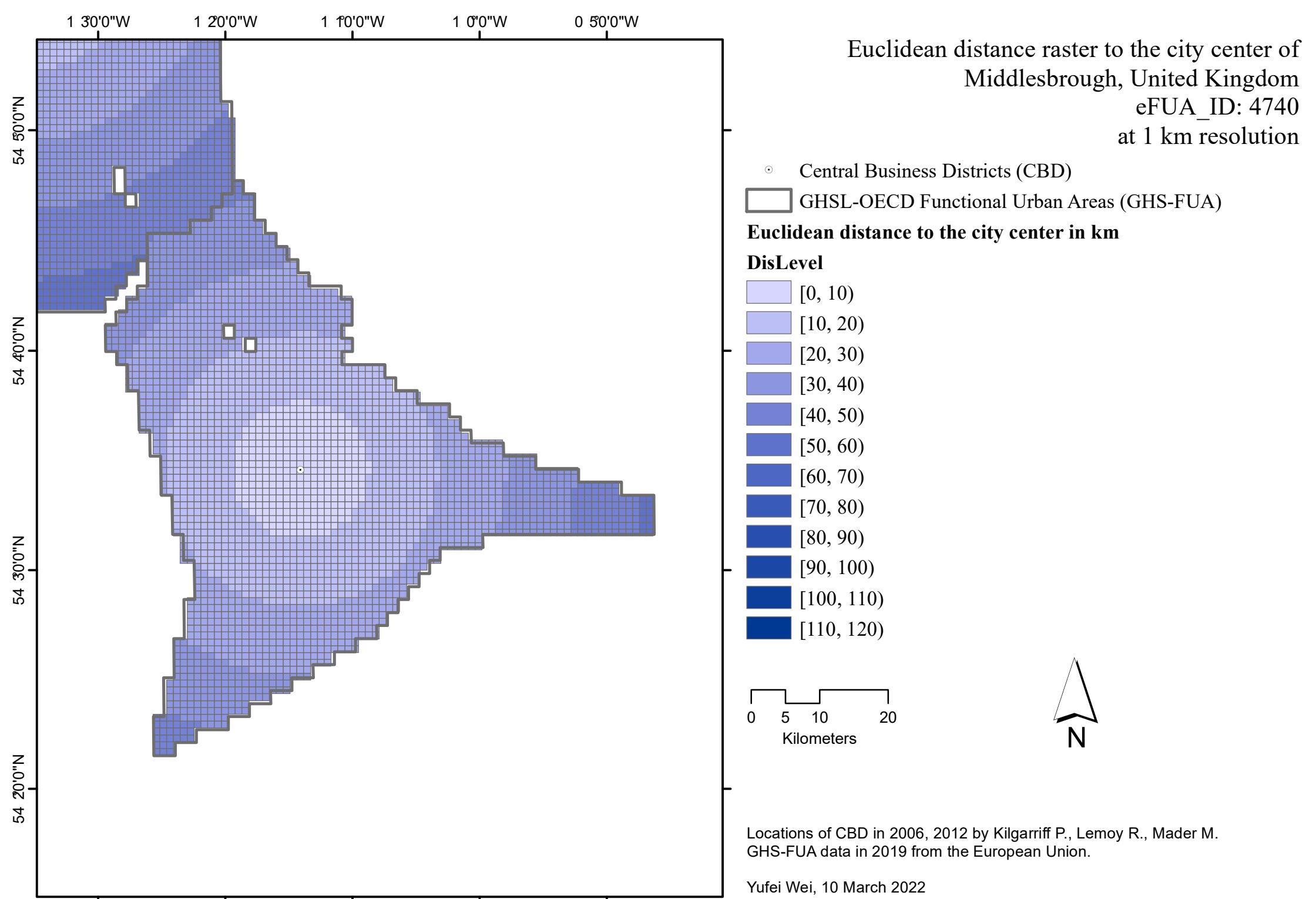
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

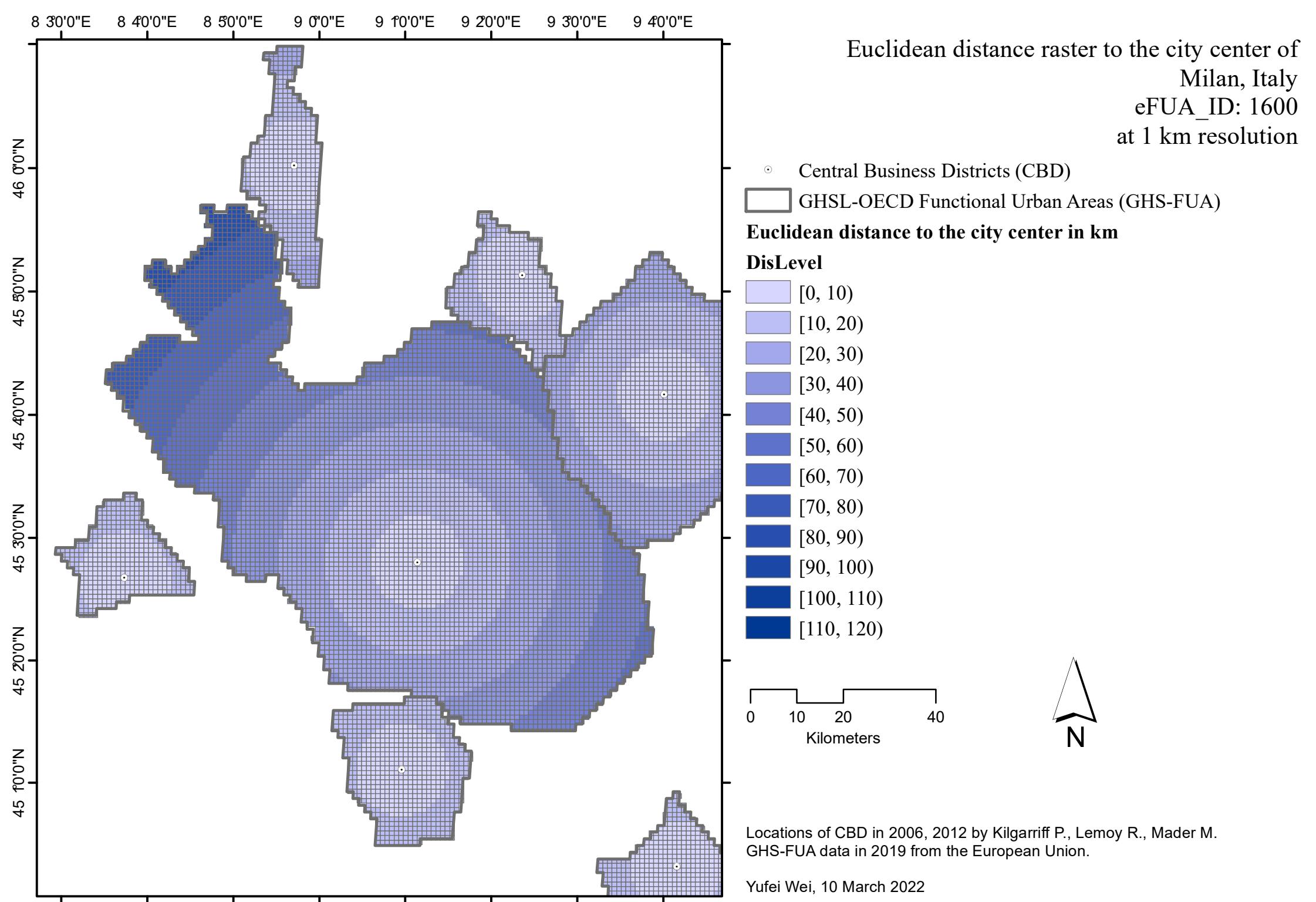
Yufei Wei, 10 March 2022

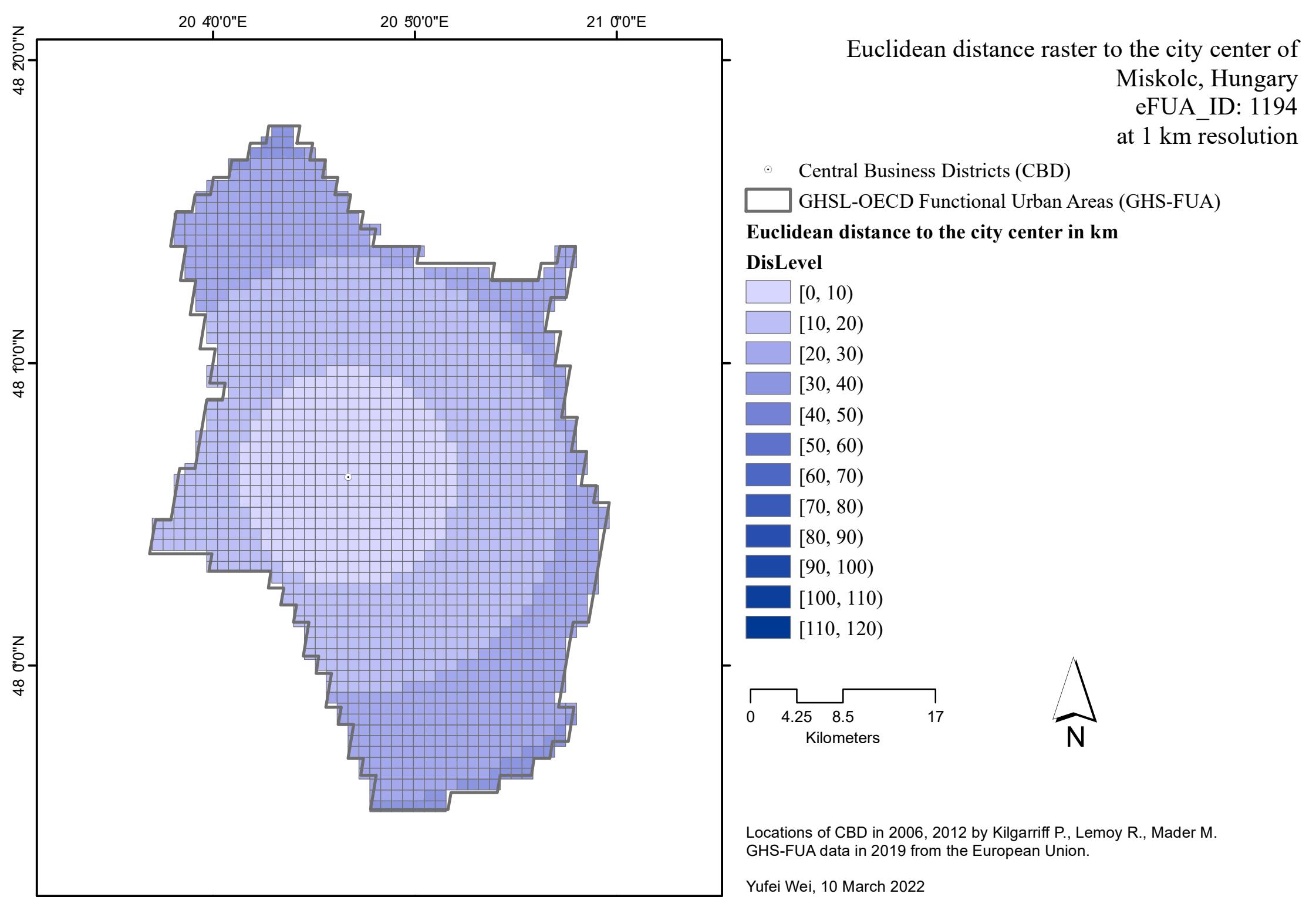










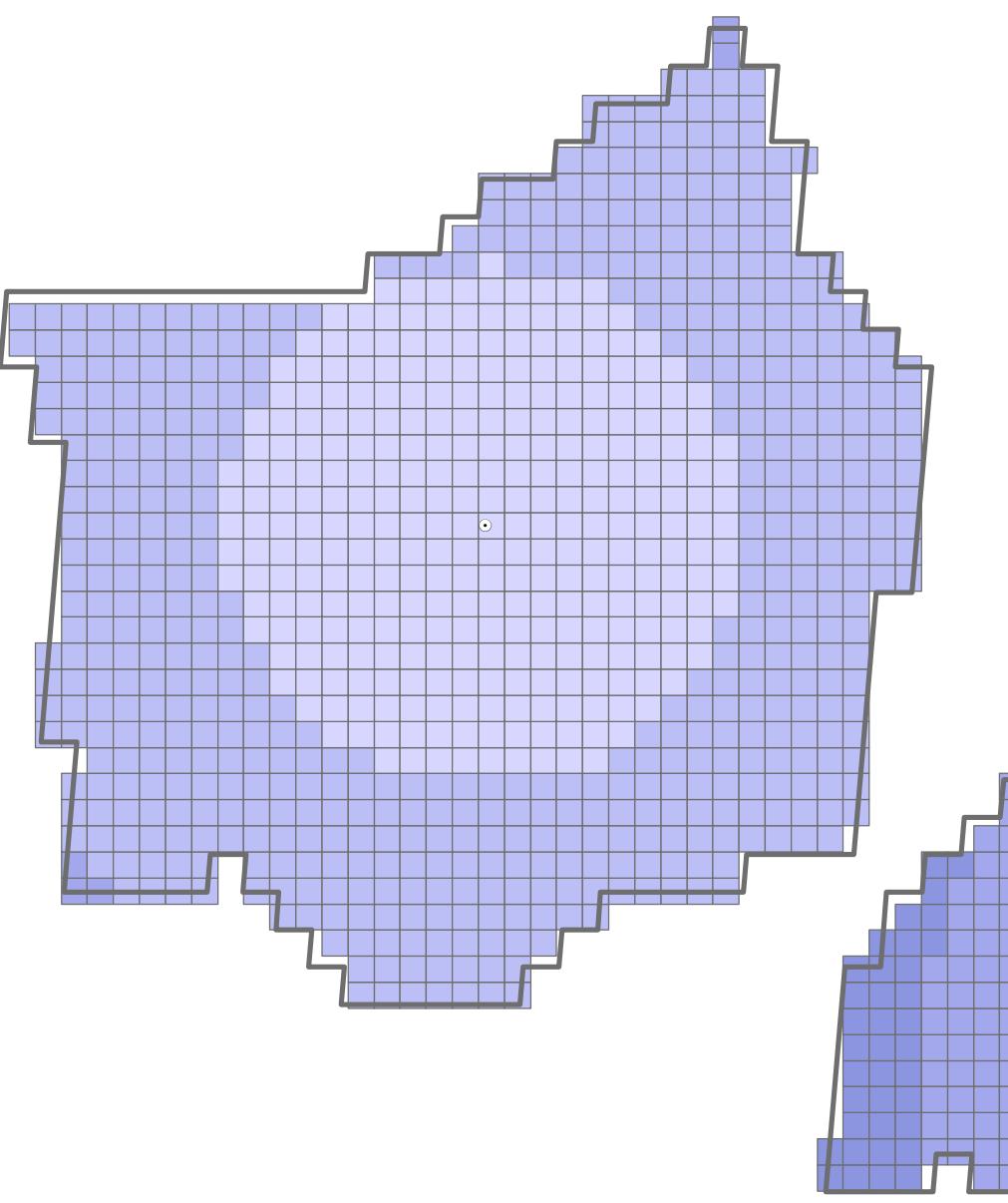


10 50'0"E

11 0'0"E

Euclidean distance raster to the city center of  
Modena, Italy  
eFUA\_ID: 2832  
at 1 km resolution

44 40'0"N  
44 30'0"N



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 3 6 12  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

6 10'0"E

6 20'0"E

6 30'0"E

6 40'0"E

Euclidean distance raster to the city center of  
Monchengladbach, Germany  
eFUA\_ID: 388  
at 1 km resolution

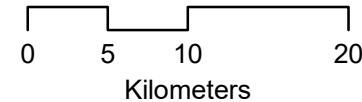
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

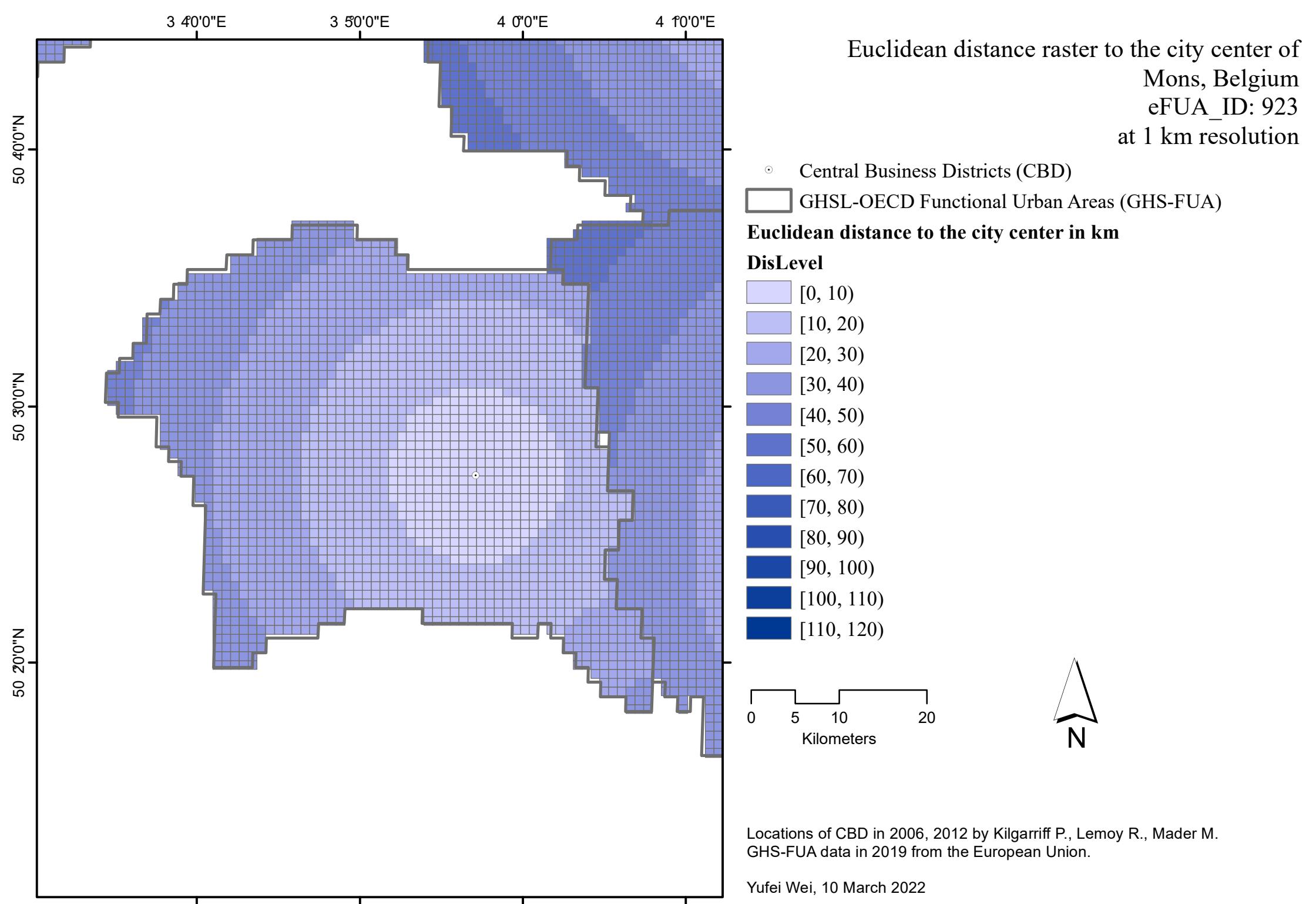
**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



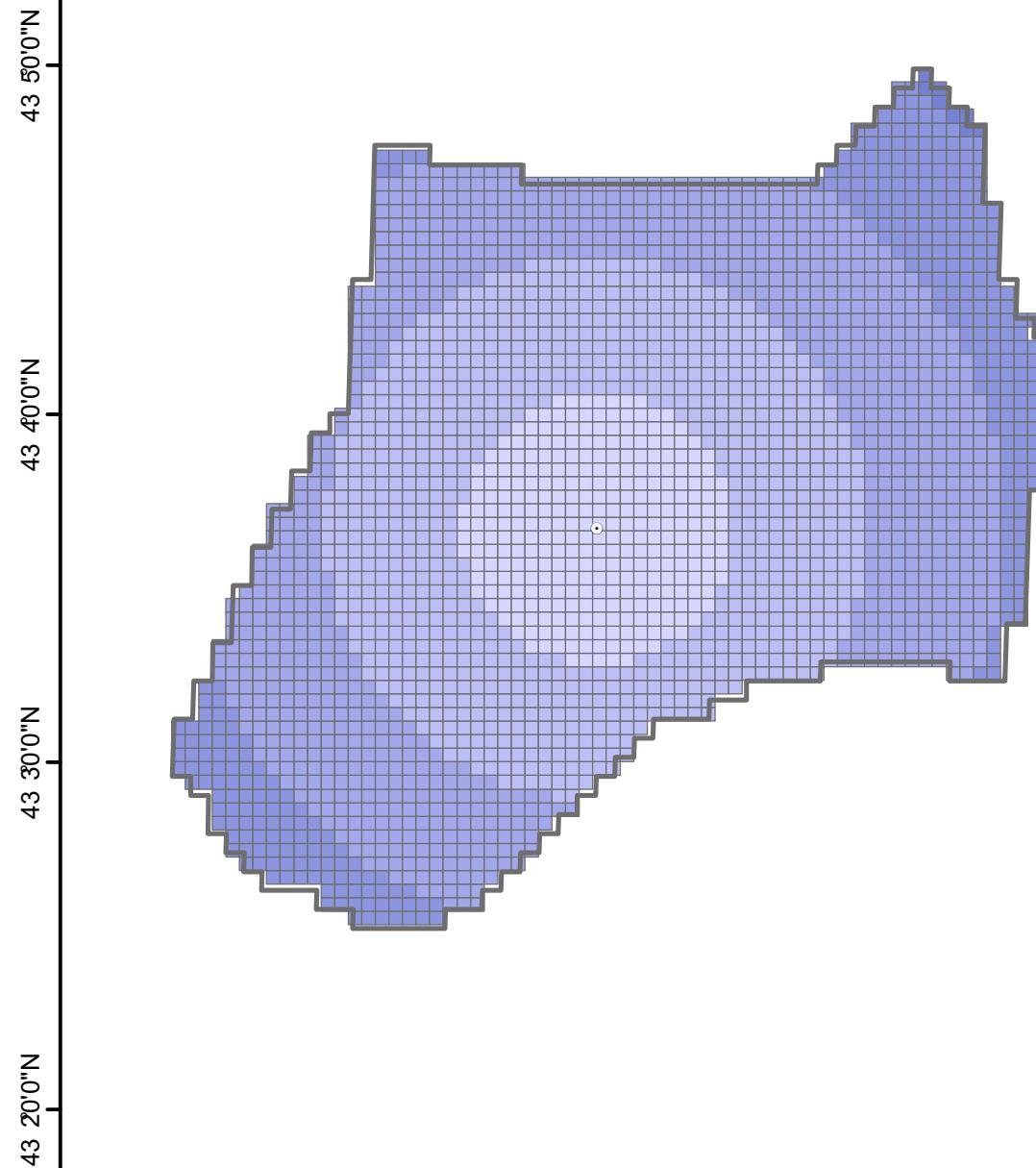
3 40'0"E

3 50'0"E

4 0'0"E

4 10'0"E

Euclidean distance raster to the city center of  
Montpellier, France  
eFUA\_ID: 3541  
at 1 km resolution



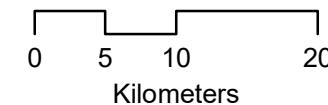
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

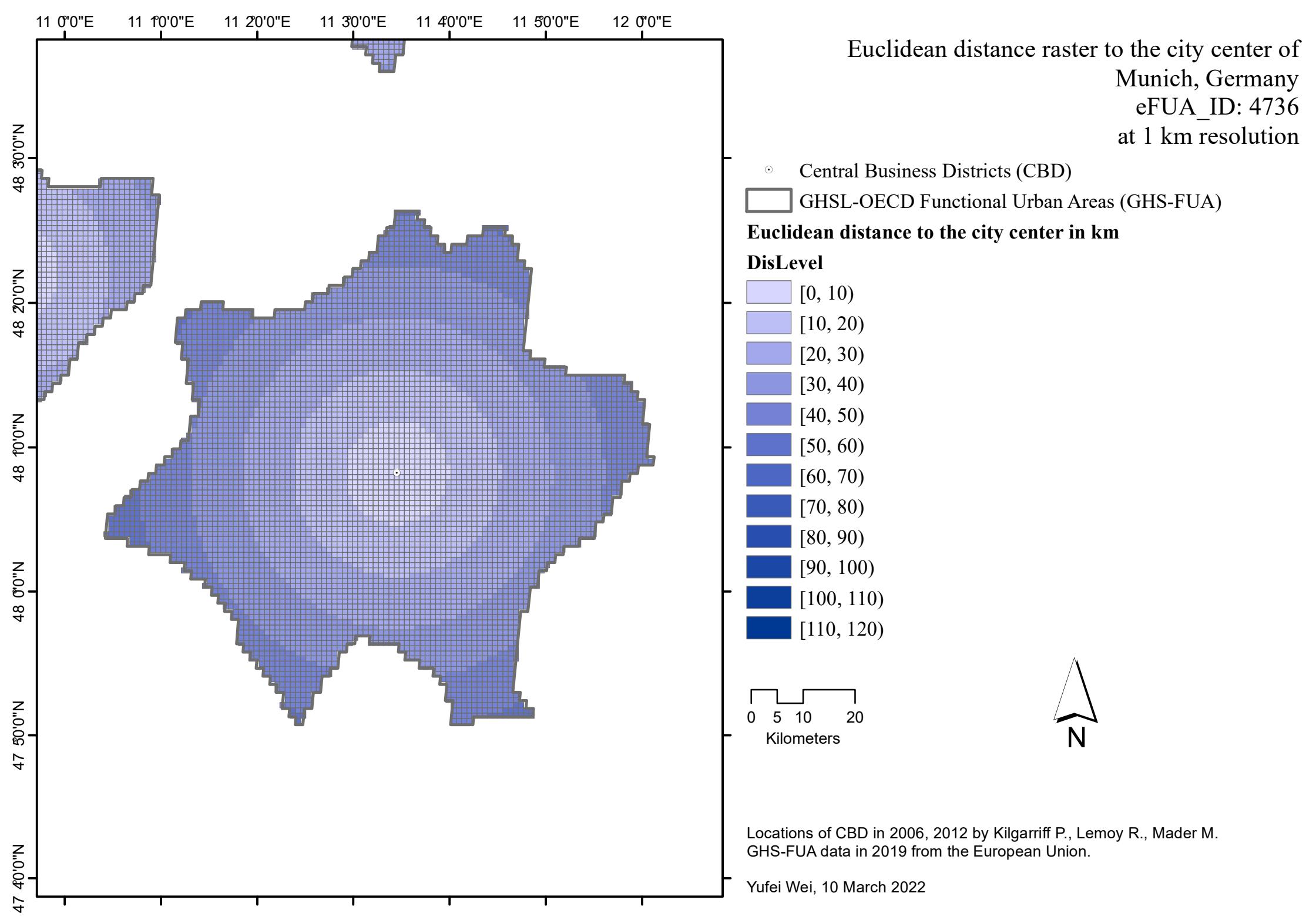
**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



1 20'0"W

1 10'0"W

1 0'0"W

0 50'0"W

Euclidean distance raster to the city center of  
Murcia, Spain  
eFUA\_ID: 3909  
at 1 km resolution

38 10'0"N

38 0'0"N

37 50'0"N

37 40'0"N

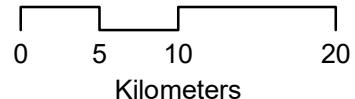
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

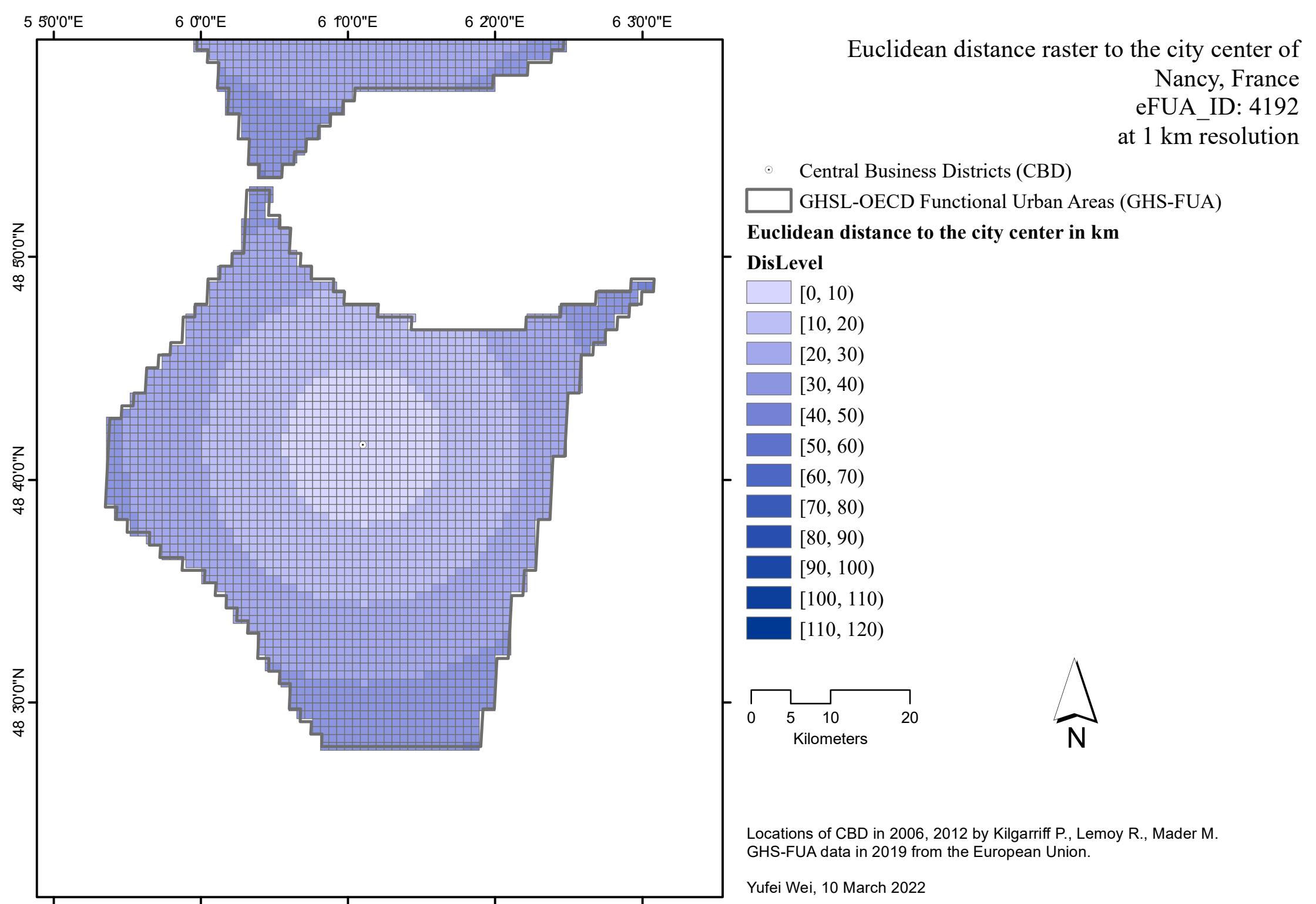
**DisLevel**

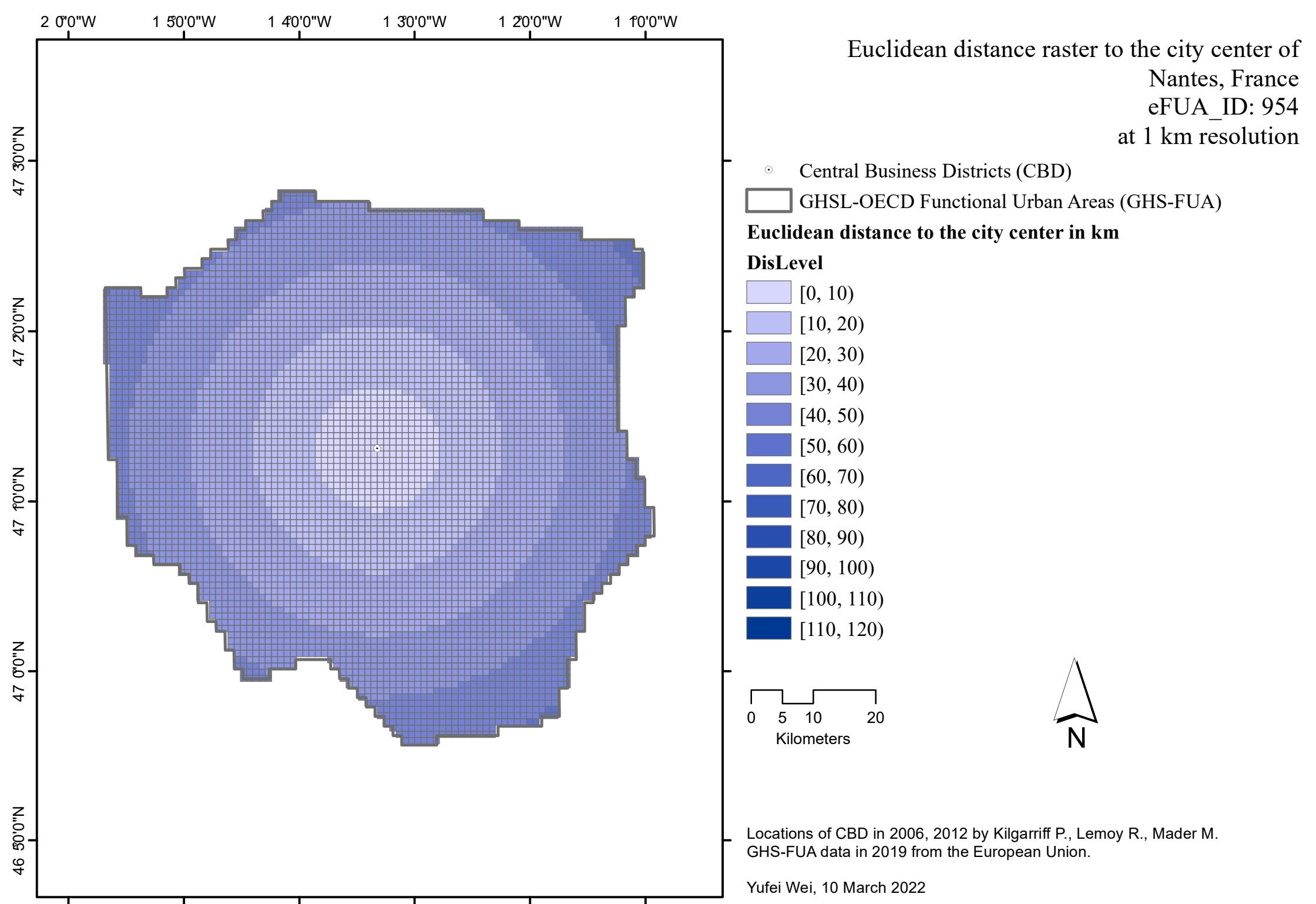
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

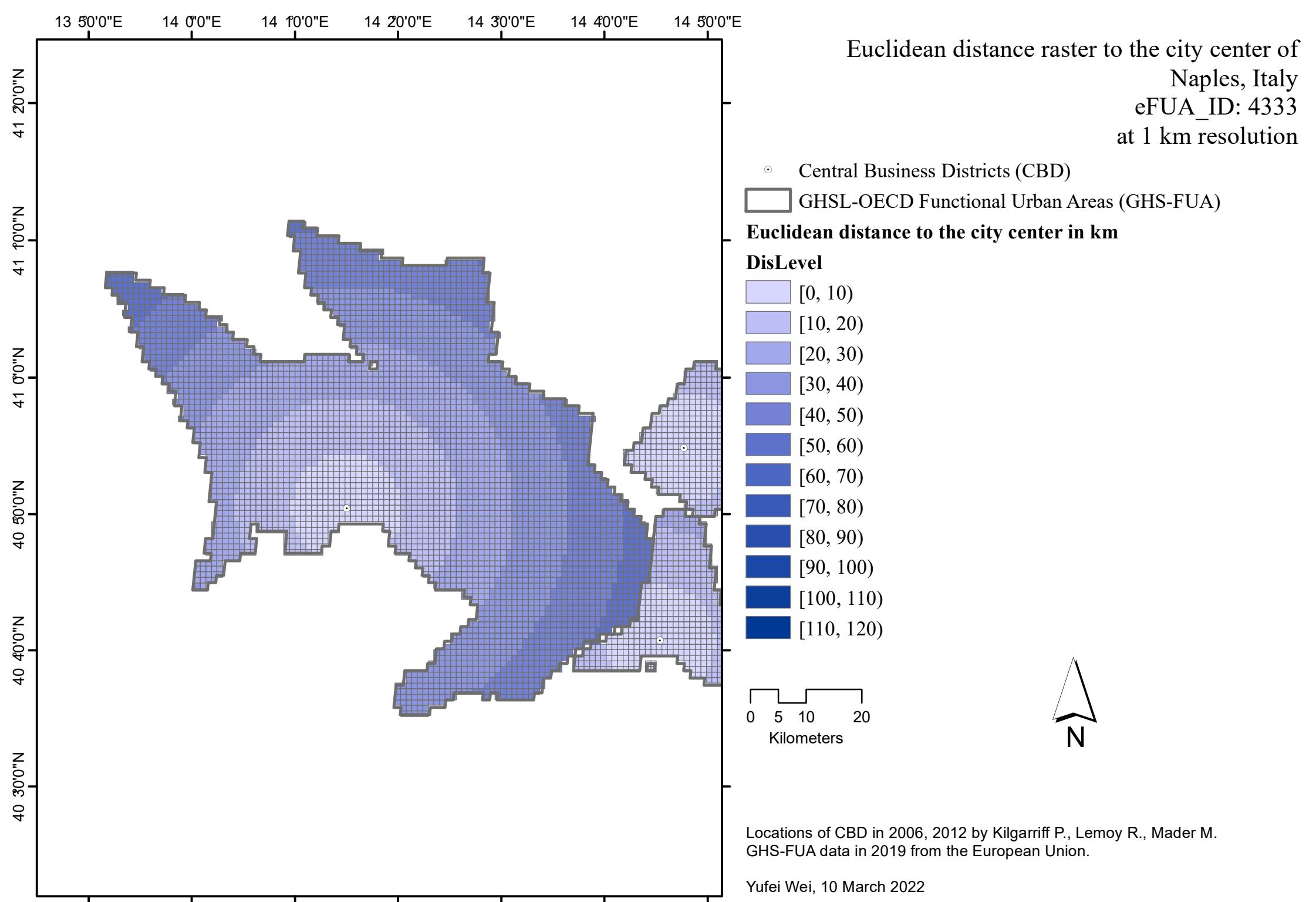


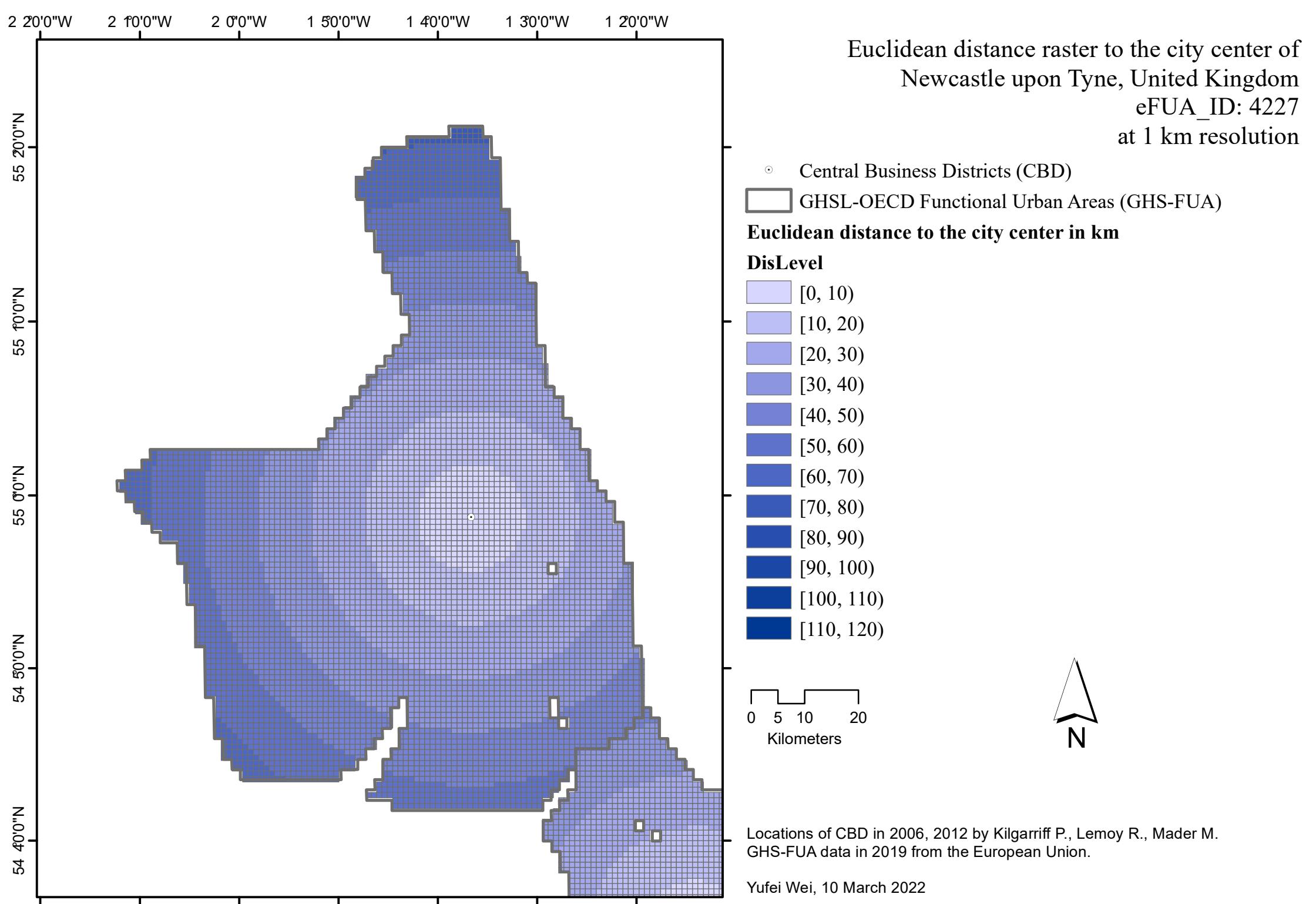
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

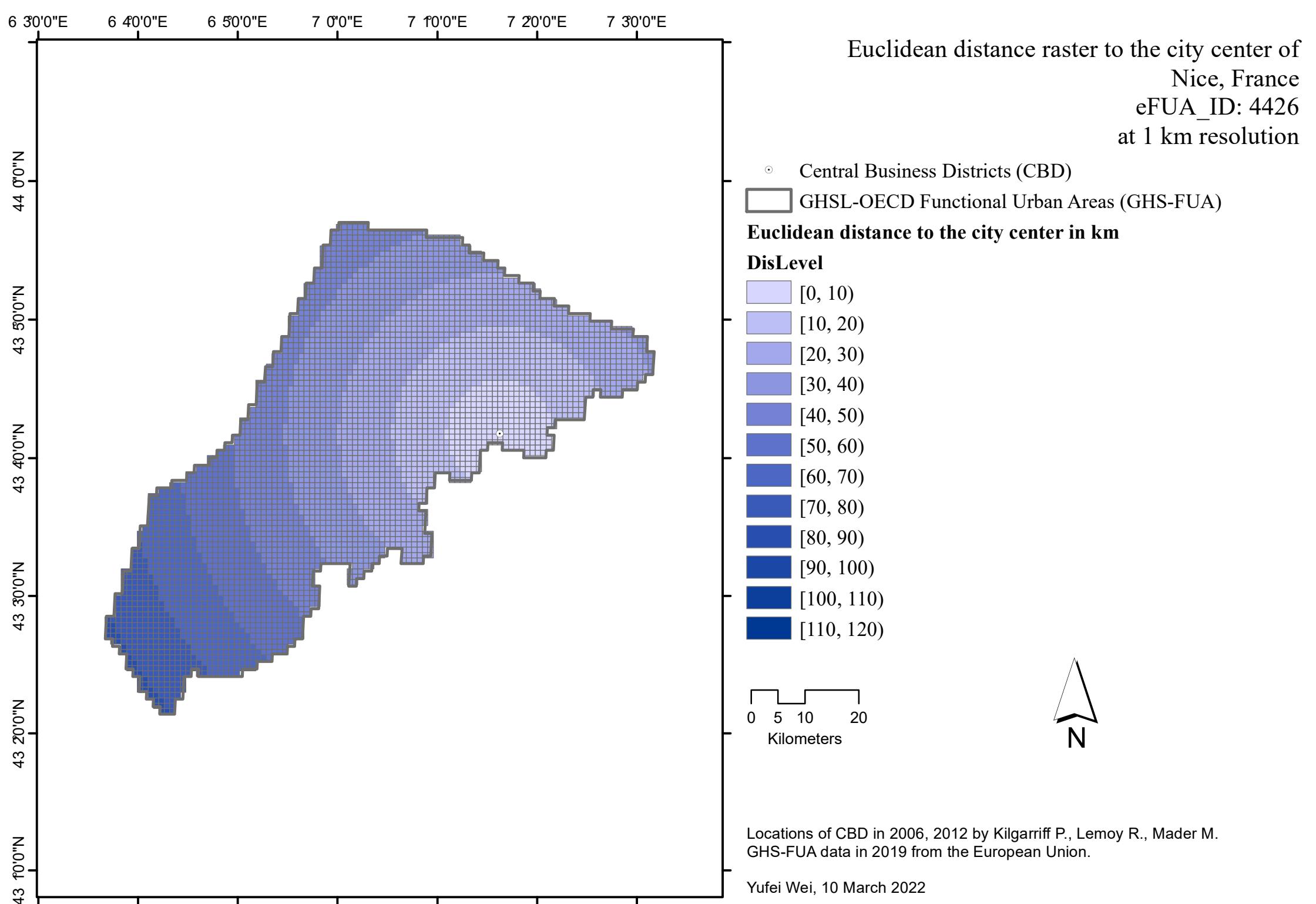
Yufei Wei, 10 March 2022











33°20'0"E

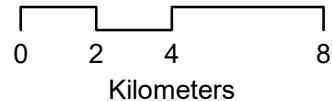
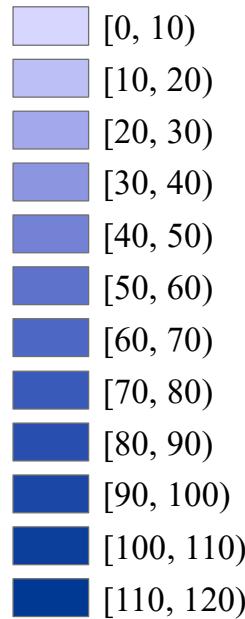
Euclidean distance raster to the city center of  
Nicosia, Cyprus  
eFUA\_ID: 226  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

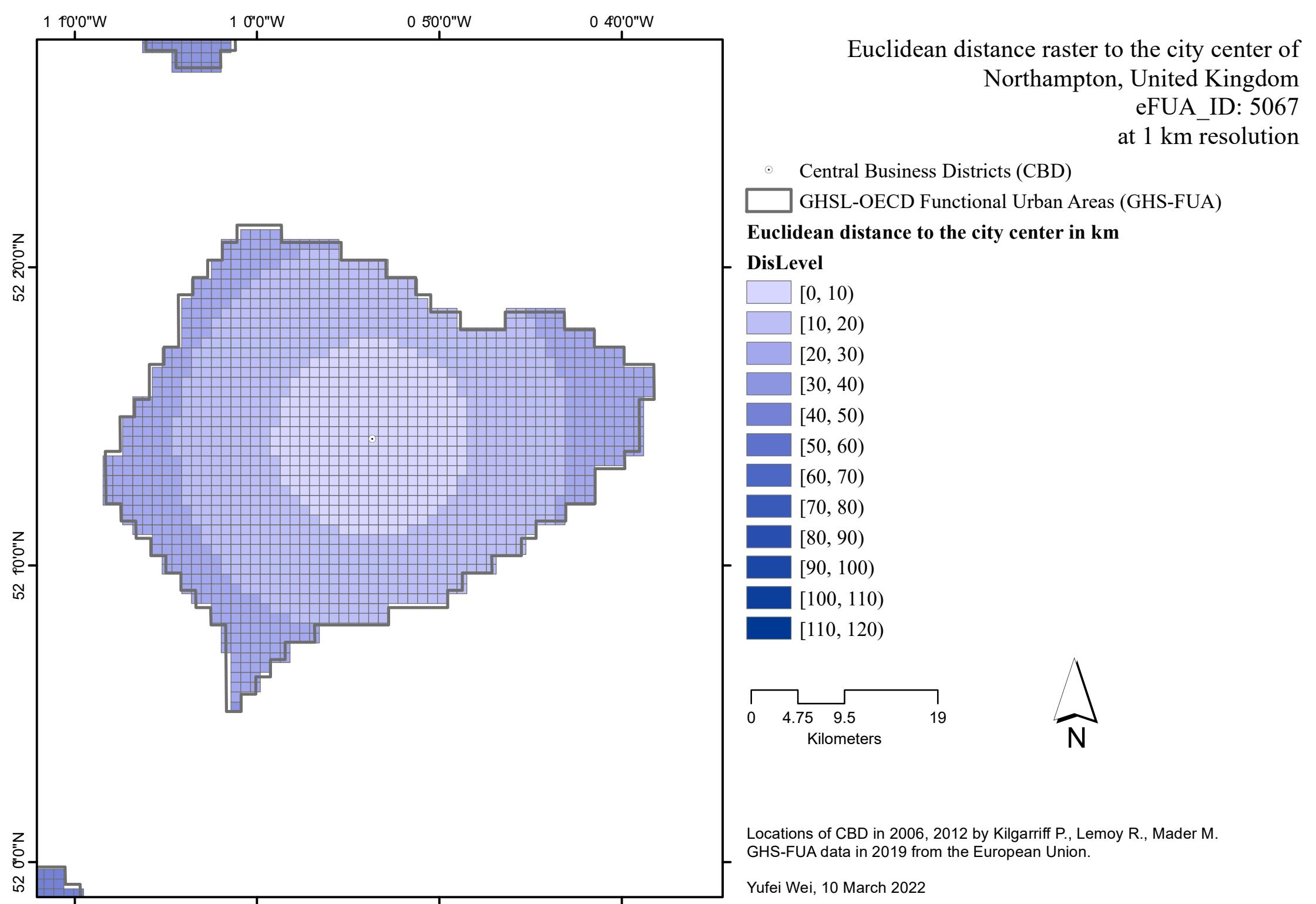
**Euclidean distance to the city center in km**

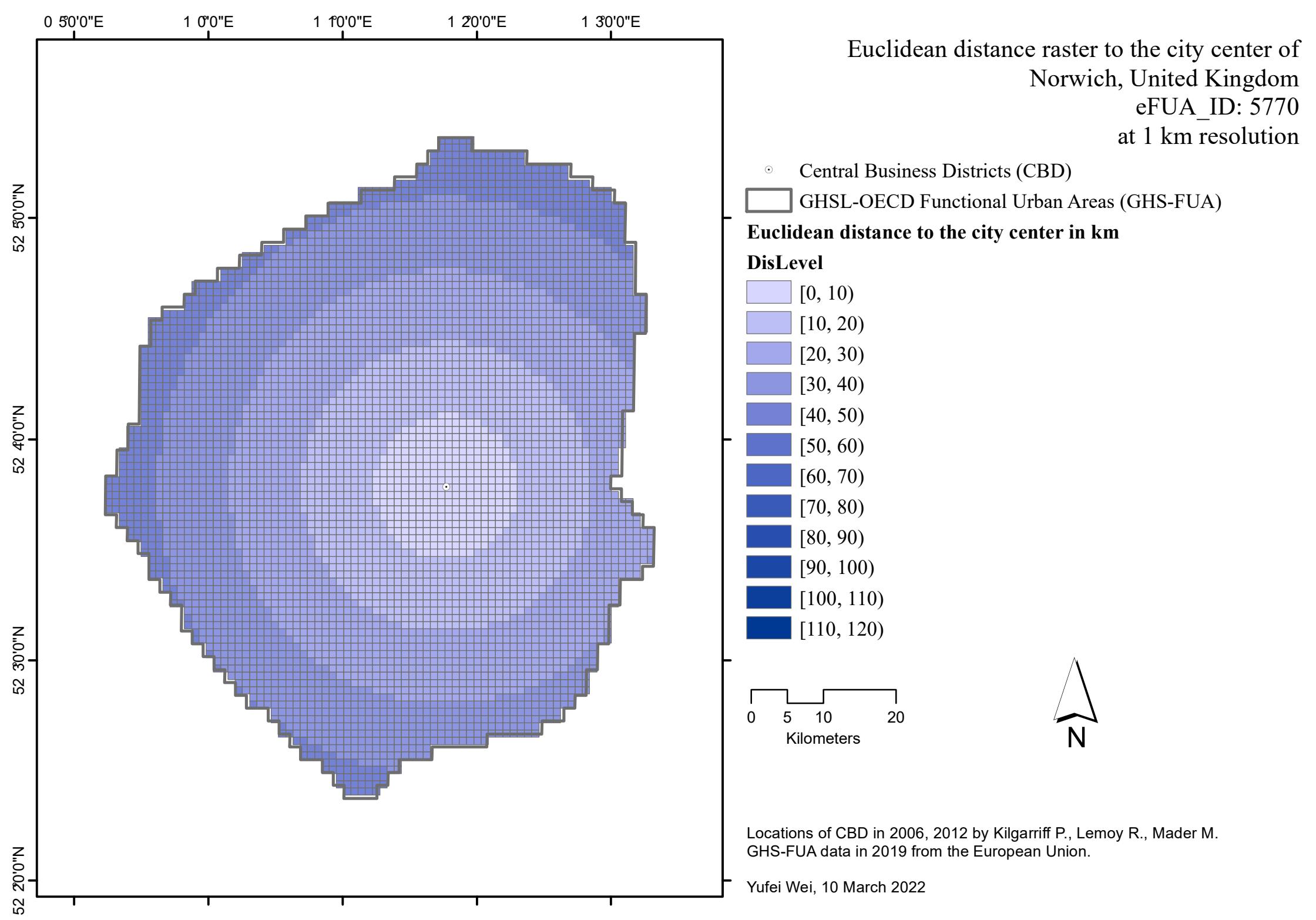
**DisLevel**

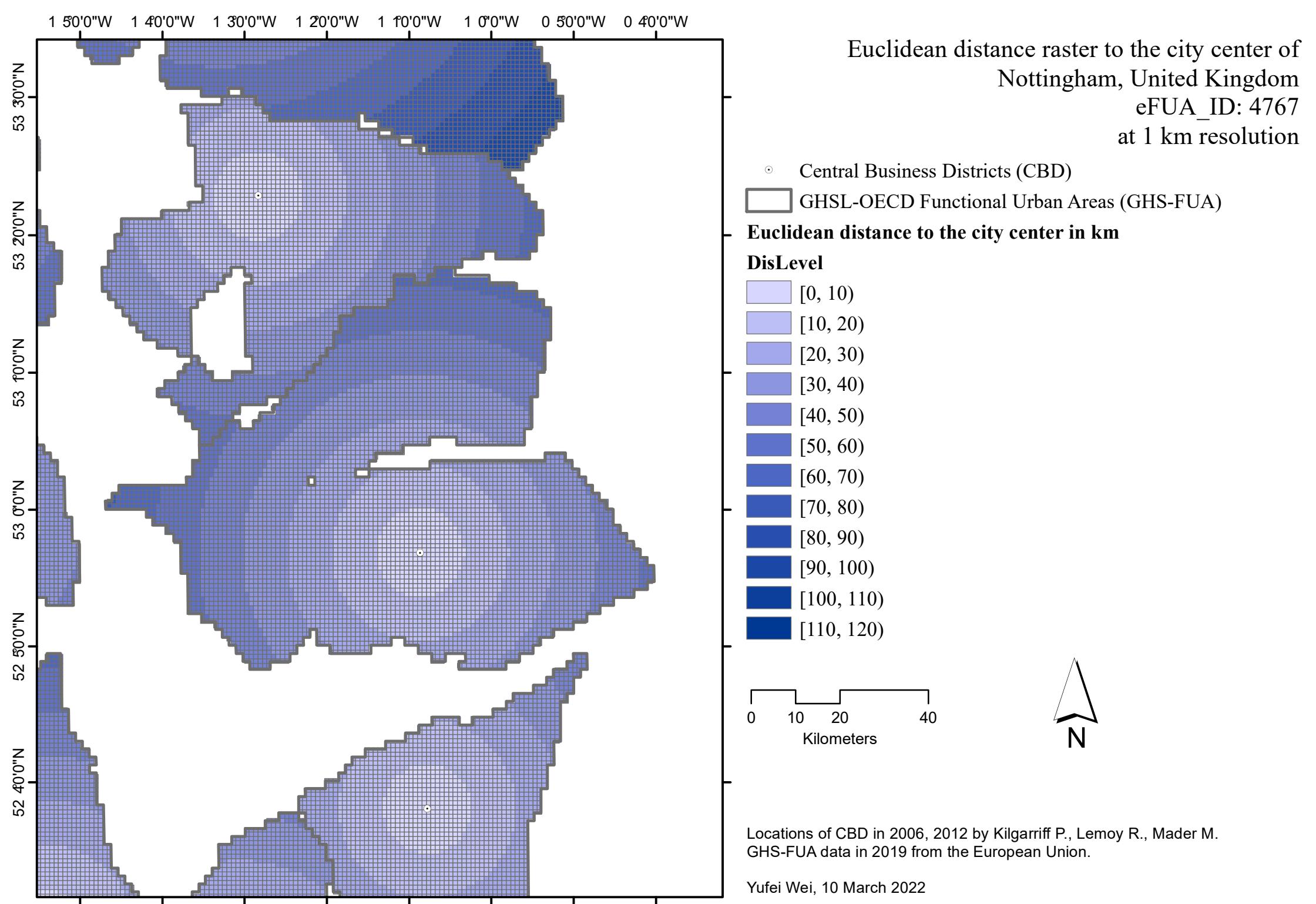


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



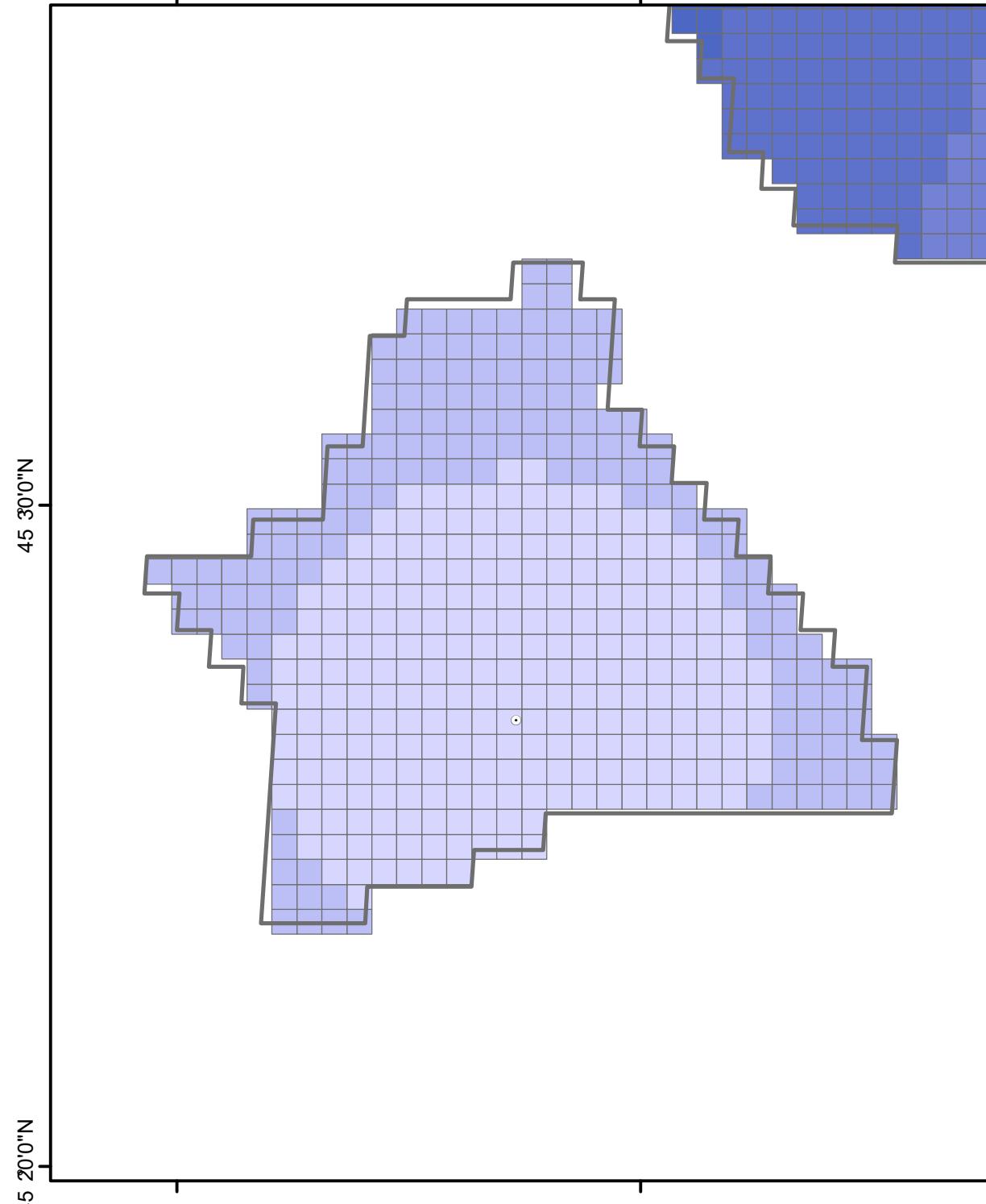




8 30'0"E

8 40'0"E

Euclidean distance raster to the city center of  
Novara, Italy  
eFUA\_ID: 706  
at 1 km resolution



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



20 30'0"E

20 40'0"E

20 50'0"E

21 0'0"E

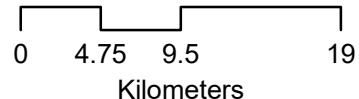
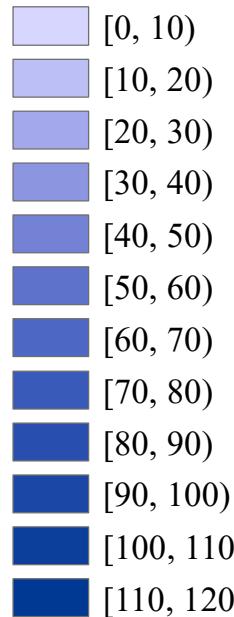
Euclidean distance raster to the city center of  
Nowy Sacz, Poland  
eFUA\_ID: 3418  
at 1 km resolution

○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

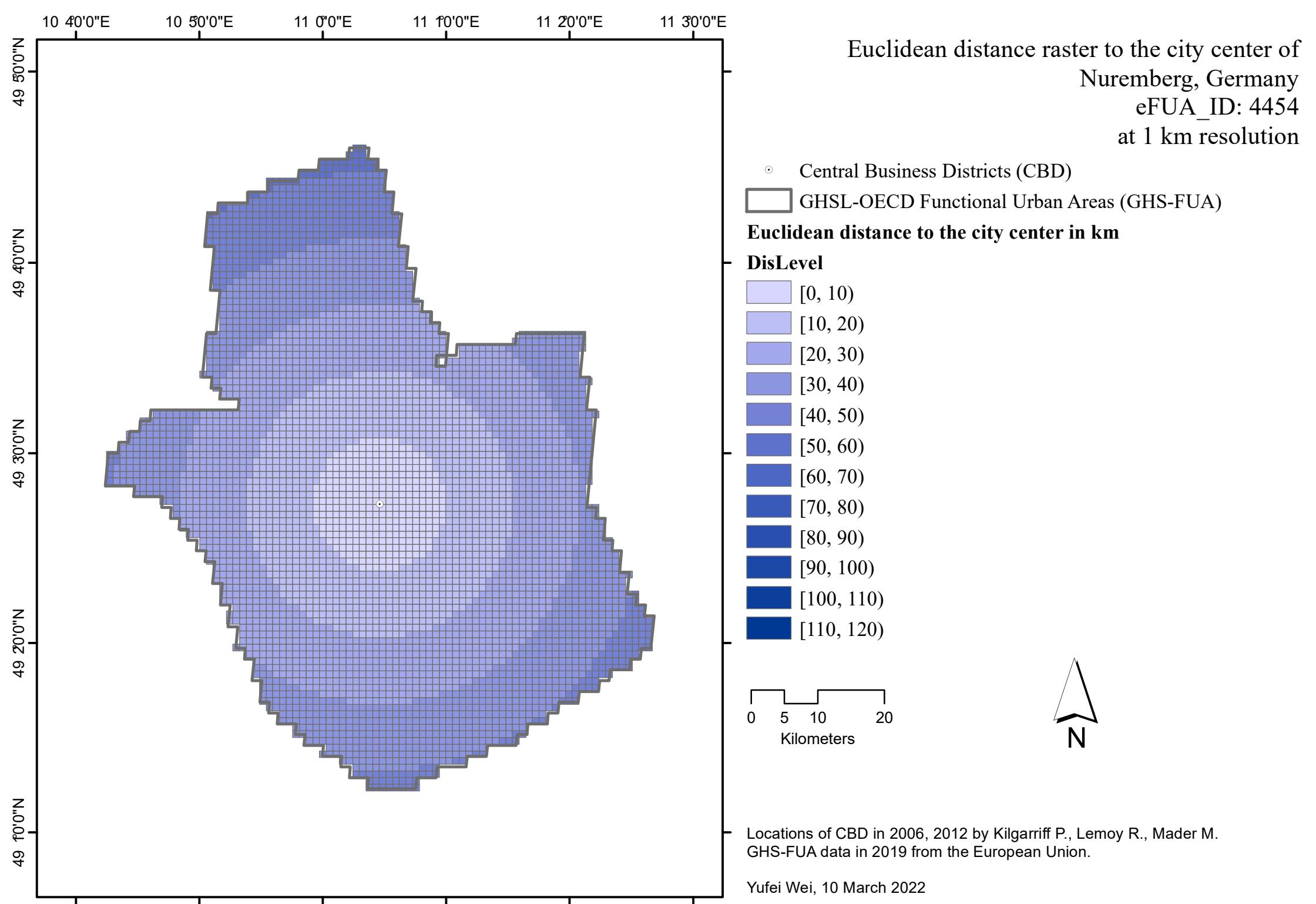
### Euclidean distance to the city center in km

#### DisLevel



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



10 0'0"E 10 10'0"E 10 20'0"E 10 30'0"E 10 40'0"E 10 50'0"E

55 40'0"N

55 30'0"N

55 20'0"N

55 10'0"N

55 0'0"N

Euclidean distance raster to the city center of  
Odense, Denmark  
eFUA\_ID: 389  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)

[10, 20)

[20, 30)

[30, 40)

[40, 50)

[50, 60)

[60, 70)

[70, 80)

[80, 90)

[90, 100)

[100, 110)

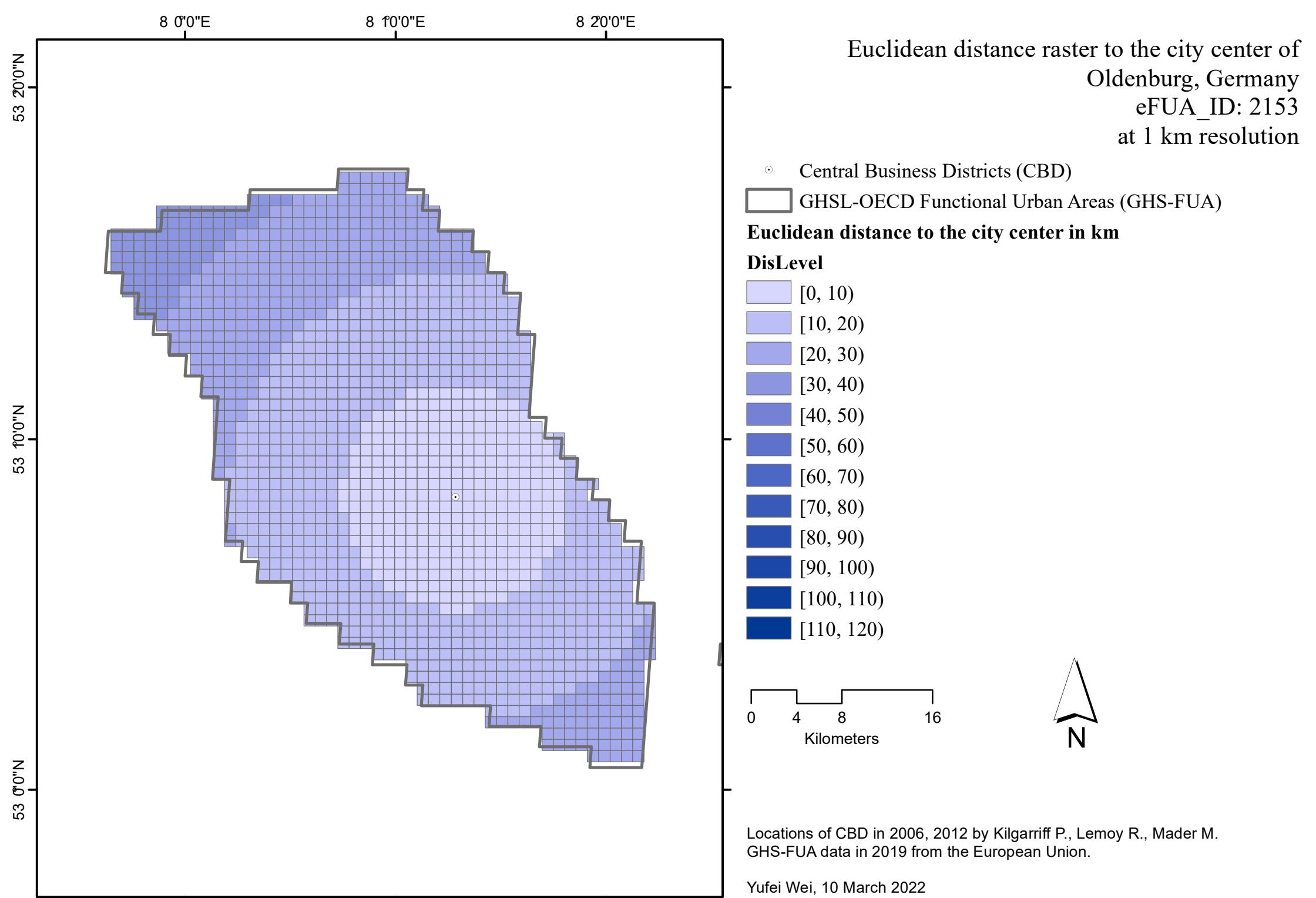
[110, 120)

0 5 10 20  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



17 0°0'E

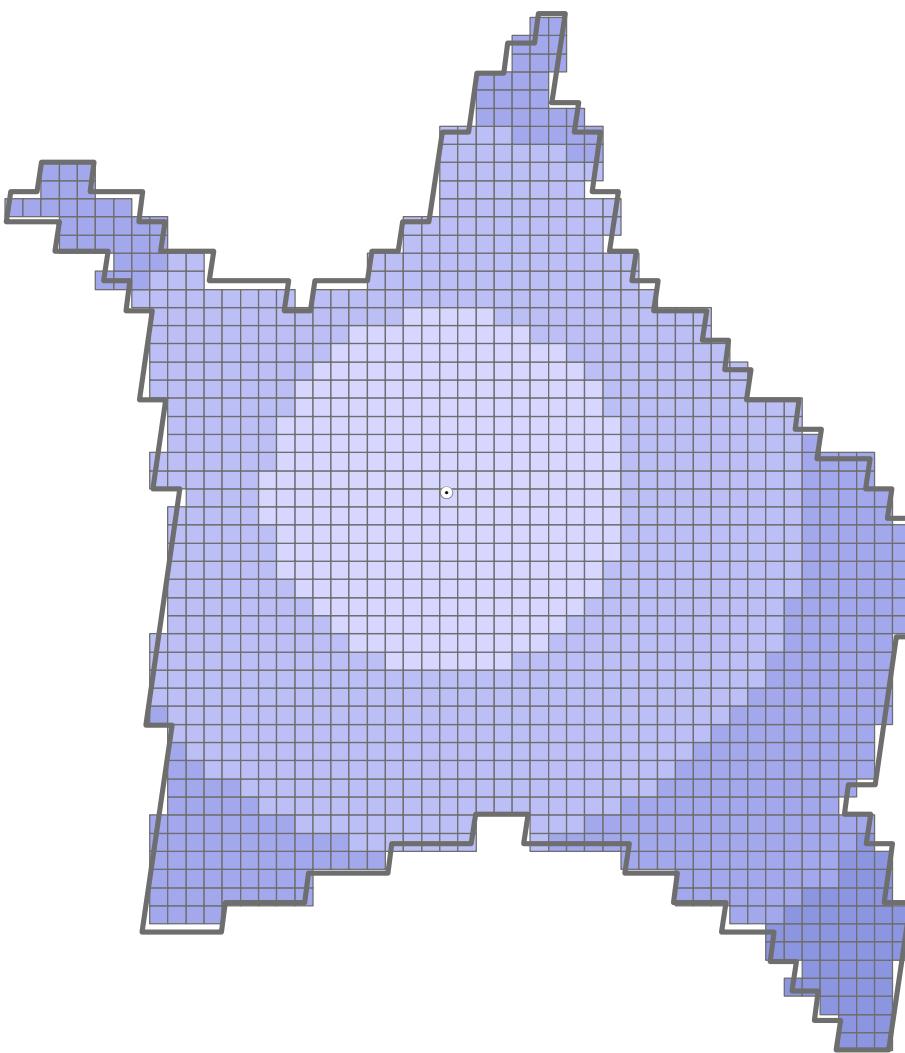
17 10'0"E

17 20'0"E

17 30'0"E

Euclidean distance raster to the city center of  
Olomouc, Czech Republic  
eFUA\_ID: 1286  
at 1 km resolution

49 40'0"N  
49 30'0"N



○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 4.5 9 18  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

17 40'0"E

17 50'0"E

18 0'0"E

18 10'0"E

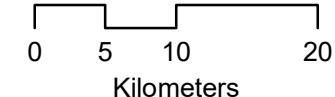
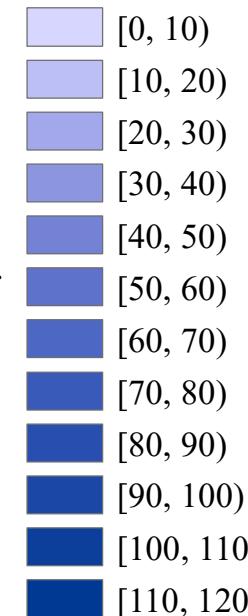
Euclidean distance raster to the city center of  
Opole, Poland  
eFUA\_ID: 2397  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

21 50'0"E

22 0'0"E

22 10'0"E

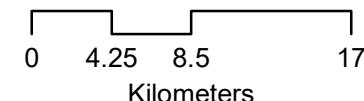
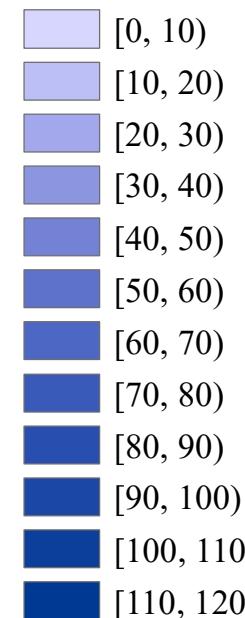
Euclidean distance raster to the city center of  
Oradea, Romania  
eFUA\_ID: 469  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

15 0°0'E

15 10'0"E

15 20'0"E

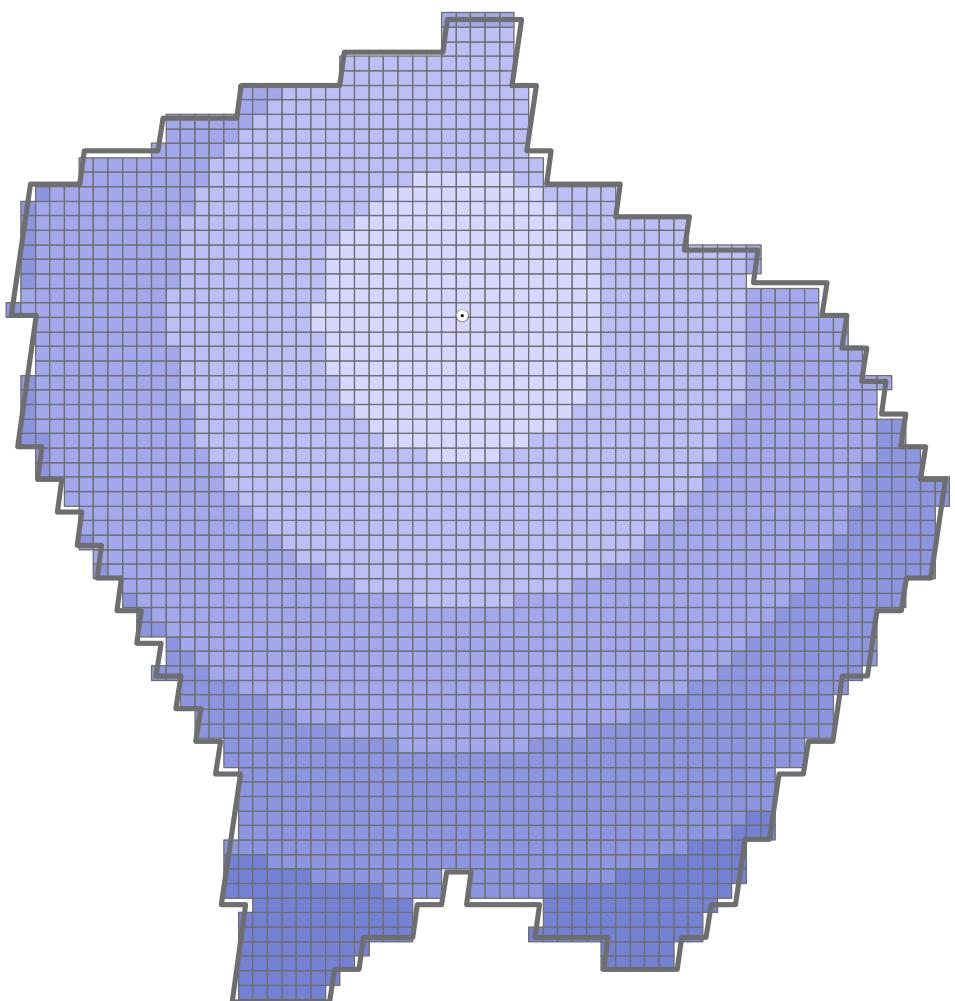
15 30'0"E

Euclidean distance raster to the city center of  
Orebro, Sweden  
eFUA\_ID: 761  
at 1 km resolution

59 20'0"N

59 10'0"N

59 0°0"N



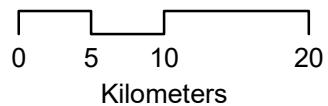
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

1 40'0"E

1 50'0"E

2 0'0"E

2 10'0"E

2 20'0"E

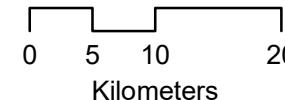
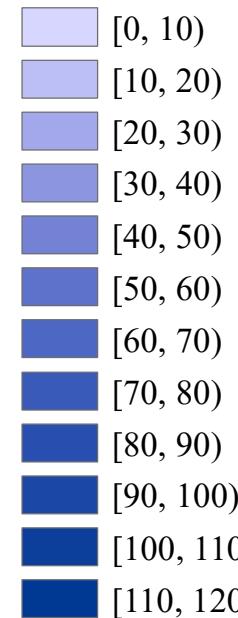
Euclidean distance raster to the city center of  
Orleans, France  
eFUA\_ID: 2639  
at 1 km resolution

○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

#### DisLevel



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

7 50'0"E

8 0'0"E

8 10'0"E

8 20'0"E

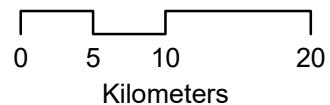
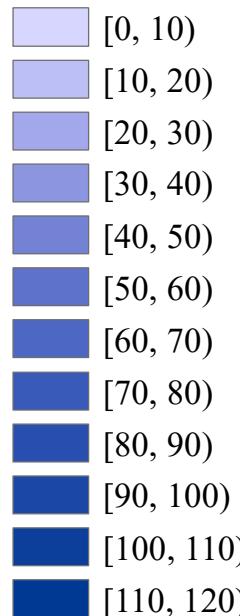
Euclidean distance raster to the city center of  
Osnabrück, Germany  
eFUA\_ID: 2004  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

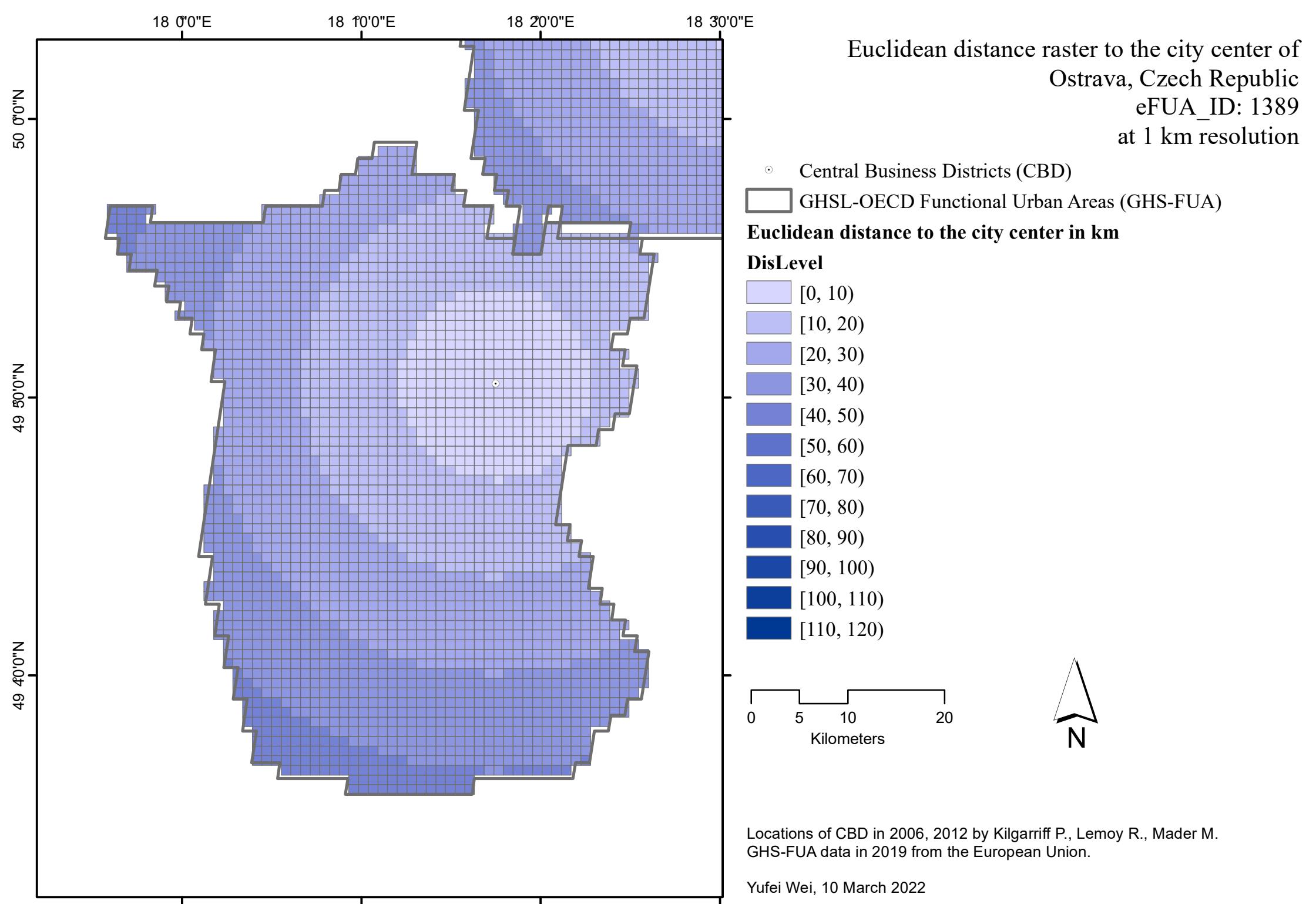
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



25 10'0"E

25 20'0"E

25 30'0"E

25 40'0"E

25 50'0"E

26 0'0"E

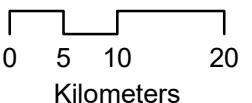
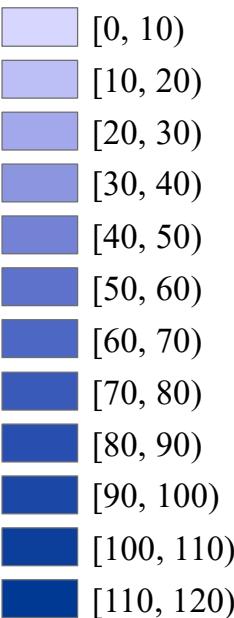
Euclidean distance raster to the city center of  
Oulu, Finland  
eFUA\_ID: 239  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

#### DisLevel



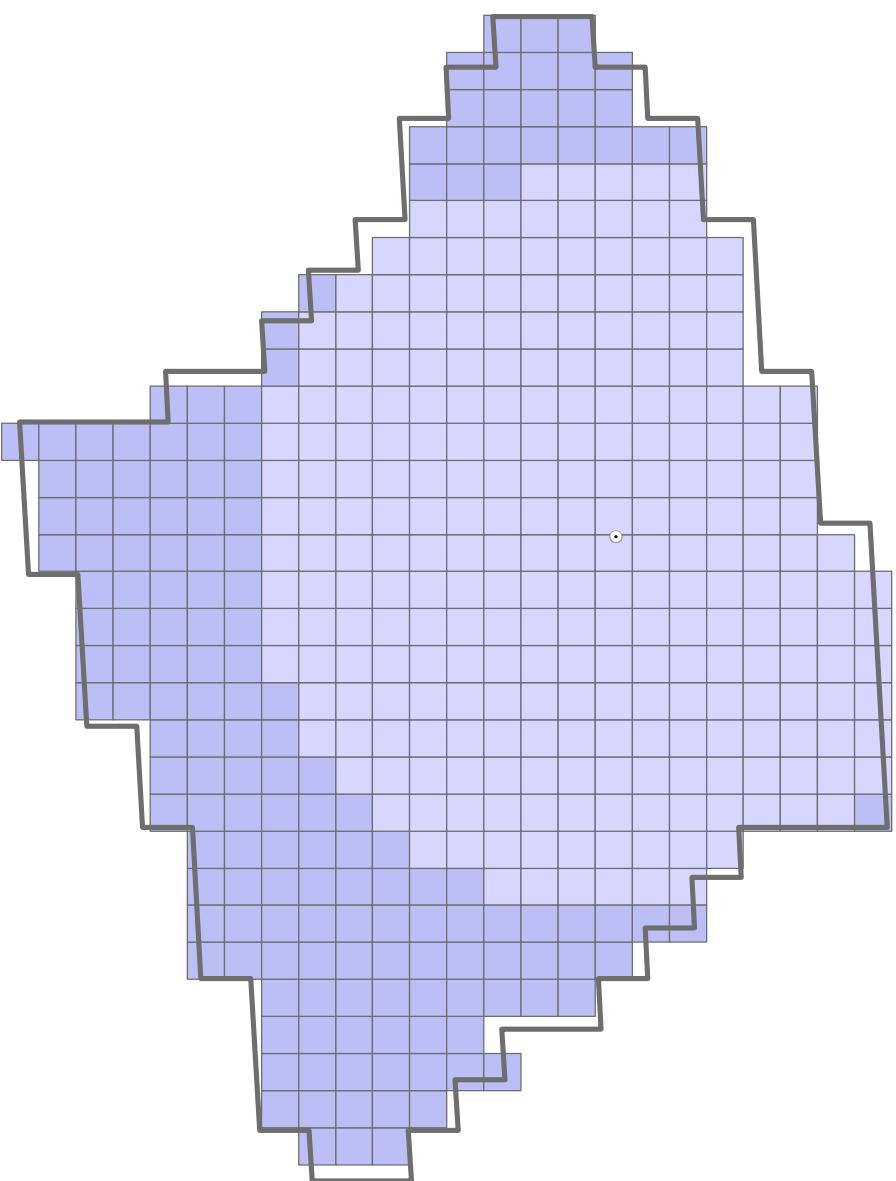
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

8 0'0"W

7 50'0"W

Euclidean distance raster to the city center of  
Ourense, Spain  
eFUA\_ID: 1292  
at 1 km resolution



○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

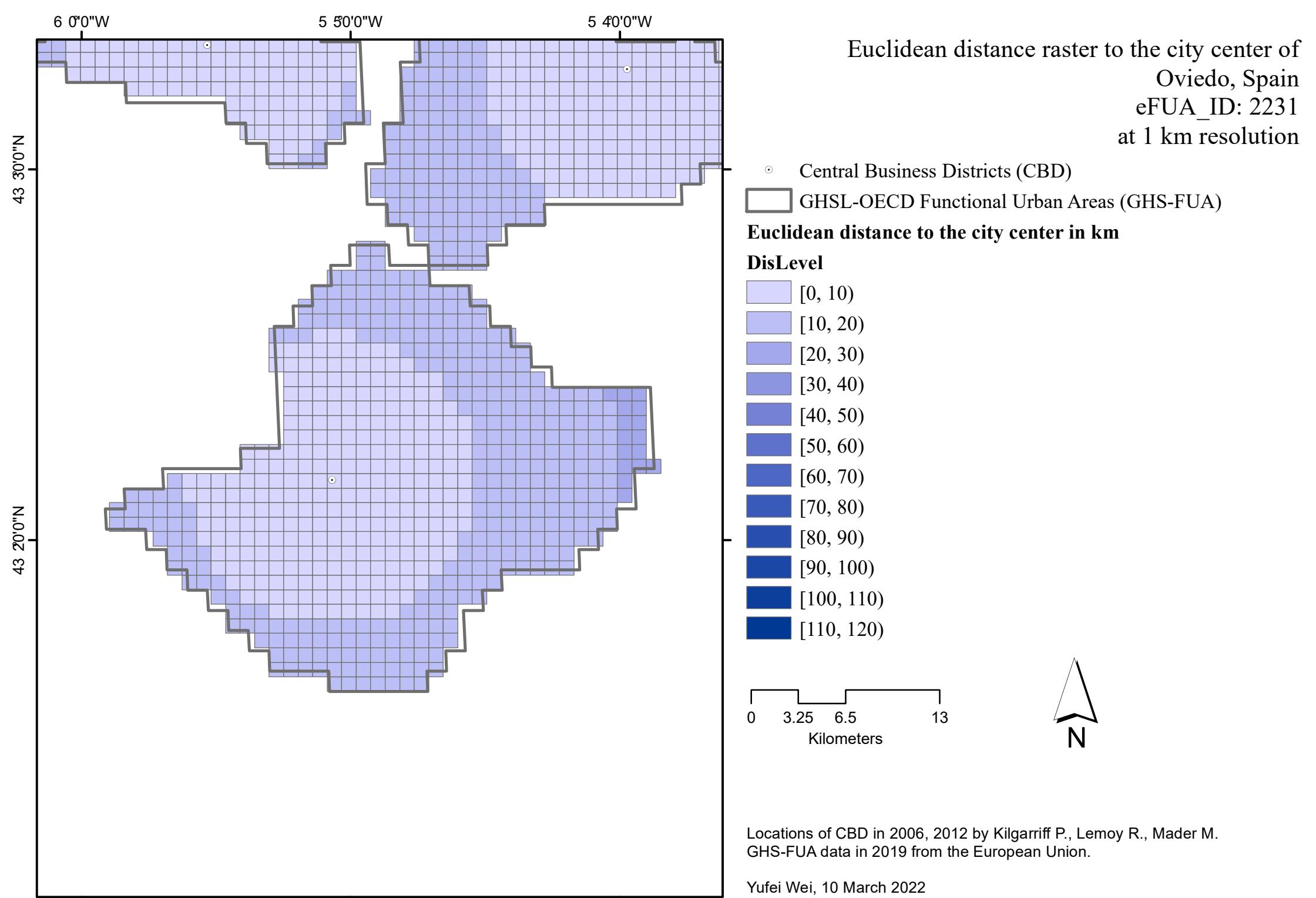
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

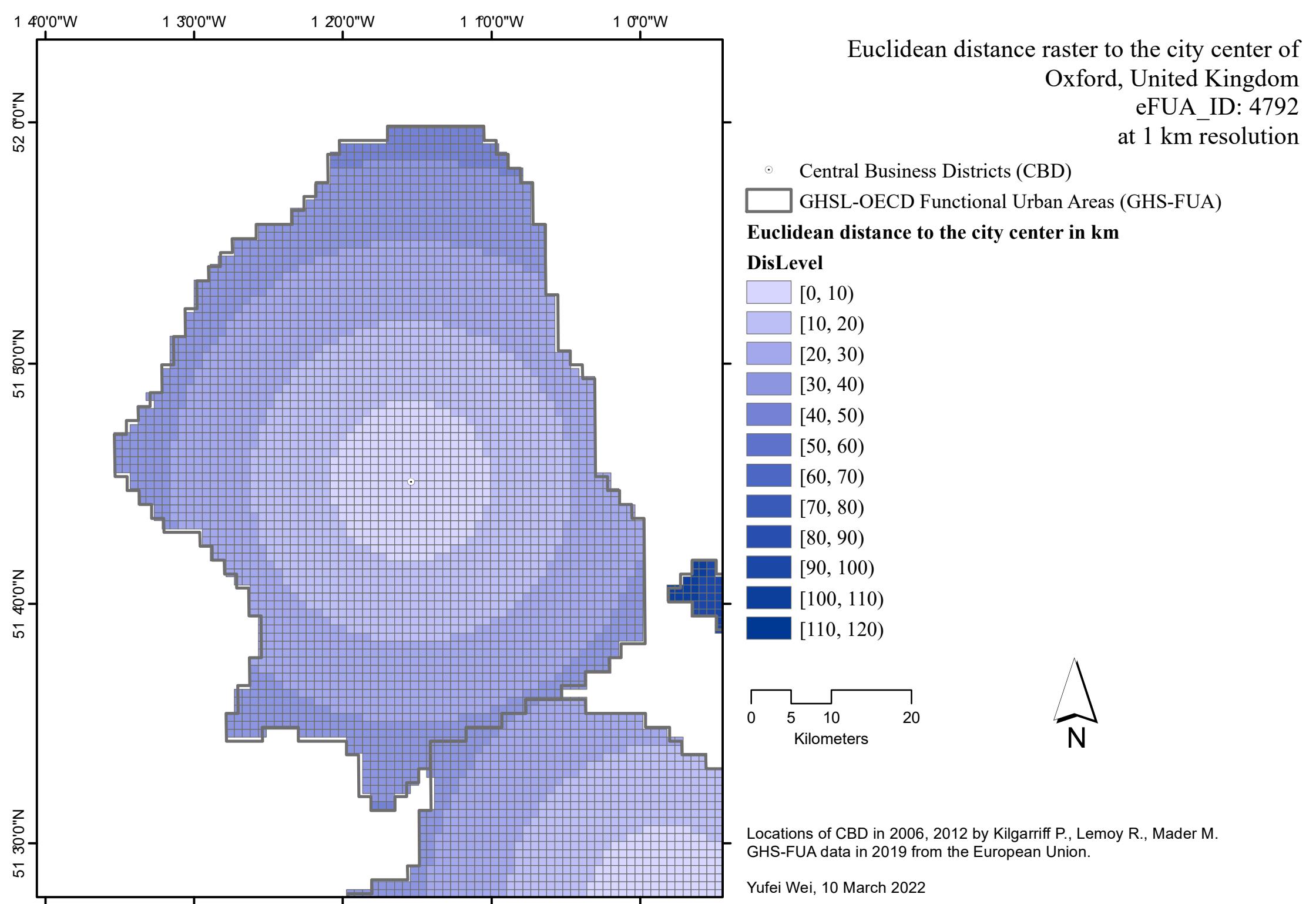
0 2.25 4.5 9  
Kilometers

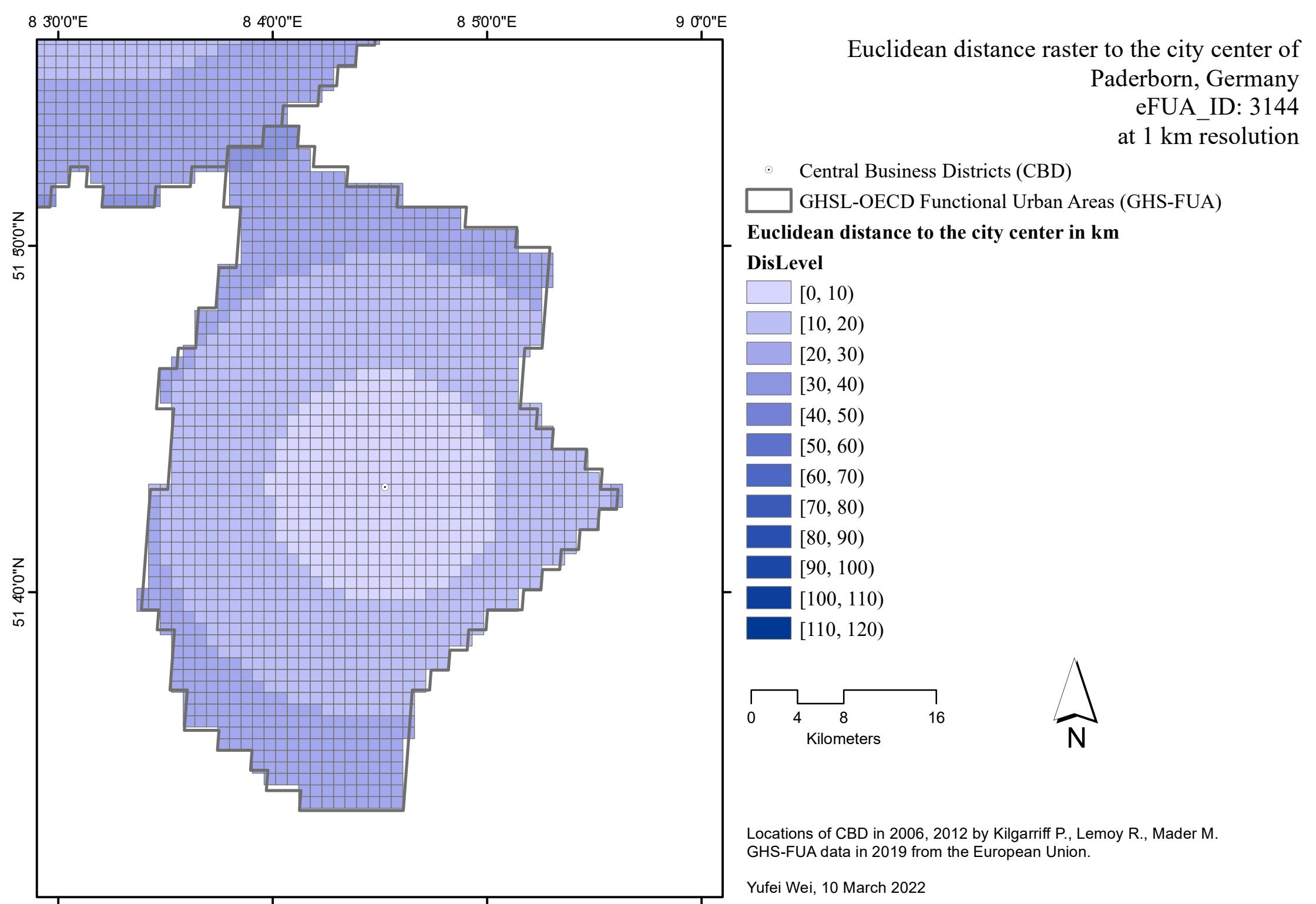


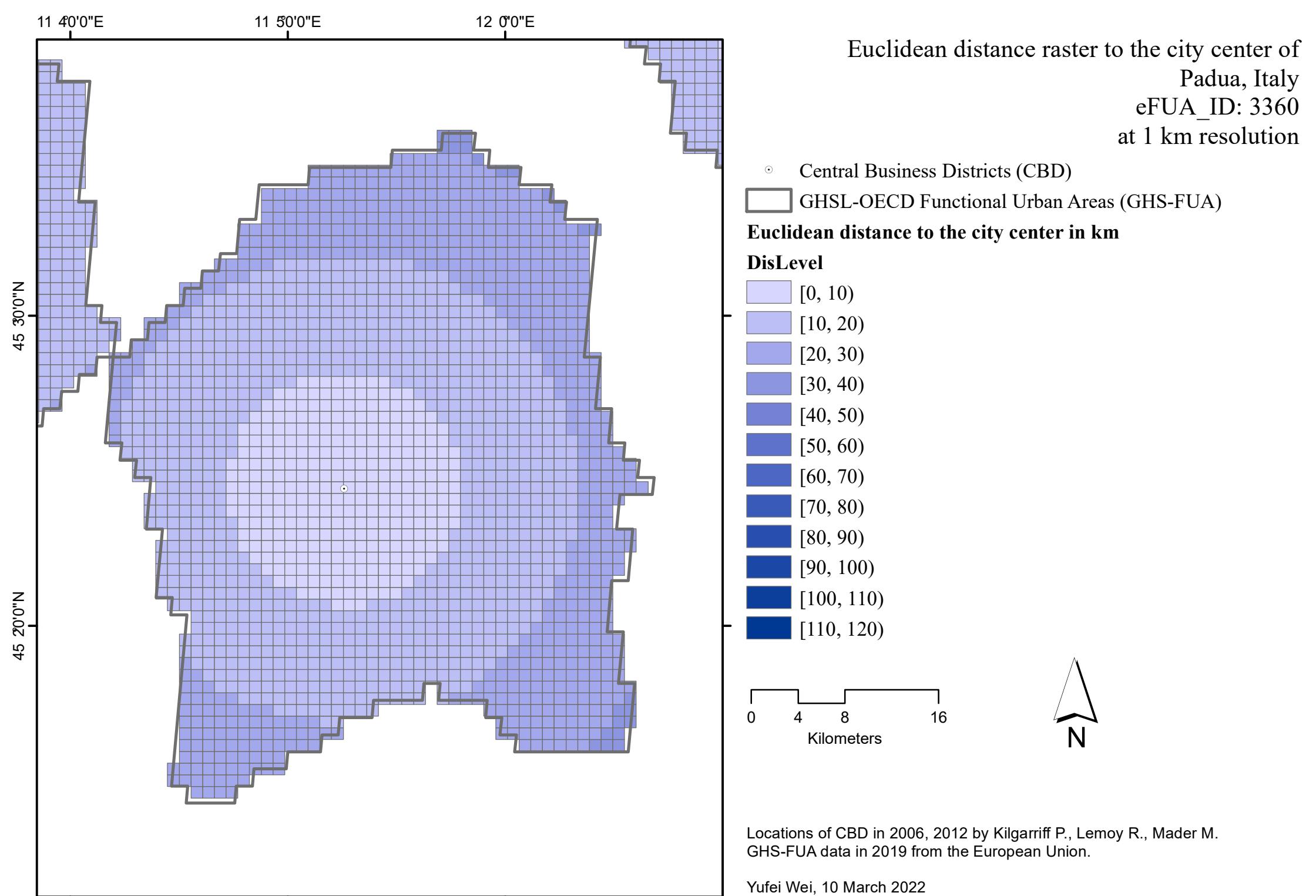
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



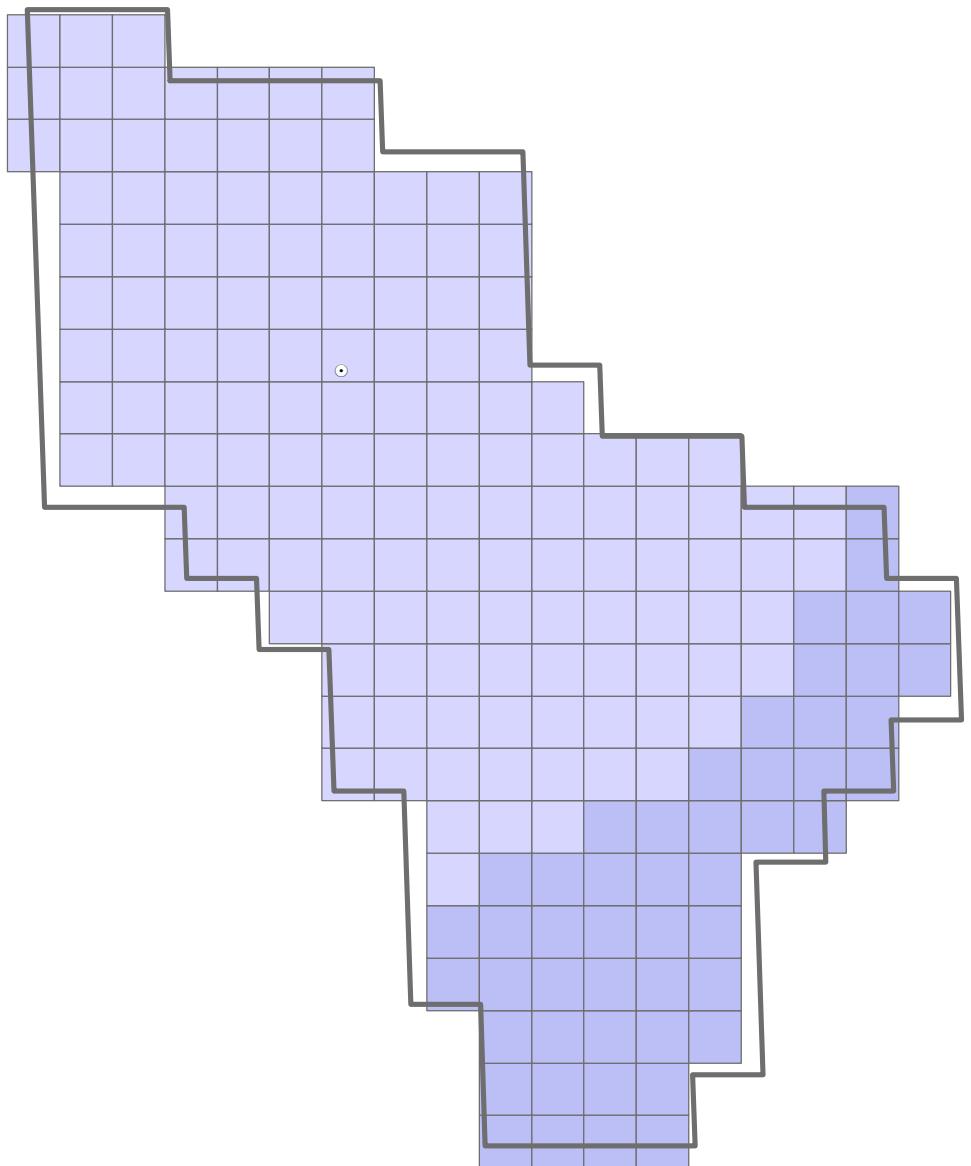






4 30'0"W

Euclidean distance raster to the city center of  
Palencia, Spain  
eFUA\_ID: 2936  
at 1 km resolution



○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

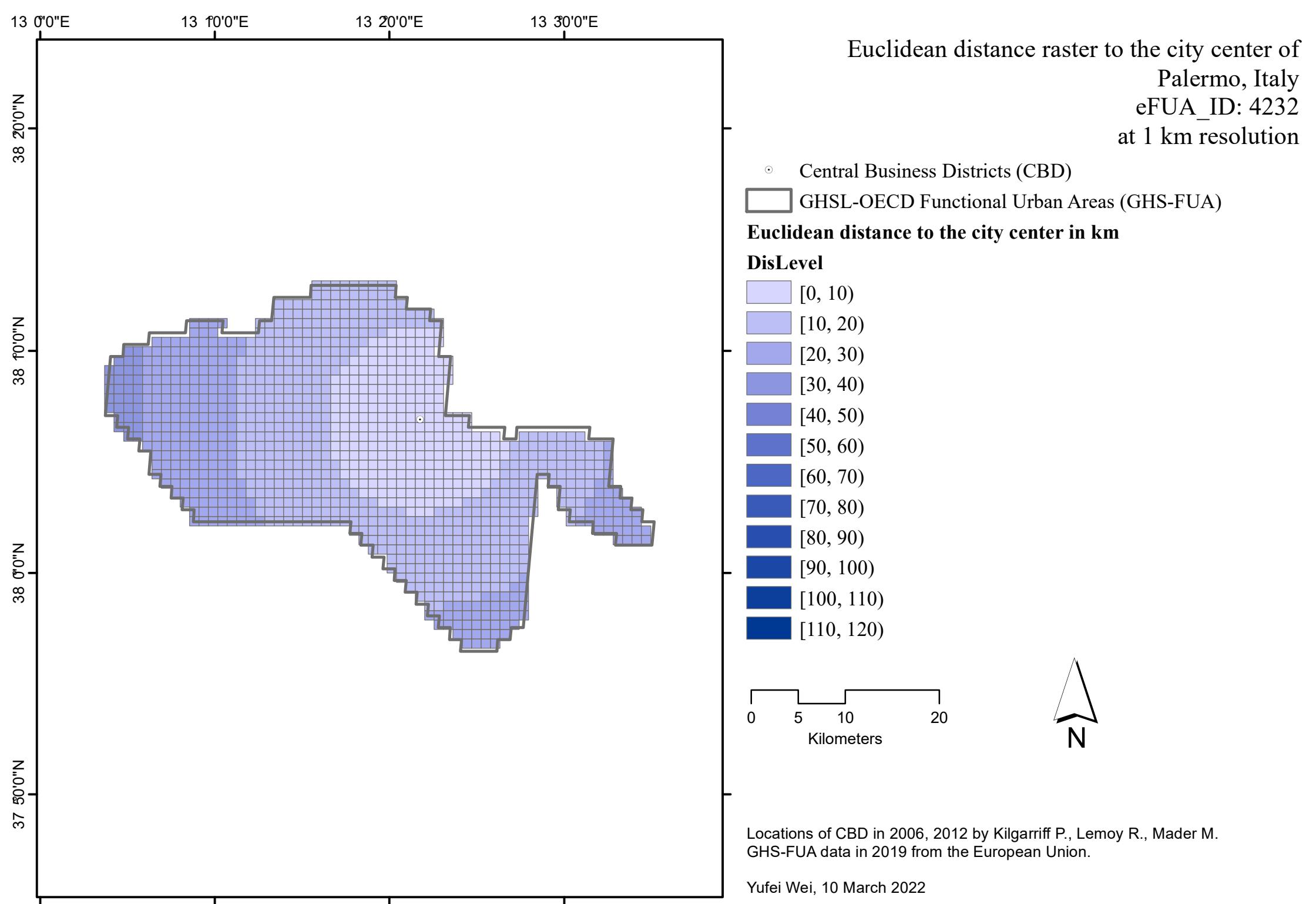
[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)

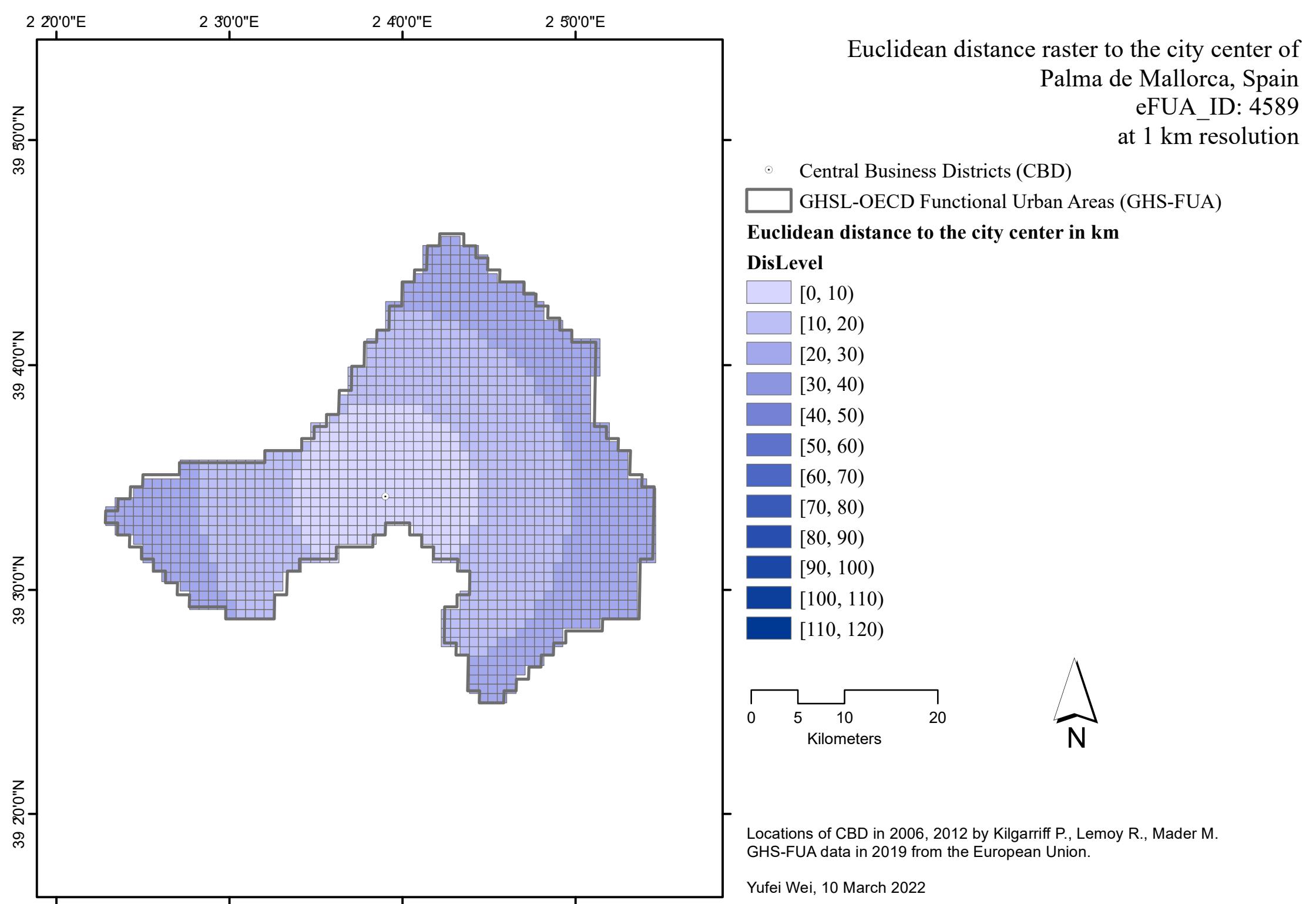
0 1.5 3 6  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



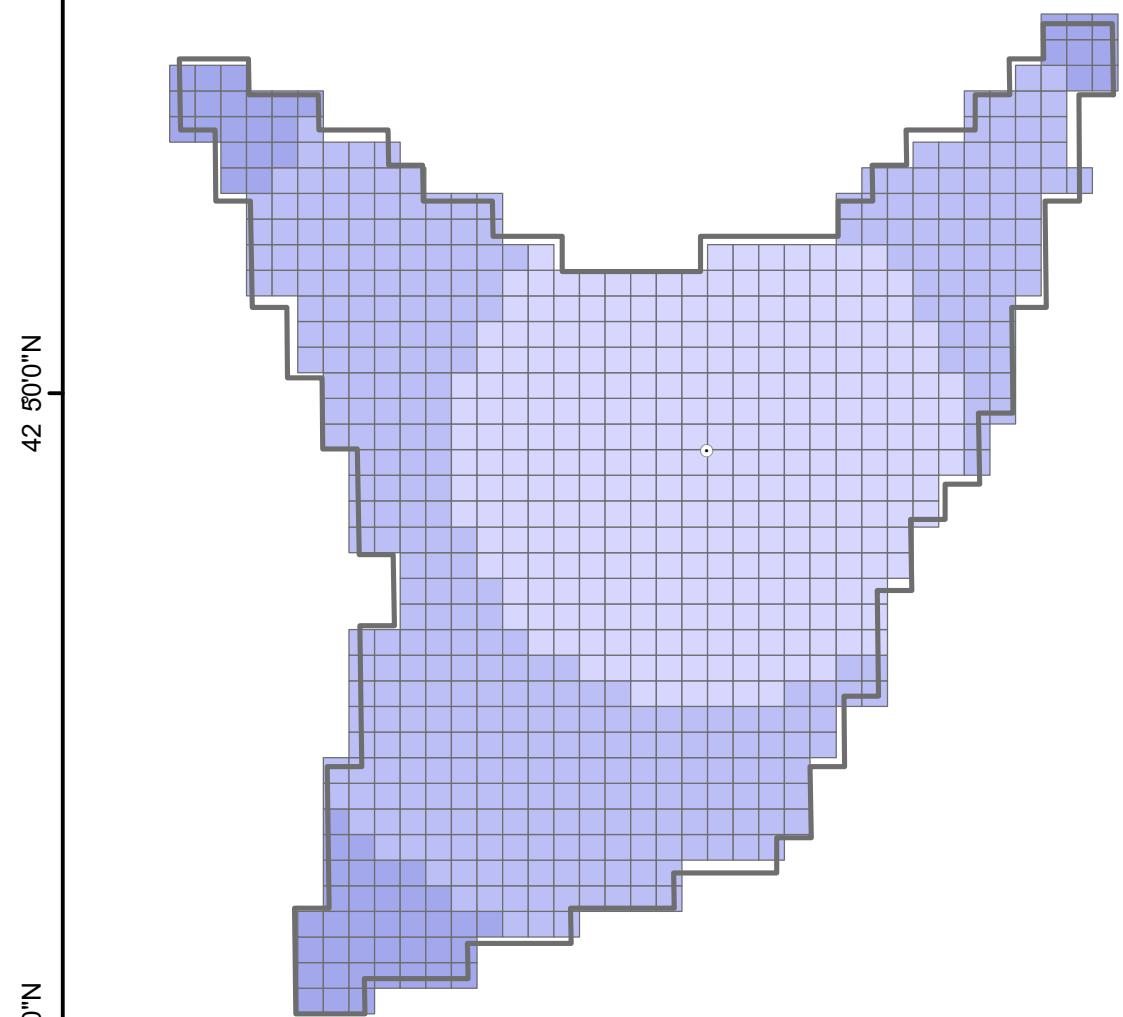


1 50'0"W

1 40'0"W

1 30'0"W

Euclidean distance raster to the city center of  
Pamplona, Spain  
eFUA\_ID: 3872  
at 1 km resolution



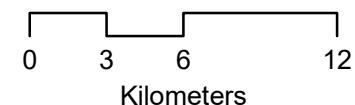
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

24 10'0"E

24 20'0"E

24 30'0"E

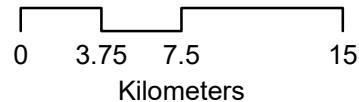
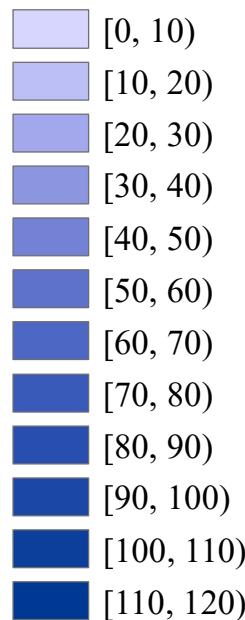
Euclidean distance raster to the city center of  
Panevezys, Lithuania  
eFUA\_ID: 580  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

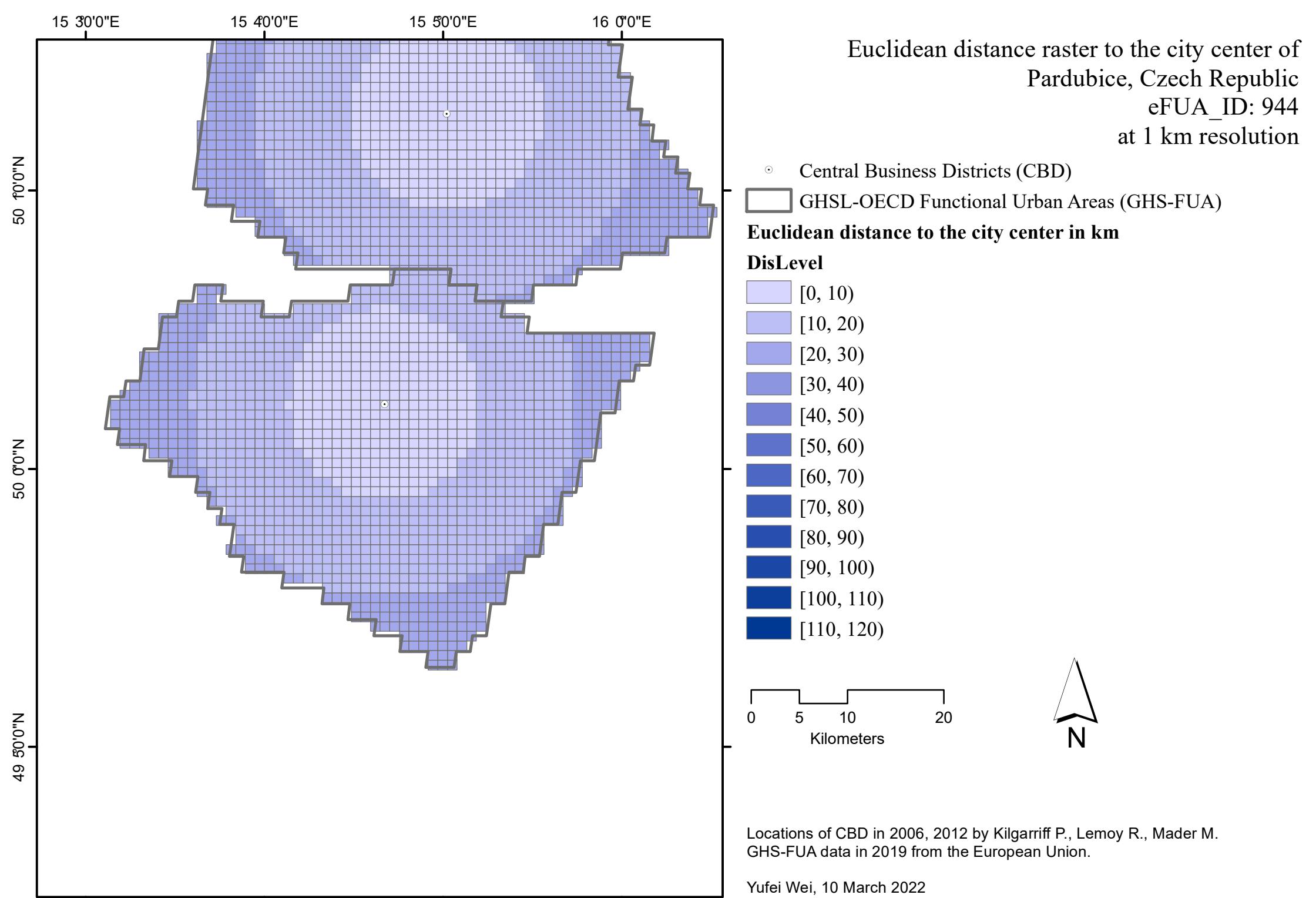
**Euclidean distance to the city center in km**

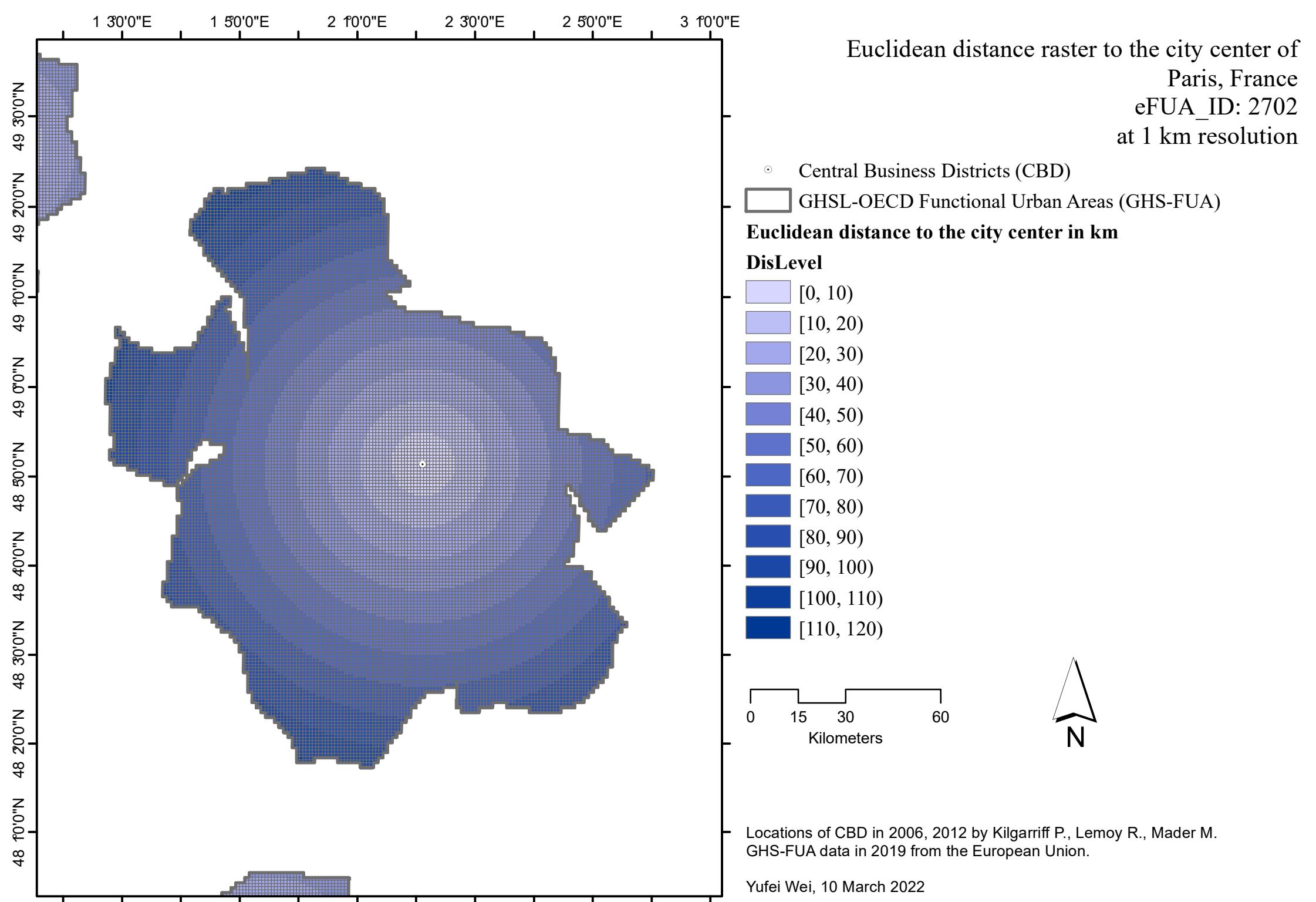
**DisLevel**

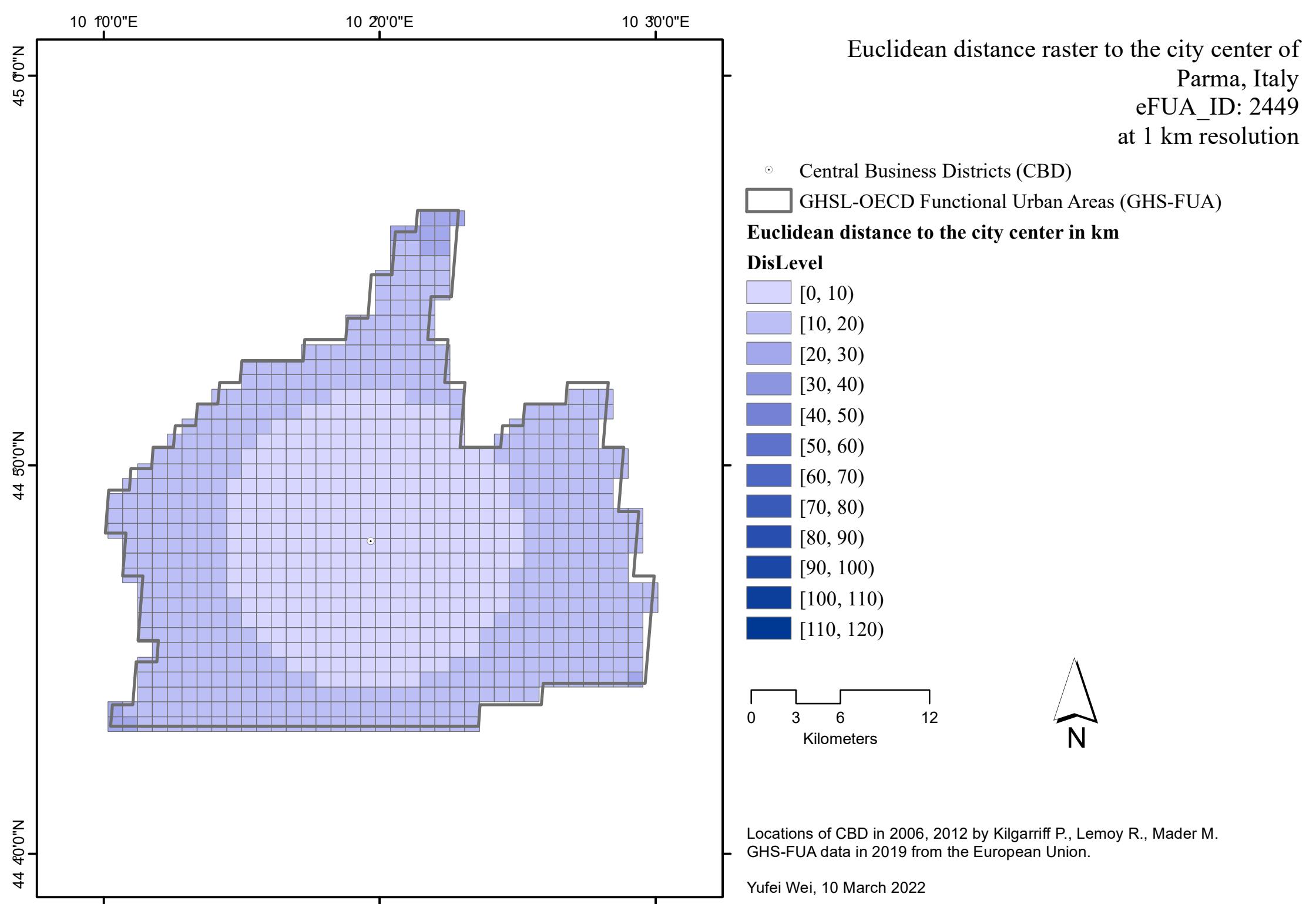


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



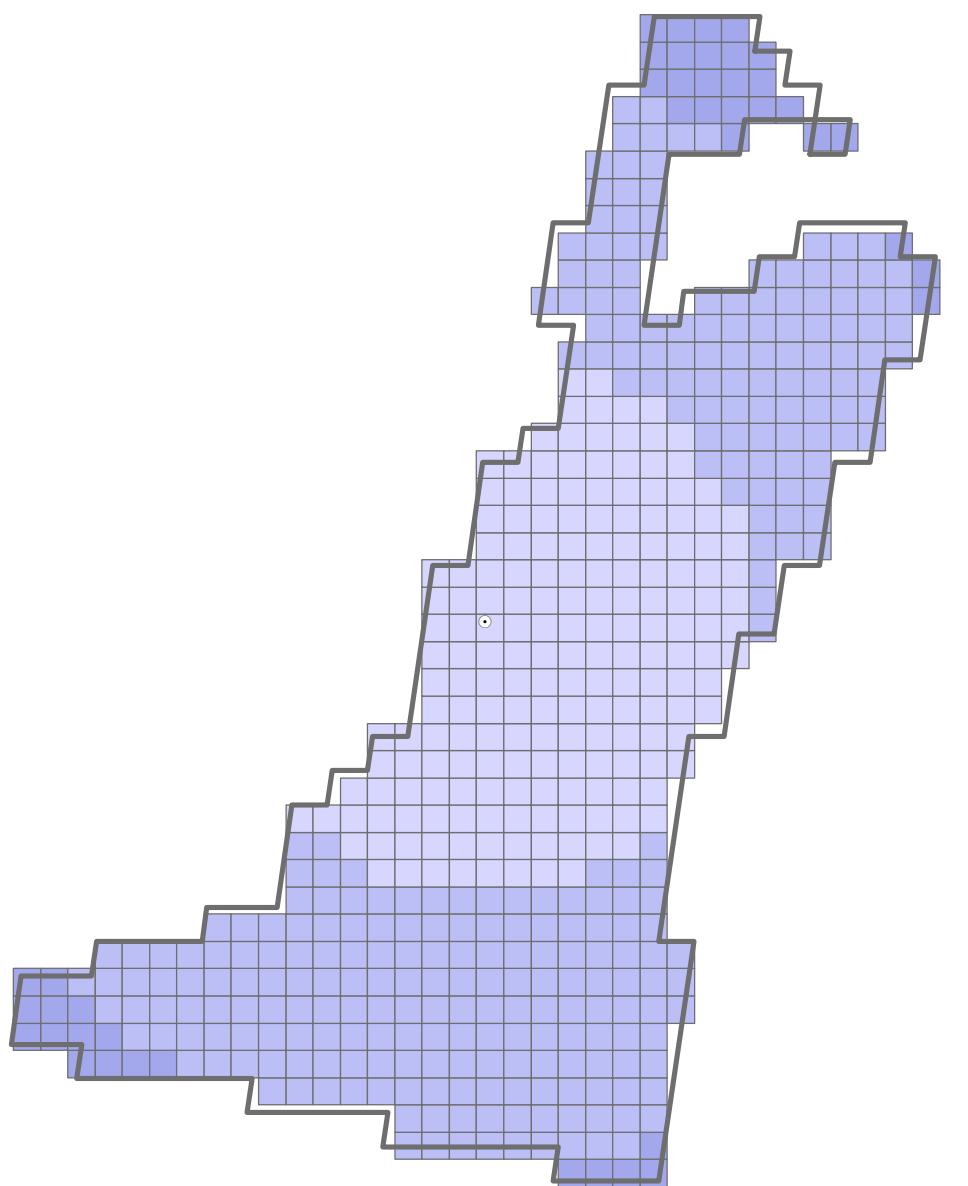




21 40'0"E

21 50'0"E

Euclidean distance raster to the city center of  
Patras, Greece  
eFUA\_ID: 249  
at 1 km resolution



Central Business Districts (CBD)

GHS-OECD Functional Urban Areas (GHS-FUA)

Euclidean distance to the city center in km

DisLevel

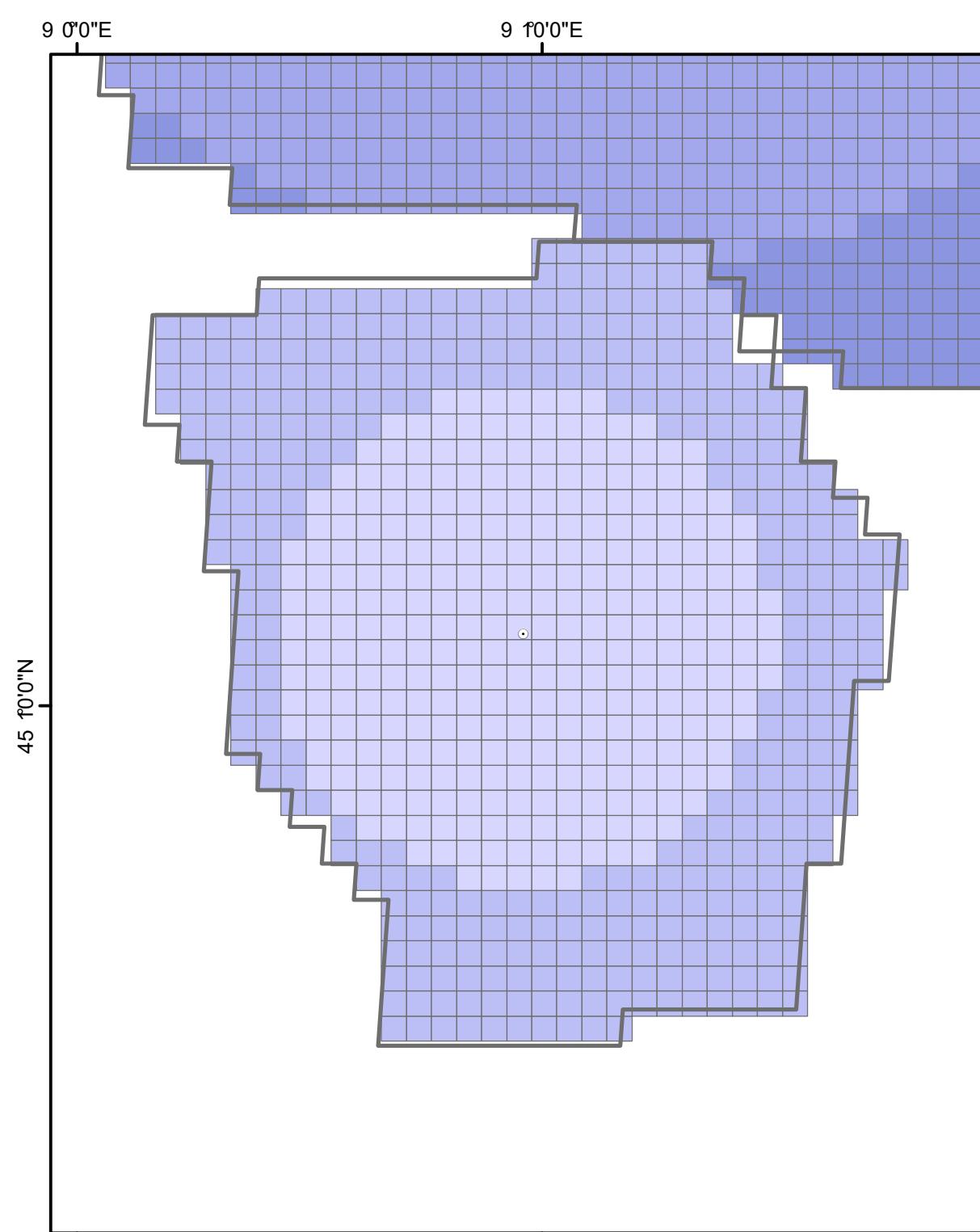
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 2.75 5.5 11  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



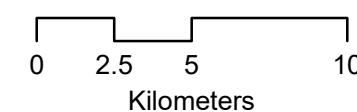
Euclidean distance raster to the city center of  
Pavia, Italy  
eFUA\_ID: 1778  
at 1 km resolution

- Central Business Districts (CBD)
- ◻ GHS-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

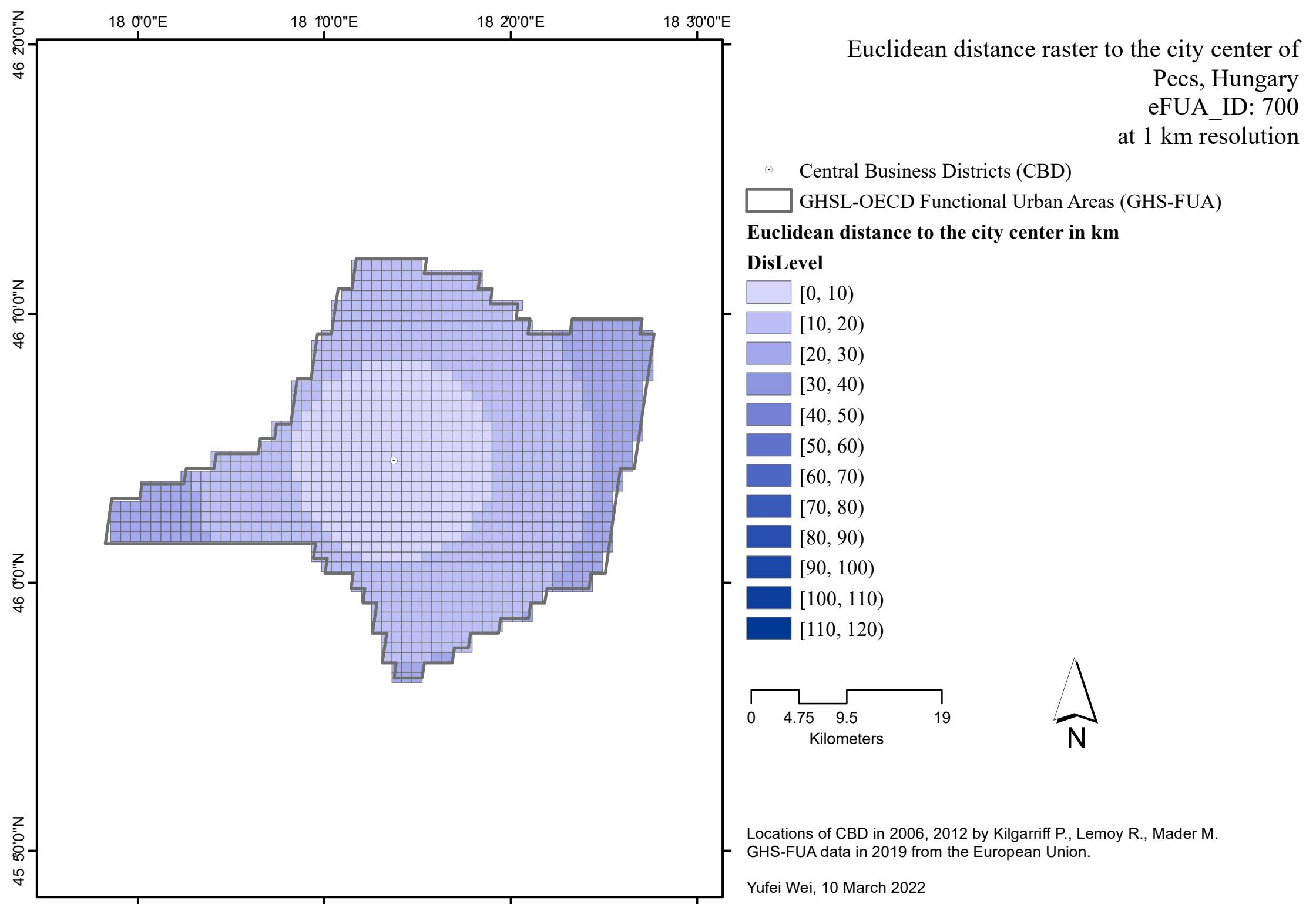
#### DisLevel

[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

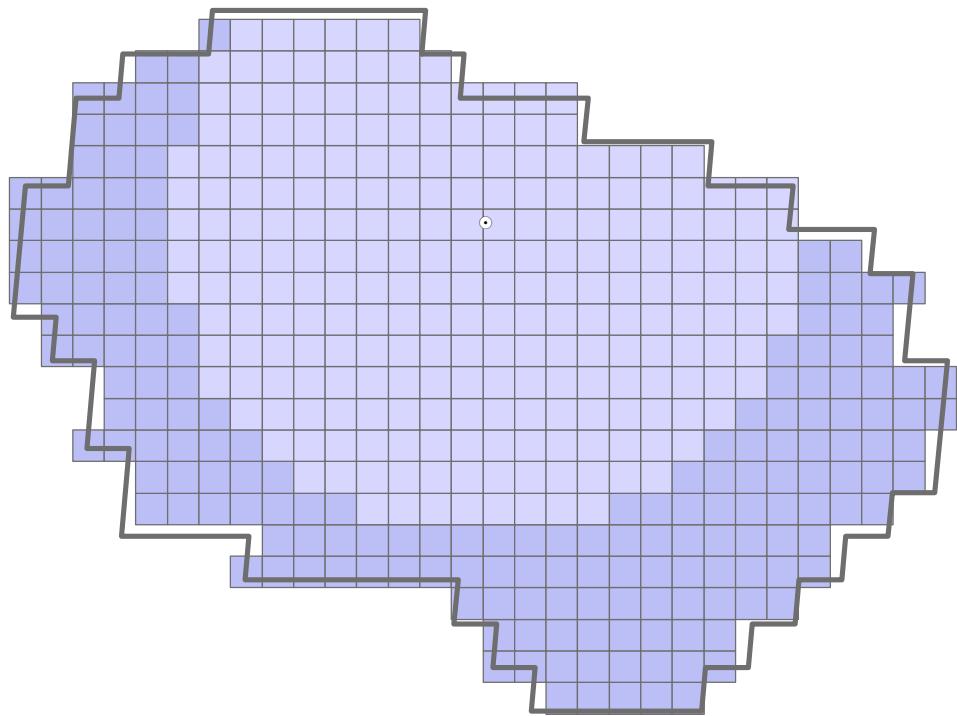


12 20'0"E

12 30'0"E

Euclidean distance raster to the city center of  
Perugia, Italy  
eFUA\_ID: 3725  
at 1 km resolution

43 10'0"N



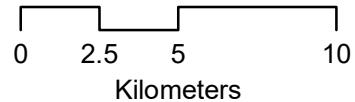
○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

12 50'0"E

13 0'0"E

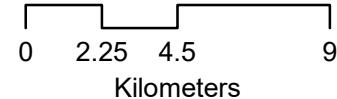
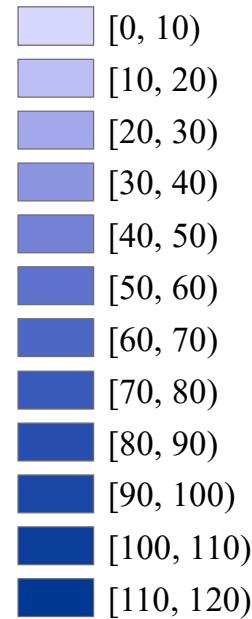
Euclidean distance raster to the city center of  
Pesaro, Italy  
eFUA\_ID: 3990  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

14 0'0"E

14 10'0"E

14 20'0"E

14 30'0"E

42 40'0"N

42 30'0"N

42 20'0"N

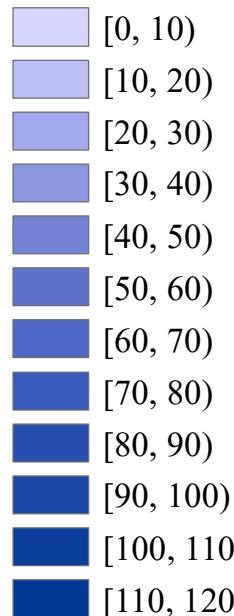
Euclidean distance raster to the city center of  
Pescara, Italy  
eFUA\_ID: 4299  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

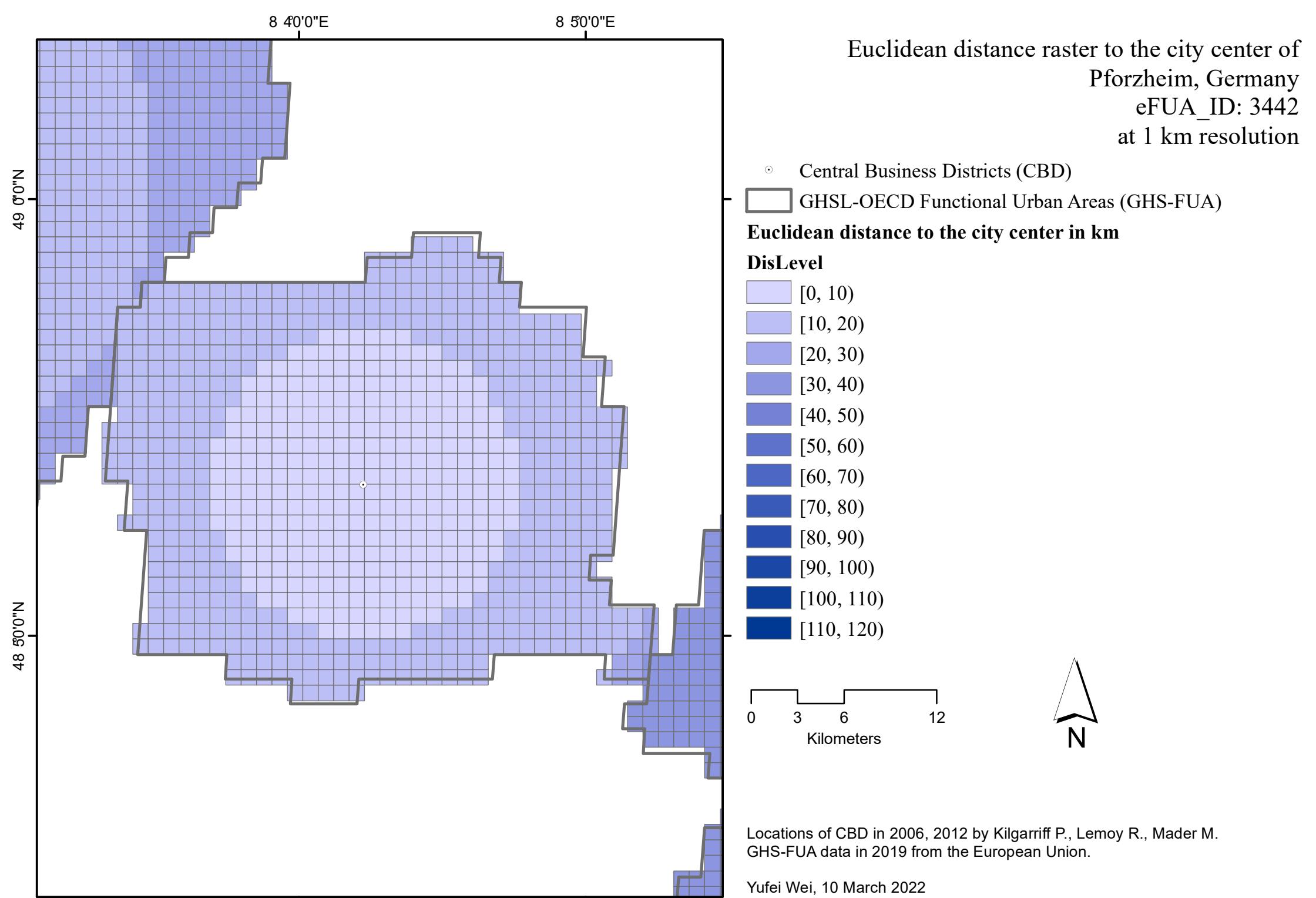
**Euclidean distance to the city center in km**

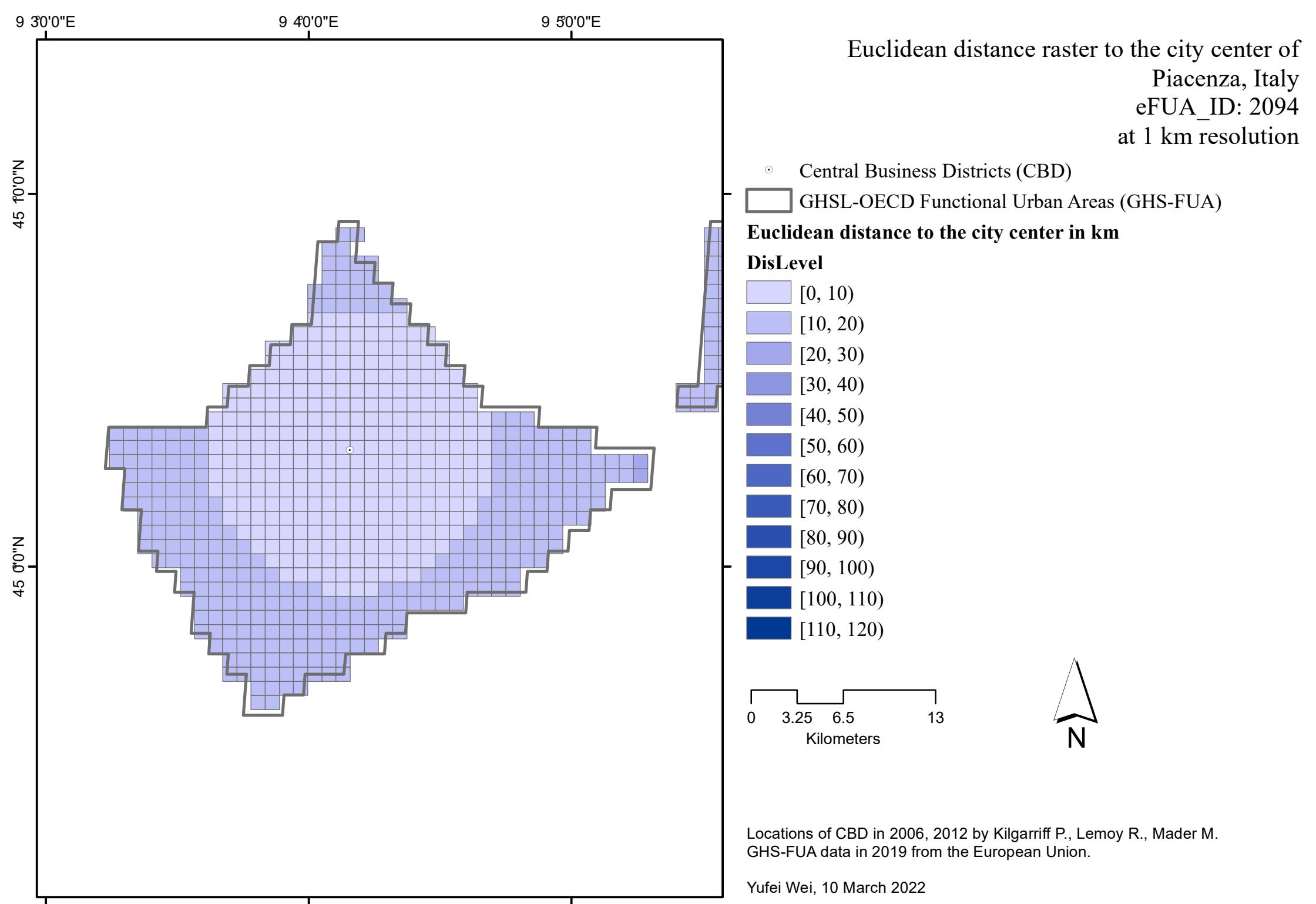
**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022





16 40'0"E

16 50'0"E

17 0'0"E

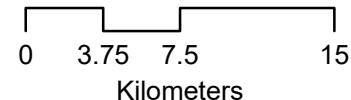
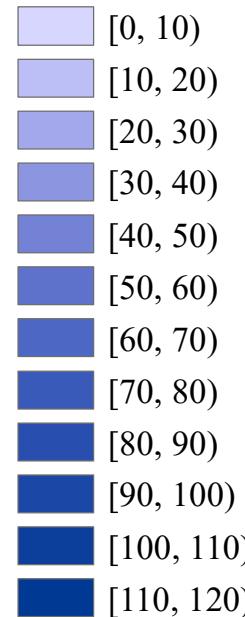
Euclidean distance raster to the city center of  
Pila, Poland  
eFUA\_ID: 1226  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

13 10'0"E

13 20'0"E

13 30'0"E

13 40'0"E

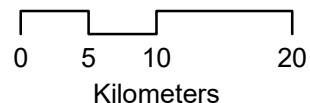
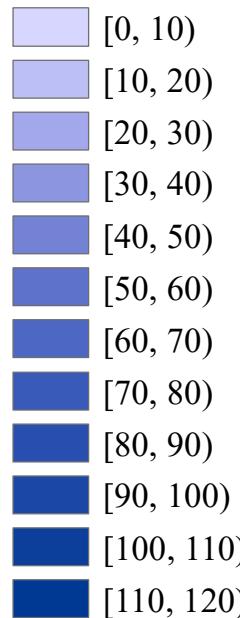
Euclidean distance raster to the city center of  
Pilsen, Czech Republic  
eFUA\_ID: 43  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

10 20'0"E

10 30'0"E

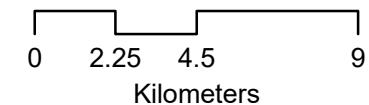
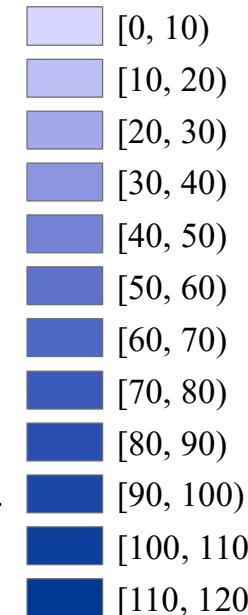
Euclidean distance raster to the city center of  
Pisa, Italy  
eFUA\_ID: 2647  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



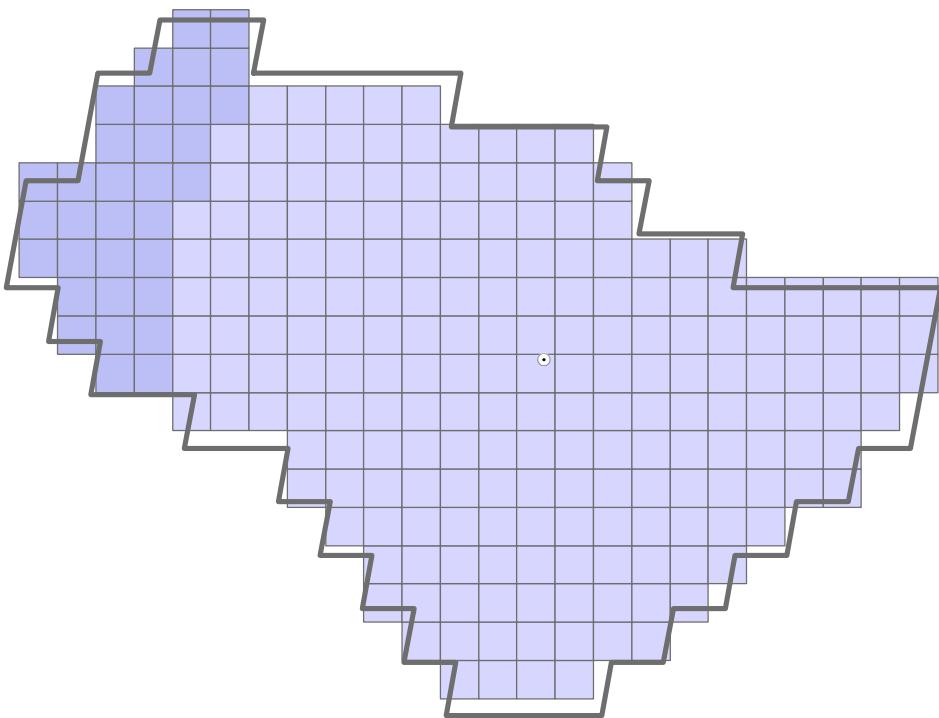
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

24 30'0"E

24 40'0"E

Euclidean distance raster to the city center of  
Pleven, Bulgaria  
eFUA\_ID: 206  
at 1 km resolution



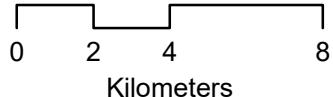
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

19 30'0"E

19 40'0"E

19 50'0"E

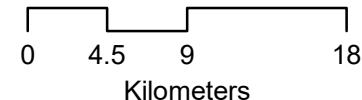
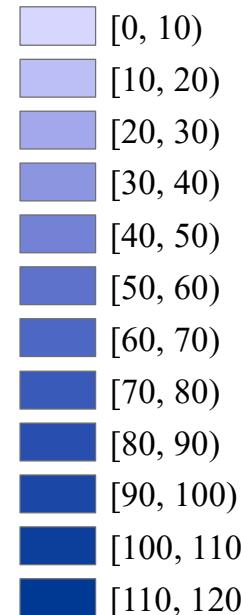
Euclidean distance raster to the city center of  
Plock, Poland  
eFUA\_ID: 2960  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



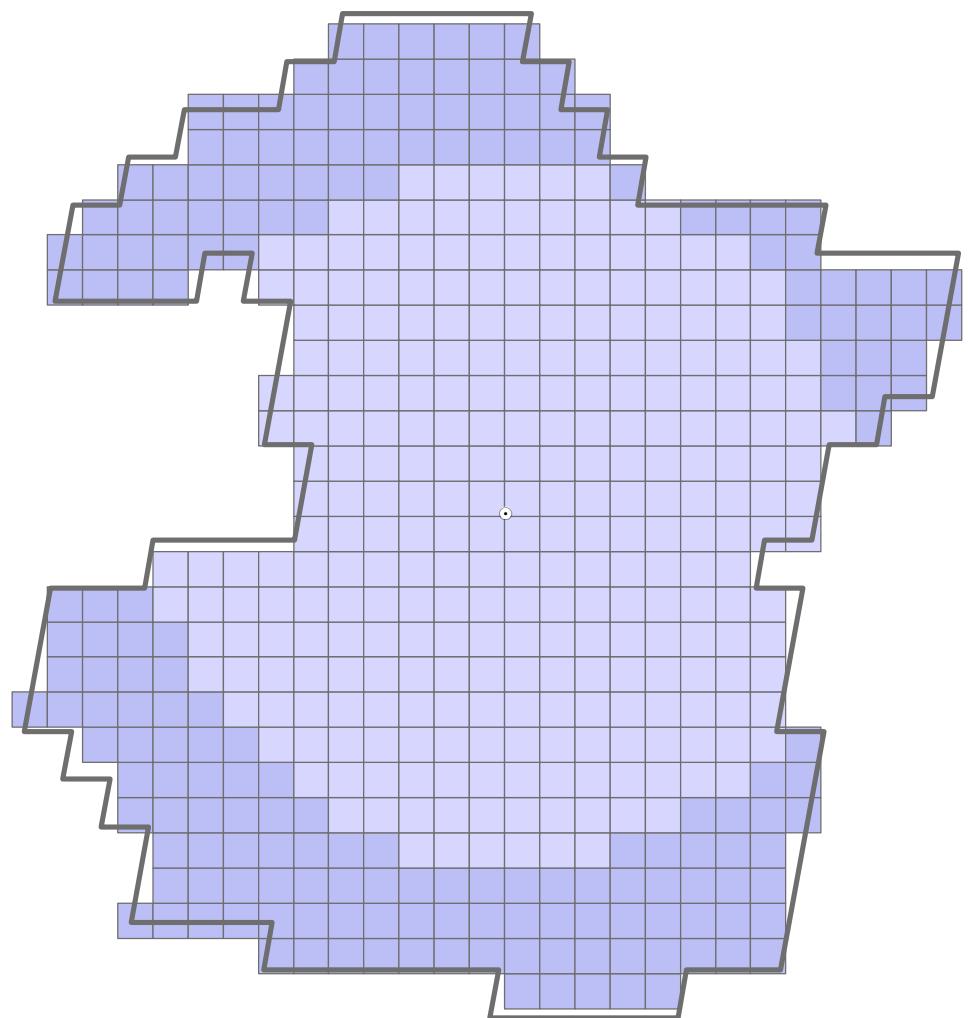
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

24°40'0"E

24°50'0"E

Euclidean distance raster to the city center of  
Plovdiv, Bulgaria  
eFUA\_ID: 368  
at 1 km resolution



○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 2.25 4.5 9  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

4 30'0"W

4 20'0"W

4 10'0"W

4 0'0"W

3 50'0"W

50 40'0"N

50 30'0"N

50 20'0"N

50 10'0"N

Euclidean distance raster to the city center of  
Plymouth, United Kingdom  
eFUA\_ID: 825  
at 1 km resolution

○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)

[10, 20)

[20, 30)

[30, 40)

[40, 50)

[50, 60)

[60, 70)

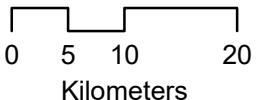
[70, 80)

[80, 90)

[90, 100)

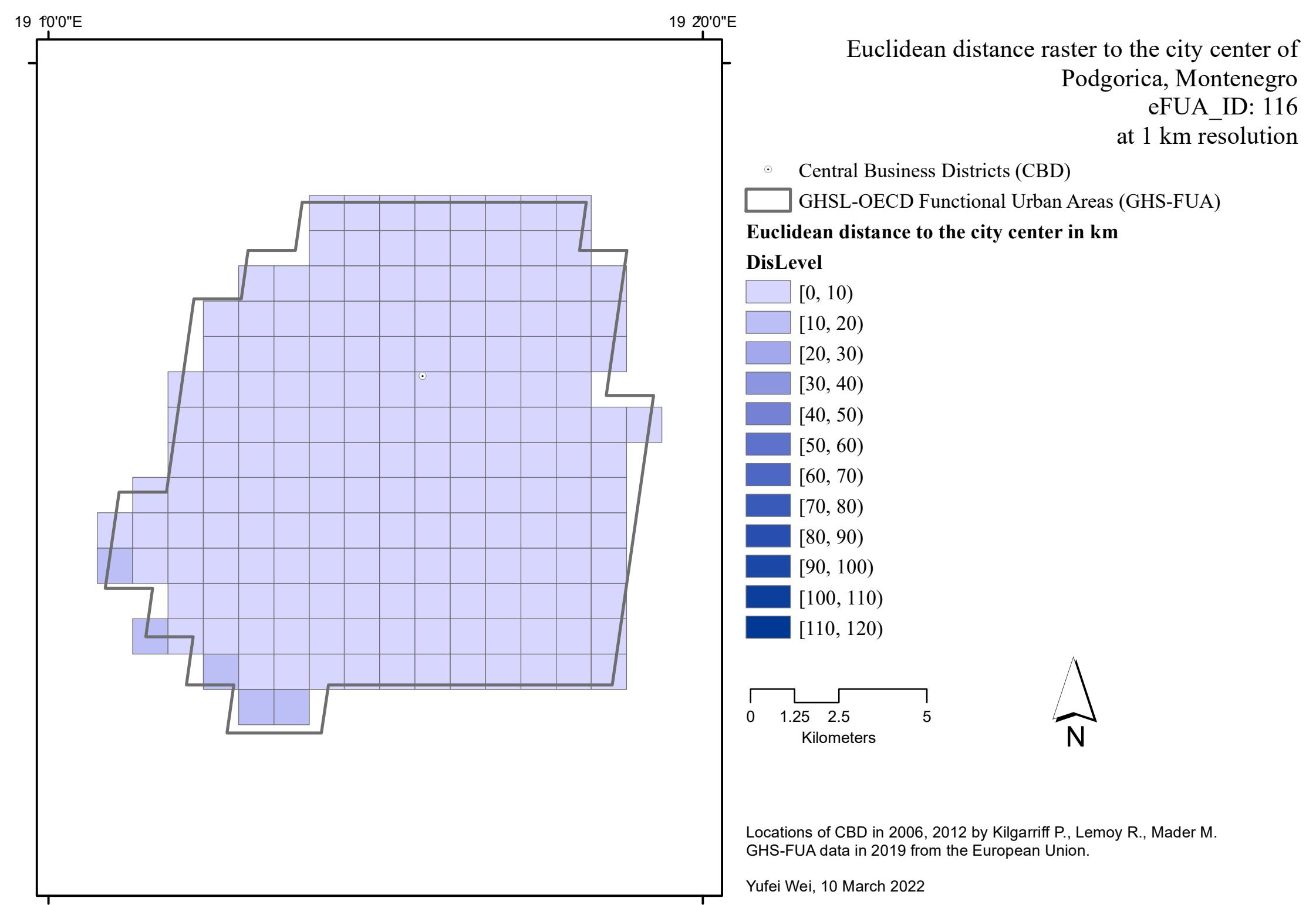
[100, 110)

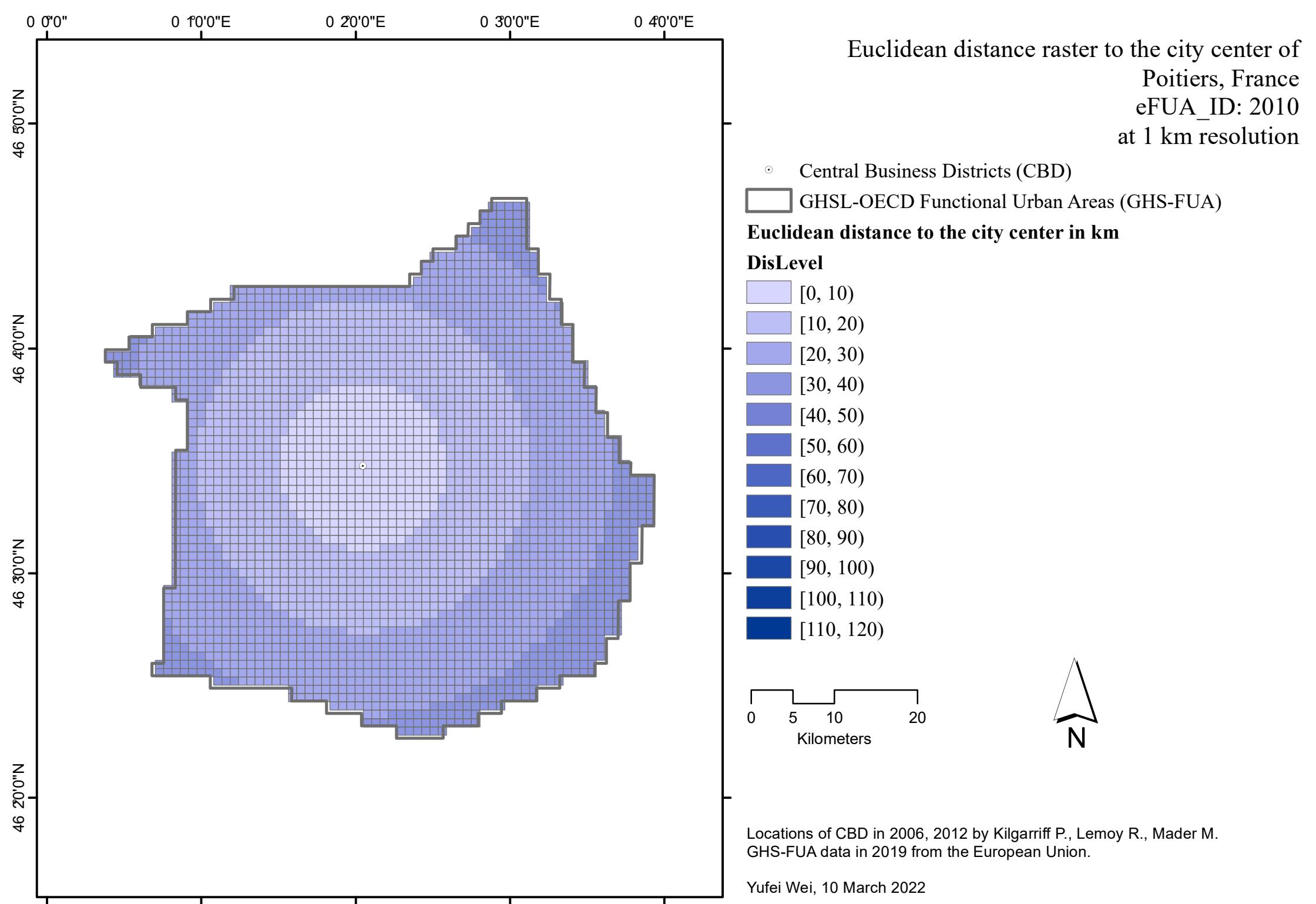
[110, 120)

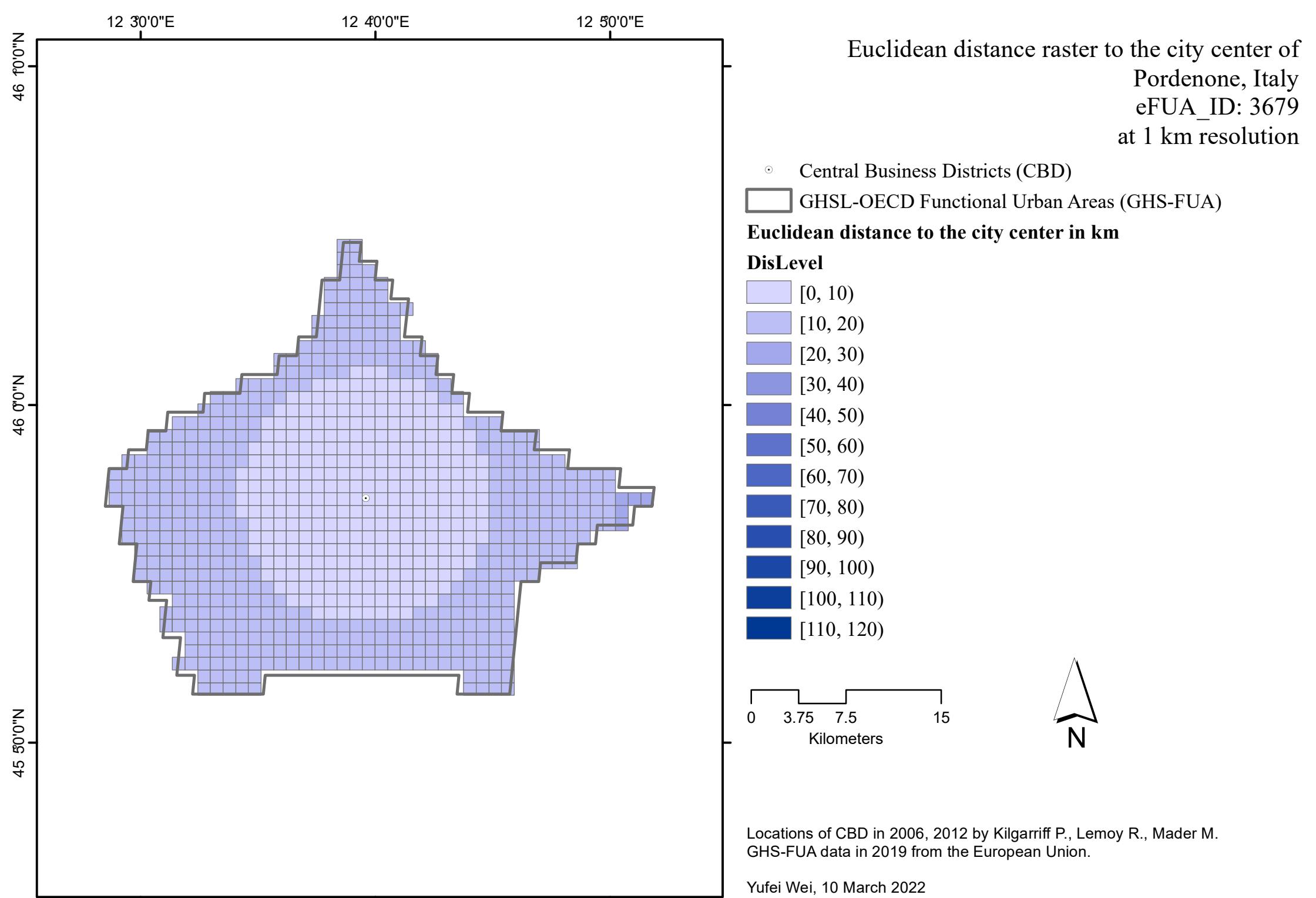


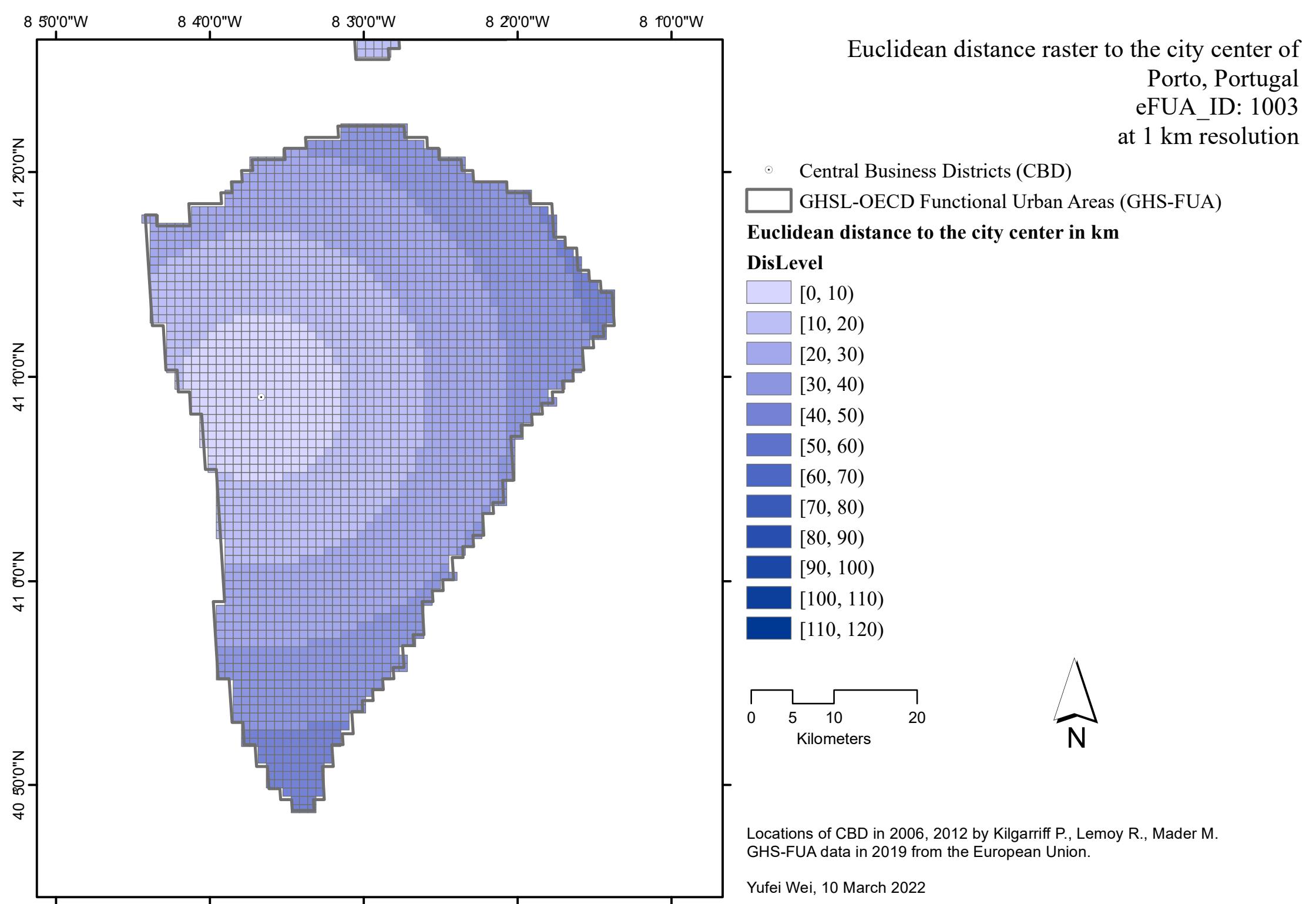
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

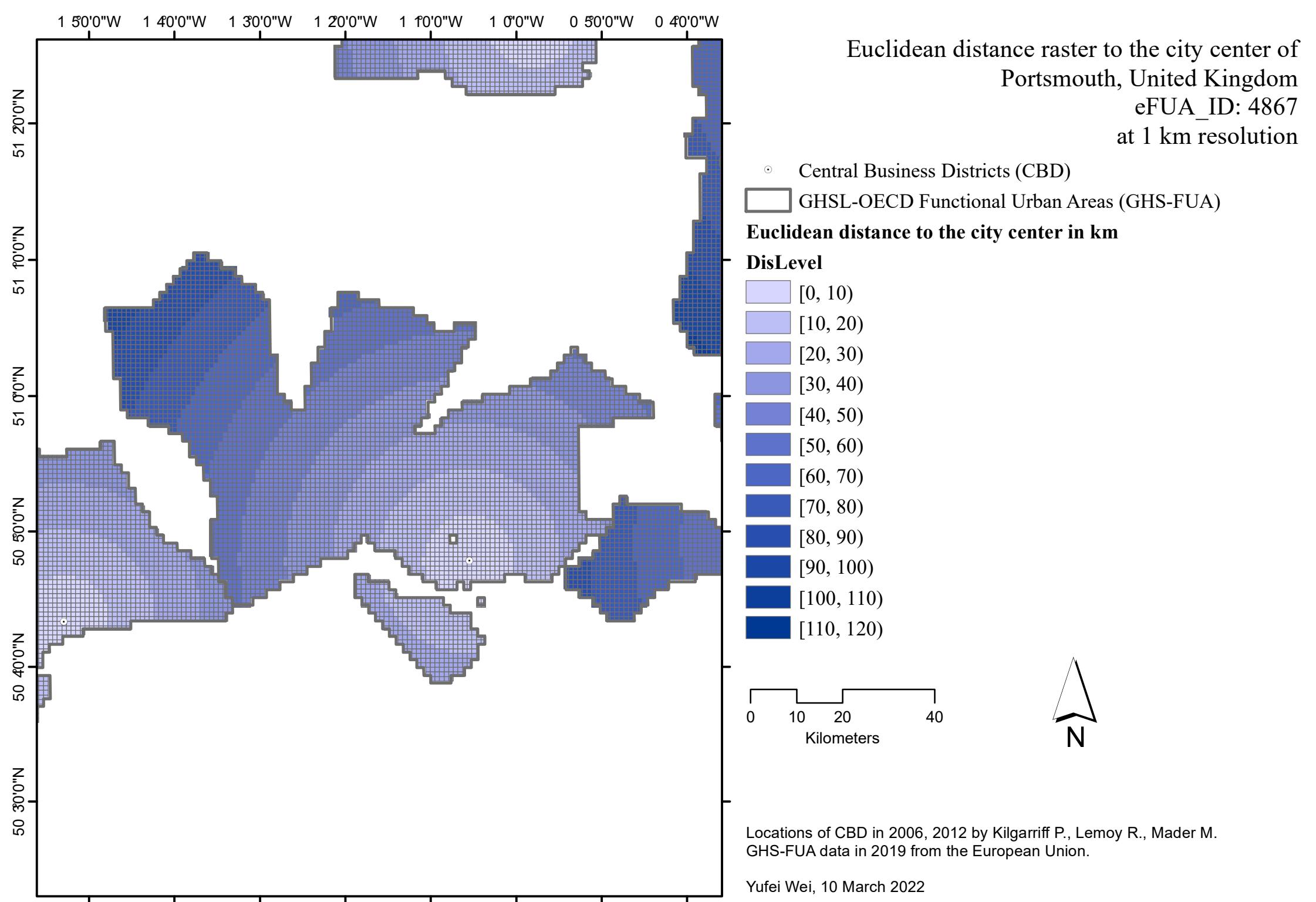
Yufei Wei, 10 March 2022

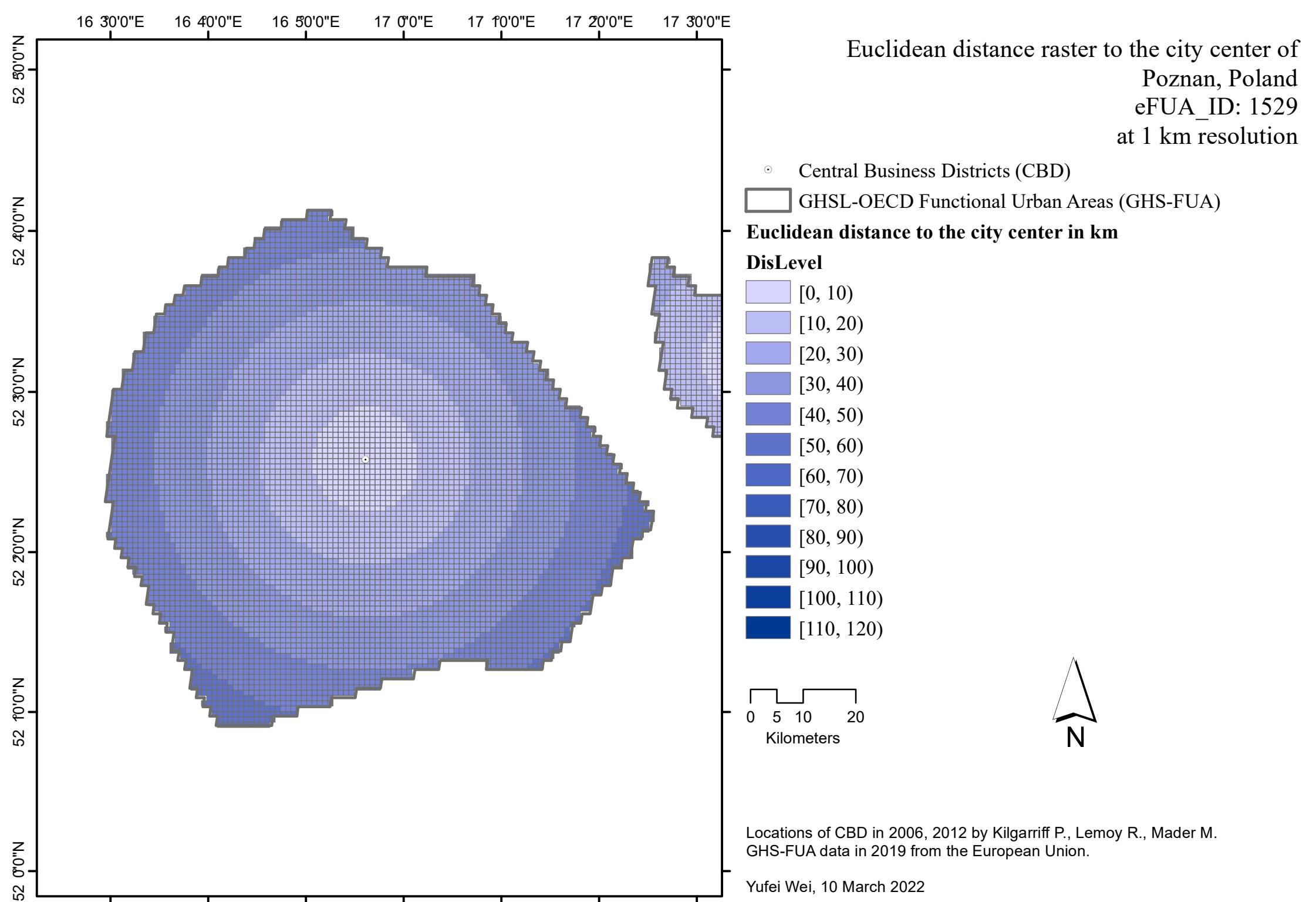


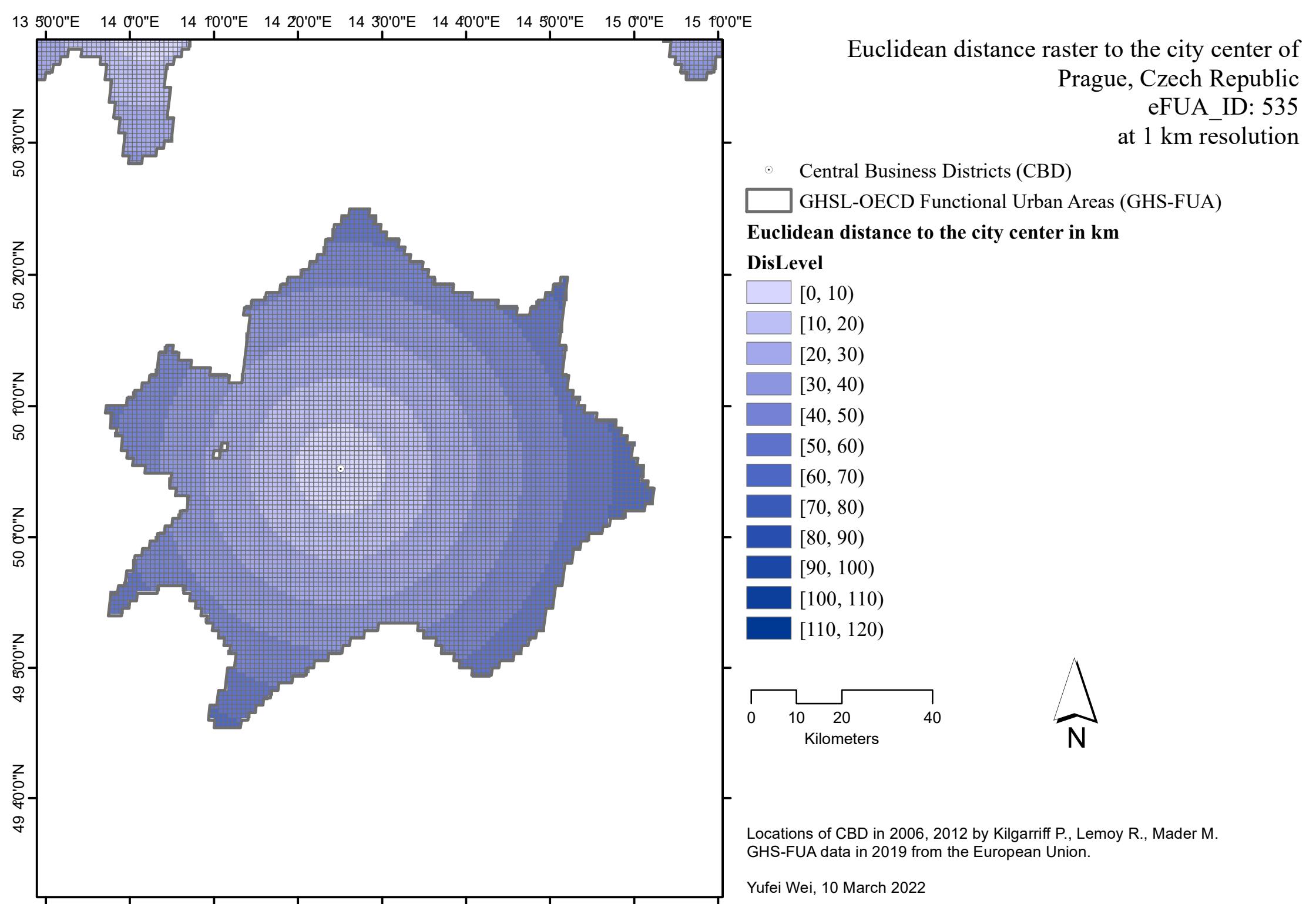


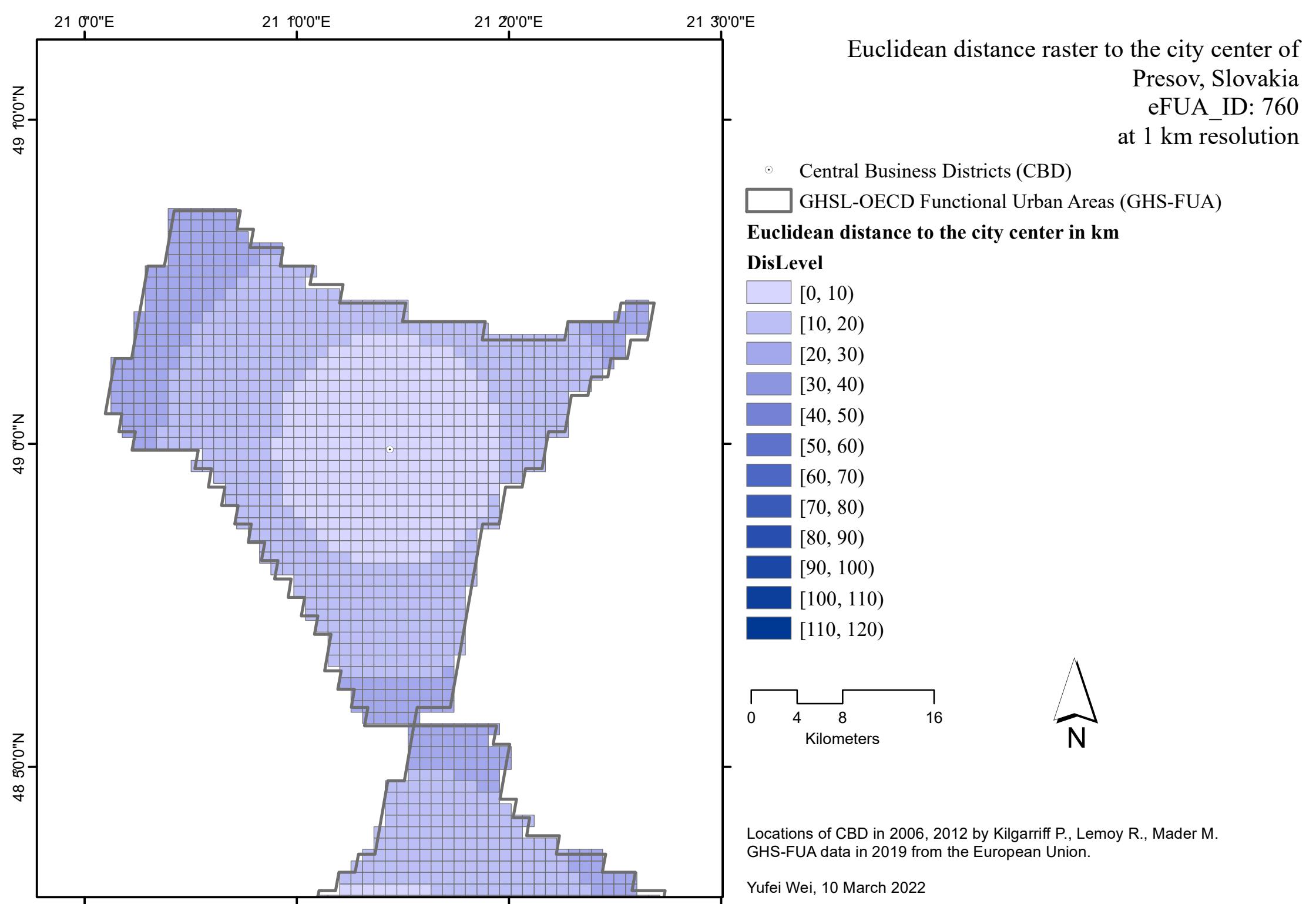


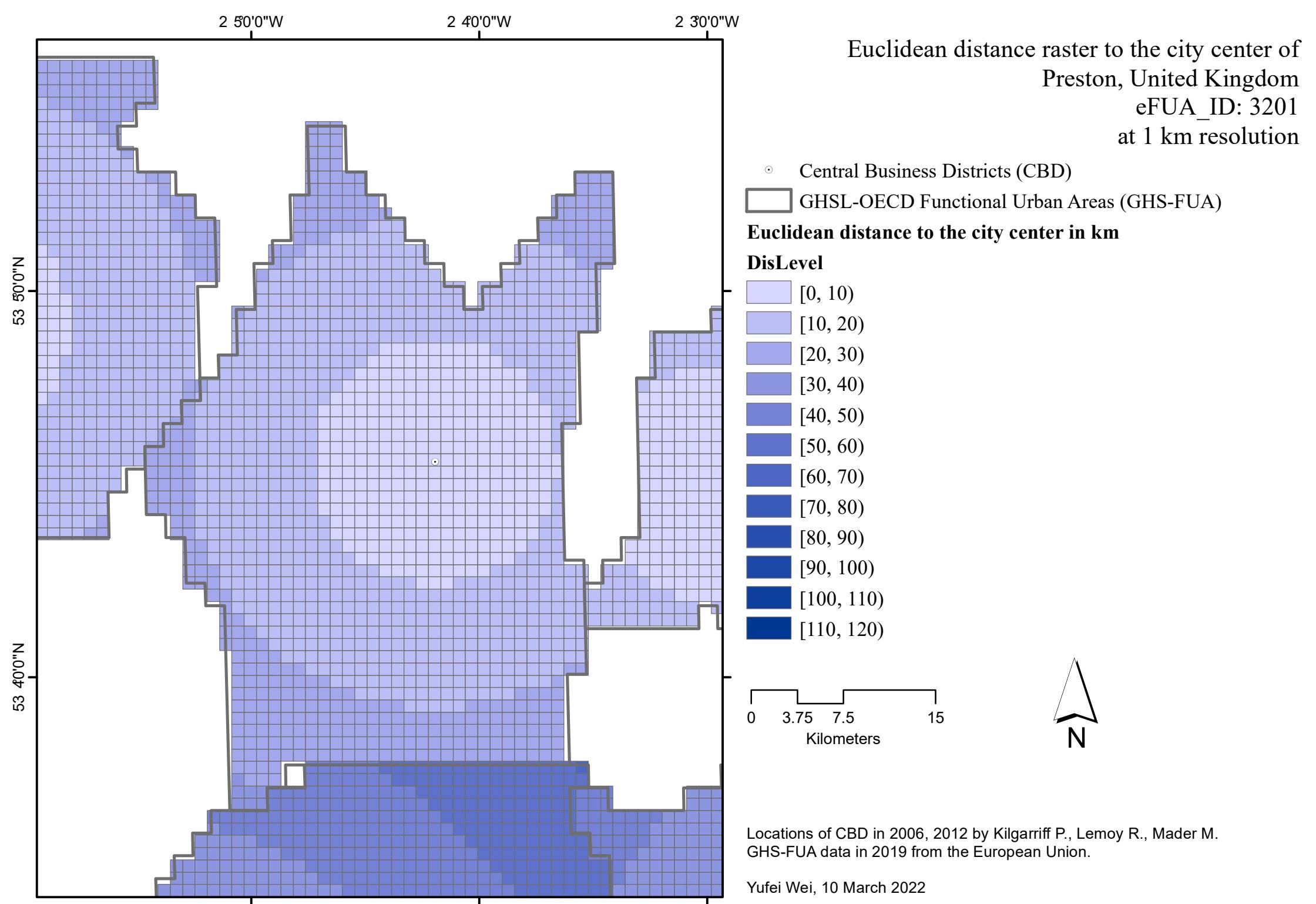


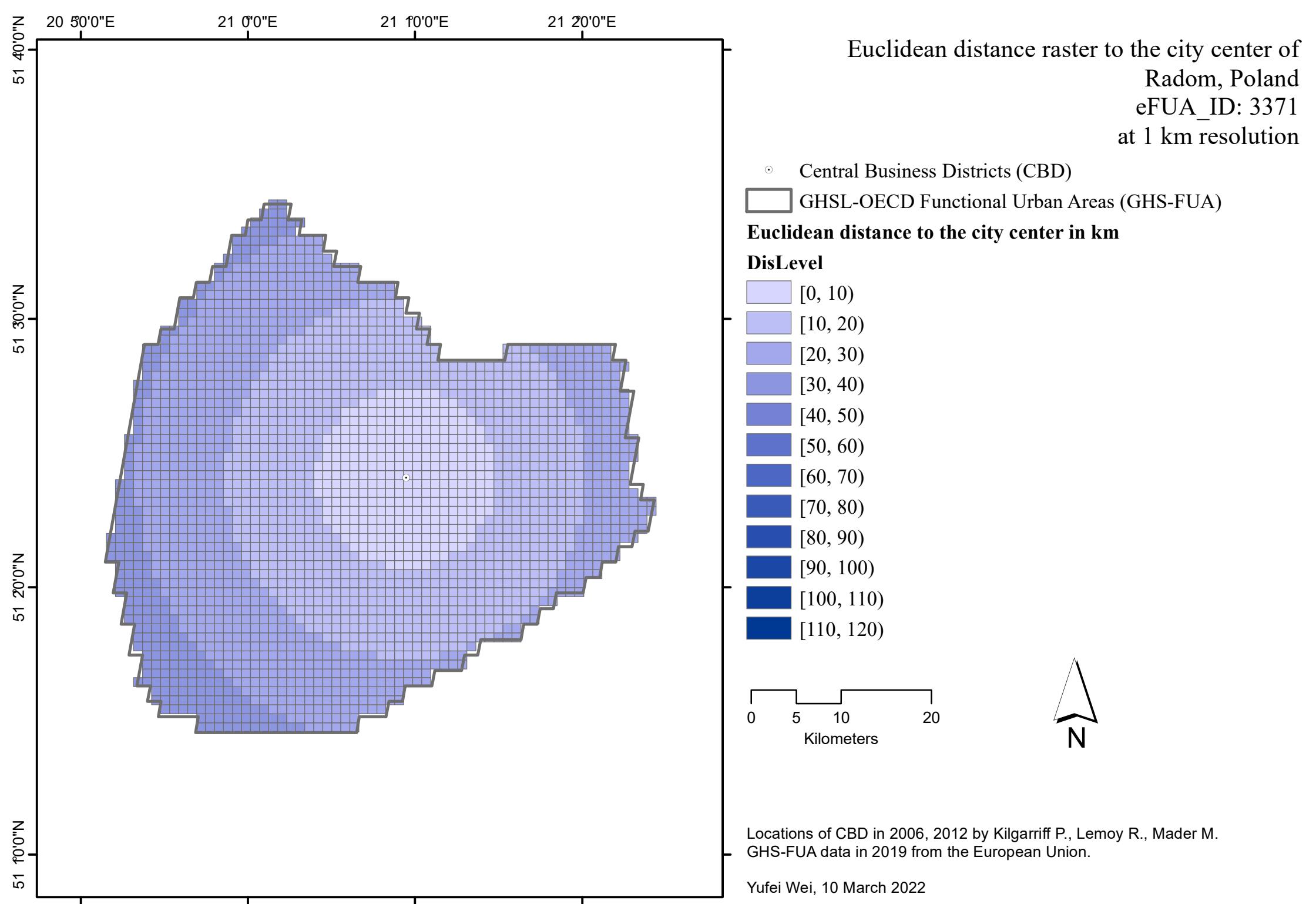






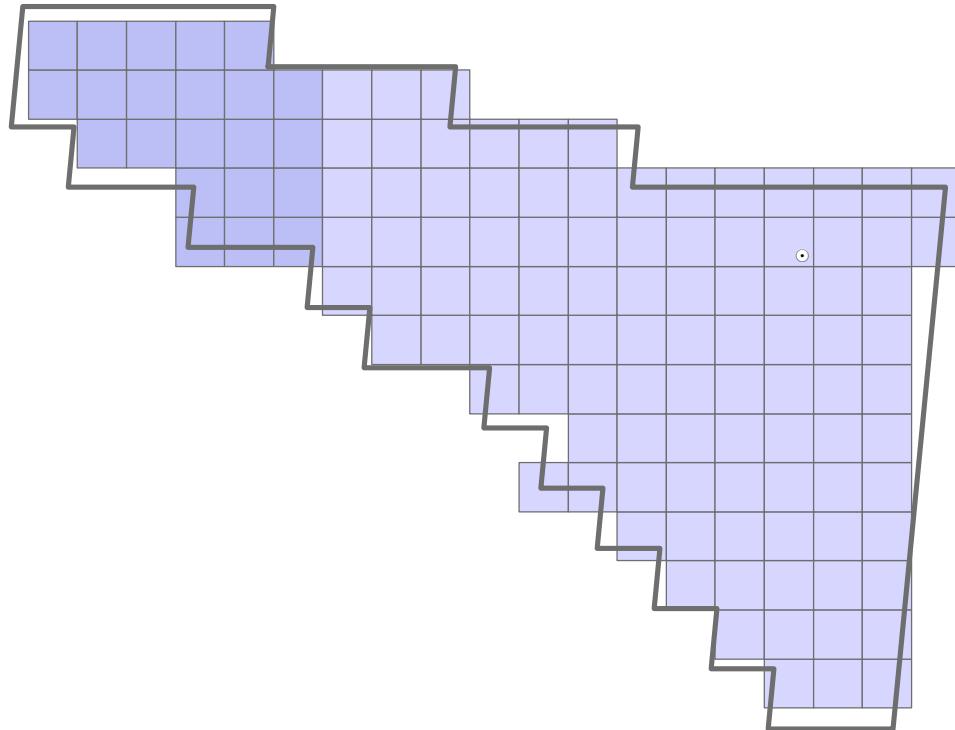






14°40'0"E

Euclidean distance raster to the city center of  
Ragusa, Italy  
eFUA\_ID: 4564  
at 1 km resolution

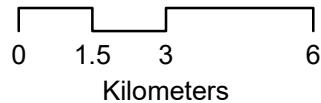
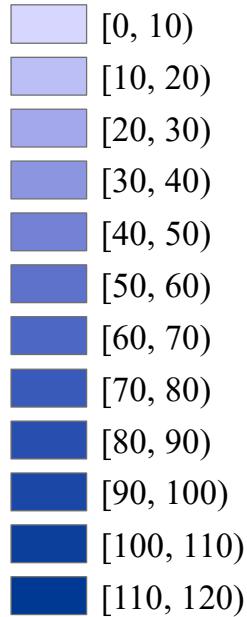


○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

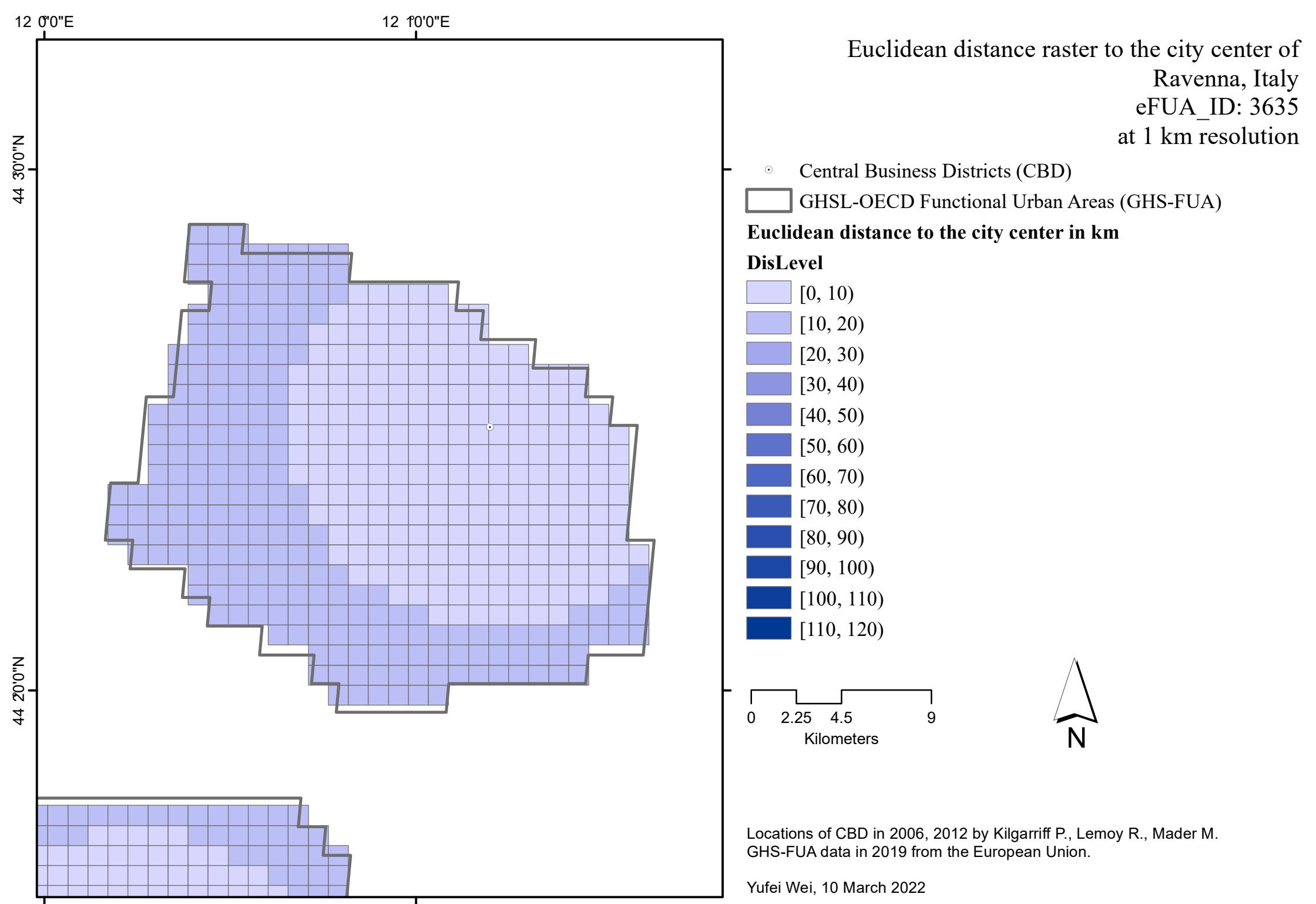
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



1 20'0"W

1 10'0"W

1 0'0"W

0 50'0"W

51 40'0"N

51 30'0"N

51 20'0"N

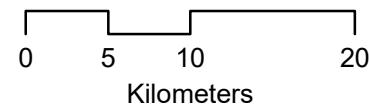
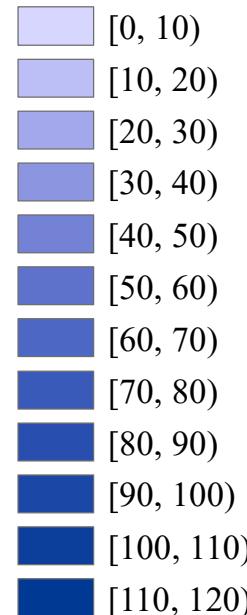
Euclidean distance raster to the city center of  
Reading, United Kingdom  
eFUA\_ID: 5047  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

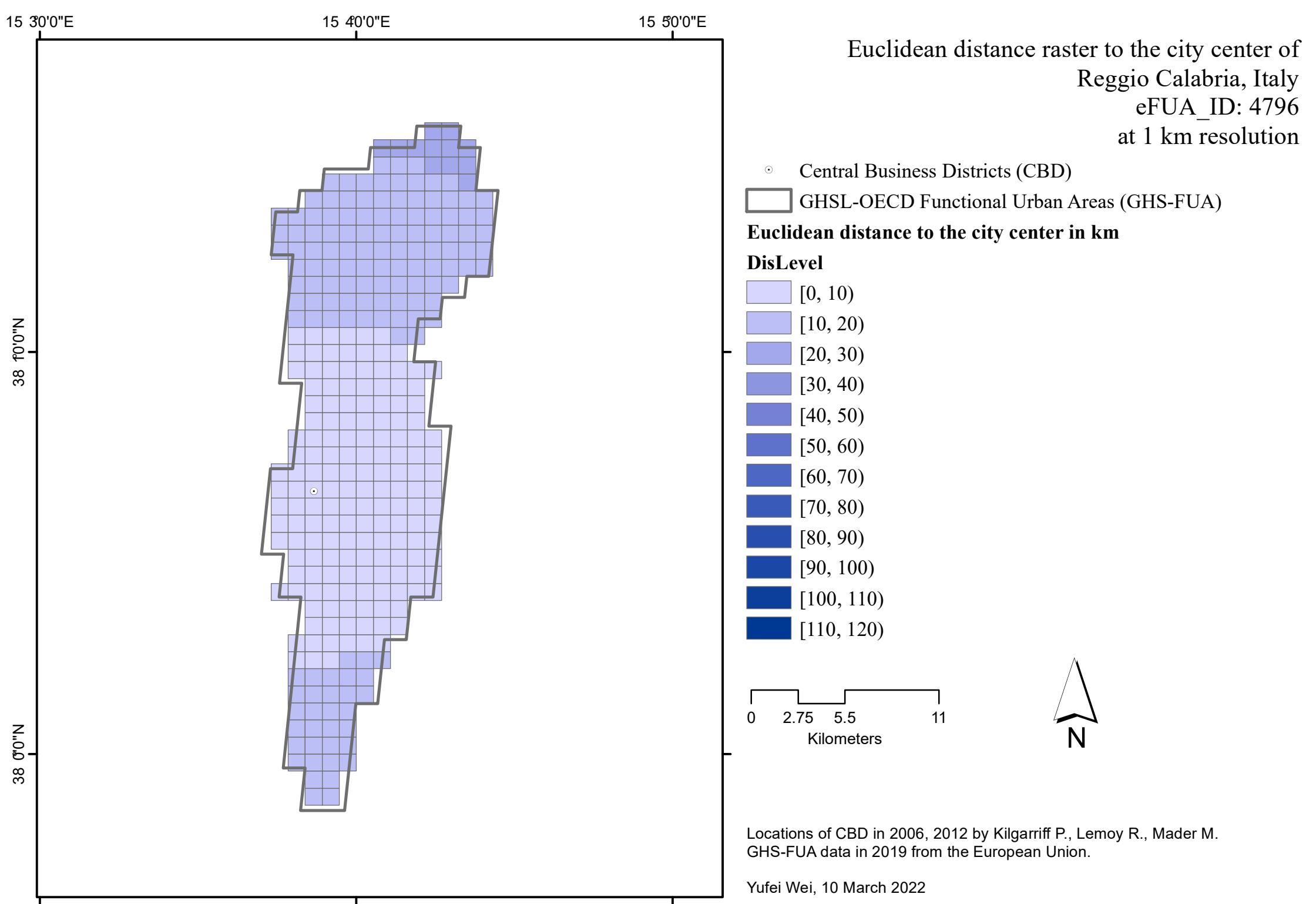
**Euclidean distance to the city center in km**

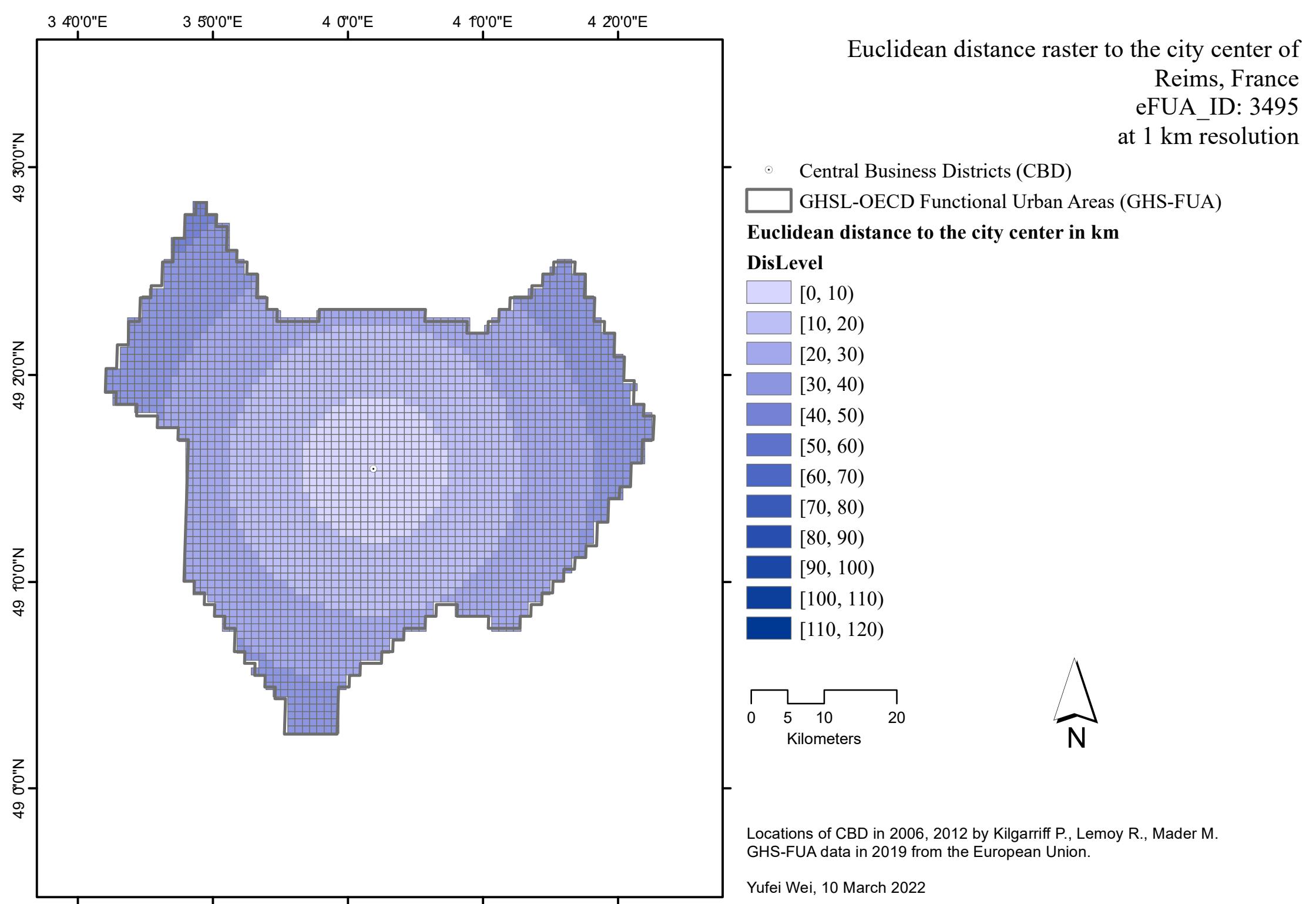
**DisLevel**

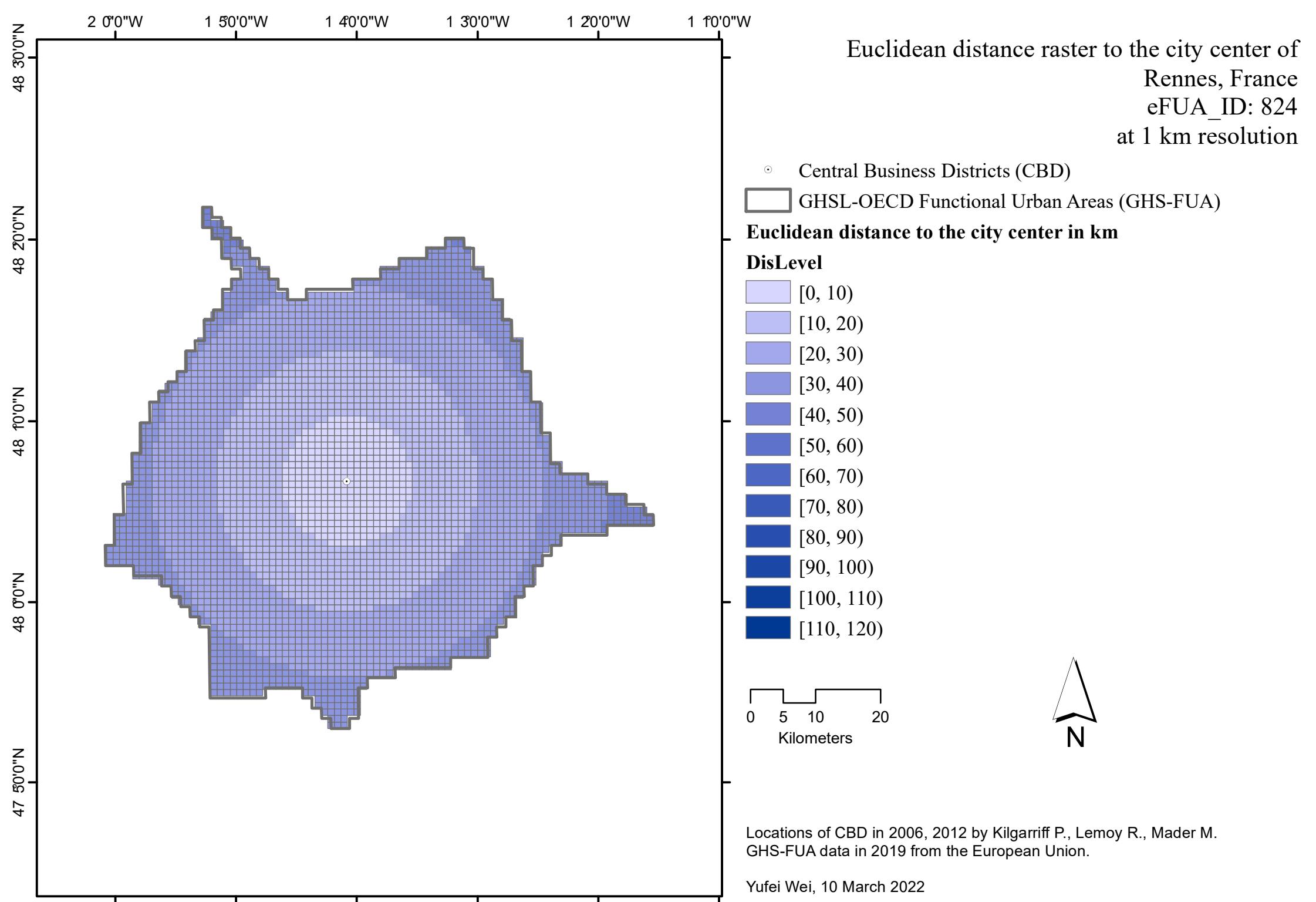


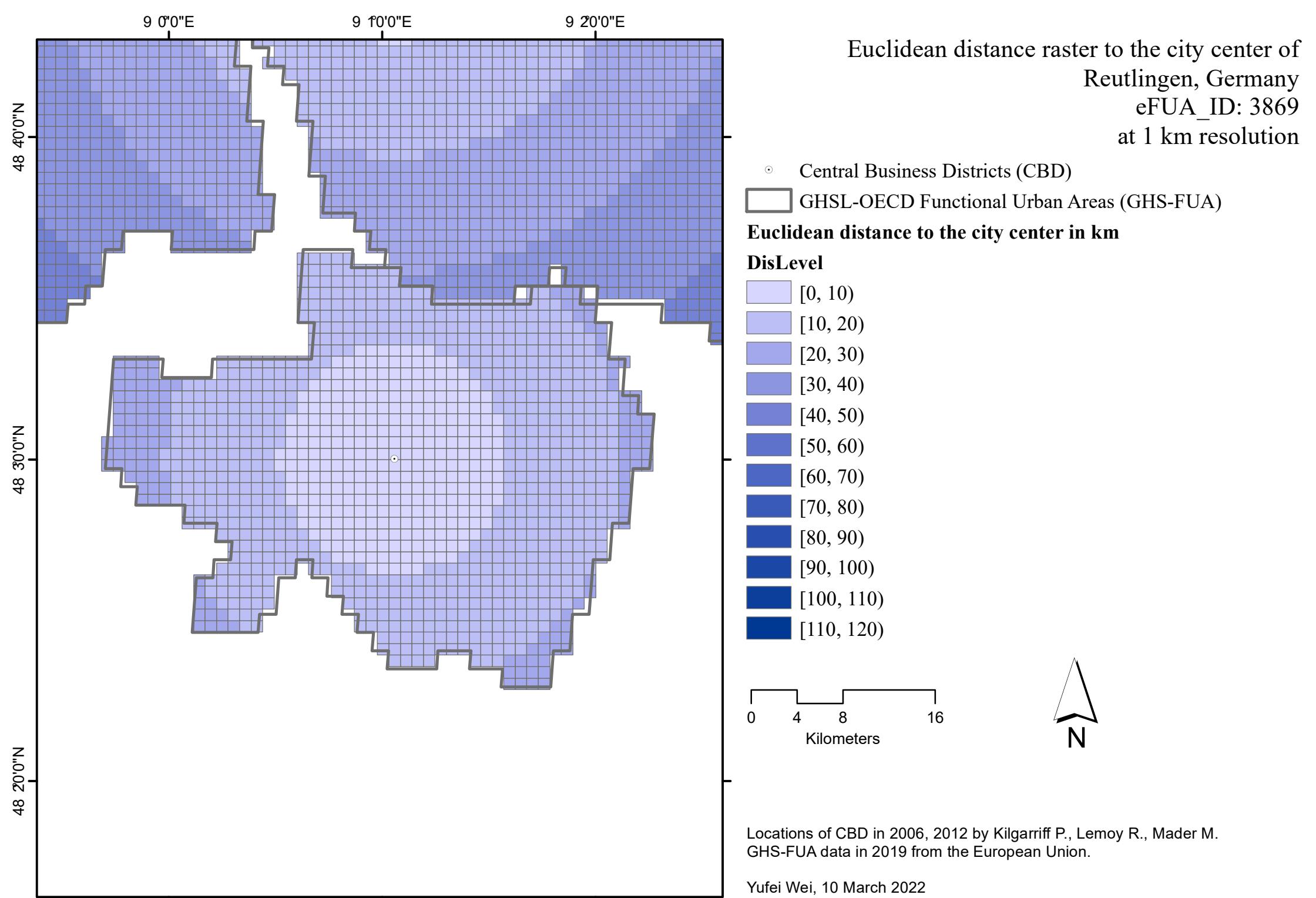
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022









22 0'0"W

21 50'0"W

21 40'0"W

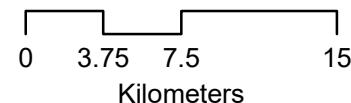
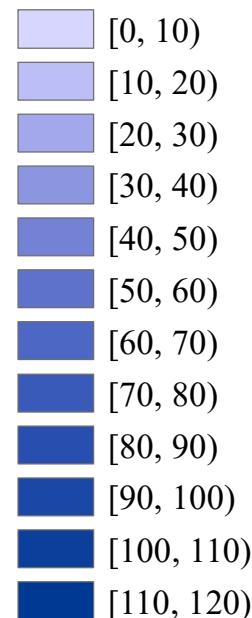
Euclidean distance raster to the city center of  
Reykjavik, Iceland  
eFUA\_ID: 83  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

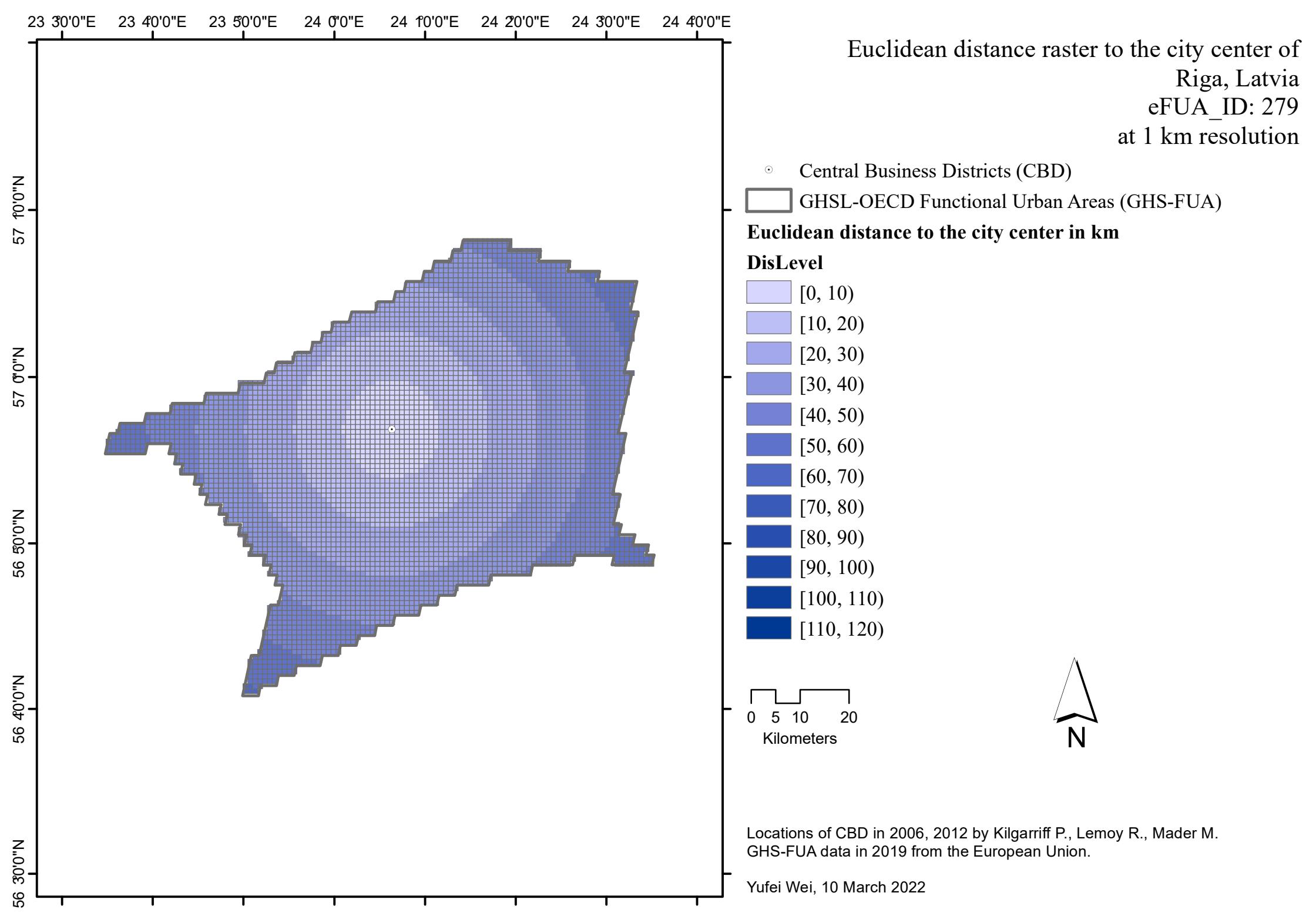
**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

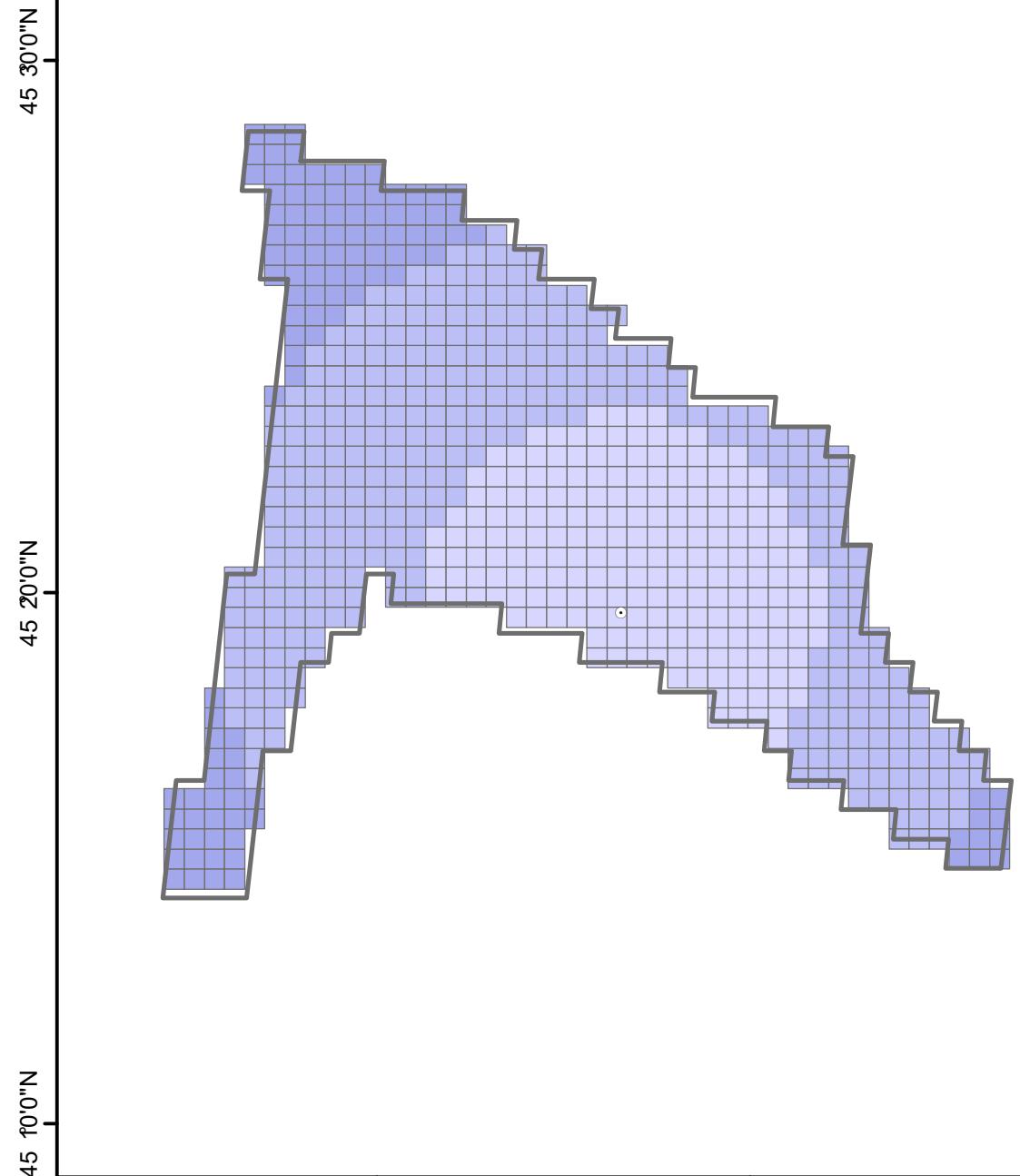
Yufei Wei, 10 March 2022



14 20'0"E

14 30'0"E

Euclidean distance raster to the city center of  
Rijeka, Croatia  
eFUA\_ID: 75  
at 1 km resolution



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

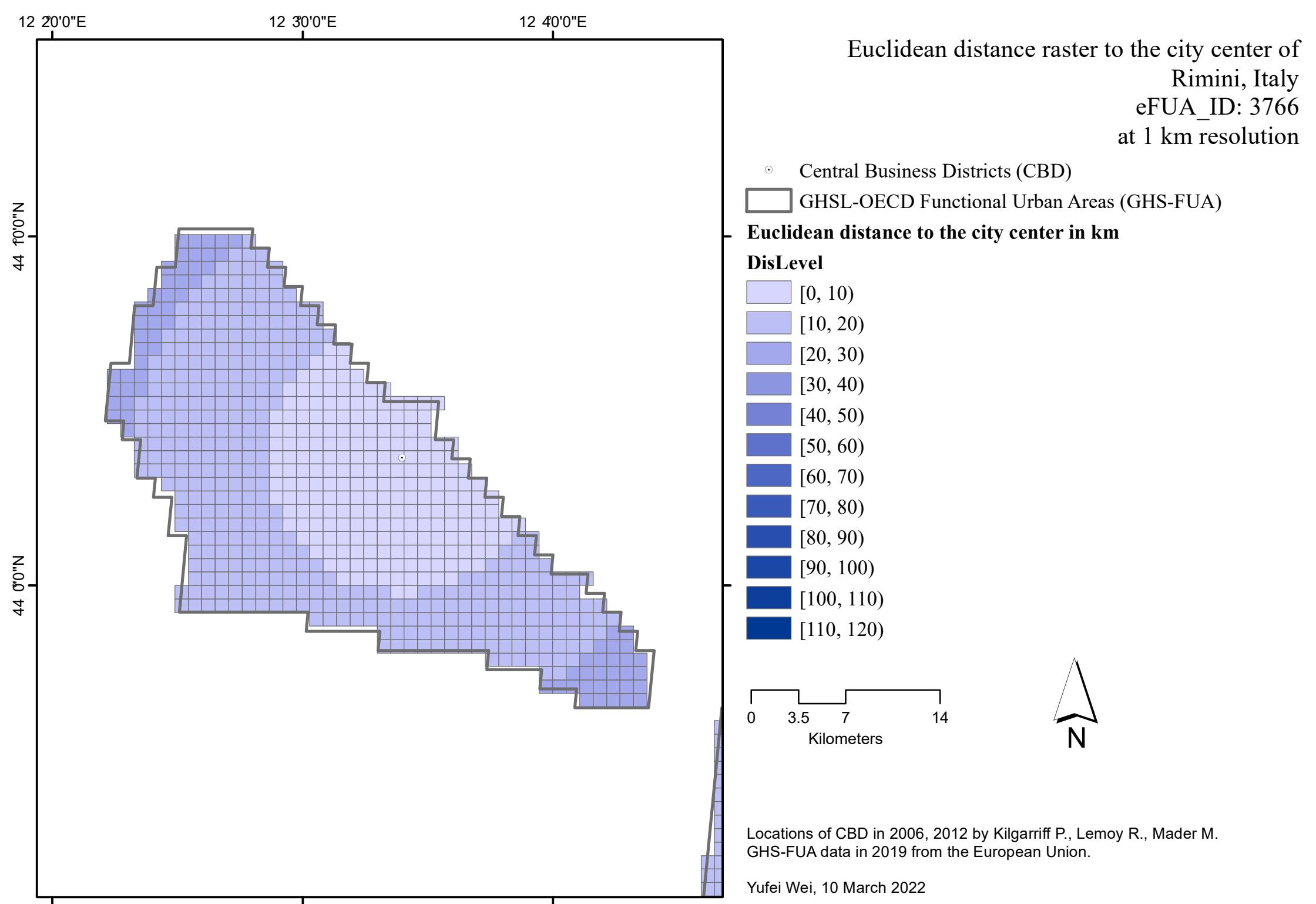
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

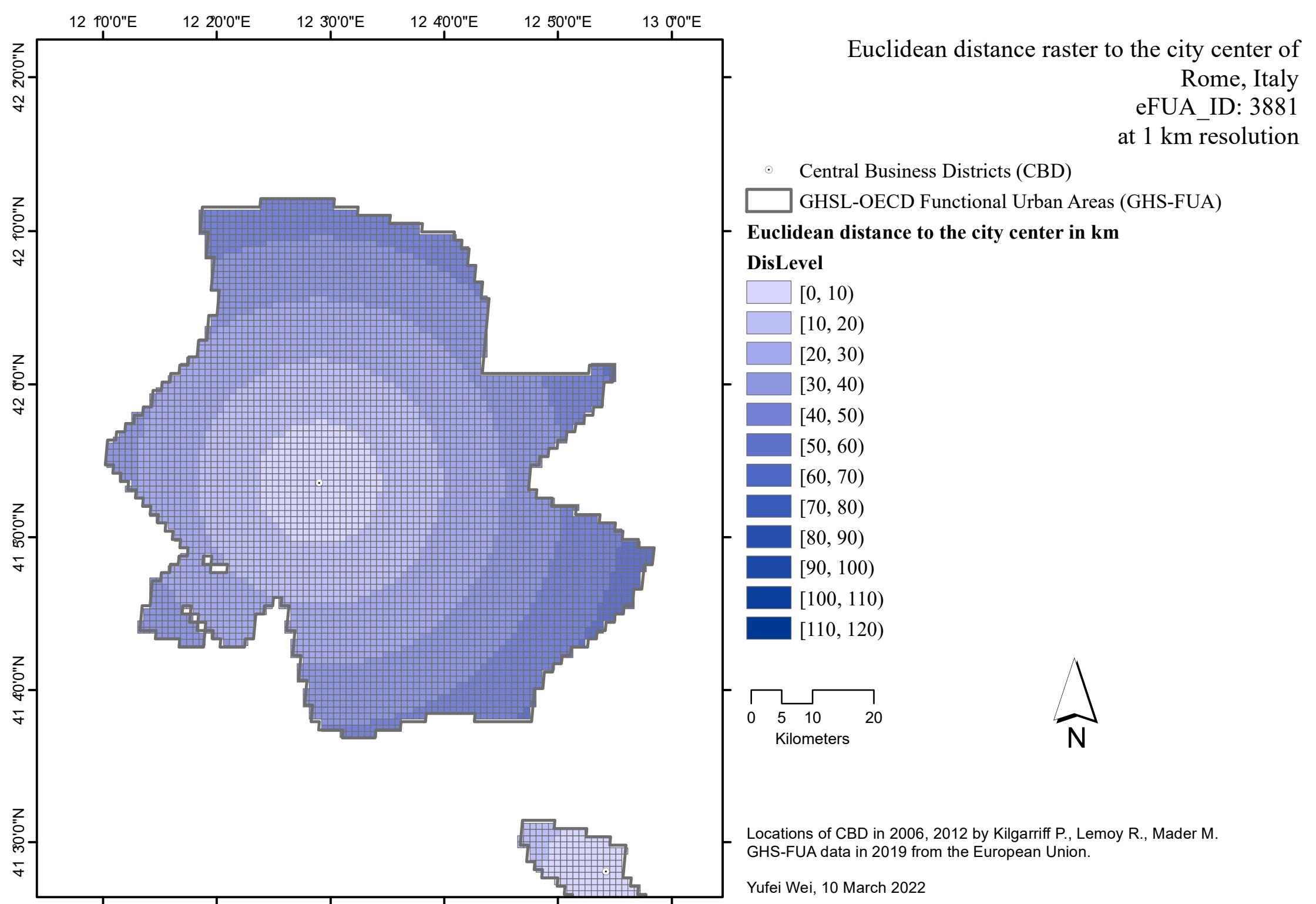
0 3.5 7 14  
Kilometers

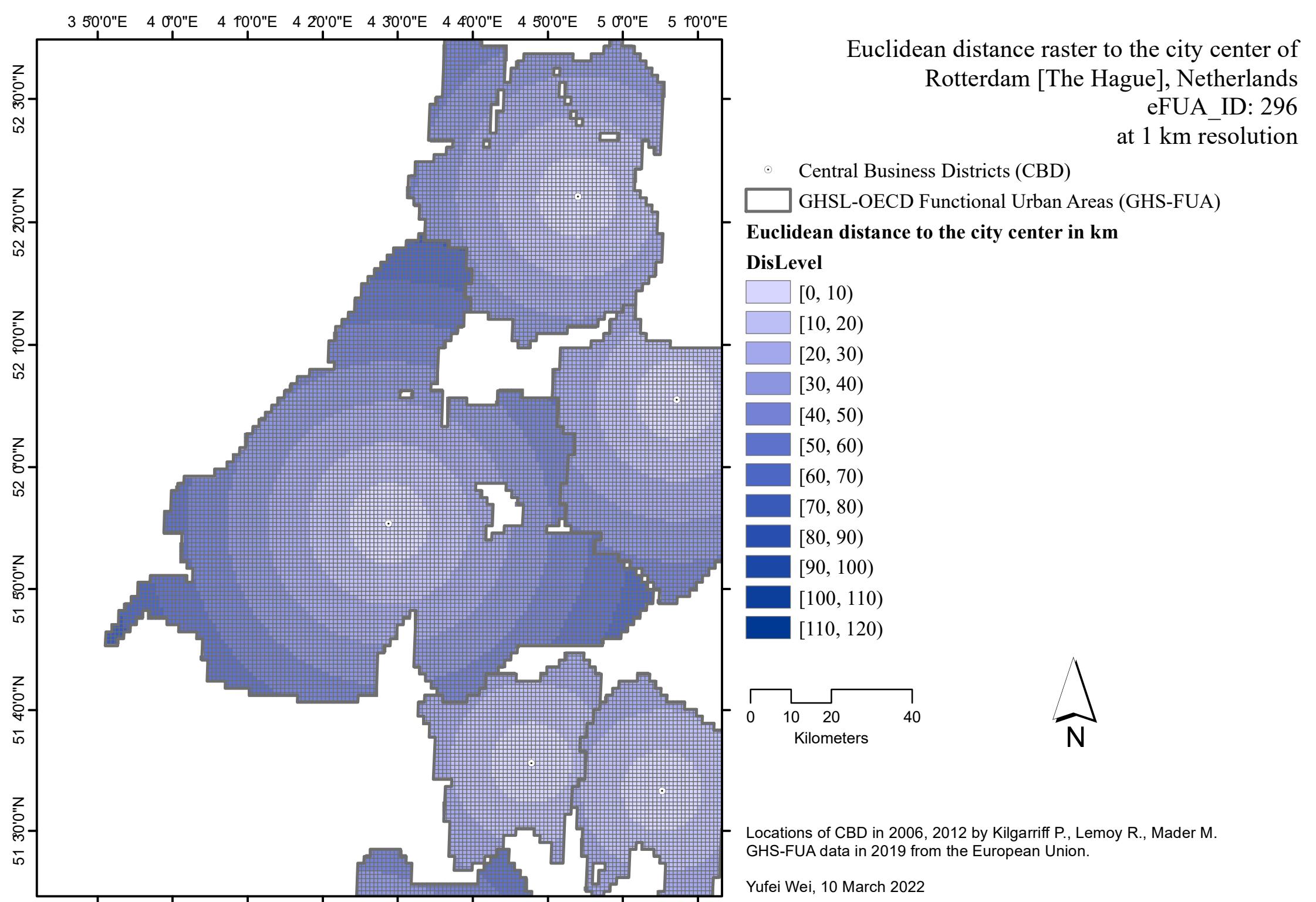


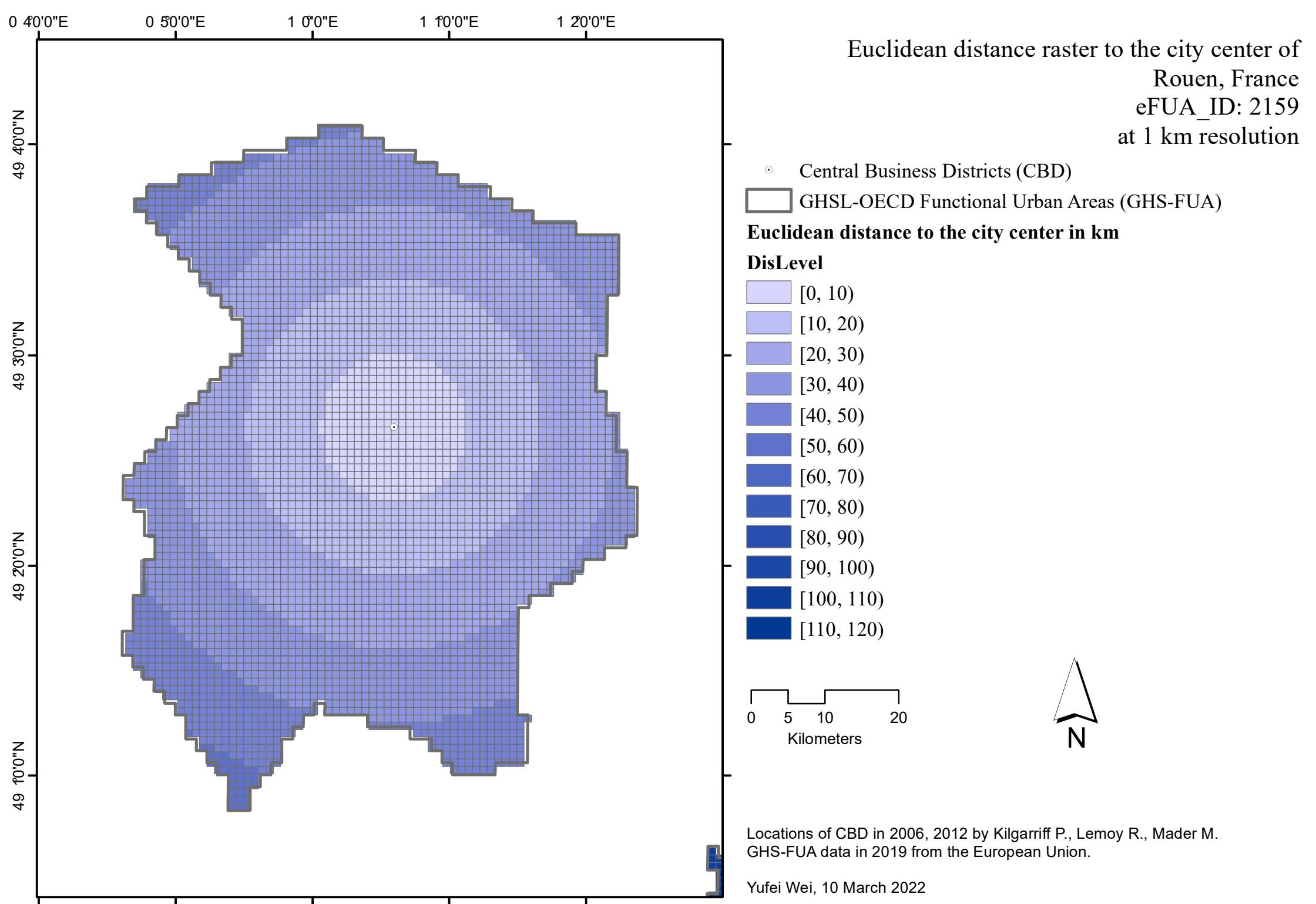
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022









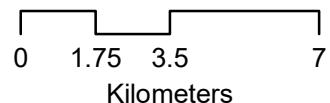
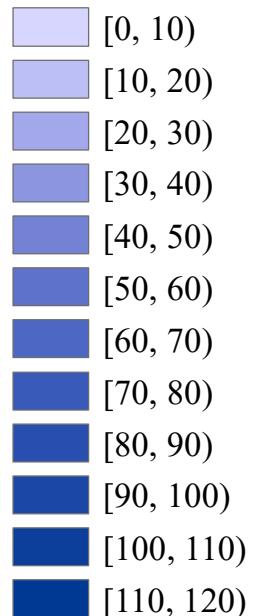
26 0'0"E

Euclidean distance raster to the city center of  
Ruse, Bulgaria  
eFUA\_ID: 518  
at 1 km resolution

- Central Business Districts (CBD)
- ◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

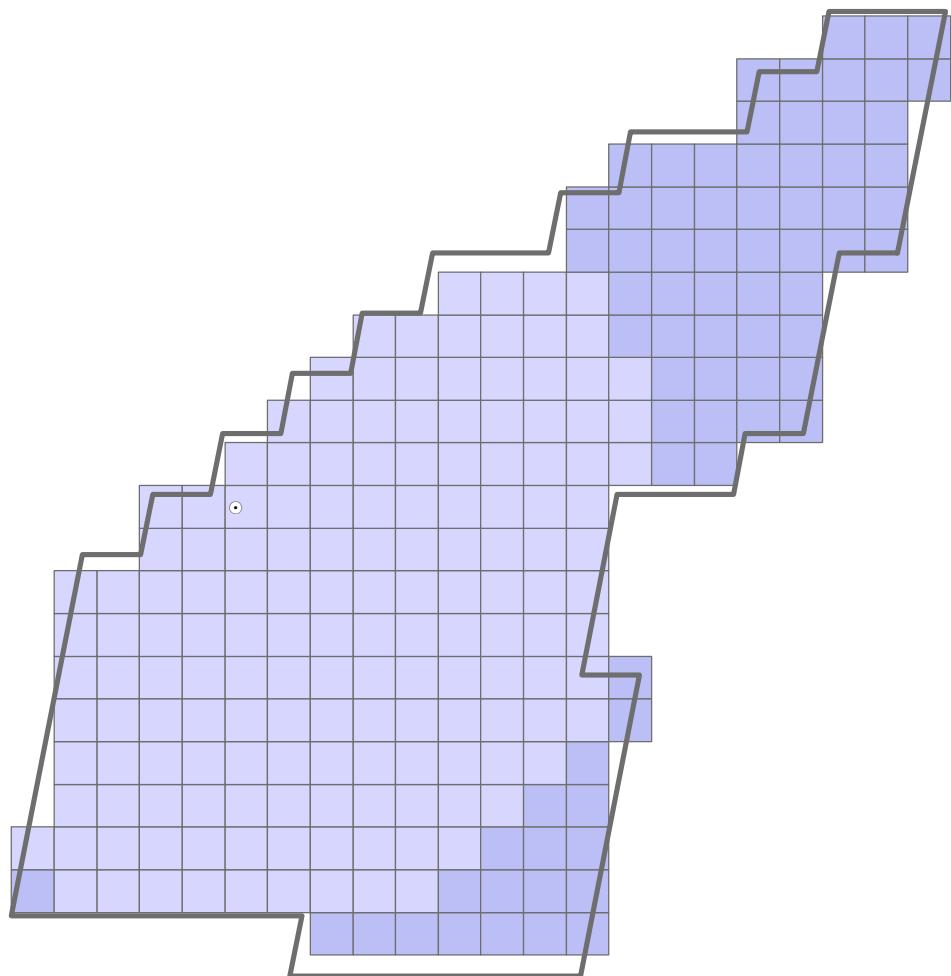
#### DisLevel

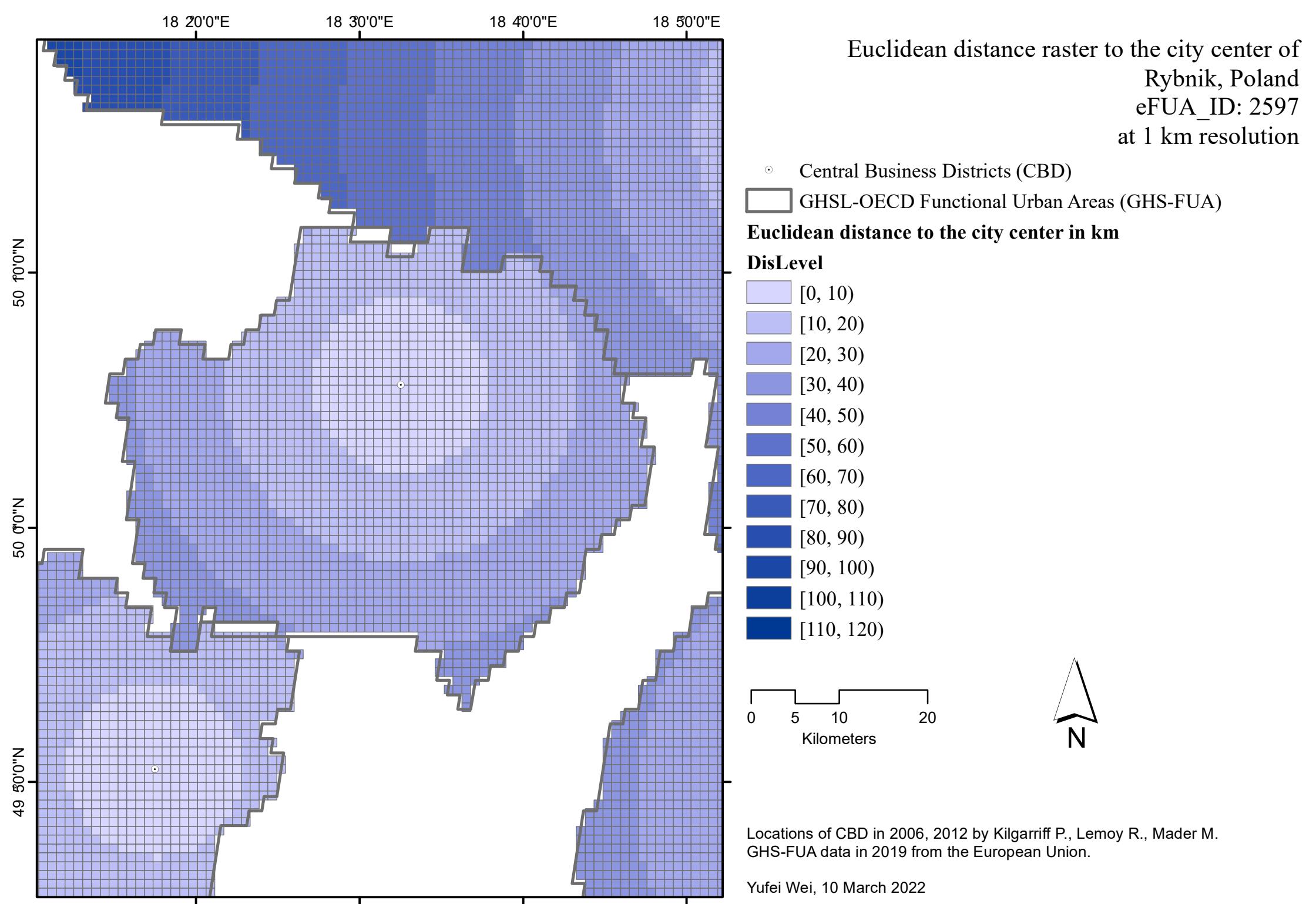


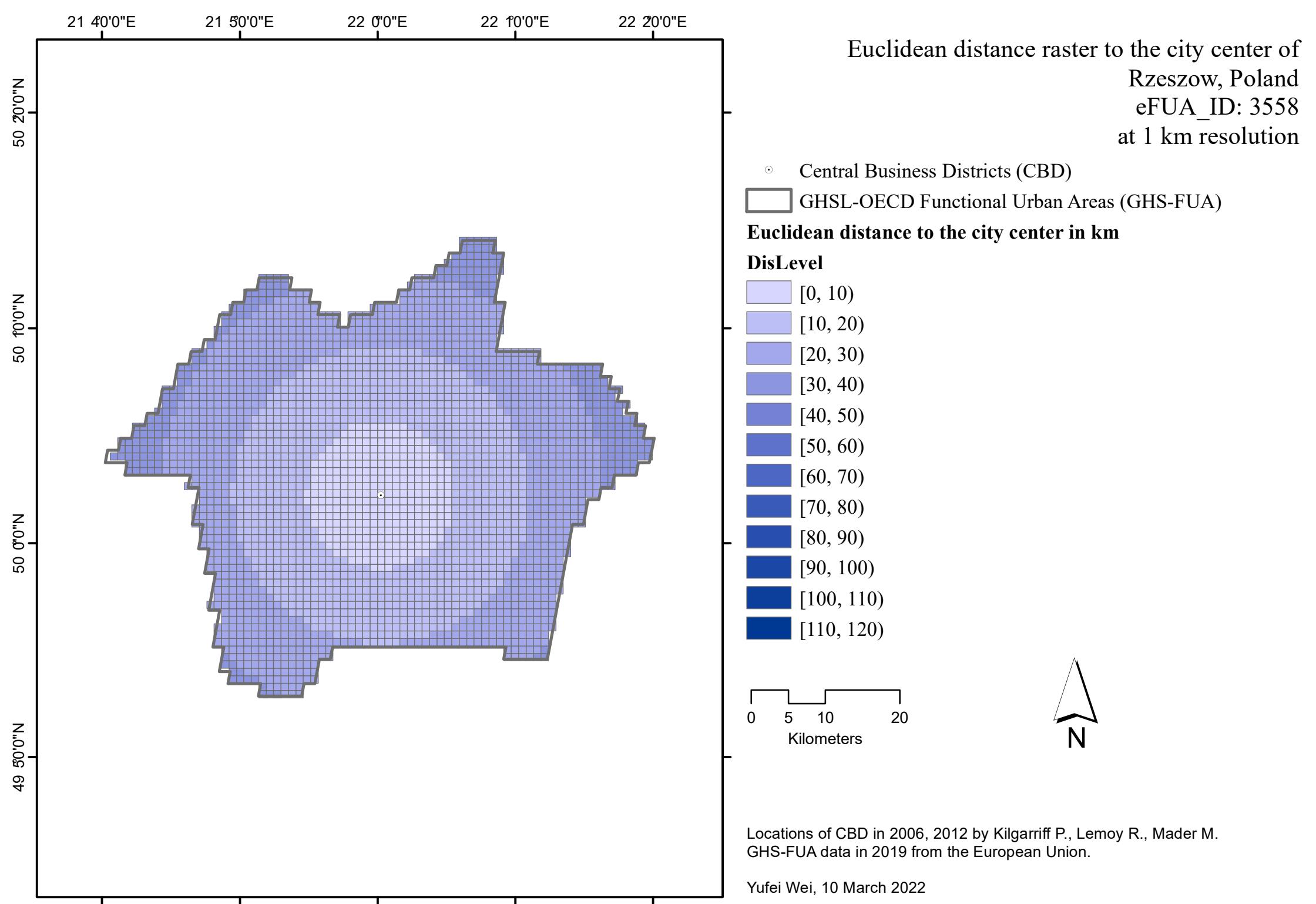
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

43 50'0"N







6 40'0"E

6 50'0"E

7 0'0"E

7 10'0"E

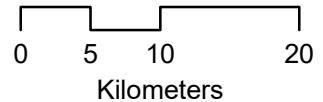
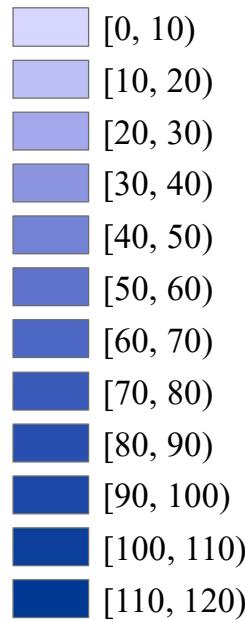
Euclidean distance raster to the city center of  
Saarbruecken, Germany  
eFUA\_ID: 1287  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

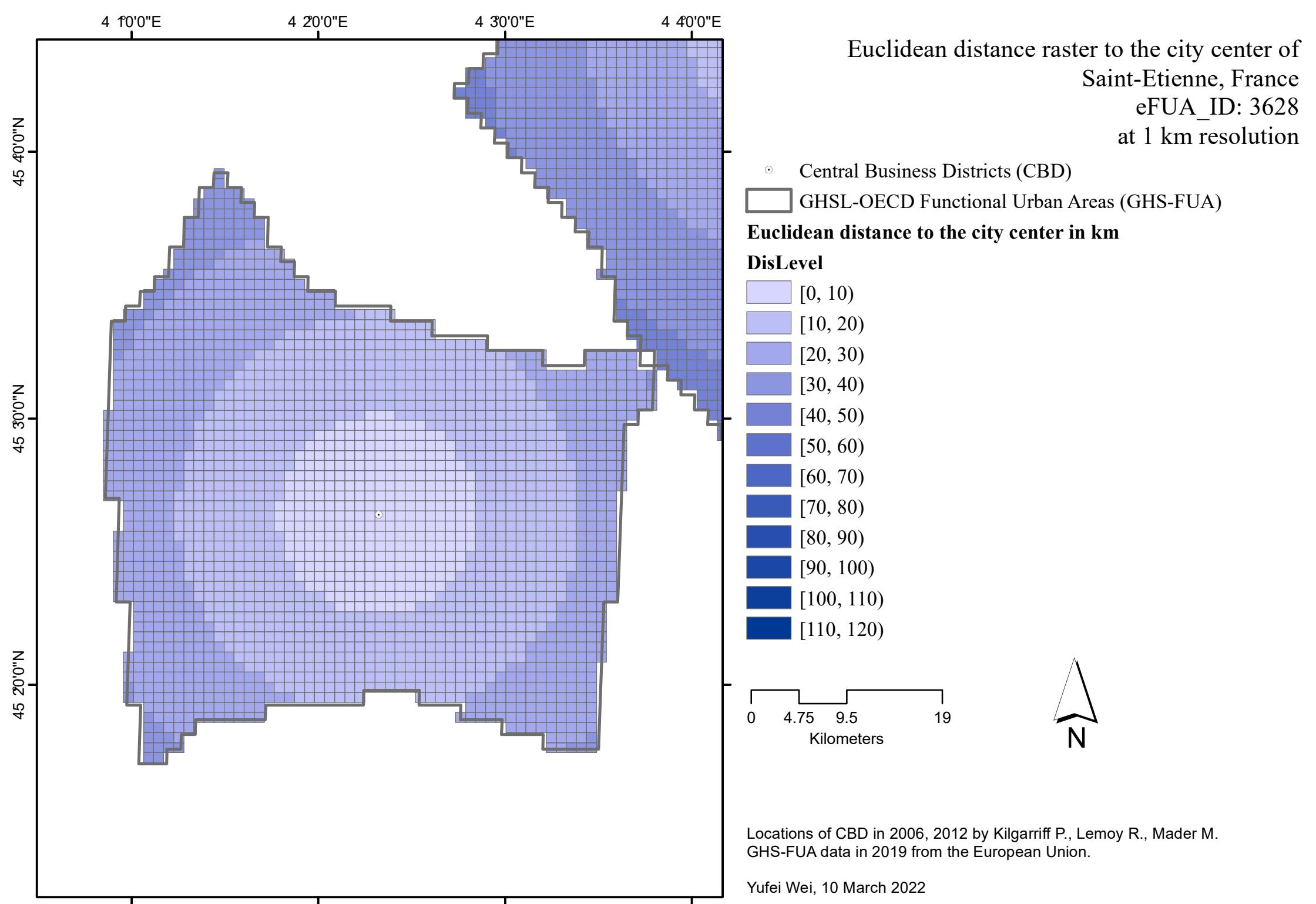
### Euclidean distance to the city center in km

#### DisLevel



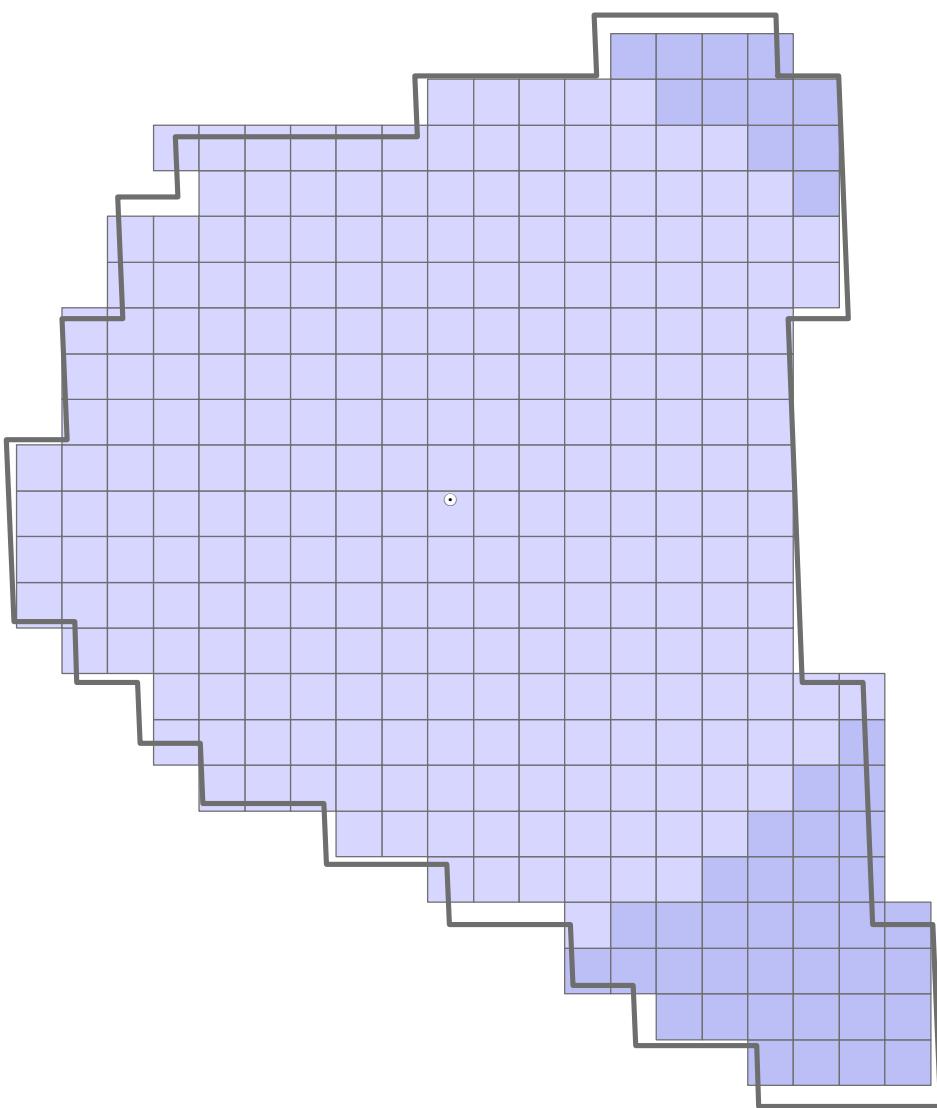
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



54°0'W

Euclidean distance raster to the city center of  
Salamanca, Spain  
eFUA\_ID: 2371  
at 1 km resolution



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)

0 1.75 3.5 7  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

14 40'0"E

14 50'0"E

15 0'0"E

40 50'0"N

40 40'0"N

40 30'0"N

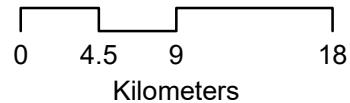
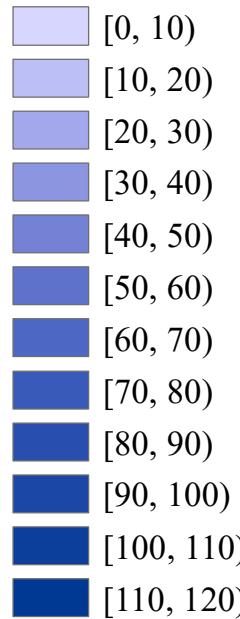
Euclidean distance raster to the city center of  
Salerno, Italy  
eFUA\_ID: 4498  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

13 0'0"E

13 10'0"E

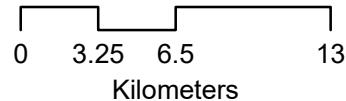
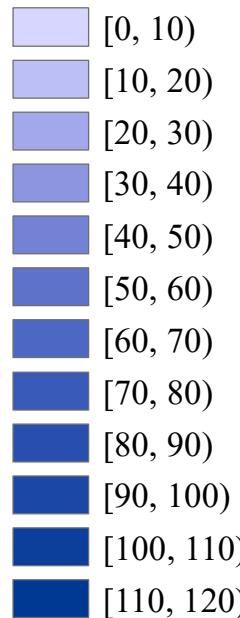
Euclidean distance raster to the city center of  
Salzburg, Austria  
eFUA\_ID: 199  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

36 10'0"E

36 20'0"E

36 30'0"E

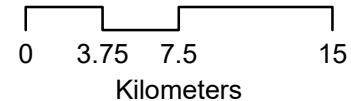
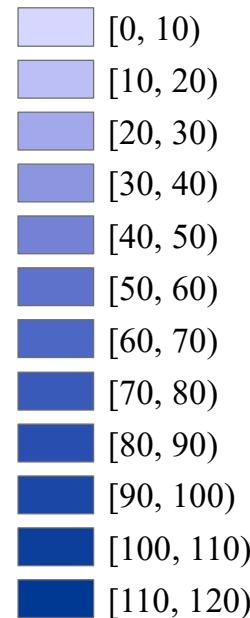
Euclidean distance raster to the city center of  
Samsun, Turkey  
eFUA\_ID: 4309  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

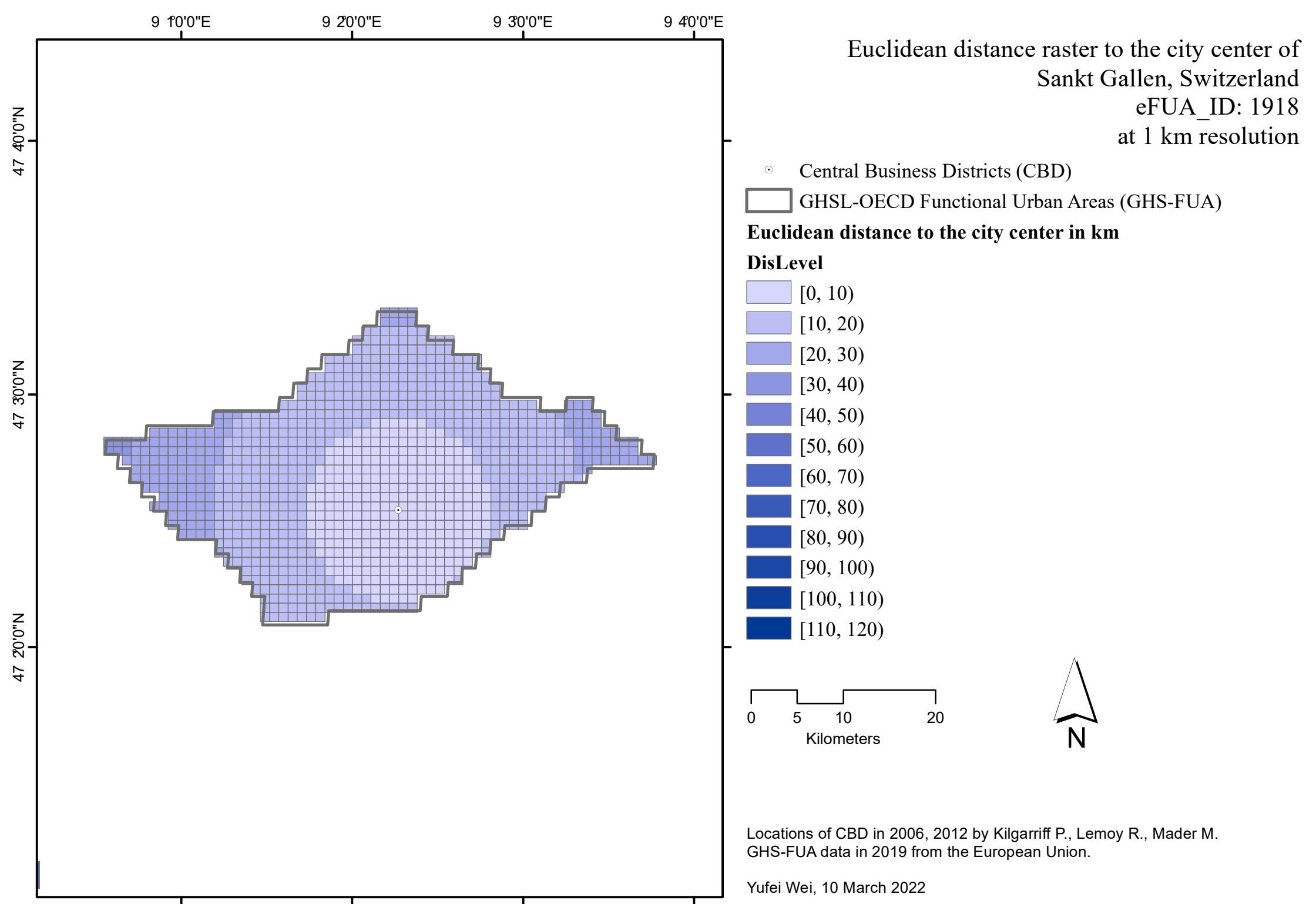
### Euclidean distance to the city center in km

#### DisLevel



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



16 20'0"W

16 10'0"W

Euclidean distance raster to the city center of  
Santa Cruz de Tenerife, Spain  
eFUA\_ID: 395  
at 1 km resolution

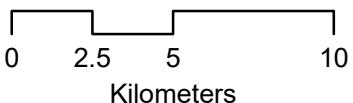
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

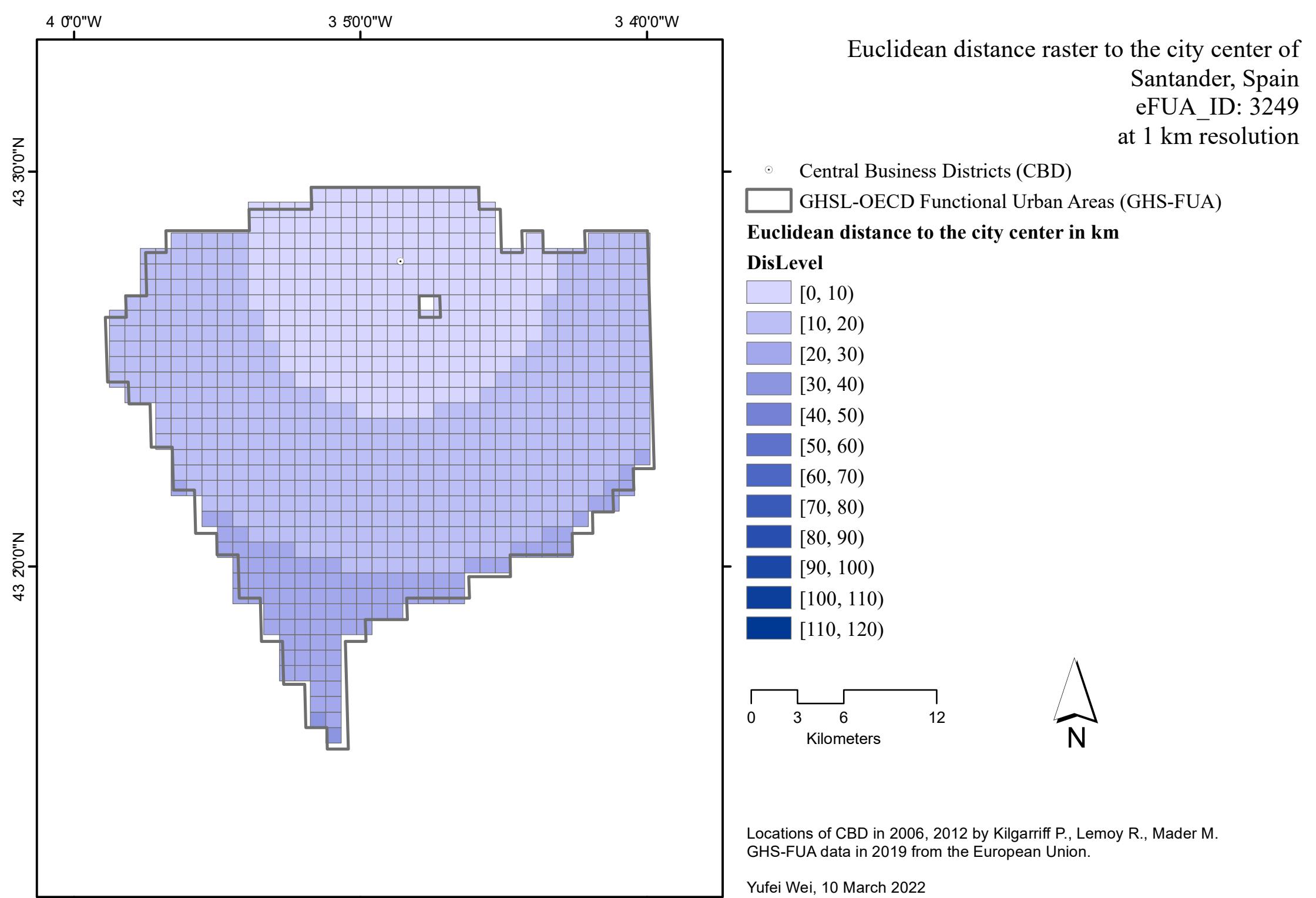
**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

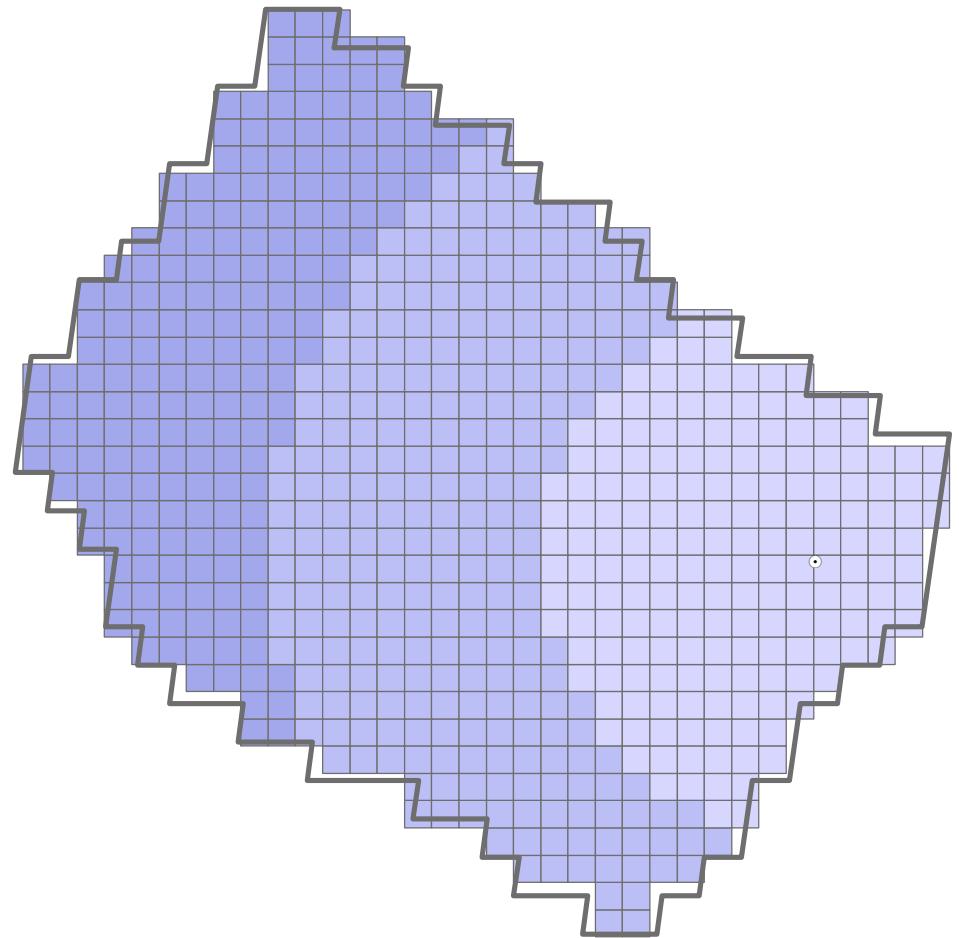


18 10'0"E

18 20'0"E

Euclidean distance raster to the city center of  
Sarajevo, Bosnia and Herzegovina  
eFUA\_ID: 798  
at 1 km resolution

44 0'0"N



○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 2.75 5.5 11  
Kilometers



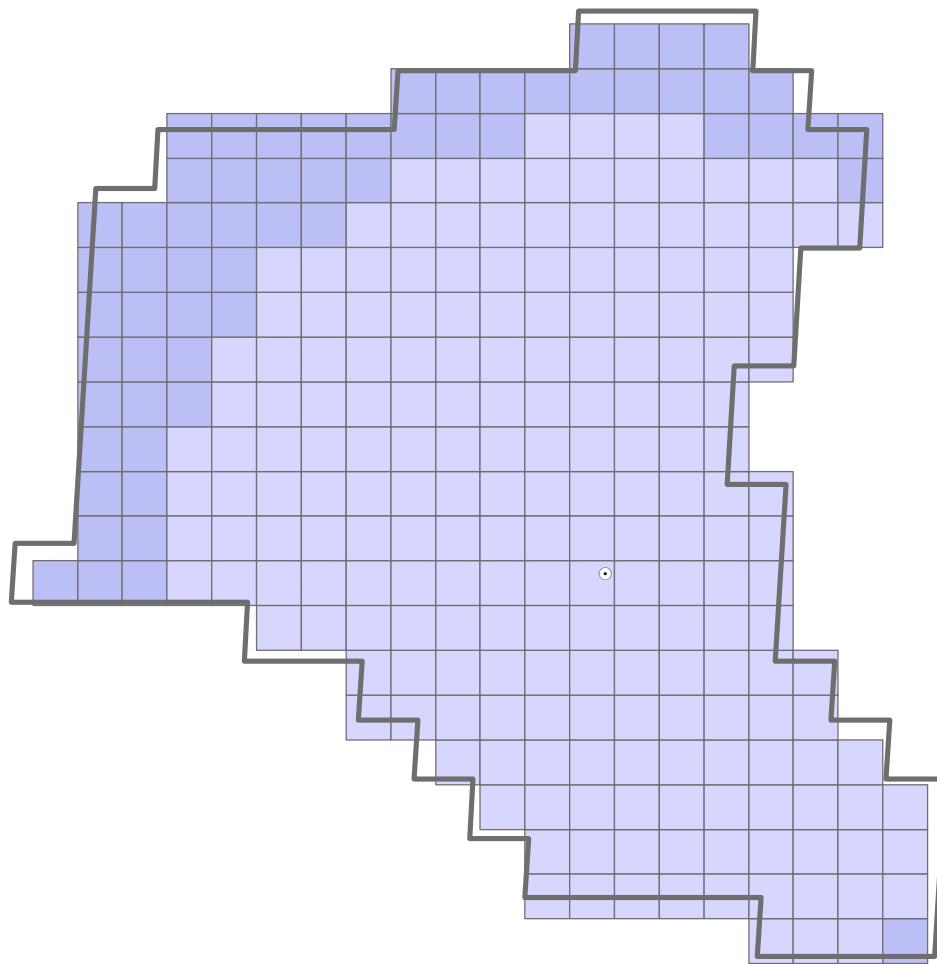
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

8 30'0"E

Euclidean distance raster to the city center of  
Sassari, Italy  
eFUA\_ID: 1508  
at 1 km resolution

40 50'0"N



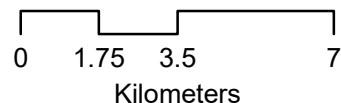
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

8 20'0"E

8 30'0"E

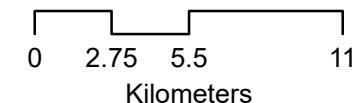
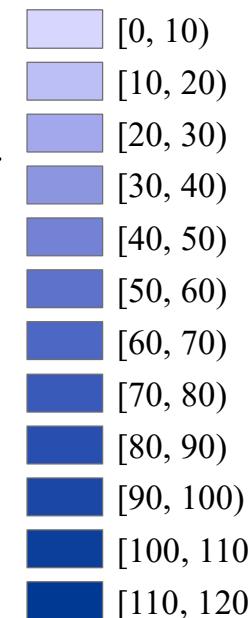
Euclidean distance raster to the city center of  
Savona, Italy  
eFUA\_ID: 565  
at 1 km resolution

○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

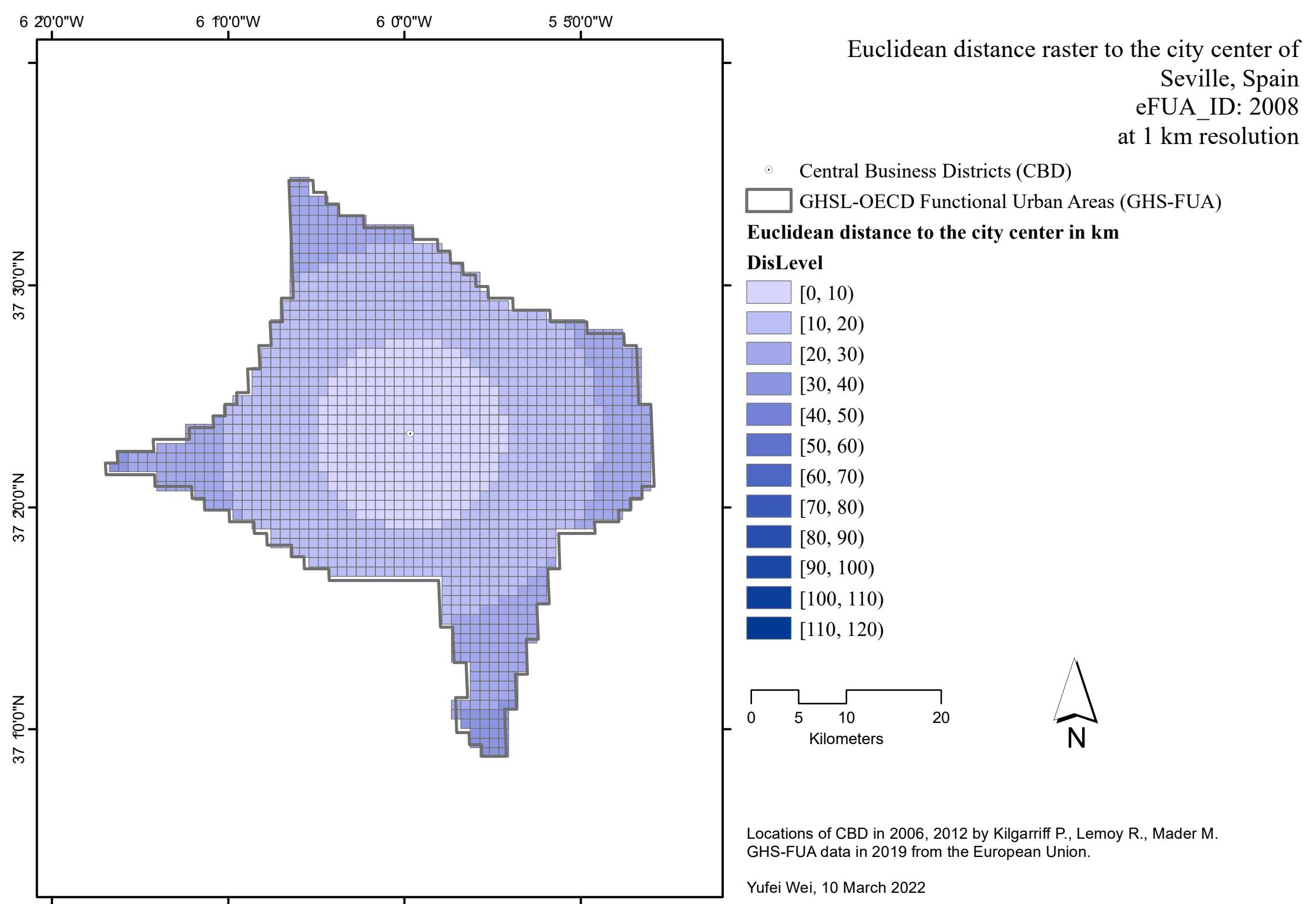
**Euclidean distance to the city center in km**

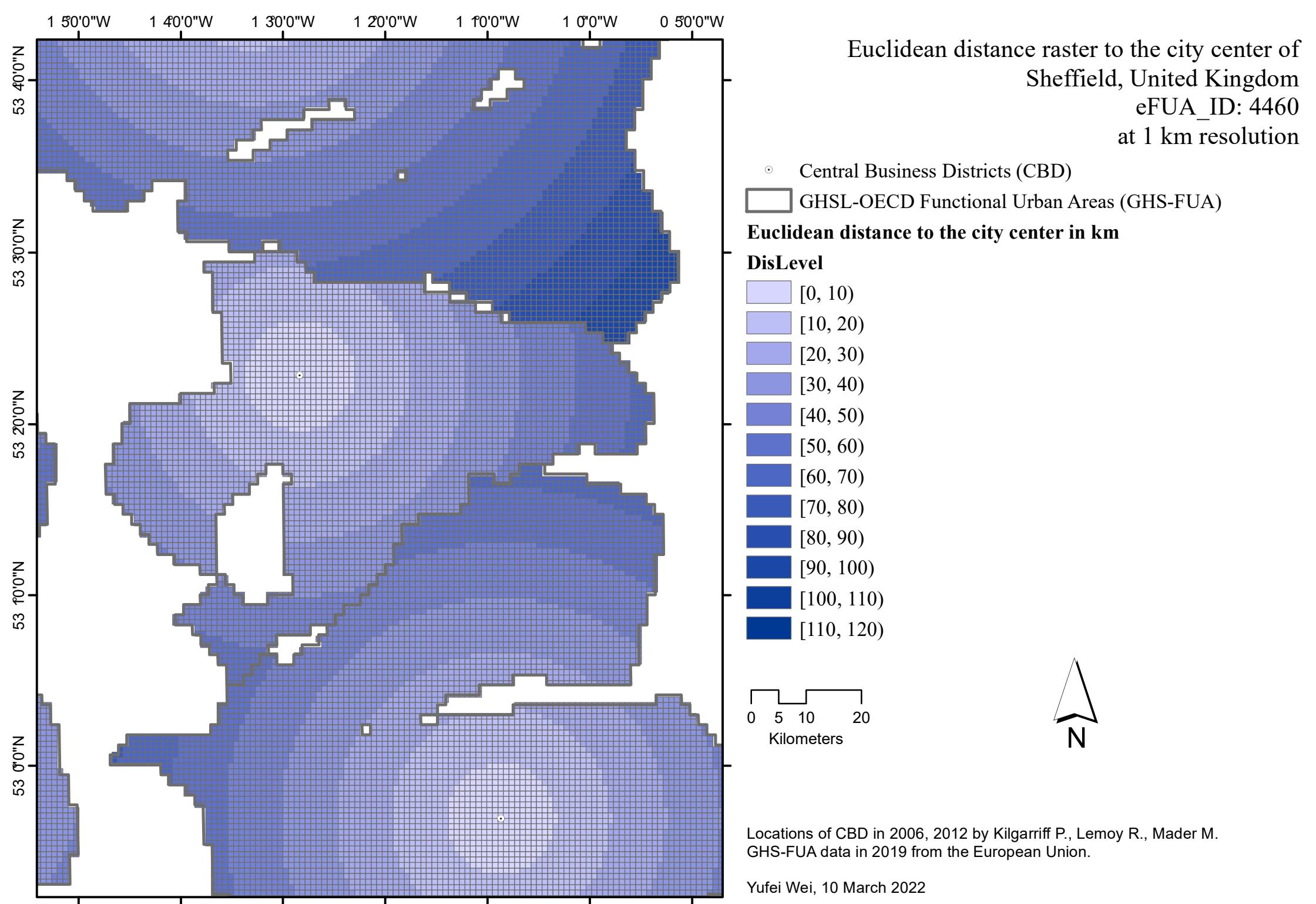
**DisLevel**



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



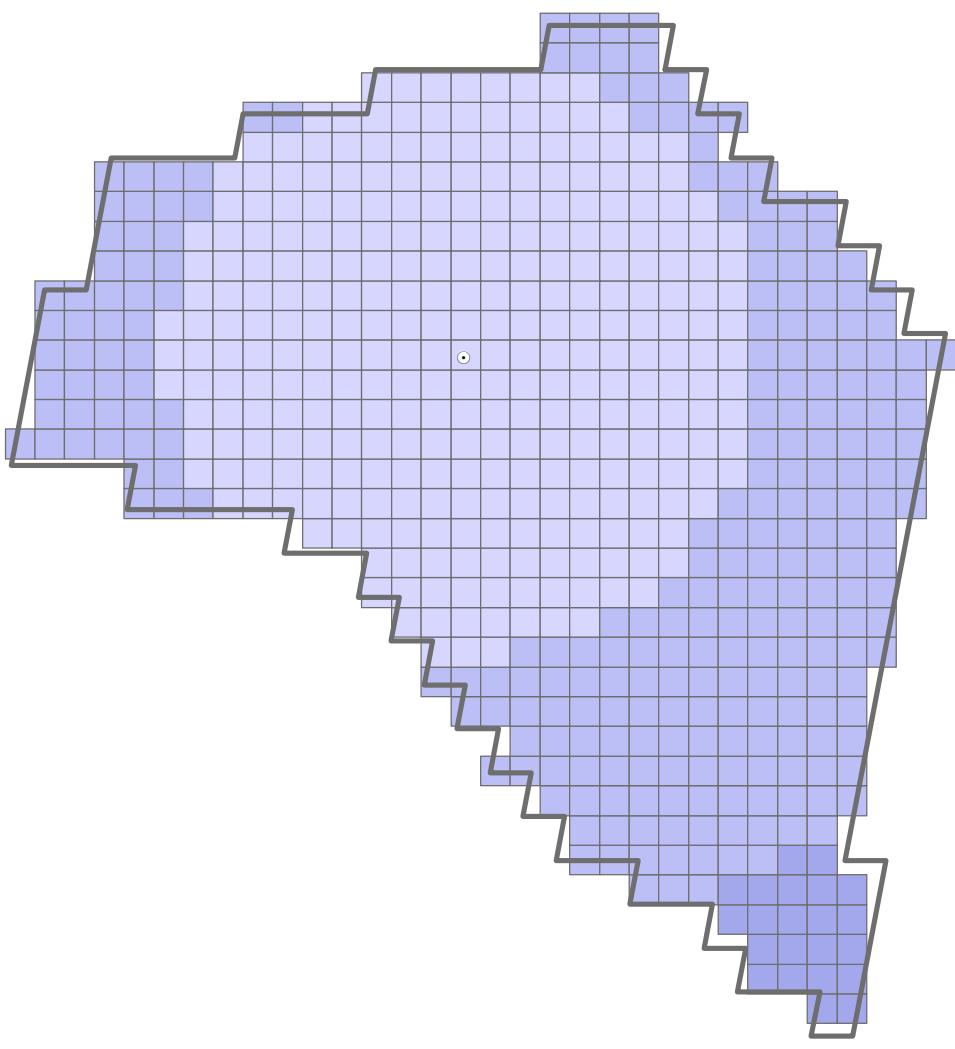


24 0'0"E

24 10'0"E

Euclidean distance raster to the city center of  
Sibiu, Romania  
eFUA\_ID: 1121  
at 1 km resolution

45 50'0"N



○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 2.75 5.5 11  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

7 50'0"E

8 0'0"E

8 10'0"E

51 0'0"N

50 50'0"N

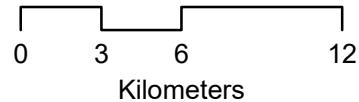
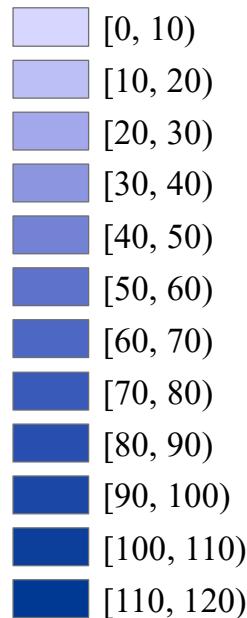
Euclidean distance raster to the city center of  
Siegen, Germany  
eFUA\_ID: 2298  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

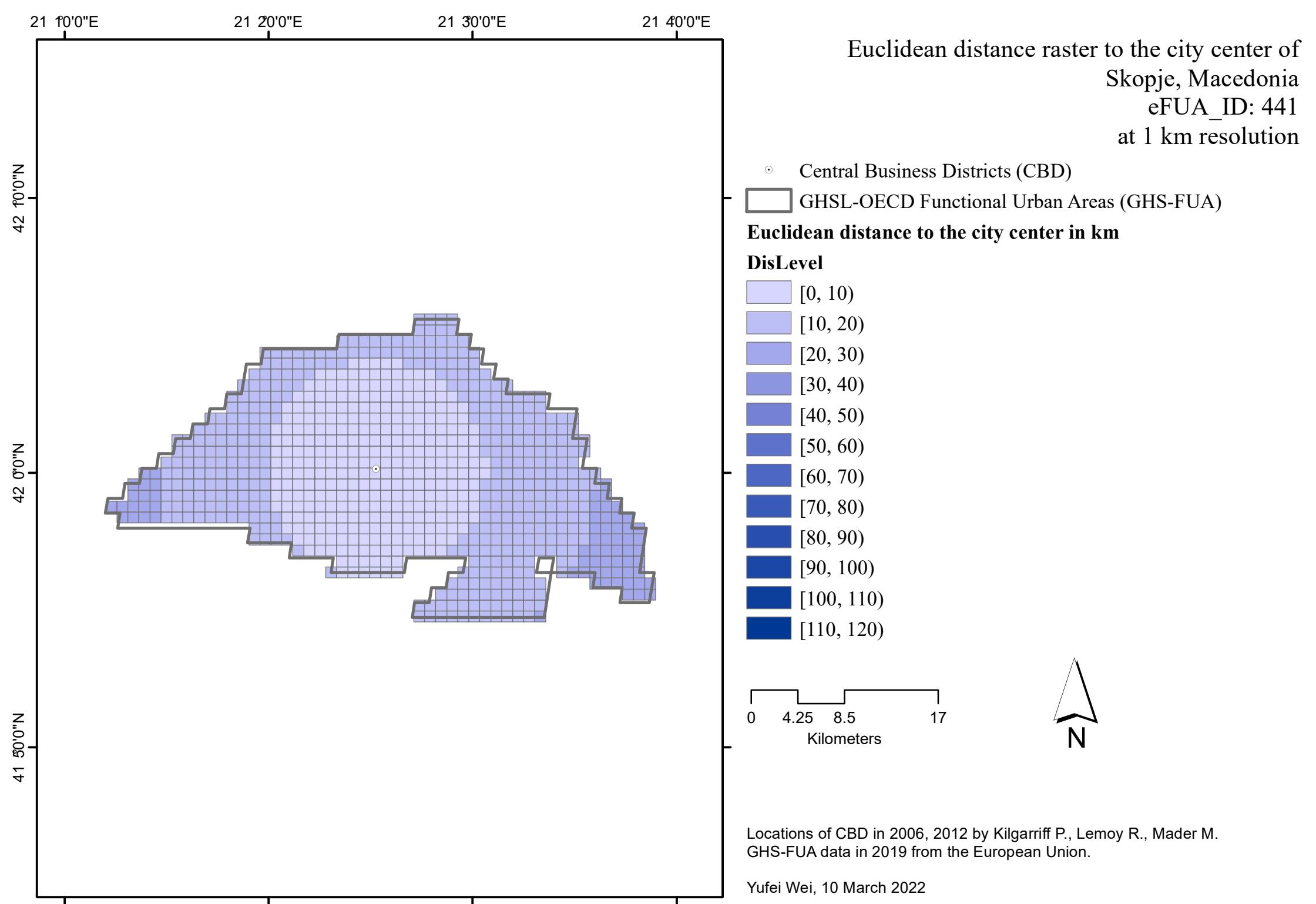
### Euclidean distance to the city center in km

#### DisLevel



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



23 0'0"E

23 10'0"E

23 20'0"E

23 30'0"E

23 40'0"E

Euclidean distance raster to the city center of  
Sofia, Bulgaria  
eFUA\_ID: 15  
at 1 km resolution

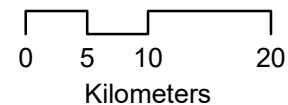
○ Central Business Districts (CBD)

□ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

#### DisLevel

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



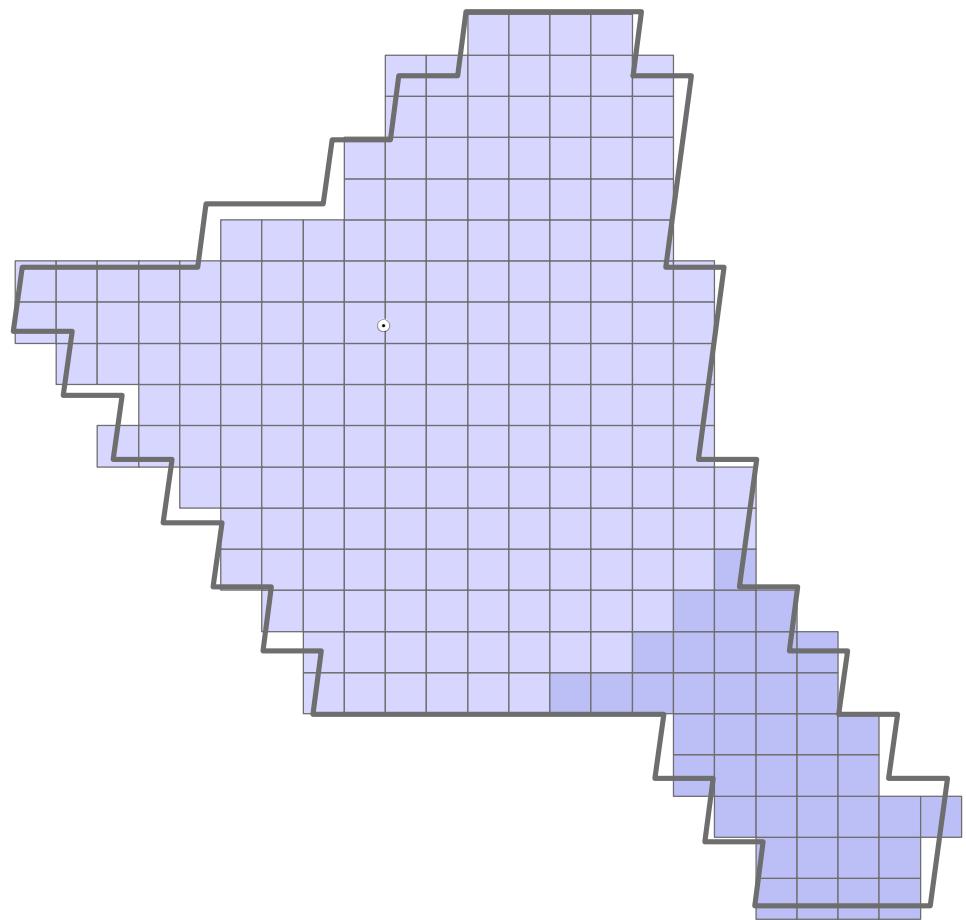
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

16 30'0"E

16 40'0"E

Euclidean distance raster to the city center of  
Sopron, Hungary  
eFUA\_ID: 77  
at 1 km resolution



○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

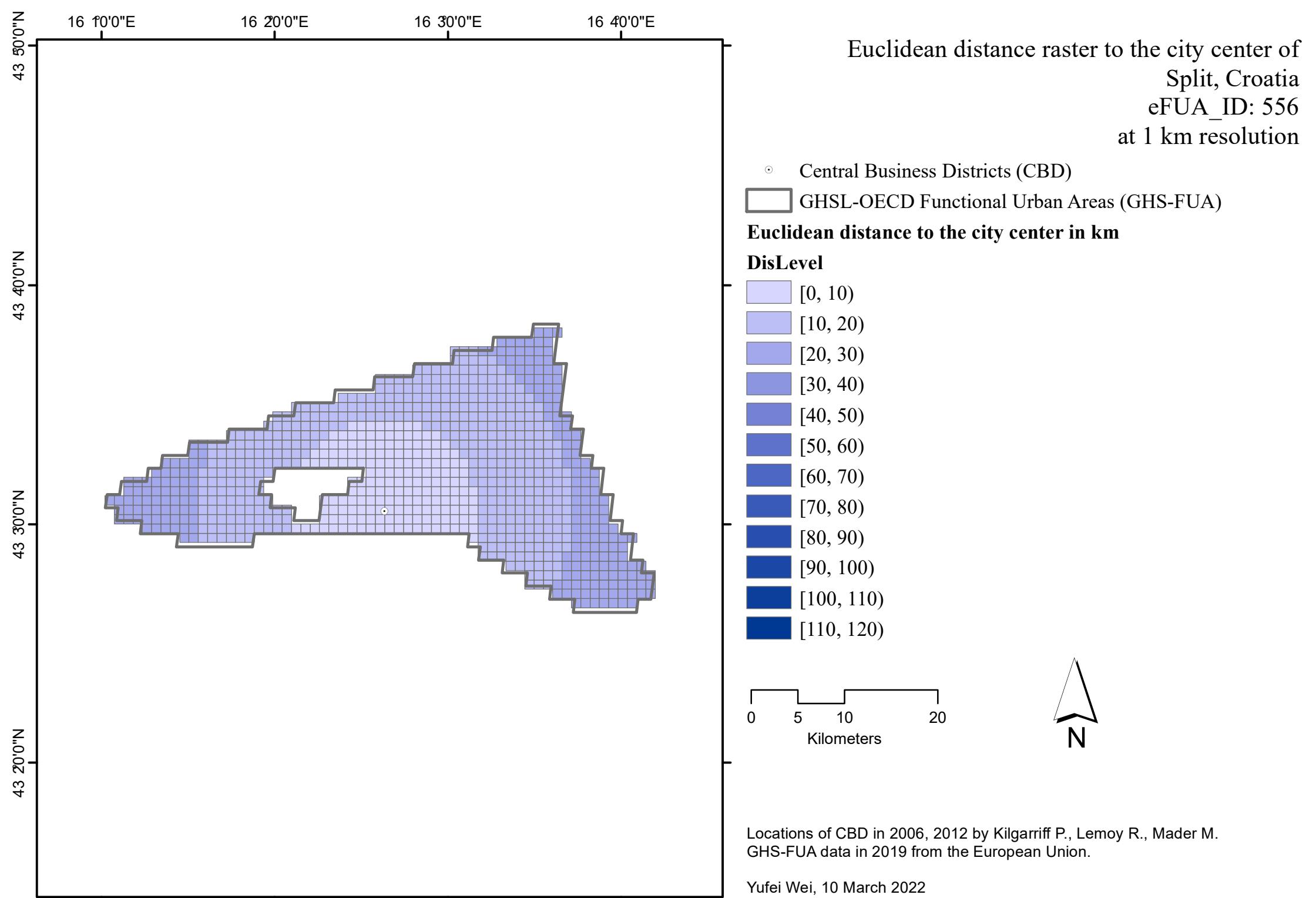
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 2 4 8  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

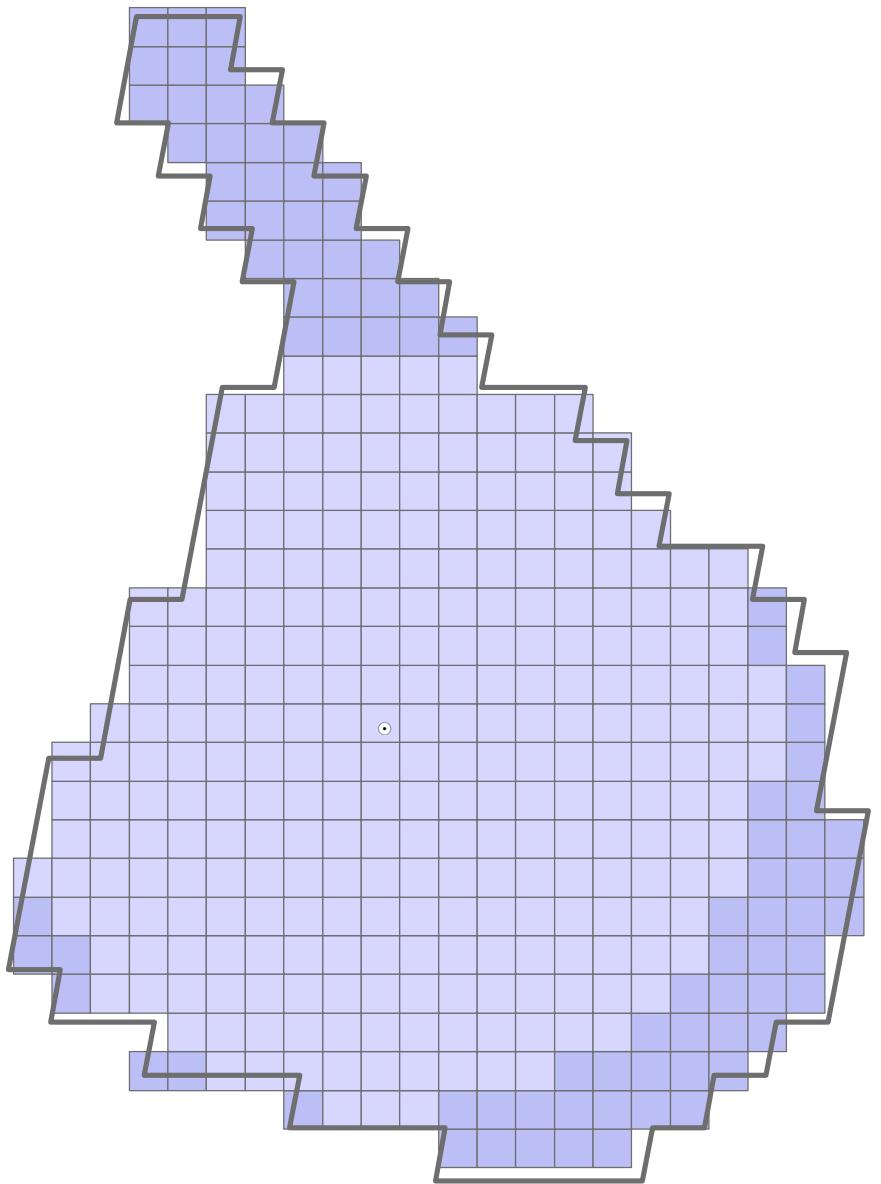
Yufei Wei, 10 March 2022



25 40'0"E

Euclidean distance raster to the city center of  
Stara Zagora, Bulgaria  
eFUA\_ID: 661  
at 1 km resolution

N



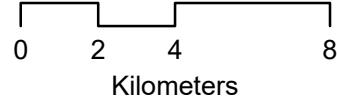
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

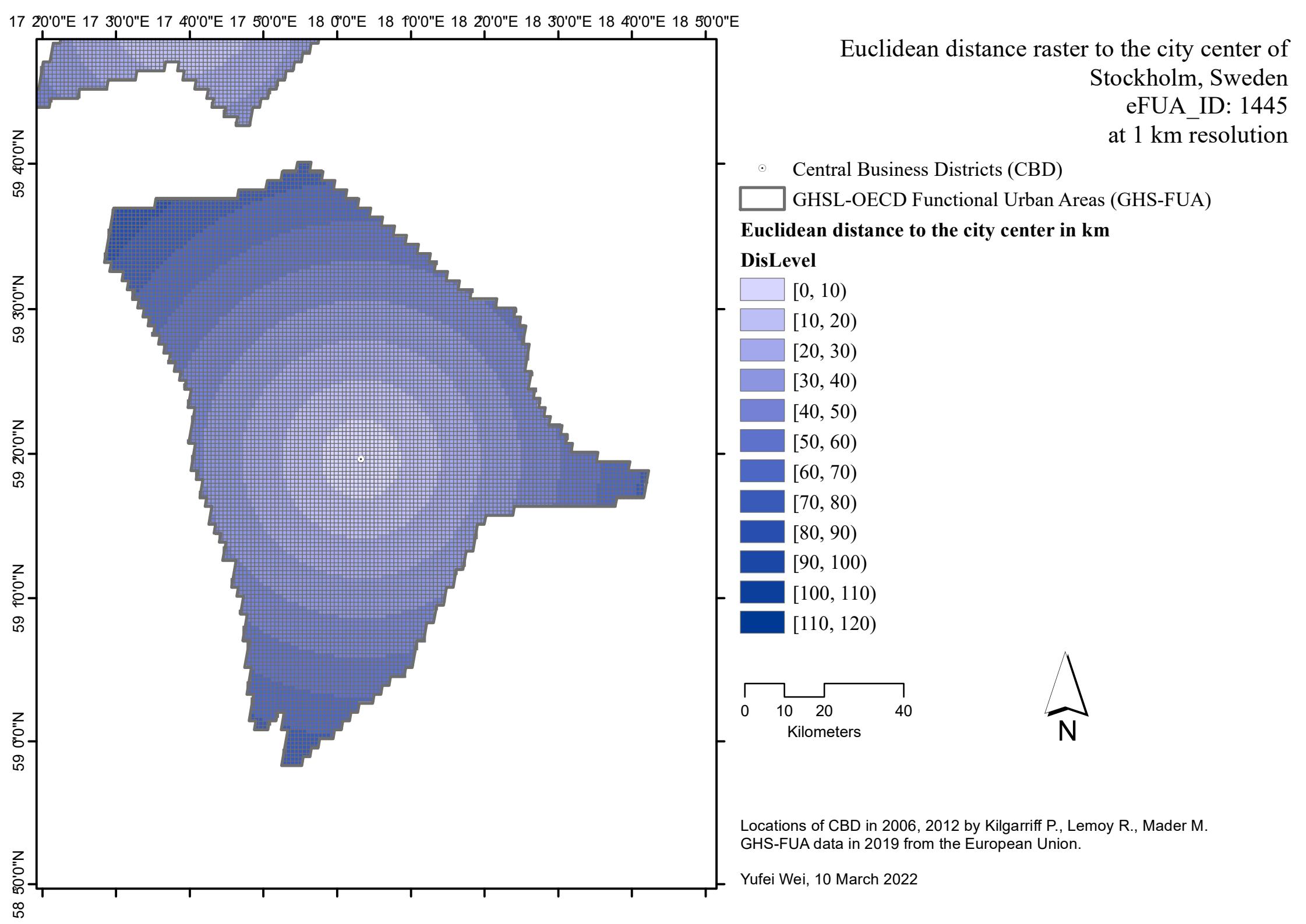
#### DisLevel

[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



2 20'0"W 2 10'0"W 2 0'0"W 1 50'0"W

53 10'0"N

53 0'0"N

52 50'0"N

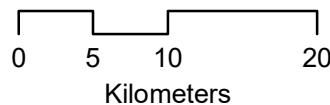
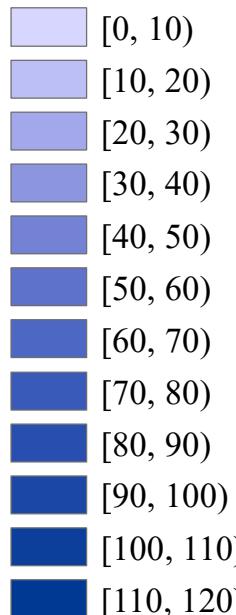
Euclidean distance raster to the city center of  
Stoke-on-Trent, United Kingdom  
eFUA\_ID: 3719  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

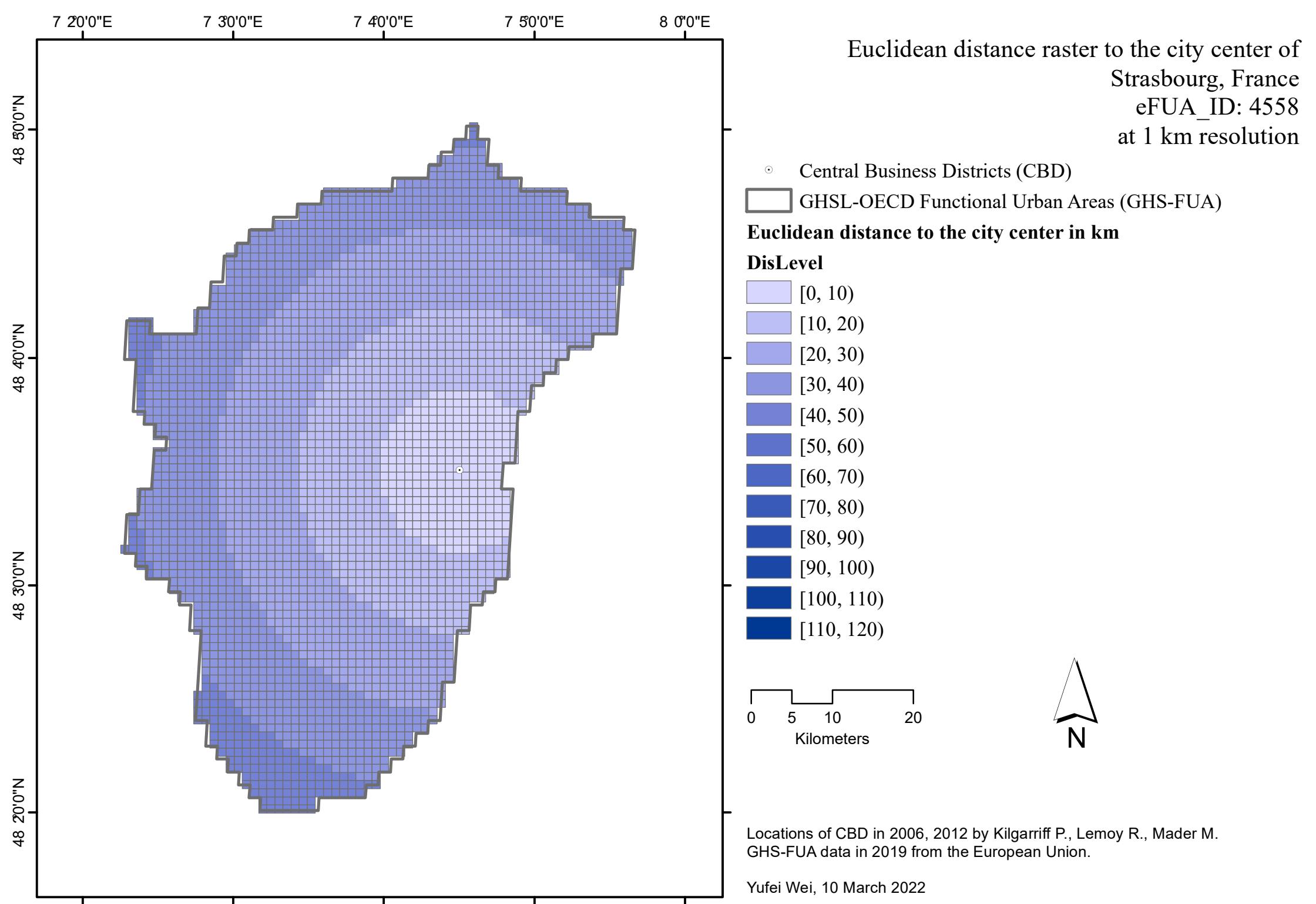
**Euclidean distance to the city center in km**

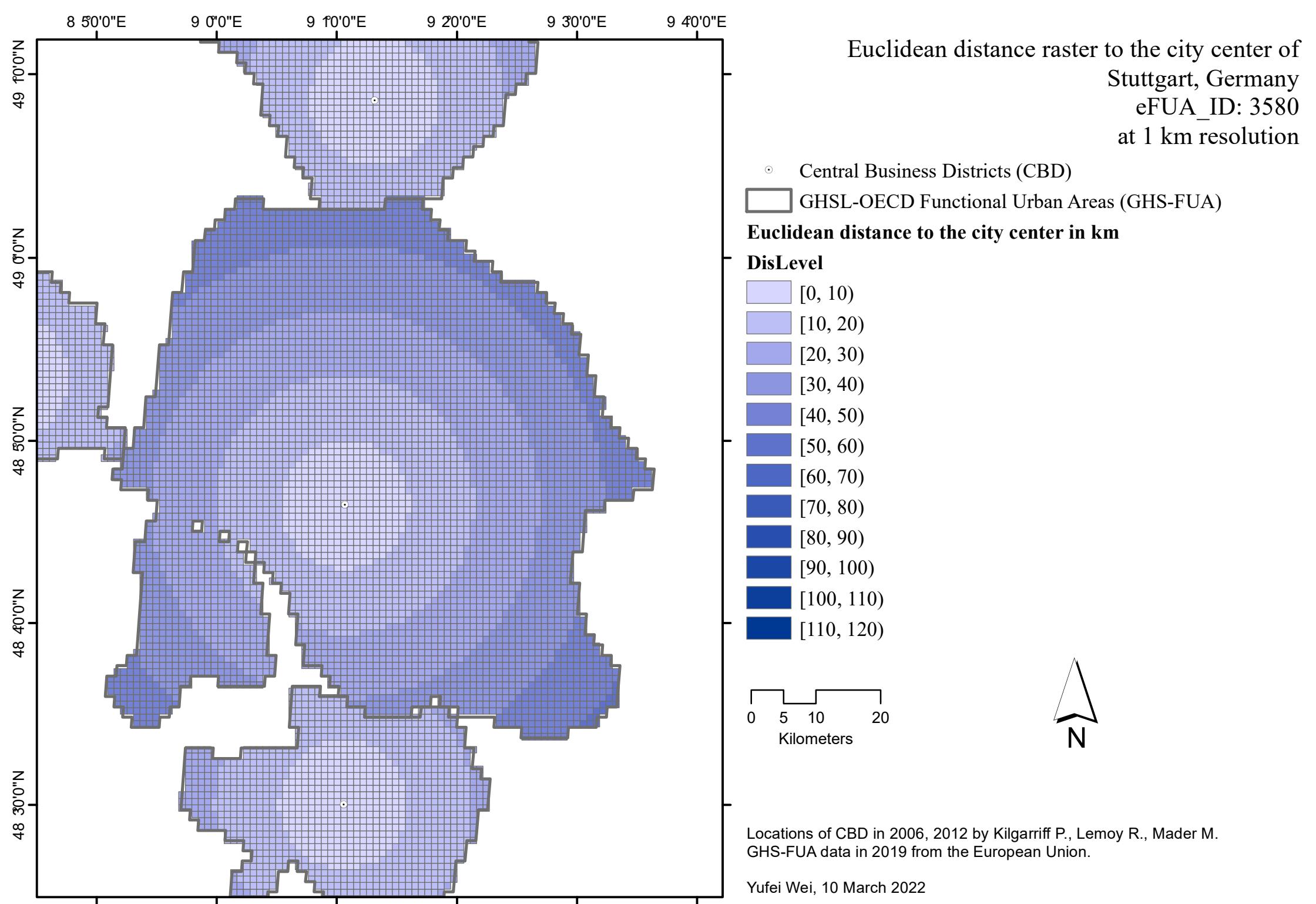
**DisLevel**

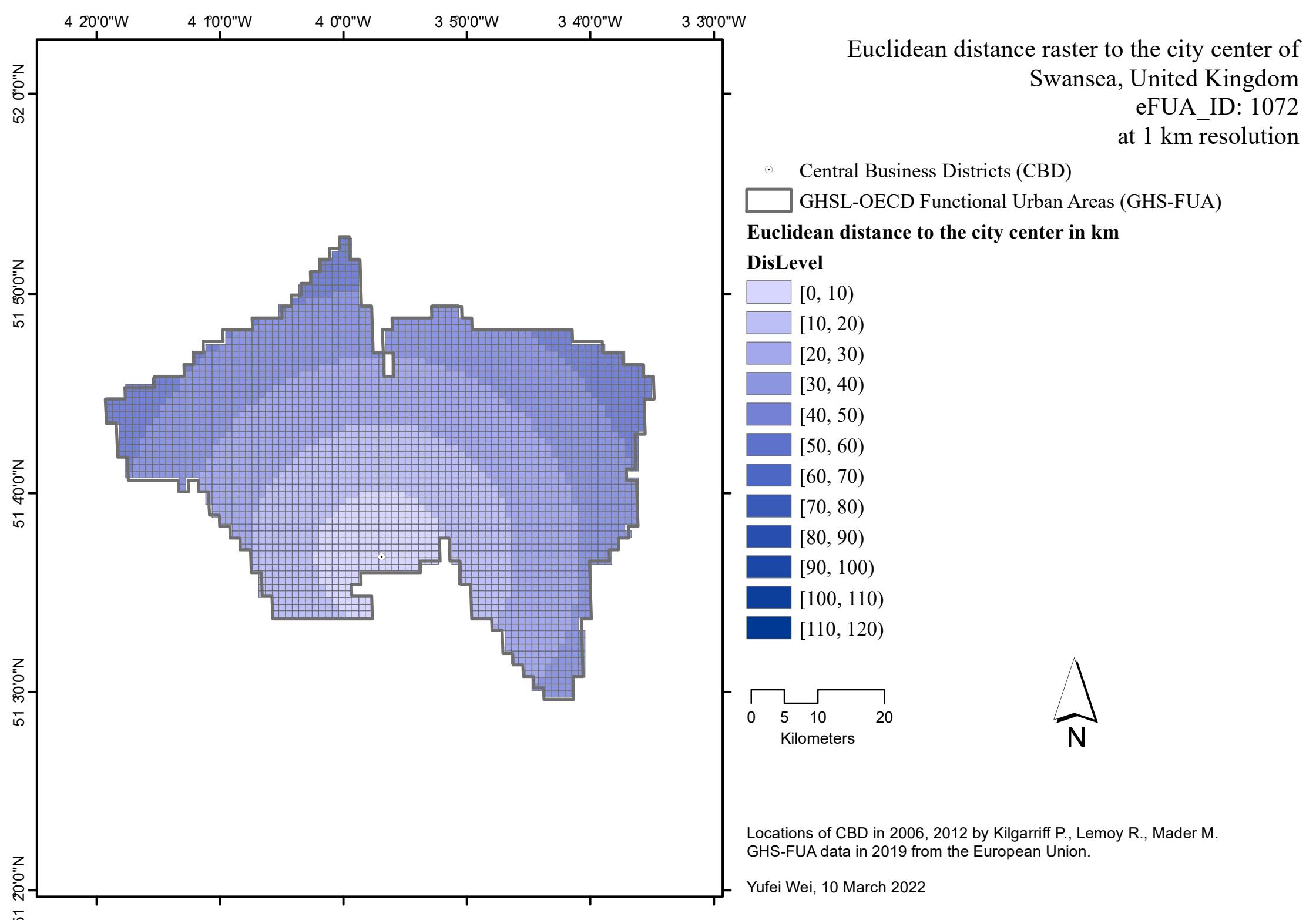


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

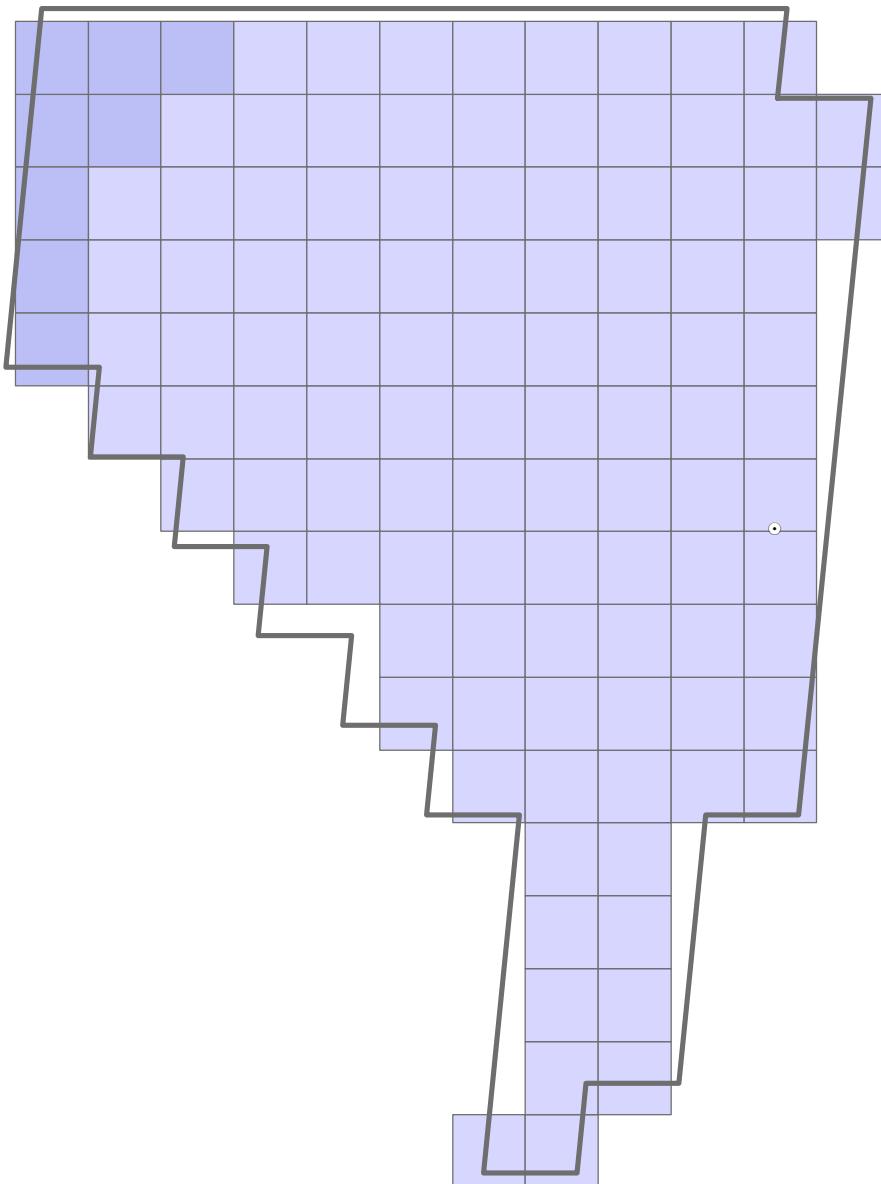
Yufei Wei, 10 March 2022







Euclidean distance raster to the city center of  
Syracuse, Italy  
eFUA\_ID: 4716  
at 1 km resolution



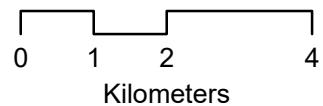
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

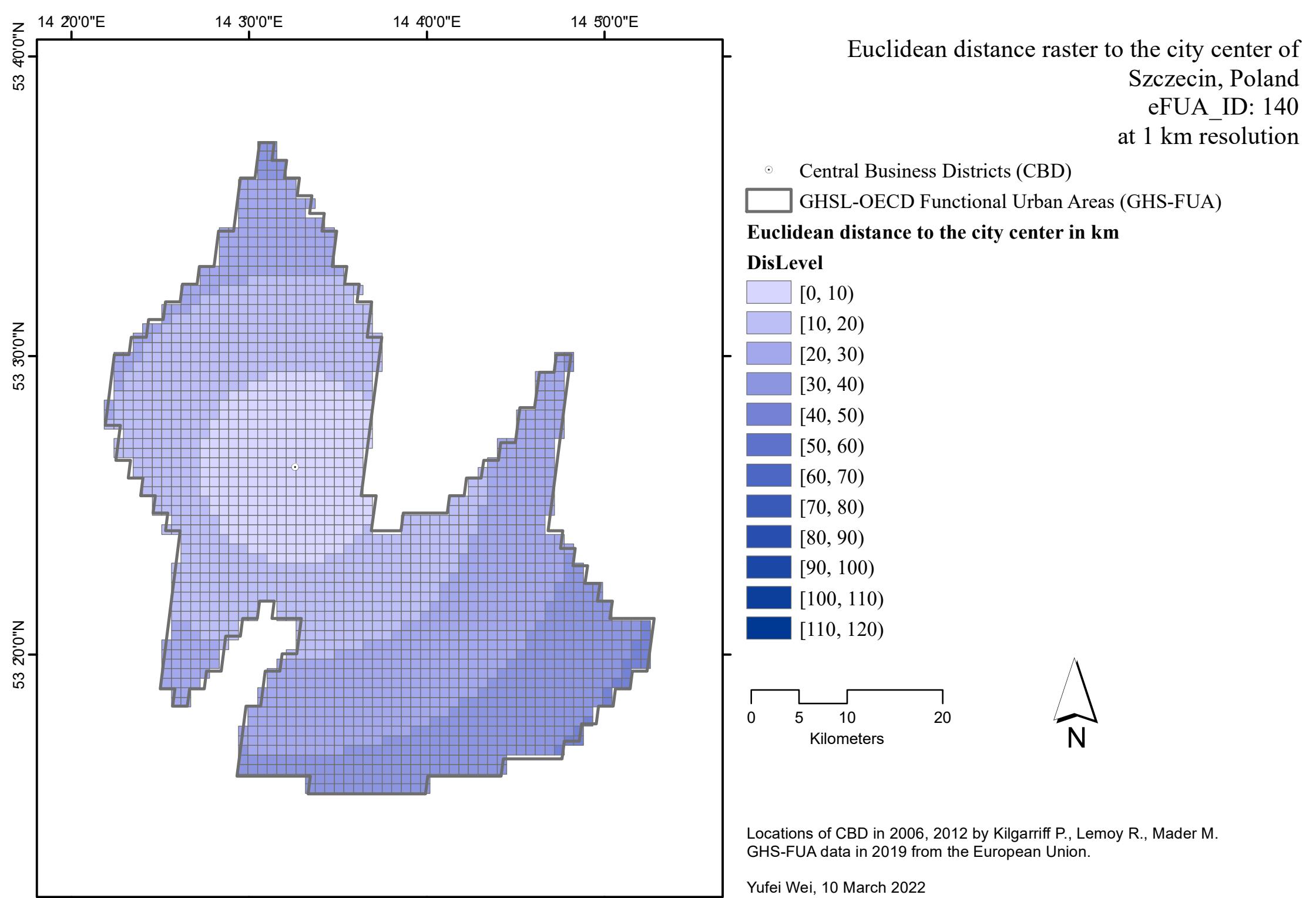
**DisLevel**

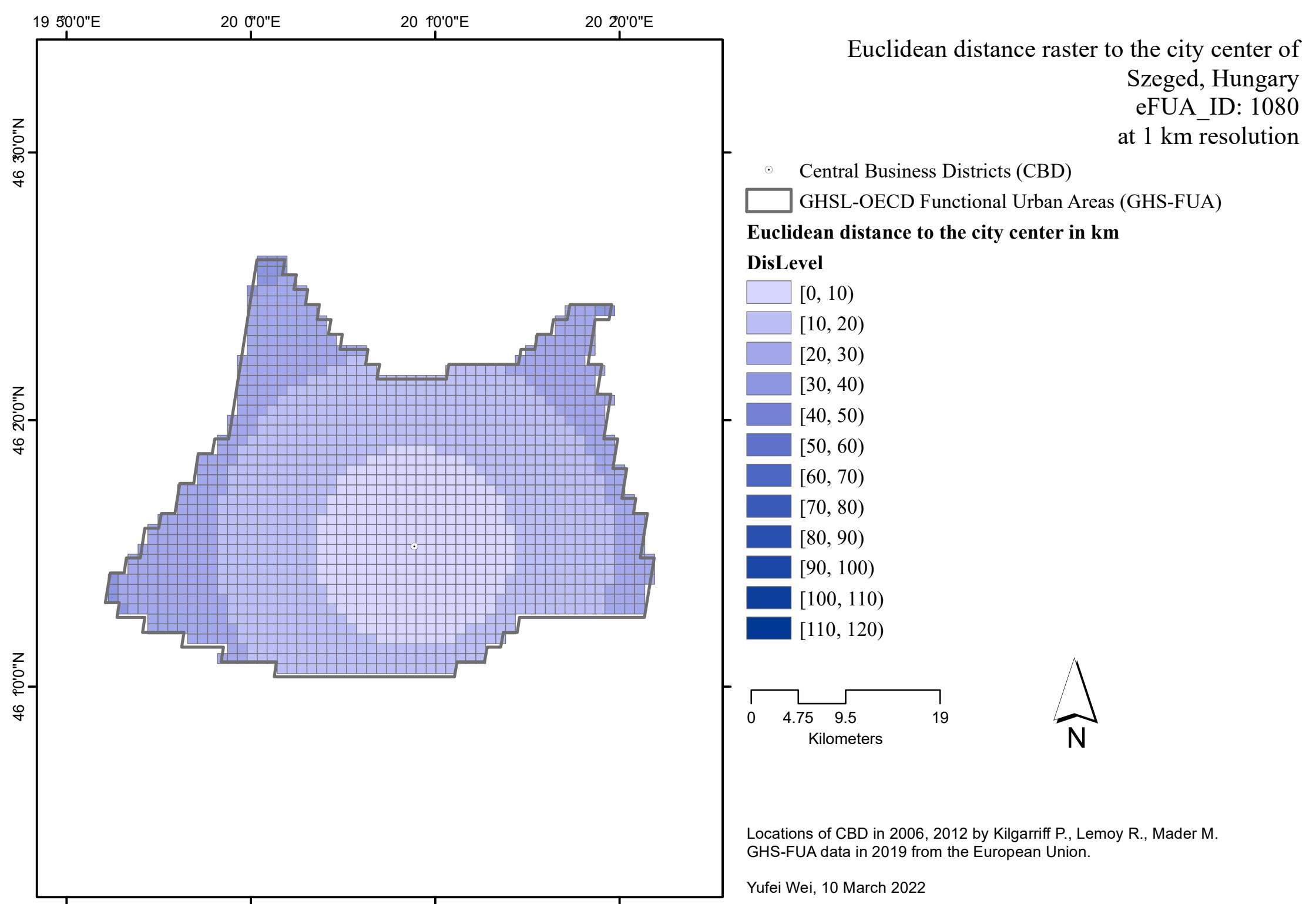
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

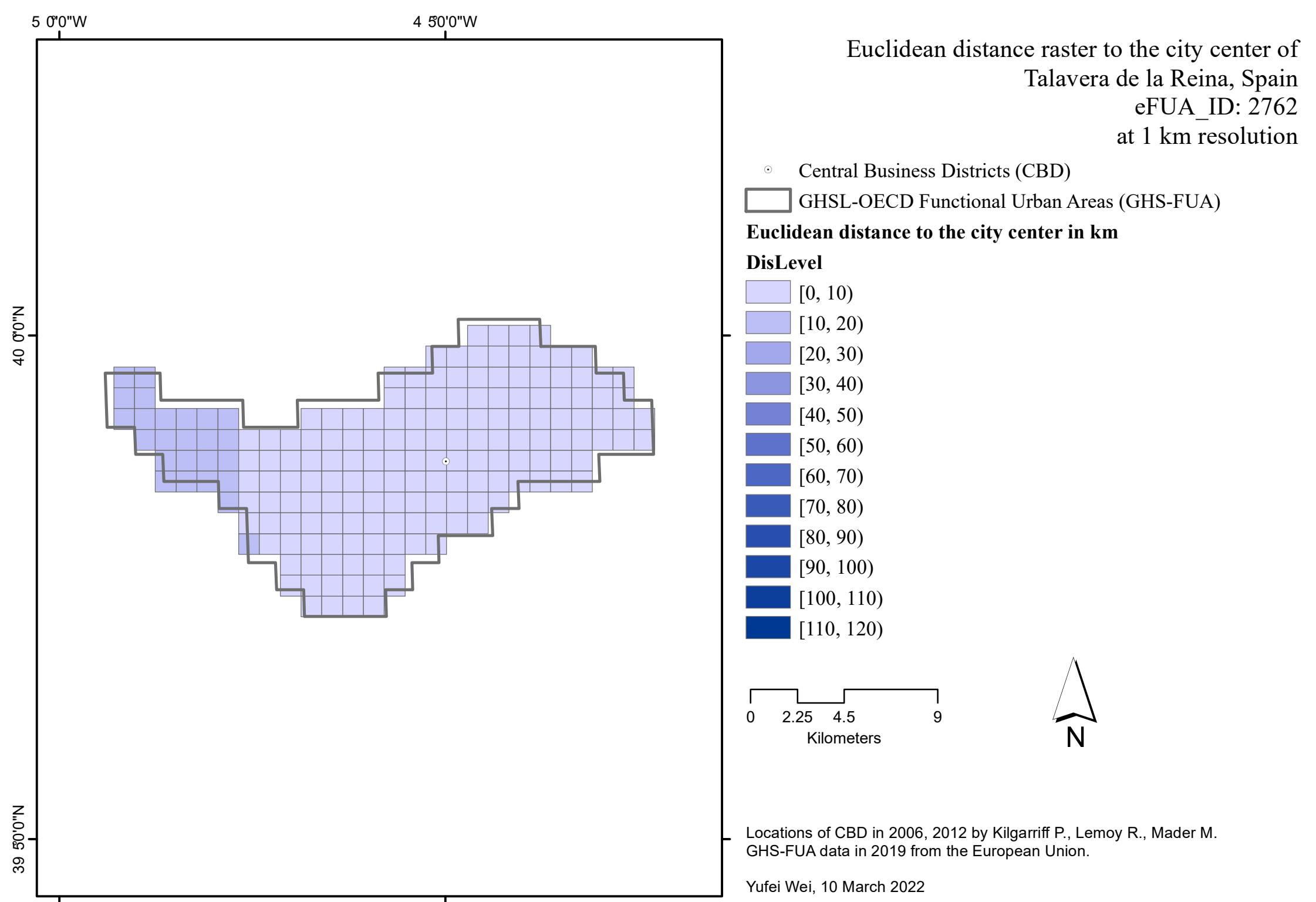


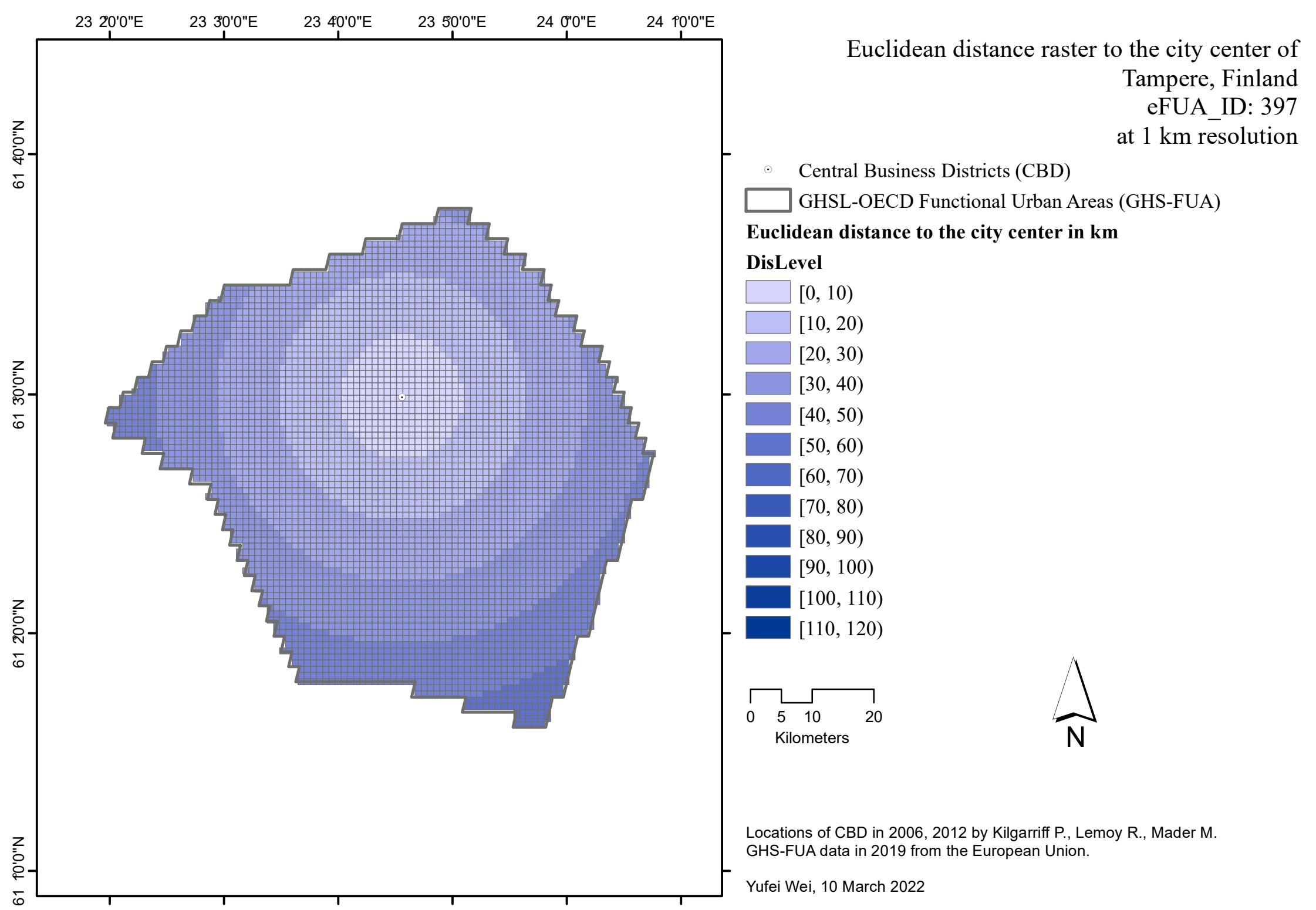
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

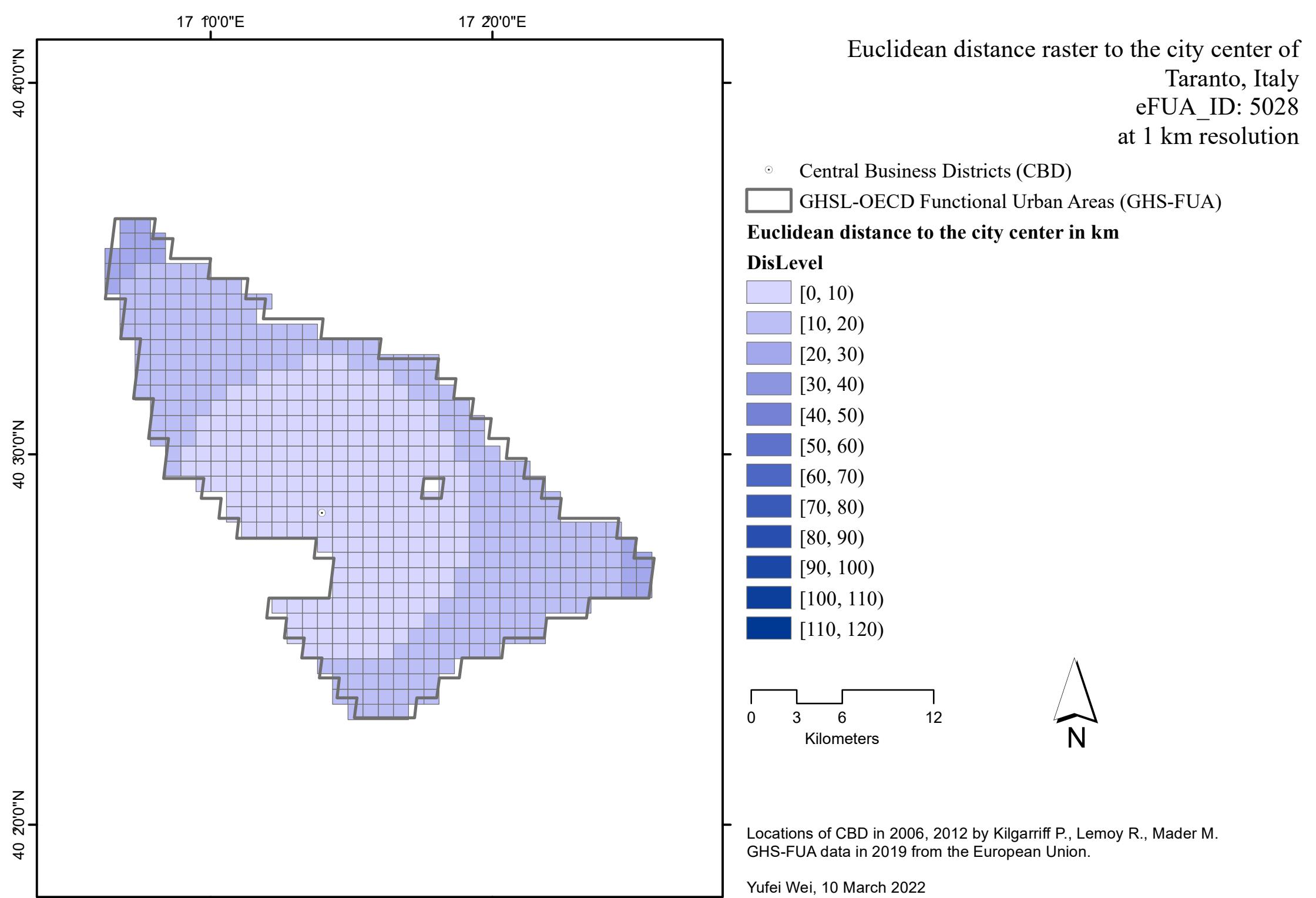
Yufei Wei, 10 March 2022











24 20'0"E

24 30'0"E

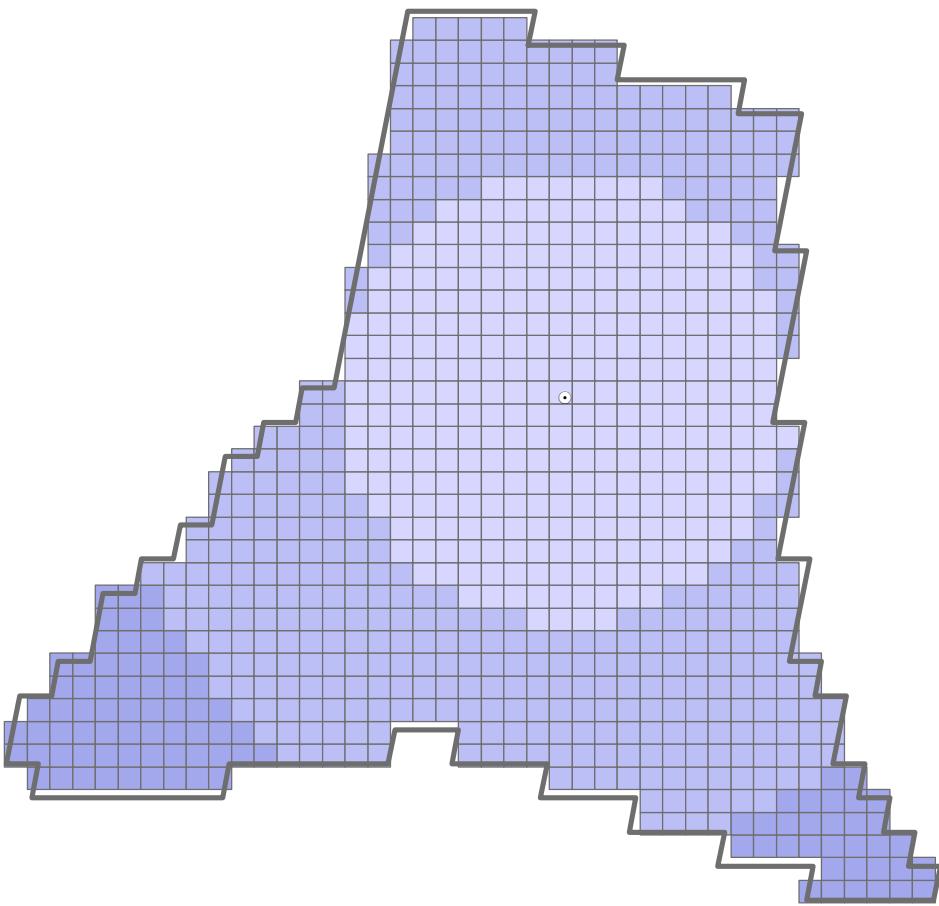
24 40'0"E

Euclidean distance raster to the city center of  
Targu Mures, Romania  
eFUA\_ID: 1336  
at 1 km resolution

46 40'0"N

46 30'0"N

46 20'0"N



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 3.5 7 14  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

1 0°0"E

1 10'0"E

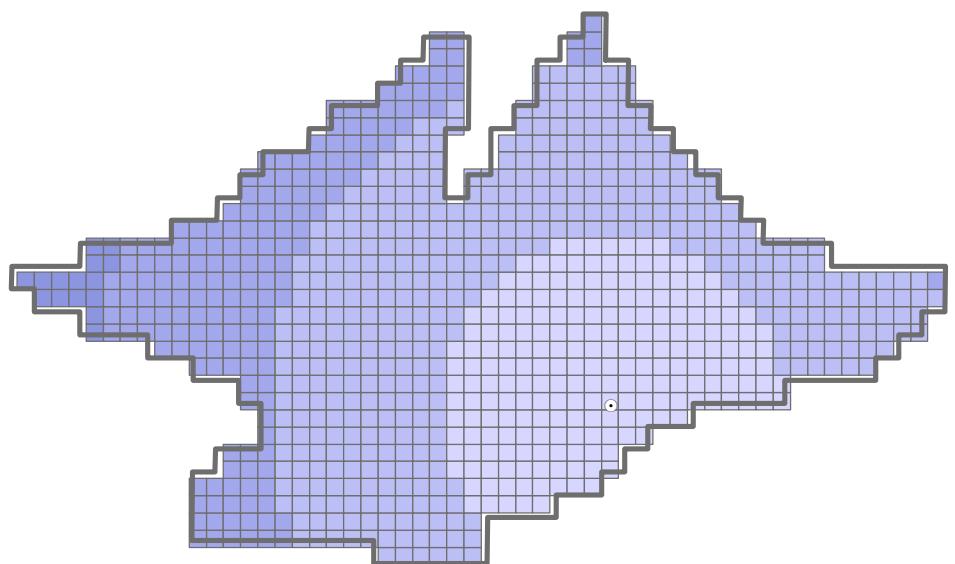
1 20'0"E

Euclidean distance raster to the city center of  
Tarragona, Spain  
eFUA\_ID: 4358  
at 1 km resolution

41 20'0"N

41 10'0"N

41 0°0"N



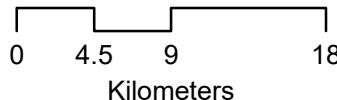
○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

12 30'0"E

12 40'0"E

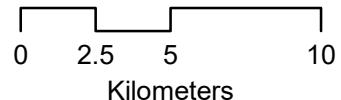
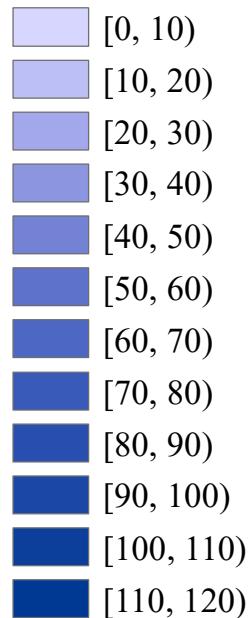
Euclidean distance raster to the city center of  
Terni, Italy  
eFUA\_ID: 3918  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

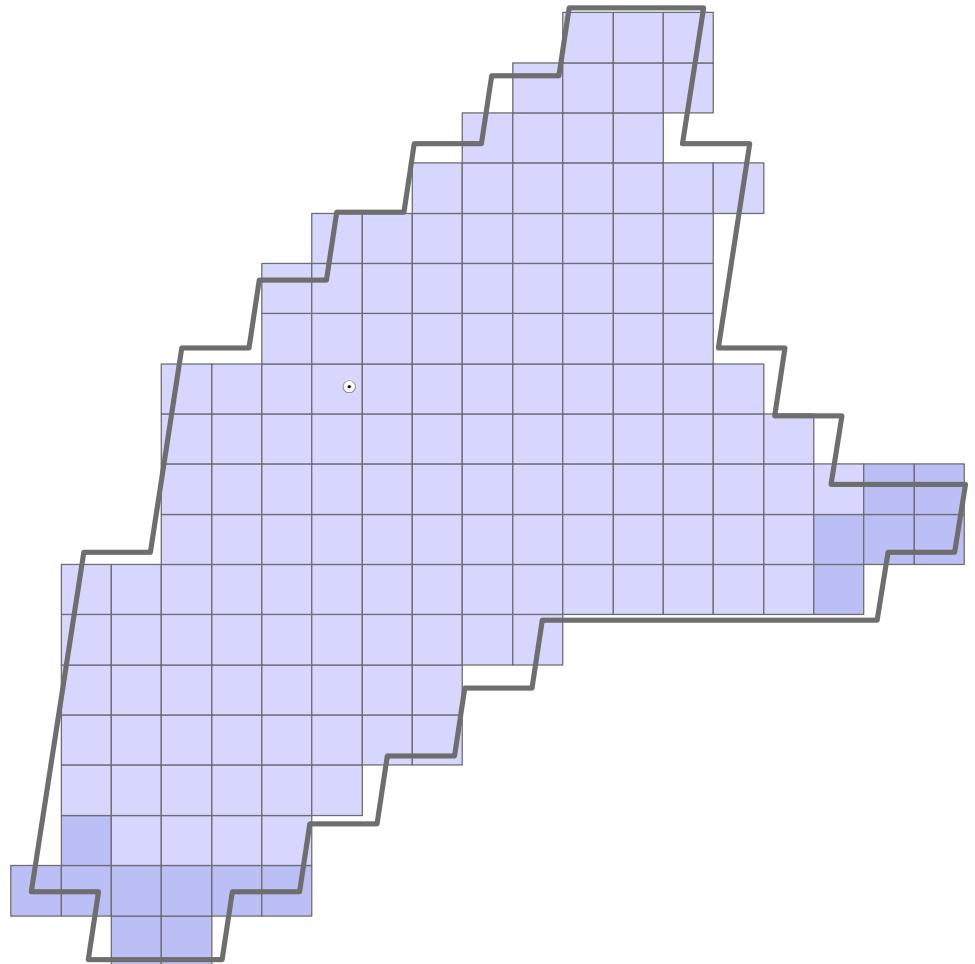


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

21 0'0"E

Euclidean distance raster to the city center of  
Tetovo, Macedonia  
eFUA\_ID: 285  
at 1 km resolution



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

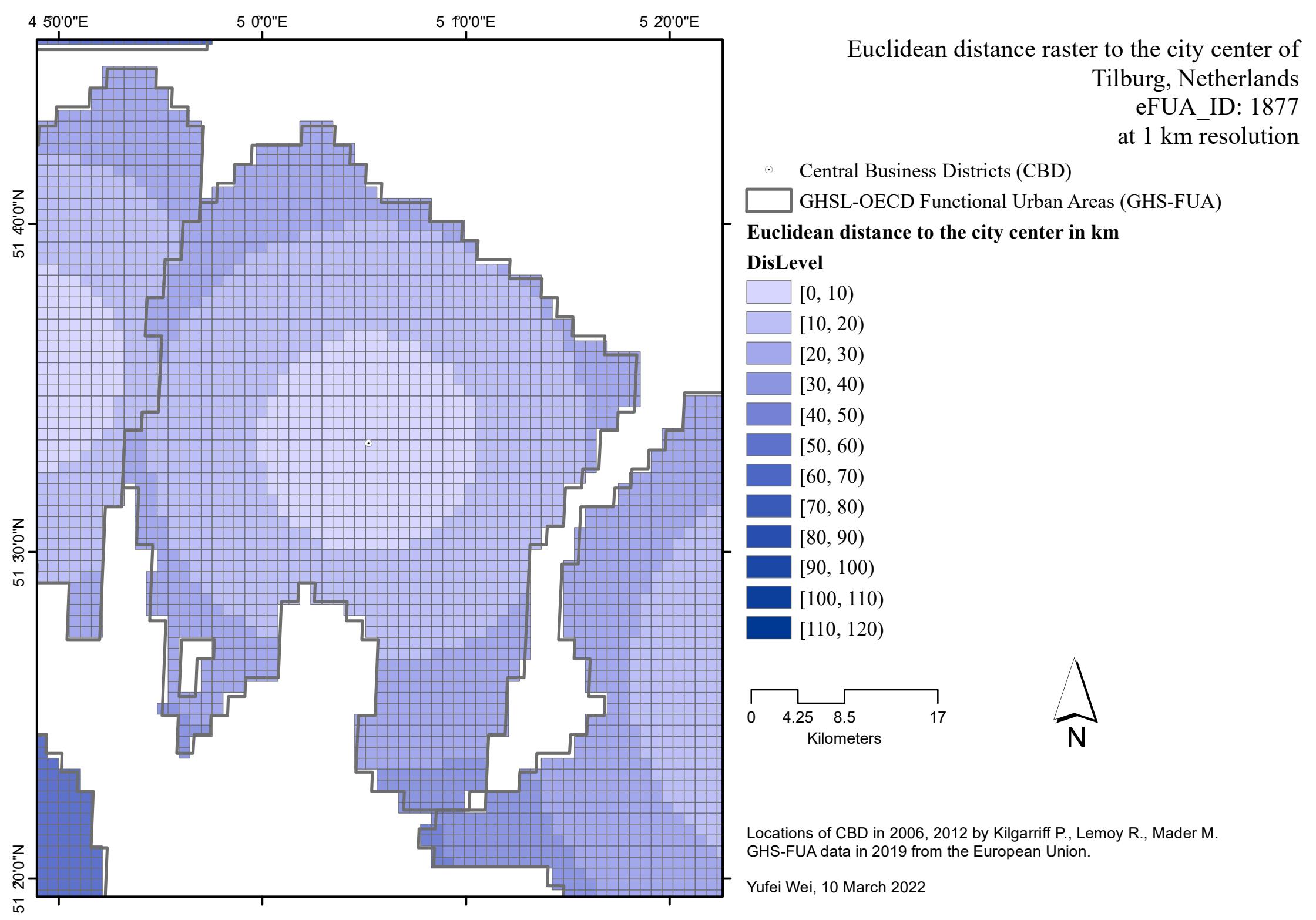
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

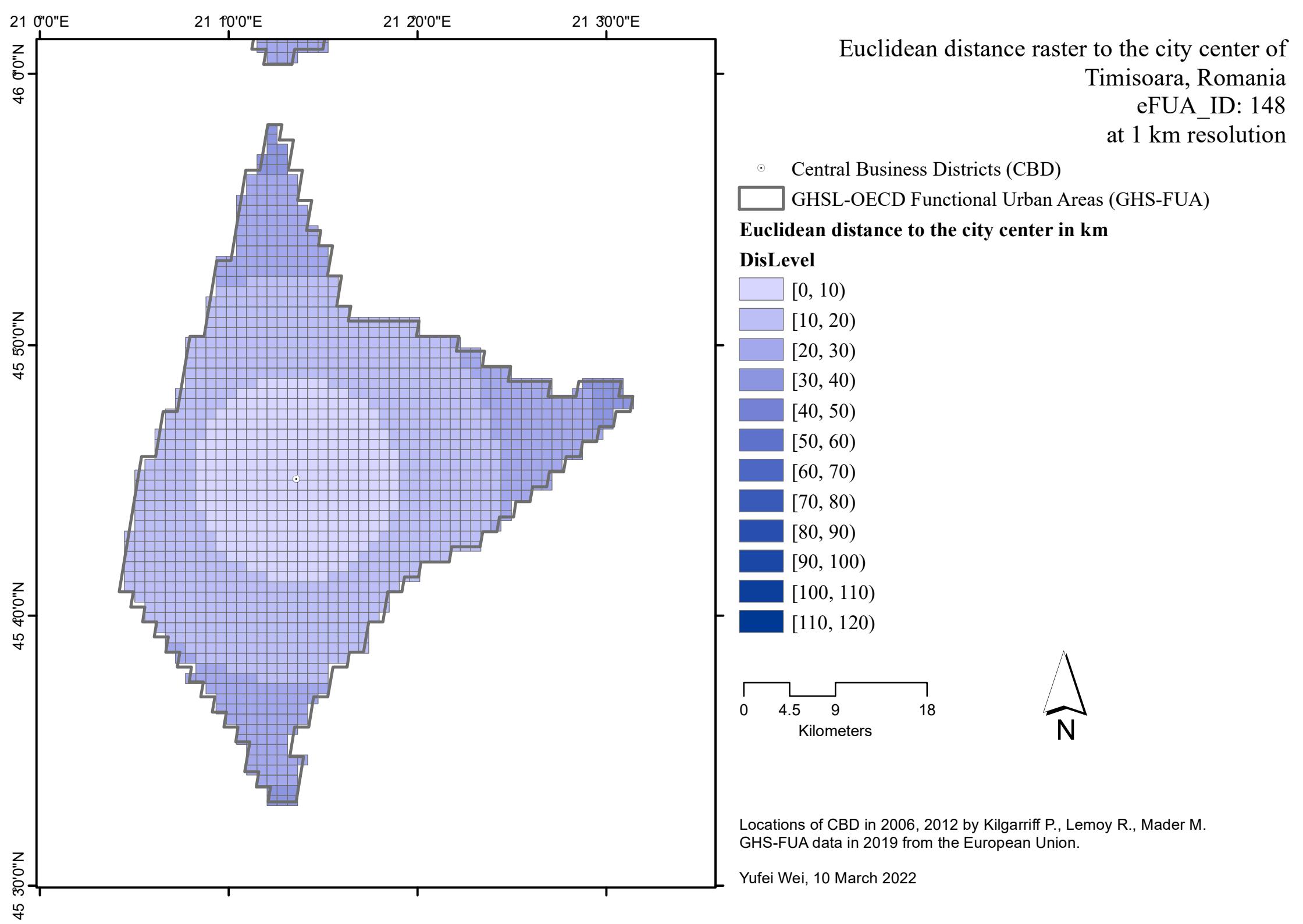
0 1.5 3 6  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022





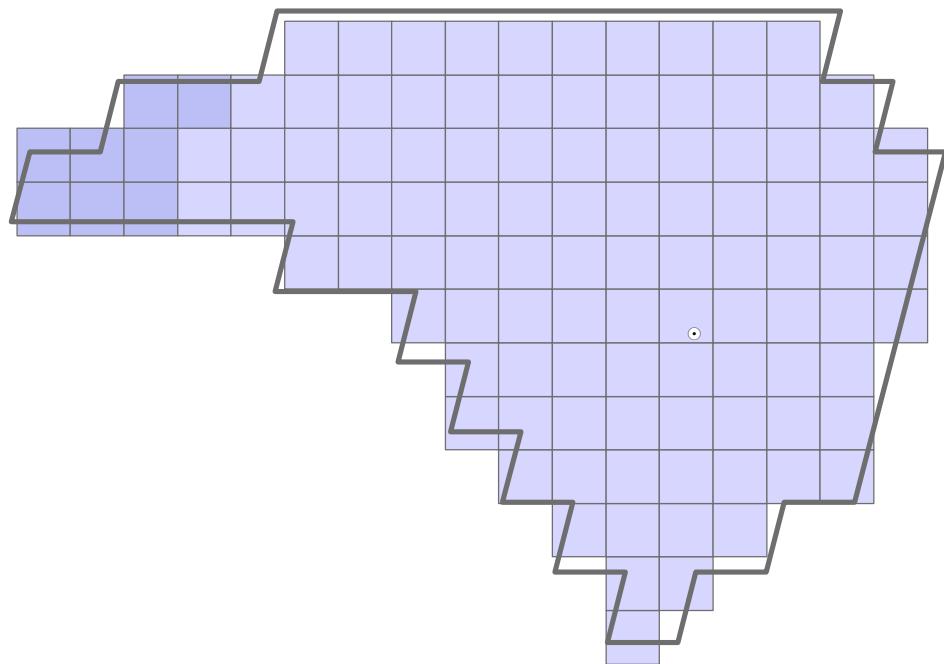
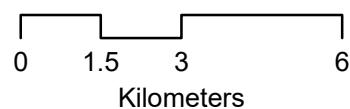
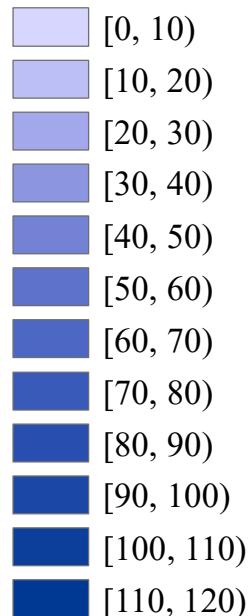
36°30'0"E

Euclidean distance raster to the city center of  
Tokat, Turkey  
eFUA\_ID: 4574  
at 1 km resolution

- Central Business Districts (CBD)
- ◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

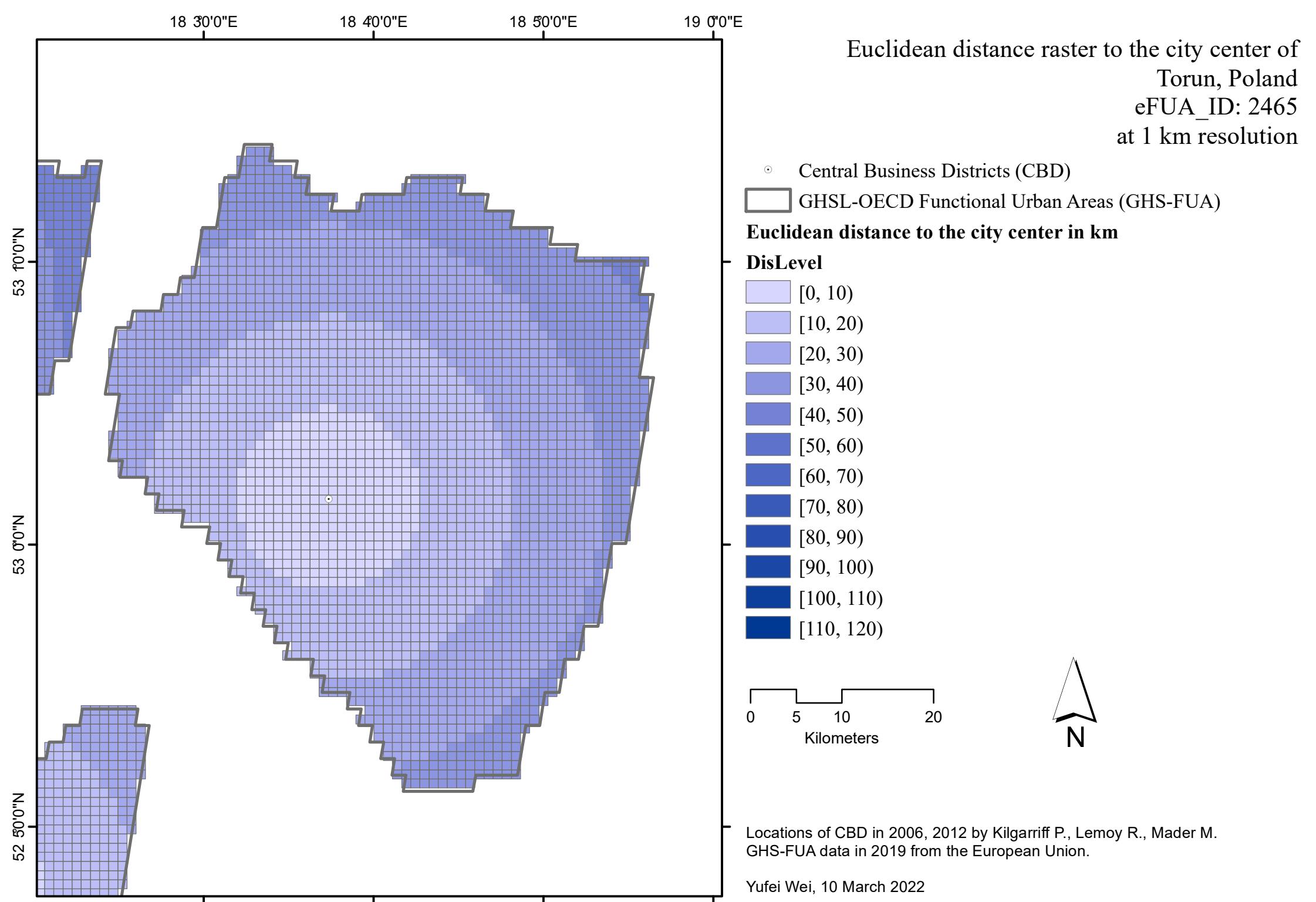
### Euclidean distance to the city center in km

#### DisLevel



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



5 40'0"E

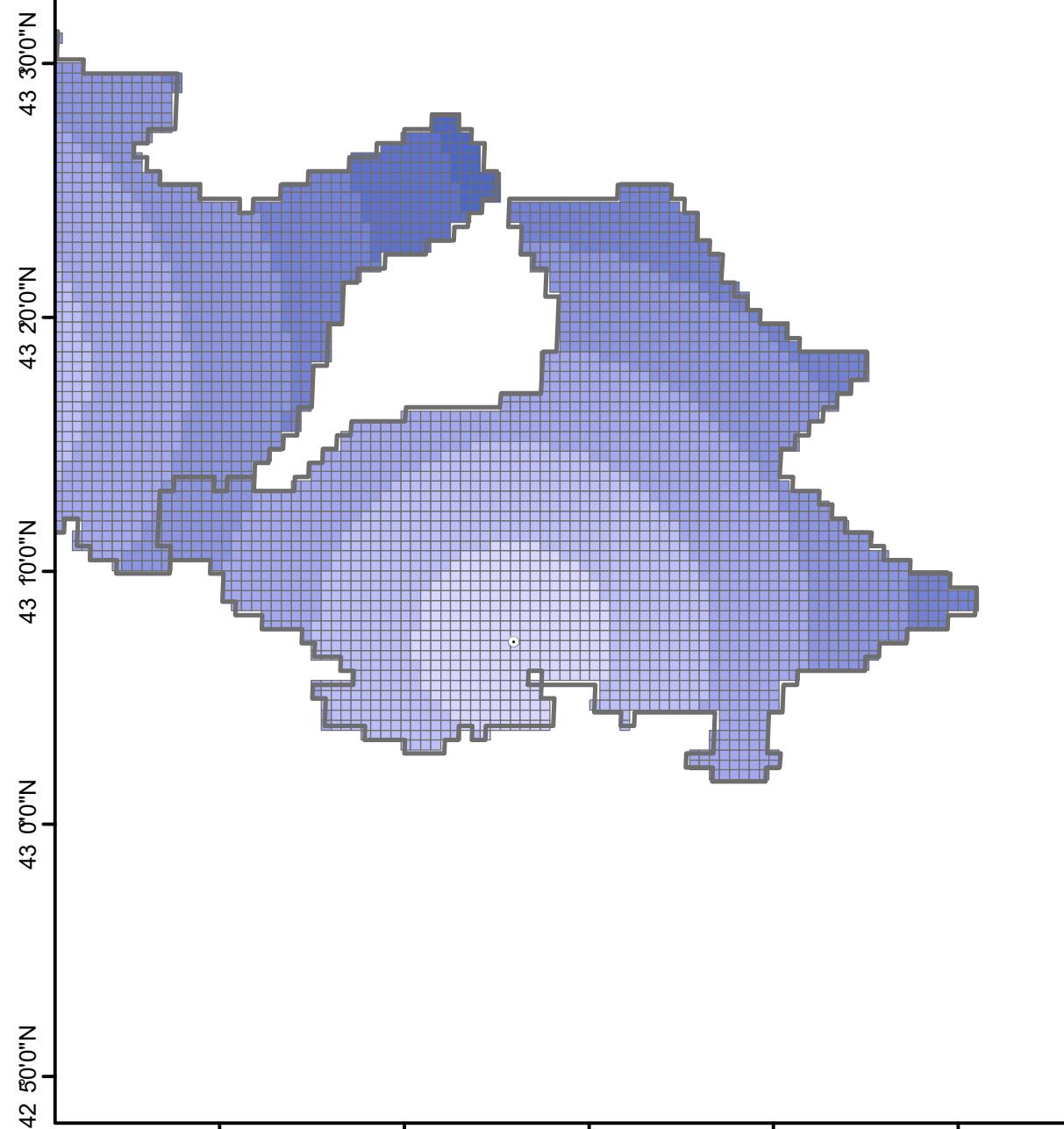
5 50'0"E

6 0'0"E

6 10'0"E

6 20'0"E

Euclidean distance raster to the city center of  
Toulon, France  
eFUA\_ID: 4158  
at 1 km resolution



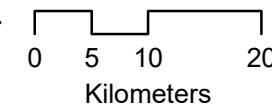
○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

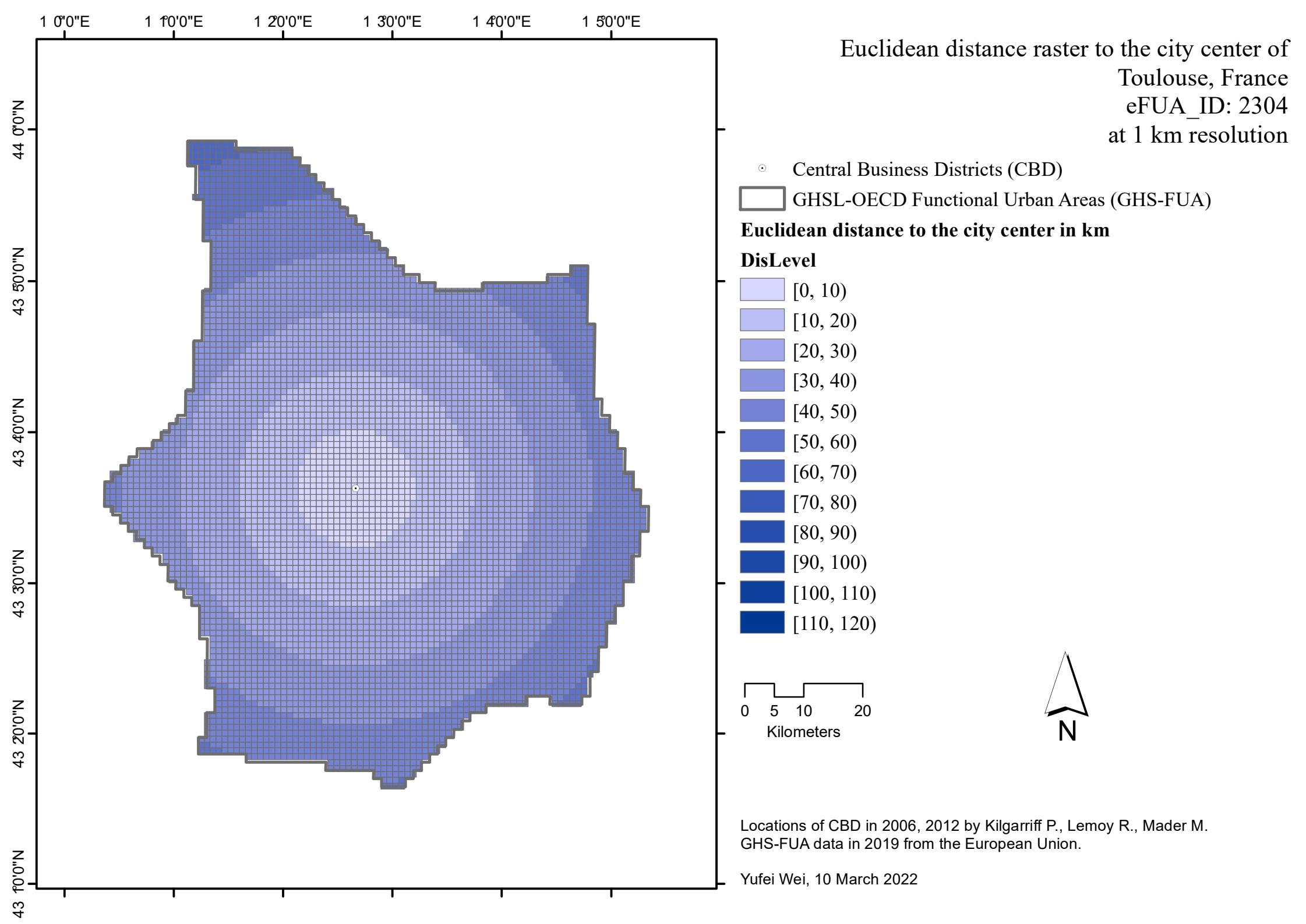
**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



0 20'0"E

0 30'0"E

0 40'0"E

0 50'0"E

1 0'0"E

Euclidean distance raster to the city center of  
Tours, France  
eFUA\_ID: 2085  
at 1 km resolution

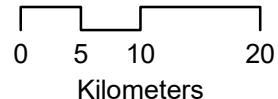
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

#### DisLevel

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

39 30'0"E

39 40'0"E

39 50'0"E

Euclidean distance raster to the city center of  
Trabzon, Turkey  
eFUA\_ID: 5228  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)

[10, 20)

[20, 30)

[30, 40)

[40, 50)

[50, 60)

[60, 70)

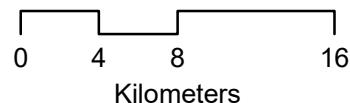
[70, 80)

[80, 90)

[90, 100)

[100, 110)

[110, 120)



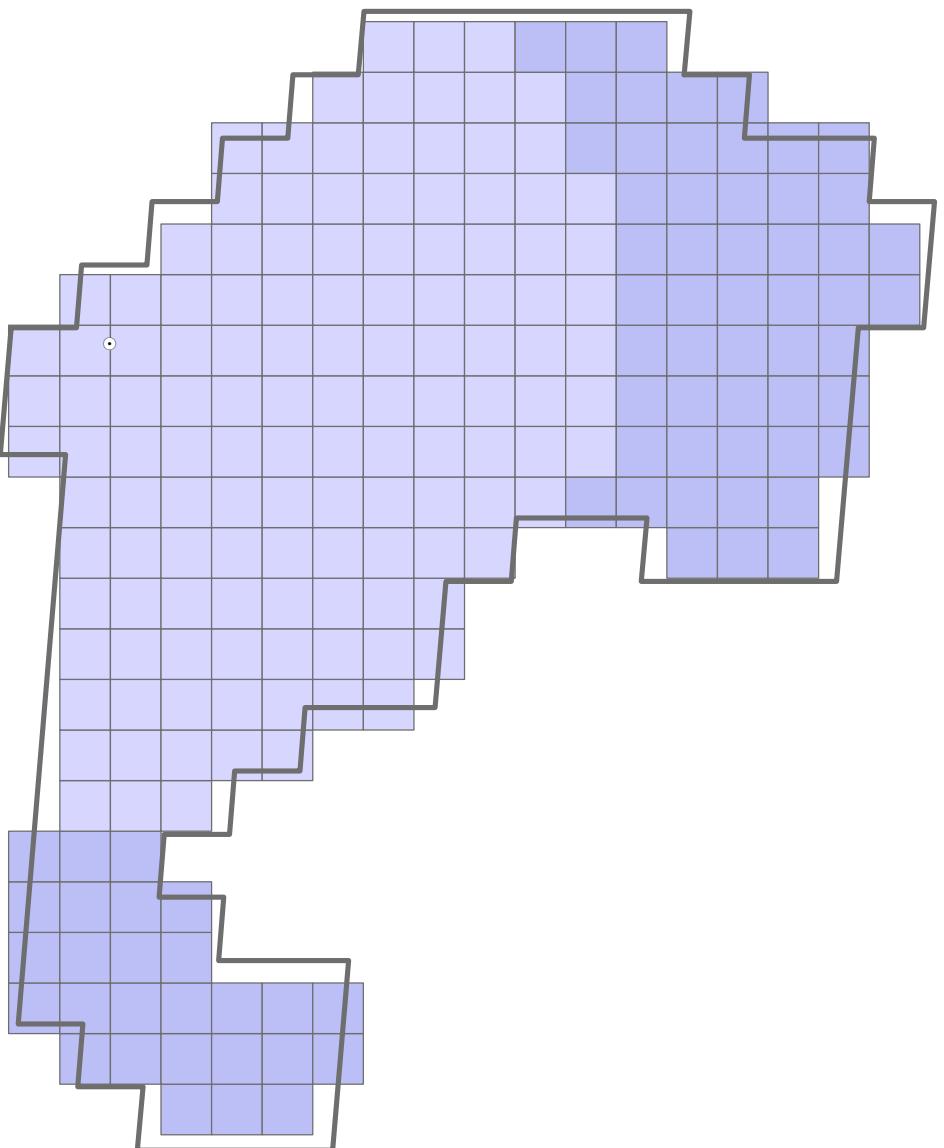
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

12 30'0"E

12 40'0"E

Euclidean distance raster to the city center of  
Trapani, Italy  
eFUA\_ID: 4130  
at 1 km resolution



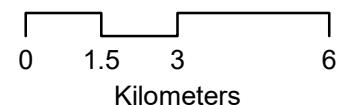
○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

11 0°0"E

11 10'0"E

11 20'0"E

Euclidean distance raster to the city center of  
Trento, Italy  
eFUA\_ID: 2891  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)

[10, 20)

[20, 30)

[30, 40)

[40, 50)

[50, 60)

[60, 70)

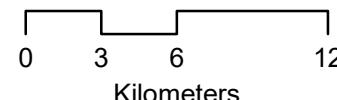
[70, 80)

[80, 90)

[90, 100)

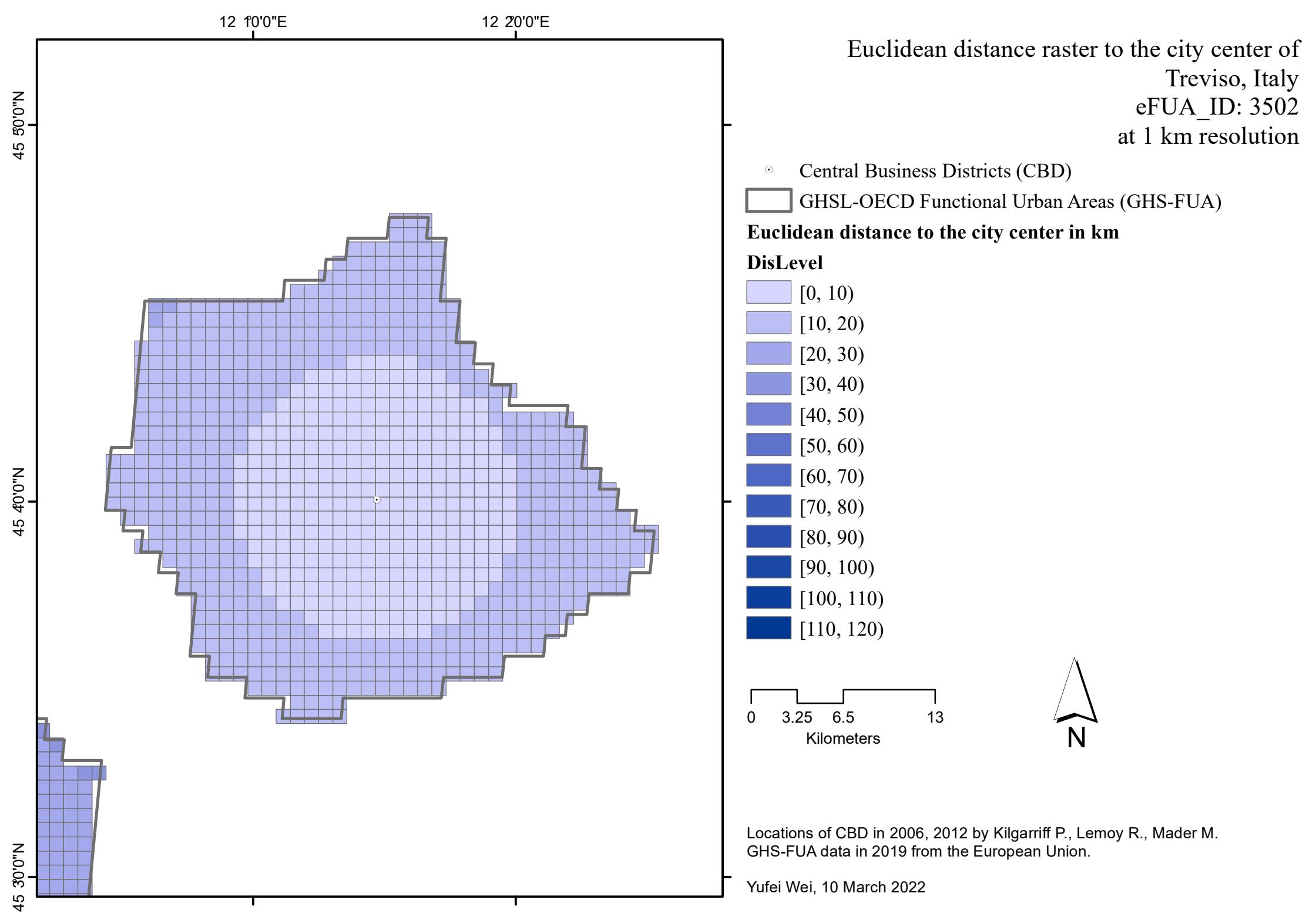
[100, 110)

[110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



6 30'0"E

6 40'0"E

6 50'0"E

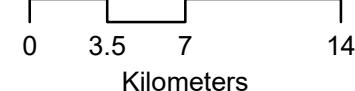
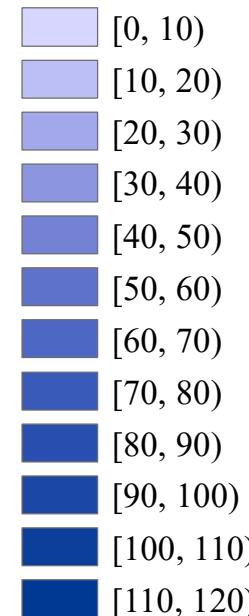
Euclidean distance raster to the city center of  
Trier, Germany  
eFUA\_ID: 945  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**



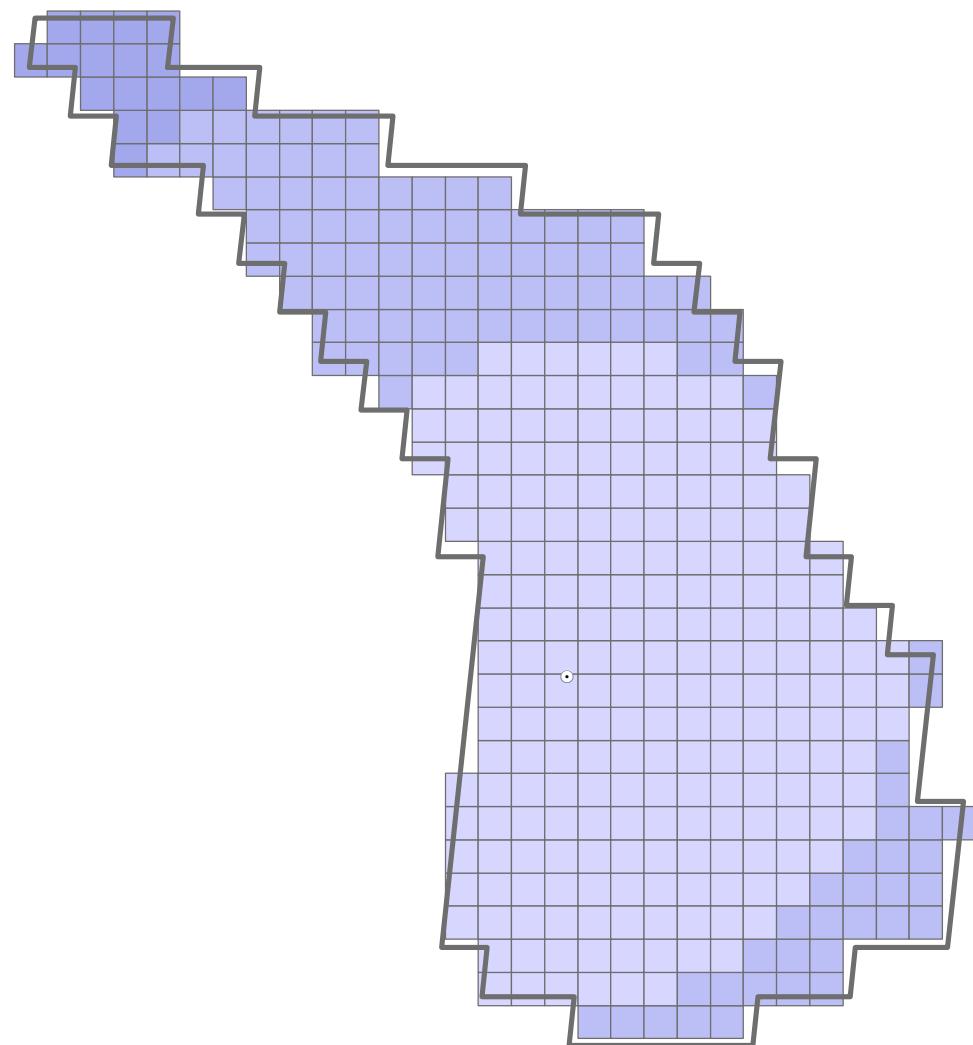
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

13 40'0"E

13 50'0"E

Euclidean distance raster to the city center of  
Triest, Italy  
eFUA\_ID: 4164  
at 1 km resolution



○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 2.5 5 10  
Kilometers



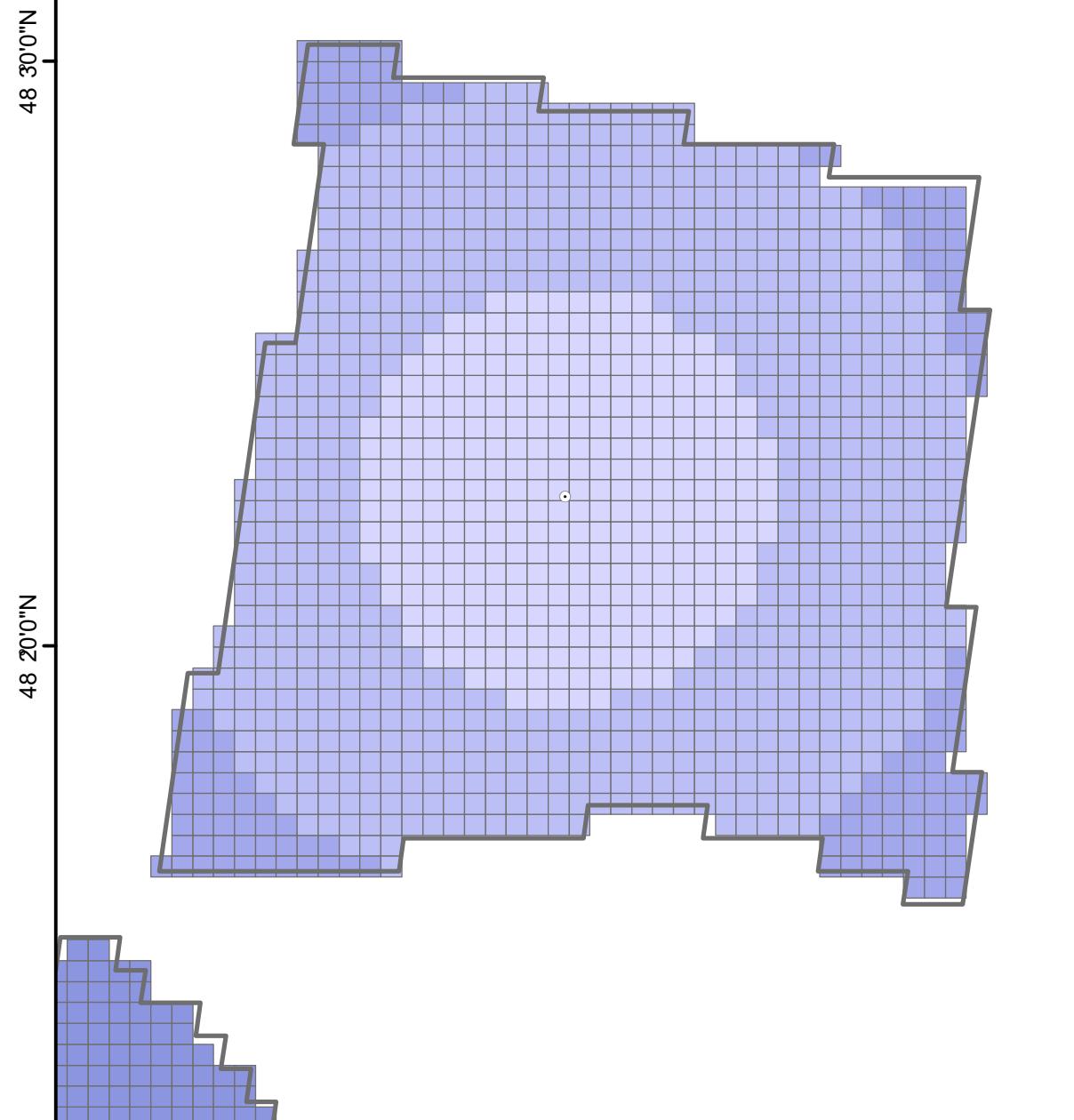
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

17 30'0"E

17 40'0"E

Euclidean distance raster to the city center of  
Trnava, Slovakia  
eFUA\_ID: 327  
at 1 km resolution



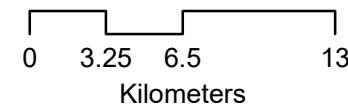
○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

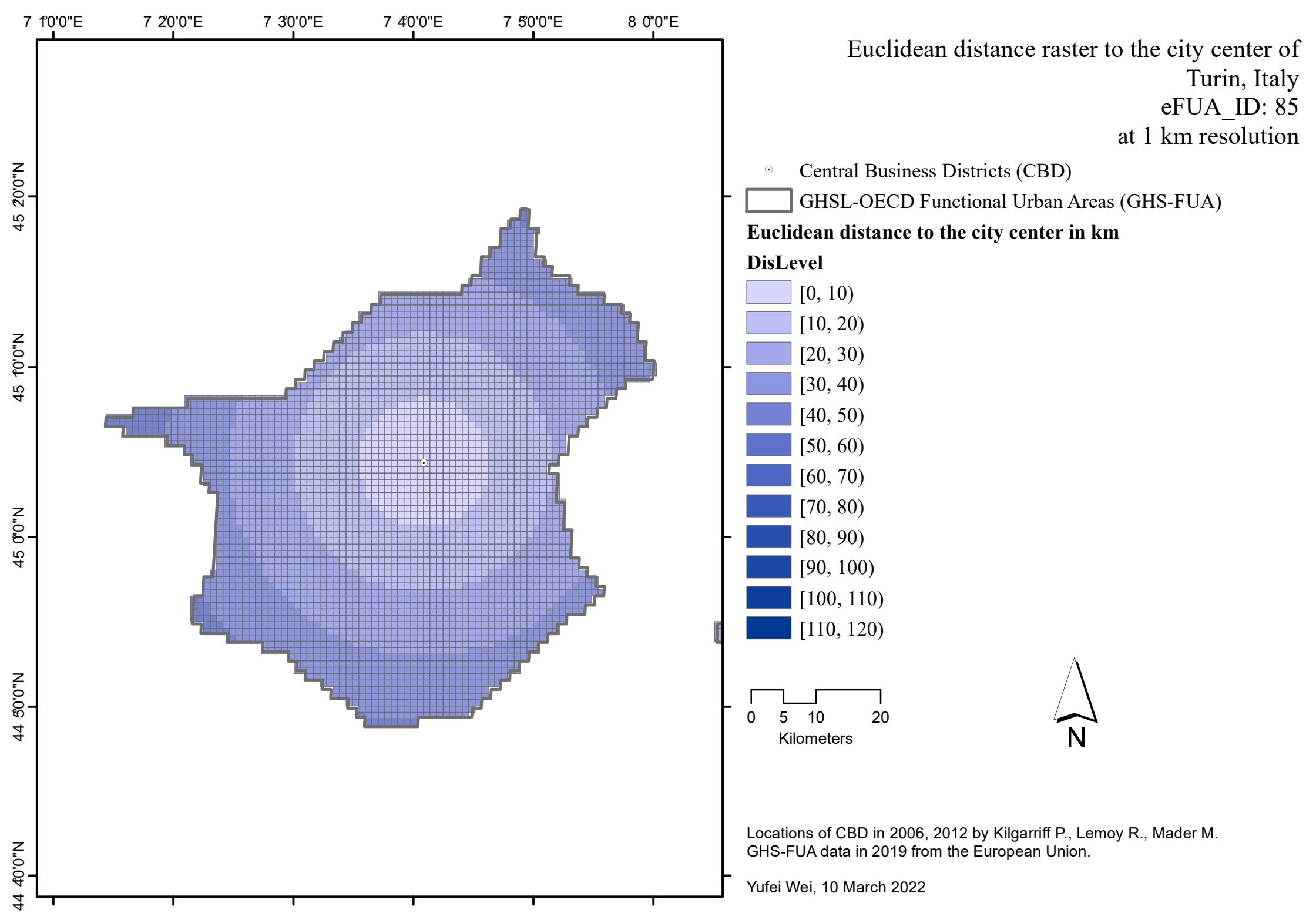
**DisLevel**

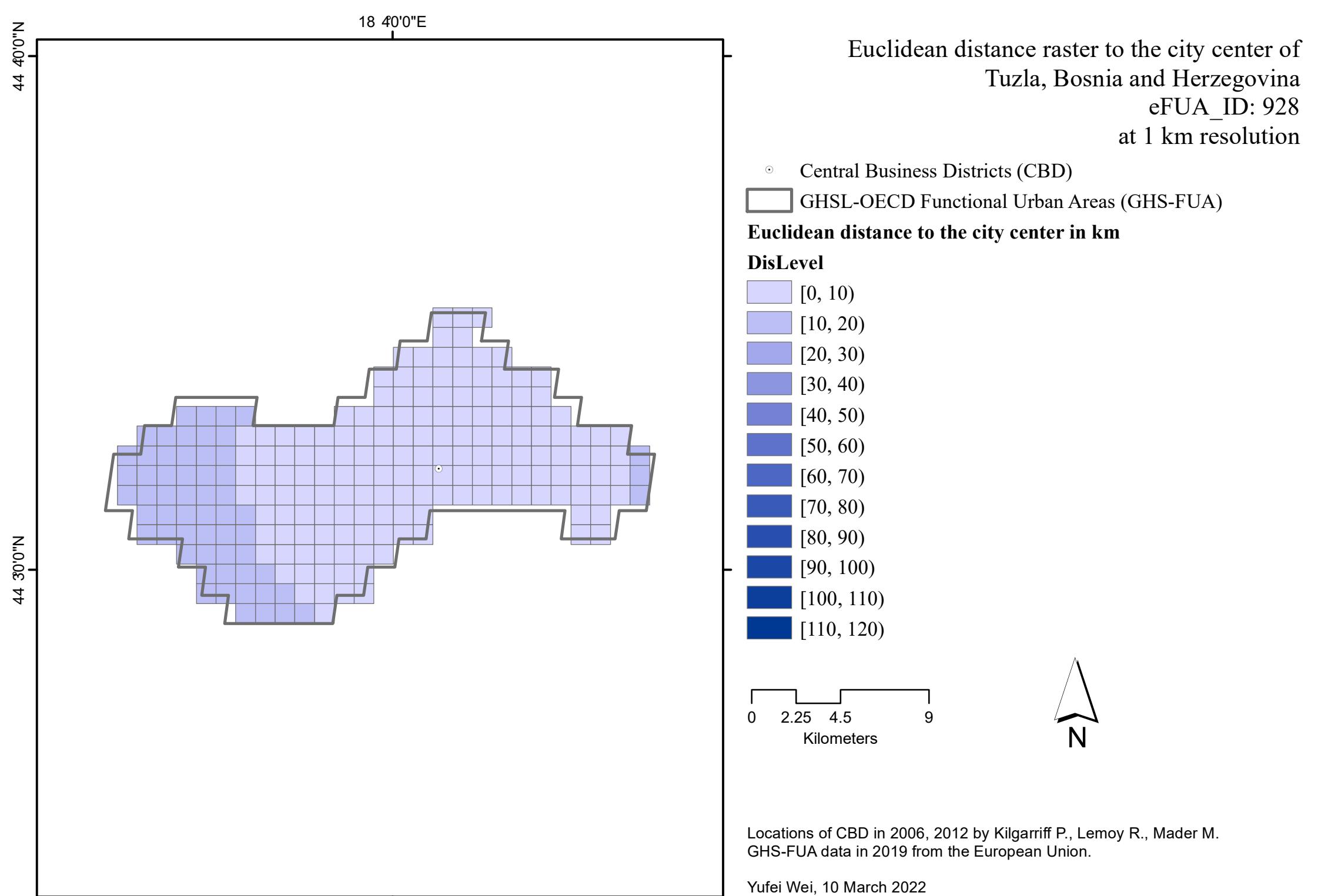
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022





9 50'0"E

10 0'0"E

10 10'0"E

Euclidean distance raster to the city center of  
Ulm, Germany  
eFUA\_ID: 4255  
at 1 km resolution

48 30'0"N

48 20'0"N

48 10'0"N

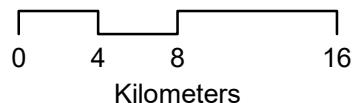
○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

### Euclidean distance to the city center in km

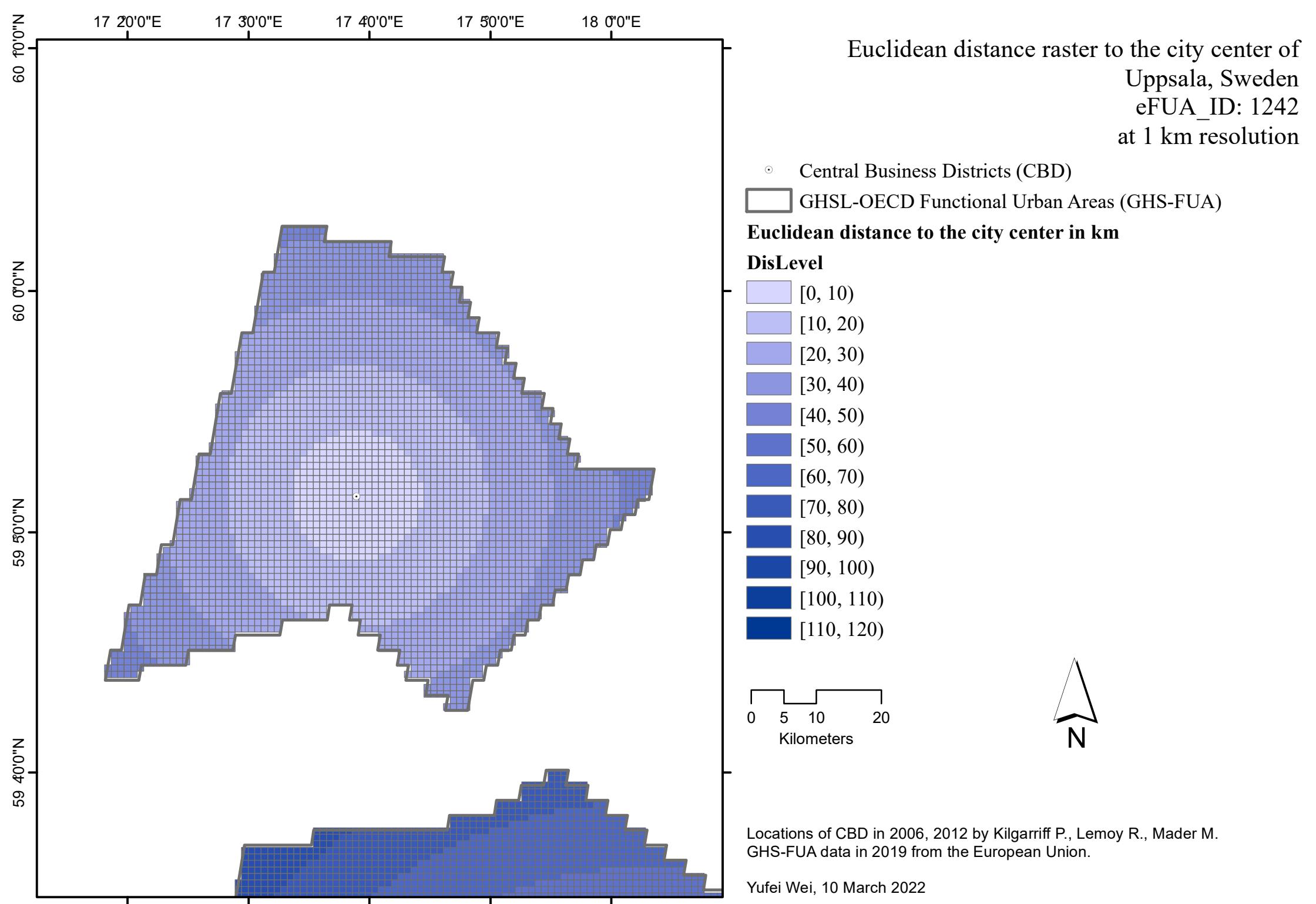
#### DisLevel

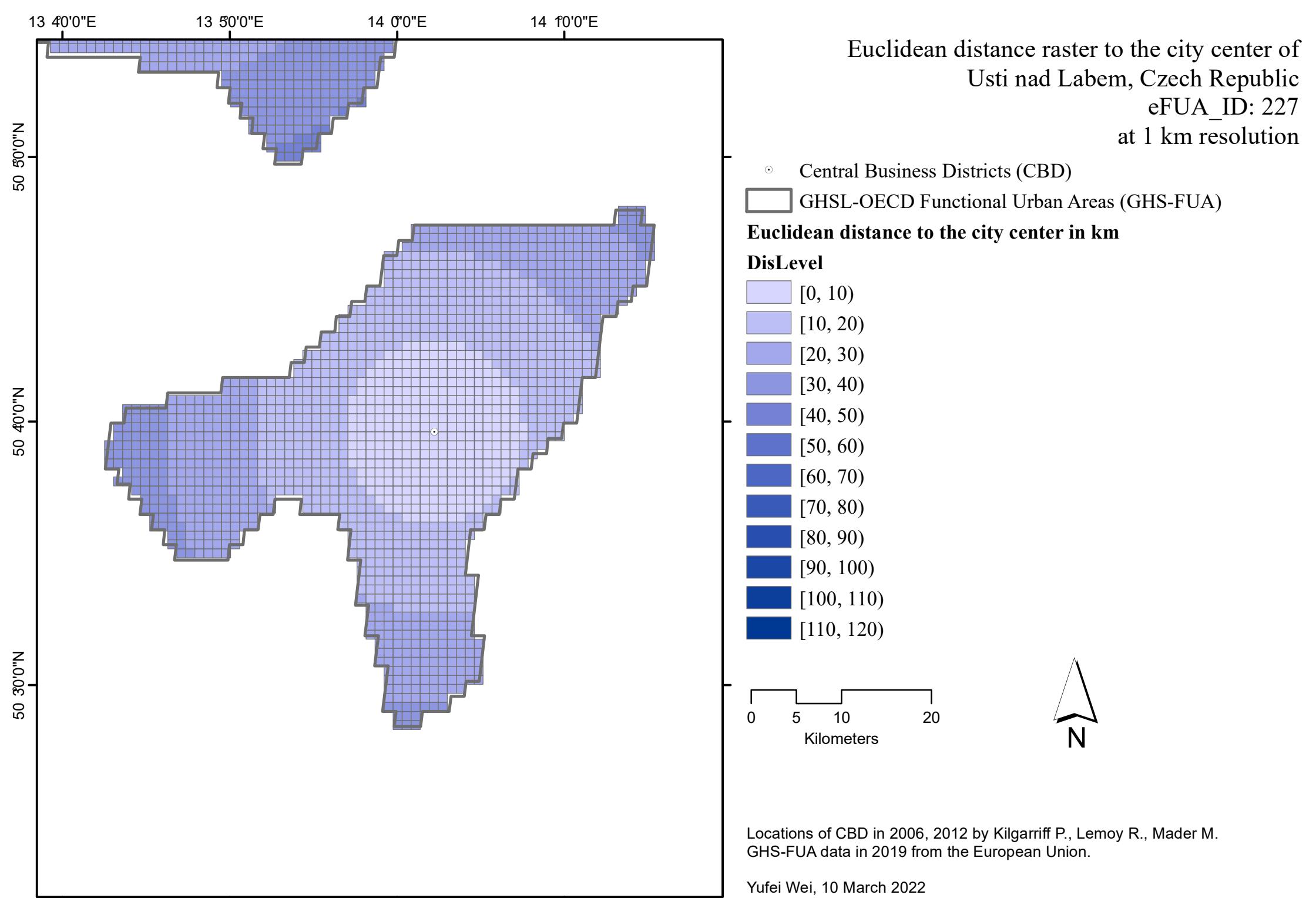
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

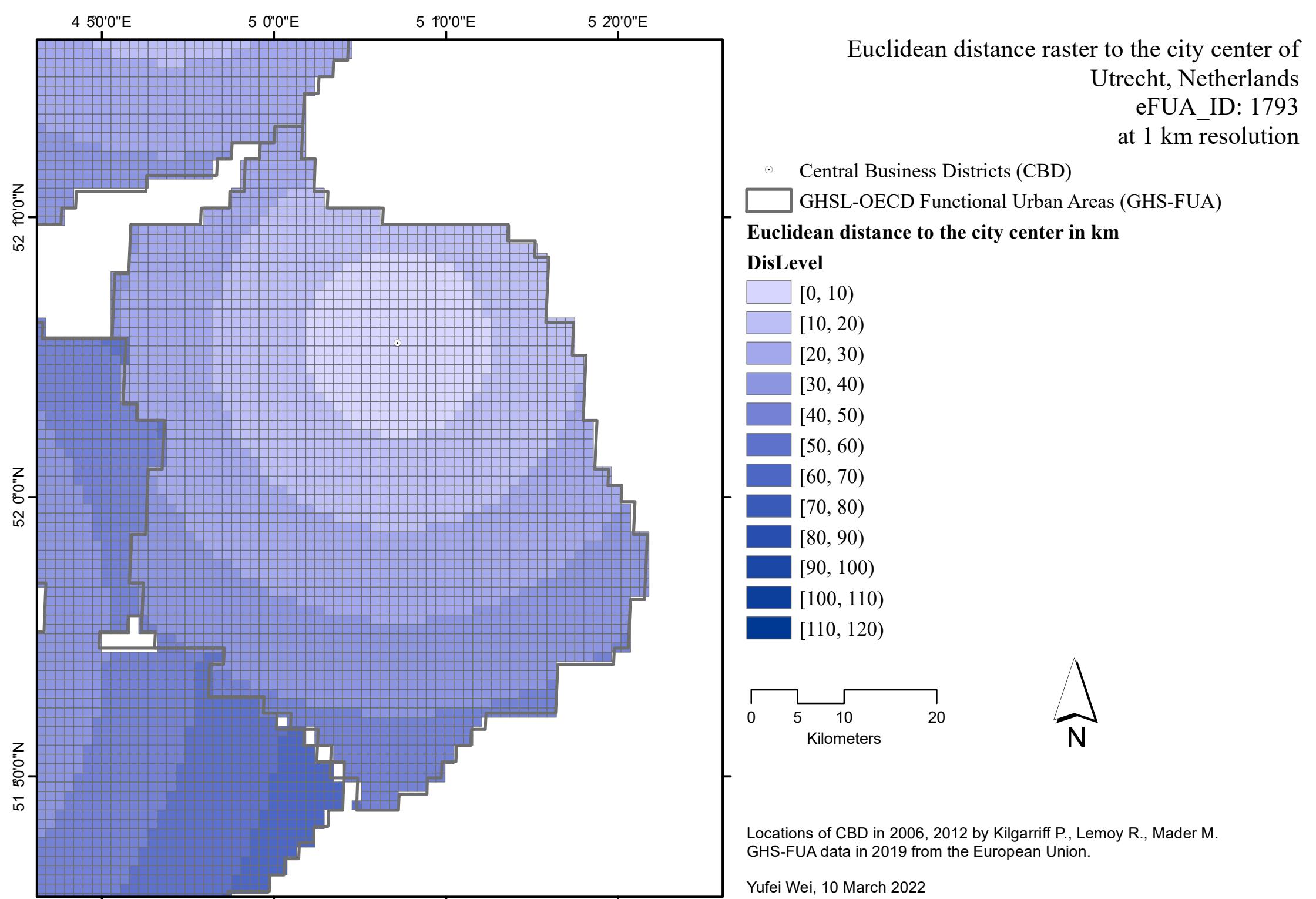


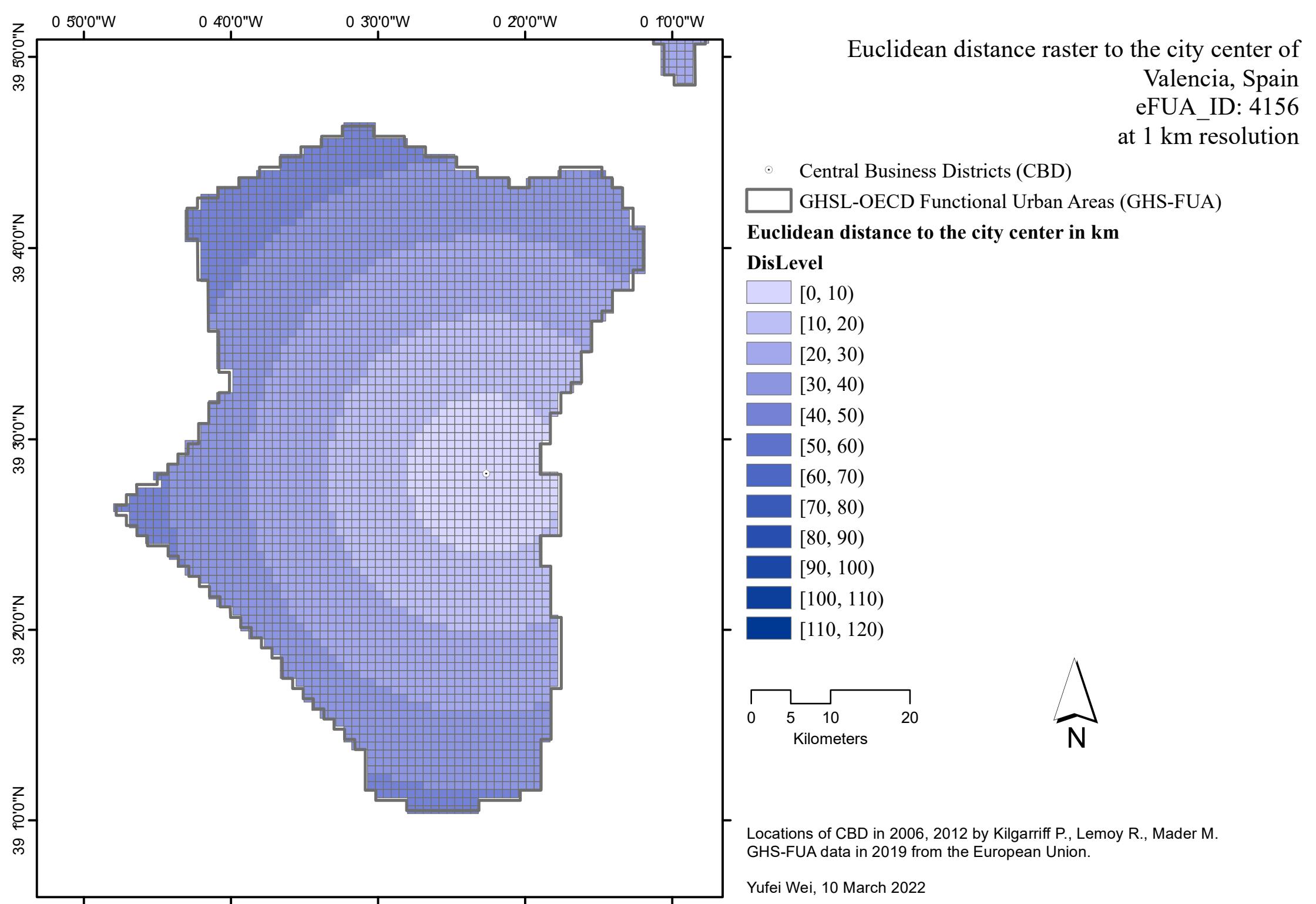
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022







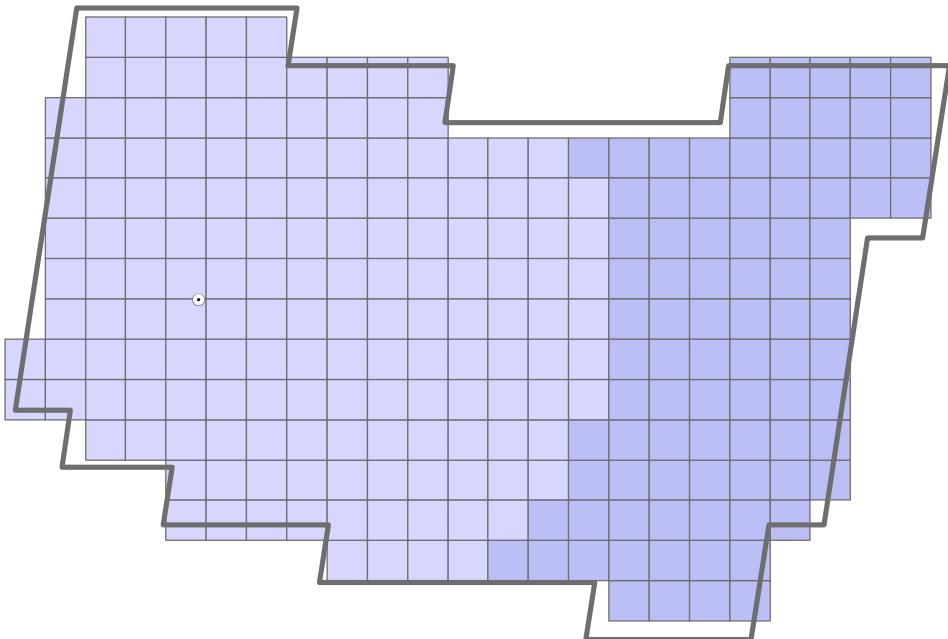


19 50'0"E

20 0'0"E

Euclidean distance raster to the city center of  
Valjevo, Serbia  
eFUA\_ID: 478  
at 1 km resolution

44 20'0"N



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

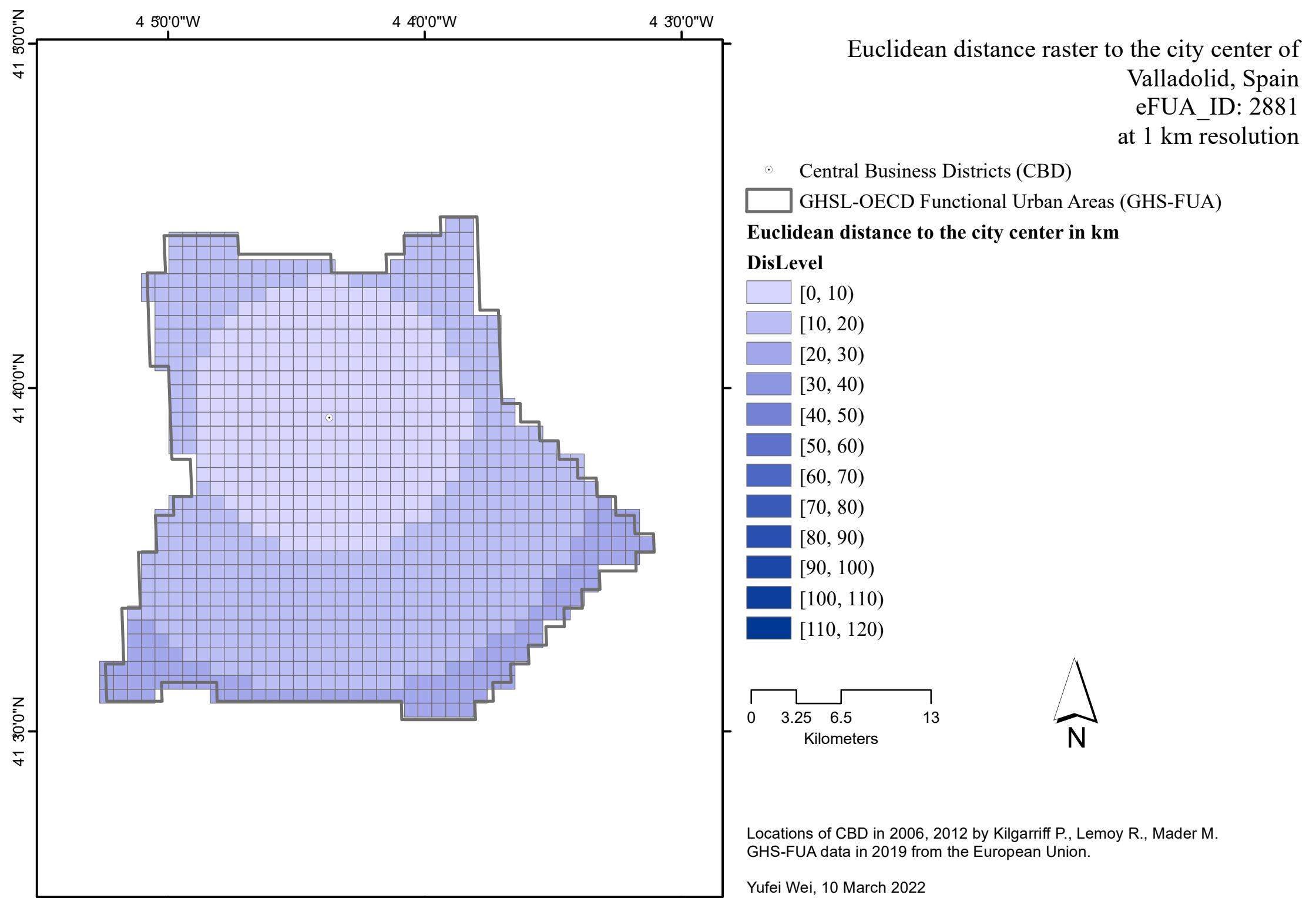
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 2 4 8  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



27 40'0"E

27 50'0"E

28 0'0"E

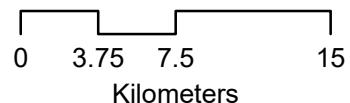
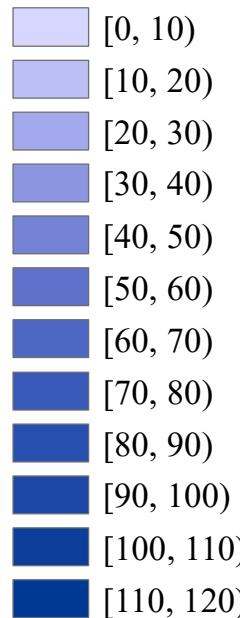
Euclidean distance raster to the city center of  
Varna, Bulgaria  
eFUA\_ID: 927  
at 1 km resolution

○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

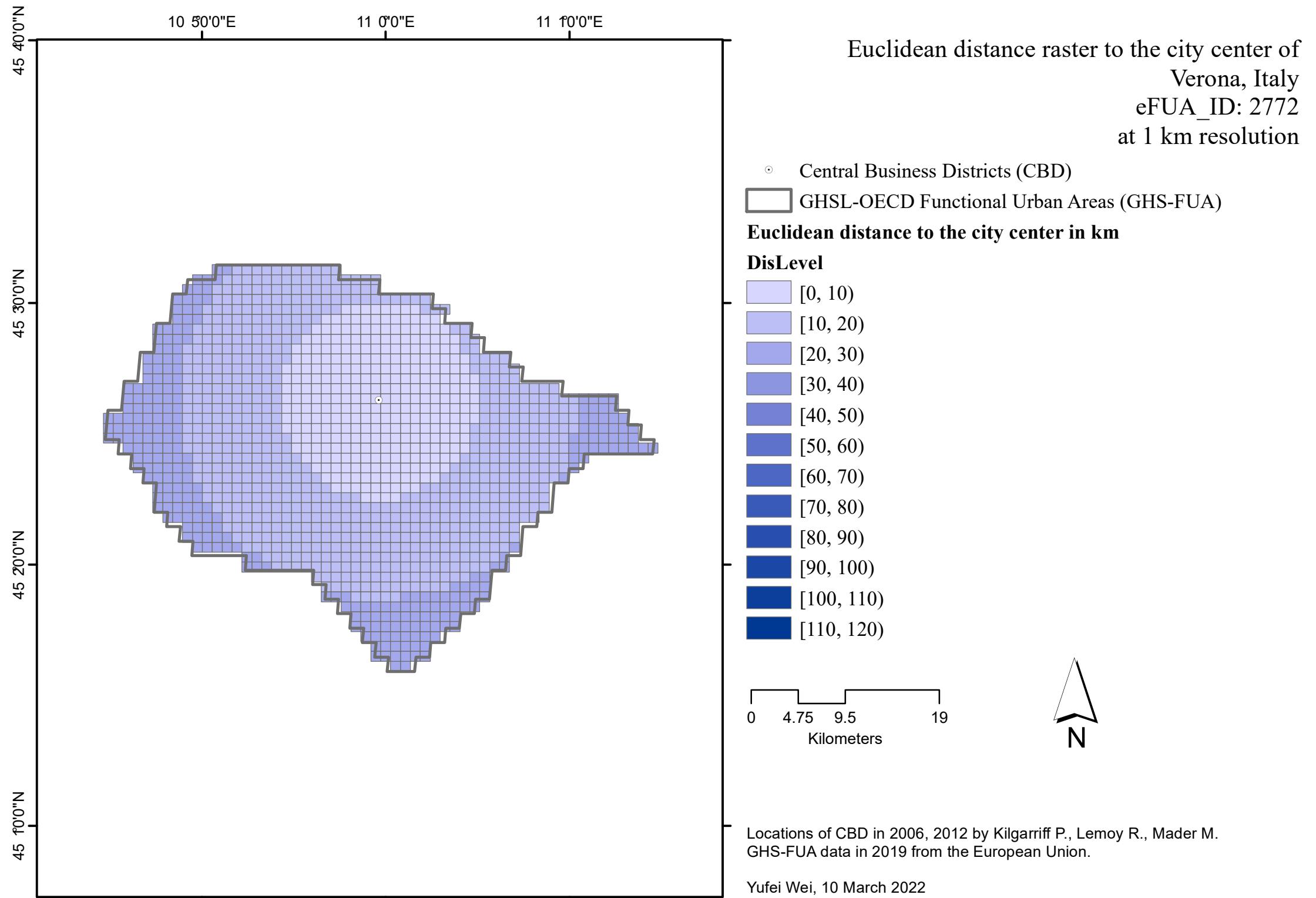
**Euclidean distance to the city center in km**

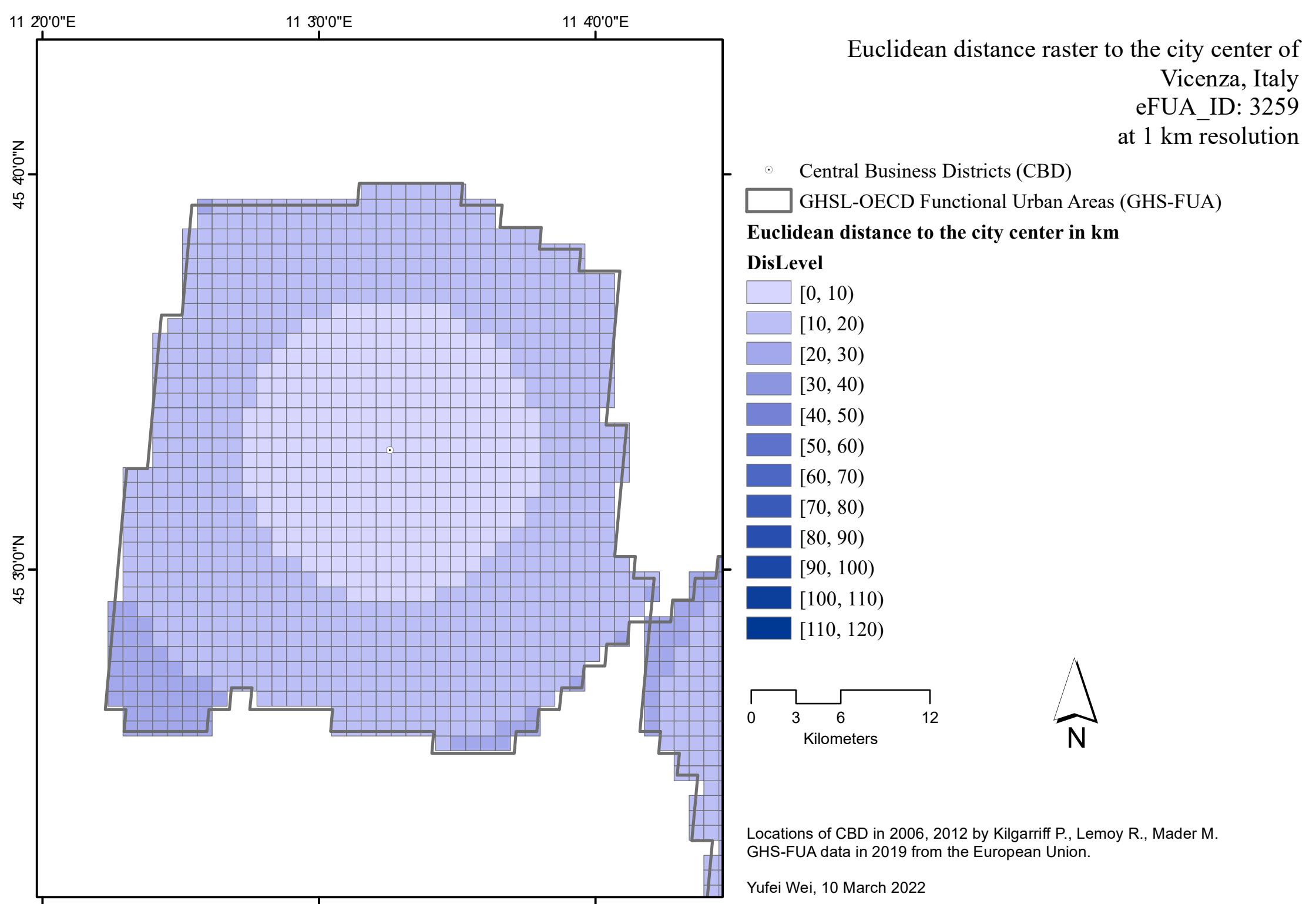
**DisLevel**

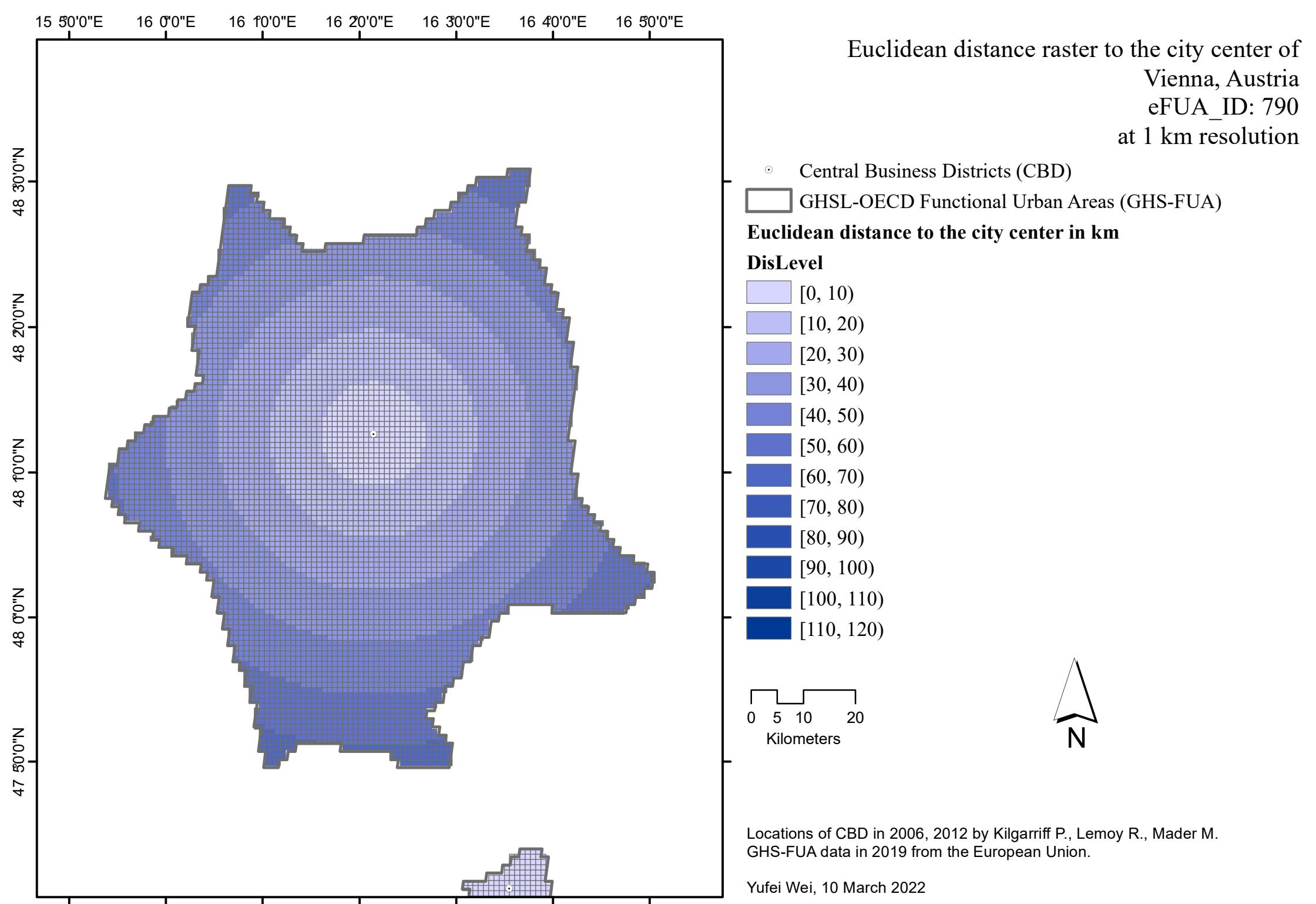


Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022







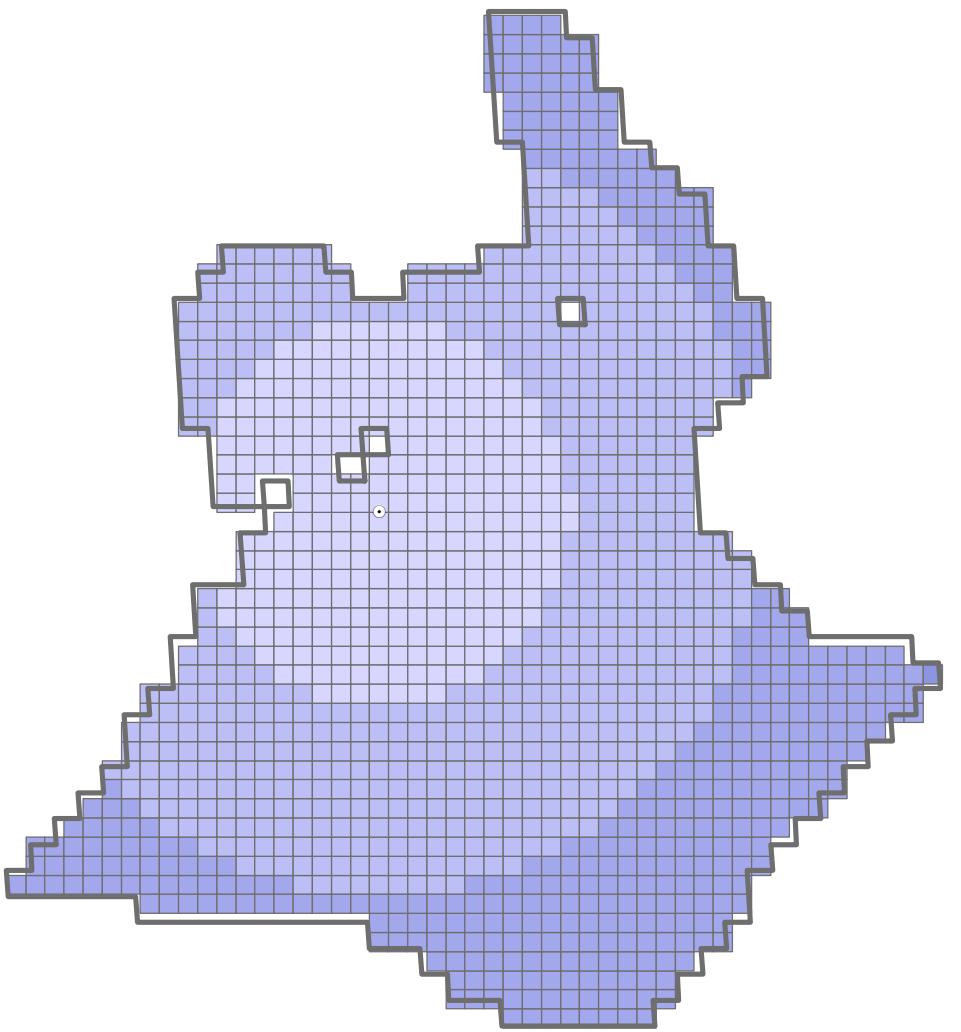
8 50'0"W

8 40'0"W

8 30'0"W

Euclidean distance raster to the city center of  
Vigo, Spain  
eFUA\_ID: 952  
at 1 km resolution

42 20'0"N  
42 10'0"N  
42 0'0"N



○ Central Business Districts (CBD)

◻ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

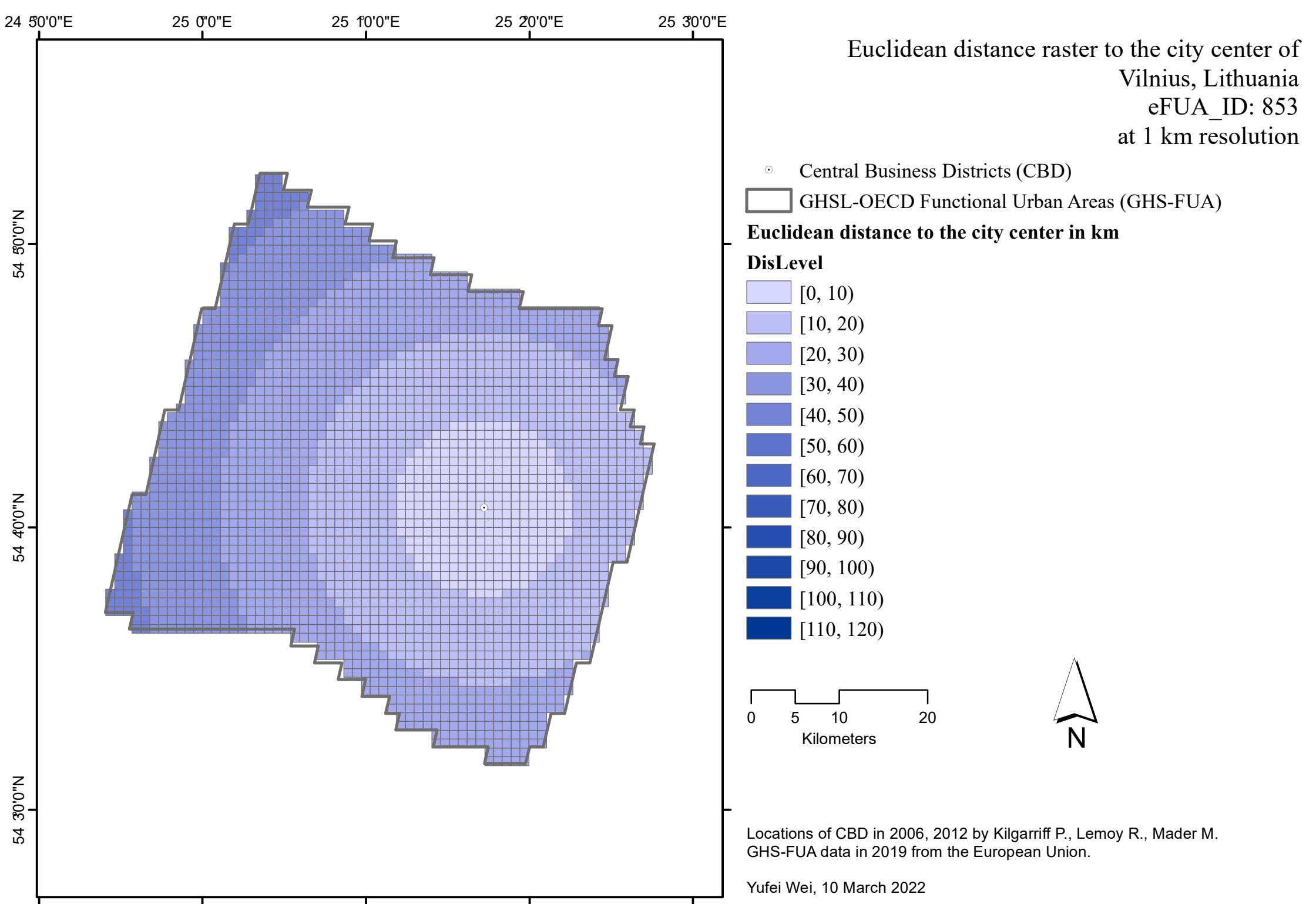
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

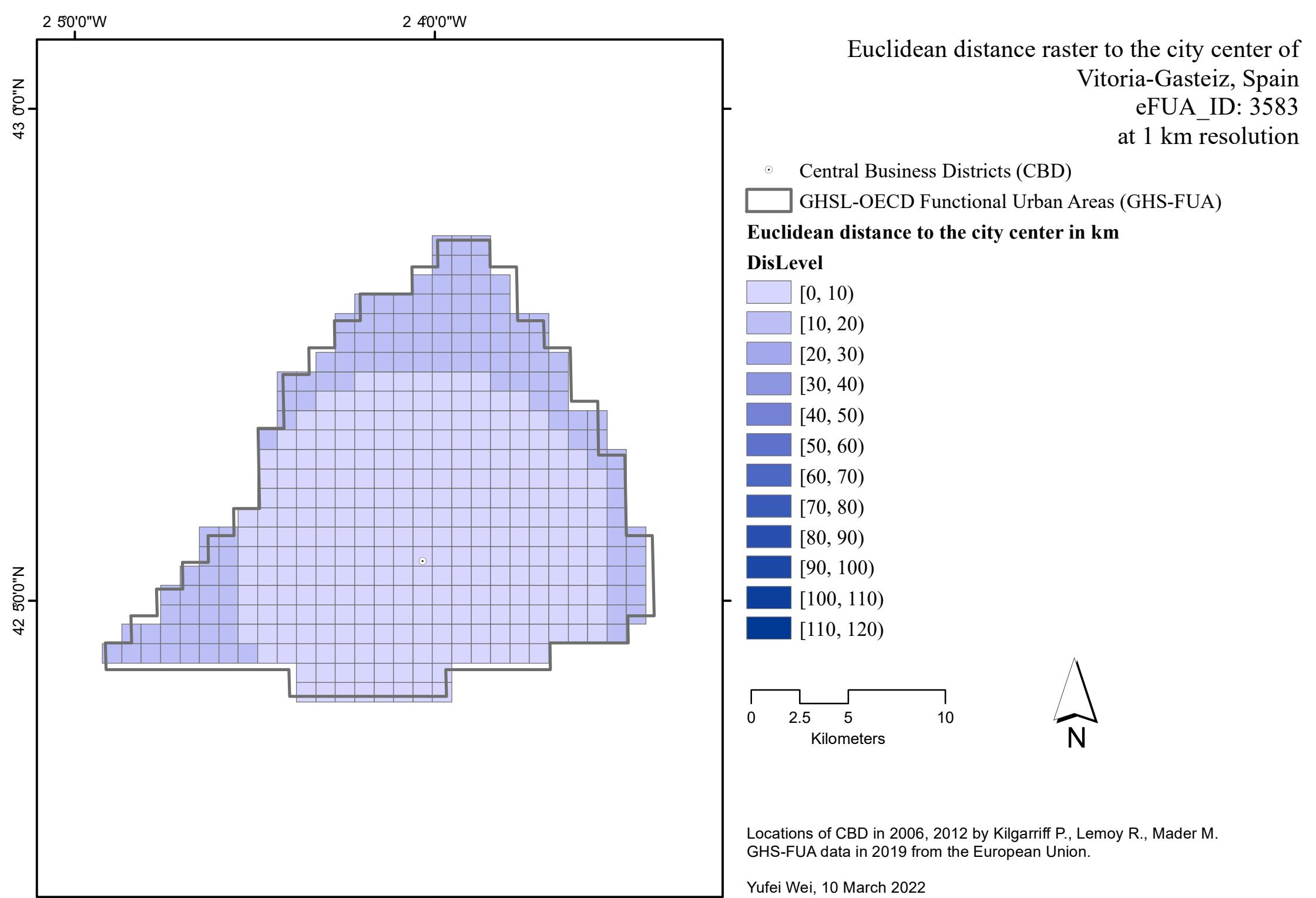
0 4.25 8.5 17  
Kilometers

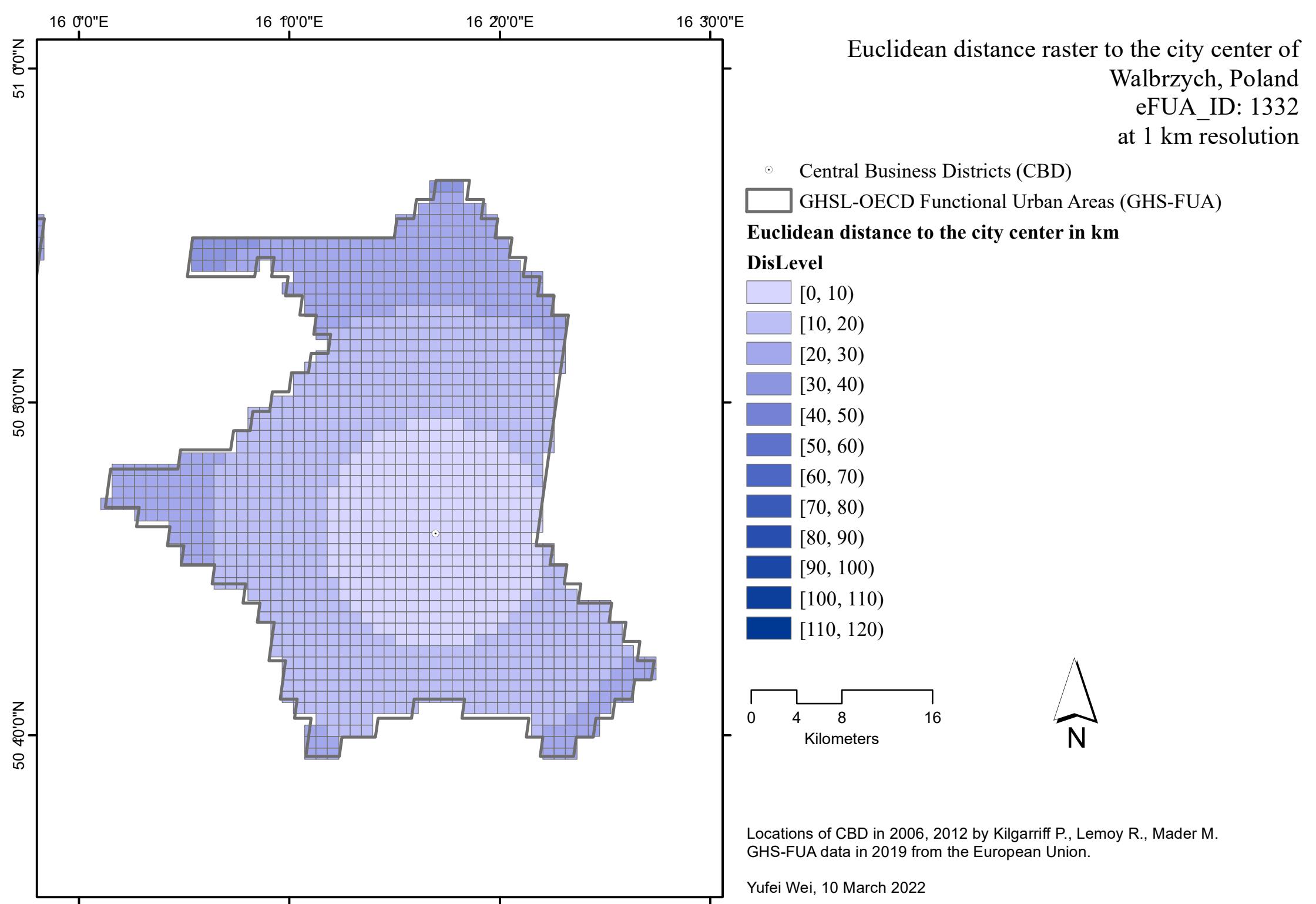


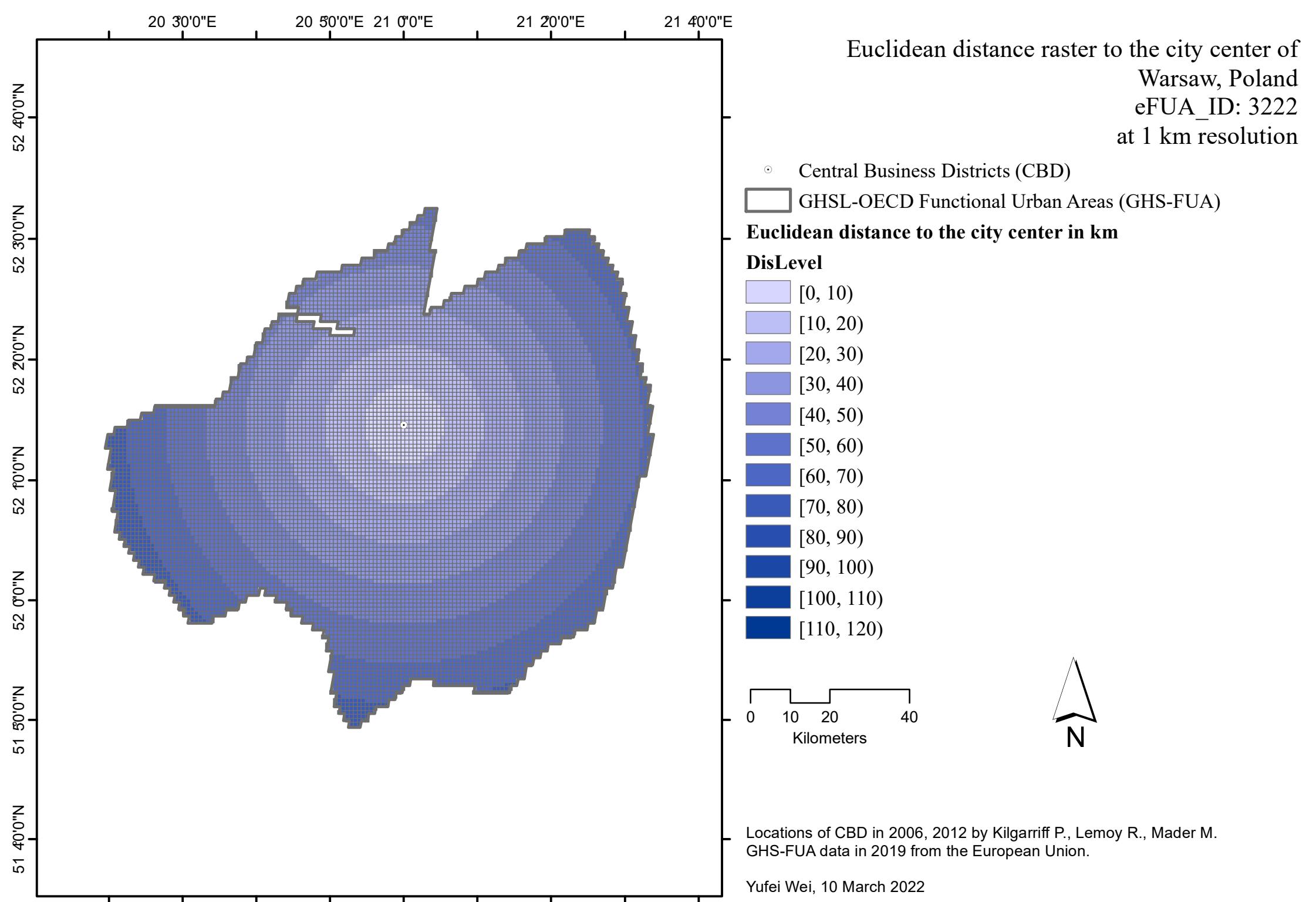
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

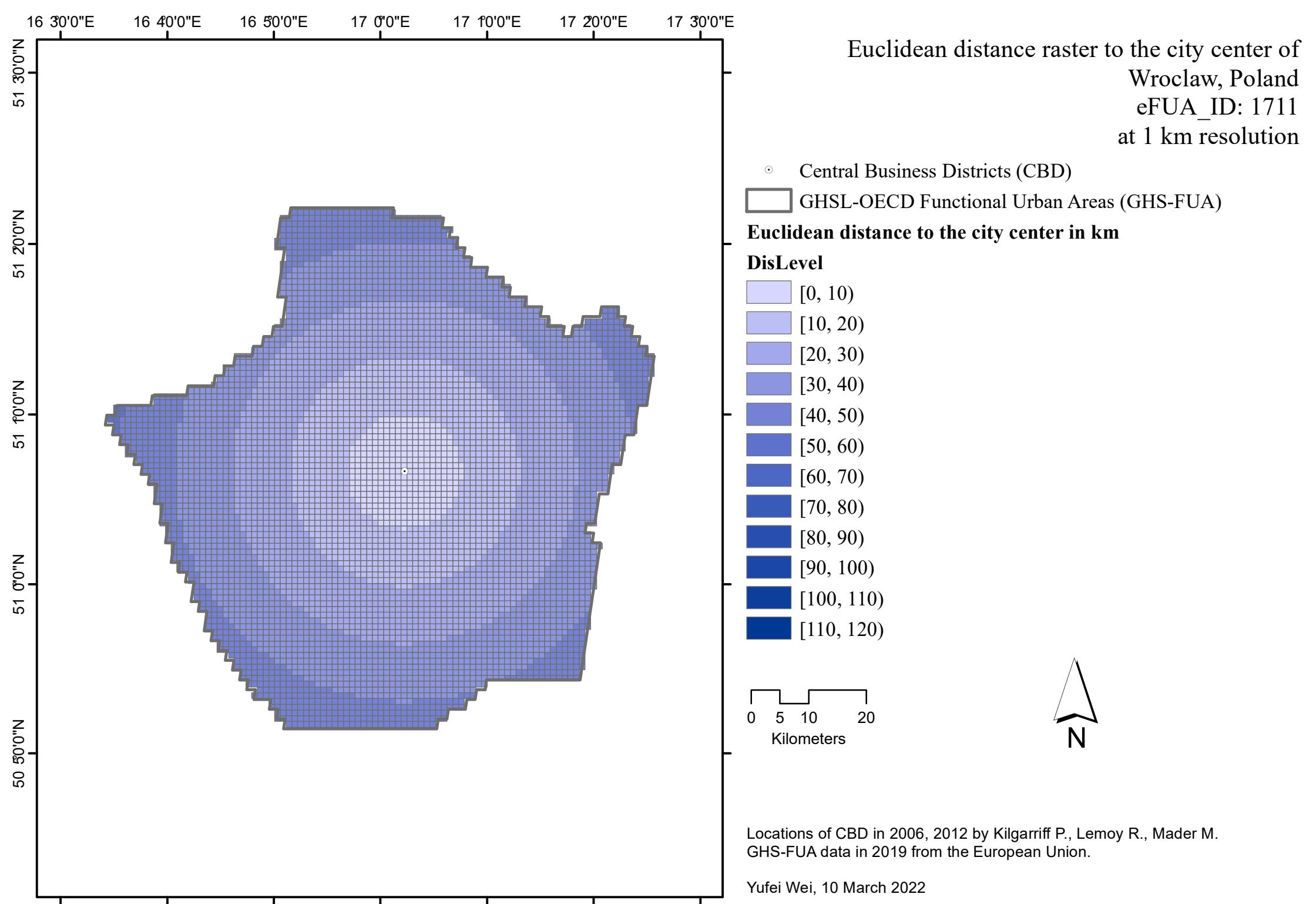
Yufei Wei, 10 March 2022

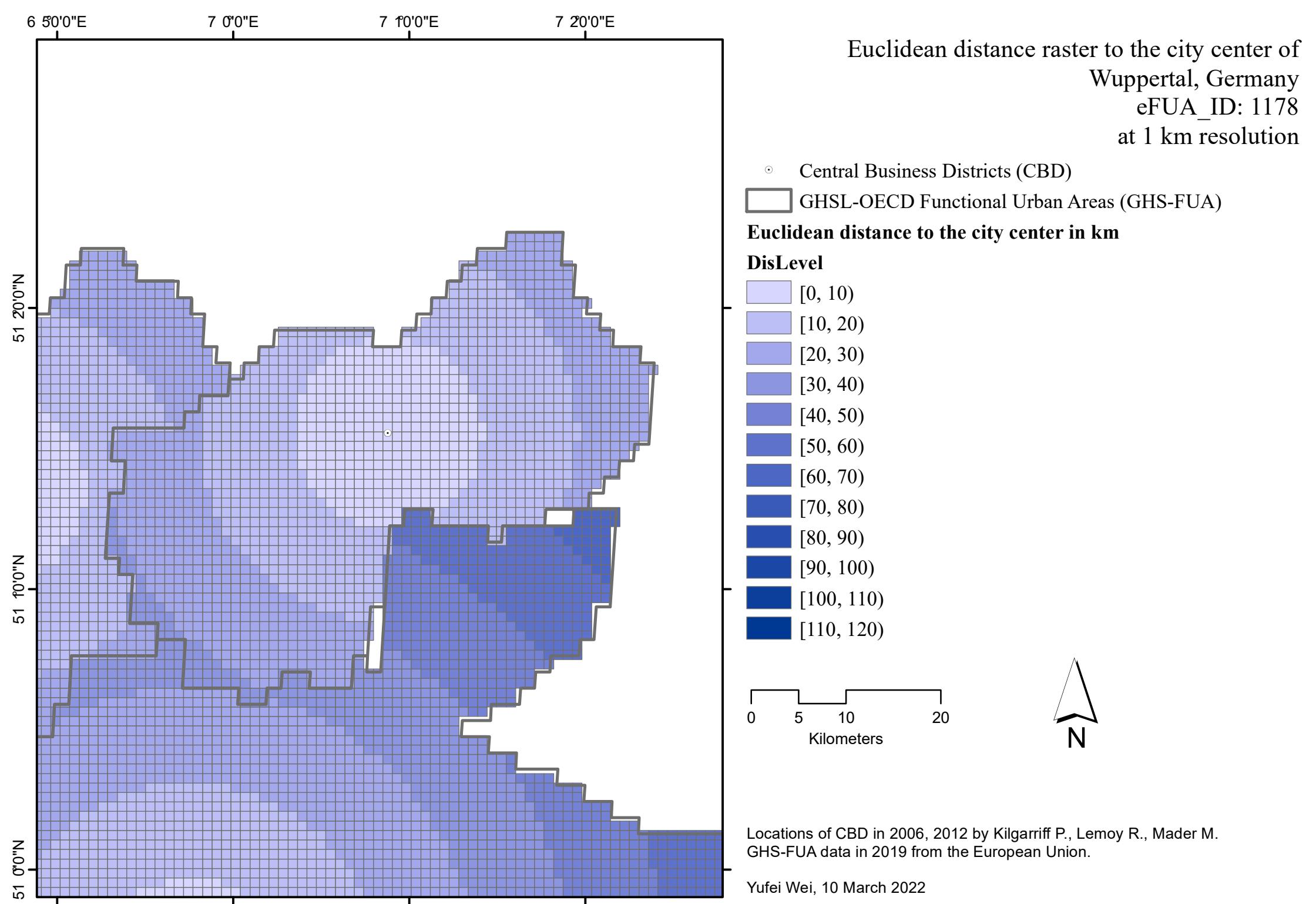


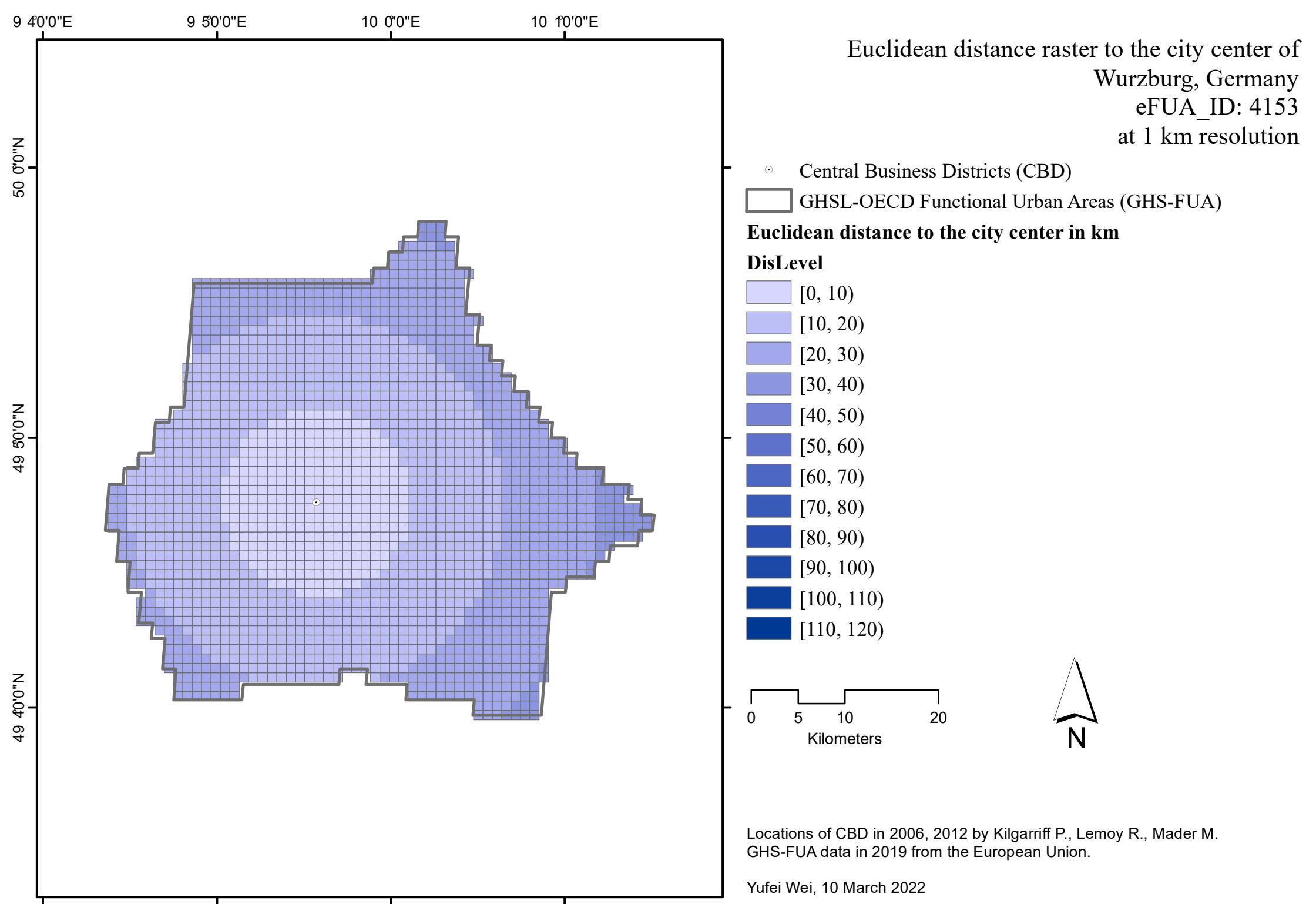












15 40'0"E

15 50'0"E

16 0'0"E

16 10'0"E

16 20'0"E

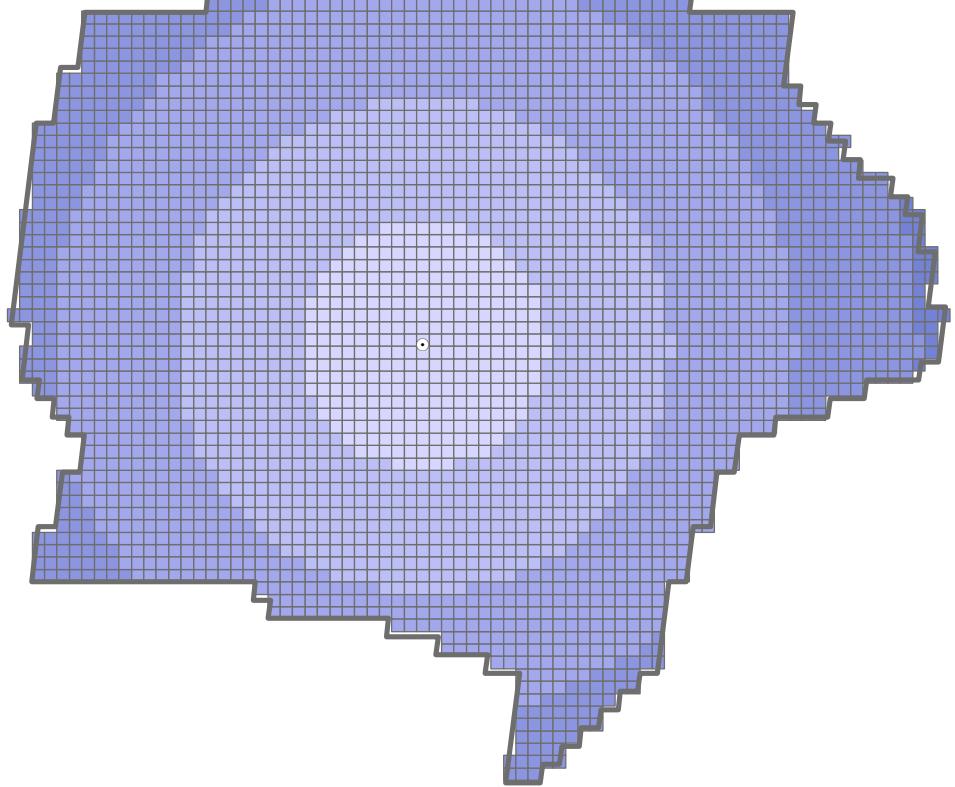
Euclidean distance raster to the city center of  
Zagreb, Croatia  
eFUA\_ID: 410  
at 1 km resolution

46 0'0"N

45 50'0"N

45 40'0"N

45 30'0"N

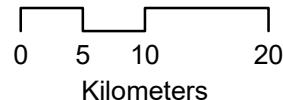
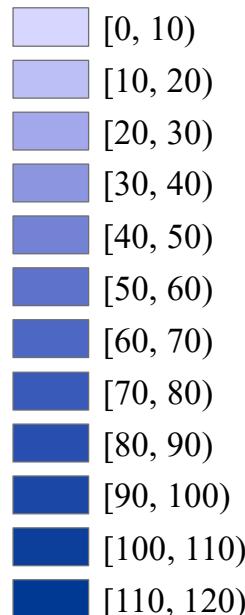


○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

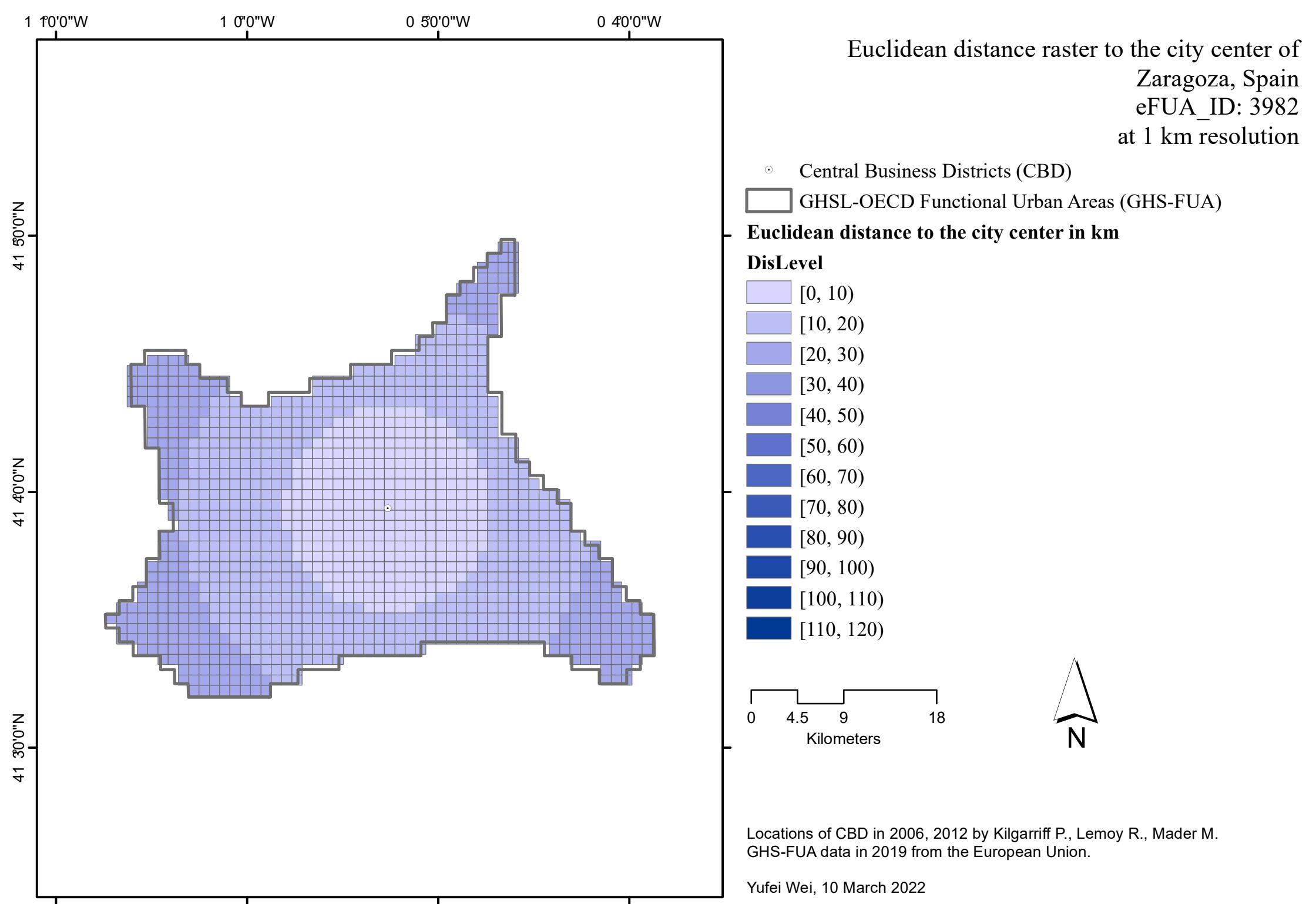
**Euclidean distance to the city center in km**

**DisLevel**



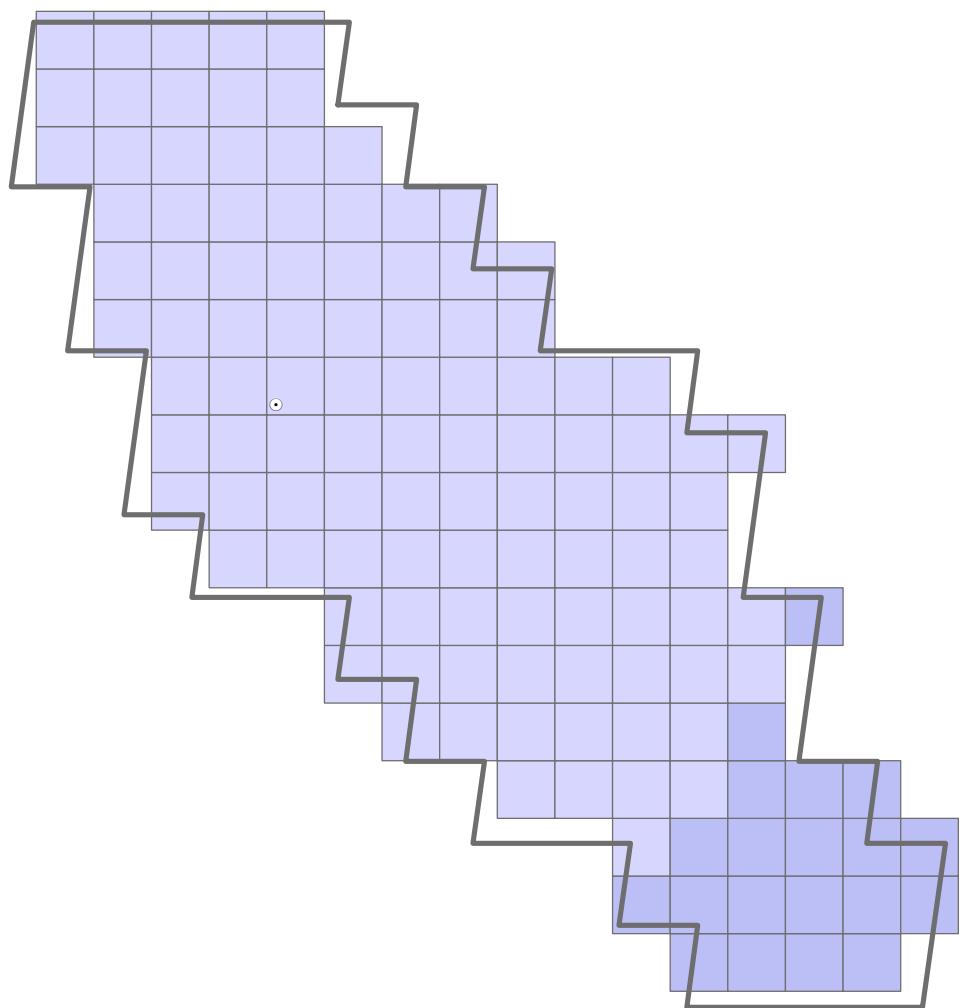
Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



18°0'0"E

Euclidean distance raster to the city center of  
Zenica, Bosnia and Herzegovina  
eFUA\_ID: 519  
at 1 km resolution



○ Central Business Districts (CBD)

□ GHS-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

[0, 10)
[10, 20)
[20, 30)
[30, 40)
[40, 50)
[50, 60)
[60, 70)
[70, 80)
[80, 90)
[90, 100)
[100, 110)
[110, 120)

0 1.25 2.5 5  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022

18 30'0"E

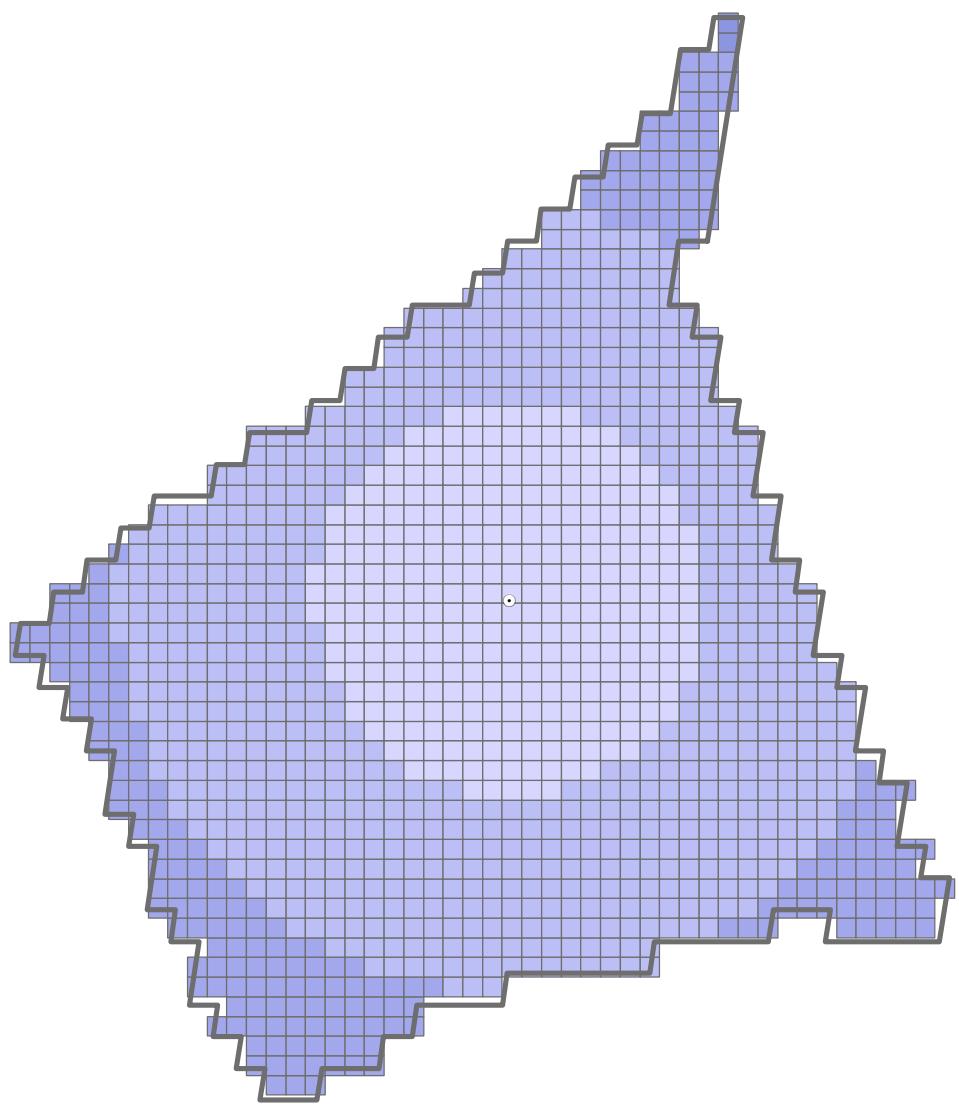
18 40'0"E

18 50'0"E

Euclidean distance raster to the city center of  
Zilina, Slovakia  
eFUA\_ID: 480  
at 1 km resolution

49 20'0"N

49 10'0"N



○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

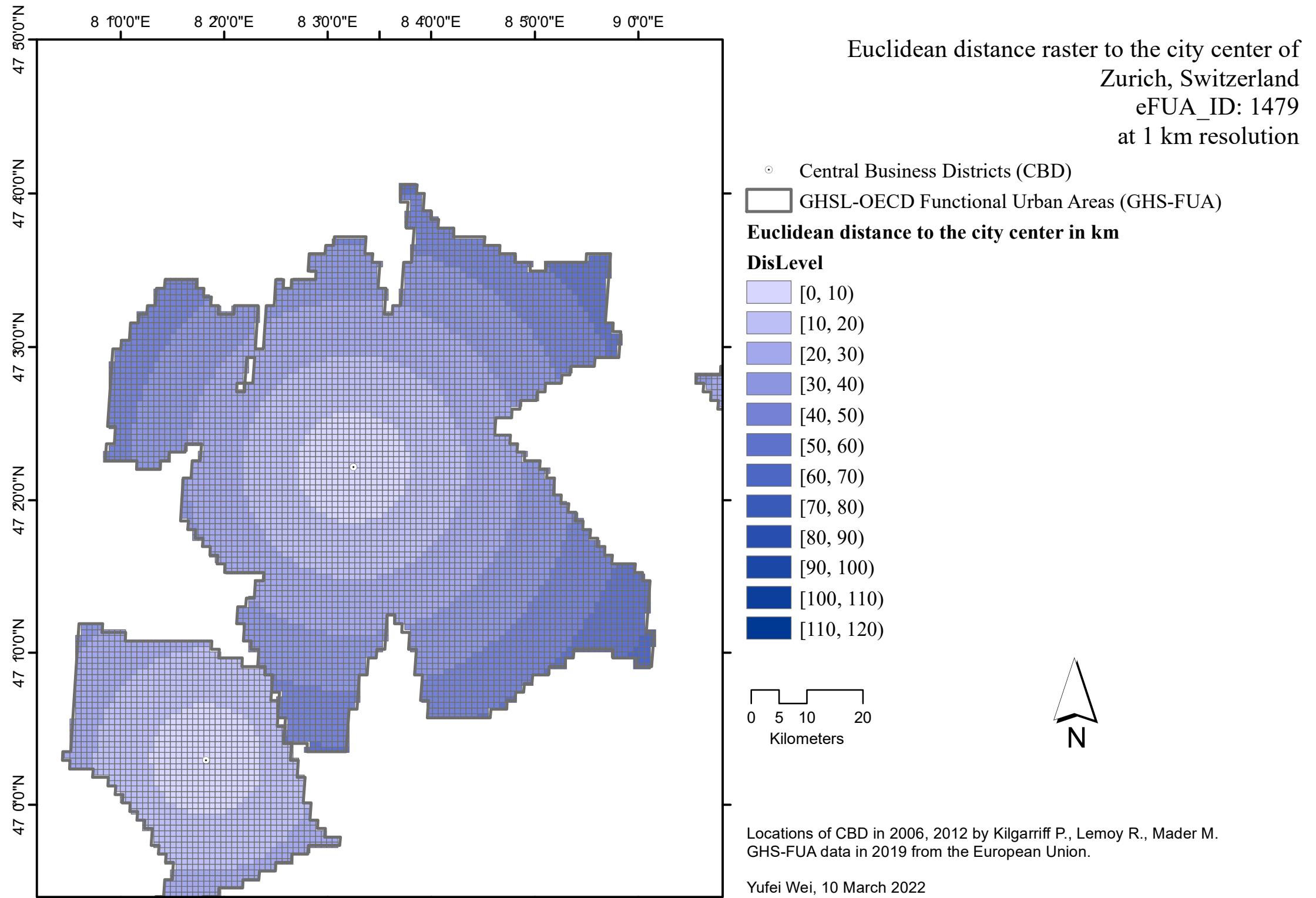
- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 4 8 16  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022



12 20'0"E

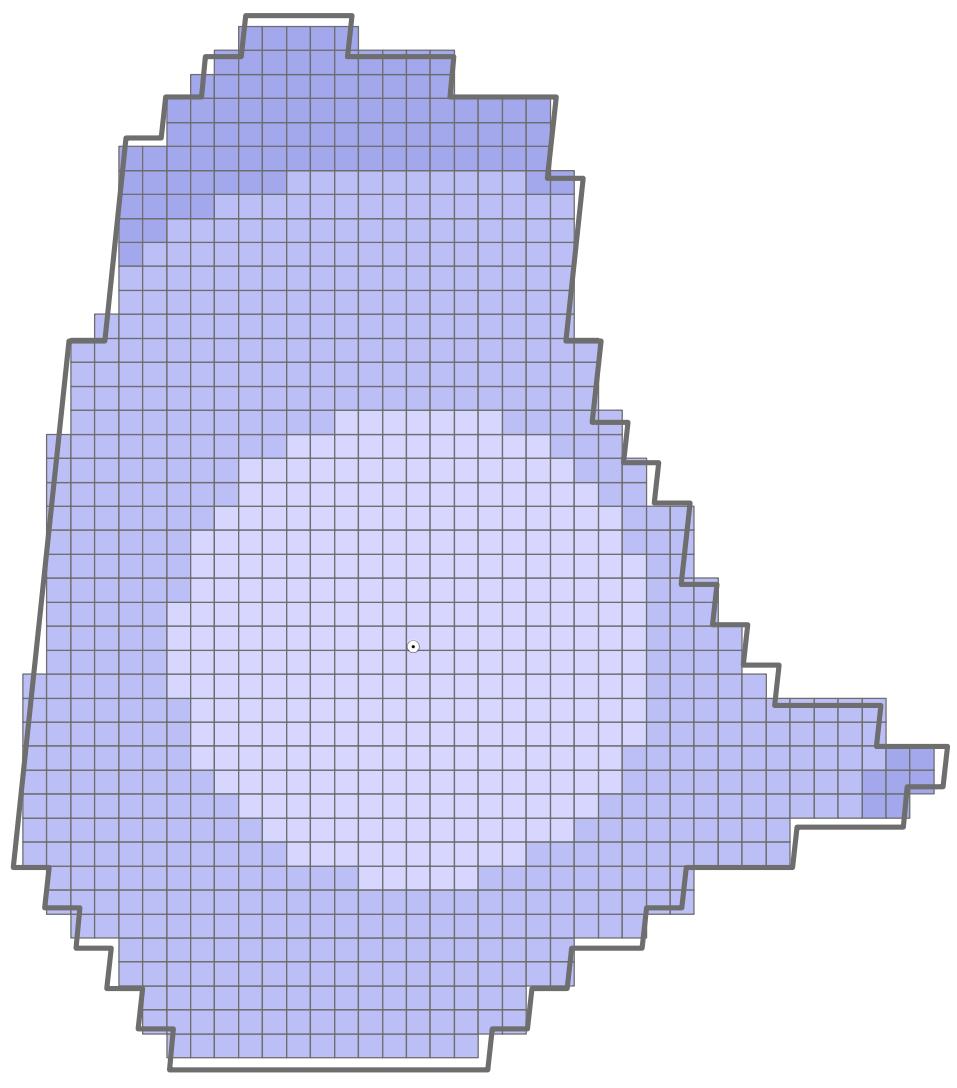
12 30'0"E

12 40'0"E

Euclidean distance raster to the city center of  
Zwickau, Germany  
eFUA\_ID: 4863  
at 1 km resolution

50 50'0"N

50 40'0"N



○ Central Business Districts (CBD)

◻ GHSL-OECD Functional Urban Areas (GHS-FUA)

**Euclidean distance to the city center in km**

**DisLevel**

- [0, 10)
- [10, 20)
- [20, 30)
- [30, 40)
- [40, 50)
- [50, 60)
- [60, 70)
- [70, 80)
- [80, 90)
- [90, 100)
- [100, 110)
- [110, 120)

0 3.25 6.5 13  
Kilometers



Locations of CBD in 2006, 2012 by Kilgarriff P., Lemoy R., Mader M.  
GHS-FUA data in 2019 from the European Union.

Yufei Wei, 10 March 2022