



Supplementary Materials:

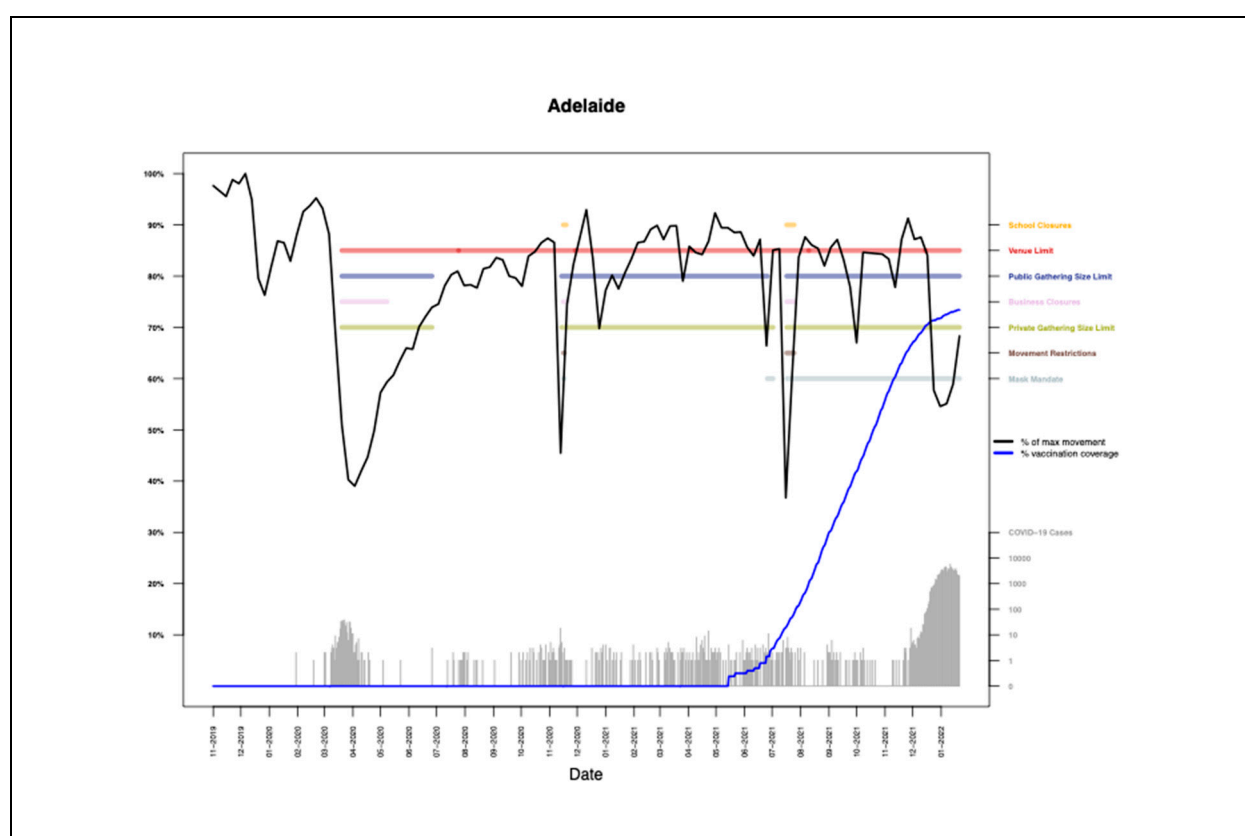
Impacts on Human Movement in Australian Cities Related to the COVID-19 Pandemic

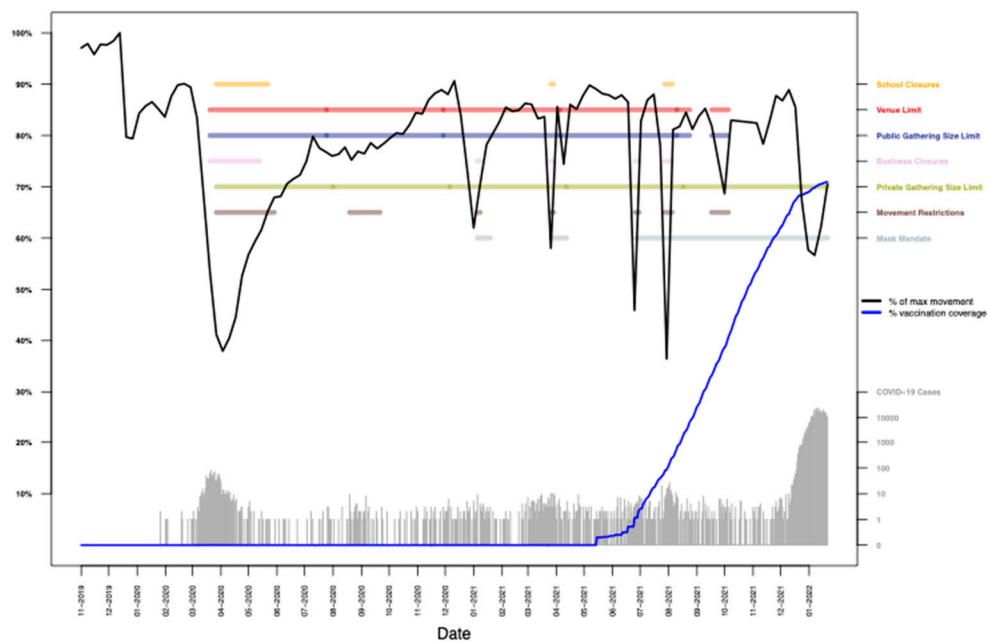
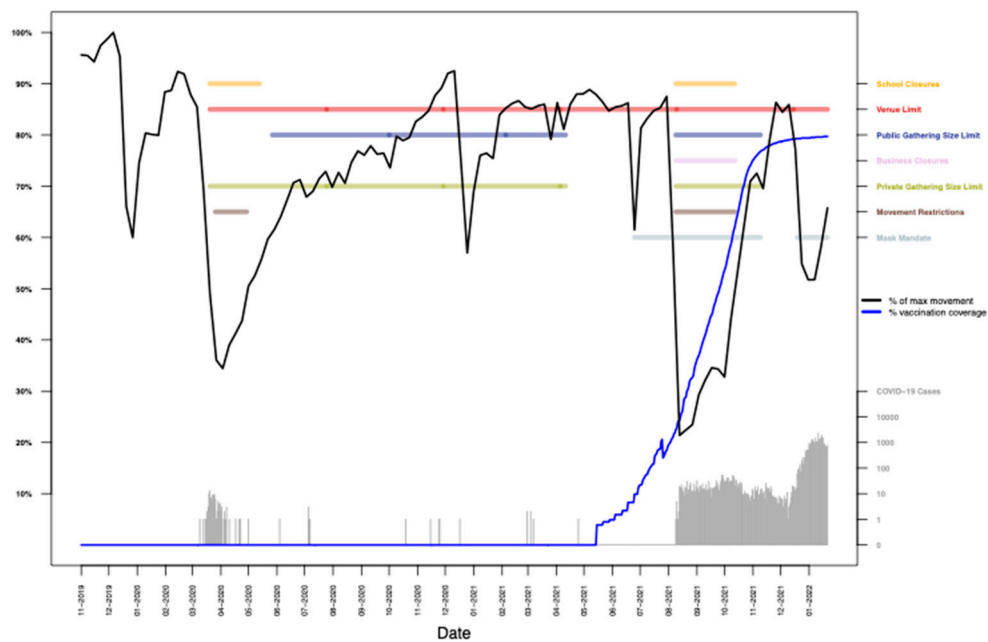
Daniel J. Weiss ^{1,2,*}, Tara F. Boyhan ², Mark Connell ², Kefyalew Addis Alene ^{1,2}, Paulina A. Dzianach ¹, Tasmin L. Symons ¹, Camilo A. Vargas-Ruiz ¹, Peter W. Gething ^{1,2} and Ewan Cameron ^{1,2}

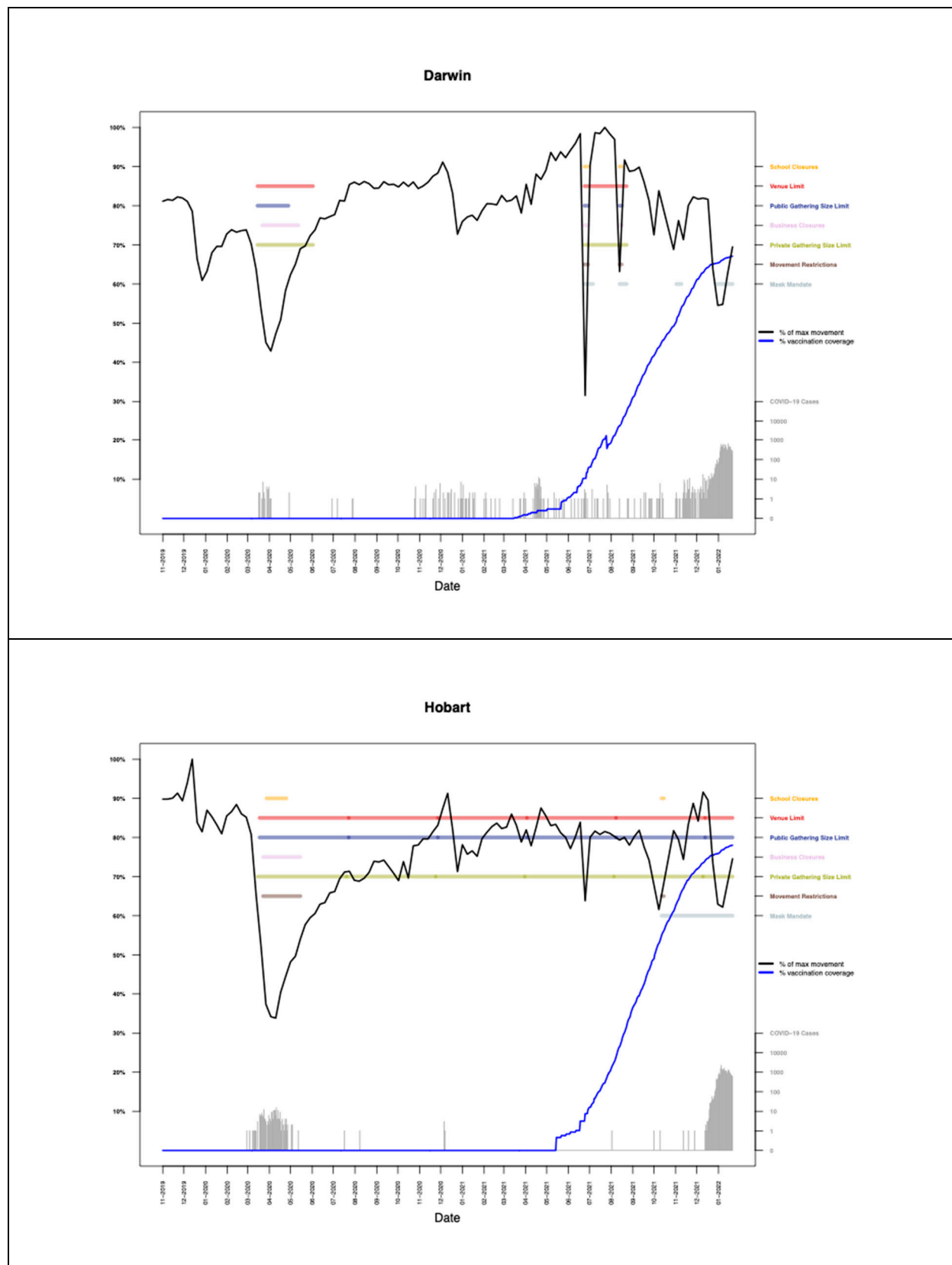
¹ Telethon Kids Institute, Perth Children's Hospital, Nedlands WA 6009, Australia

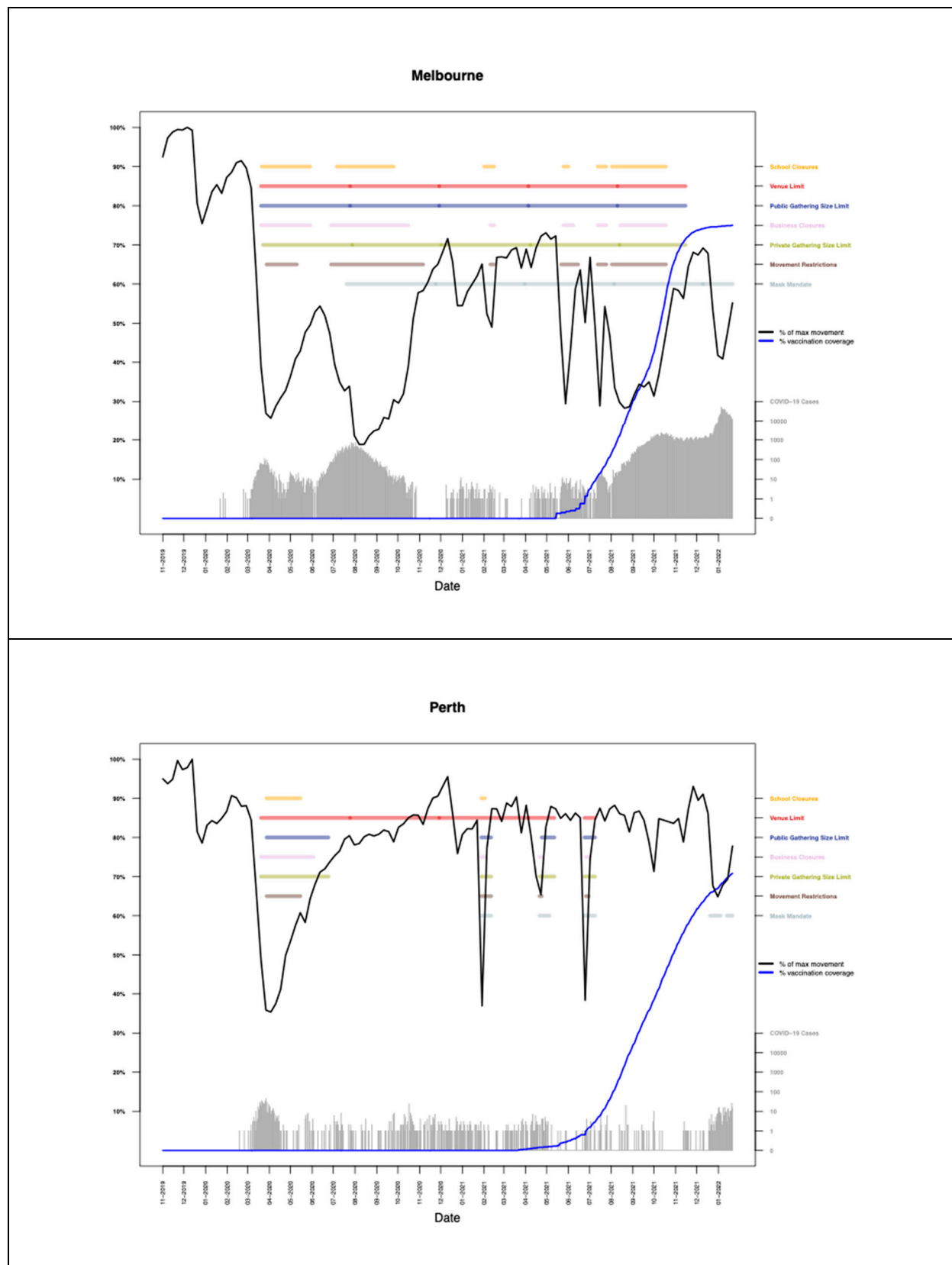
² Curtin University, School of Population Health, Bentley WA 6102, Australia

* Correspondence: Daniel.Weiss@telethonkids.org.au



Brisbane**Canberra**





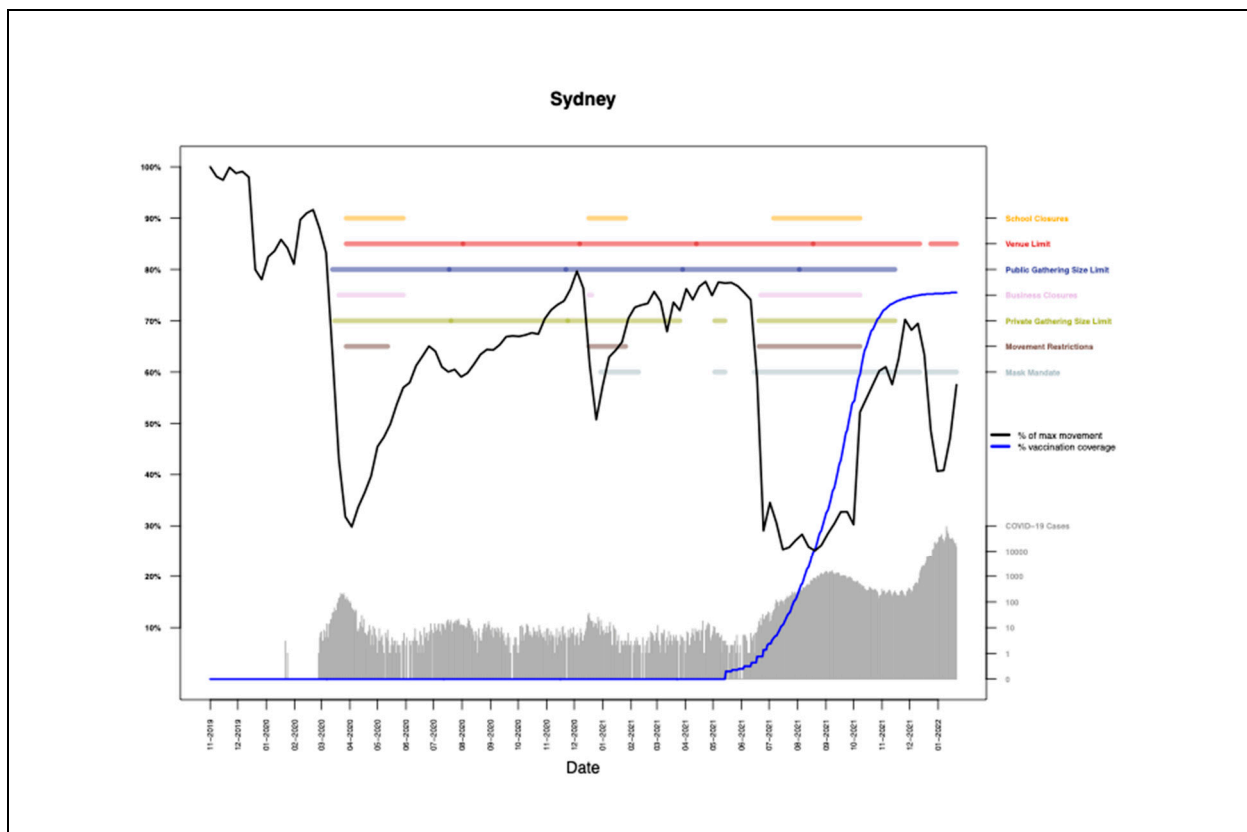
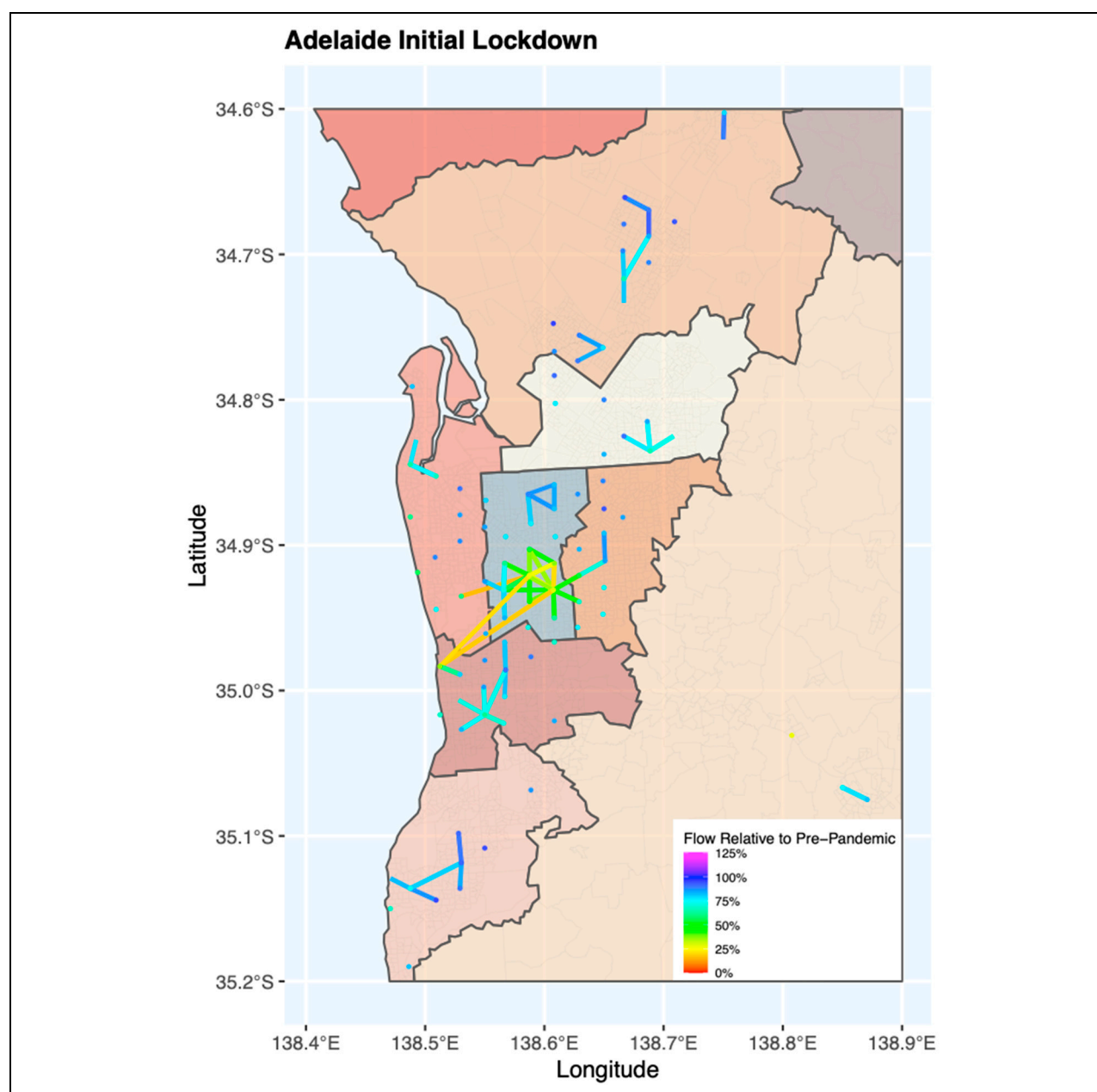
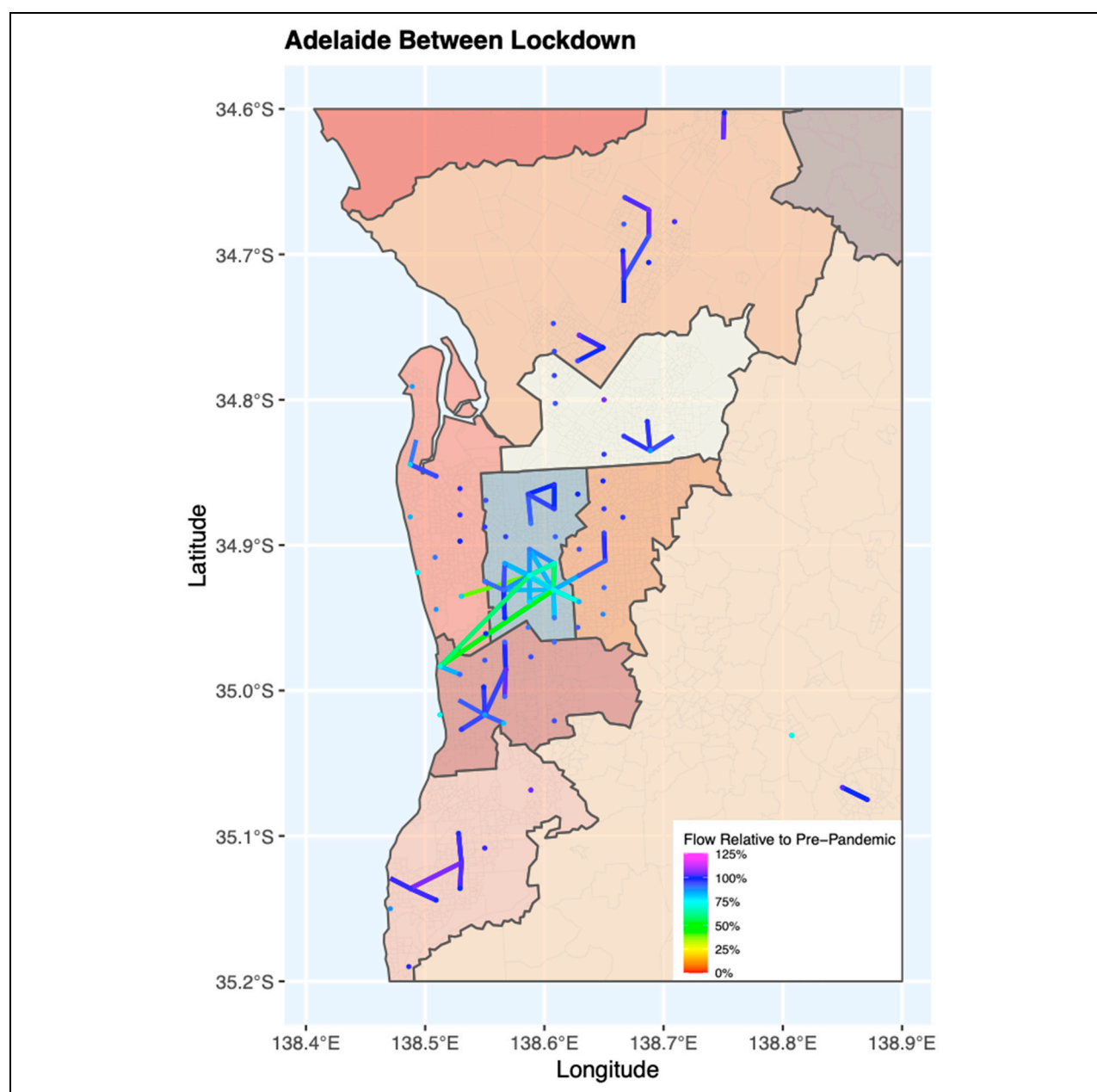
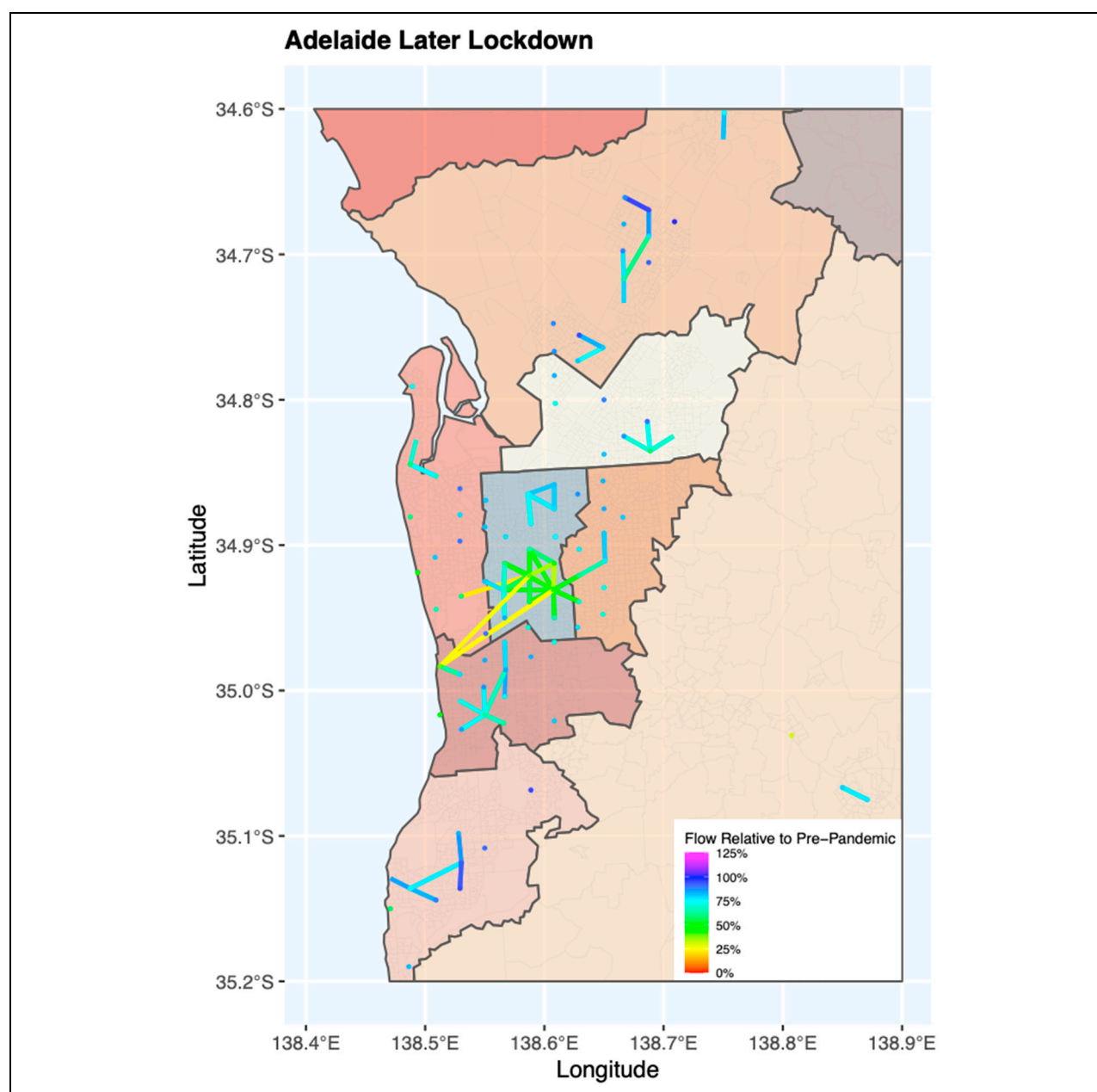
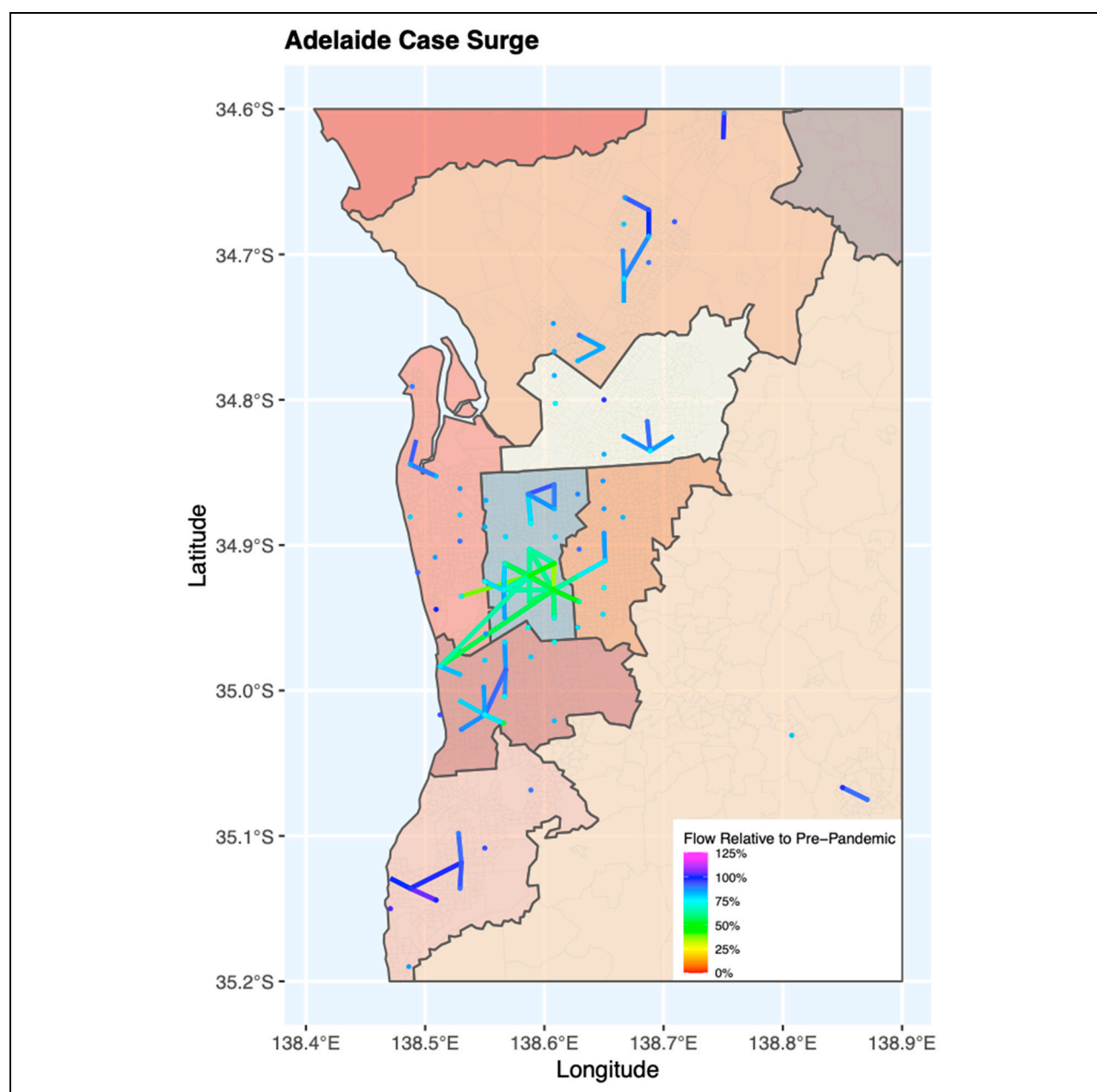


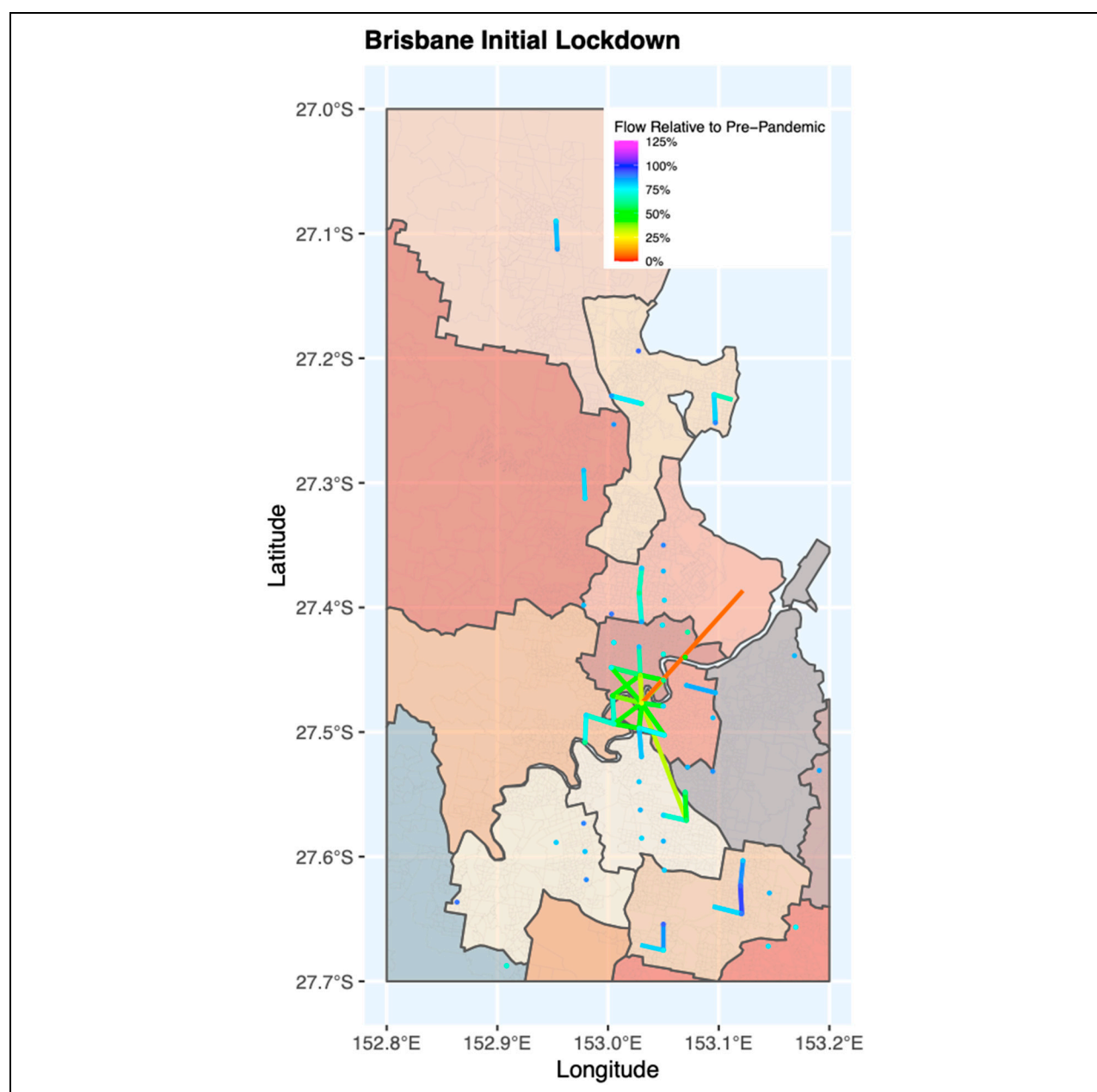
Figure S1. The movement, restrictions, vaccinations, and incidence chronology for all state and territorial capitals in Australia. The black line represents movement within the city relative to the most movement observed within the timeseries. Cases are presented as in gray and displayed on a logarithmic scale.

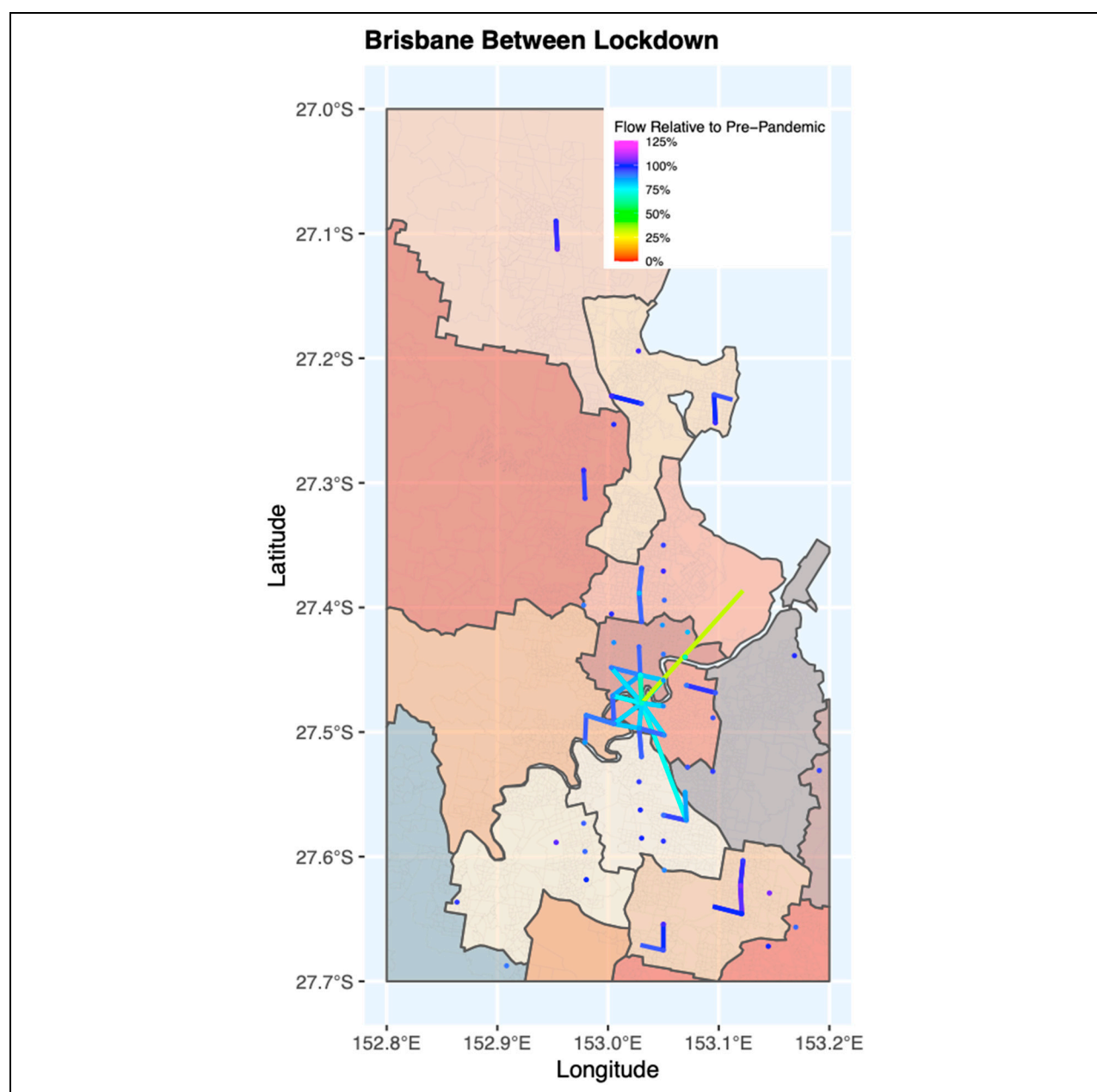


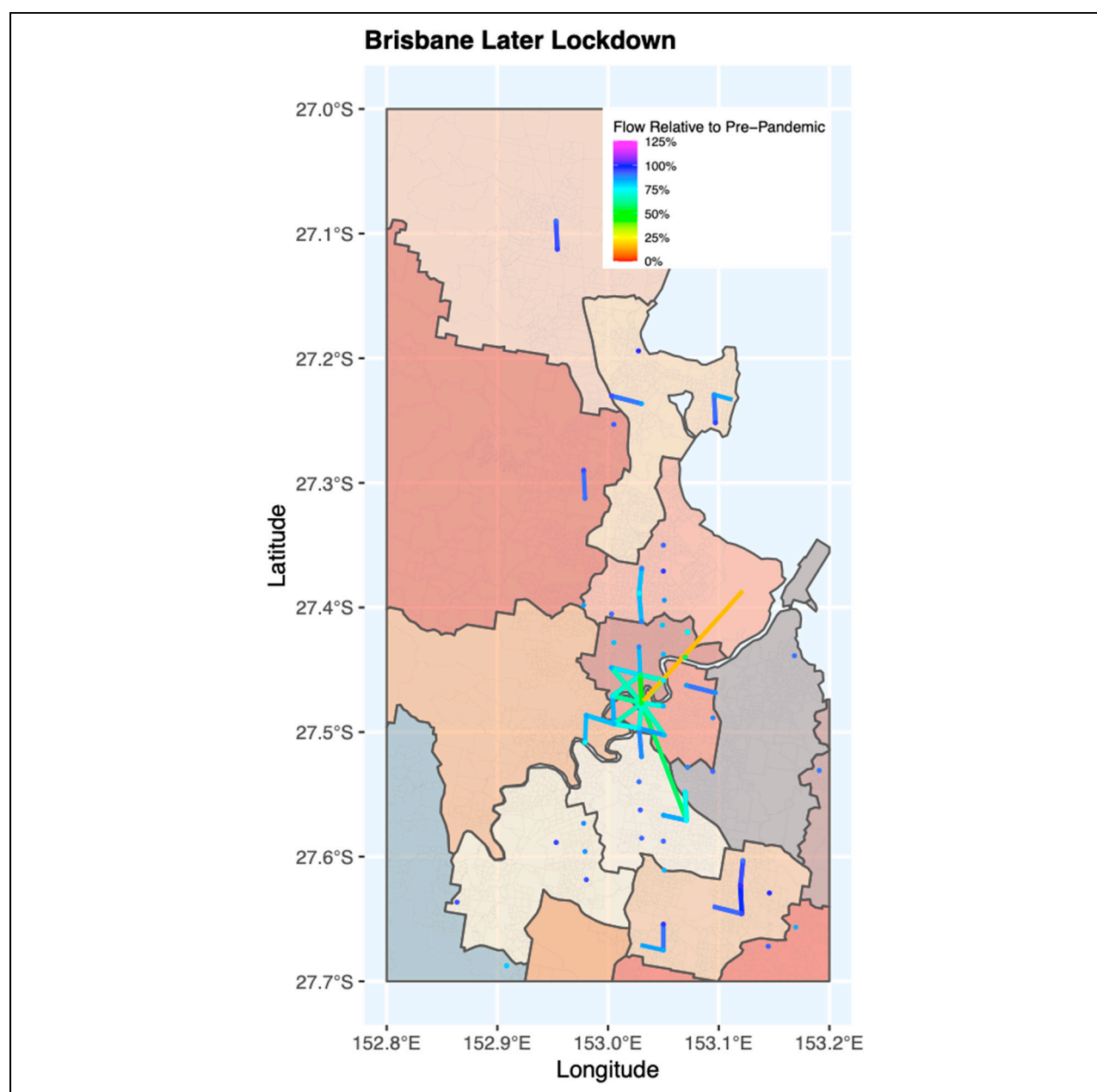


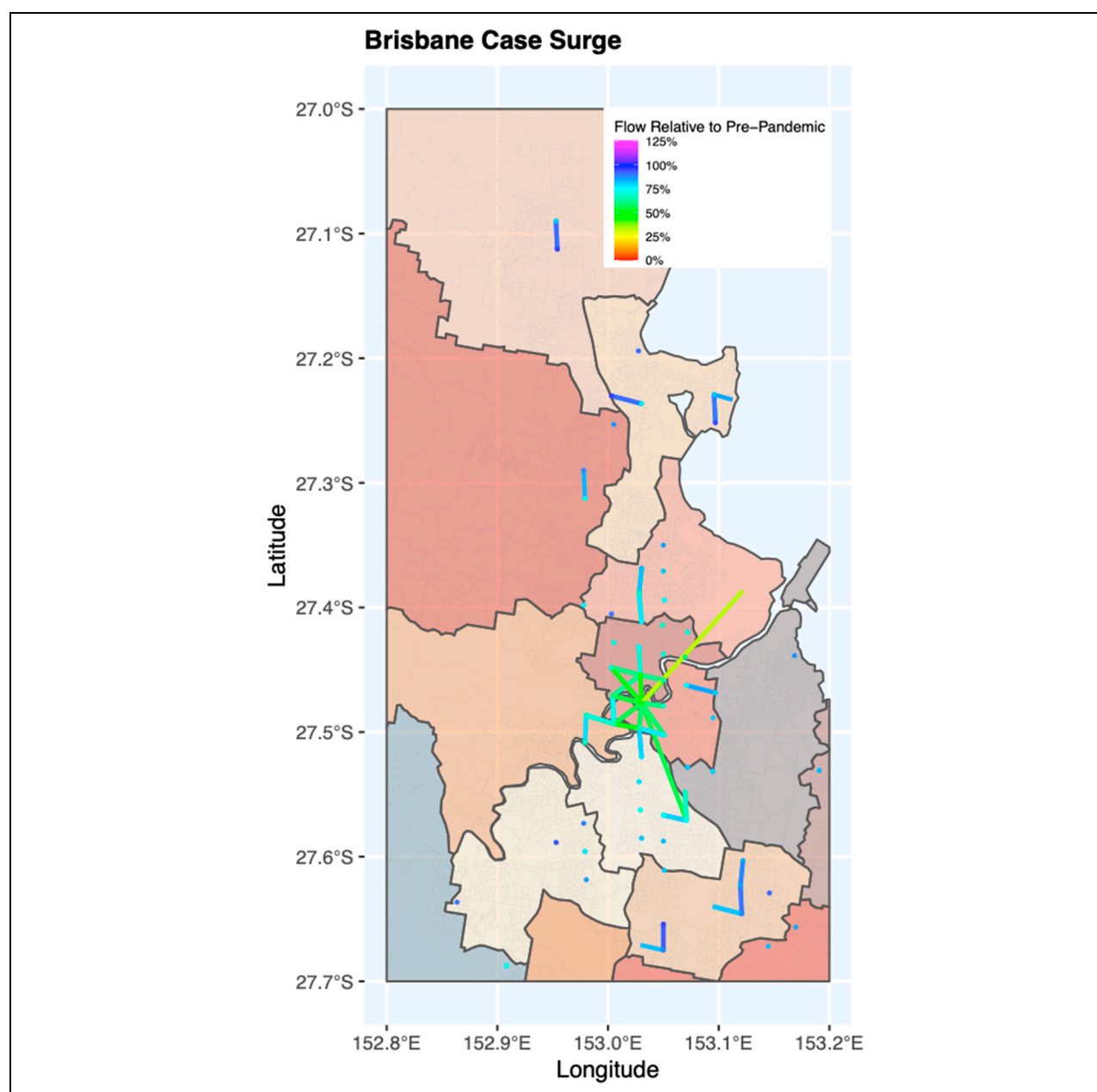


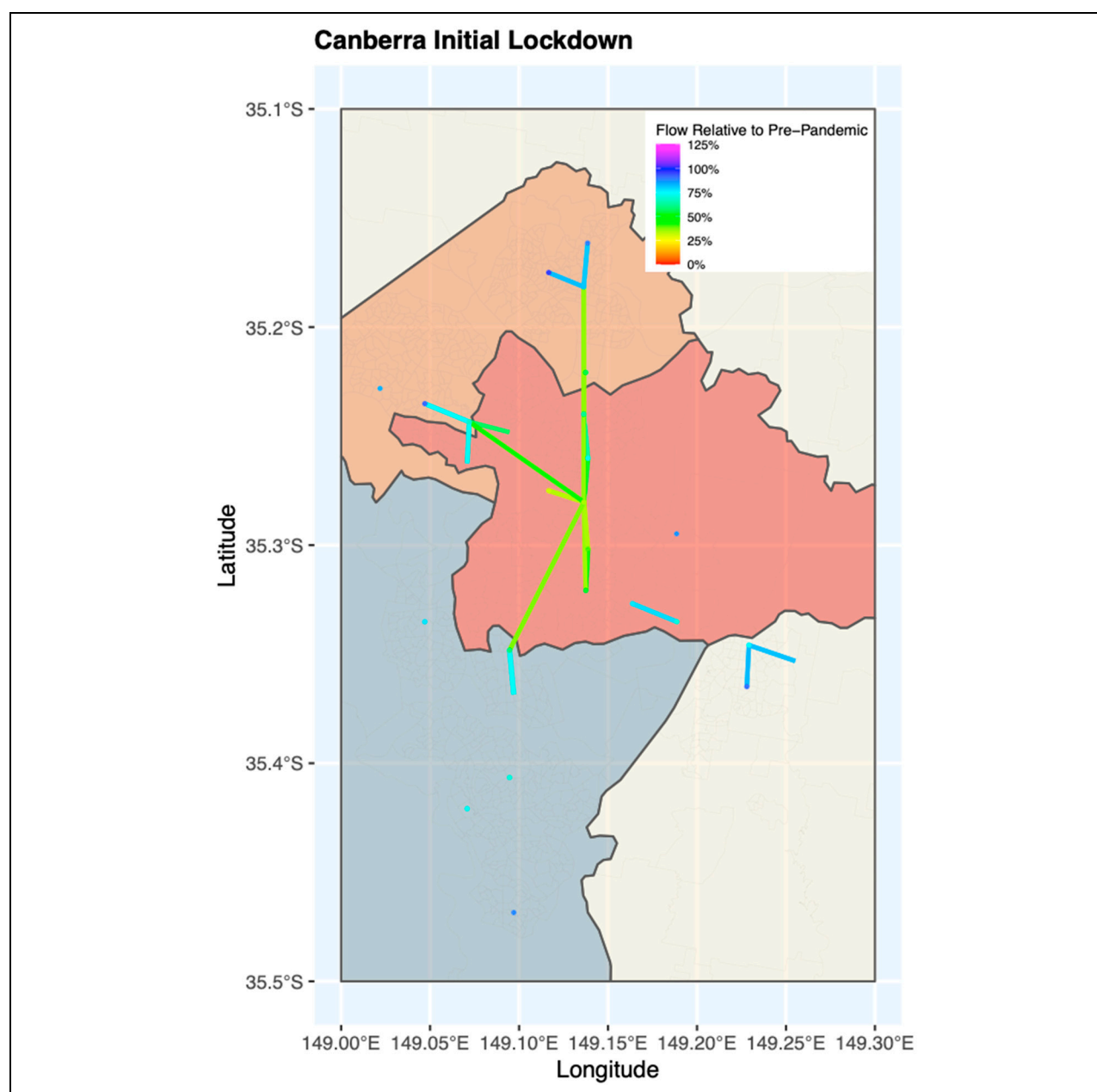


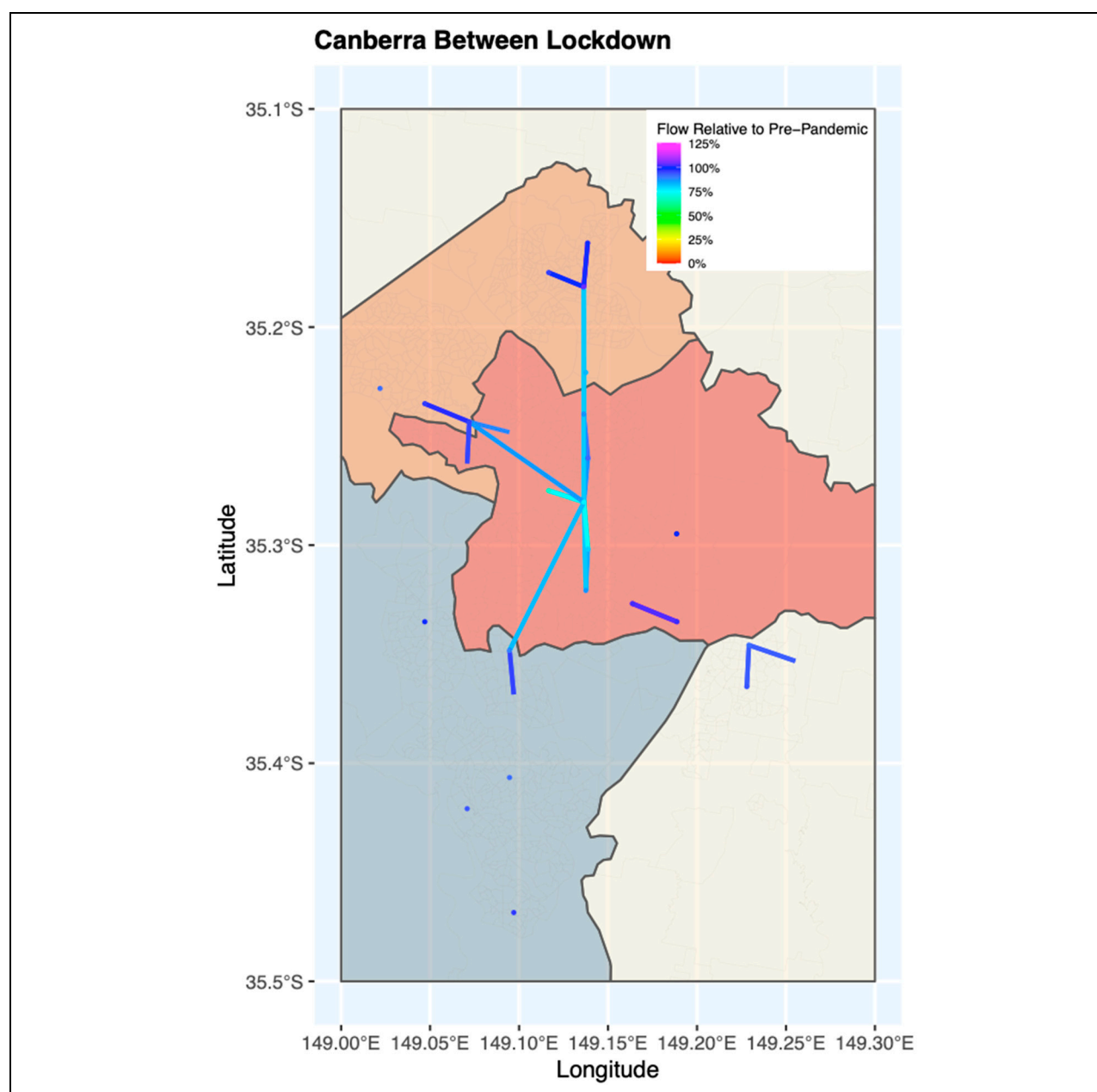


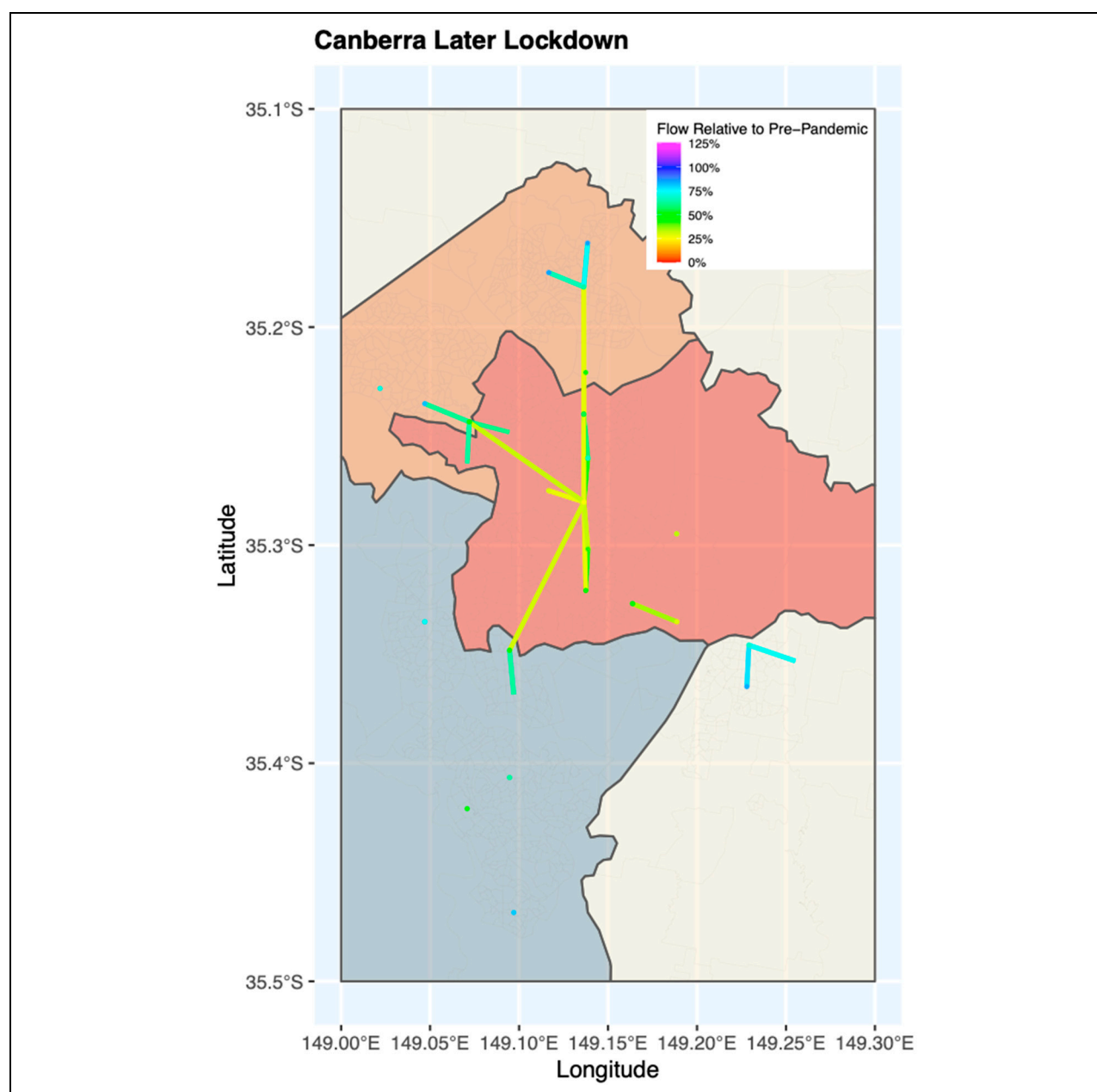


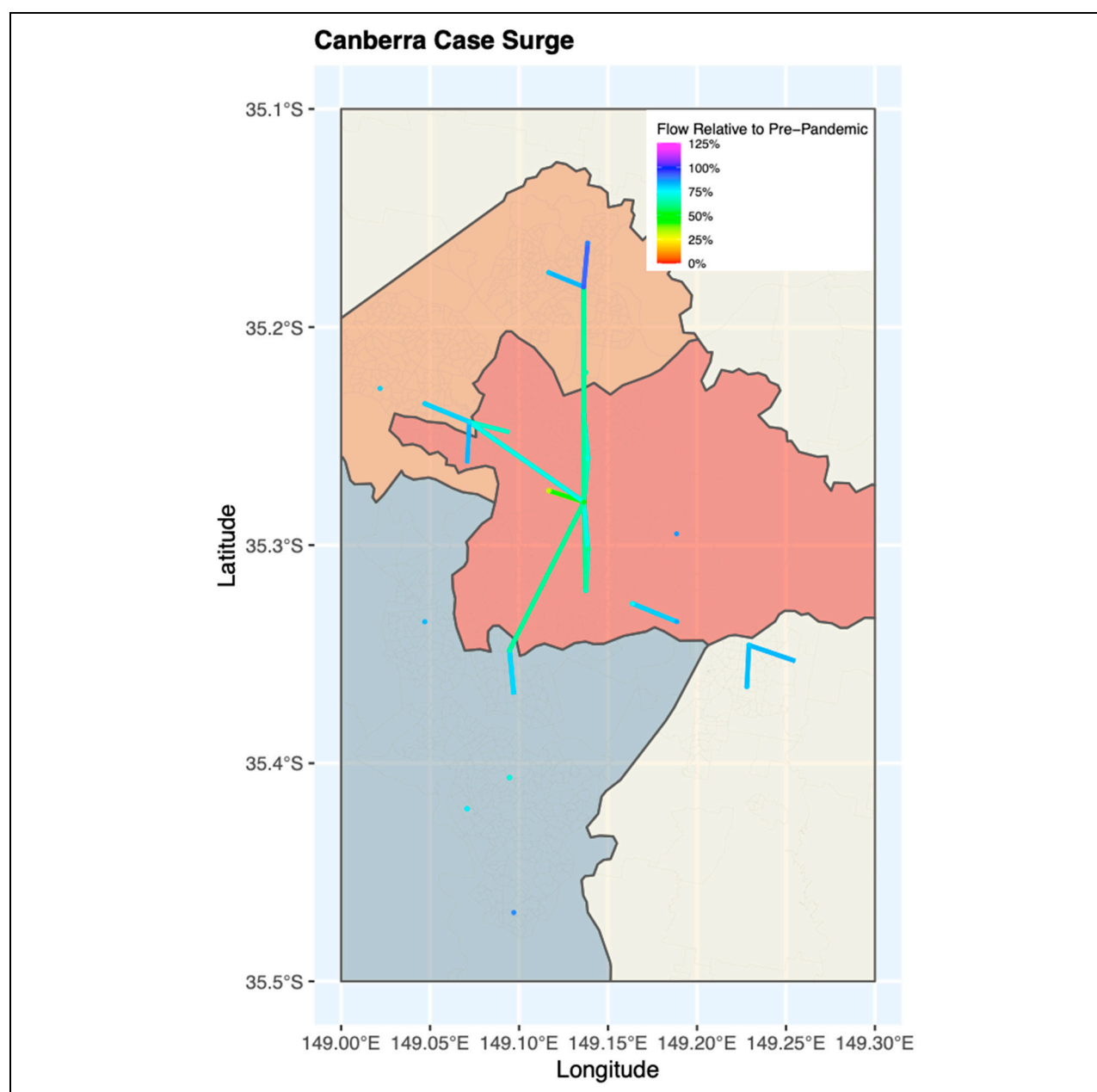


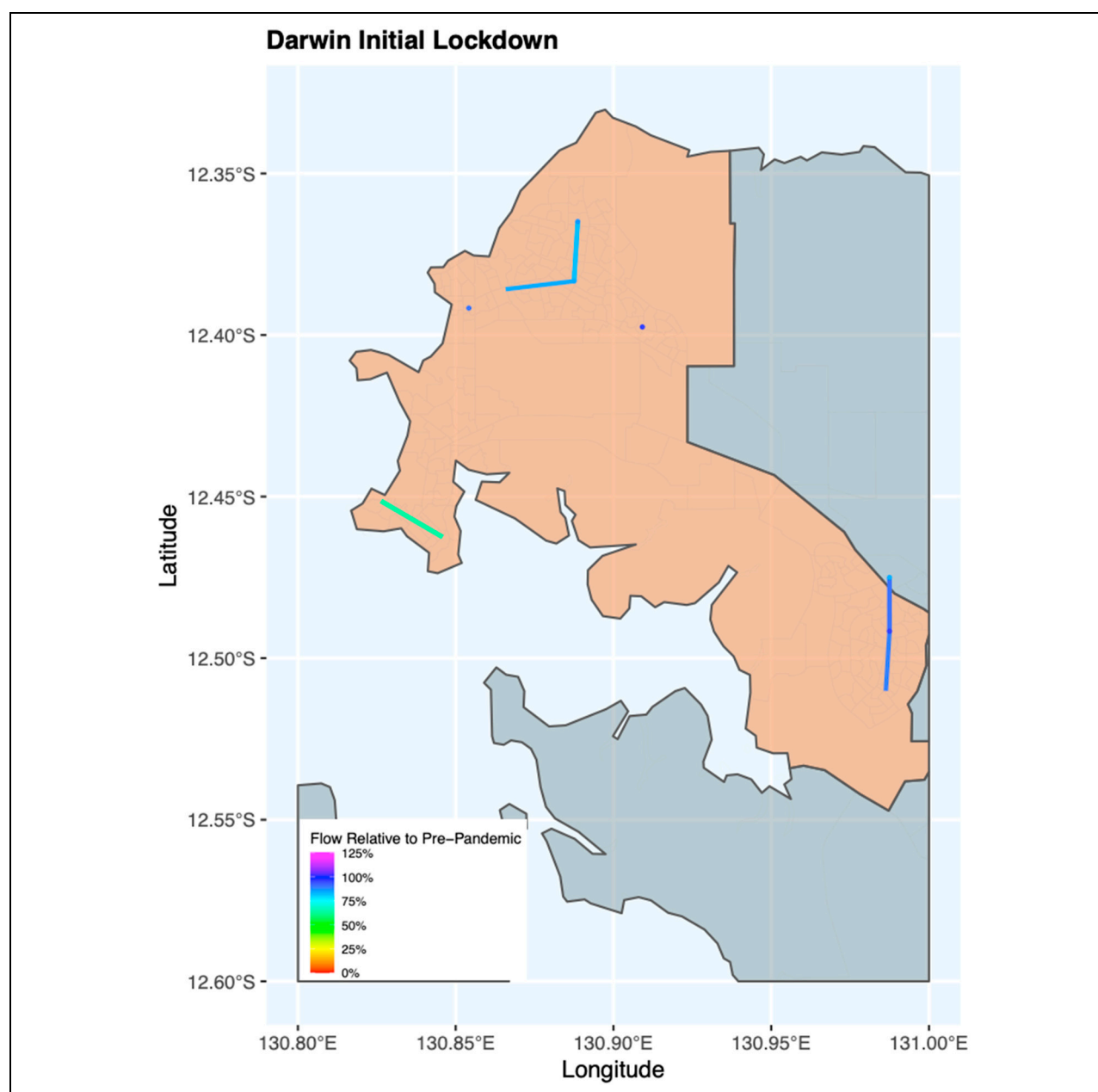


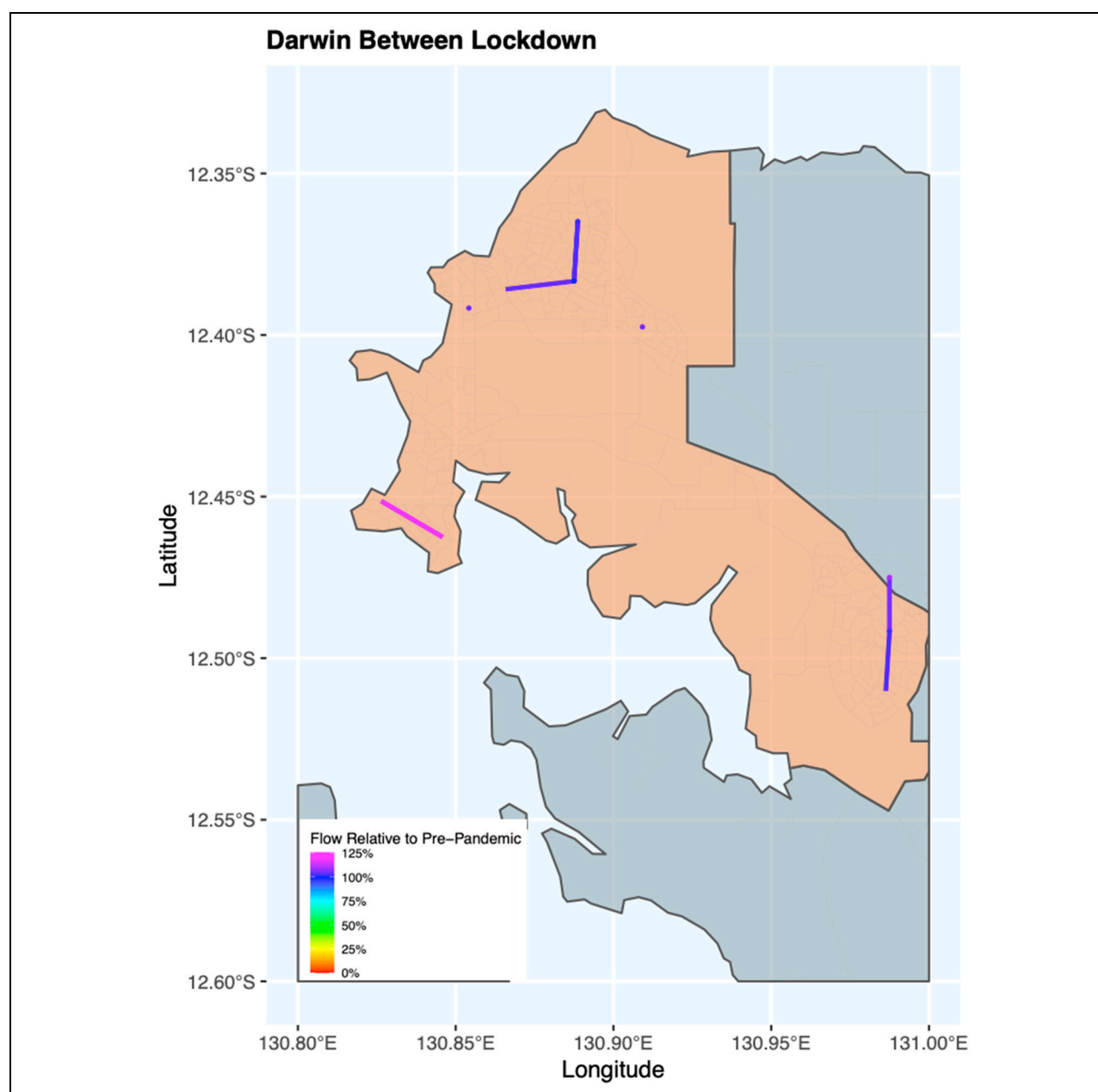


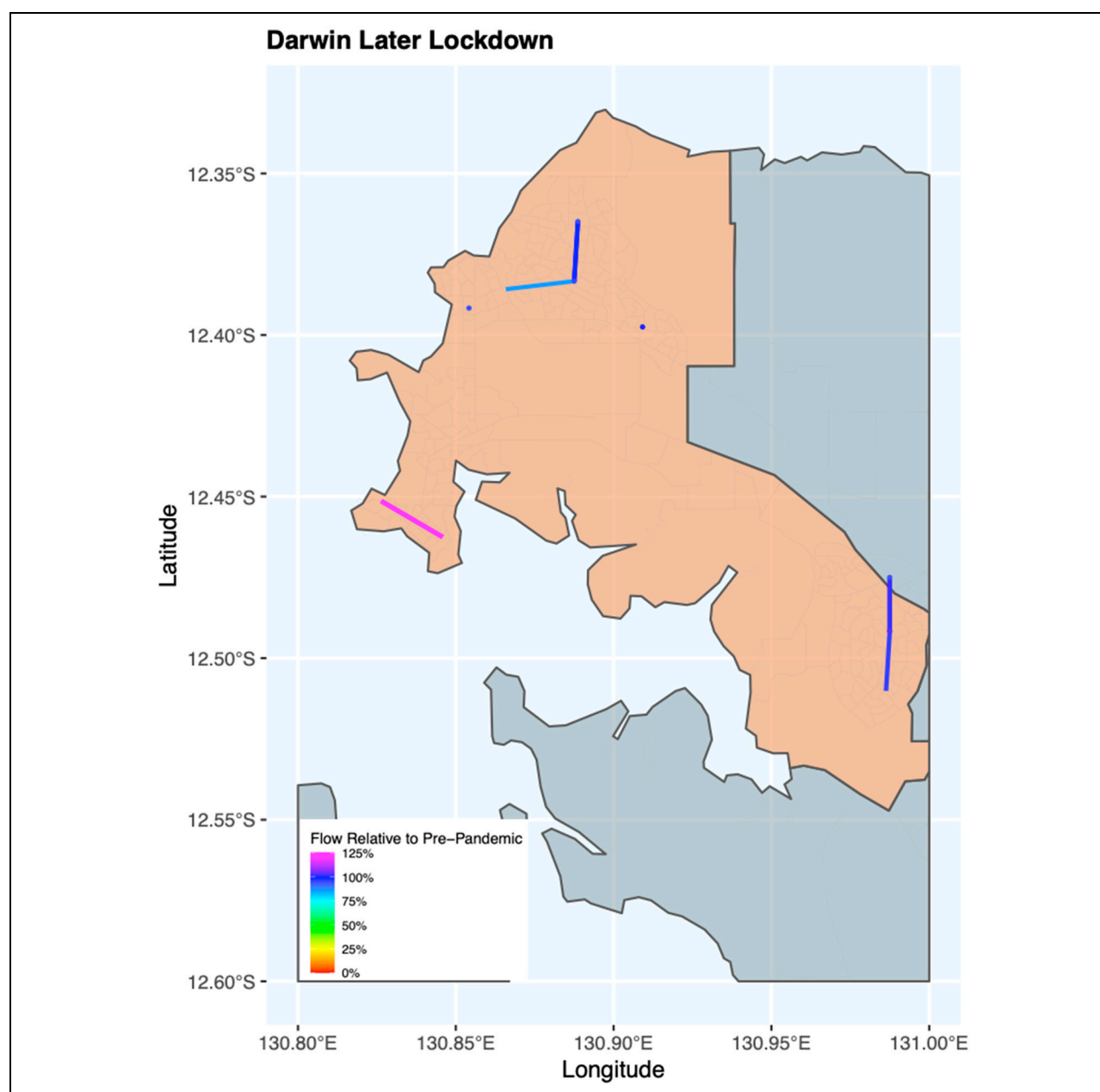


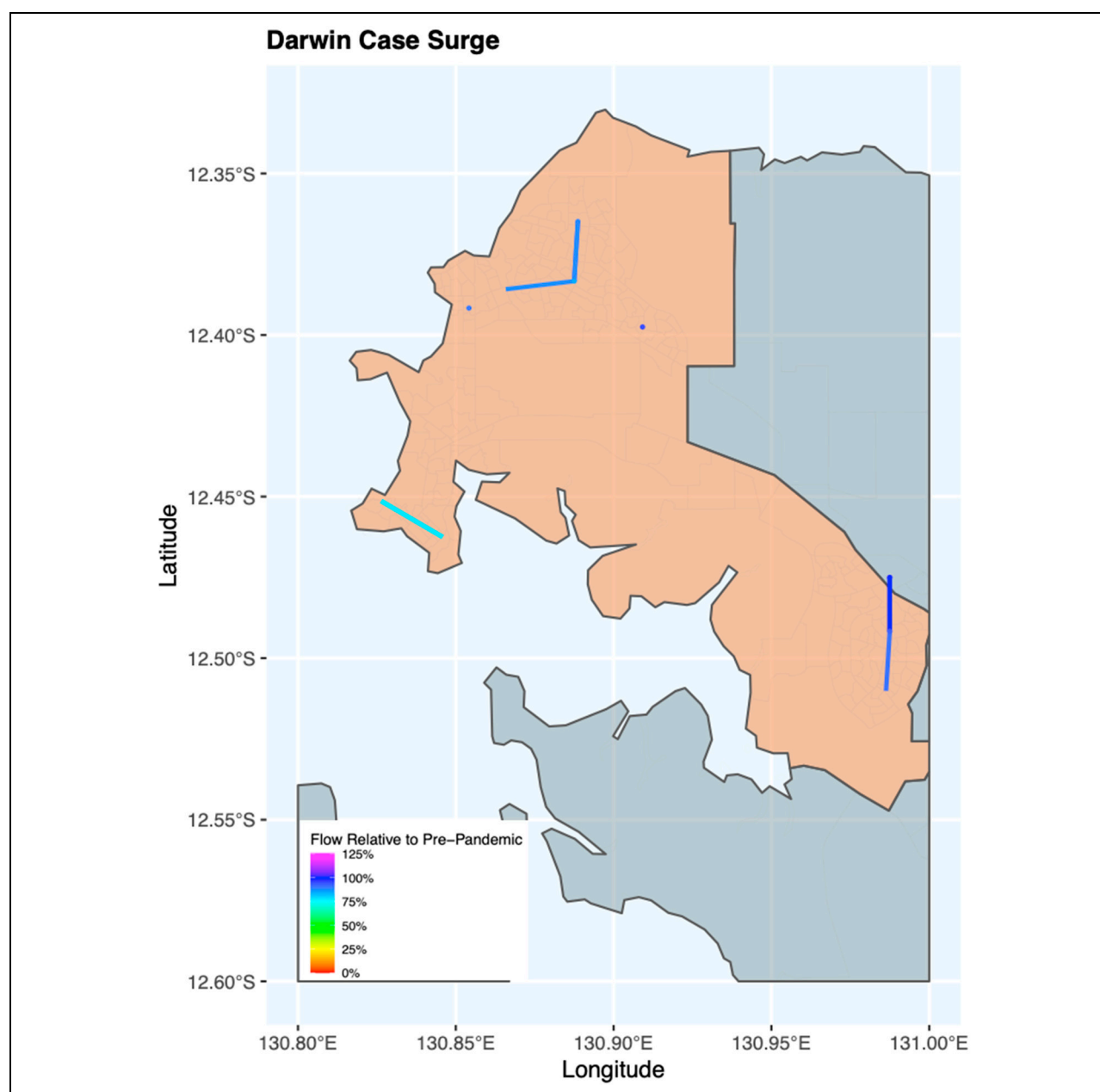


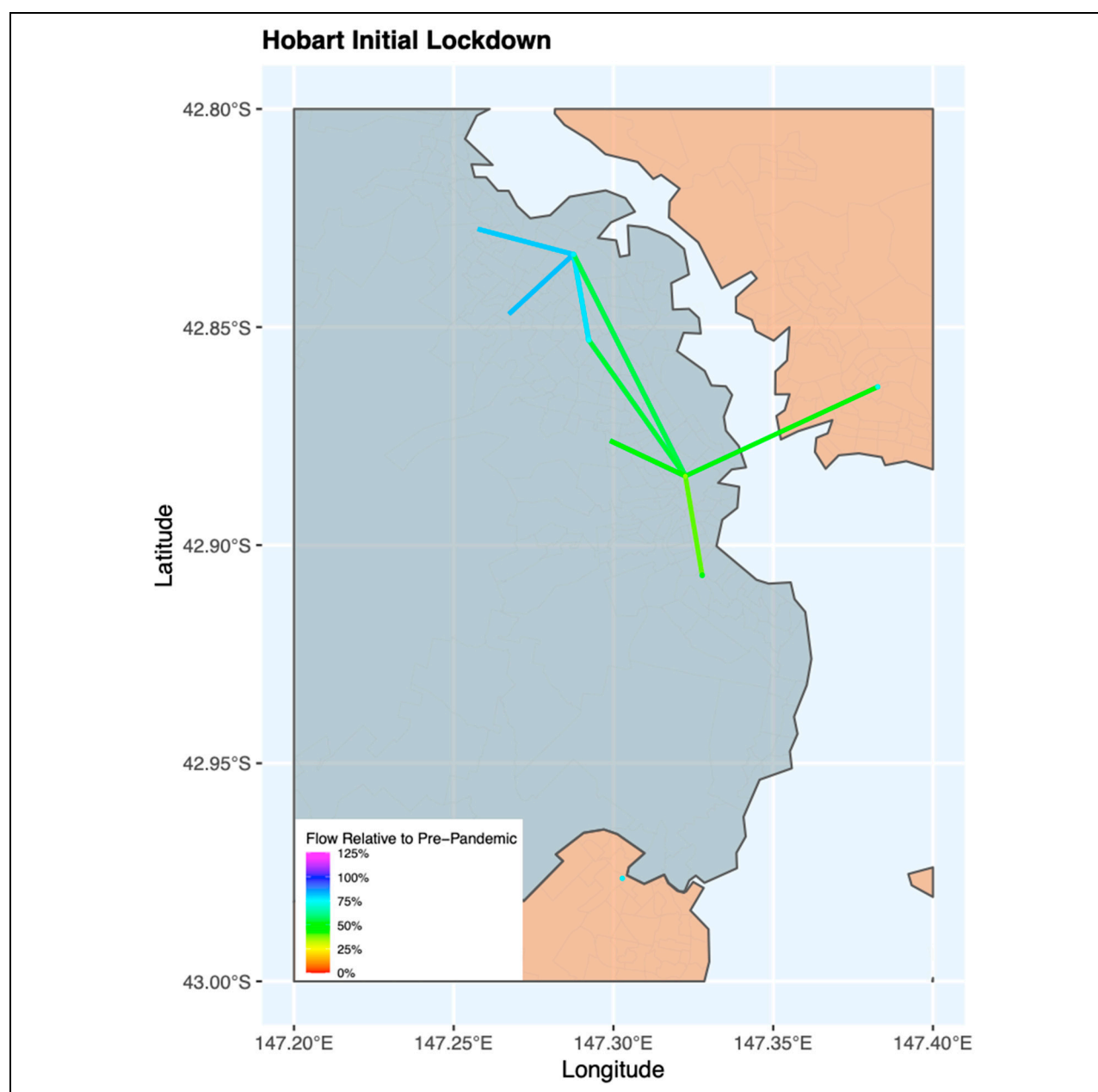


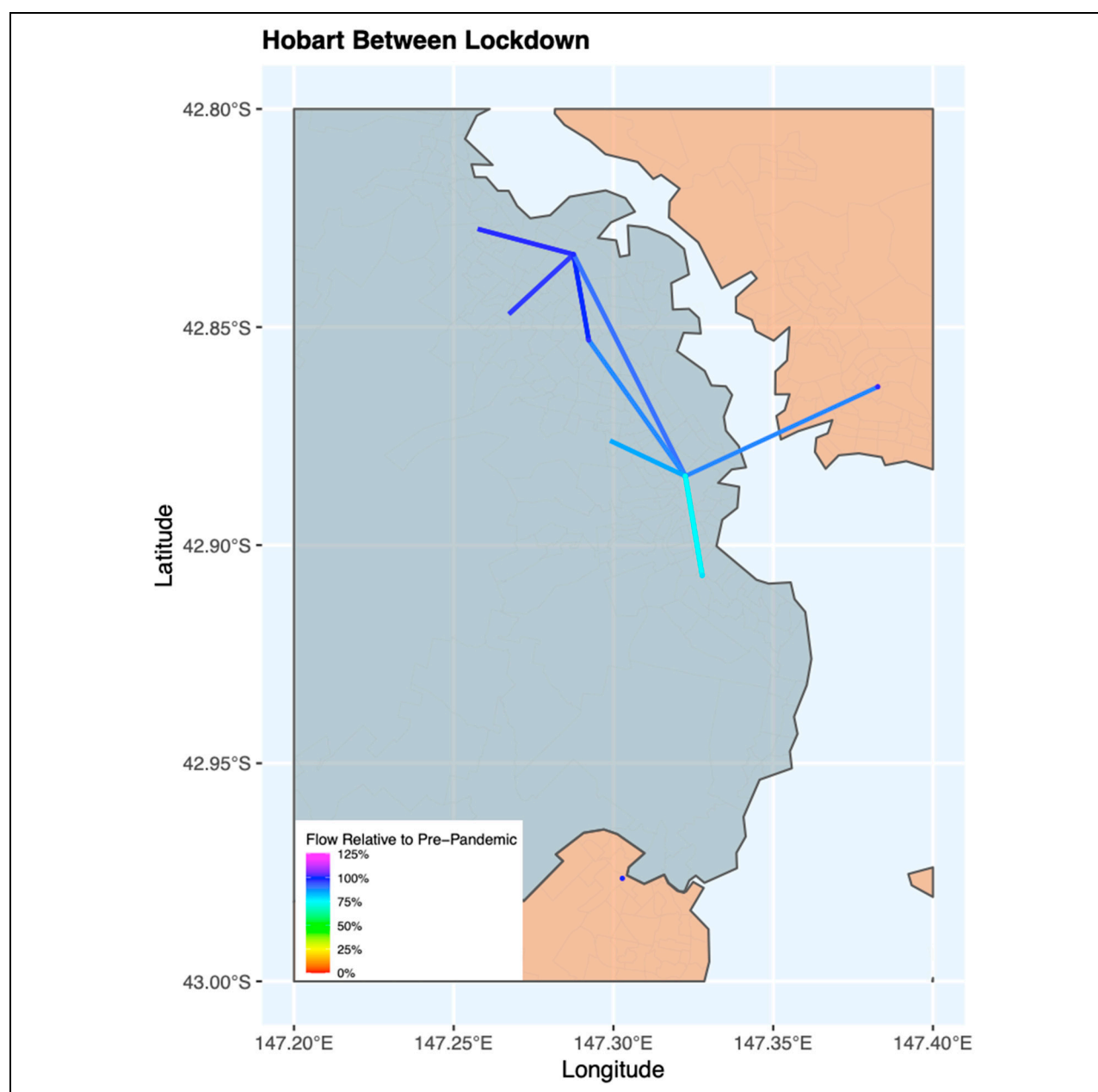


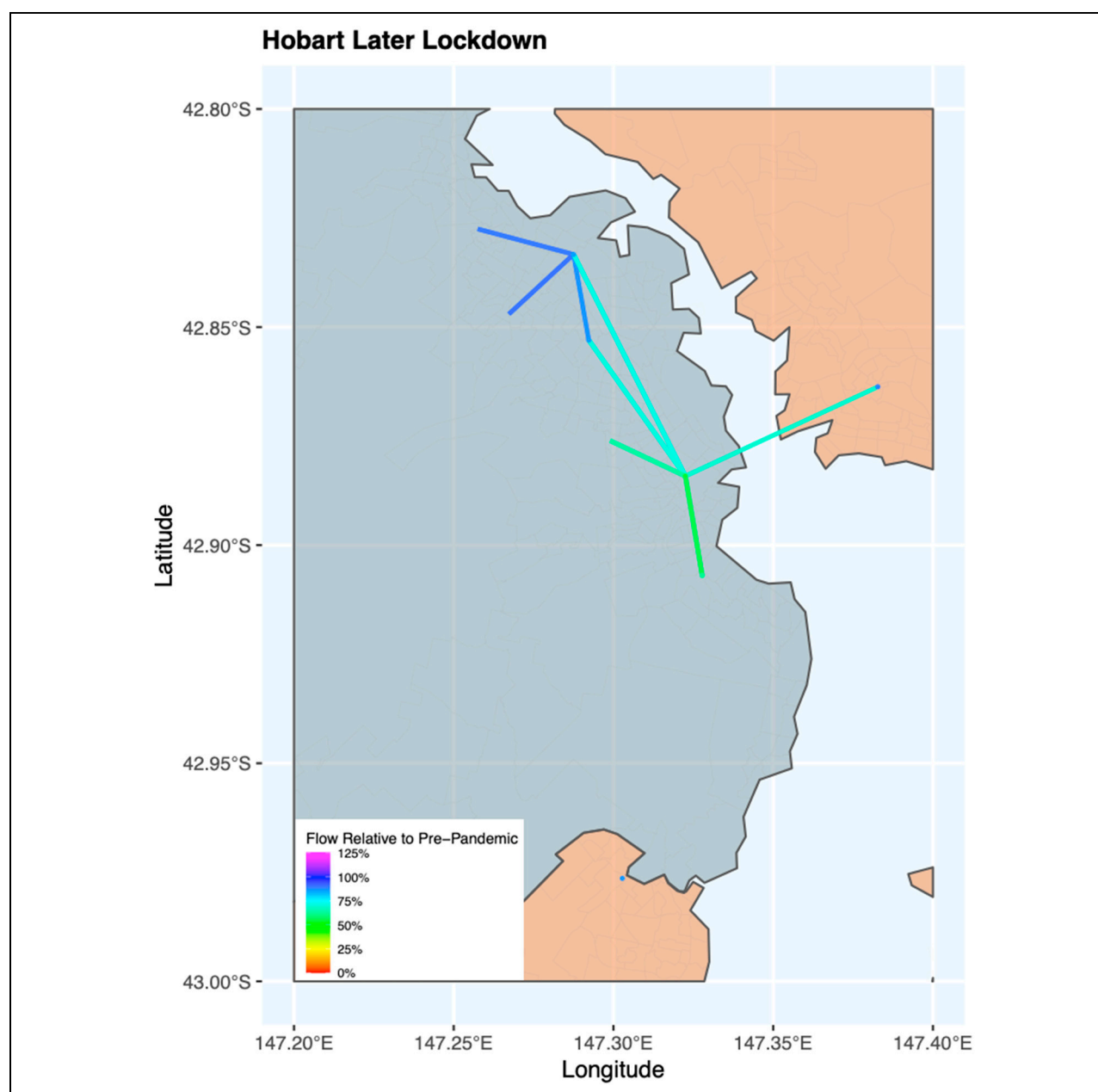


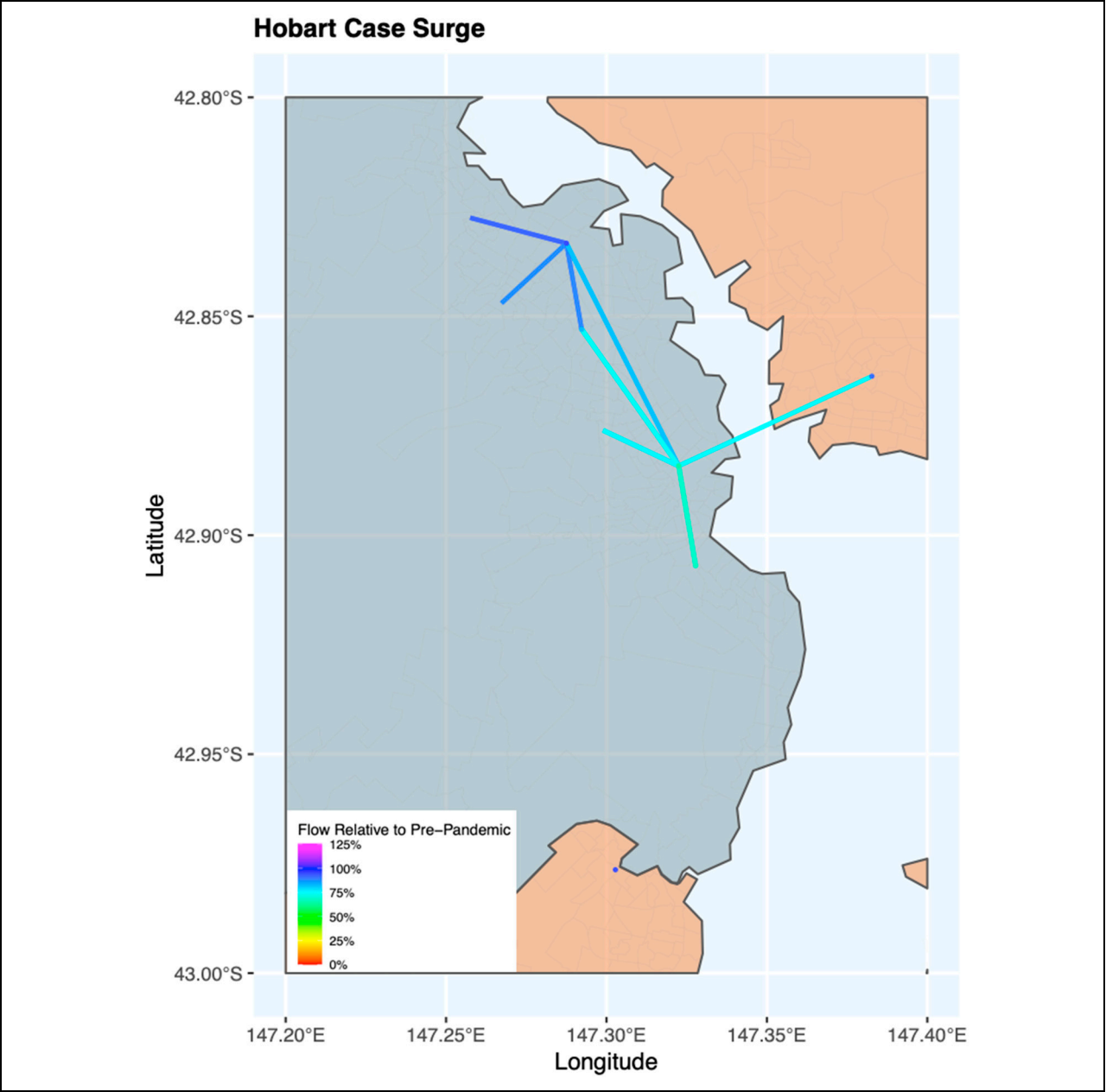


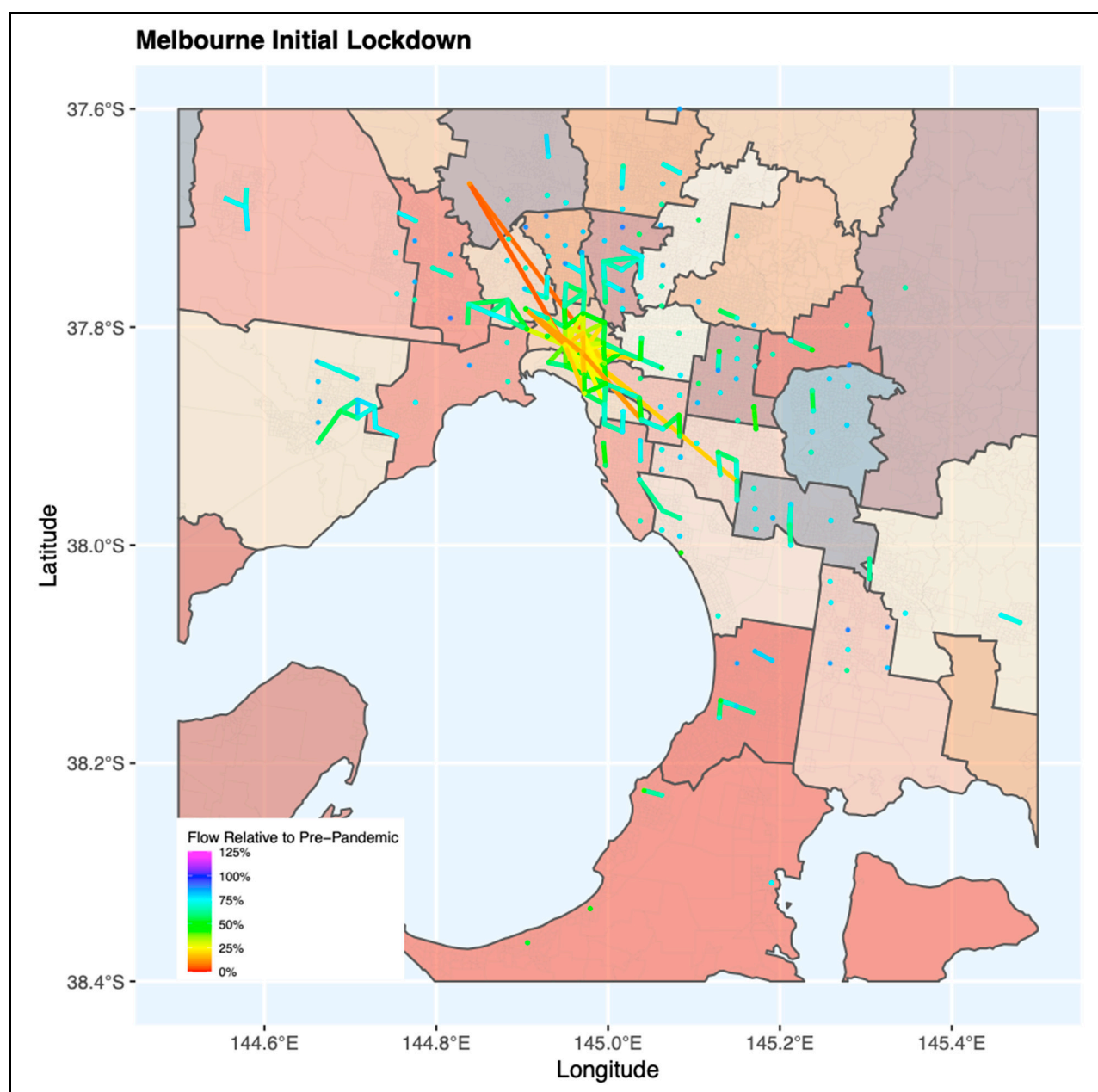


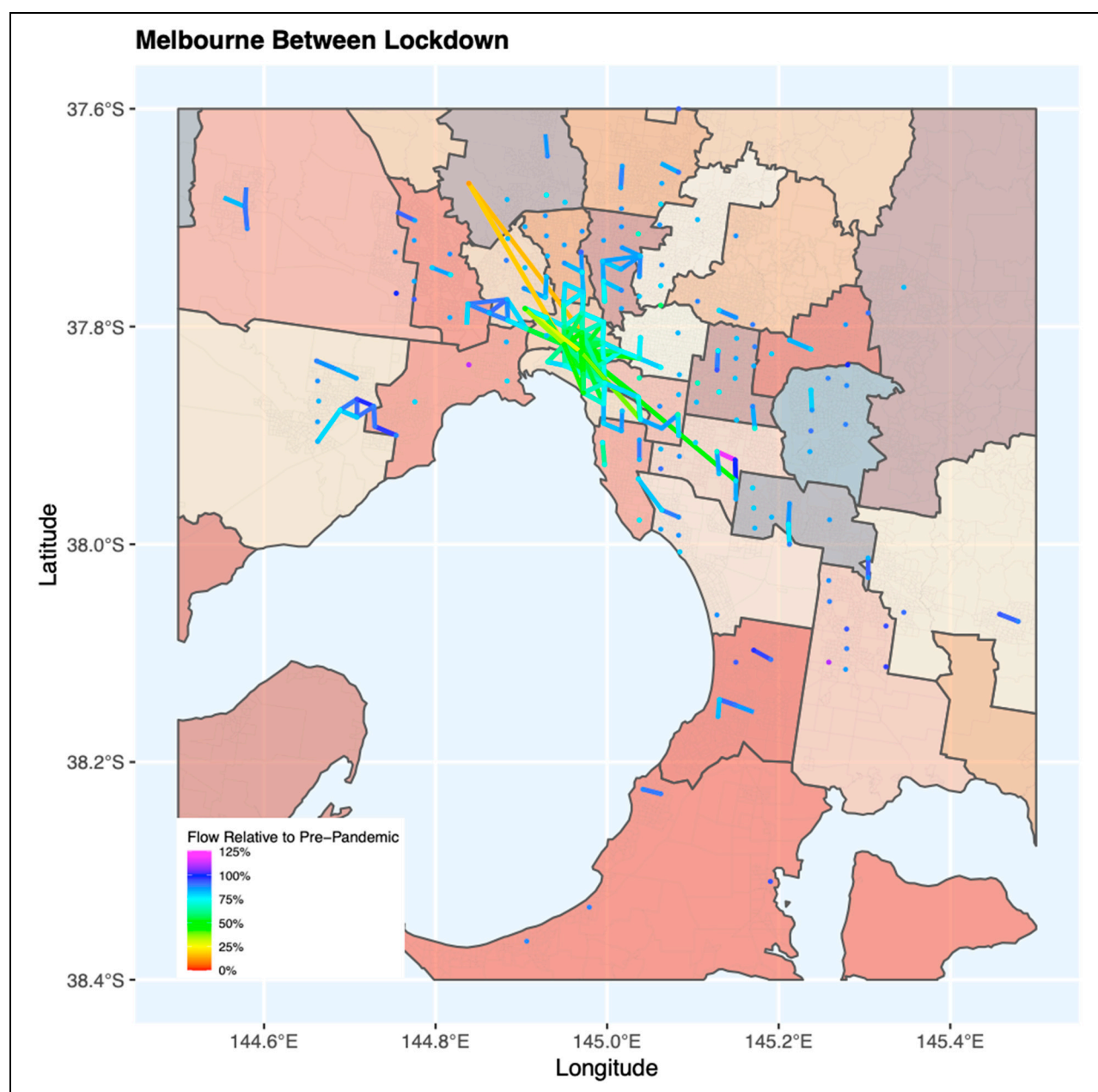


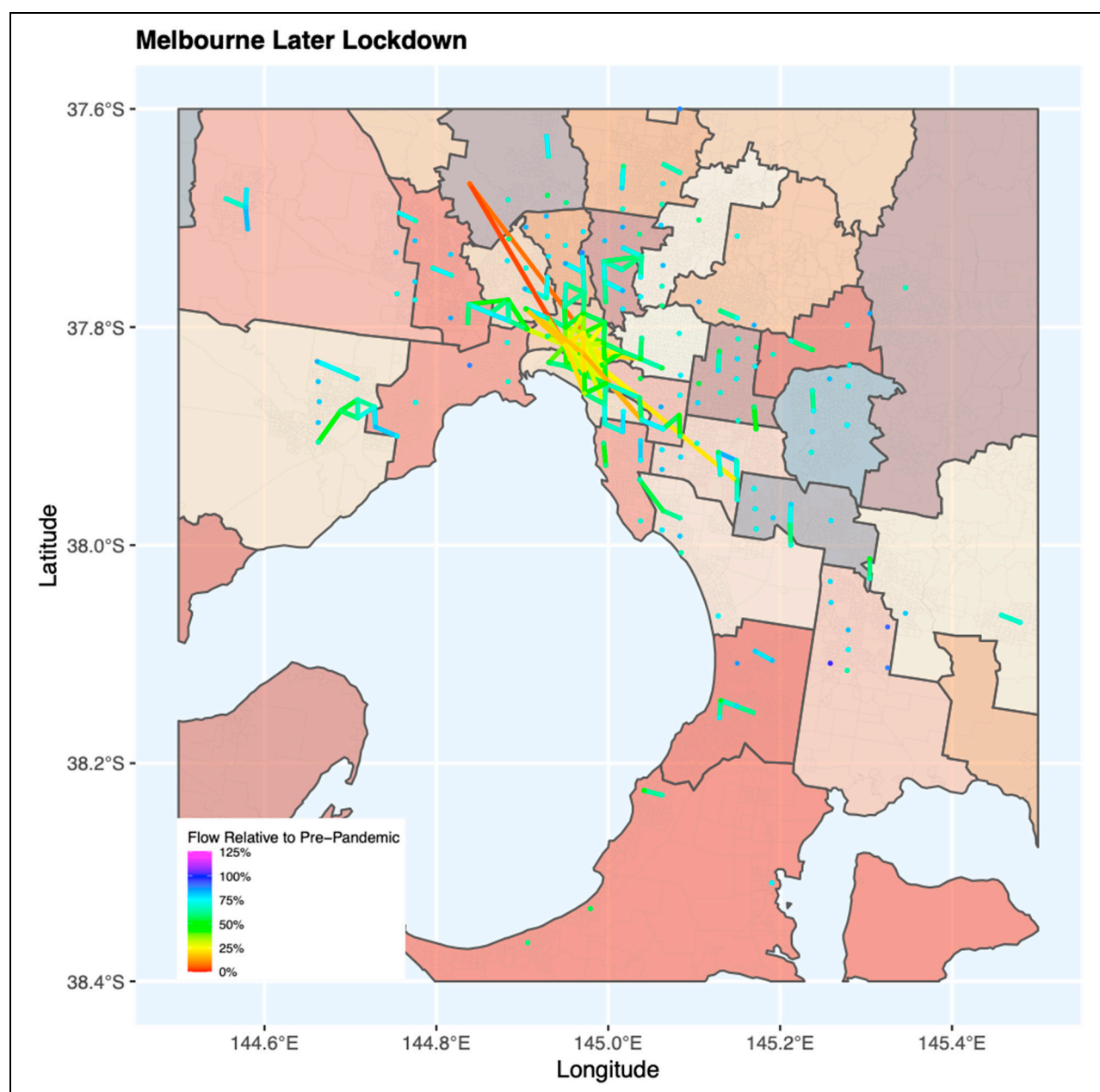


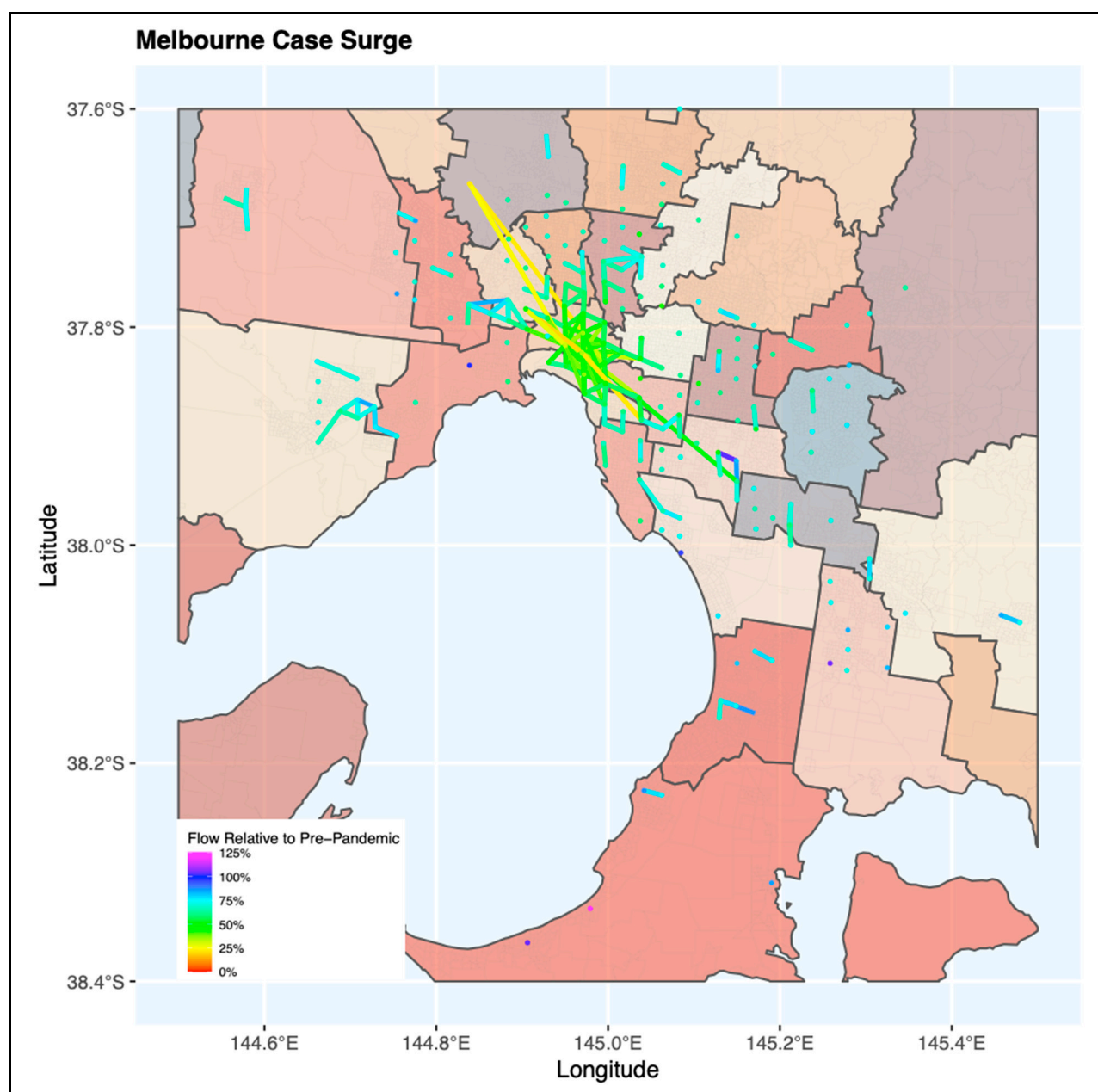


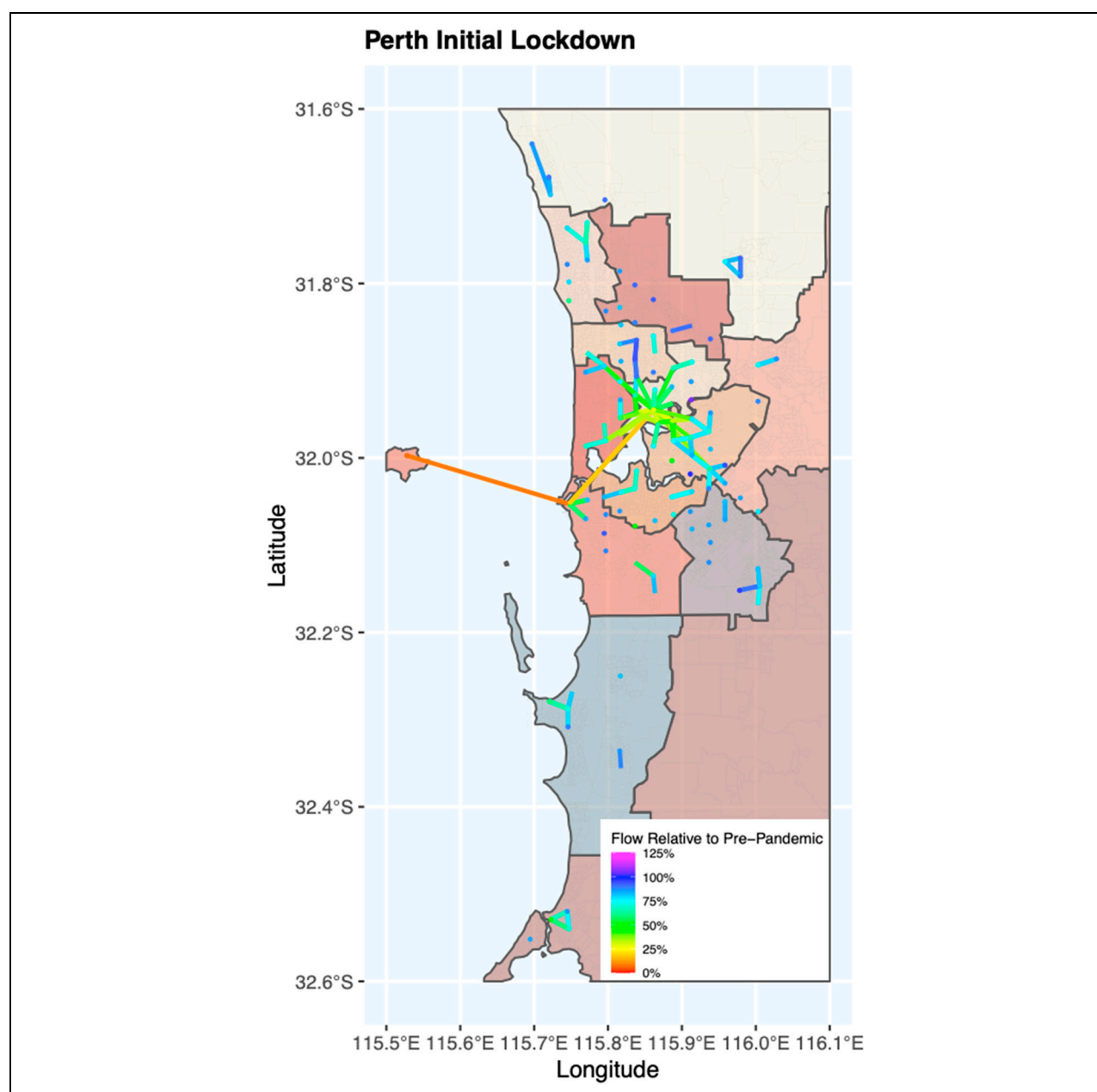


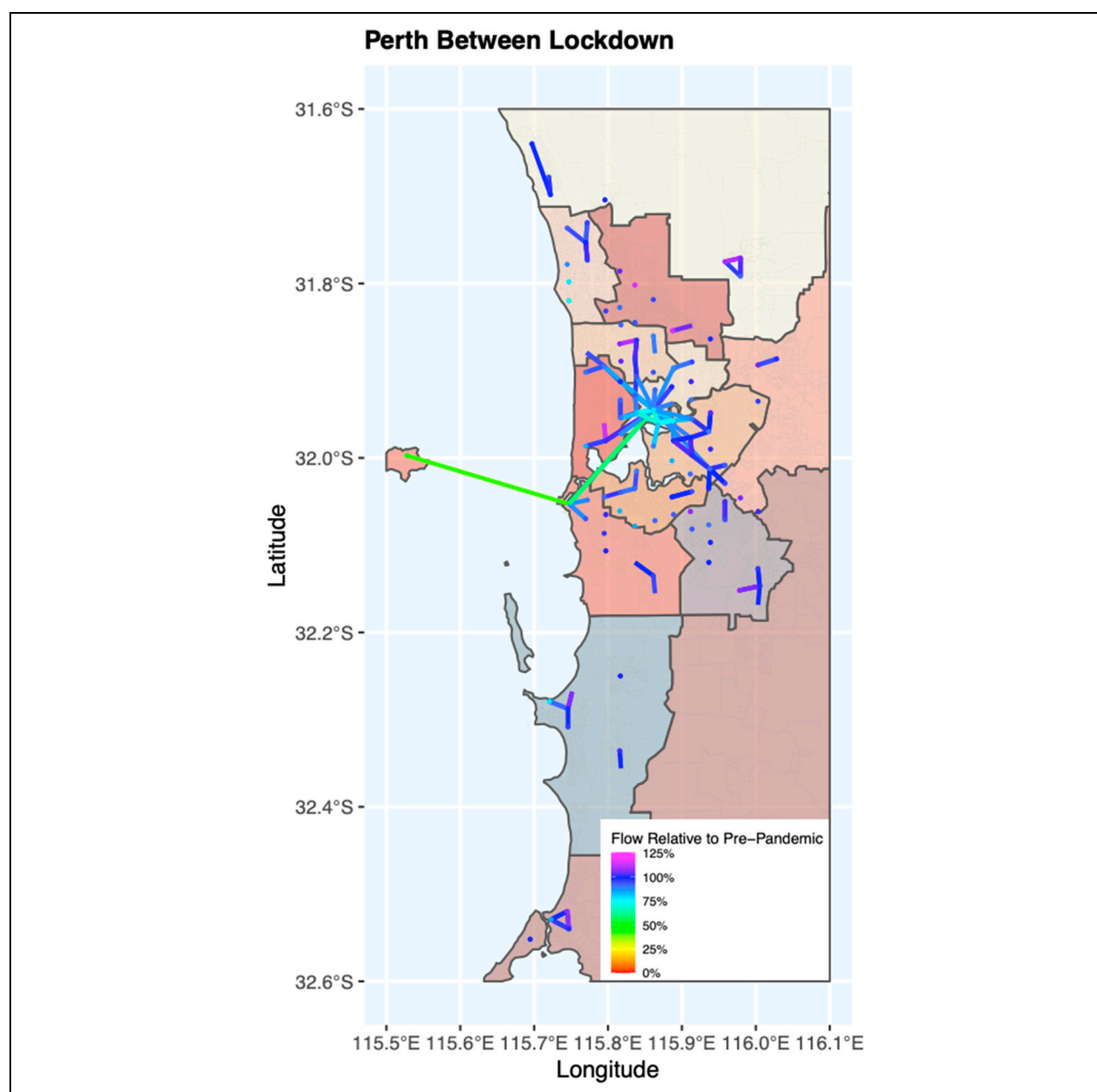


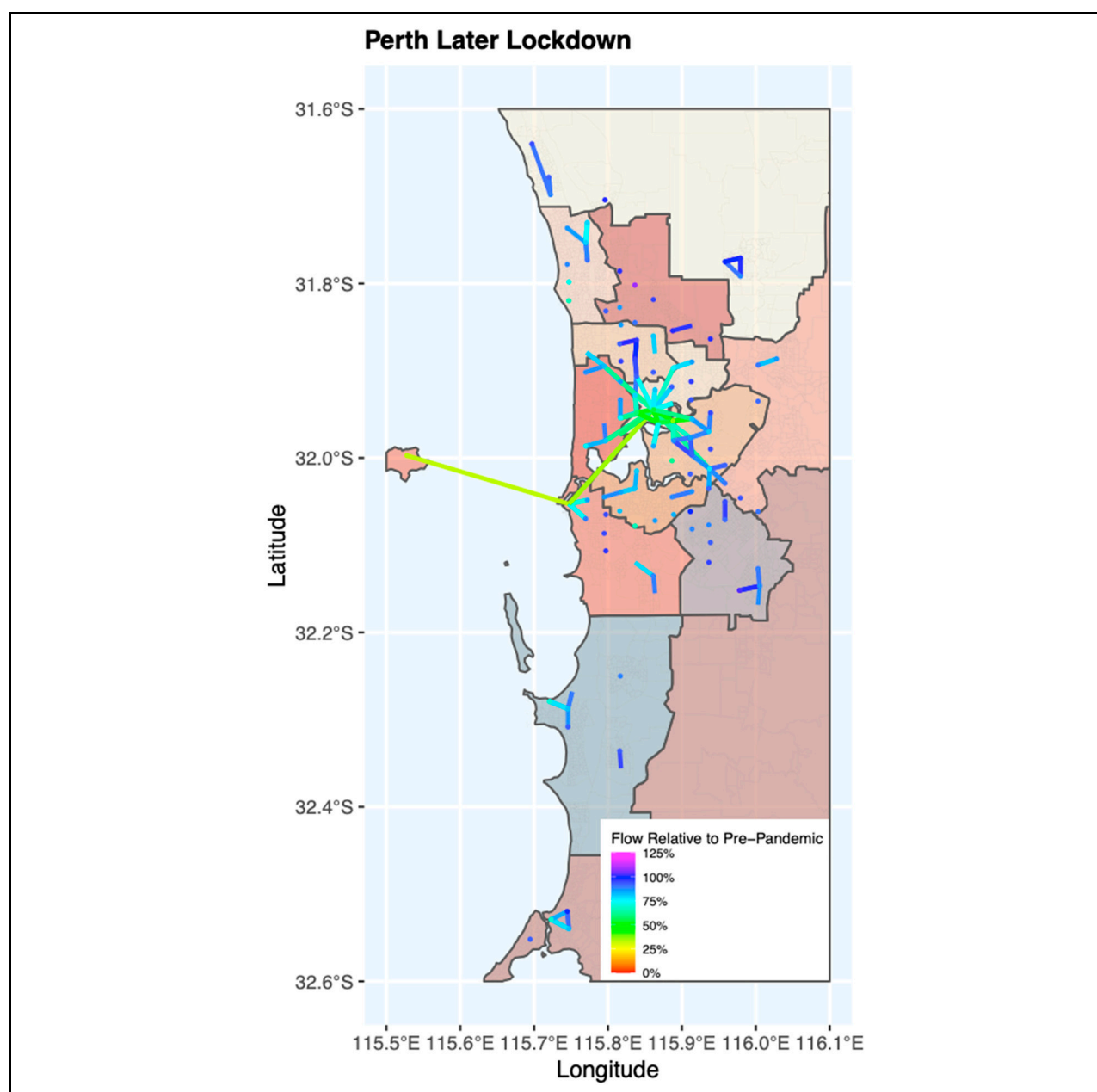


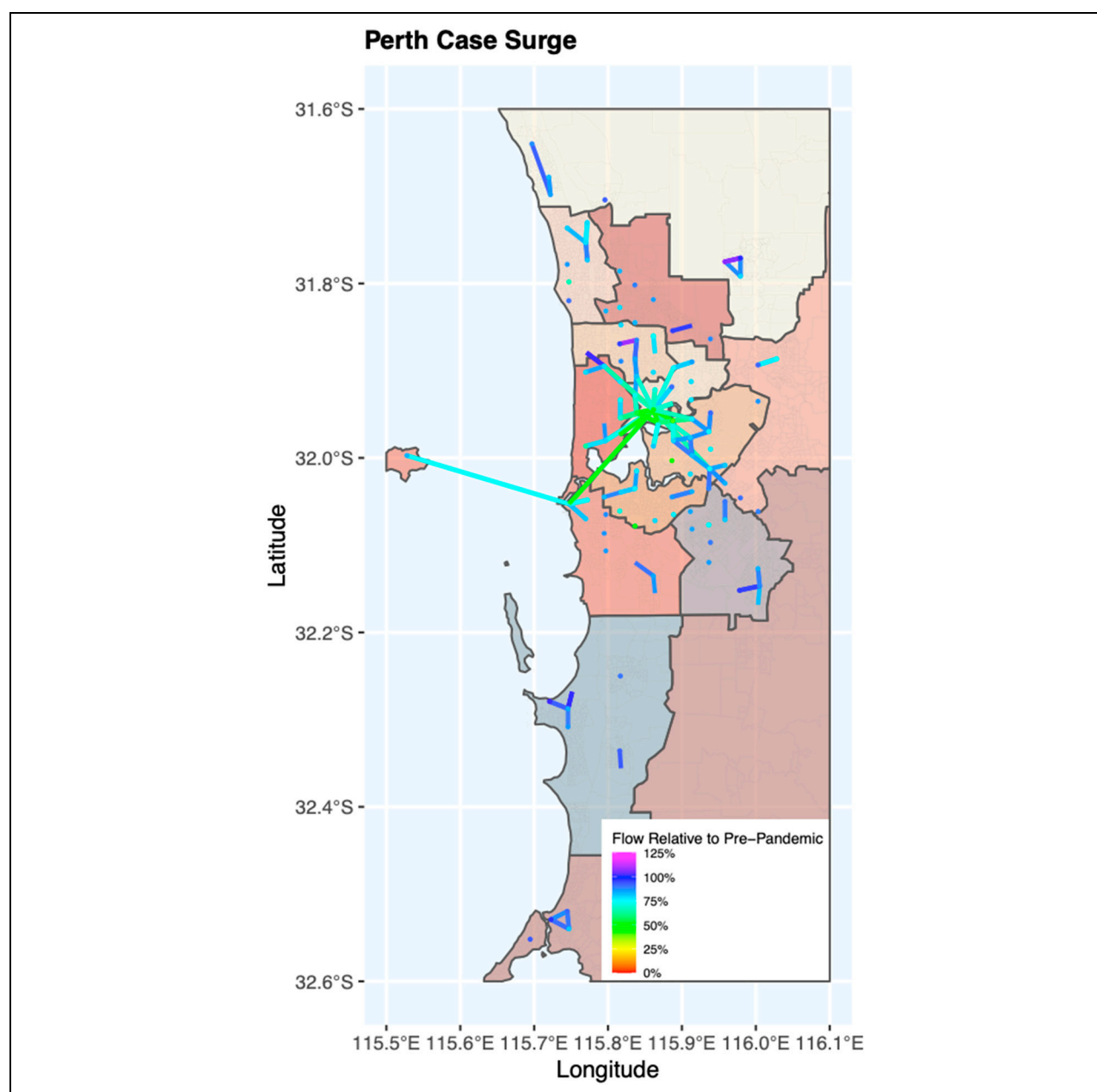


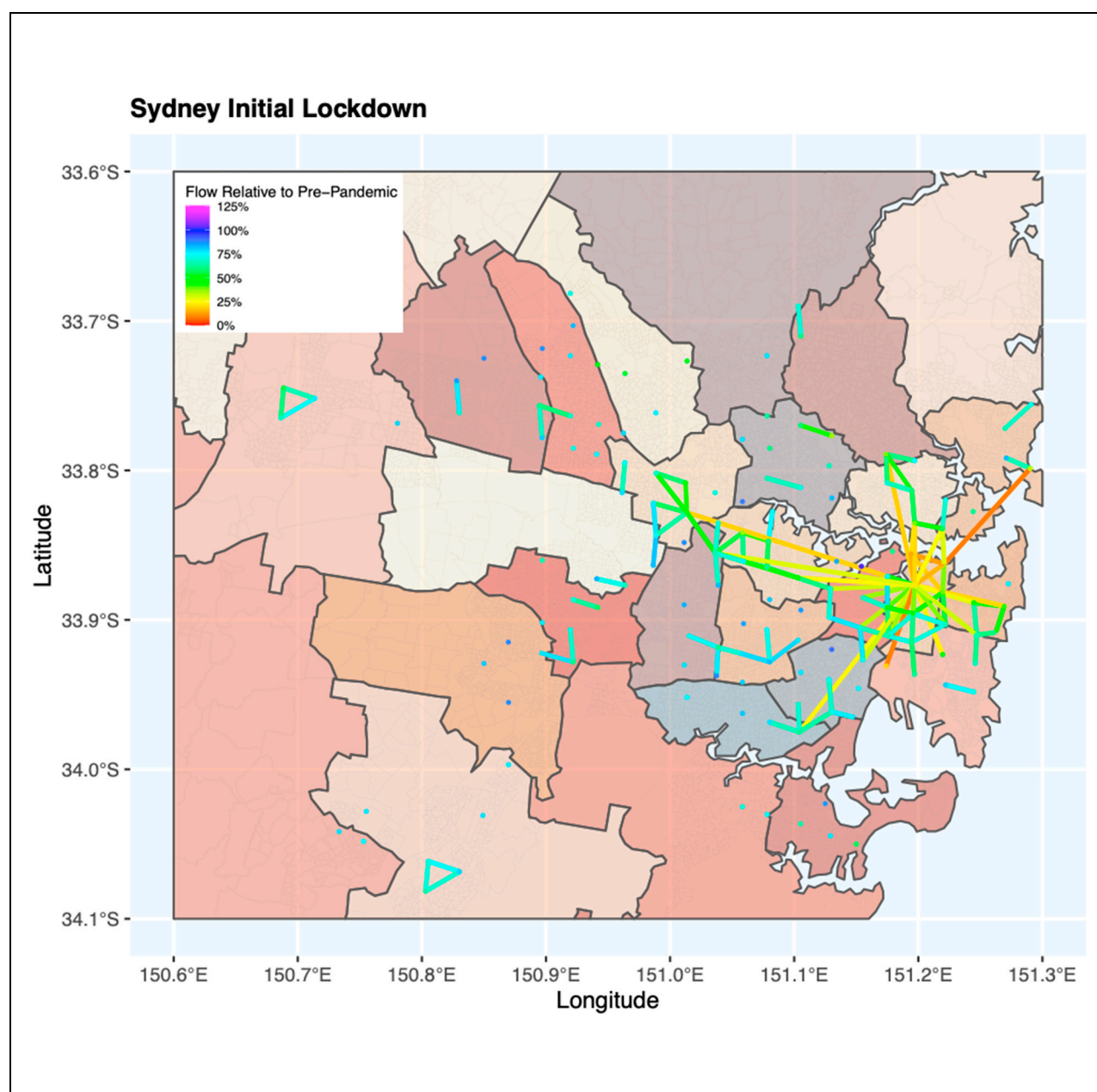


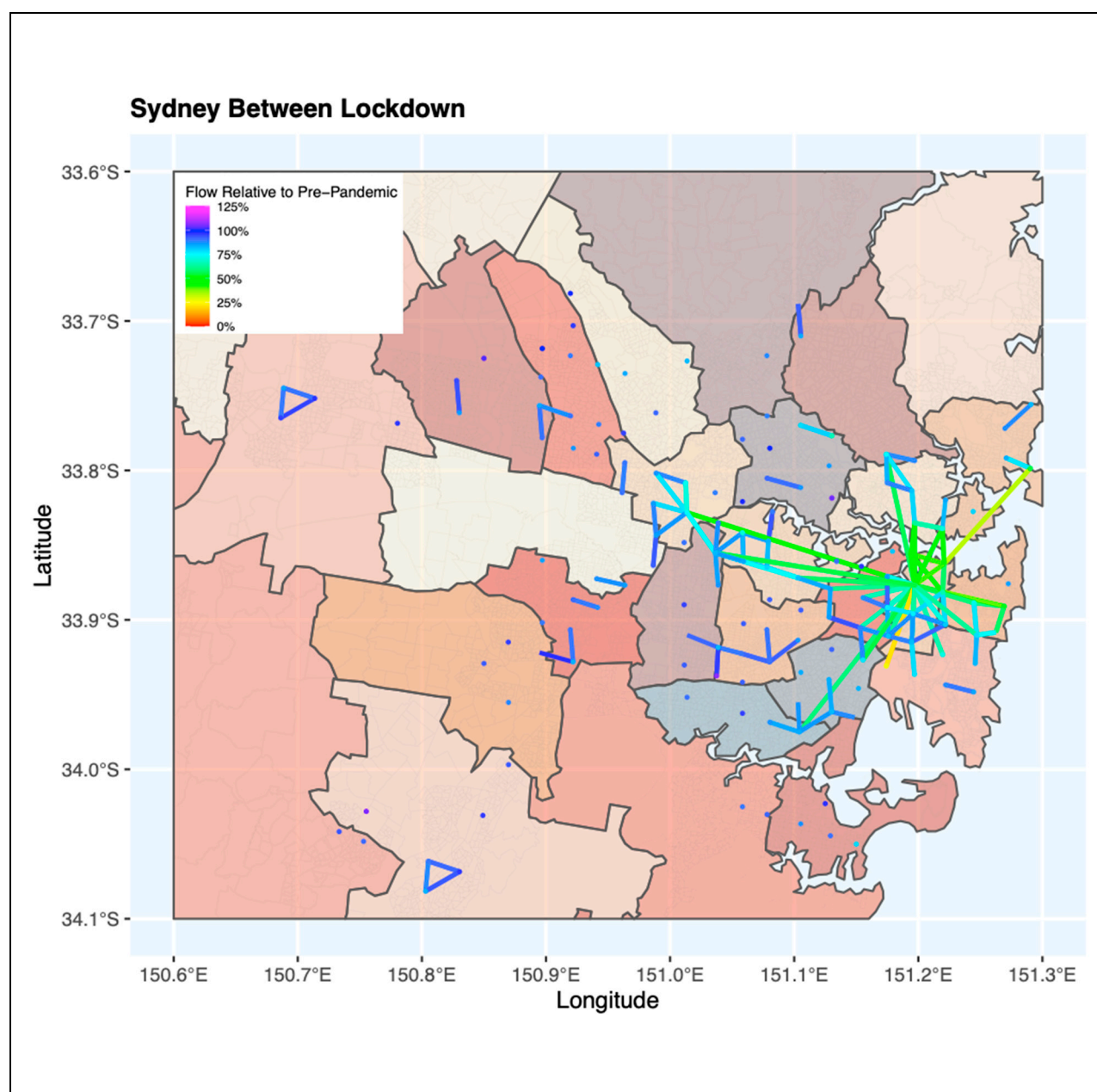


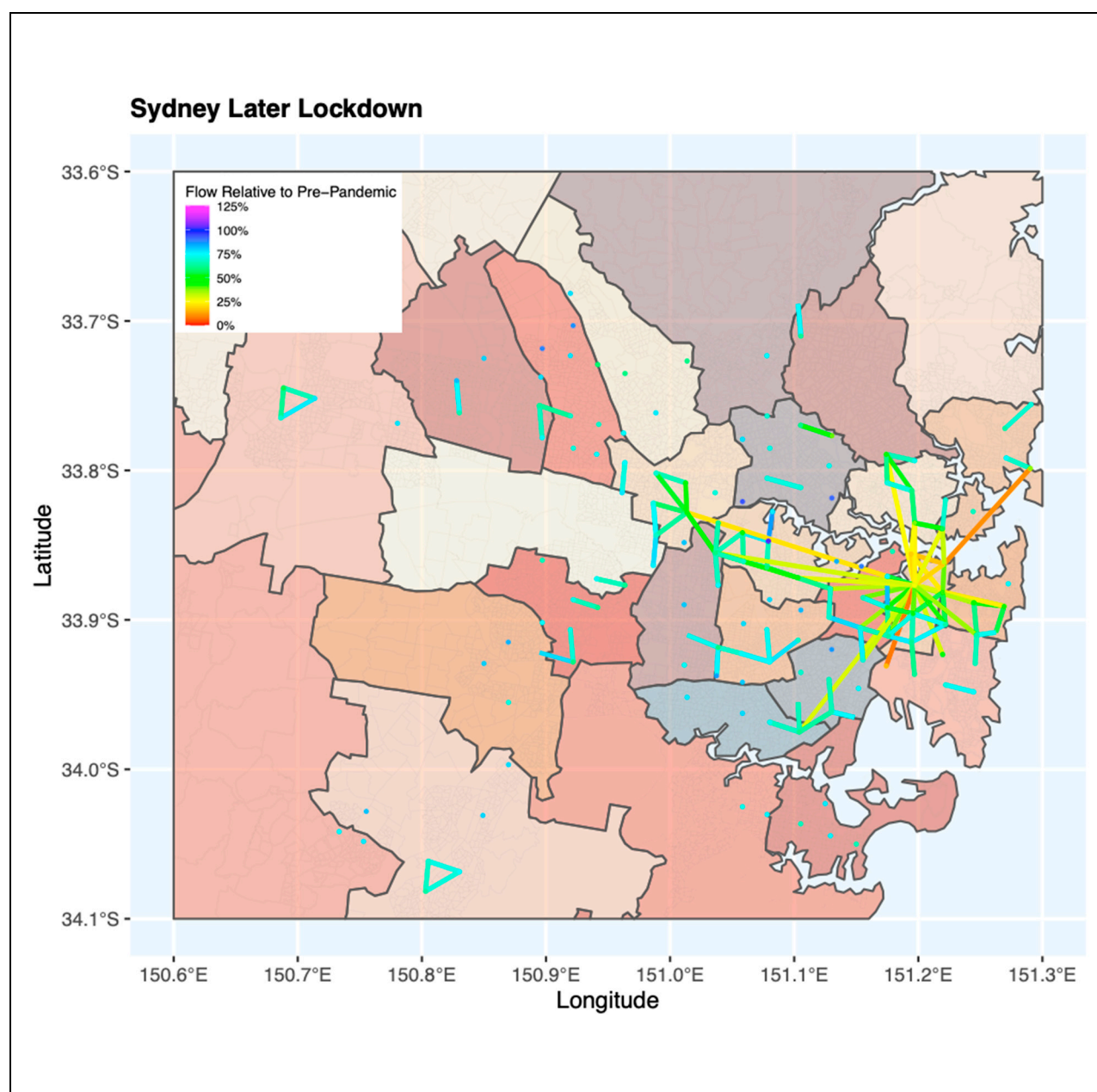












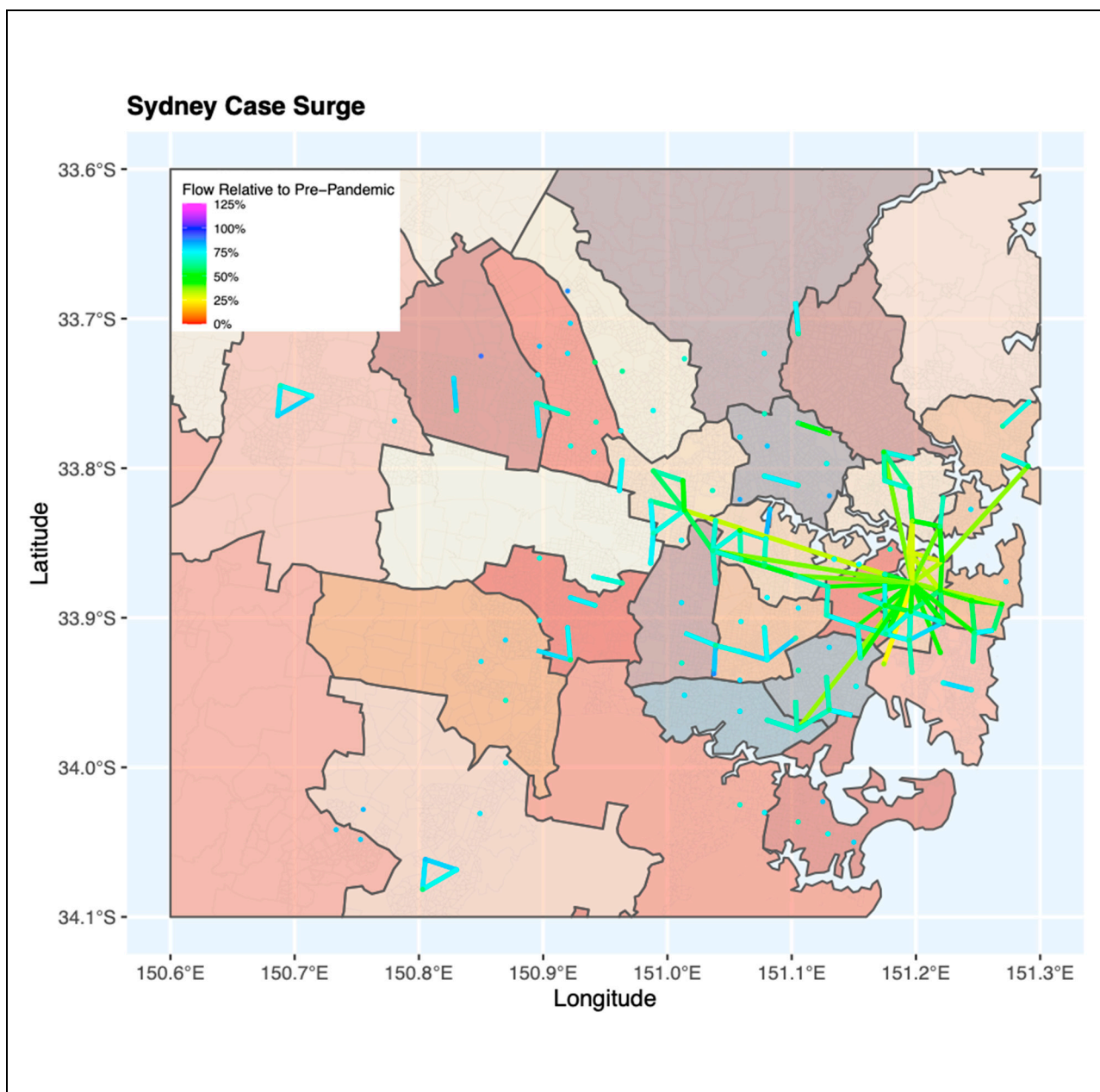
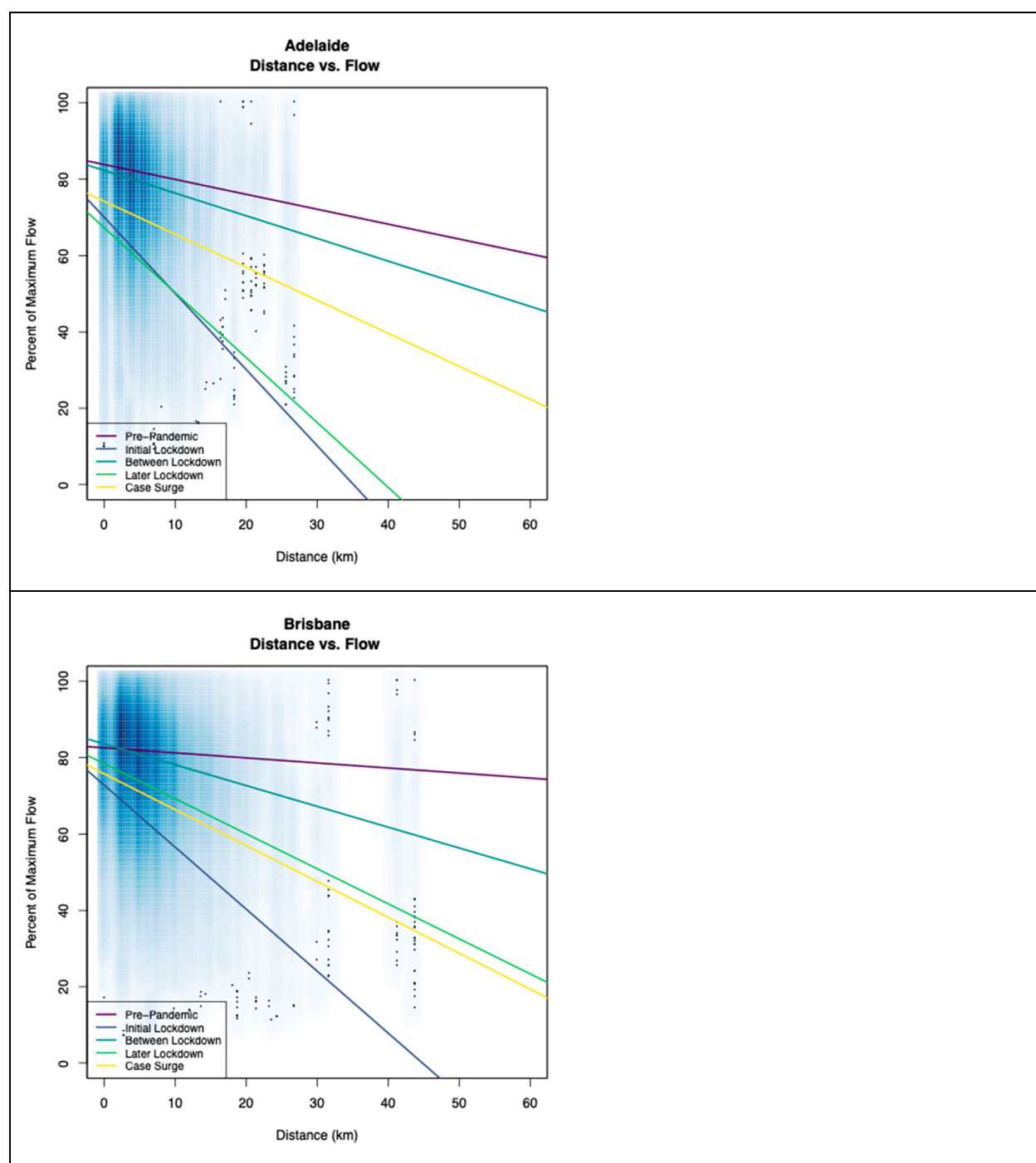
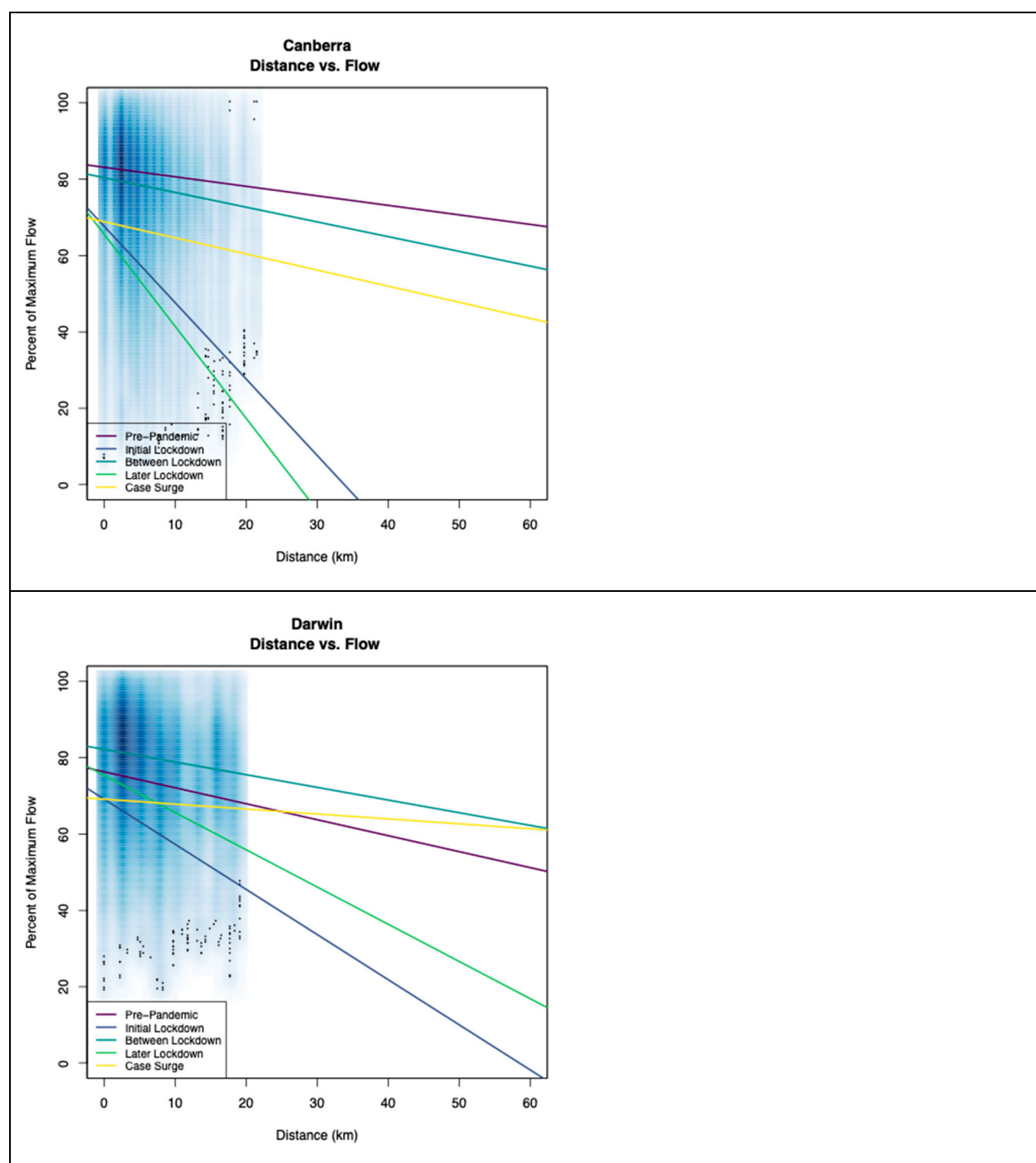
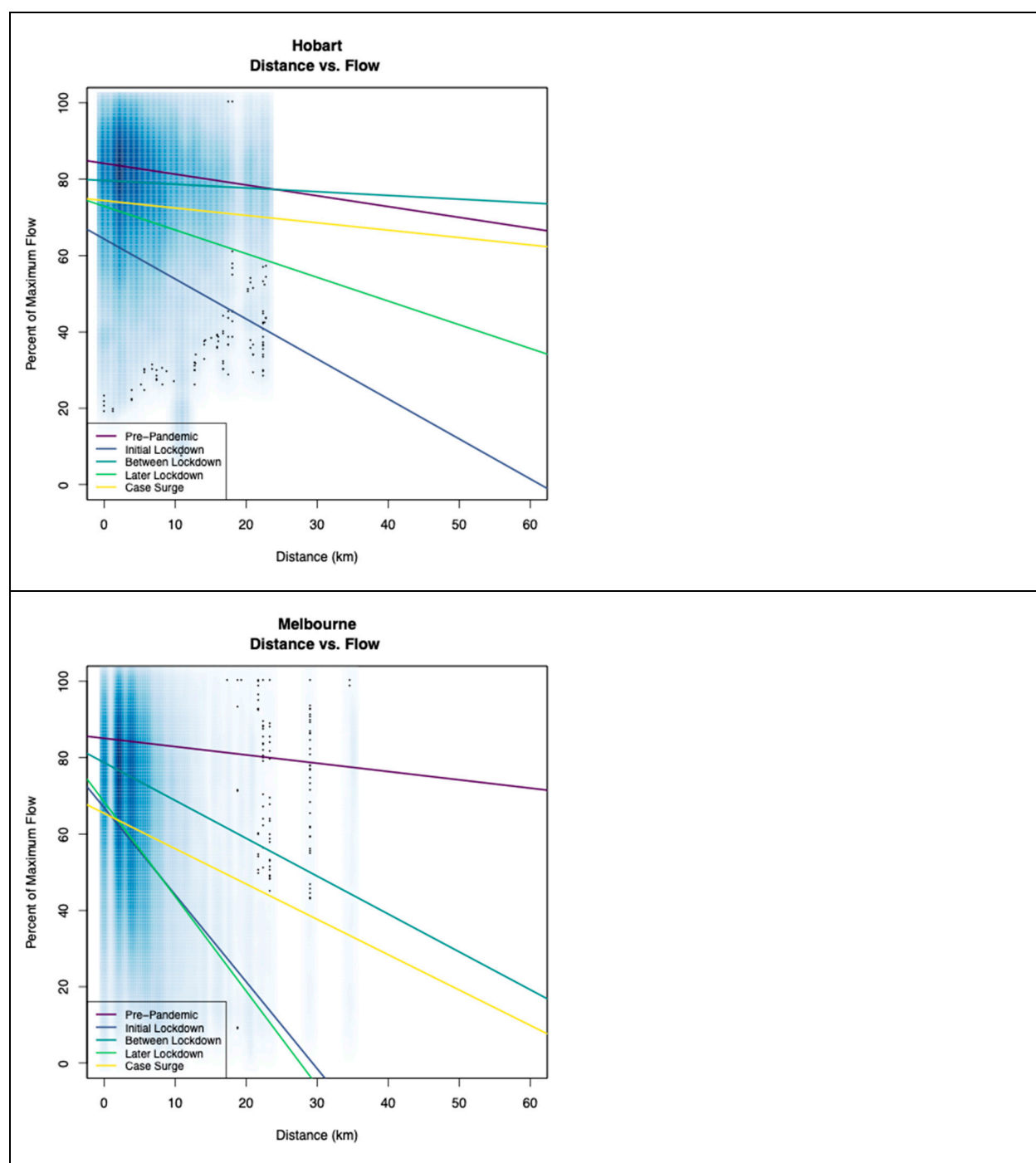


Figure S2. Movement maps for cities during pandemic stages relative to a pre-pandemic baseline for (a) The initial lockdown period, (b) Periods without movement restrictions, (c) Snap lockdowns, and (d) Surge in cases within a highly vaccinated population. For interpretability, only flows that were within the 1% of flow volume on any week within the timeseries are mapped.







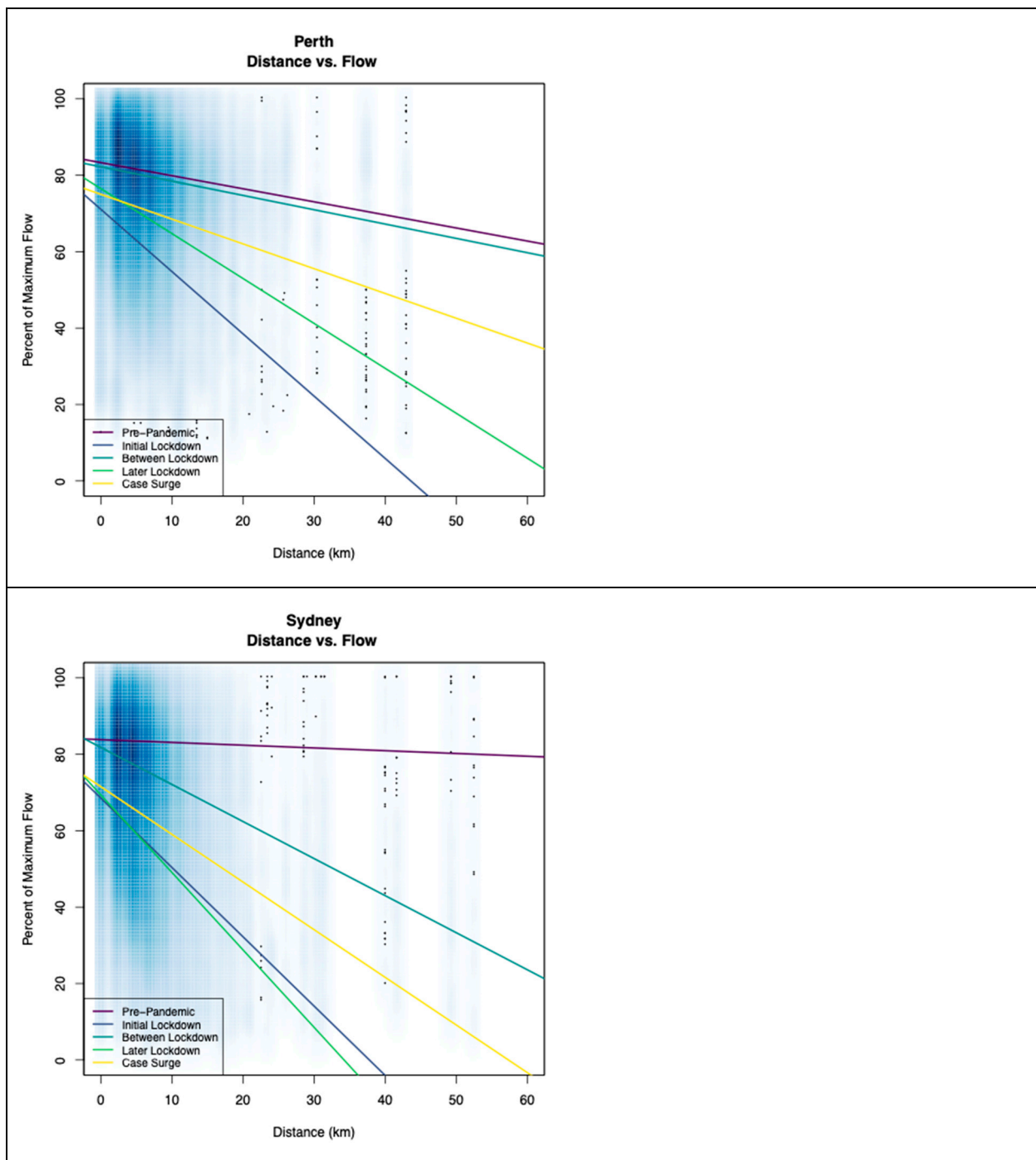
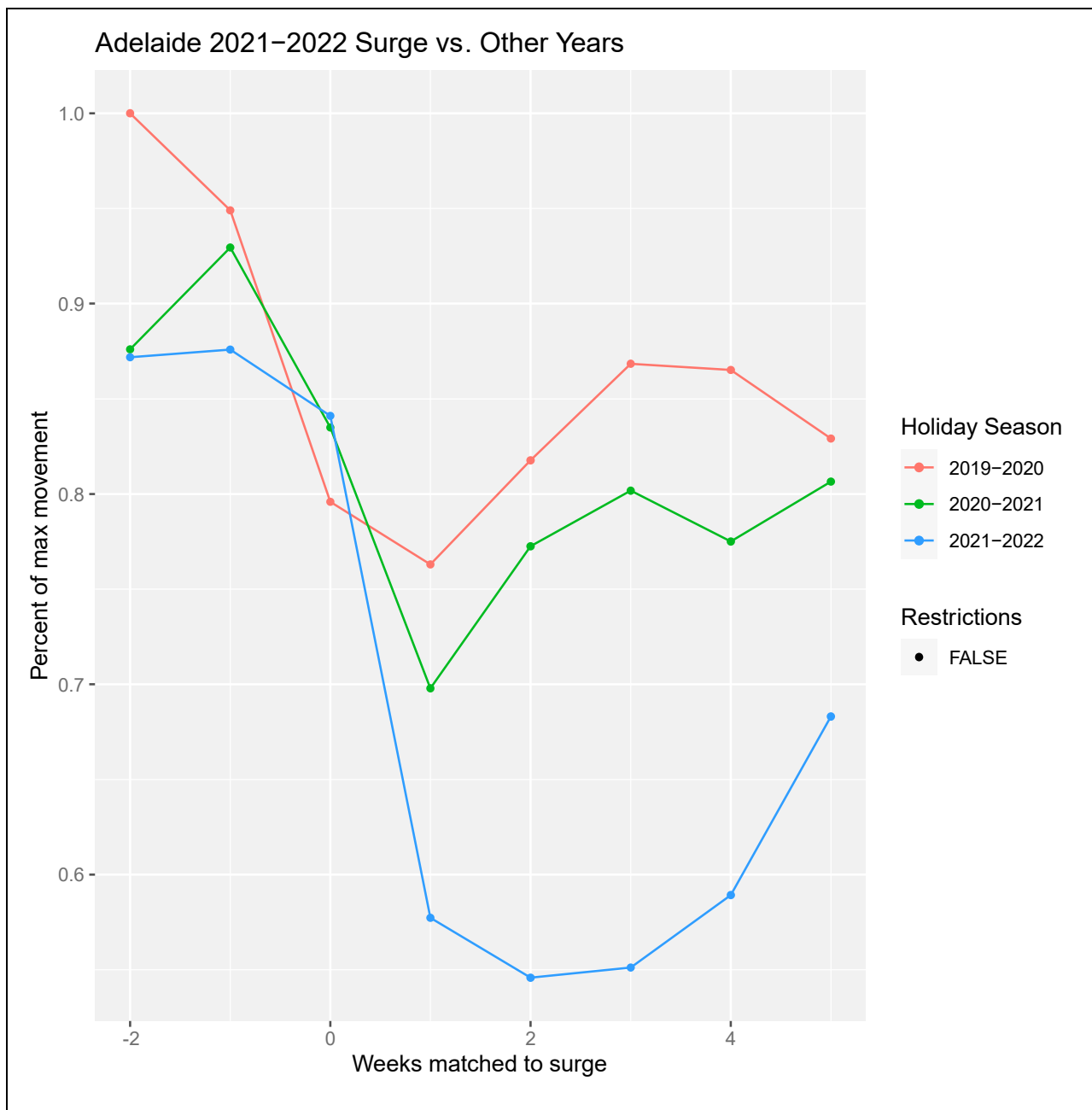
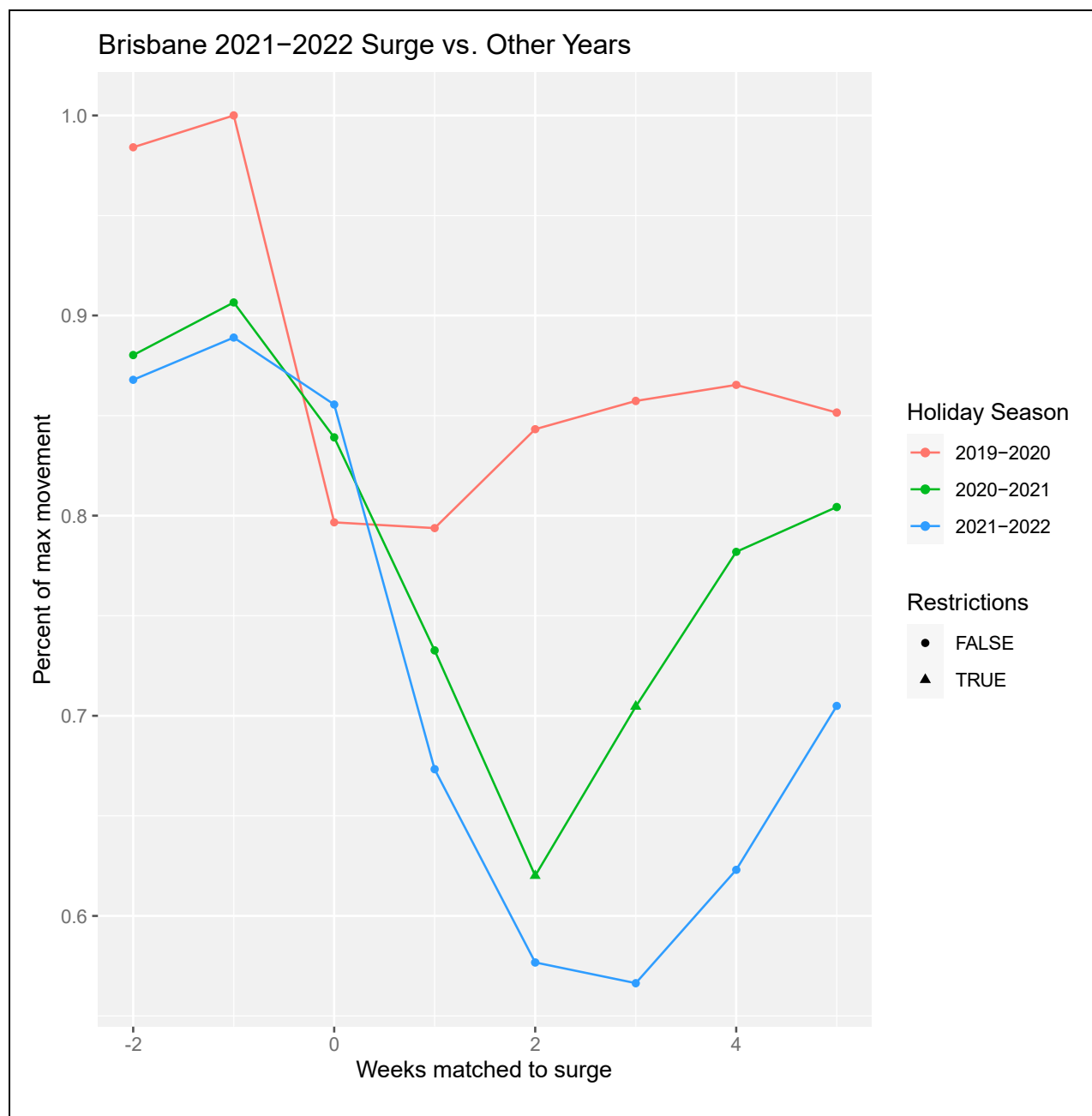
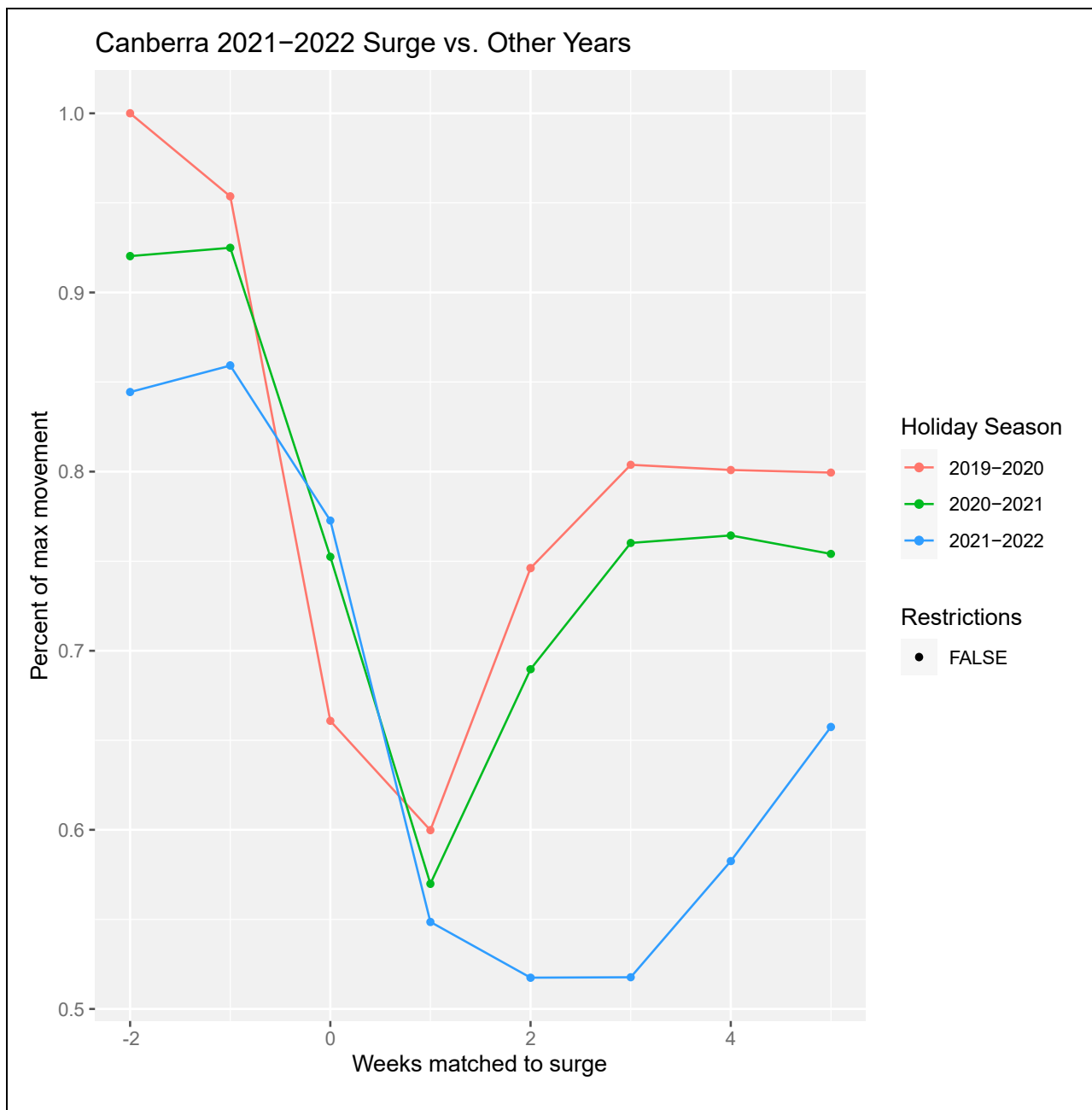
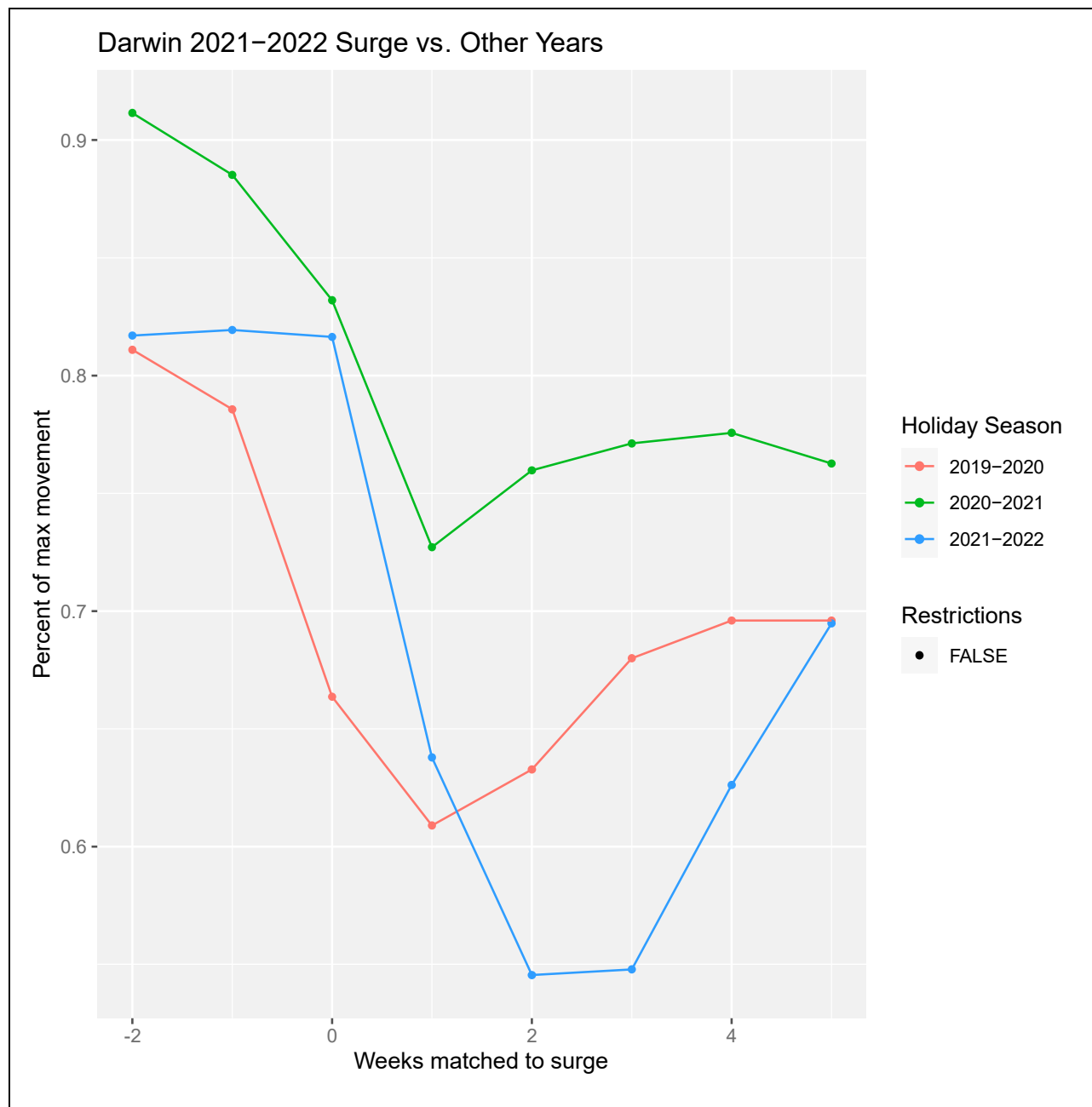


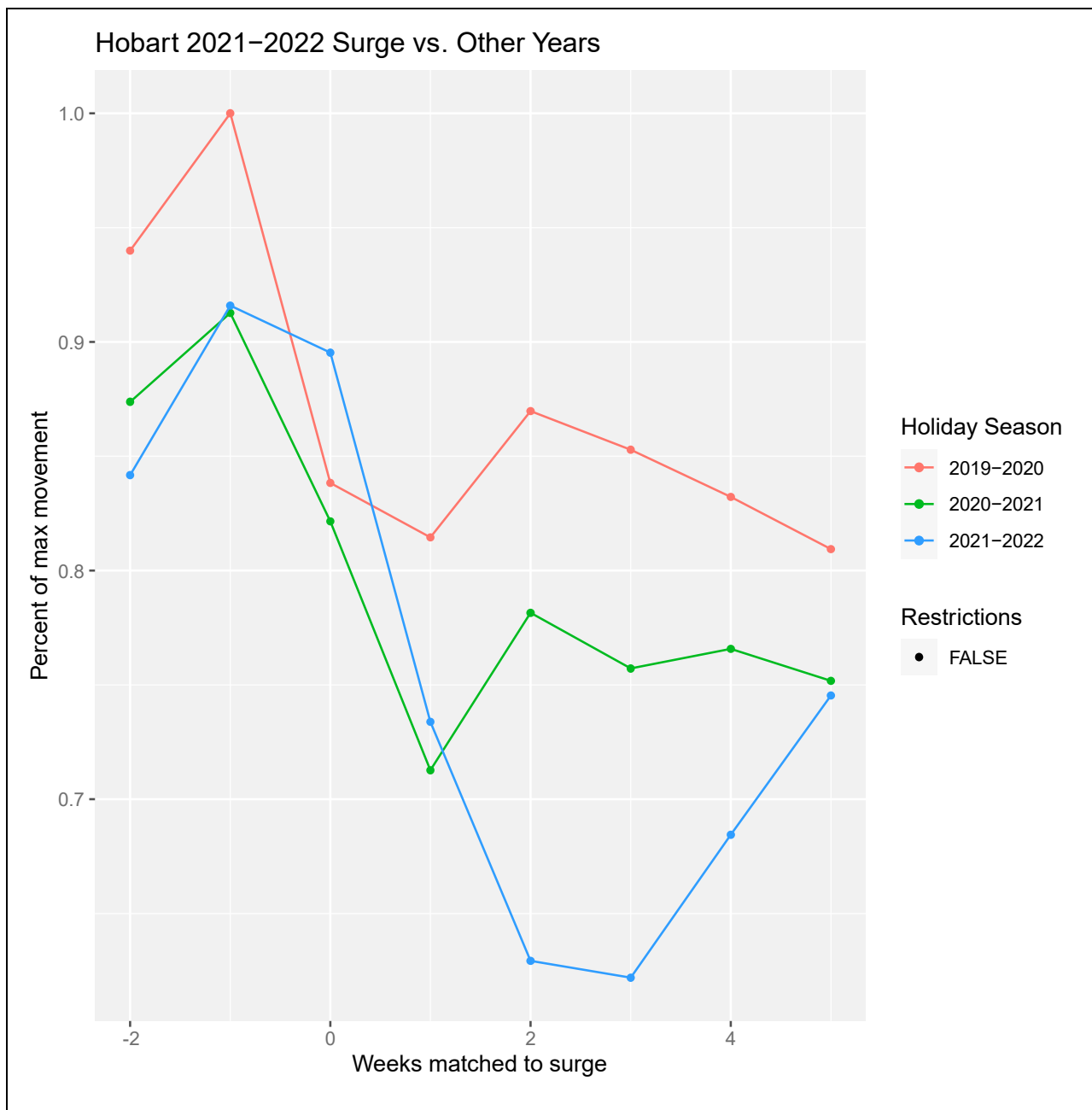
Figure S3. Declines in human movement flow volume by city for all lockdown categories for a single city. The lines represent the linear trends for all weeks within each category.

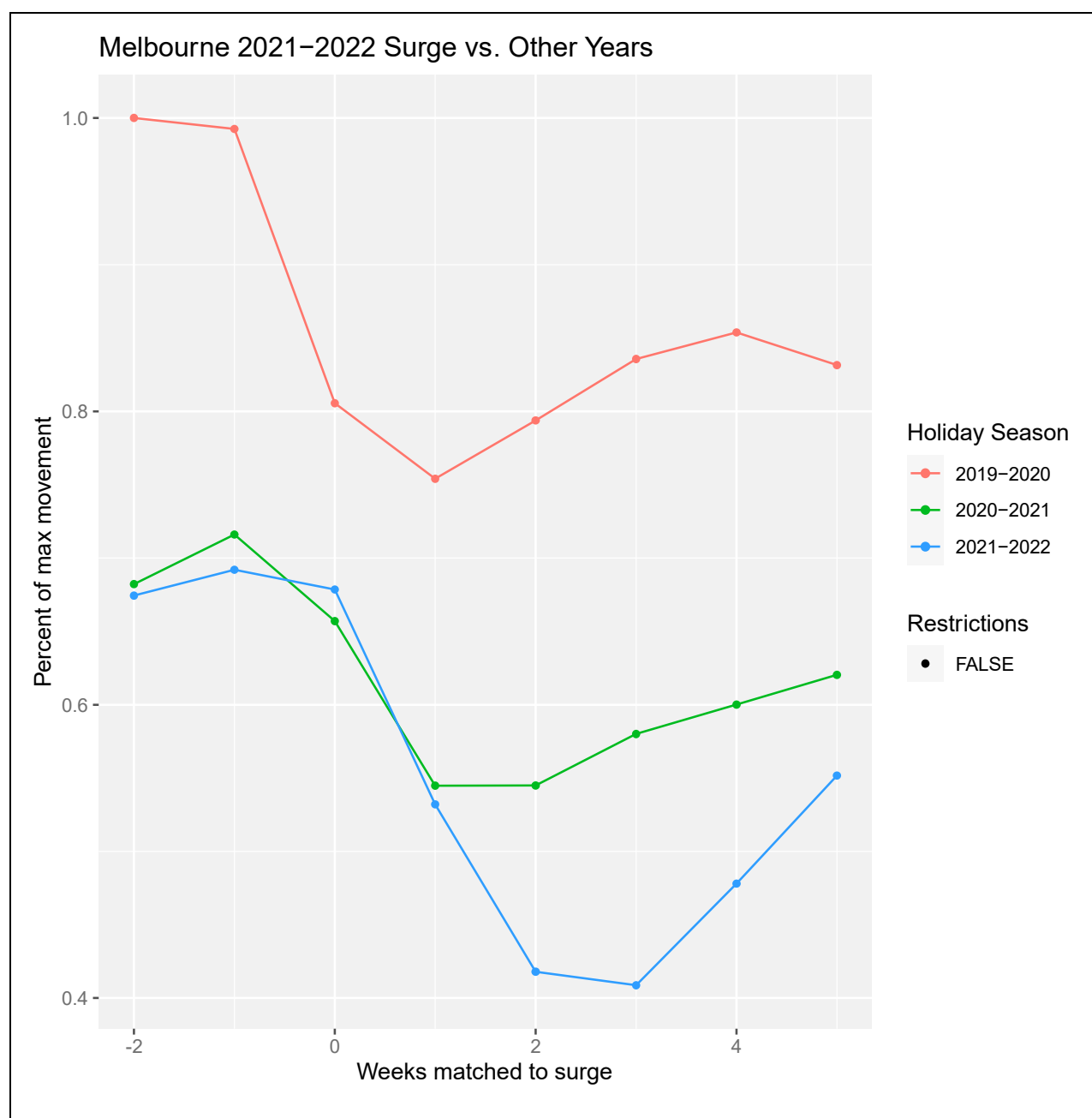


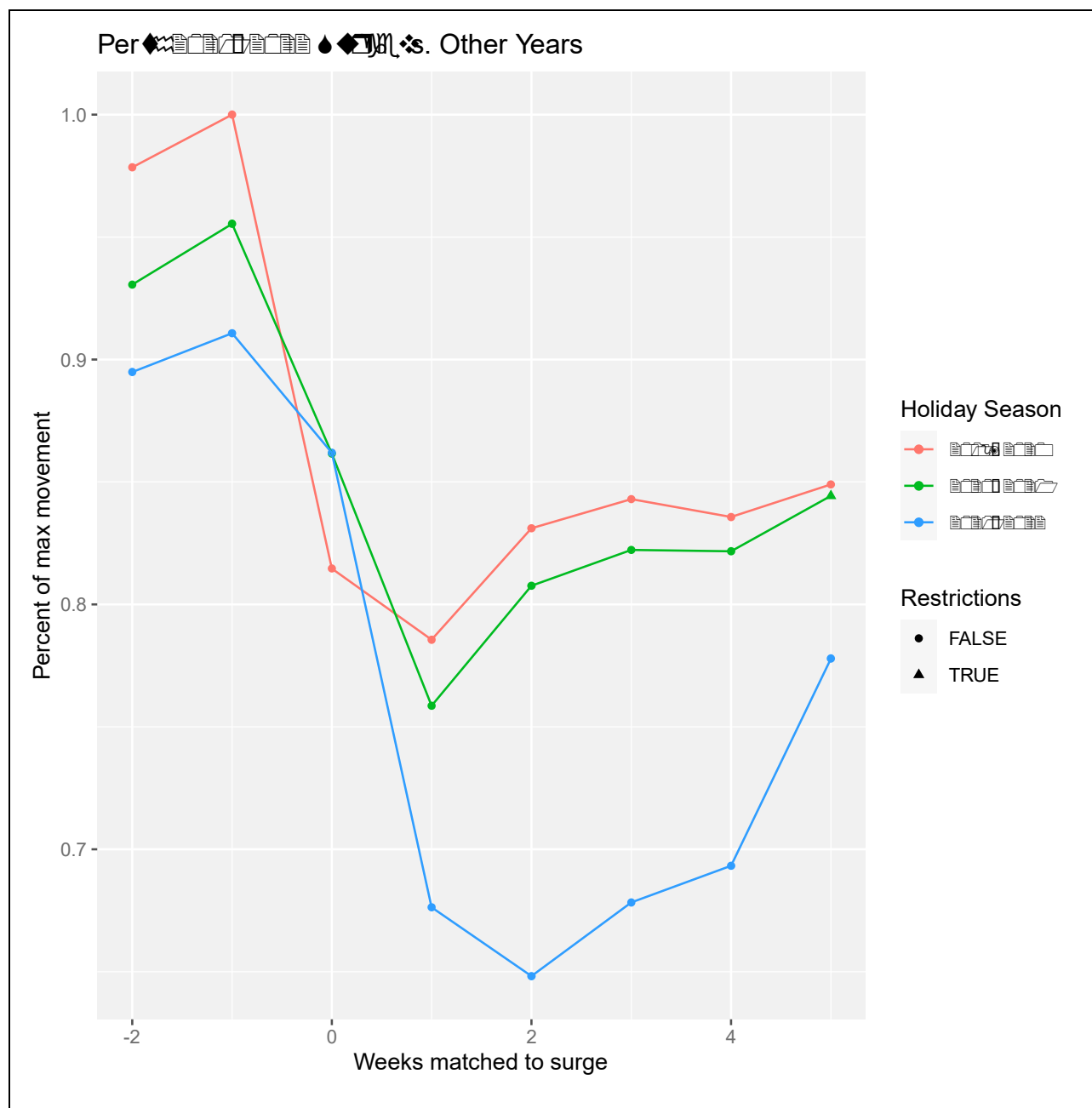












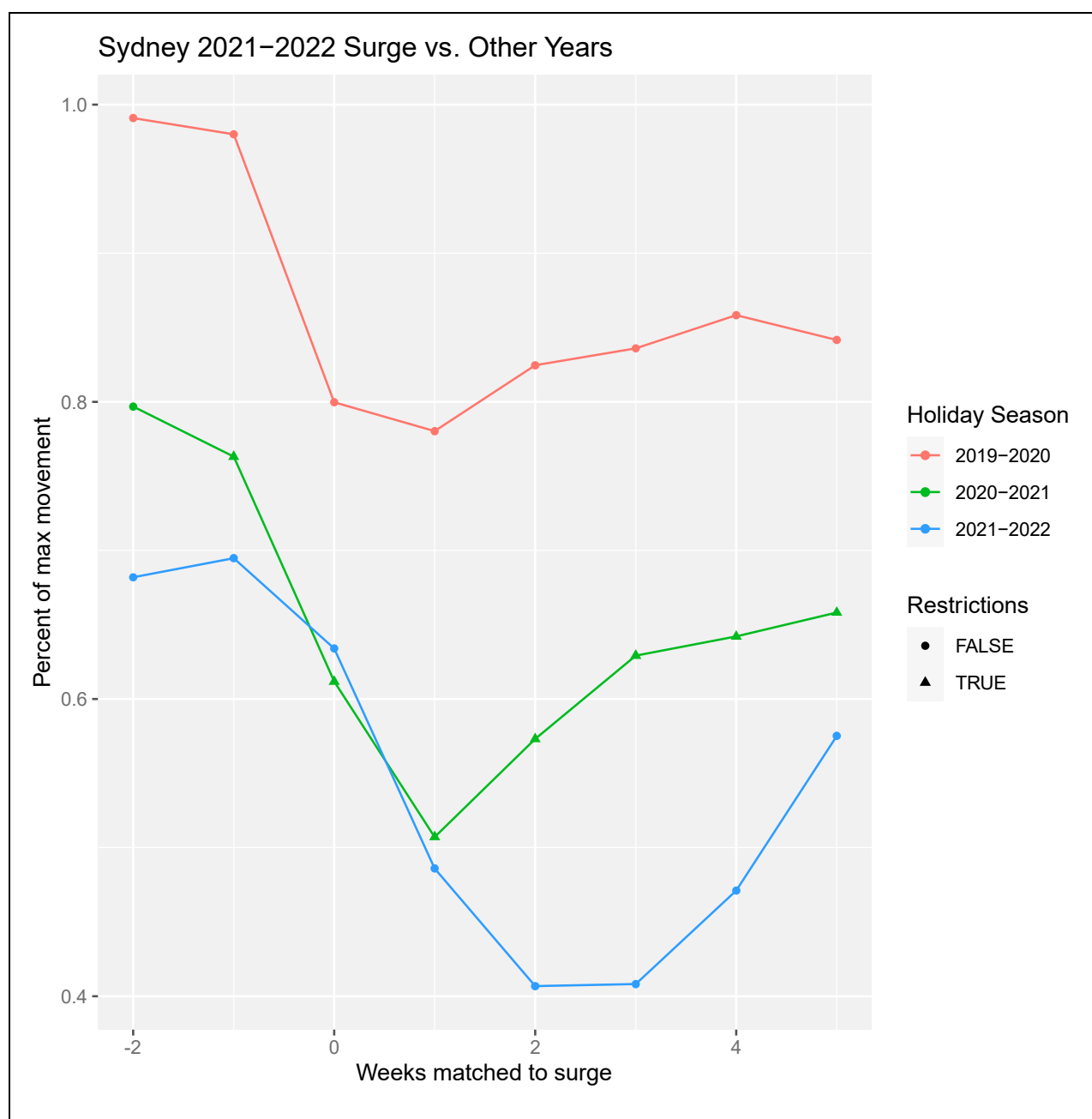


Figure S4. Declines in human movement flow volume coincident with the late pandemic case surges amongst a heavily vaccinated population and without restrictions compared to observed holiday movement volumes in other years. Anniversary weeks are aligned for each plot.