

CAN WE USE MOBILITY DATA TO ASSESS THE IMPACTS OF URBAN GREEN SPACE INTERVENTIONS?

도시 녹지 공간 개입의 영향을
평가하기 위해 이동성
데이터를 사용할 수 있습니까



Medical
Research
Council

Mark Green & Wenjing Zhang



RATIONALE



Urban green and blue spaces (UGBS):

- Places to exercise
- Social opportunities for meeting friends
- Chance to reconnect with nature
- Co-benefits for tackling climate change



Health and
wellbeing



Key question: How can we design and adapt UGBS
to promote health and wellbeing?

NATURAL EXPERIMENTS



Where we can identify changes in UGBS provision, these present novel opportunities to evaluate the impact of those changes as a *natural experiment*

1. Baseline population



2. Changes to UGBS



4. Follow up over time



3. Identify control group with no changes



NEW FORMS OF DATA



To understand whether changes in urban green and blue spaces (UGBS) might impact health and wellbeing, we need to first:

- Identify if changes to UGBS led to more people using them
- Mobility data can help us to evaluate utilization, however few examples demonstrating if valuable

CASE STUDIES



**Rewilding Frodsham
Golf Course**



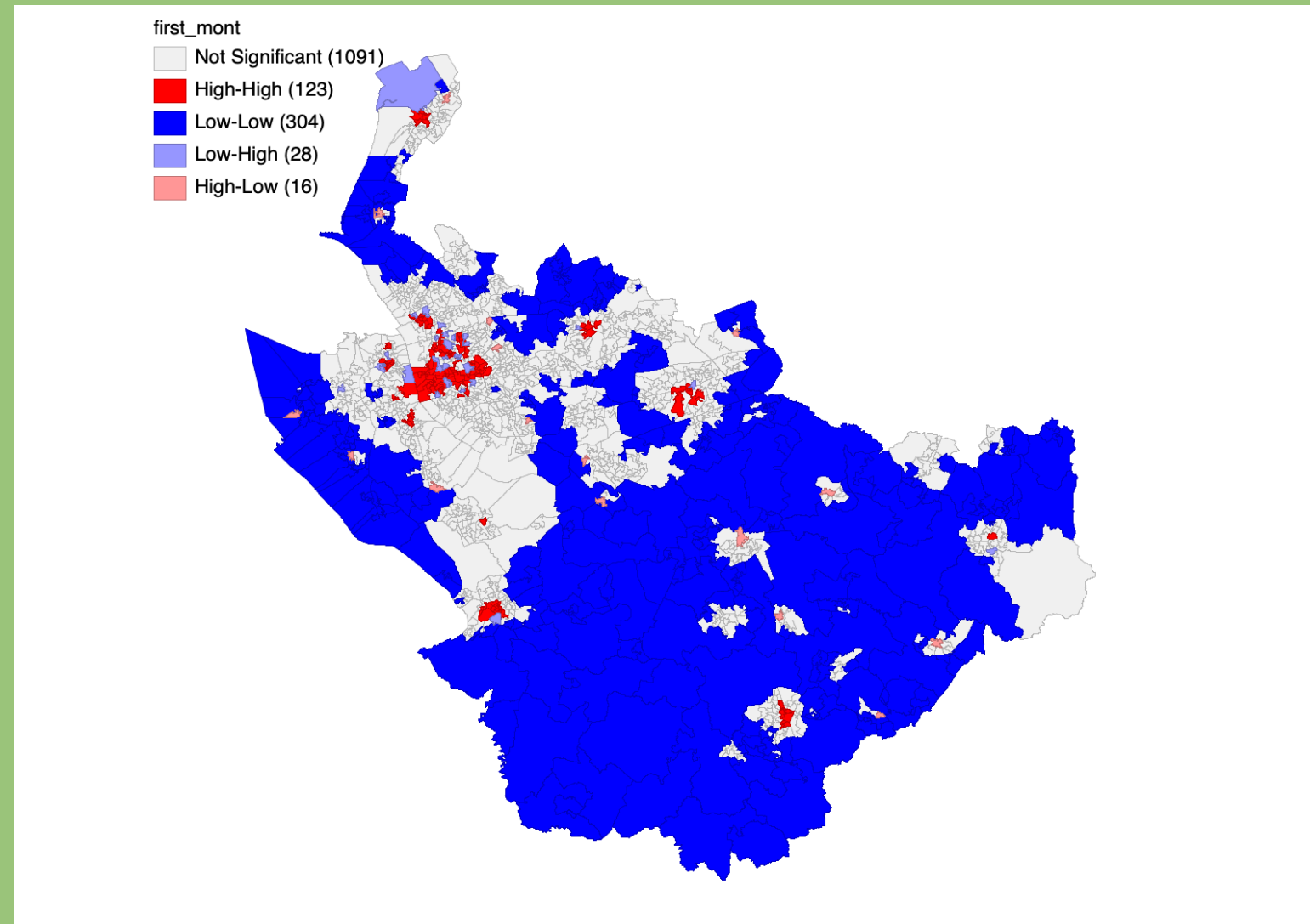
**Wildflower planting
in Liverpool**

DATA

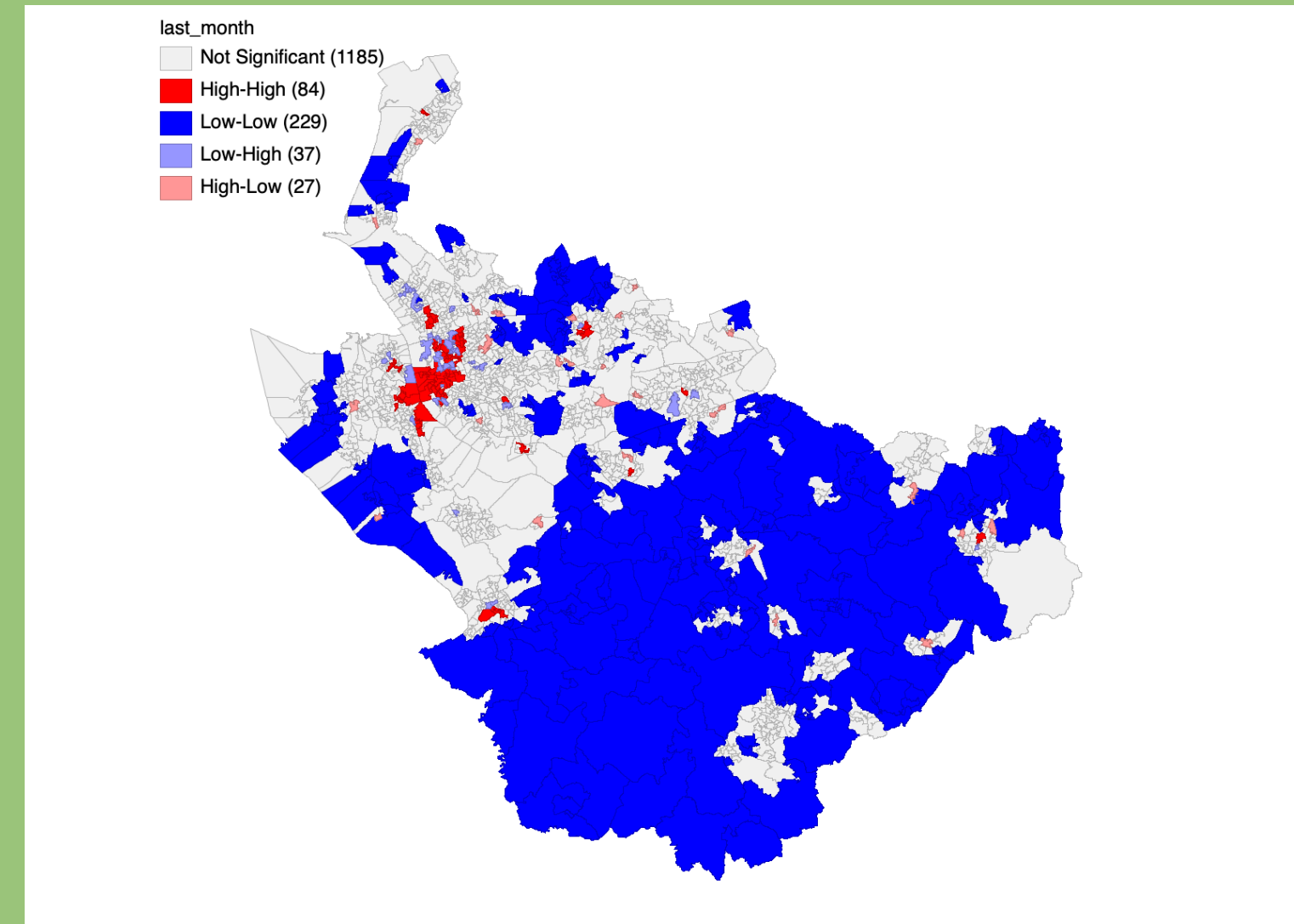


- Geolytix mobile phone derived GPS records
- August 2021 to July 2022
- Anonymous monthly counts of people by H3 geometry (~200m² hexagon, 28m edge)
- Matched mobility counts to green space locations using Ordnance Survey Open Green Layer

DATA



Aug 2021



July 2022

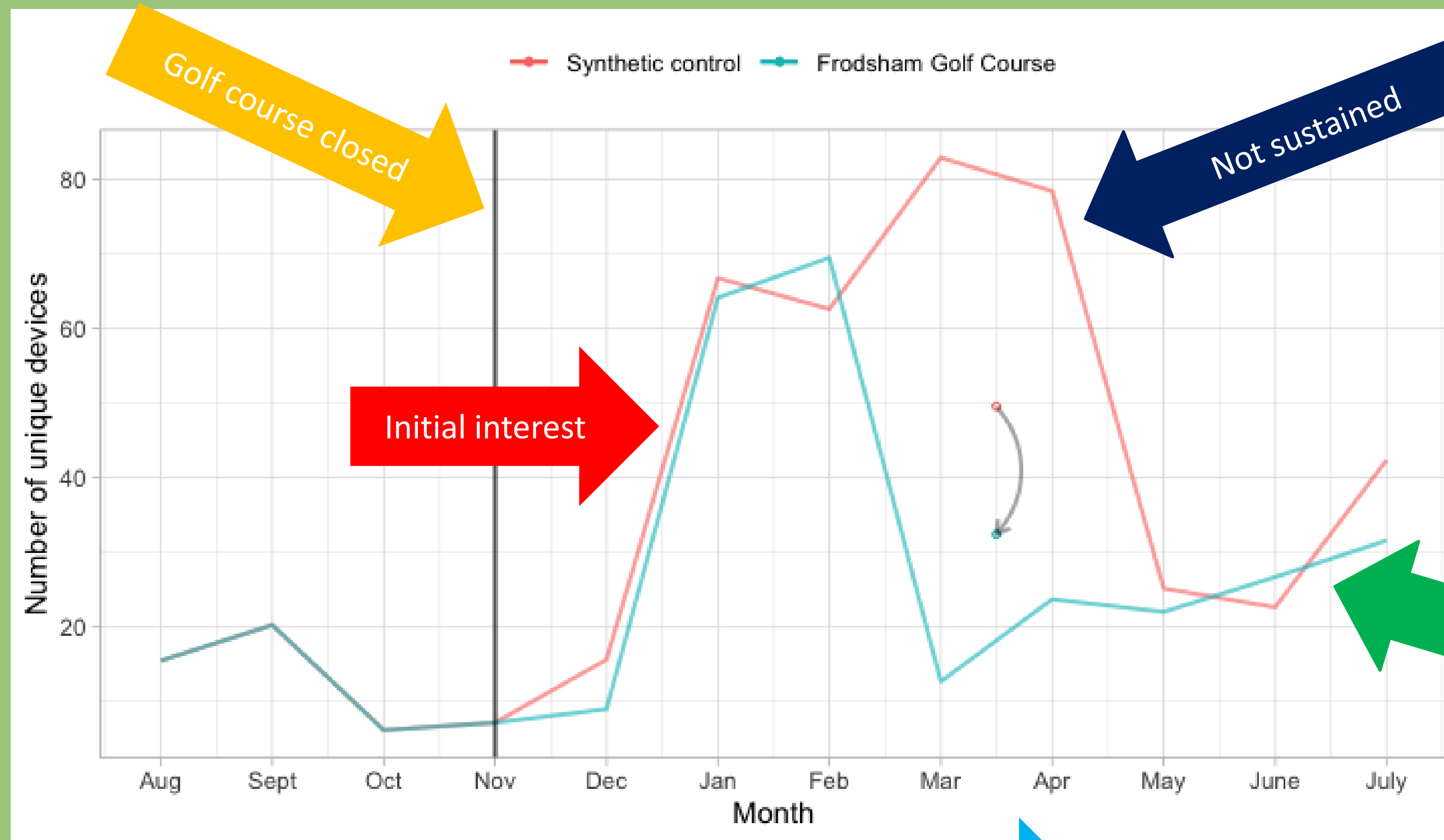
Maps by Wenjing Zhang

STATISTICAL ANALYSIS



- Synthetic control – extension of difference-in-difference methods
- Create matched control for intervention areas to give counterfactual of what might have been expected to occur if intervention did not happen

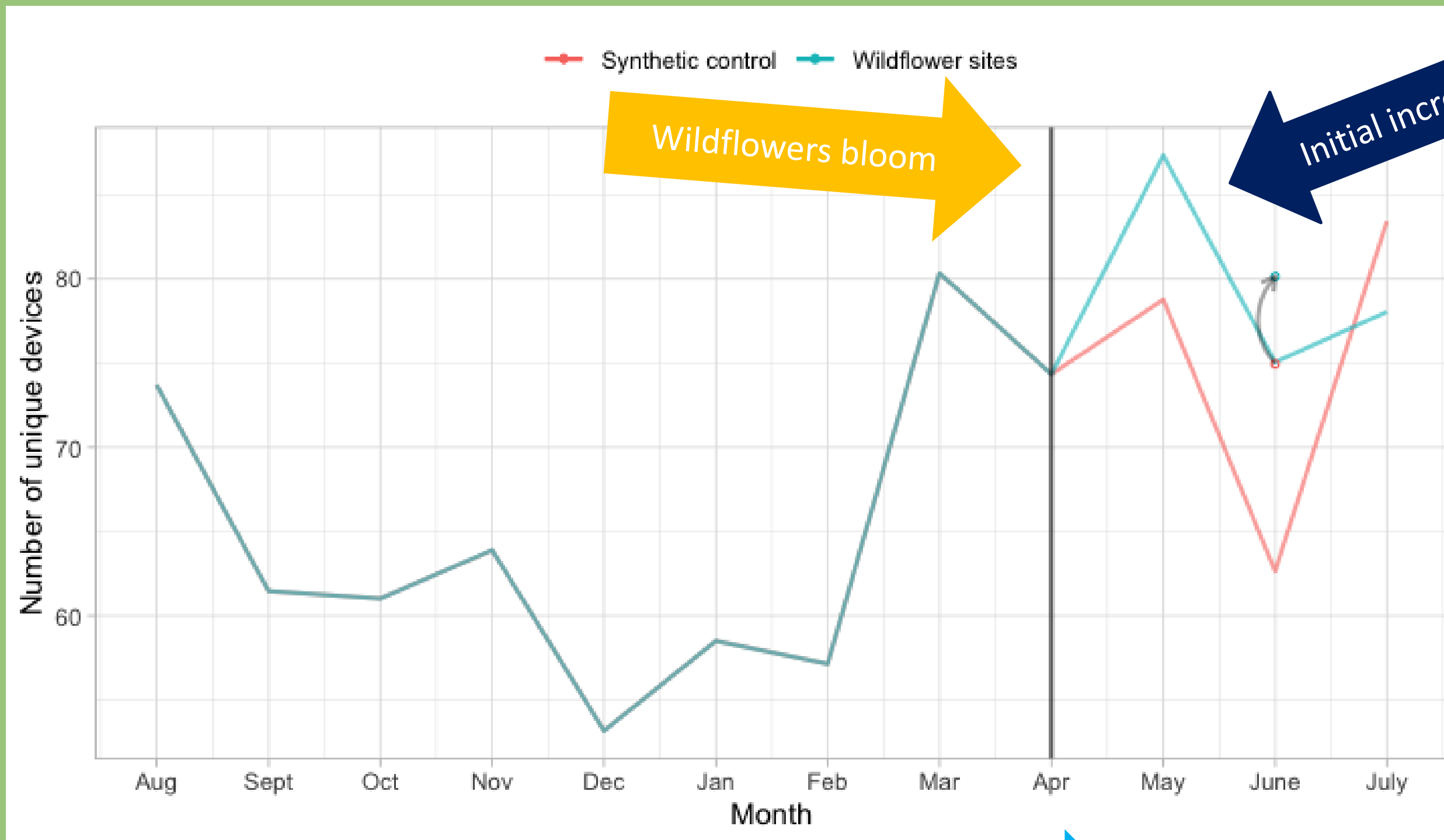
REWILDING A GOLF COURSE



More people visiting green spaces

Time

WILDFLOWER PLANTING



More people visiting green spaces

Time

CONCLUSIONS



- Mobility data can help us to evaluate whether urban green and blue space changes were successful
- Planting of wildflowers in Liverpool appear to have increased green space utilization, but rewilding a golf course did not
- Low level green space interventions without any infrastructure can have some value, but any benefits will likely be minimal

감사합니다

Geography team:

Mark Green mark.green@liverpool.ac.uk

Wenjing Zhang wzzhang@Liverpool.ac.uk

