

eBirding and the pandemic

Preliminary results

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17-11-2021

Introduction



Instagram [@birding_memes](#)

Introduction

- Lifestyle shift
- COVID-19 and birding



Instagram @birding_memes

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- Movement, travel



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- Impact on eBird data



Instagram @birding_memes

Introduction

- Lifestyle shift
- COVID-19 and birding
- Movement, travel
- **Impact on eBird data**
- Broad predictions (birder behaviour)



Instagram @birding_memes

Questions

Changes and gaps in pandemic eBird data?

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BEFORE (BEF) = 2018 – 19

DURING (DUR) = 2020 – 21

Questions

Changes and gaps in pandemic eBird data?

- Overall birding activity

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Changes and gaps in pandemic eBird data?

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- Group birding

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Changes and gaps in pandemic eBird data?

- Overall birding activity
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- Birding effort

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Changes and gaps in pandemic eBird data?

- Overall birding activity
- Group birding
- Birding effort
- Biases in birding activity
 - Spatial spread
 - Temporal spread

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Changes and gaps in pandemic eBird data?

- Overall birding activity
- Group birding
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 - Spatial spread
 - Temporal spread

Numerous metrics using the focal data point, **checklists**.

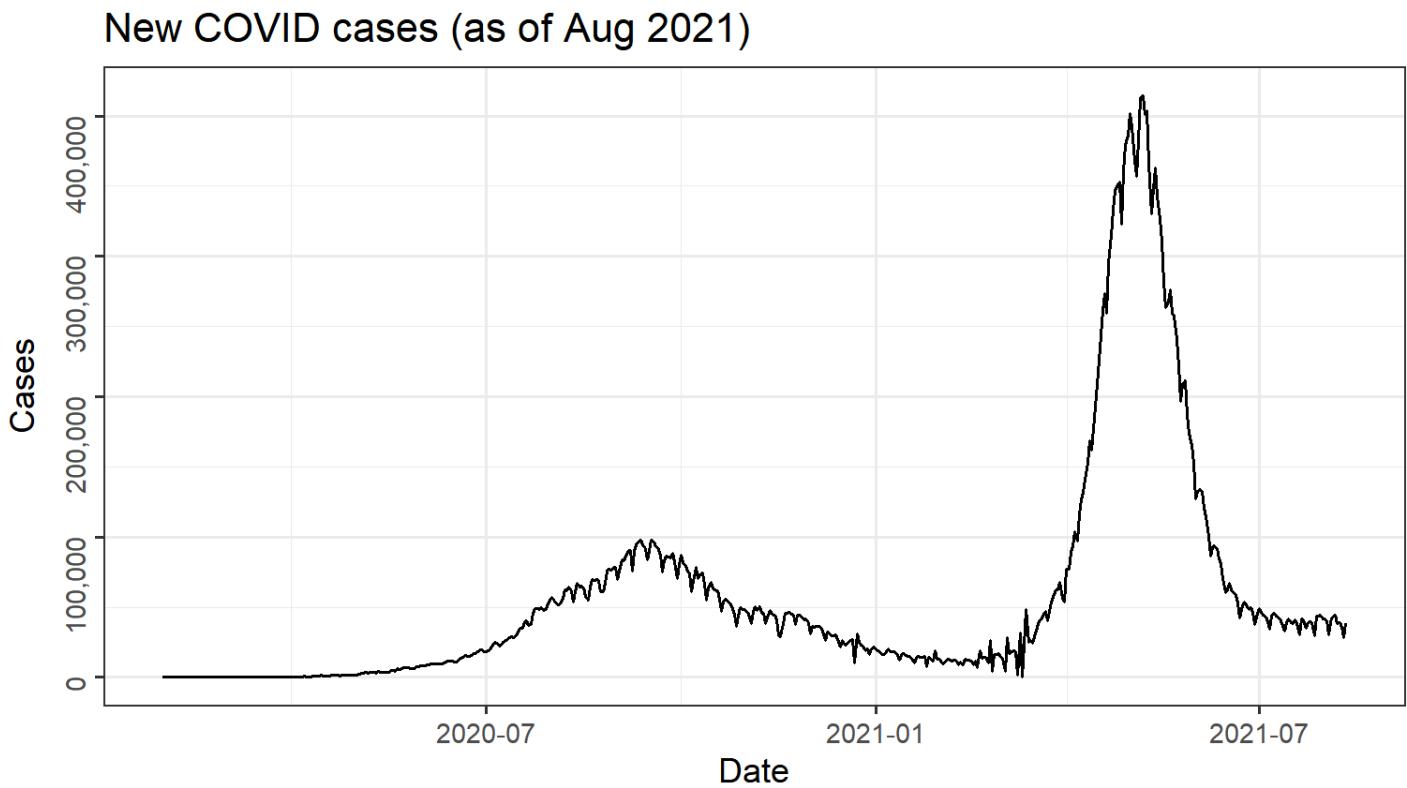
The COVID-19 timeline

The COVID-19 timeline

COVID-19 waves

The COVID-19 timeline

COVID-19 waves



The COVID-19 timeline

COVID-19 waves

Lockdowns

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1	state	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	AR				x	x																			
3	GJ				x	x																			
4	KA				x	x															x		x	x	x
5	KL				x	x															x	x			
6	MH				x	x															x	x			
7	SK				x	x																			
8	TN				x	x																			
9	UL				x	x																			
10	WB				x	x																			
11																									

Timeline information scarce!

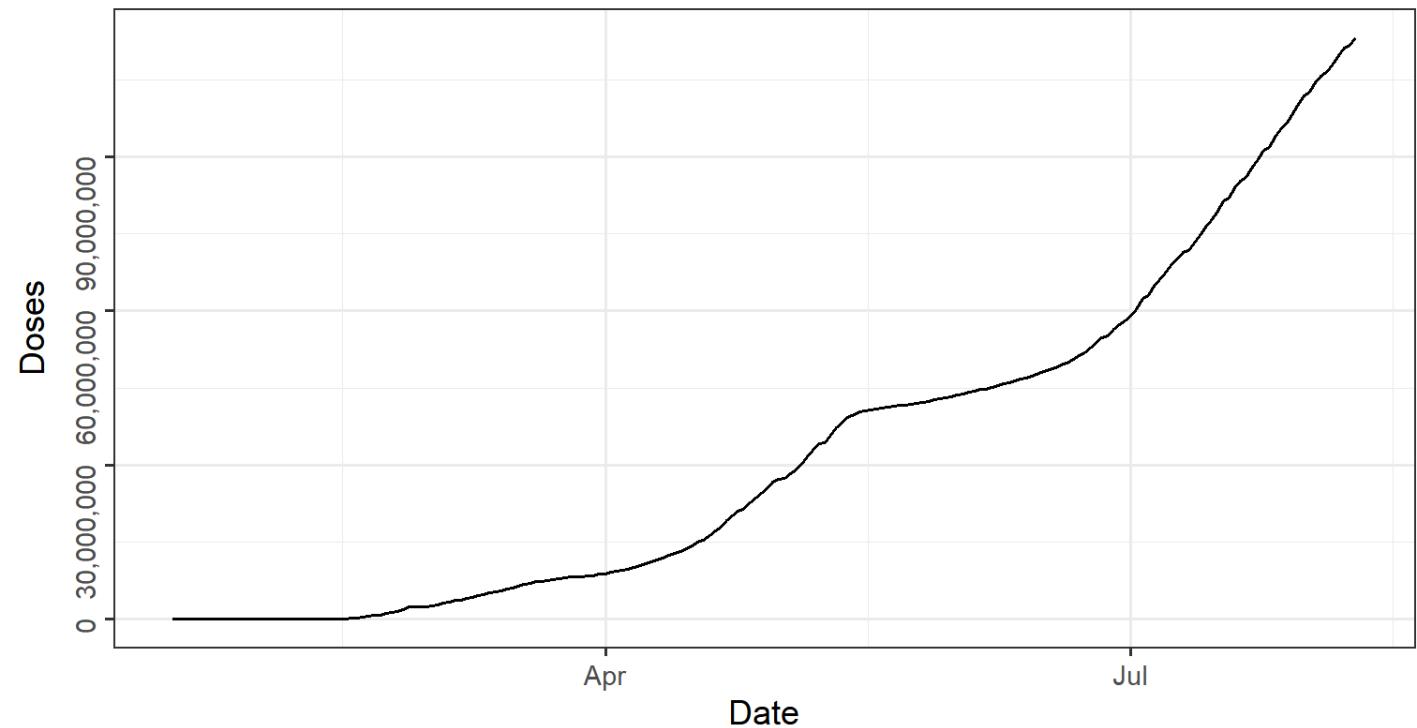
The COVID-19 timeline

COVID-19 waves

Lockdowns

Vaccination phases

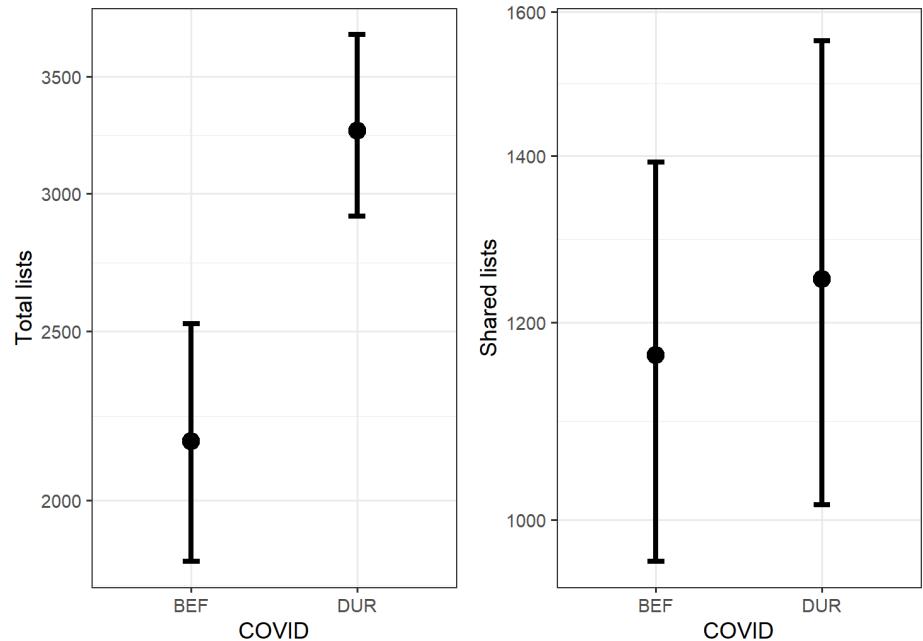
Second vaccine doses administered (as of Aug 2021)



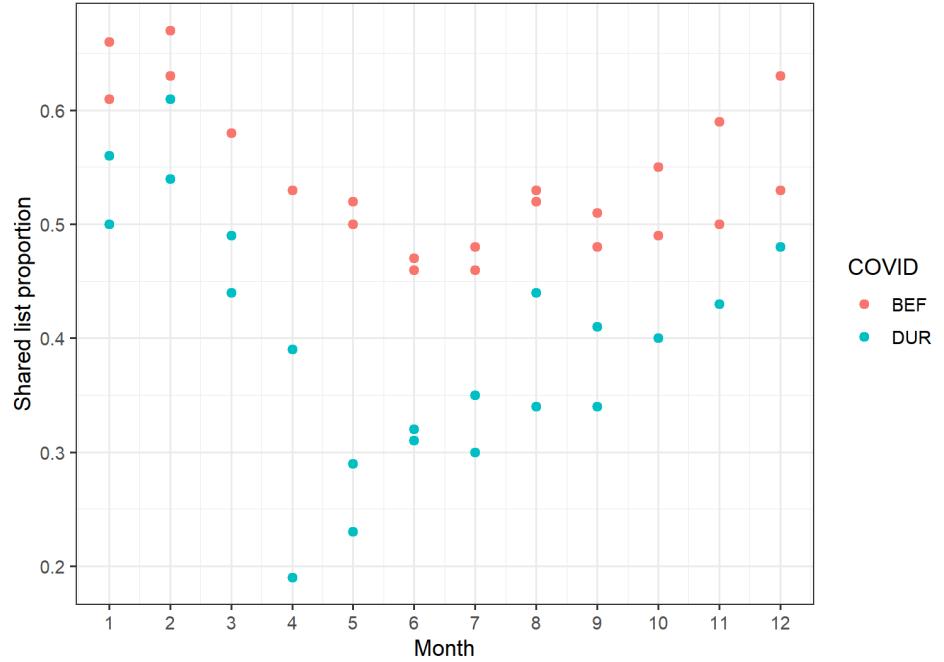
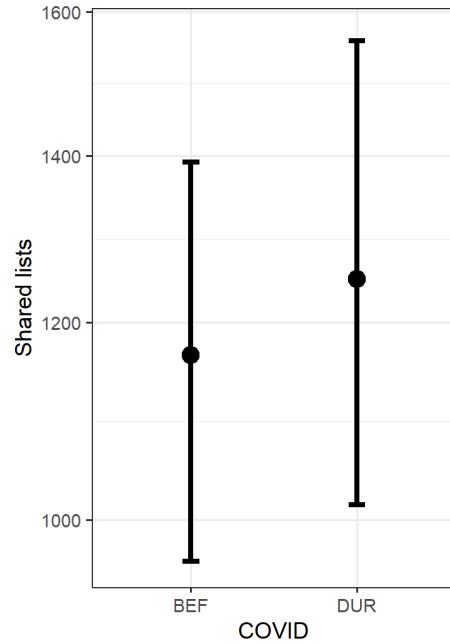
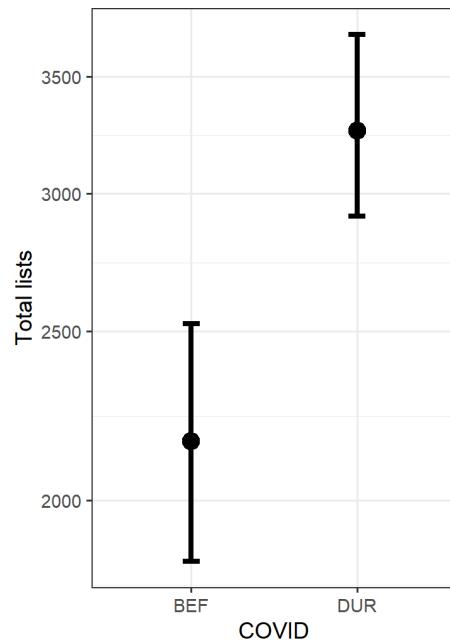
Exploratory results

Birding activity

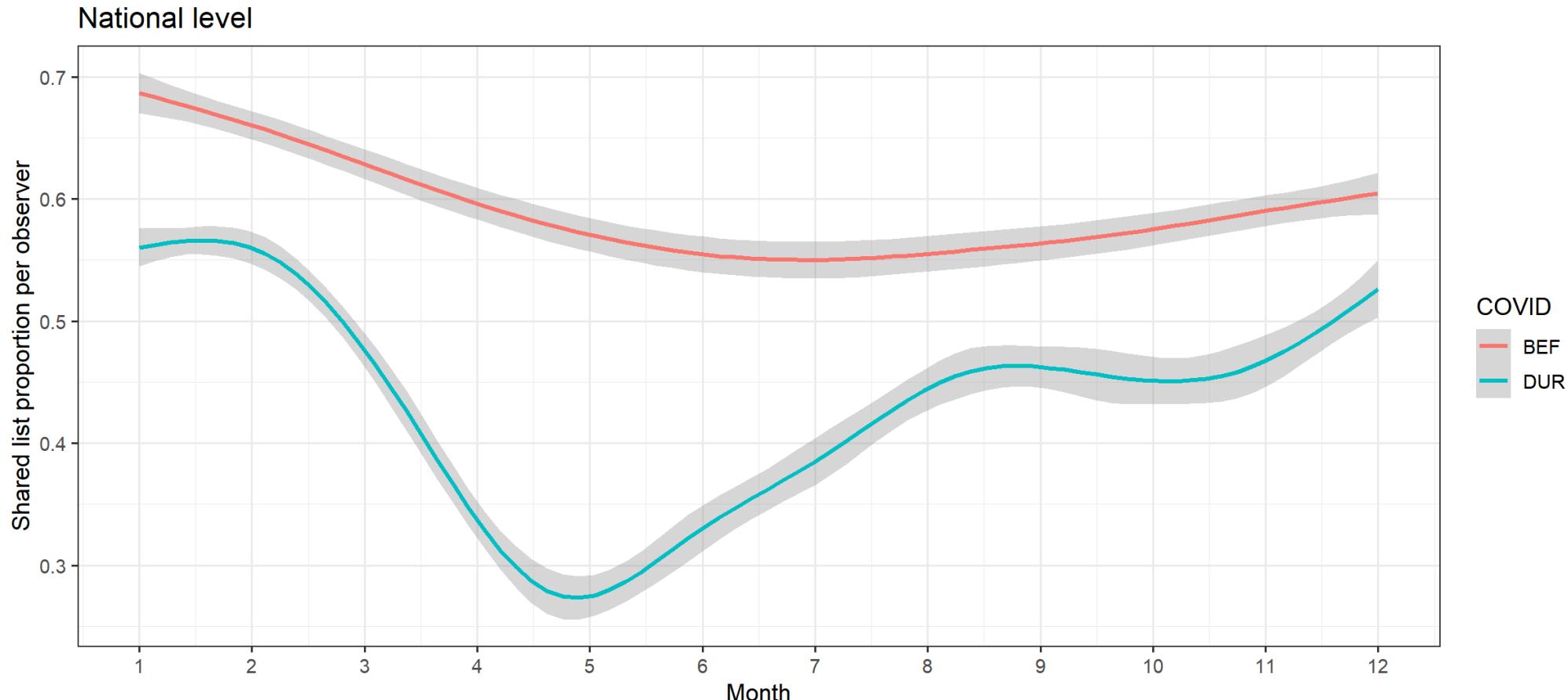
Total and shared lists



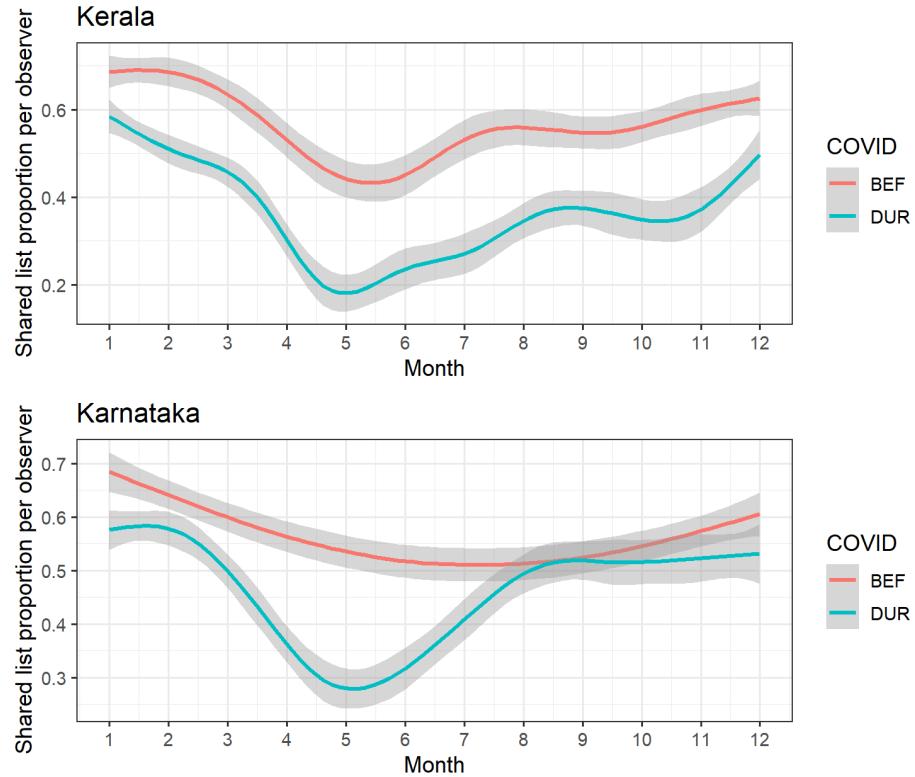
Total and shared lists



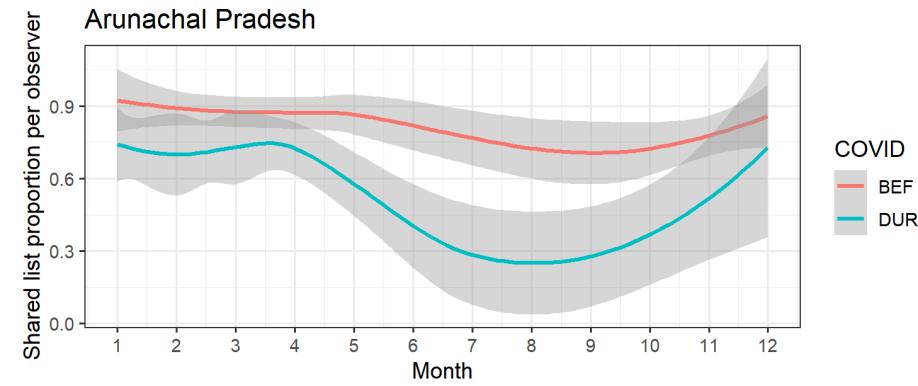
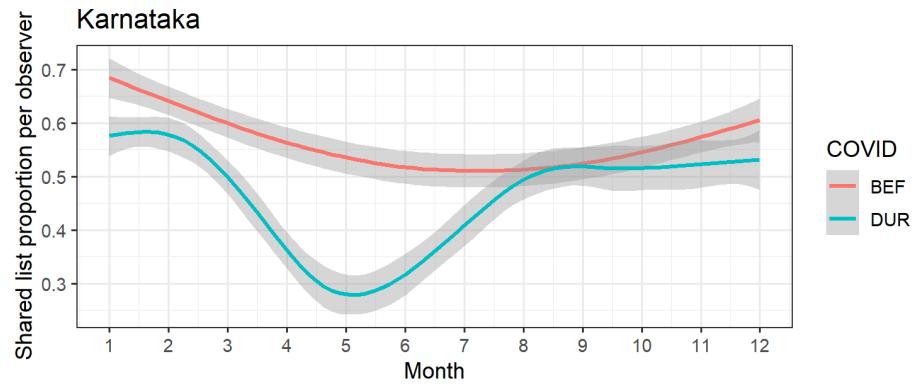
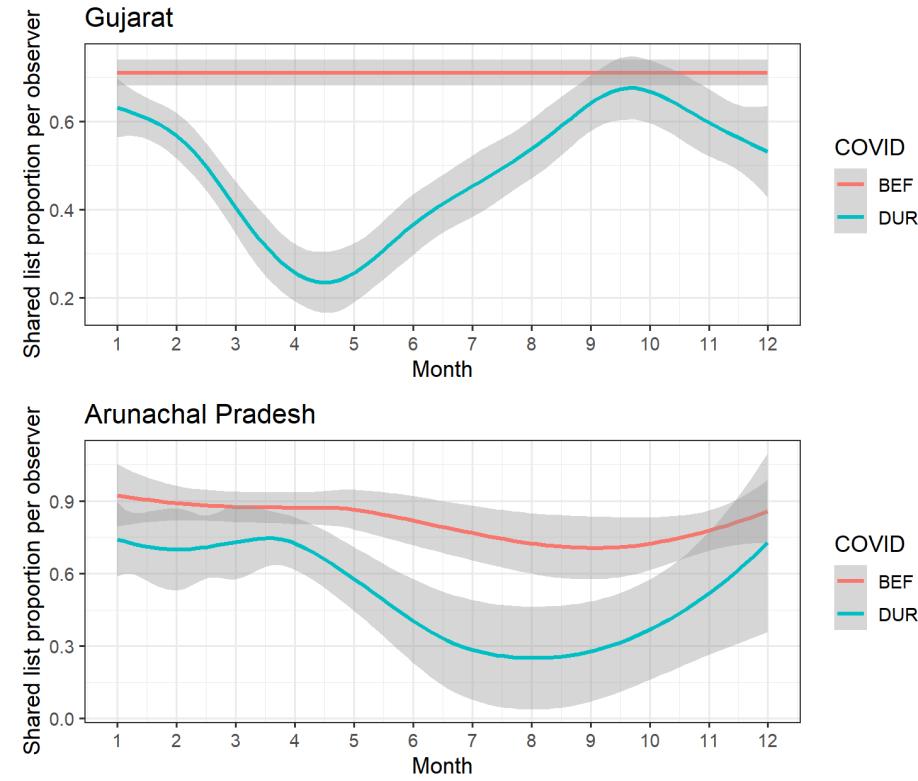
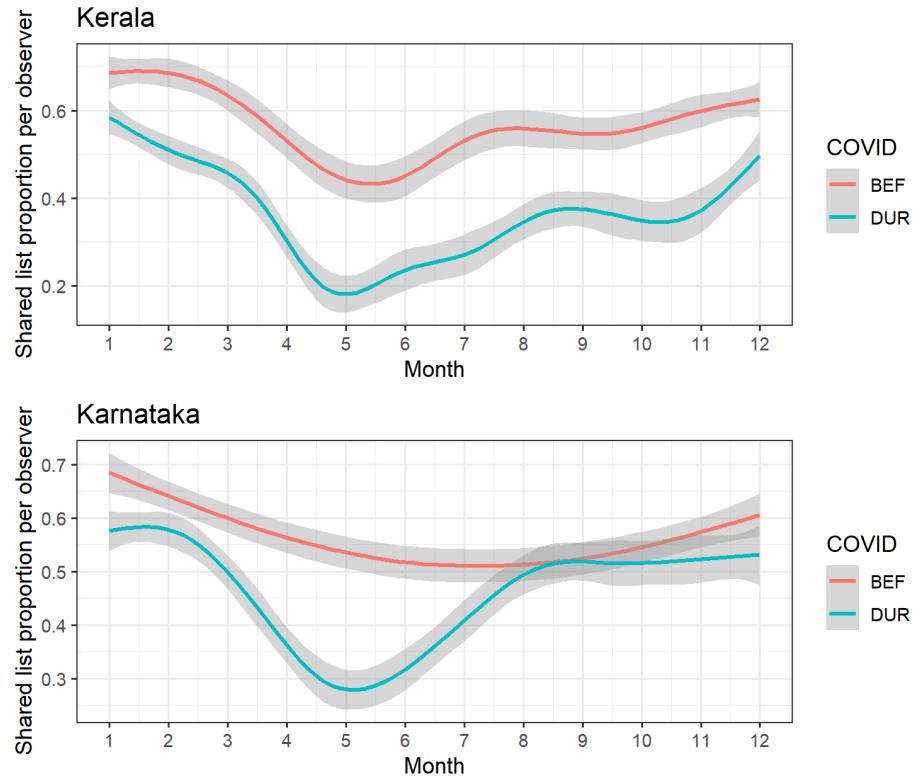
Lists per observer



Lists per observer



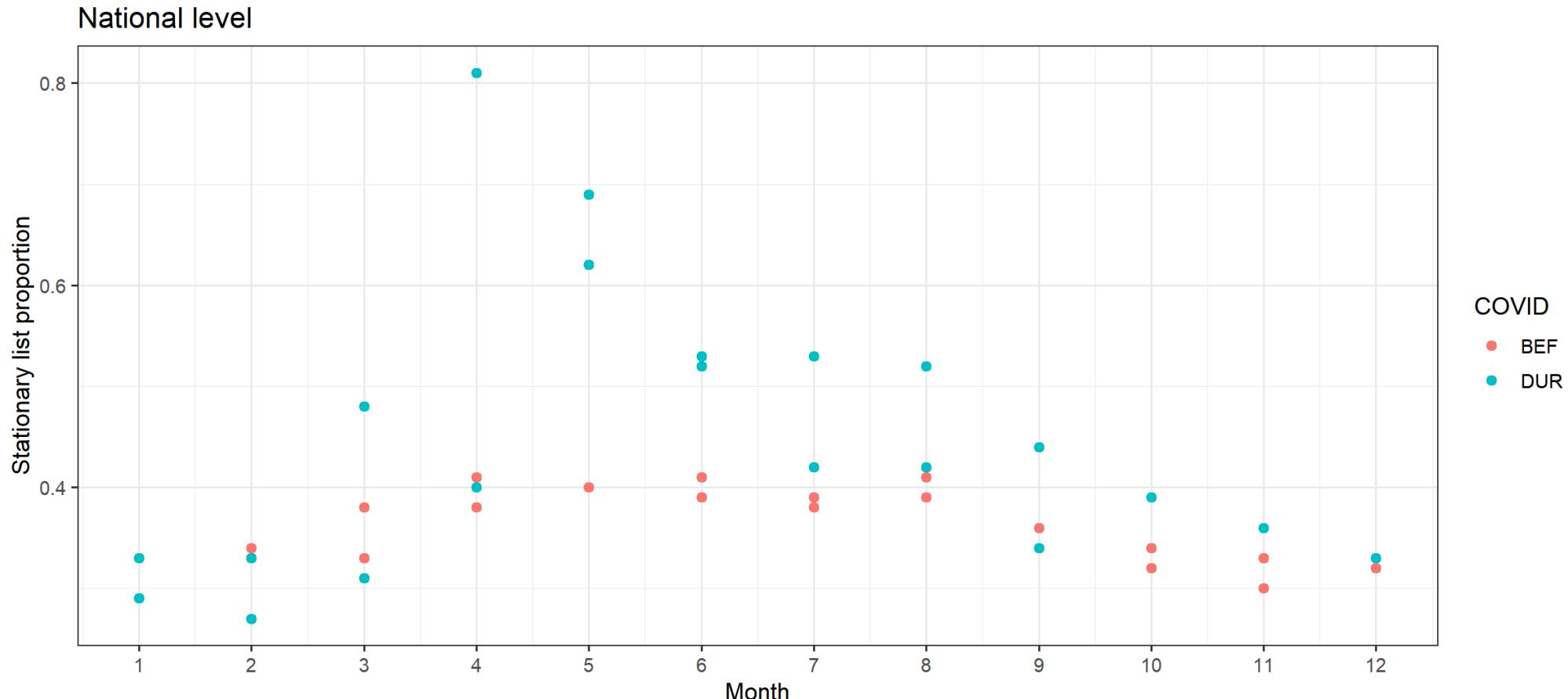
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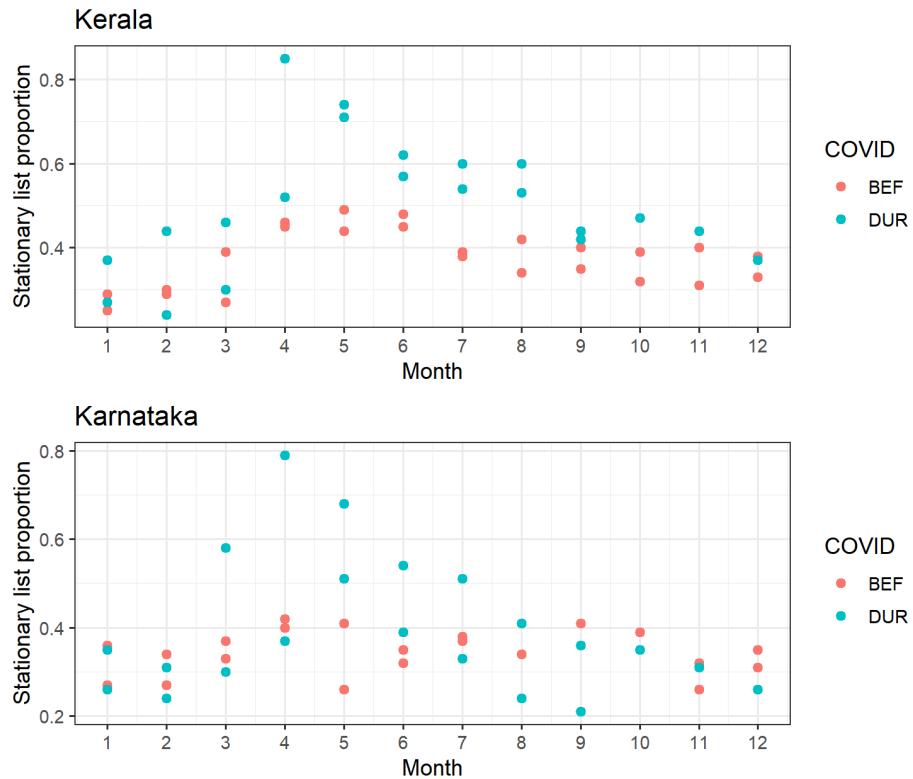
Birding effort

Birding protocol

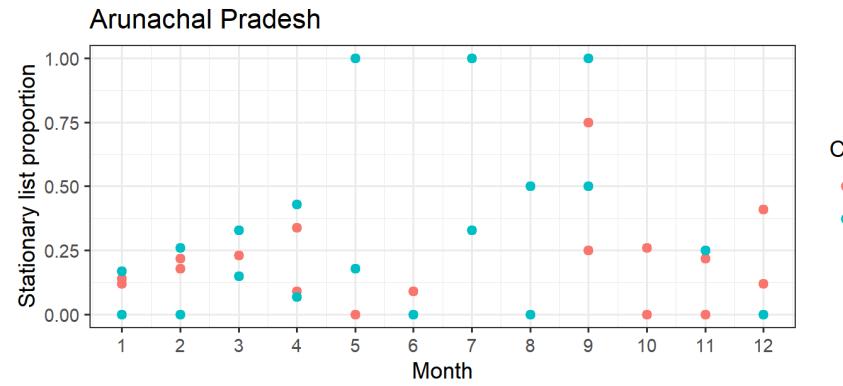
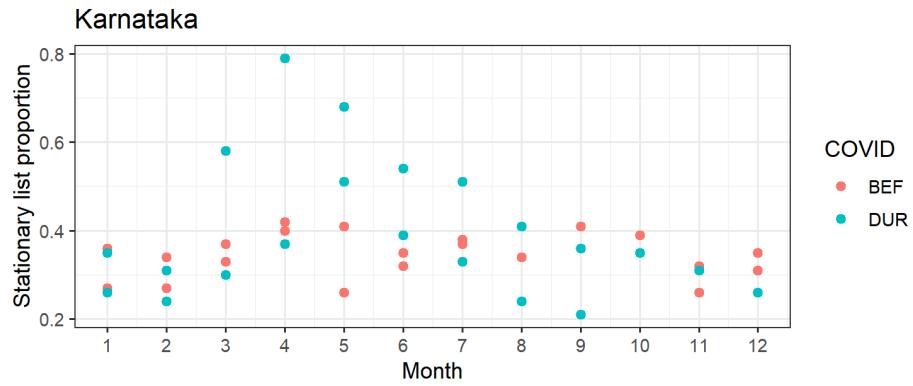
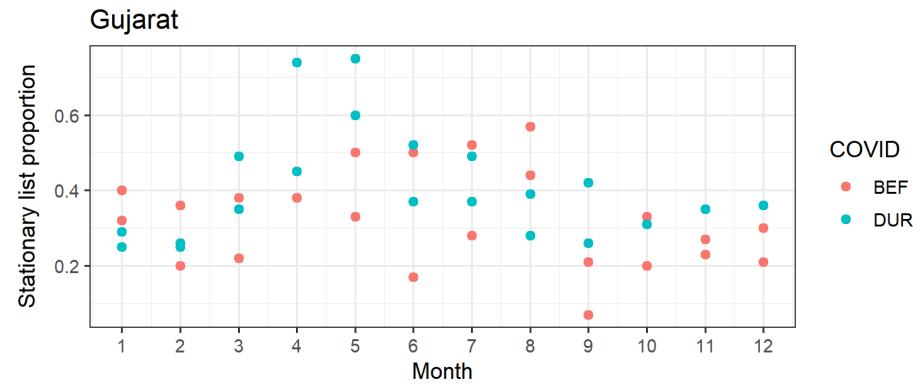
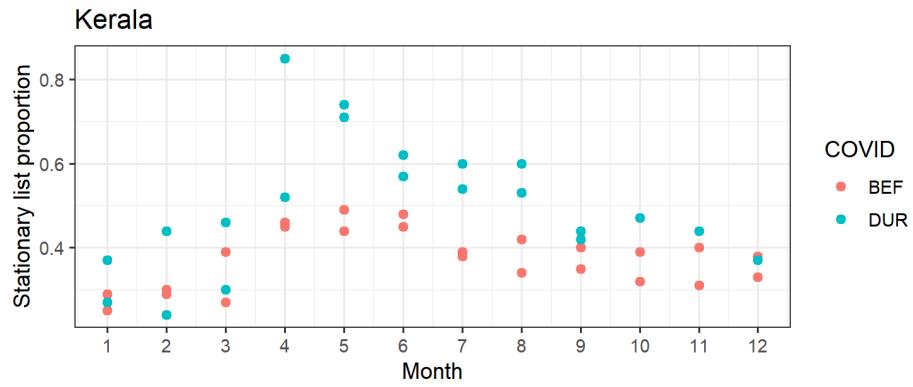
Birding protocol



Birding protocol

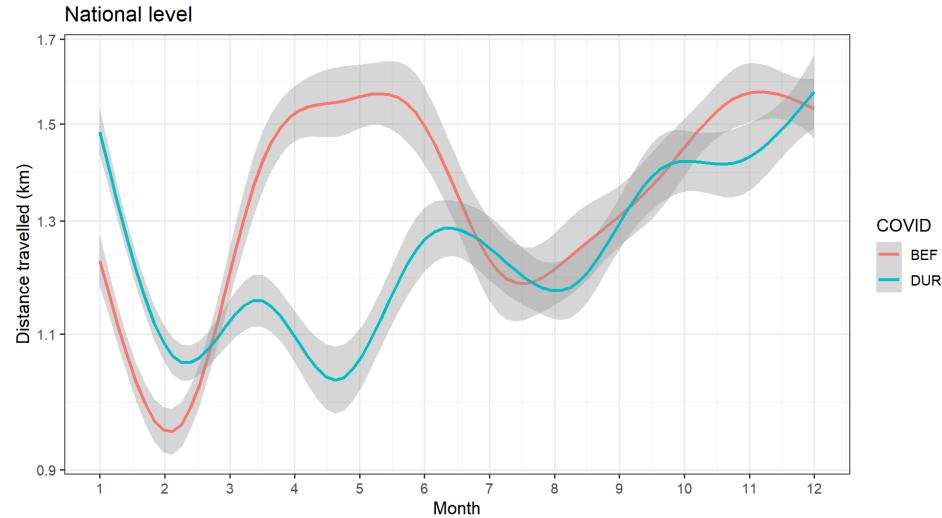


Birding protocol

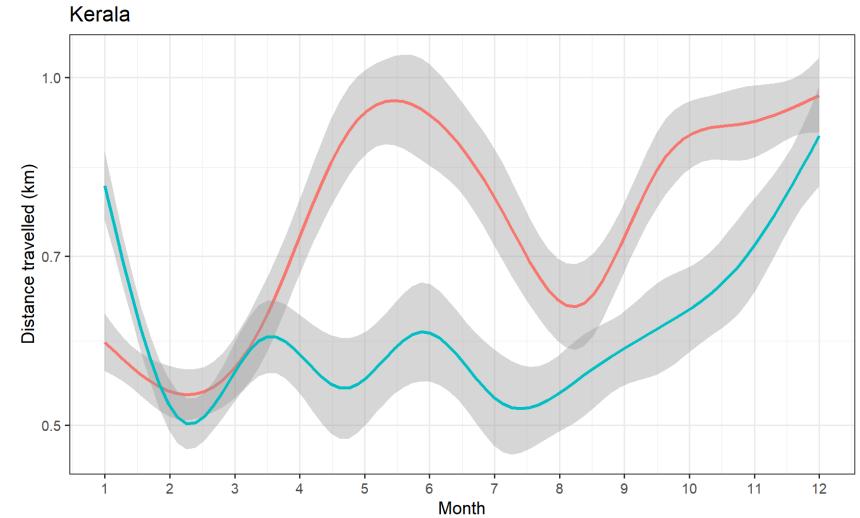
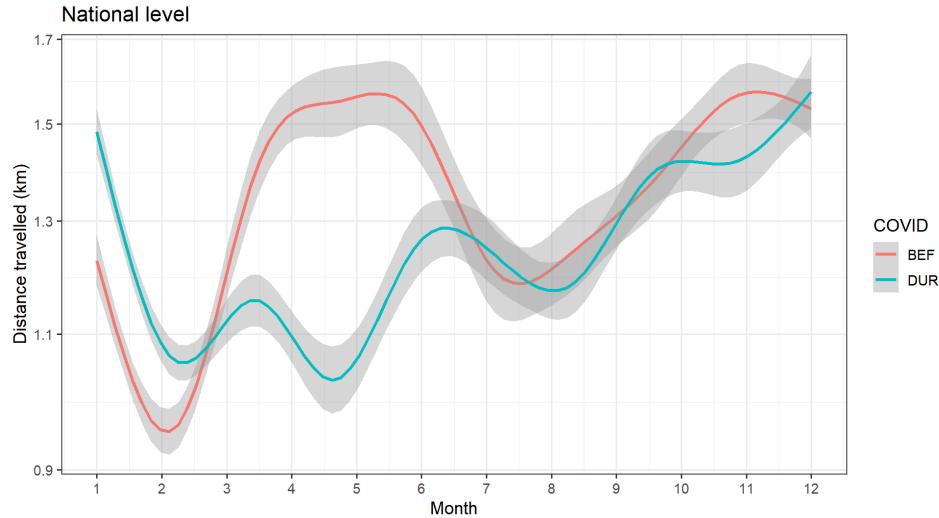


Average distance travelled

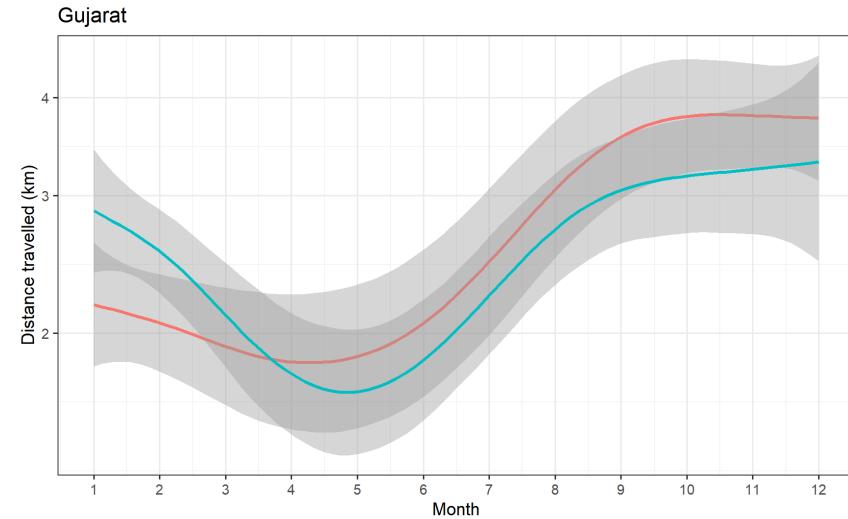
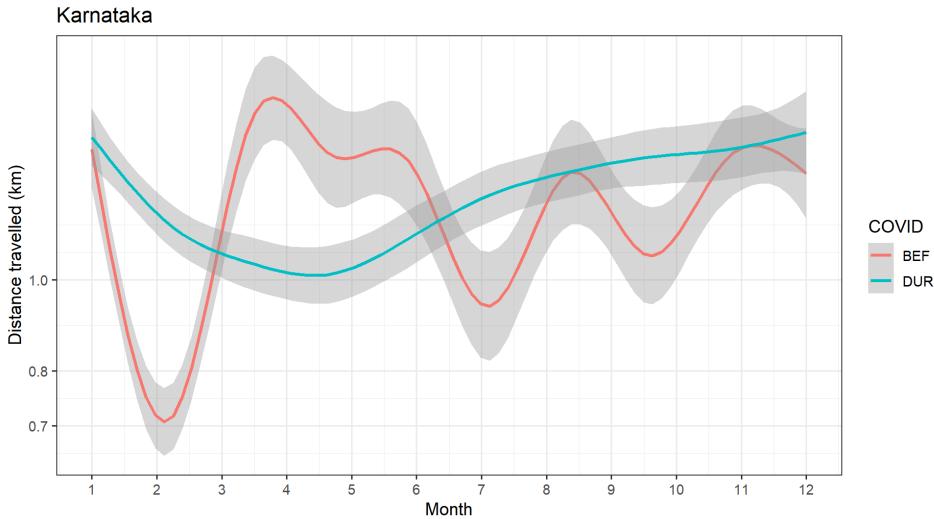
Average distance travelled



Average distance travelled



Average distance travelled



Site fidelity (per observer)

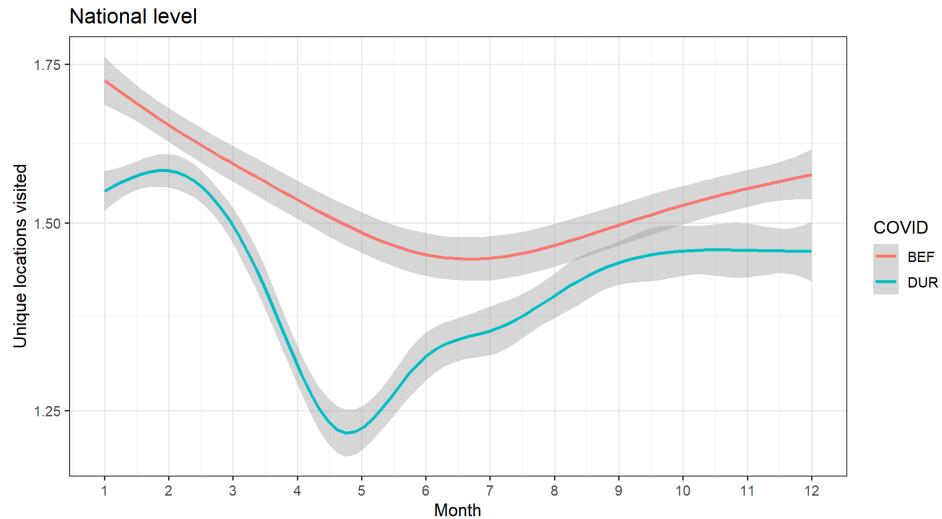
Site fidelity (per observer)

$$Site\ fidelity \propto \frac{1}{Unique^* locations\ visited}$$

*A $\approx 1\text{km} \times 1\text{km}$ area defined by degree coordinates.

Site fidelity (per observer)

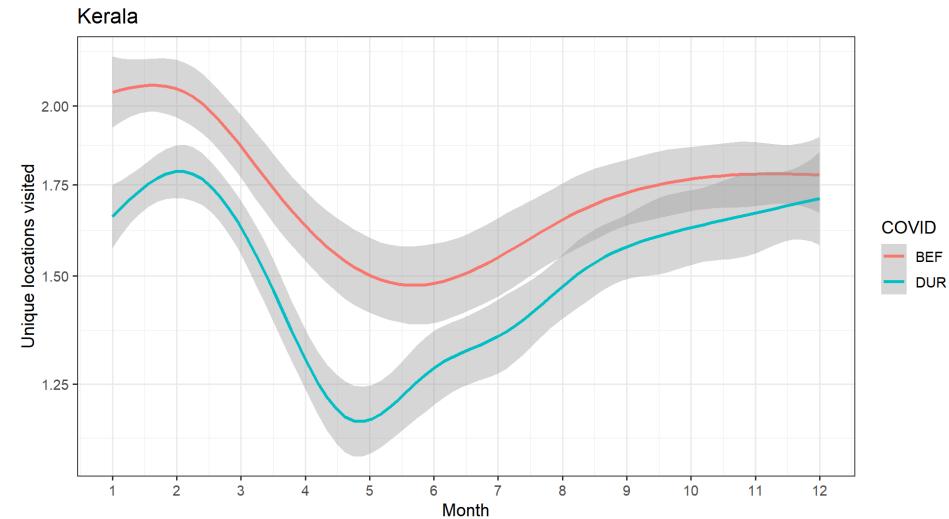
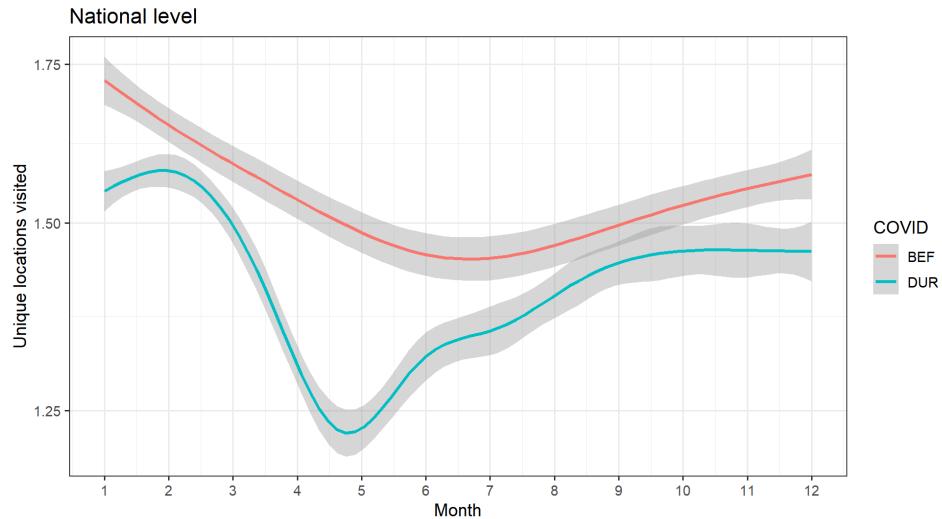
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Site fidelity (per observer)

Site fidelity \propto

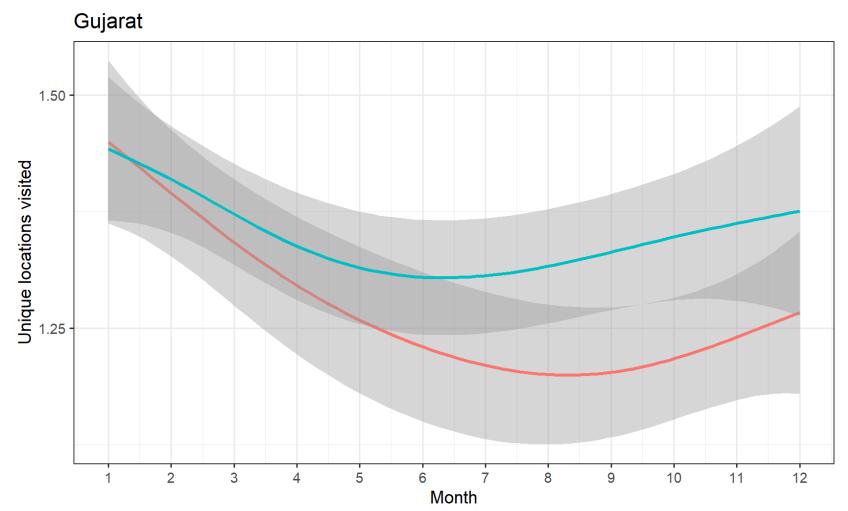
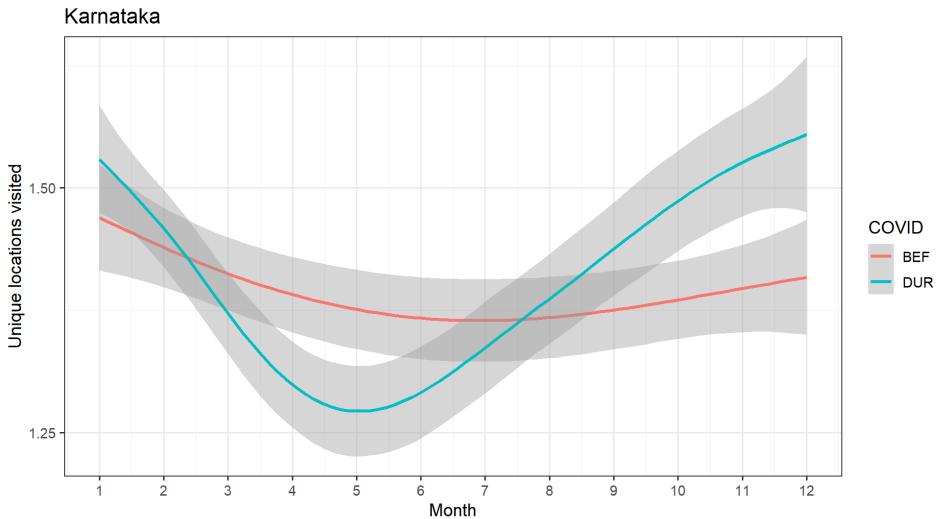
$\frac{1}{\text{Unique* locations visited}}$



Site fidelity (per observer)

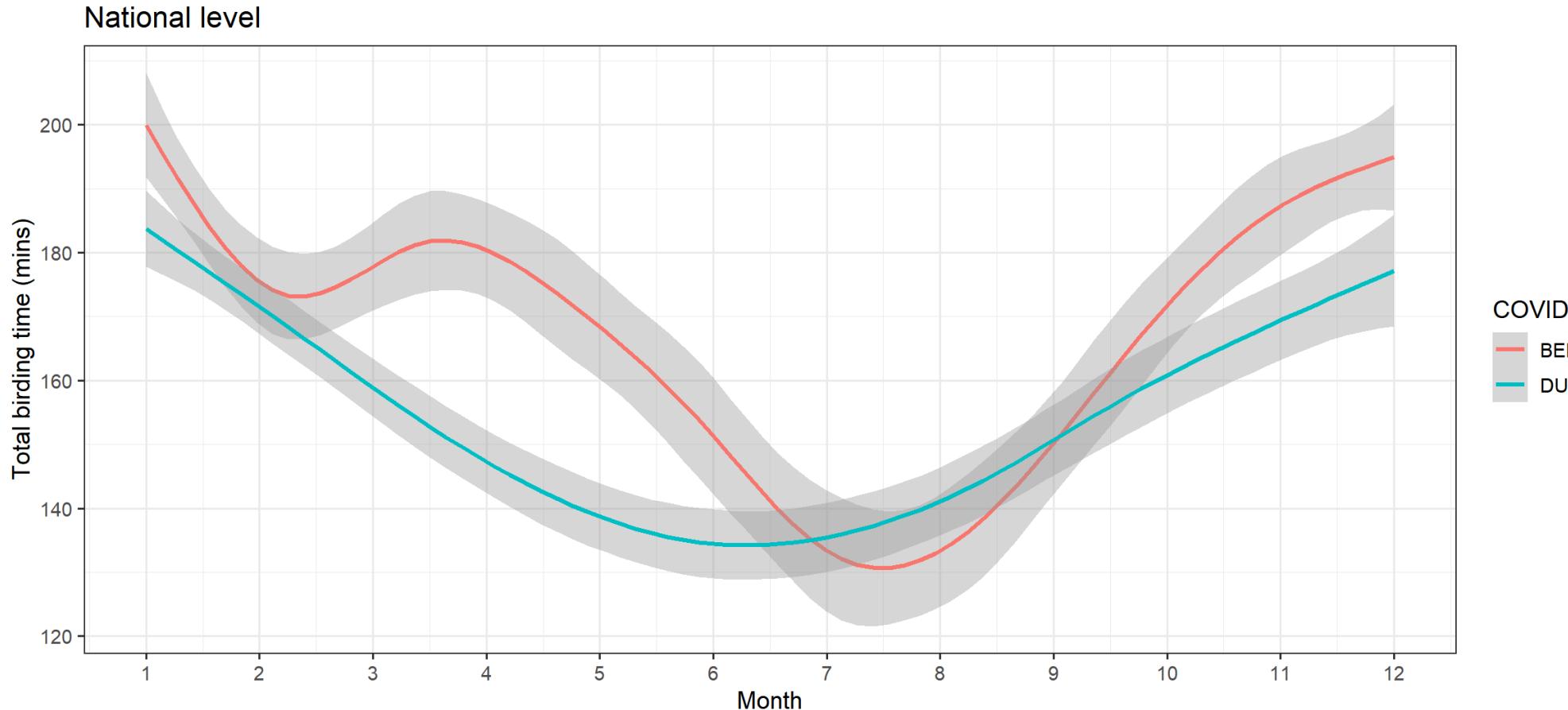
Site fidelity \propto

$$\frac{1}{\text{Unique* locations visited}}$$



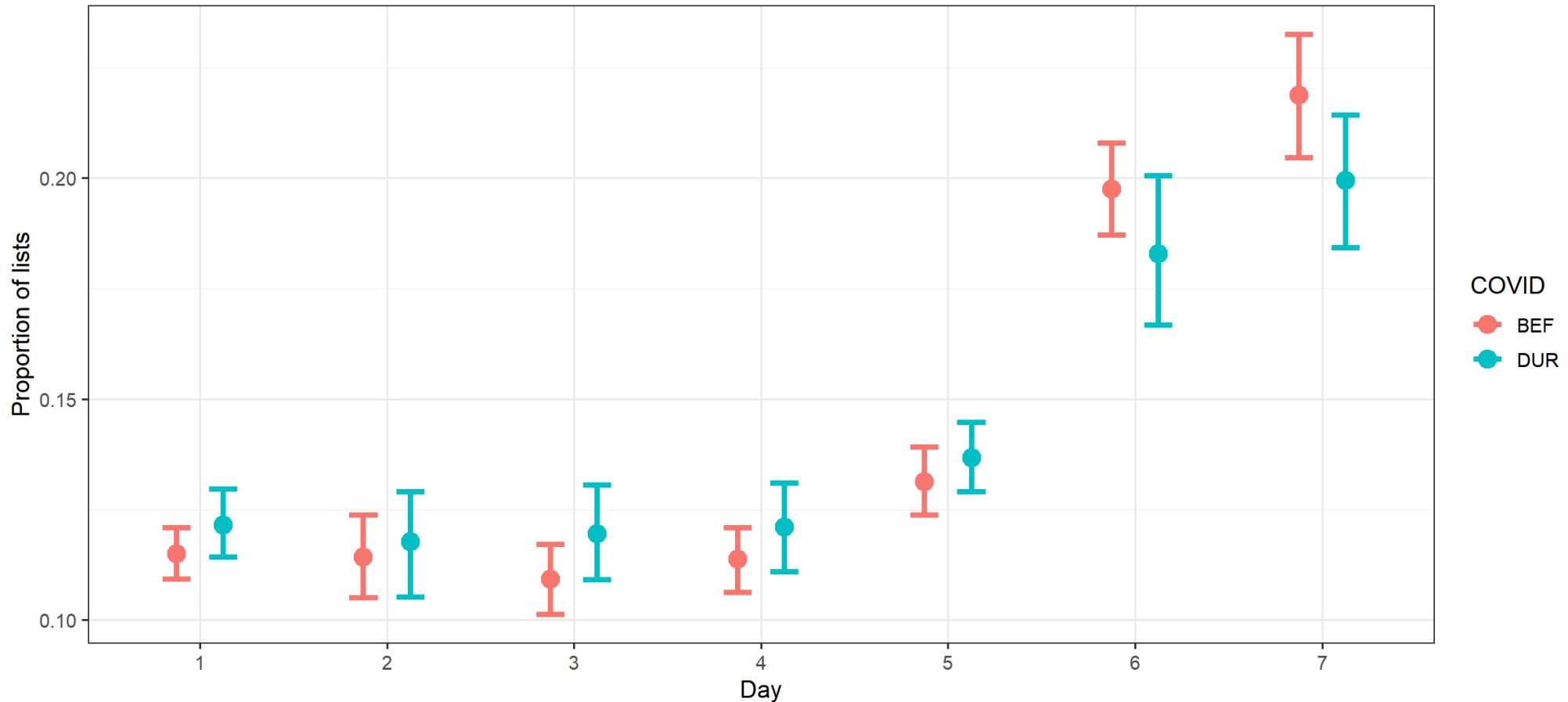
Total birding time

Total birding time

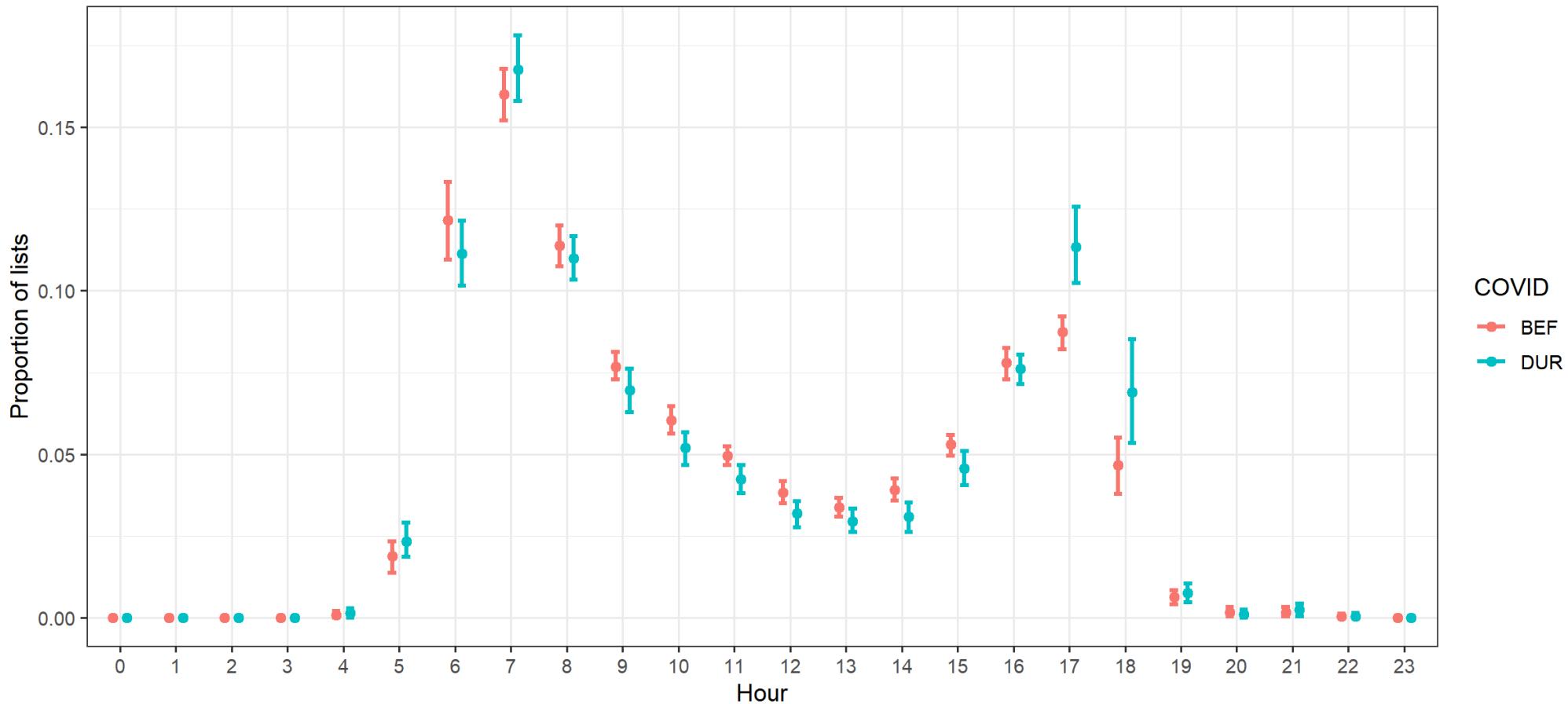


Temporal bias

Days of week (national level)



Times of day (national level)



Summary

Big national events had higher impact

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(Role of novelty vs regulations?)

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(Role of novelty vs regulations?)

National-state level mirroring

Big national events had higher impact

(Role of novelty vs regulations?)

National-state level mirroring

State-wise variation

Big national events had higher impact

(Role of novelty vs regulations?)

National-state level mirroring

State-wise variation

Other *general* patterns

Thanks!