BURROW-INFRASTRUCTURES IMPROVE SUCCESSFUL REINTRODUCTION

A HYPOTHESES

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INTRODUCTION

- We know, that common hamsters *(Cricetus cricetus)* use several burrows in the course of their active season[1;2].

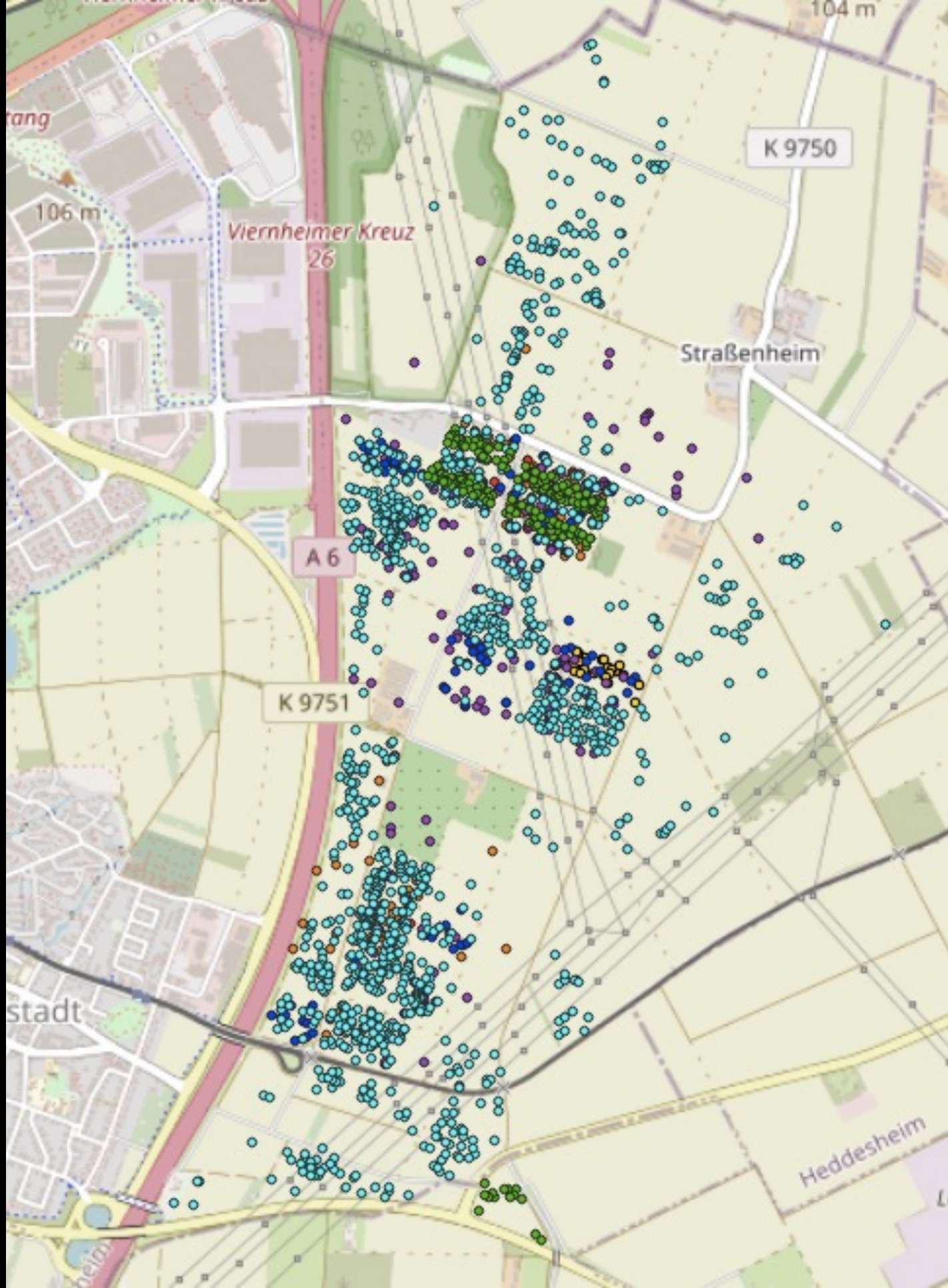
- Data we have collected on burrow density of our reintroduced population shows that the same burrows are inhabited over the course of several years, longer than the average hamster life span.

- This suggests, that several individuals make use of the same burrow at different times.

- Could this be a factor determining successful population establishment?

GIS ANALYSIS

- Way Points marking detected burrows, colour-coded by time of sampling.



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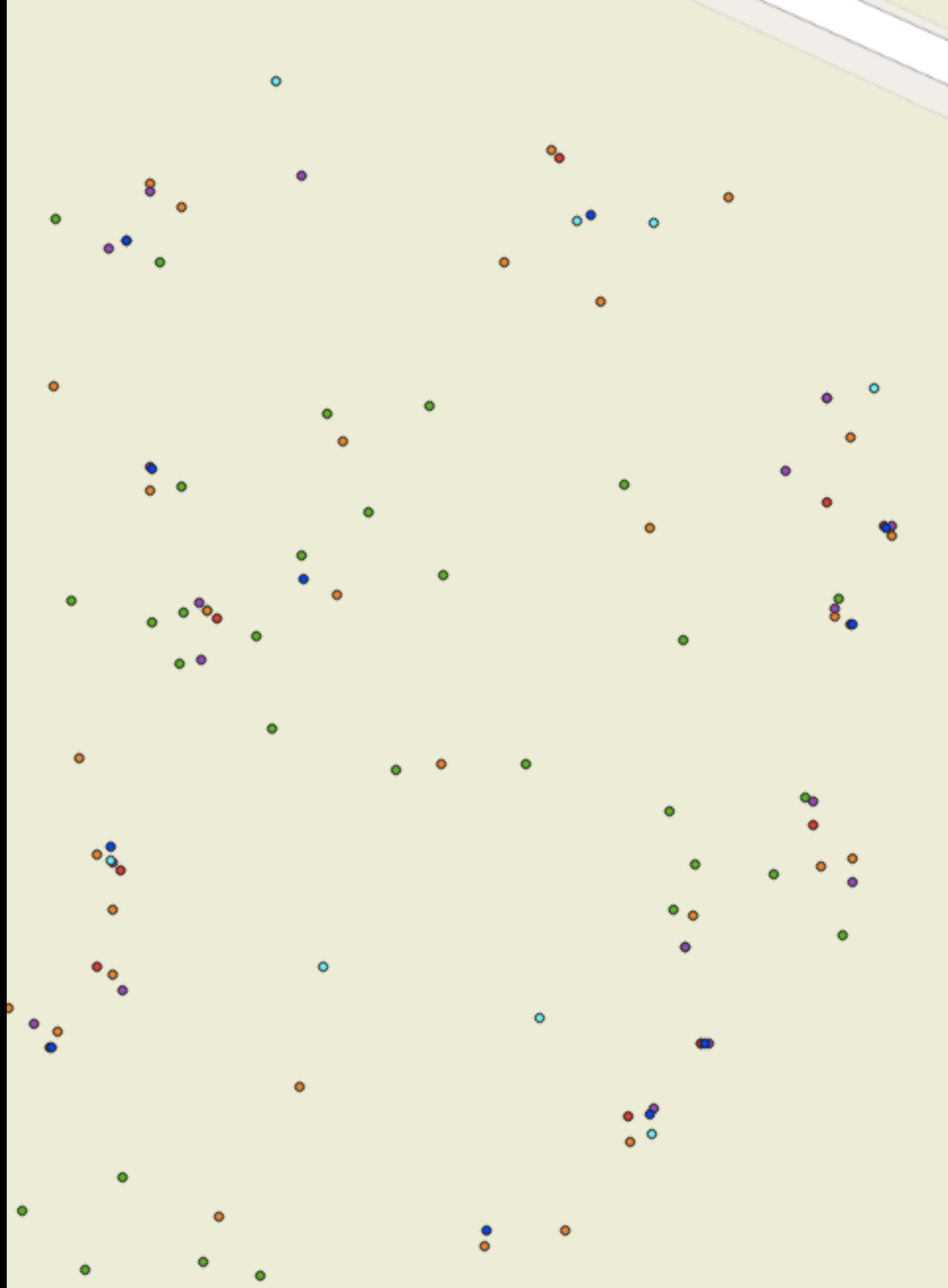

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- Way Points marking detected burrows, colour-coded by time of sampling.
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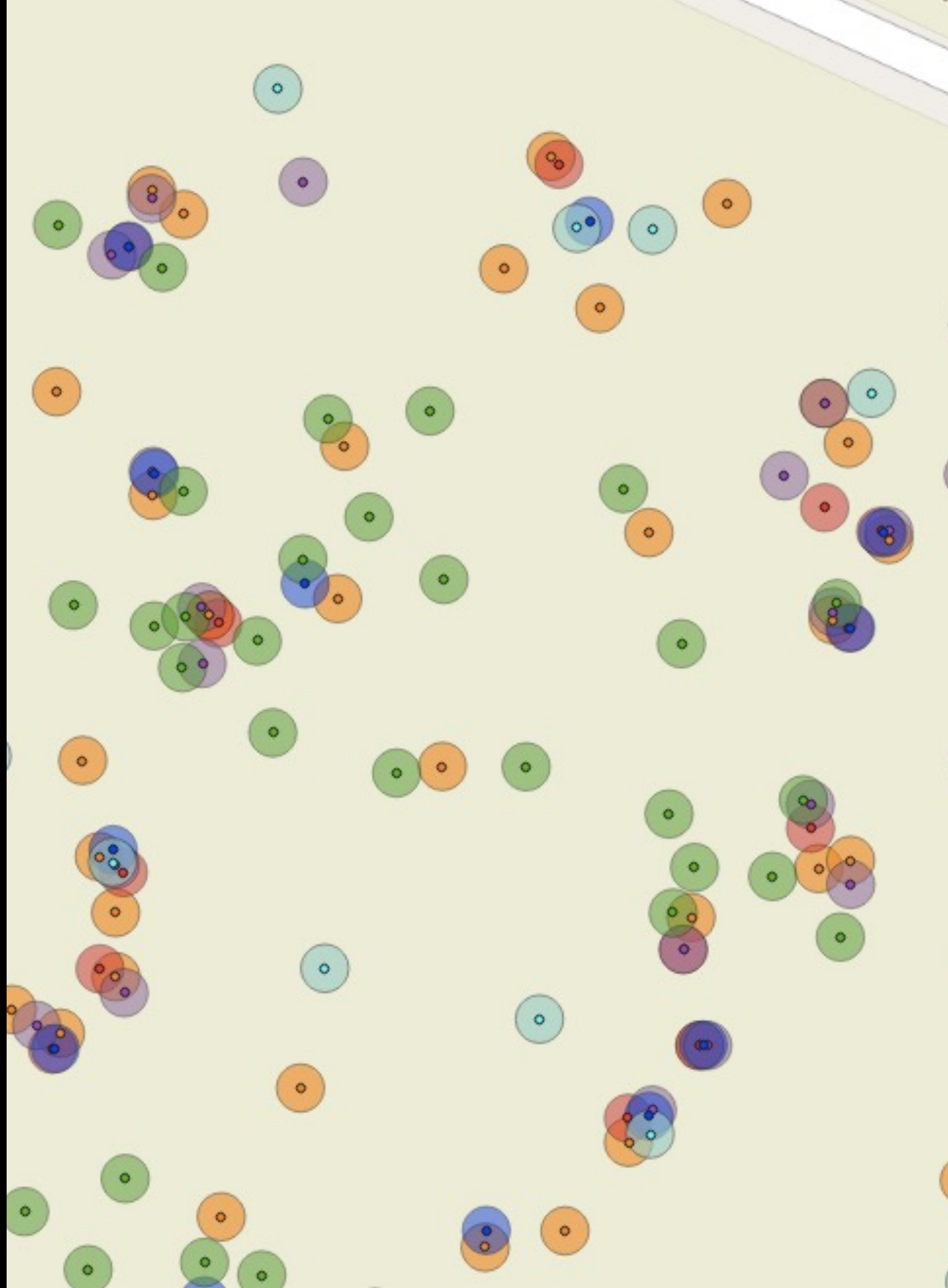

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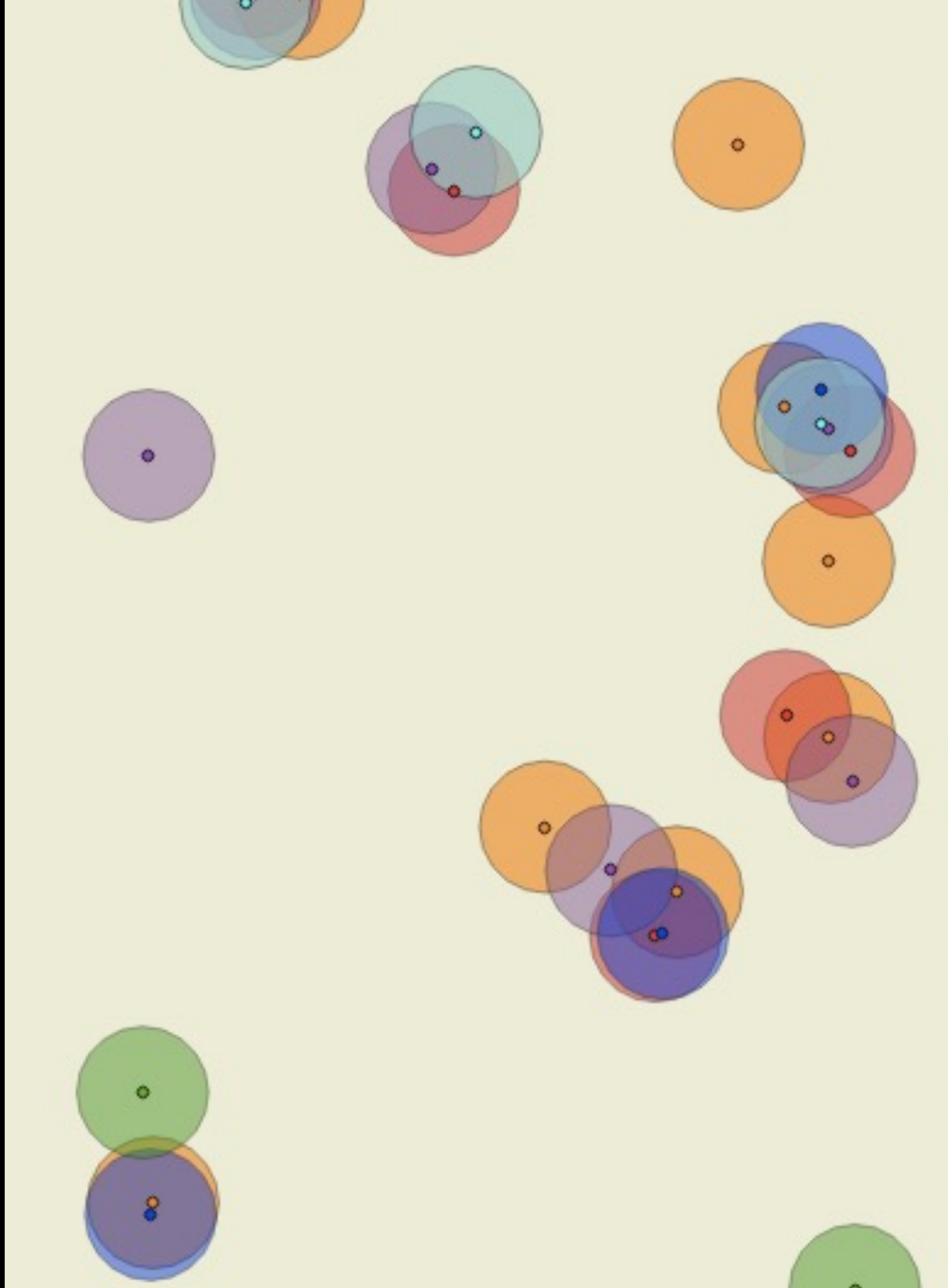

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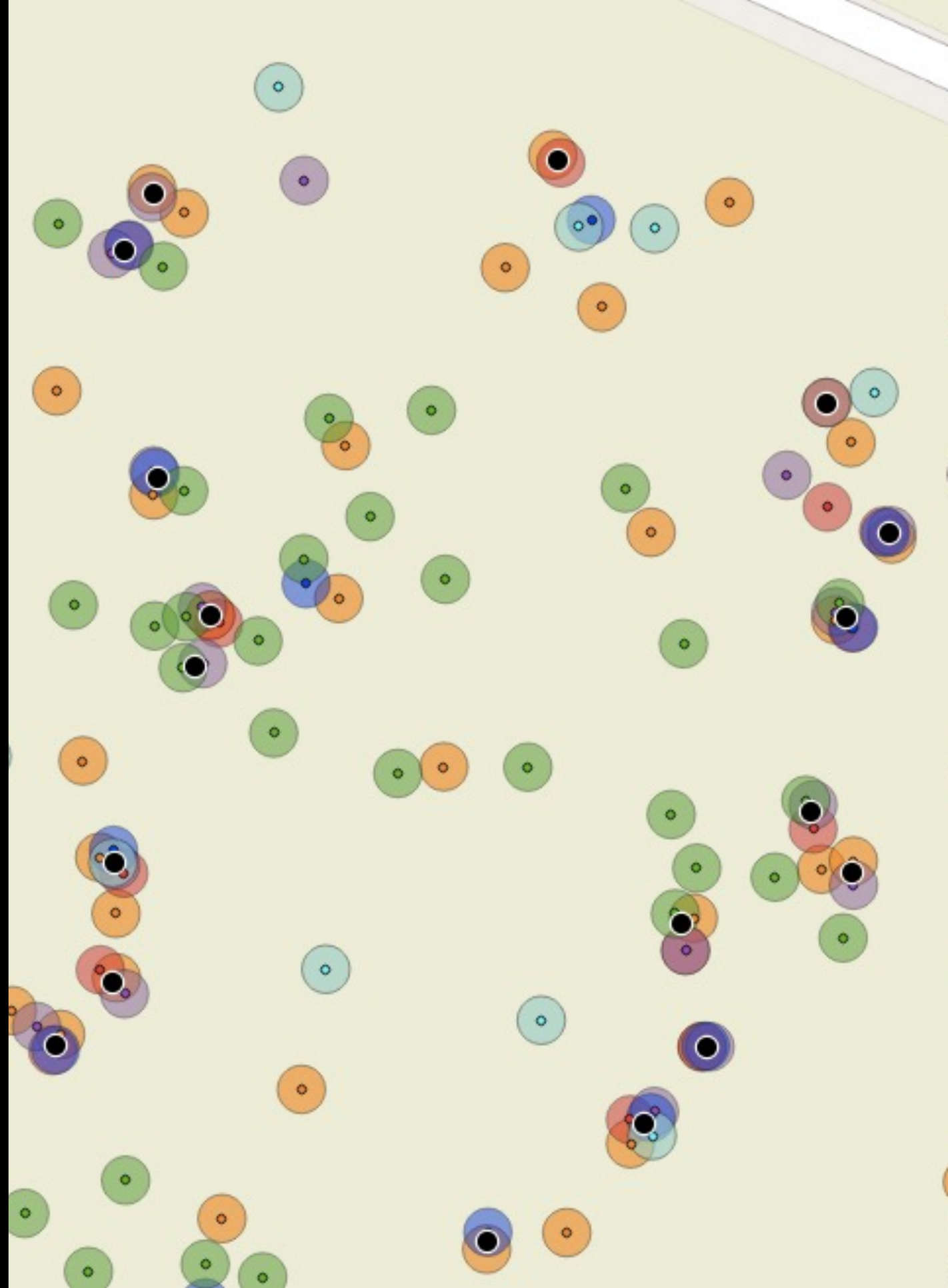
- New layer created, highlighting repeating burrows.



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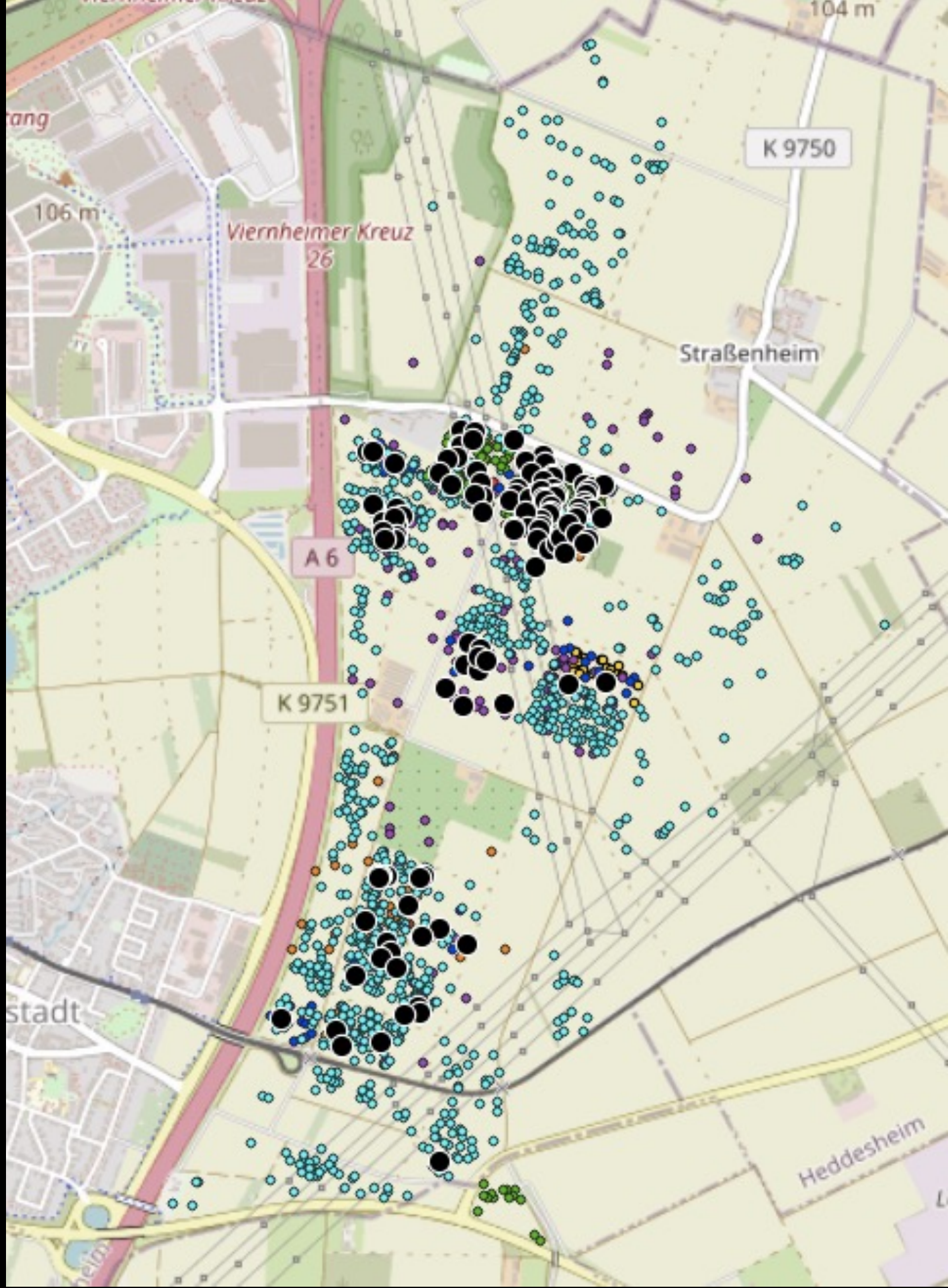
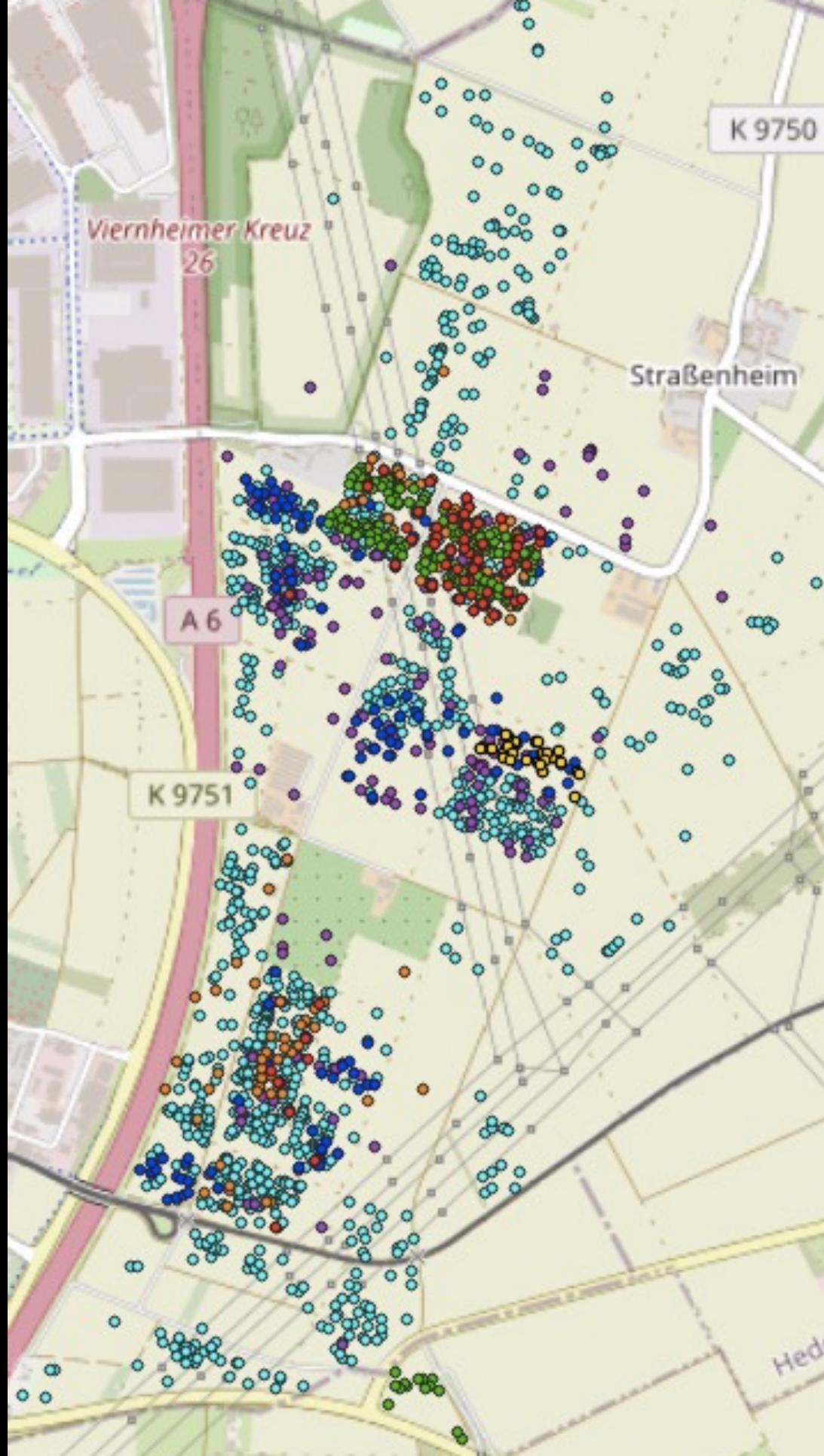


RESULTS

- We found a total of 24 burrows that had been used in three consecutive years
- 92 Burrows were used in two years. Of which…
  - …76 in consecutive years
  - …16 with a lapse, where the burrow was not found during a year’s census.
- This means 40 burrows were used over the span of three years, longer than the average life span of our hamsters.

THIS IS A MINIMUM RESULT

- Results are only ever as good as the input data.
- We did not sample the exact same area every year, reducing chance of overlap.



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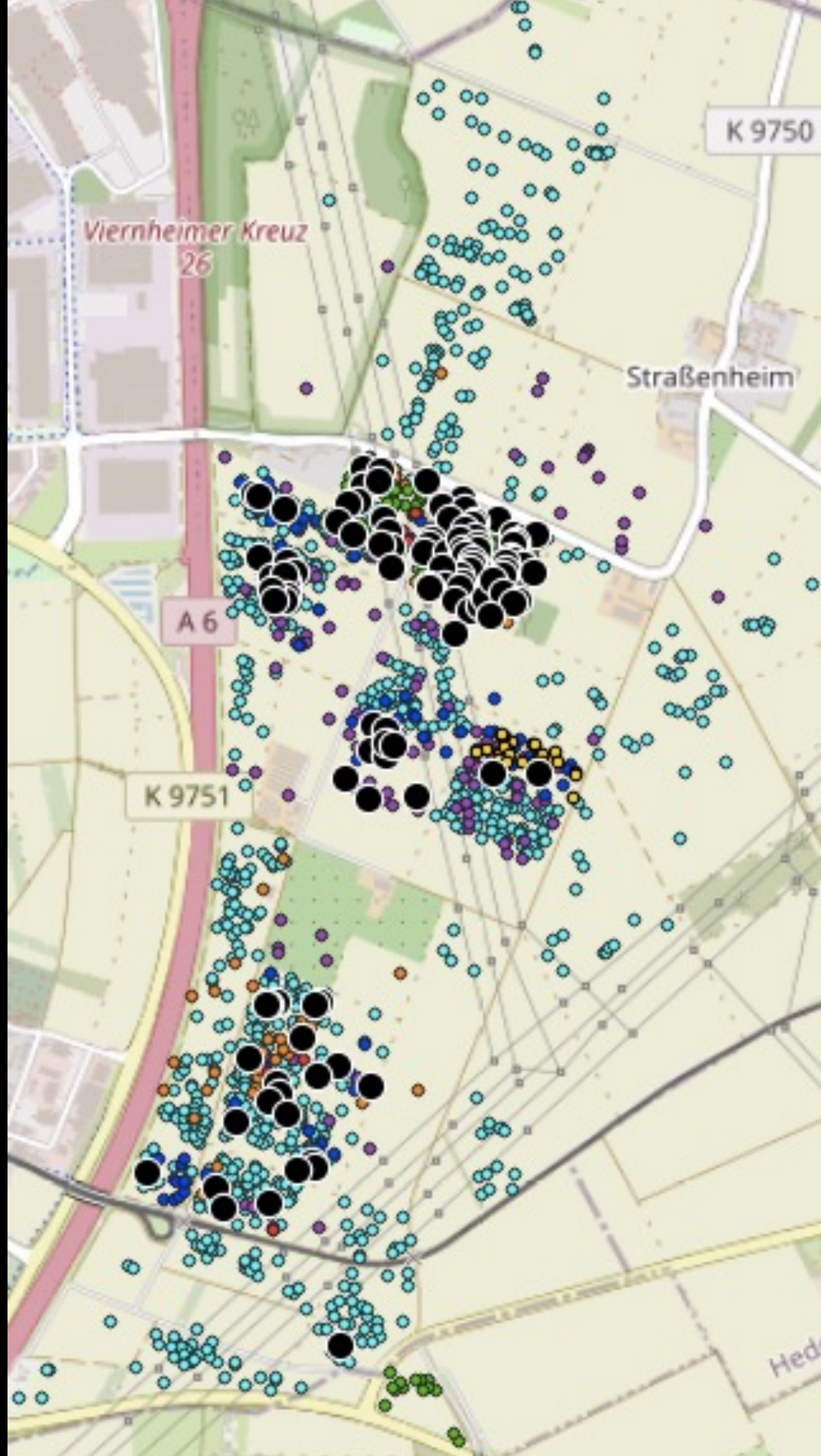


DISCUSSION

Ecological fitness is determined by efficiency.

- Reusing burrows saves energy.
- An existing infrastructure may improve chances of offspring survival once they leave their mother's burrow.
- Predation pressure may be alleviated.

CONCLUSION

- Burrows appear to be passed down through generations.
- Hamsters newly introduced to “virgin” territory with no burrow infrastructures may have a disadvantage.
- This effect should be considered when planning new release sites.

FURTHER RESEARCH

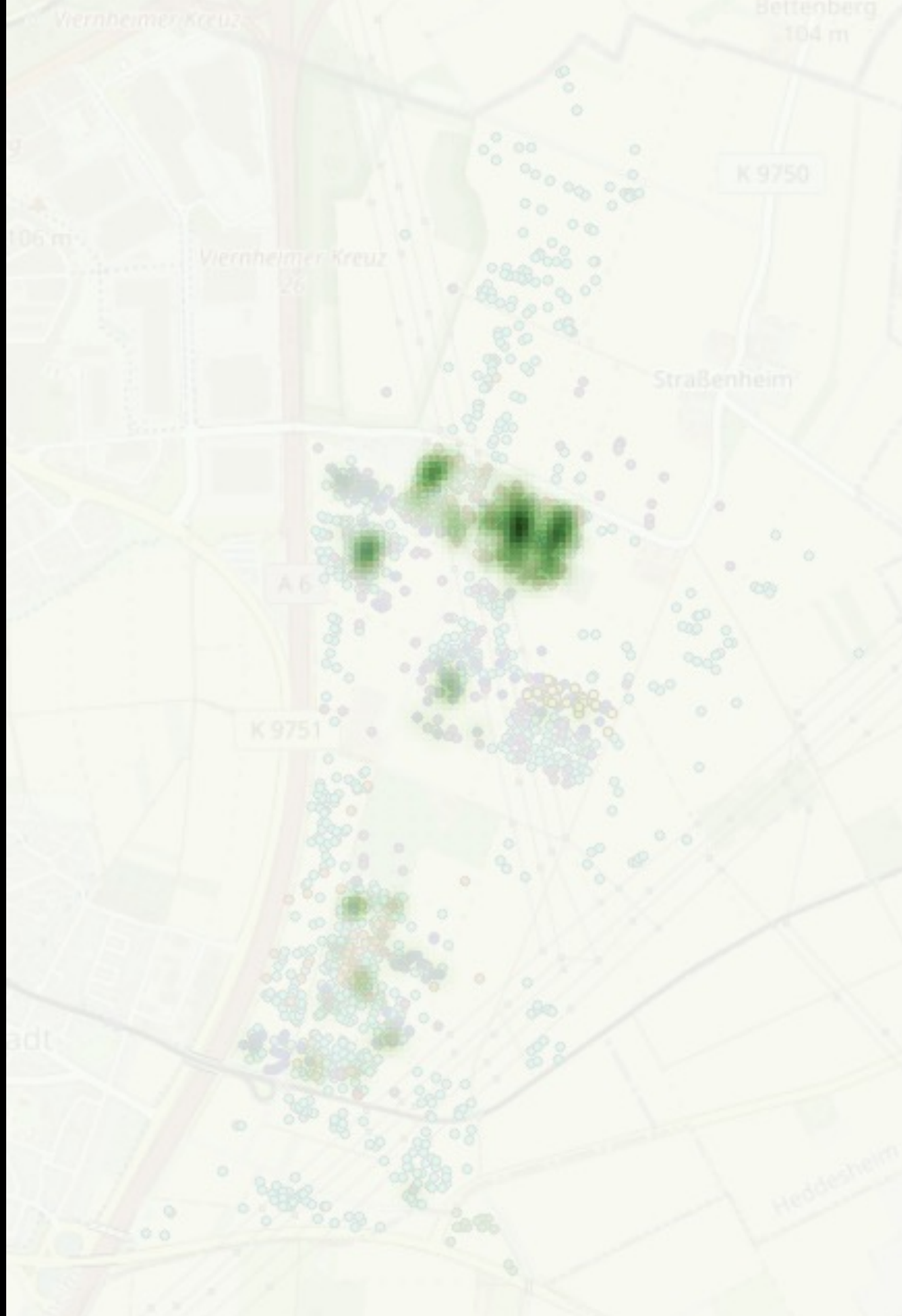
- Better coverage of entire area.
- Comparison between release sites with differing reintroduction success.

THANK YOU!

QUESTIONS?

BONUS - JUST AN IDEA: USING HEAT MAPS FOR HABITAT ANALYSES

- This is a heat map of burrow findings.
- Weighted by number of years the burrows were found.
- Could serve as a simple tool to identify better quality release sites.
- Could possibly help identify factors for reintroduction success.



LITERATURE

1) *Gorecki, A. (1997): Energy Flow Through The Common Hamster Population. -Acta theriol. 22: 25-66*

2) *Karaseva, E.V. & Shilayeva, L.M. (1965): The Structure of Hamster Burrows in Relation to its Age and the Season. -Bull. Moskauer Ges. der Naturforscher Abt. Biol. 70 (6): 30-39*

3) *Townsend, C.R., Begon, M & Harper, J.L. (2009): Essentials of Ecology, Third Edition. Chapter 3.5. Blackwell Publishing*

- *Images by Dr. Ulrich Weinhold and Malu Antrobus-Thorweihe.*

- *Software used for GIS analyses: Q-GIS; GPS used in fieldwork: Garmin*