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The changing geographies of ageing and age-mixing in Scotland, 2011-2022

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Background

Source: Centre for Ageing Better https://www.agewithoutlimits.org/

As Scotland's population ages, maintaining sustainable age structures is increasingly important for both economic and demographic sustainability (Scottish Government, 2021)

Scotland faces added challenges due to the uneven spatial distribution of its population and ongoing population decline in remote areas (Scottish Government, 2024)

Rising residential age segregation in England and Wales (Sabater et al. 2017, Sabater and Finney, 2023) raises concerns about reduced intergenerational mixing and social cohesion

Age-mixed neighbourhoods may have more opportunities for intergenerational interactions, which are beneficial for health and wellbeing (Zhong et al, 2020) but many people may prefer to live in similar-aged spaces

This study explores how the geographies of ageing and age-mixing are changing across Scotland's urban-rural hierarchy, with implications for demographic sustainability and age-inclusive communities

Research questions

1. How are patterns of age segregation and age diversity changing over time across the urban hierarchy?

2. How are changes in age diversity and population ageing over time spatially patterned?

Source: Centre for Ageing Better https://www.agewithoutlimits.org/

Data

2011 and 2022 Scottish Census data (2011 data zones)
- Population for single year of age
- Total population
- Median age

Urban-rural hierarchy (Scottish Government):
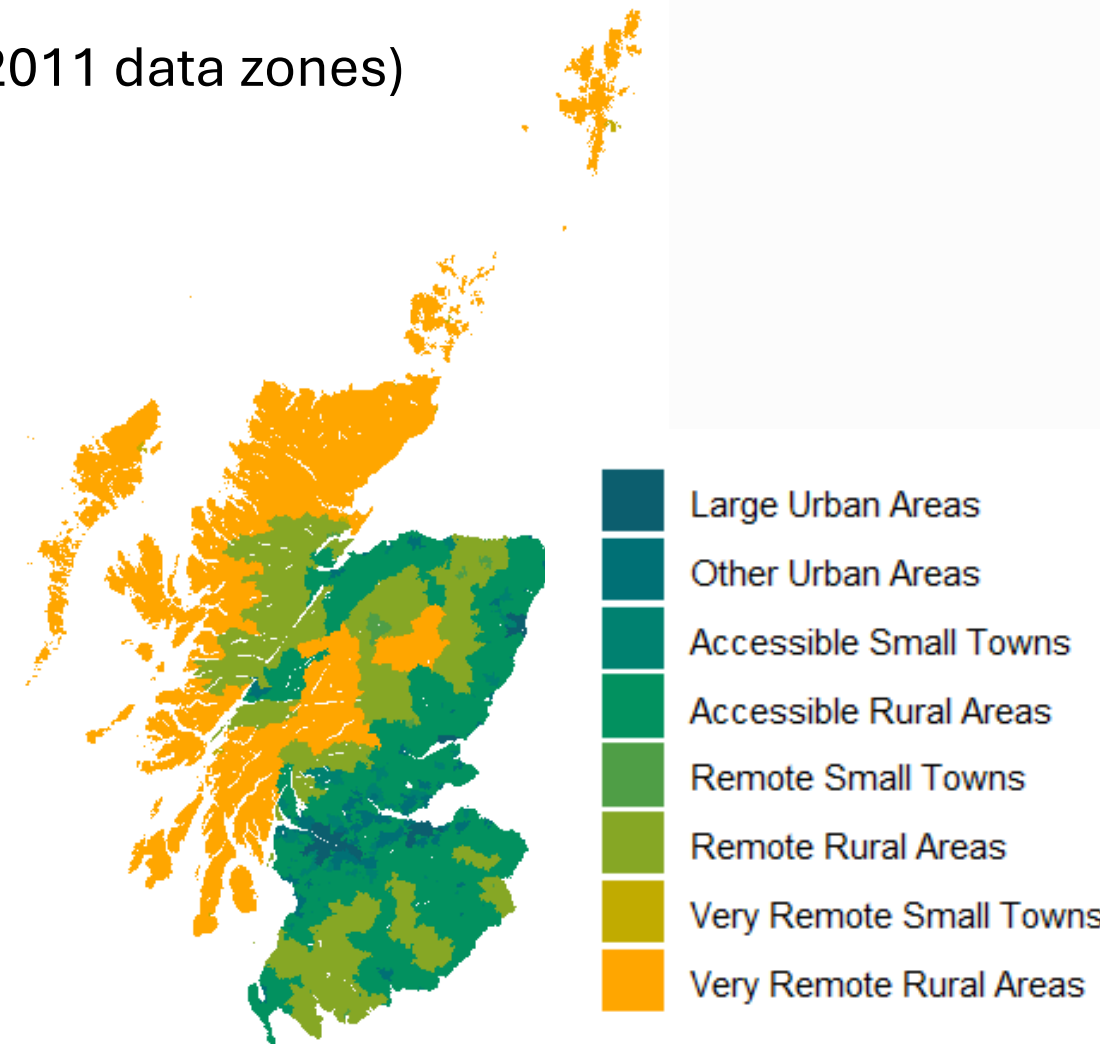
Large urban: ≥ 125,000 population

Other urban: 10,000 - 124,999 population

Small town: 3,000 – 9,999 population
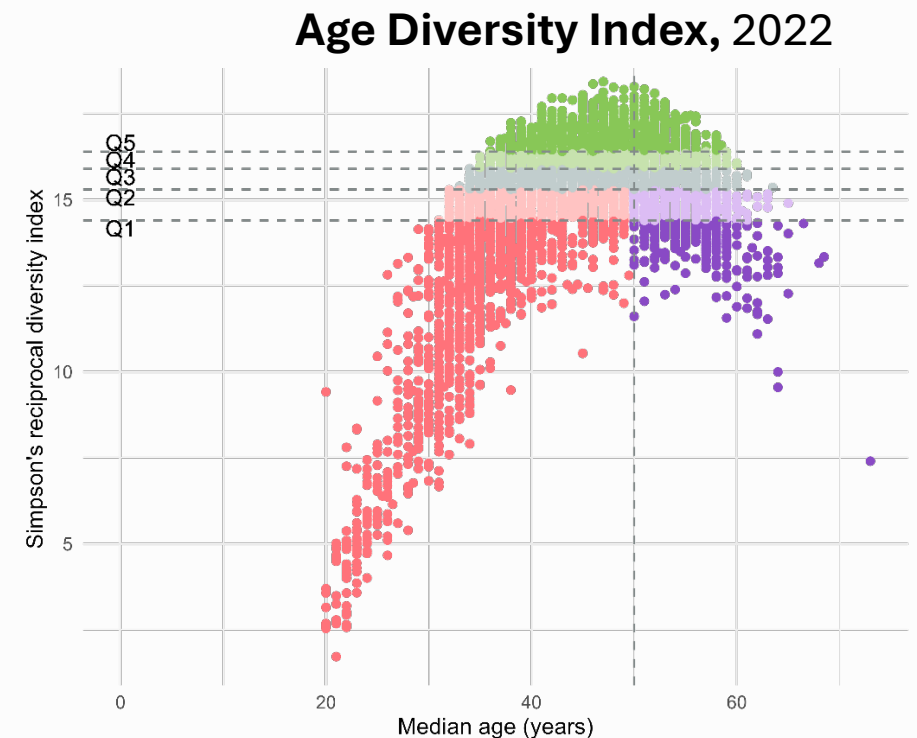
Accessible: <30 minutes from large settlement

Remote: ≥30 minutes – 1 hour from large settlement

Very remote: ≥1 hour from large settlement

Large Urban Areas
Other Urban Areas
Accessible Small Towns
Accessible Rural Areas
Remote Small Towns
Remote Rural Areas
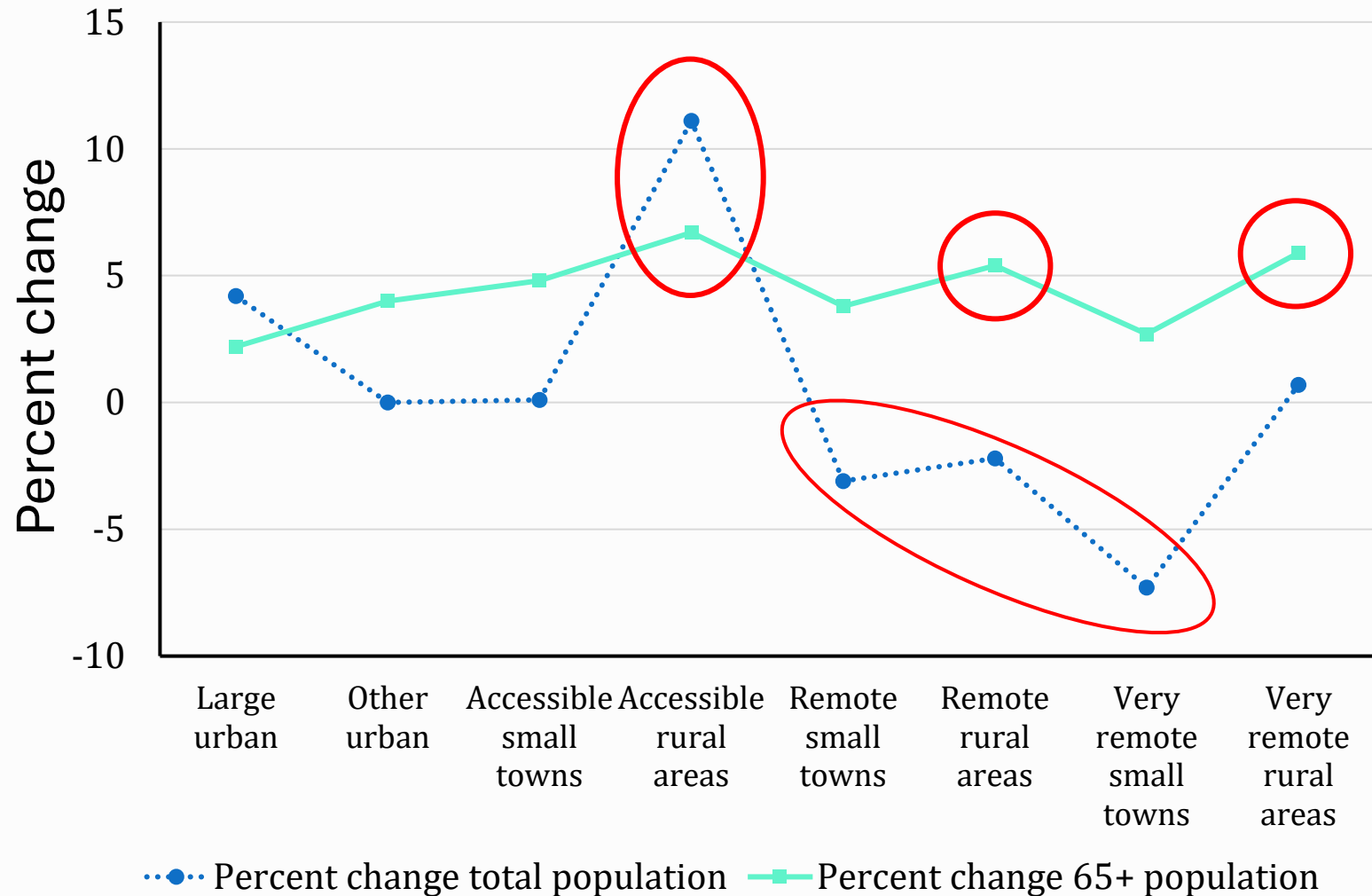Very Remote Small Towns
Very Remote Rural Areas

Analysis

1. **Dissimilarity Index** of segregation between "older" and "younger" groups calculated across data zones, within urban-rural categories
    - e.g., percent aged 24-39 and percent aged 65+

2. **Age Diversity Index**: Simpson's reciprocal index calculated across 5-year age groups for each data zone
    - Quintiles of age diversity and age diversity change were calculated to plot in graphs and maps

3. Local Indicators of Spatial Autocorrelation (**LISA**) of **age diversity change** to understand clusters and outliers of changing age diversity
    - Clusters: high-high, low-low, low-high, high-low
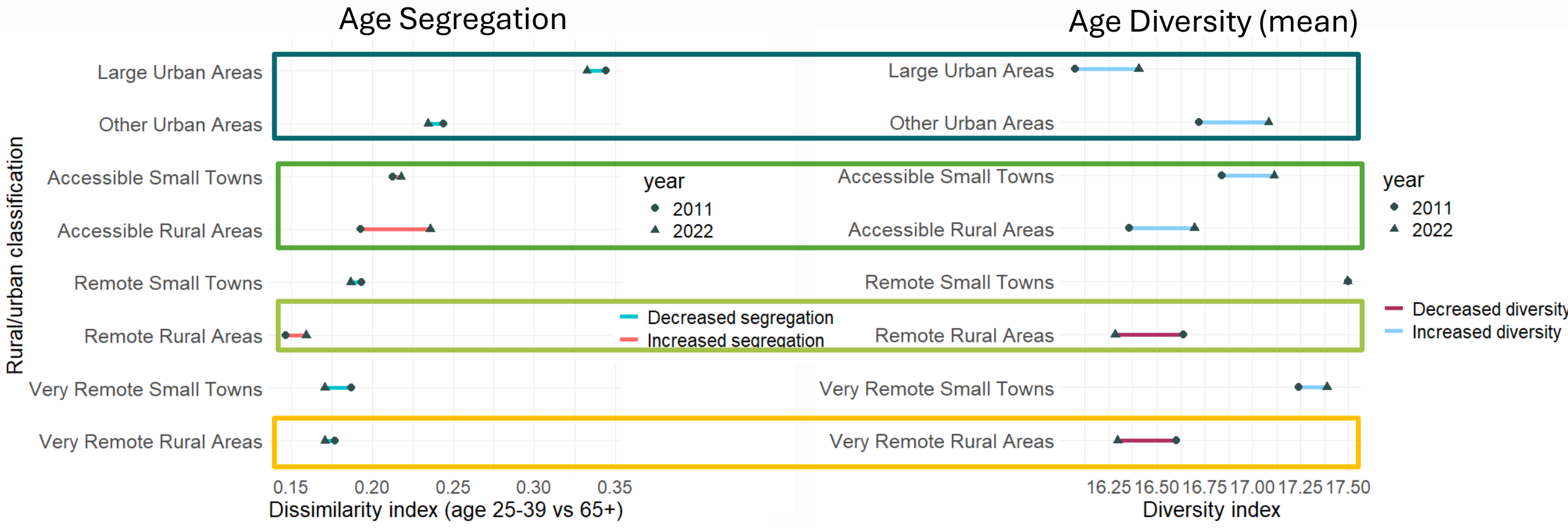

Age Diversity Index, 2022

The changing geographies of ageing, 2011-2022

- **Accessible rural areas** saw the largest increase in total population and 65+ population
- After accessible rural areas, **(very) remote rural areas** saw the largest increase in the 65+ population
- **Remote small towns and rural areas** and **very remote small towns** and saw decreases in population

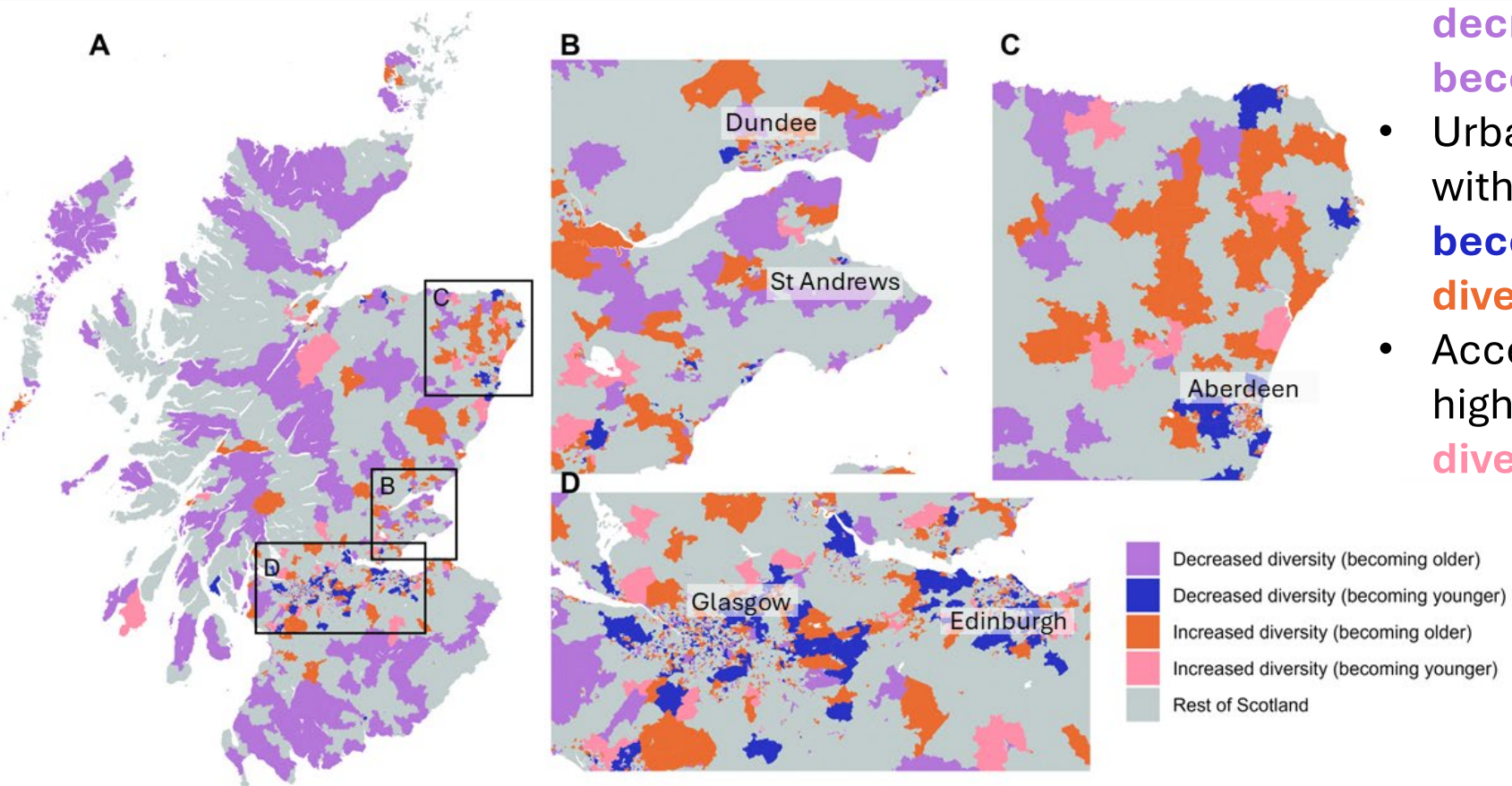# Changing local age mix across the urban-rural hierarchy

Spatial distribution of Age Diversity Index, 2022

- Many remote rural areas, especially highlands, islands, and borders, have **low age diversity and older age distribution**
- Scotland's large cities and accessible areas have a mix of **very age-diverse** areas and **younger, less age-diverse areas**

Legend:
- Q1 (Least diverse), older
- Q1, younger
- Q2, older
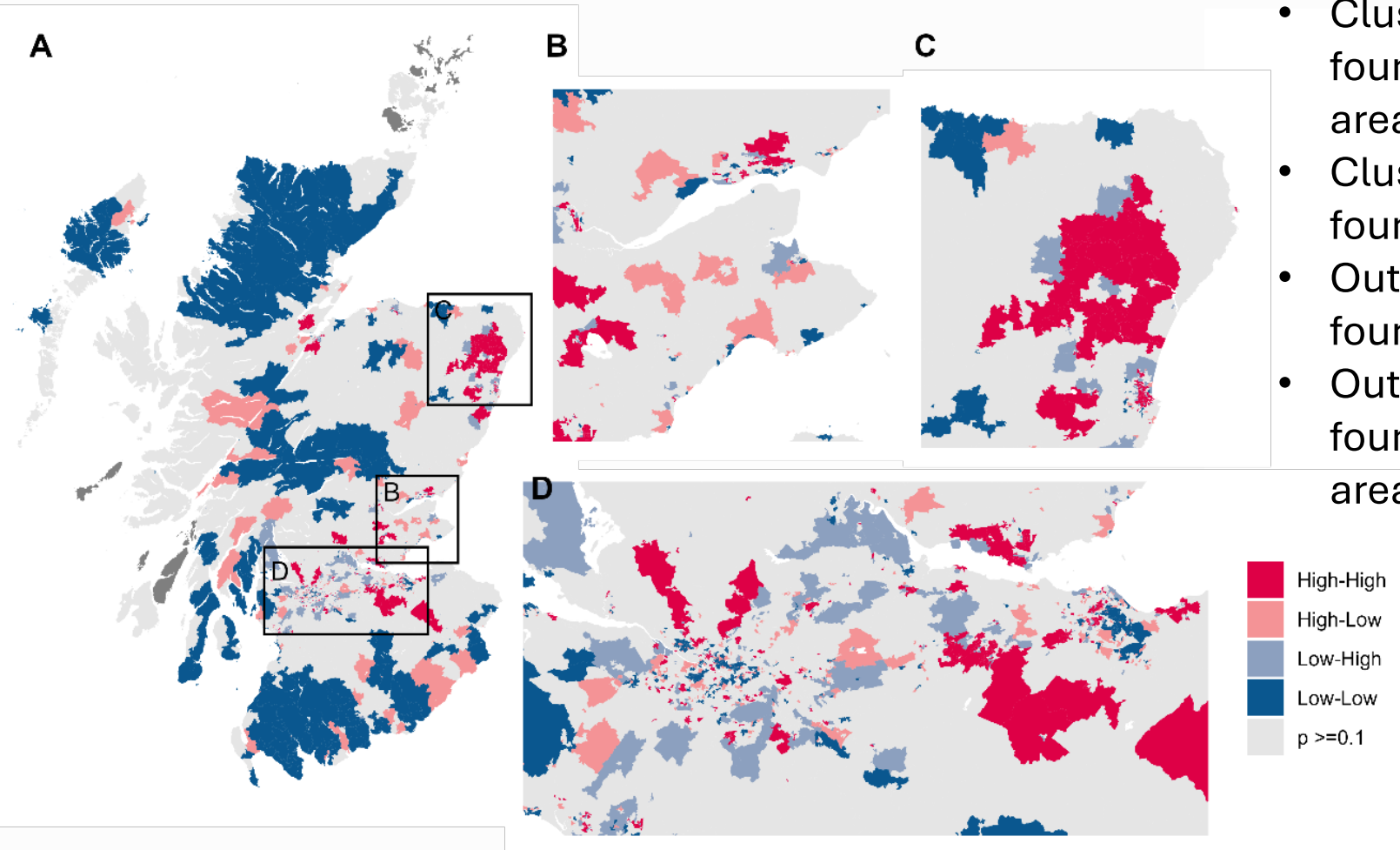- Q2, younger
- Q3
- Q4
- Q5 (Most diverse)

Spatial distribution of change in Age Diversity Index, 2011-2022

- A large proportion of remote areas have **decreasing age diversity and are becoming older** over time
- Urban areas have a mix of neighbourhoods with **decreased age diversity and becoming younger**, and **increased age diversity and becoming older**
- Accessible rural areas have a relatively high proportion of areas of **increasing age diversity but becoming younger** over time

Decreased diversity (becoming older)
Decreased diversity (becoming younger)
Increased diversity (becoming older)
Increased diversity (becoming younger)
Rest of Scotland

Spatial distribution of clusters of change in Age Diversity Index (LISA), 2011-2022

- Clusters of **decreasing age diversity** are found in remote rural areas and some urban areas
- Clusters of **increasing age diversity** are found in accessible areas and urban areas
- Outliers with **decreasing age diversity** are found in accessible and urban areas
- Outliers with **increasing age diversity** are found in some remote areas, accessible areas, and urban areas

Legend:
- High-High
- High-Low
- Low-High
- Low-Low
- p >=0.1

Changes in age mixing varied considerably across area types

Urban areas:

- Age segregation is highest (and age diversity is lowest) in large urban areas, although these areas are becoming less age-segregated and more age-diverse over time
- Outliers of increasing or decreasing age diversity in urban areas suggests increasing polarisation between age groups in some urban places

Accessible areas:

- Accessible rural areas have seen both increased age segregation and increased age diversity
- This may be due to a combination of ageing in place and in-migration by families to particular localities

(Very) remote areas:

- Remote rural areas have seen decreases in age diversity
- Clusters of rural areas of decreasing diversity in combination with population ageing suggests threat to demographic resilience

Source: Centre for Ageing Better https://www.agewithoutlimits.org/

Challenges for Scotland's Ageing Population: Emerging Patterns and Policy Implications

These findings highlight specific challenges that Scotland is facing in the context of population ageing:

- Rural-urban variations in the age mix of small areas may pose a threat to the demographic and economic sustainability of some areas in Scotland – especially remote rural areas (Scottish Government, 2024)

- Increased polarisation between age groups in urban and accessible areas could widen or create new inequalities for older people living in these areas (Hagestad and Uhlenberg, 2006; Sabater and Finney, 2023) and reduce opportunities for intergenerational mixing (Buffel et al, 2014, Fang et al, 2023)

Source: Centre for Ageing Better https://www.agewithoutlimits.org/

Questions for the future (to be continued!):
- What is driving these changes in Scotland? E.g., Age-selective migration, mortality inequalities, housing dynamics?
- Does neighbourhood age mix matter for health and wellbeing; and for neighbourhood belonging?

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