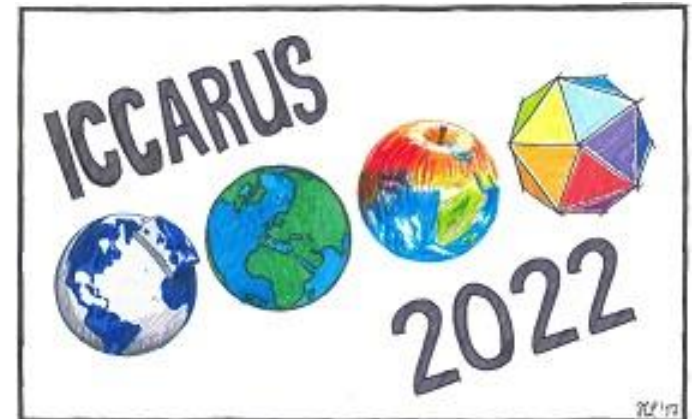


Preliminary evaluation of the ECOCLIMAP-SG dataset over Turin

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Valeria Garbero (ARPA Piemonte, IT)

Massimo Milelli (CIMA Foundation, IT)



wg3b PP CITTA'

Parallel session 10th March 2022

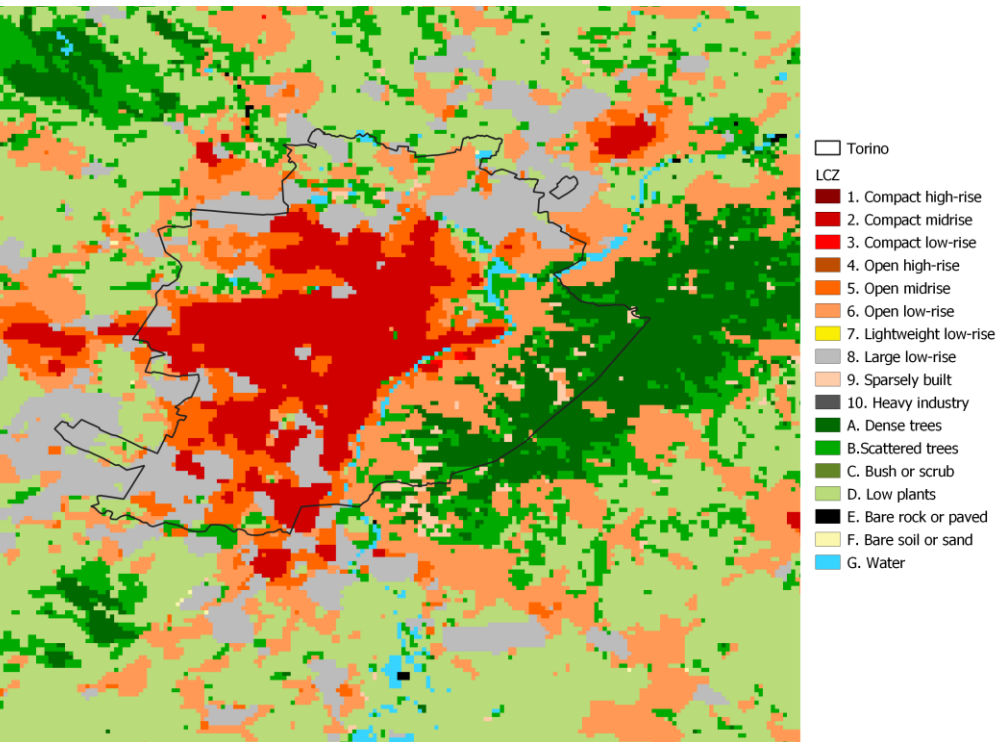


**Politecnico
di Torino**

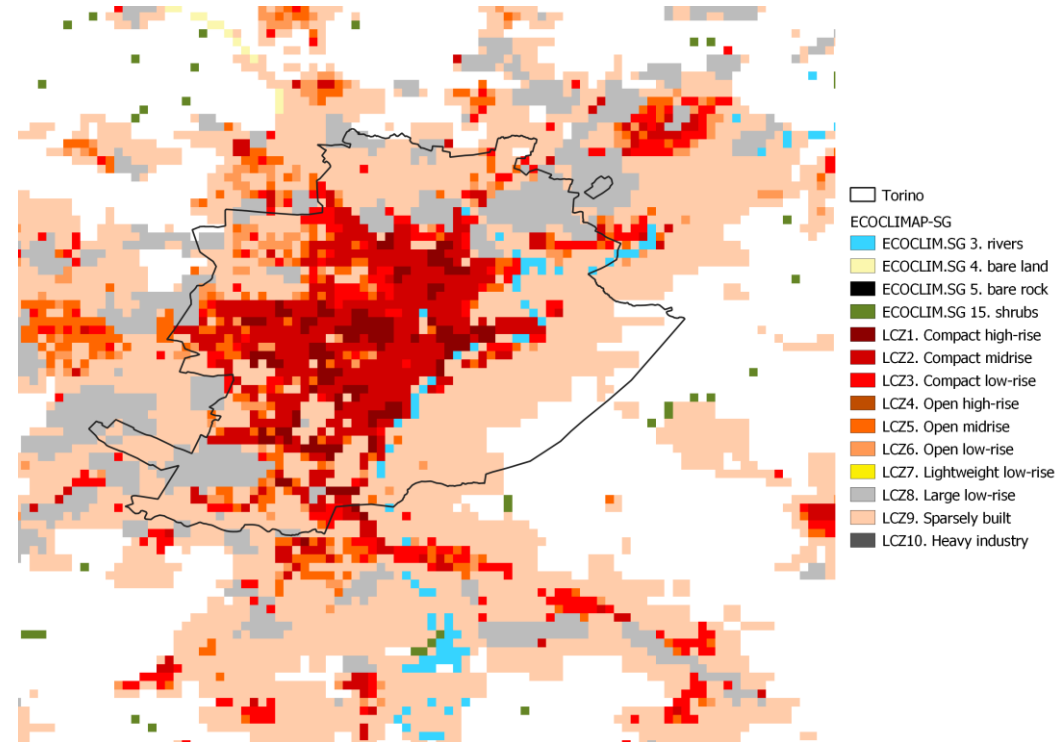
Department of Environment,
Land and Infrastructure
Engineering



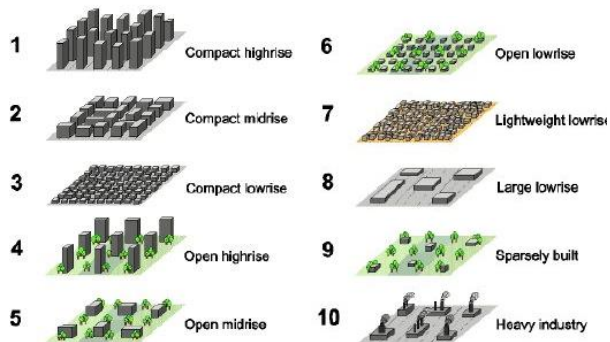
LCZ from Demuzere 2020 database (WUDAPT) resolution: 100 m



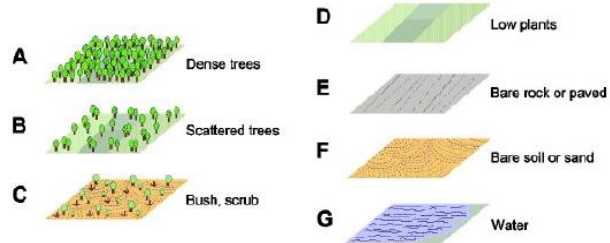
LCZ from ECOCLIMAP-SG 2018 (urban classes only) resolution: 300 m



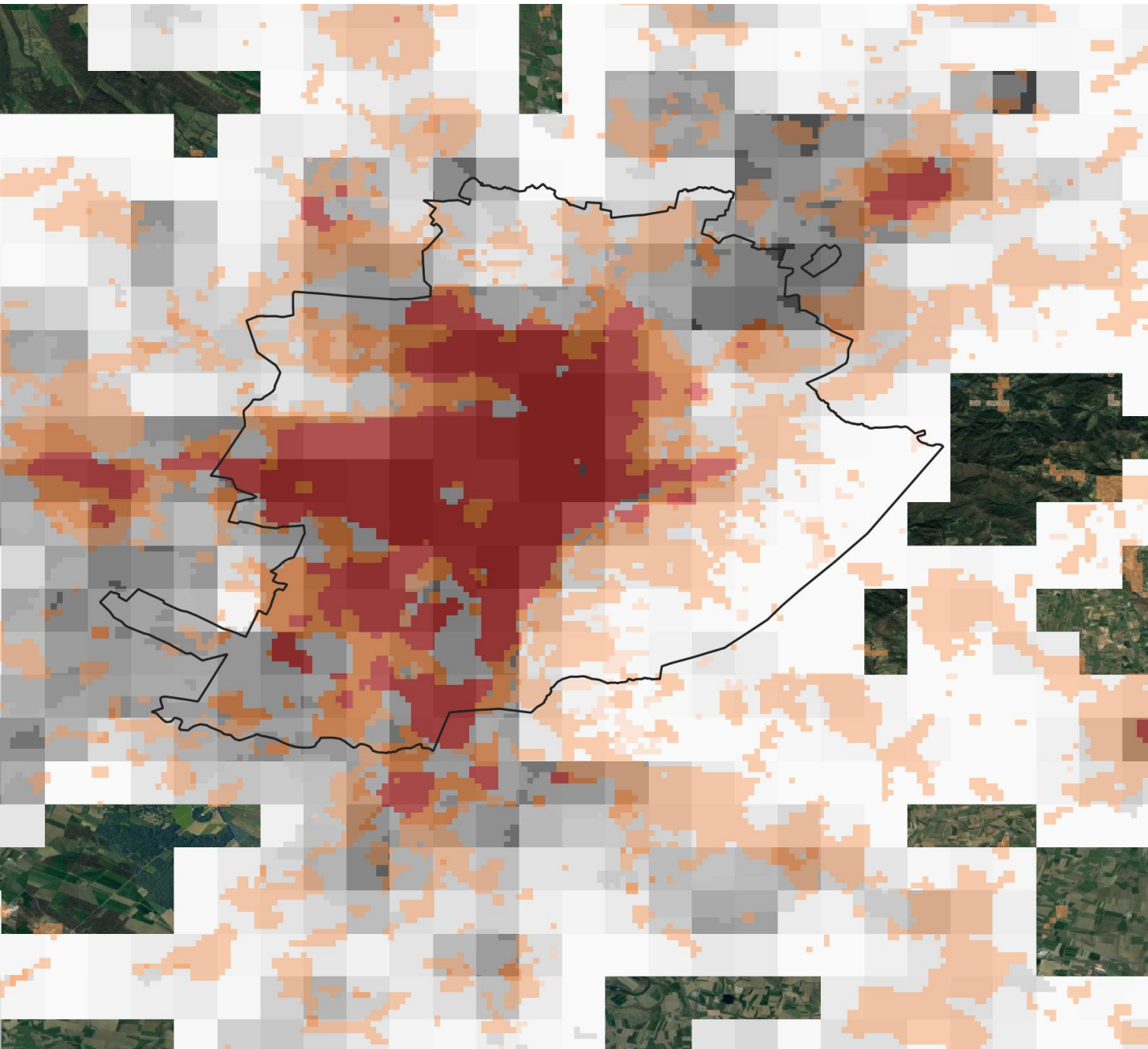
BUILDING TYPES



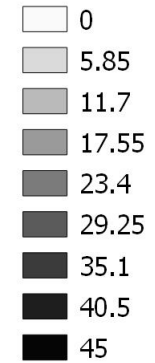
LAND COVER TYPES



Comparison between AHF and LCZ from Demuzere 2020



AHF W/m²

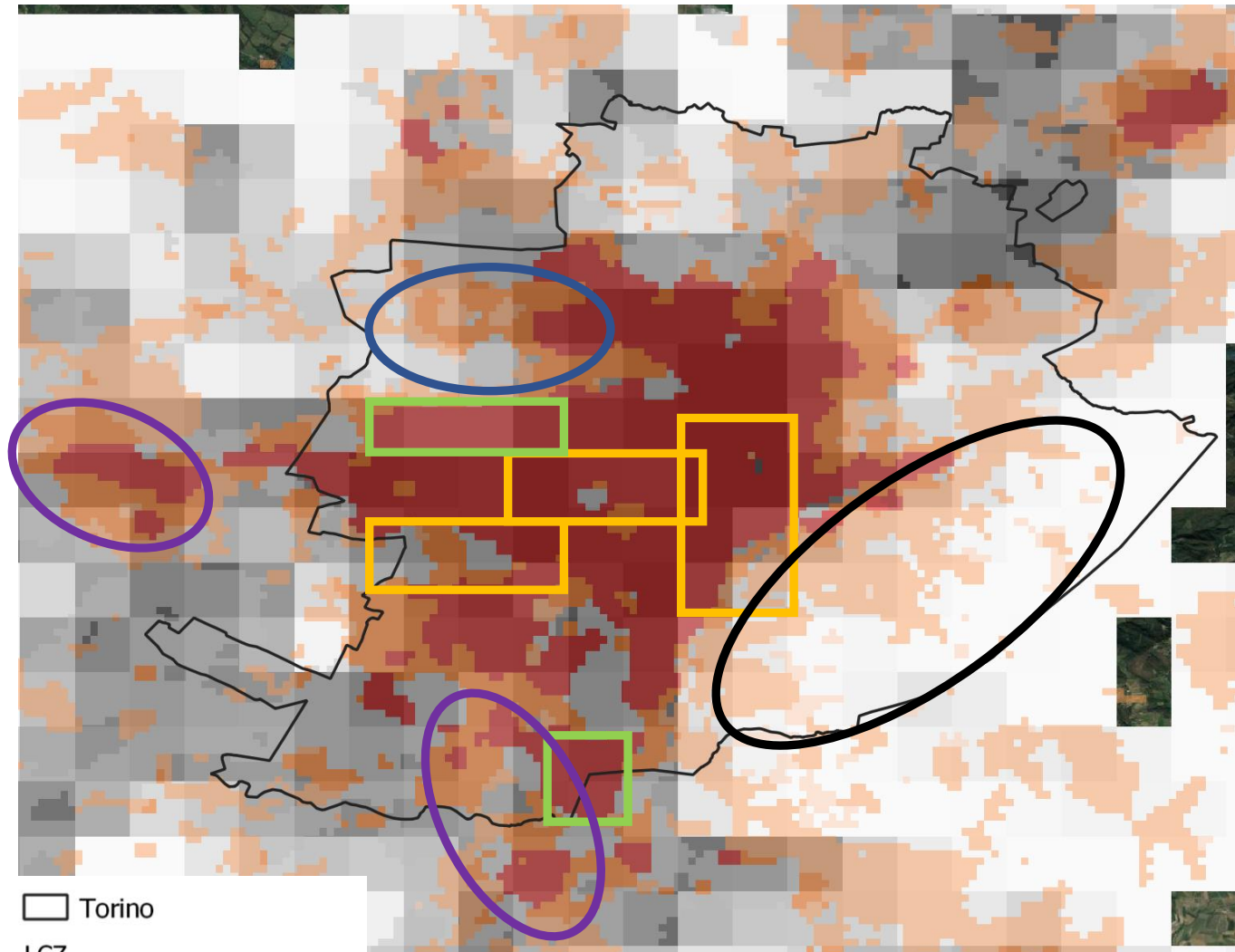


Torino

LCZ

- 1. Compact high-rise
- 2. Compact midrise
- 3. Compact low-rise
- 4. Open high-rise
- 5. Open midrise
- 6. Open low-rise
- 7. Lightweight low-rise
- 8. Large low-rise
- 9. Sparsely built
- 10. Heavy industry

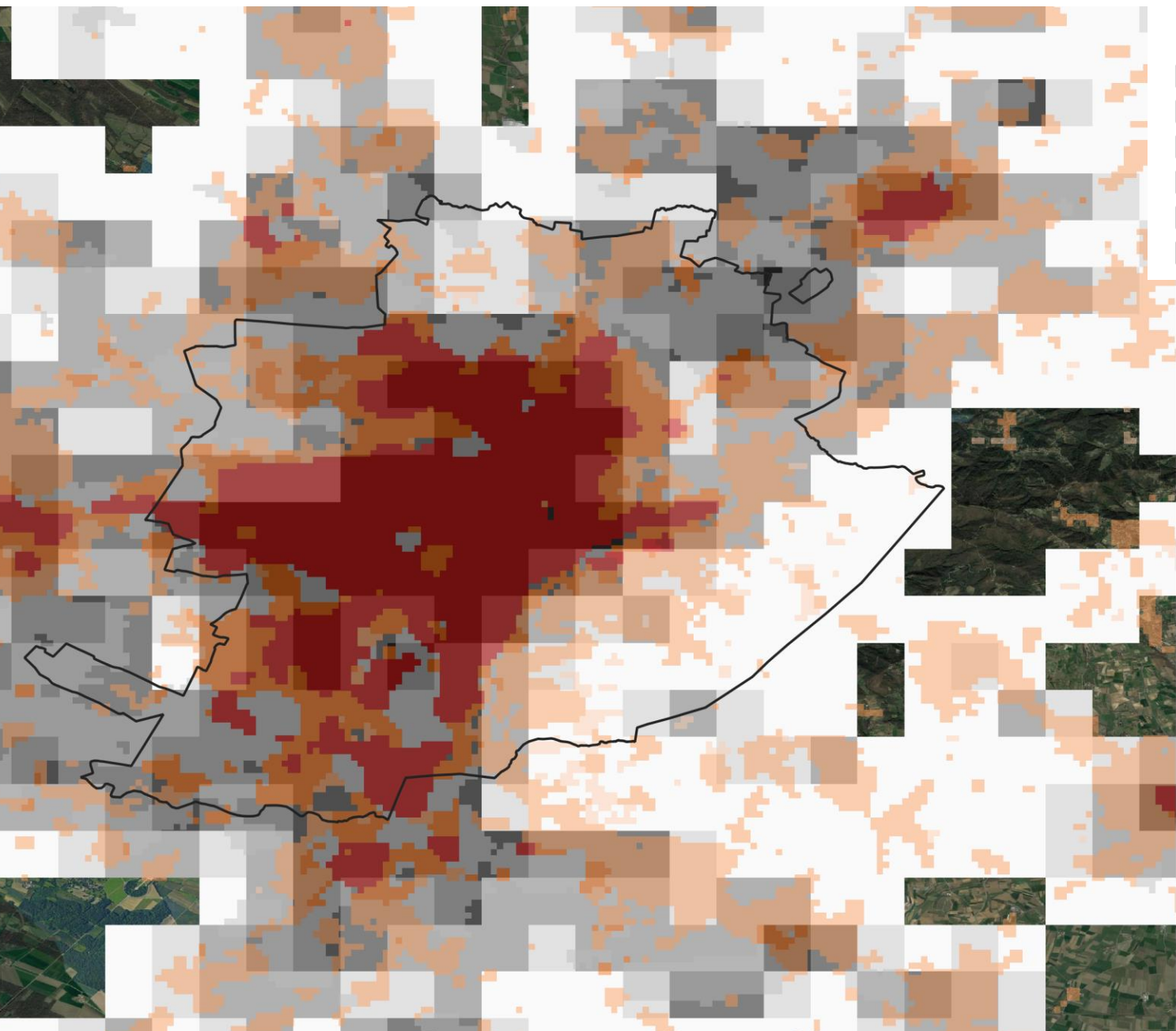
Comparison between AHF and LCZ from Demuzere 2020



Some mean values of AHF in the city center:

LCZ	AHF (W/m ²)	
1	---	
2	30-35	19-28
3	---	
4	---	
5	15-25	25-31
6	0.5-10	

Comparison between ISA and LCZ from Demuzere 2020



ISA (%)

- < 0.1
- 0.1 - 0.2
- 0.2 - 0.4
- 0.4 - 0.6
- 0.6 - 0.8
- 0.8 - 1

Torino

LCZ

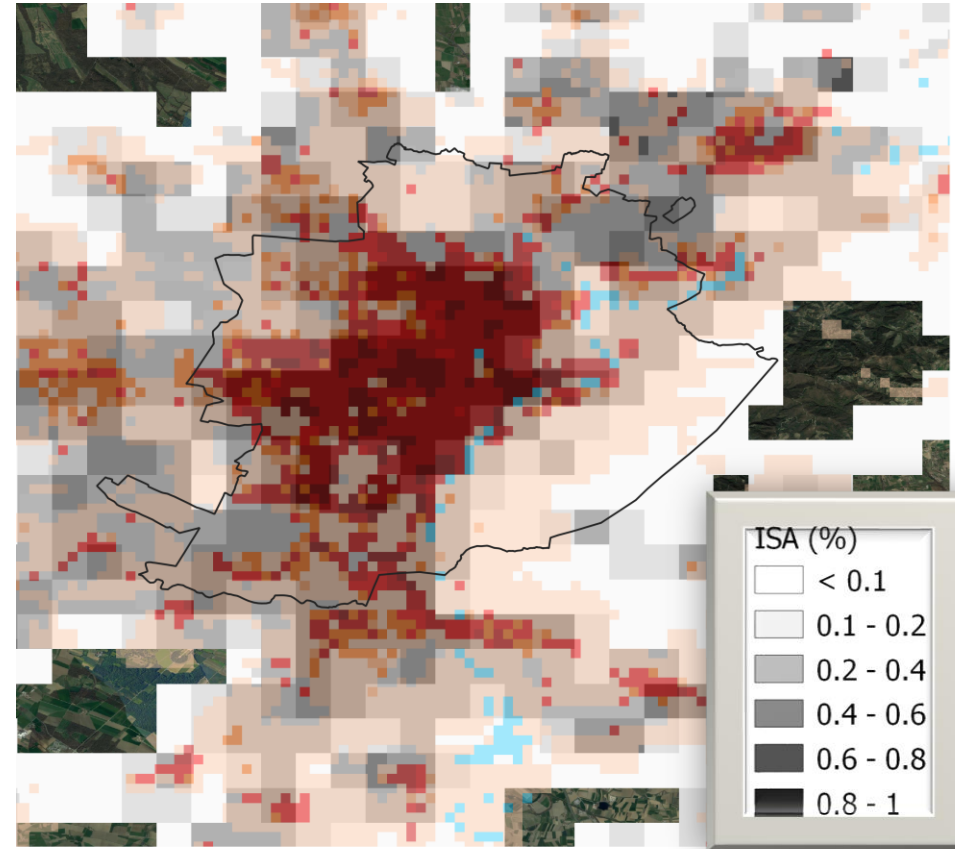
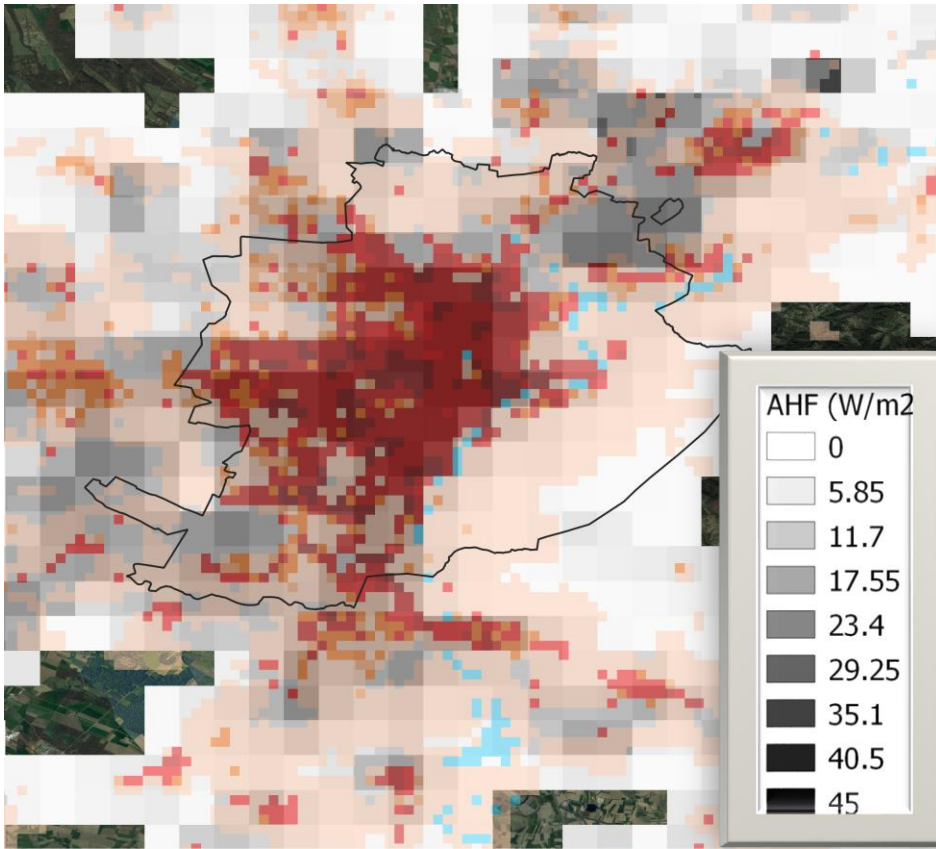
- 1. Compact high-rise
- 2. Compact midrise
- 3. Compact low-rise
- 4. Open high-rise
- 5. Open midrise
- 6. Open low-rise
- 7. Lightweight low-rise
- 8. Large low-rise
- 9. Sparsely built
- 10. Heavy industry

LCZ	ISA (%)
1	---
2	0.8-1
3	---
4	---
5	0.4-0.8
6	< 0.2

AHF

Comparison between

ISA



and LCZ from ECOCLIMAP-SG 2018

Torino

ECOCLIMAP-SG

- ECOCLIM.SG 3. rivers
- ECOCLIM.SG 4. bare land
- ECOCLIM.SG 5. bare rock
- ECOCLIM.SG 15. shrubs
- LCZ1. Compact high-rise
- LCZ2. Compact midrise

- LCZ3. Compact low-rise
- LCZ4. Open high-rise
- LCZ5. Open midrise
- LCZ6. Open low-rise
- LCZ7. Lightweight low-rise
- LCZ8. Large low-rise
- LCZ9. Sparsely built
- LCZ10. Heavy industry

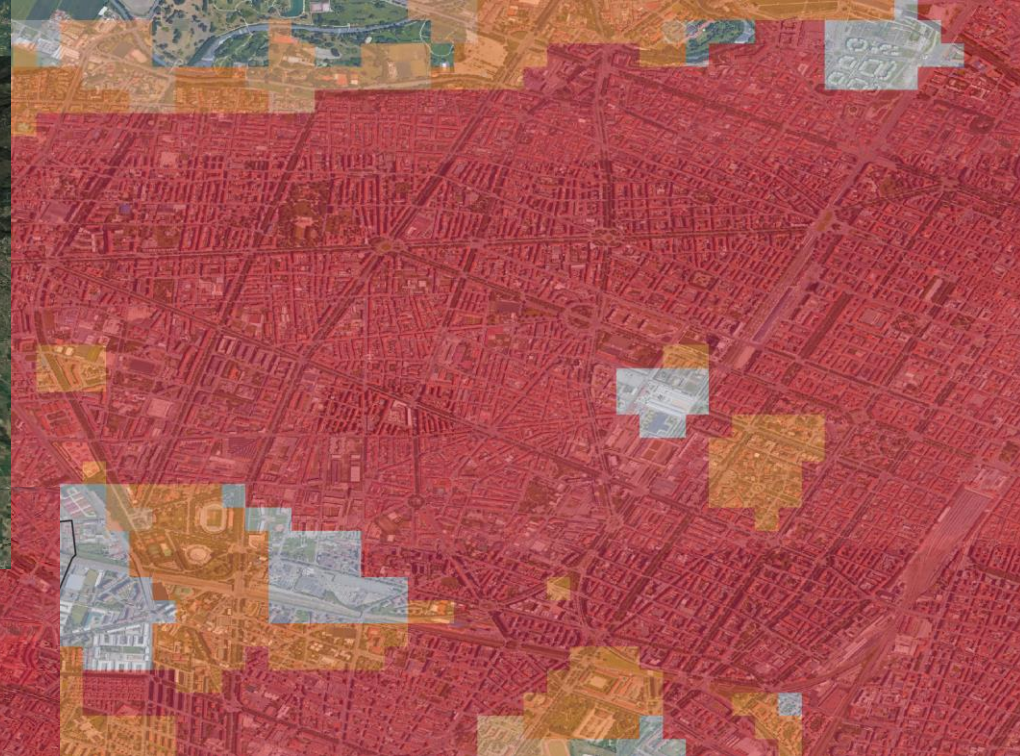
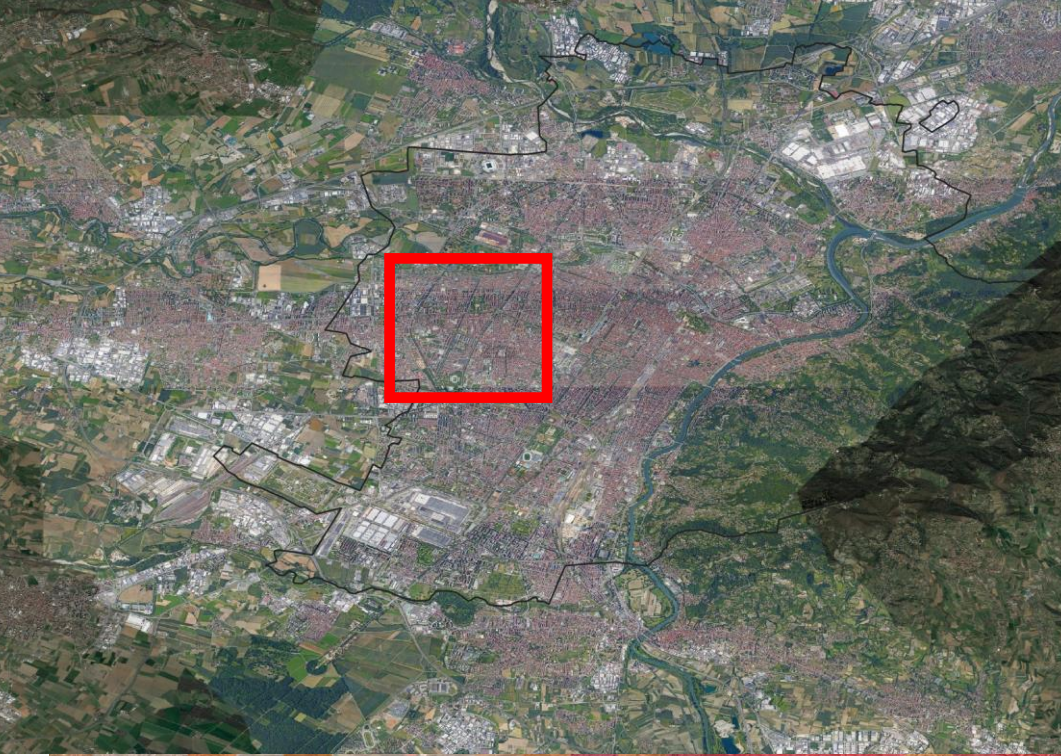


Need for lookup tables

LCZ from Demuzere 2020



- 2. Compact midrise
- 5. Open midrise
- 8. Large low-rise



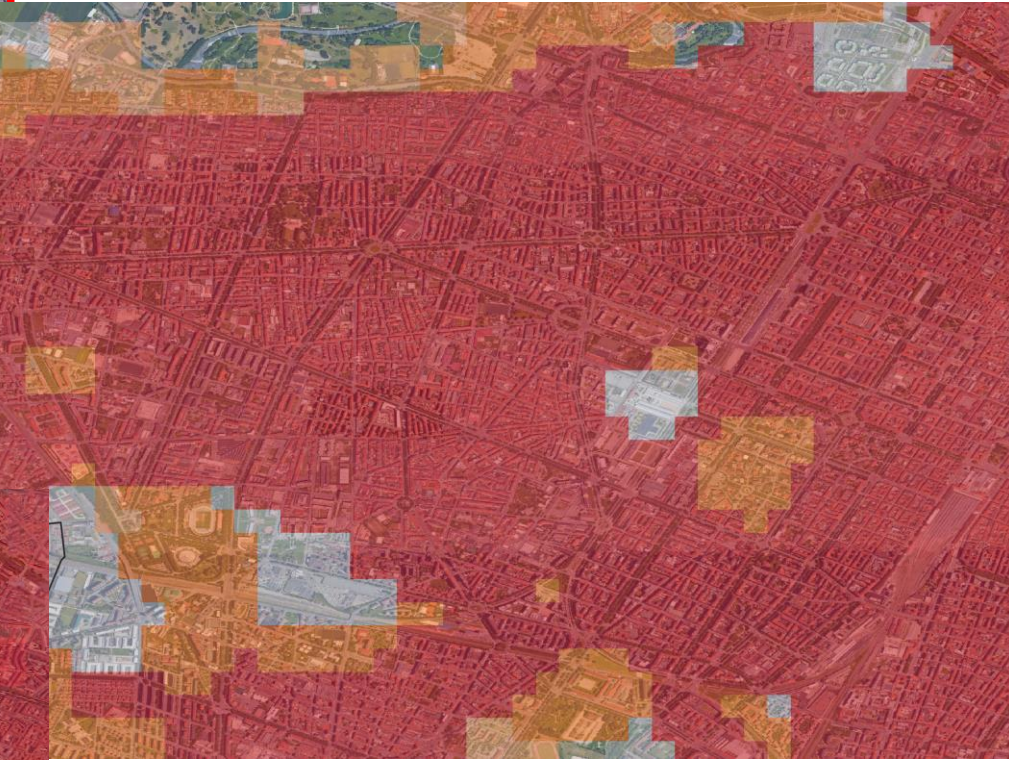
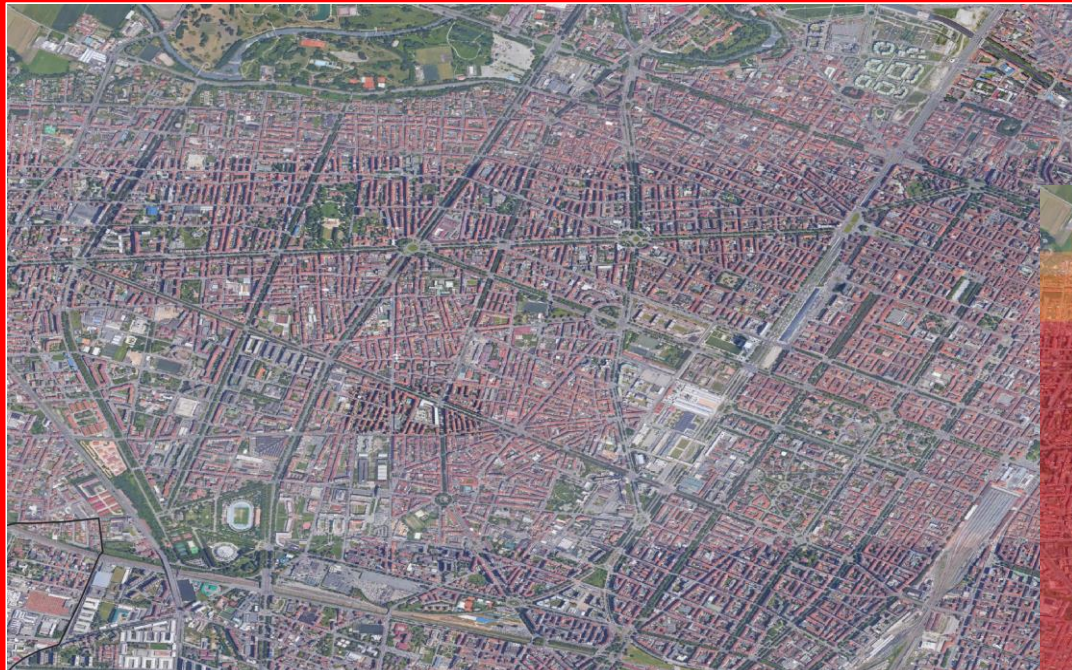
LCZ from ECOCLIMAP-SG

ECOCLIMAP-SG
2018 seems more
detailed for Turin!

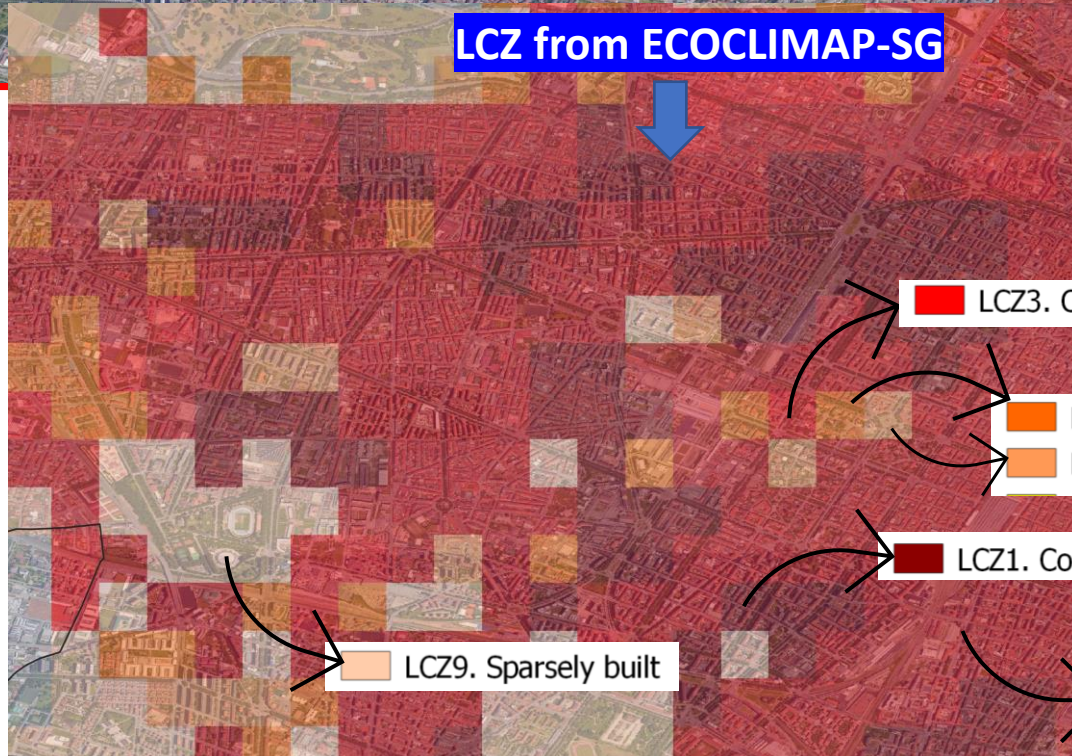
LCZ from Demuzere 2020



- 2. Compact midrise
- 5. Open midrise
- 8. Large low-rise



LCZ from ECOCLIMAP-SG



- LCZ3. Compact low-rise
- LCZ5. Open midrise
- LCZ6. Open low-rise
- LCZ1. Compact high-rise
- LCZ9. Sparsely built
- LCZ2. Compact midrise

ECOCLIMAP-SG 2018 seems more detailed for Turin!

References

- *Demuzere, M., Bechtel, B., Middel, A., & Mills, G. (2019). Mapping Europe into local climate zones. PLOS ONE, 14(4), e0214474.*
<https://doi.org/10.1371/journal.pone.0214474>
- *Demuzere, M.; Bechtel, B.; Middel, A.; Mills, G. (2020): European LCZ map. Figshare. Dataset.*
<https://doi.org/10.6084/m9.figshare.13322450>