

eBirding and the pandemic

Preliminary results

Karthik Thrikkadeeri

17-11-2021

Introduction



Instagram [@birding_memes](#)

Introduction

- Lifestyle shift
- COVID-19 and birding



Instagram @birding_memes

Introduction

- Lifestyle shift
- COVID-19 and birding
- Movement, travel



Instagram @birding_memes

Introduction

- Lifestyle shift
- COVID-19 and birding
- Movement, travel
- 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?

Questions

Changes and gaps in pandemic eBird data?

- Overall birding activity

Questions

Changes and gaps in pandemic eBird data?

- Overall birding activity
- Group birding

Questions

Changes and gaps in pandemic eBird data?

- Overall birding activity
- Group birding
- Birding effort

Questions

Changes and gaps in pandemic eBird data?

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

Questions

Changes and gaps in pandemic eBird data?

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

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

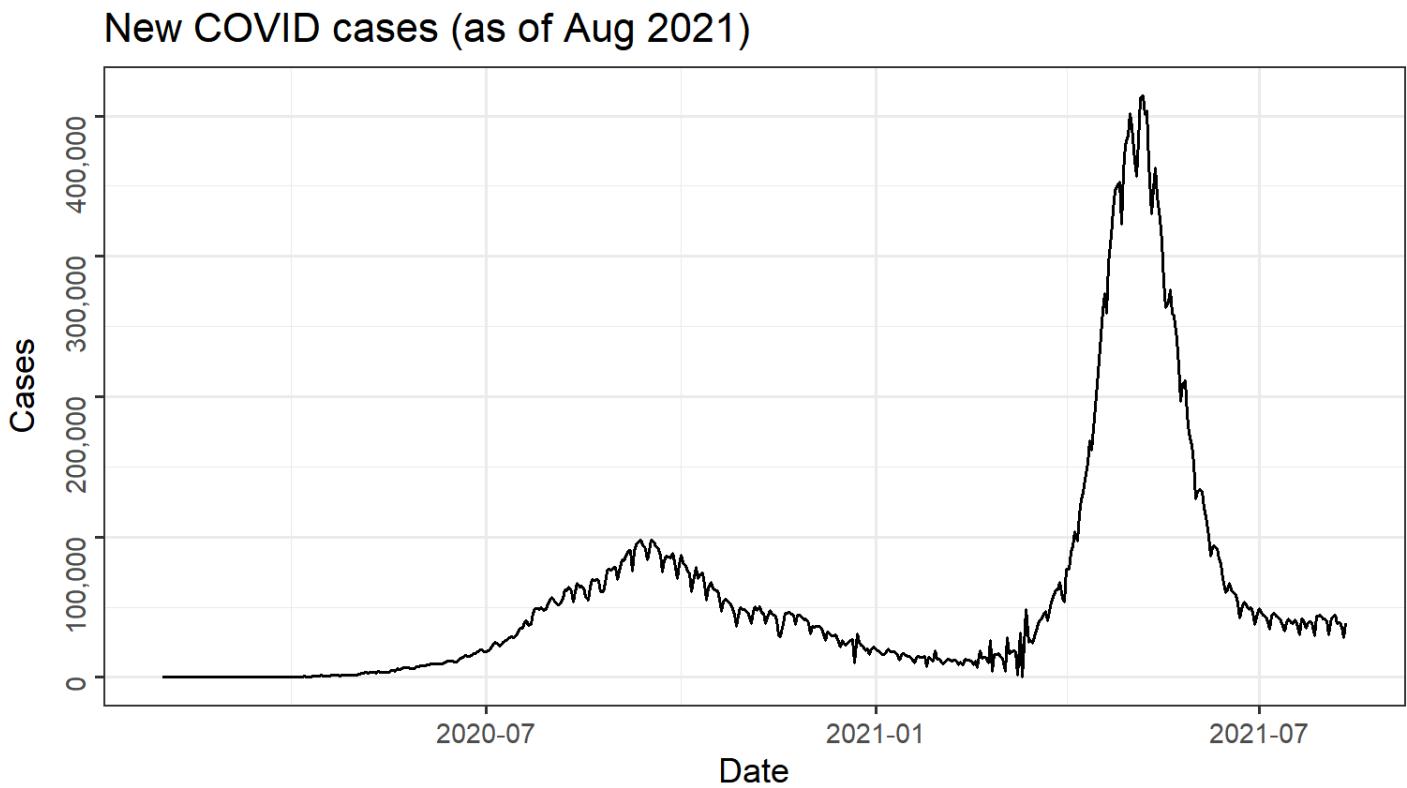
The COVID-19 timeline

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!

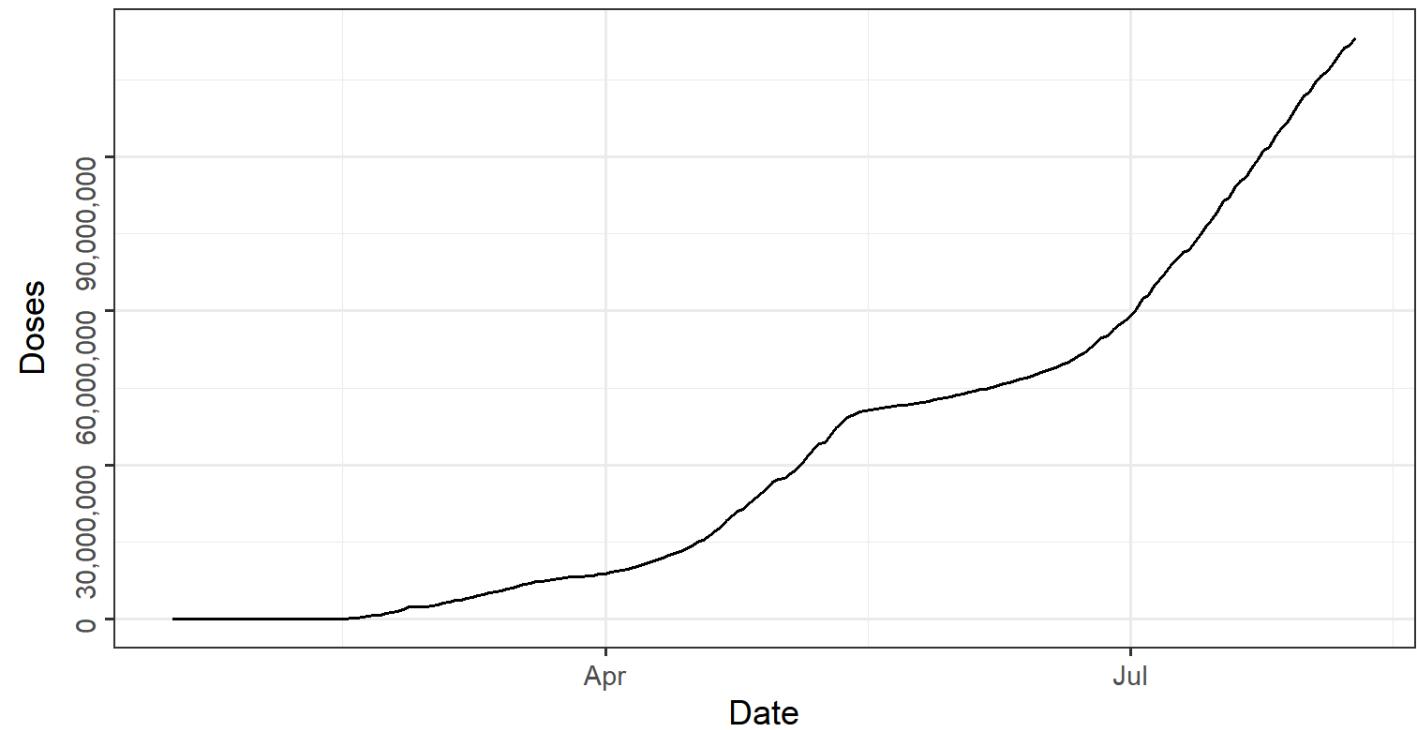
The COVID-19 timeline

COVID-19 waves

Lockdowns

Vaccination phases

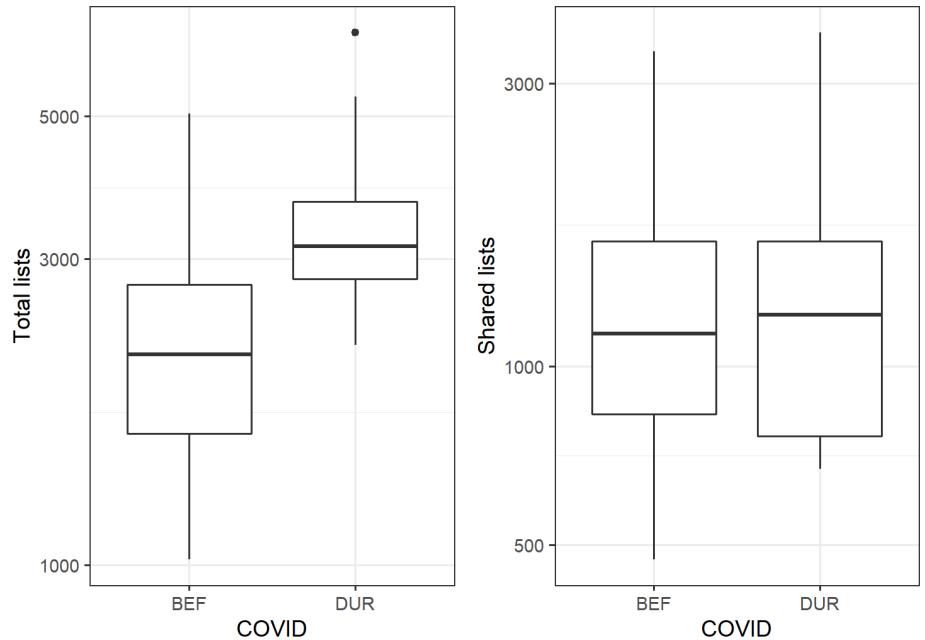
Second vaccine doses administered (as of Aug 2021)



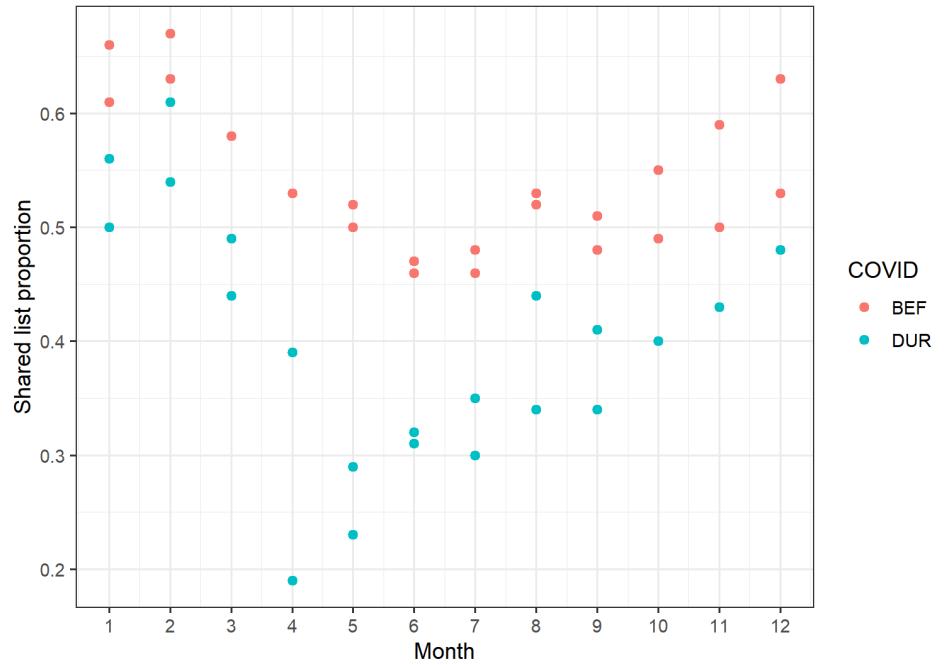
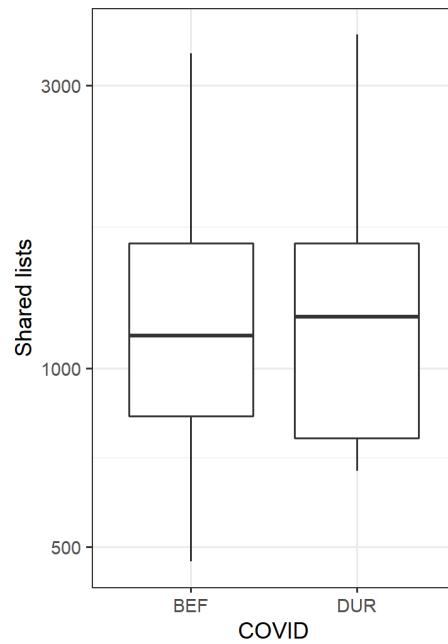
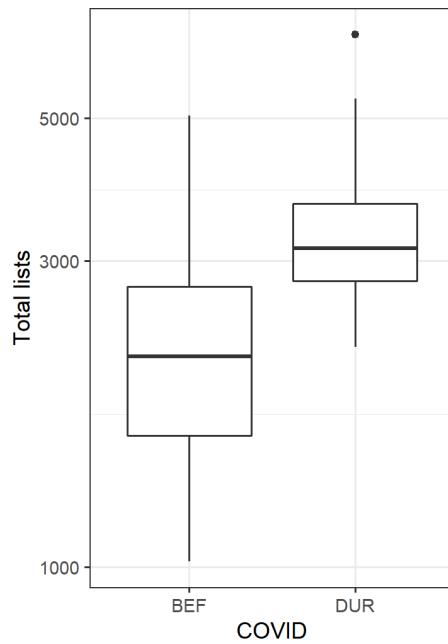
Exploratory results

Birding activity

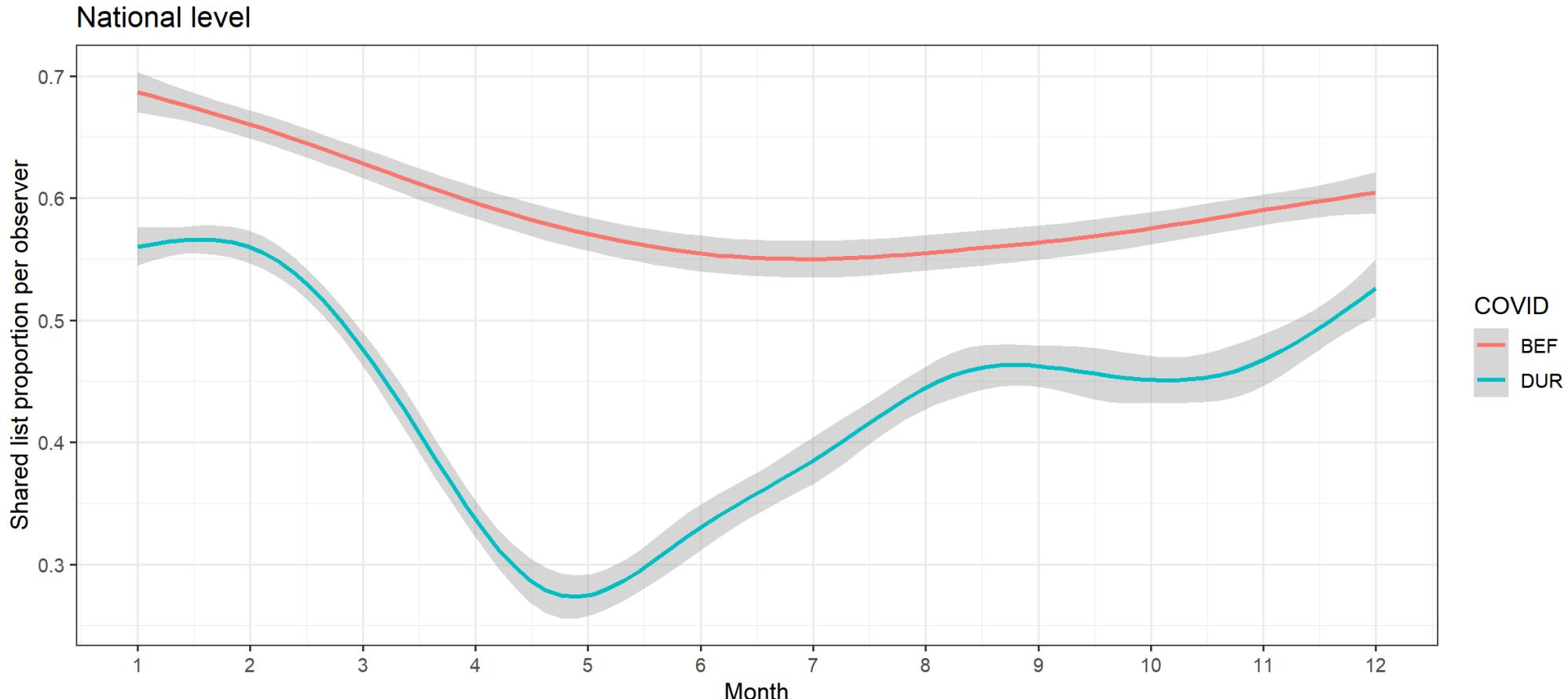
Total and shared lists



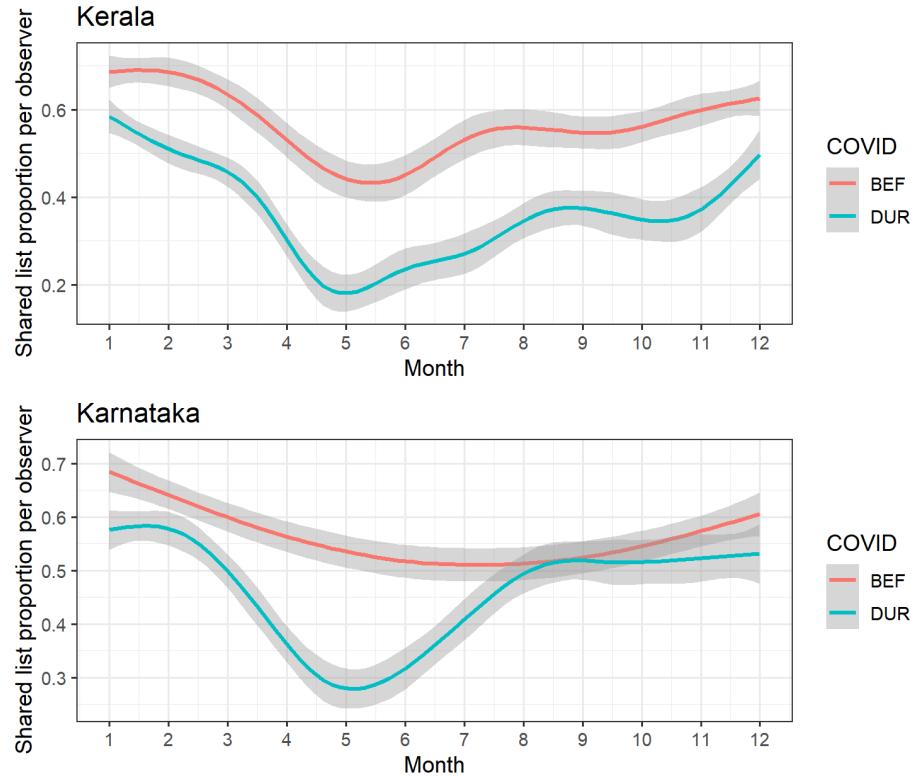
Total and shared lists



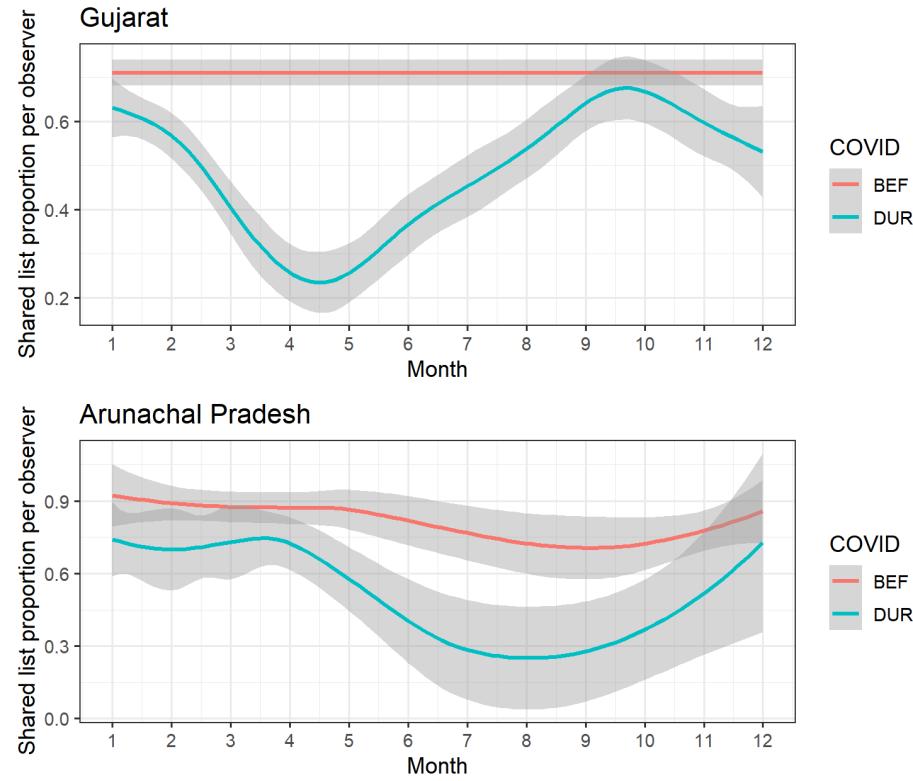
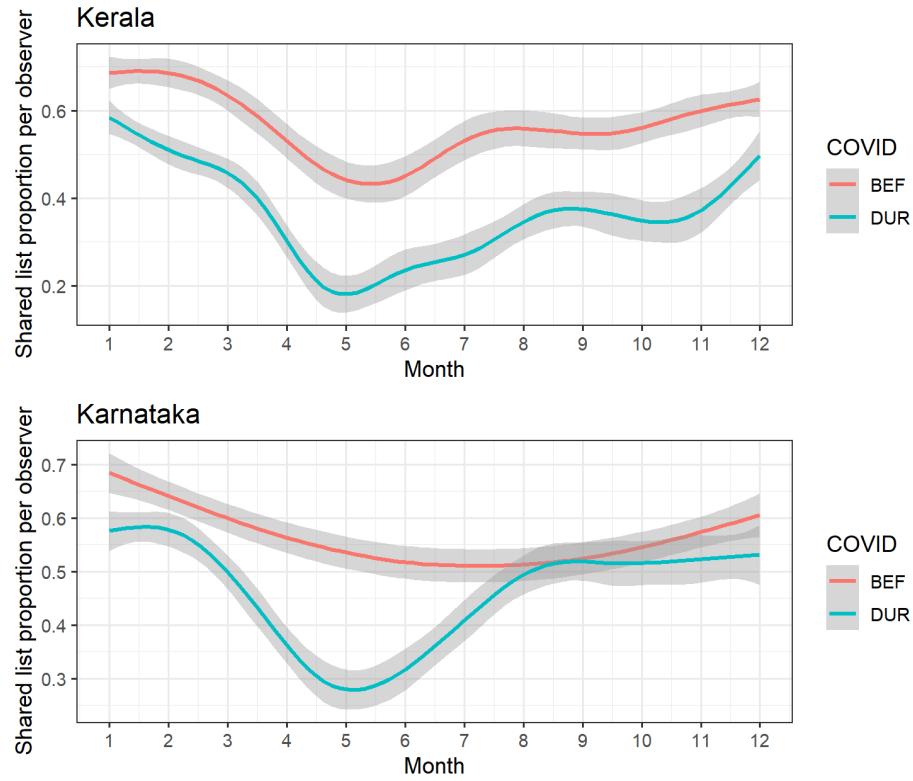
Lists per observer



Lists per observer



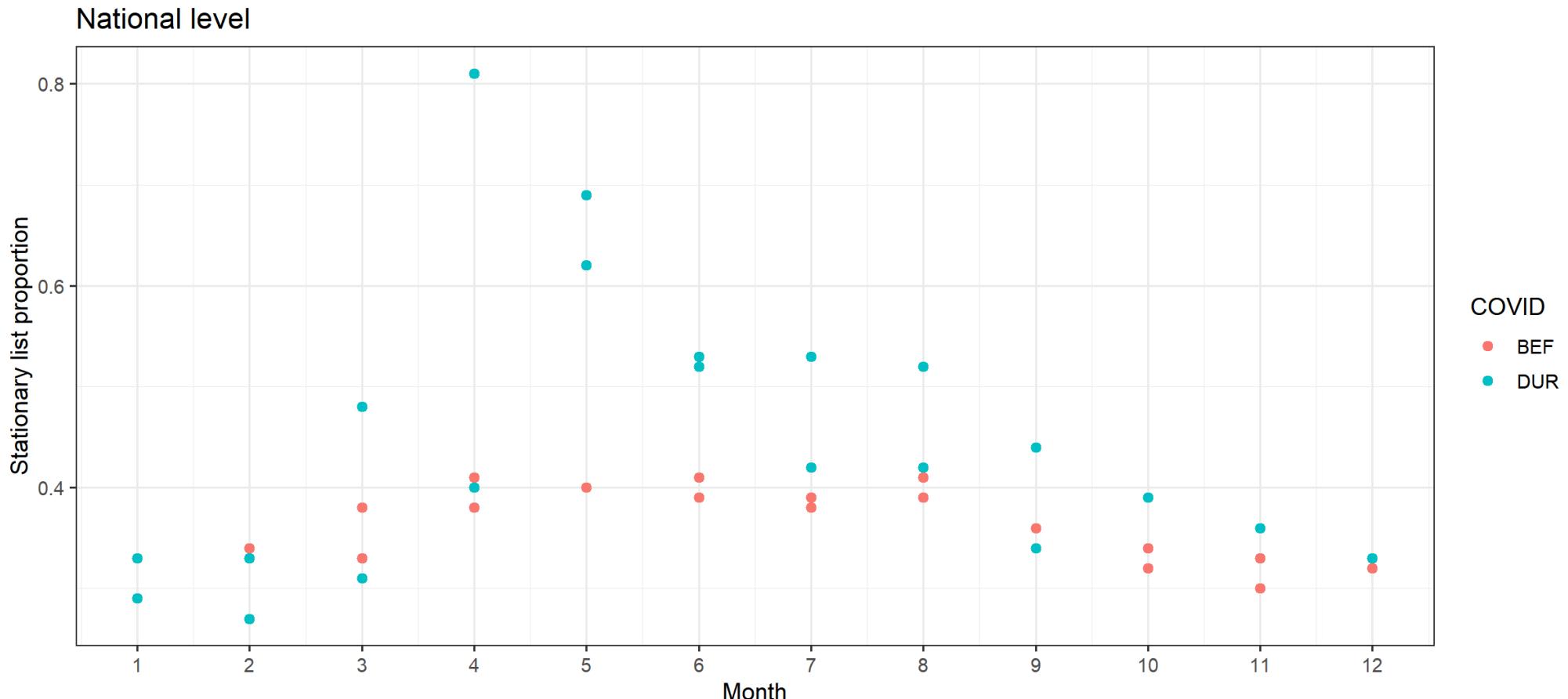
Lists per observer



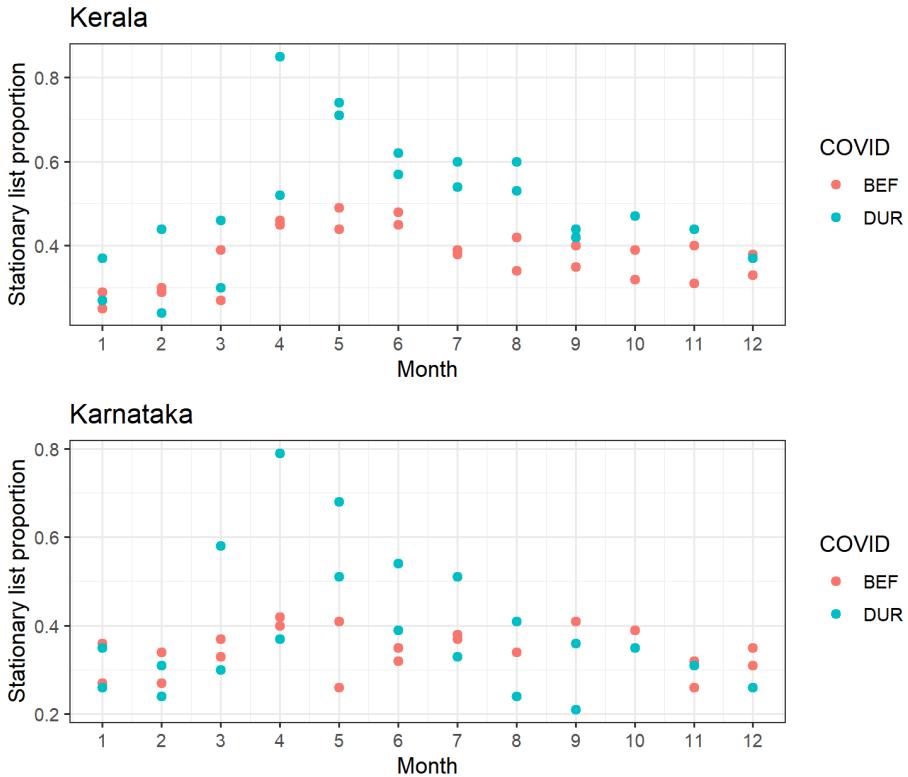
Birding effort

Birding protocol

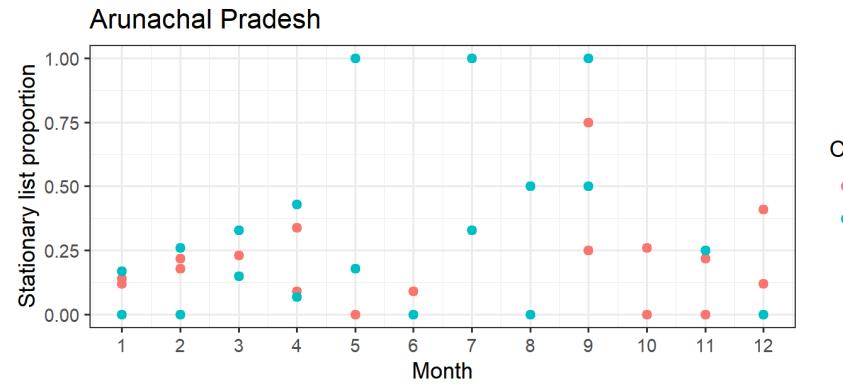
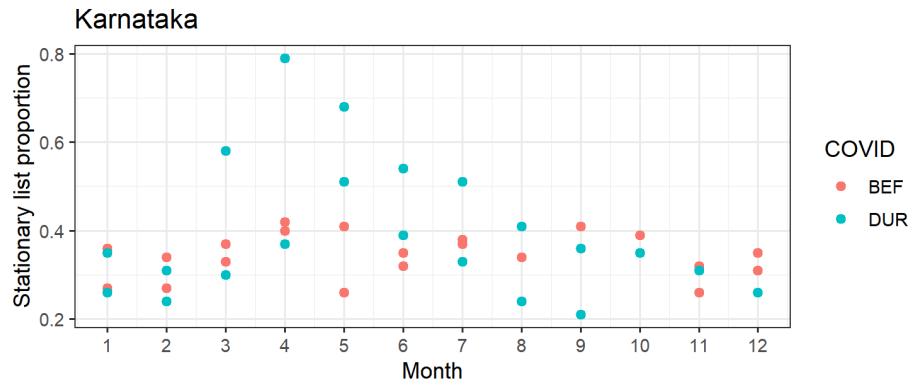
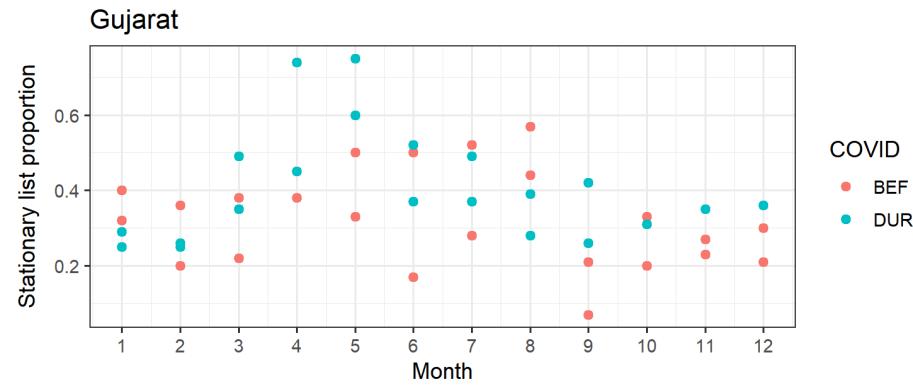
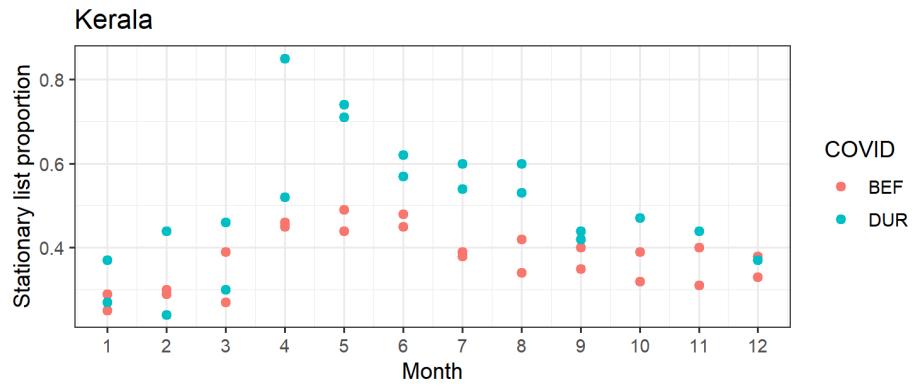
Birding protocol



Birding protocol

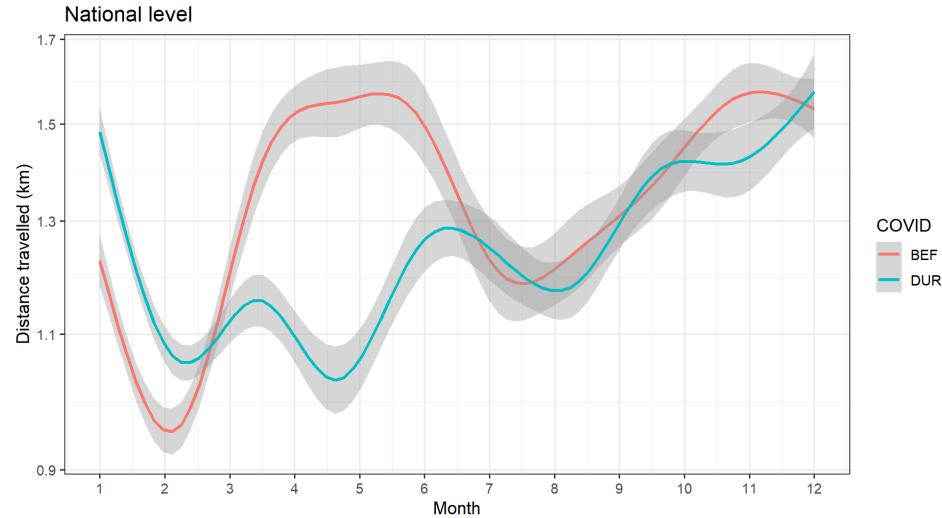


Birding protocol

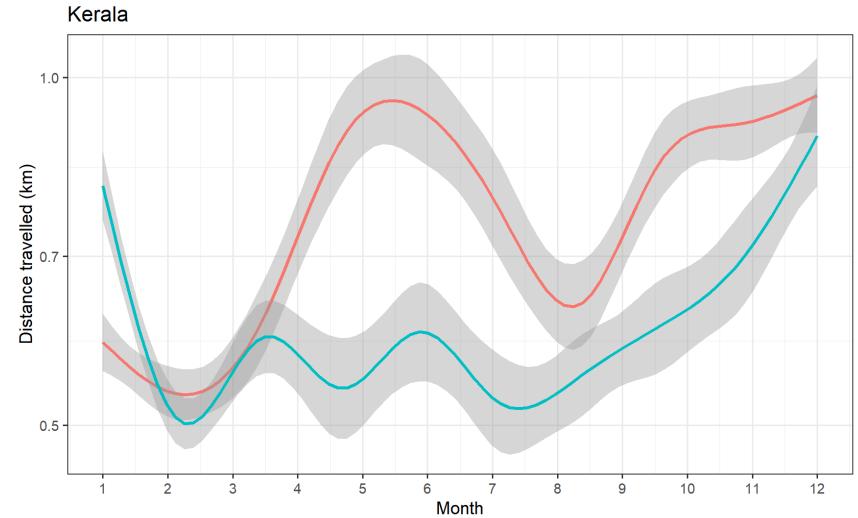
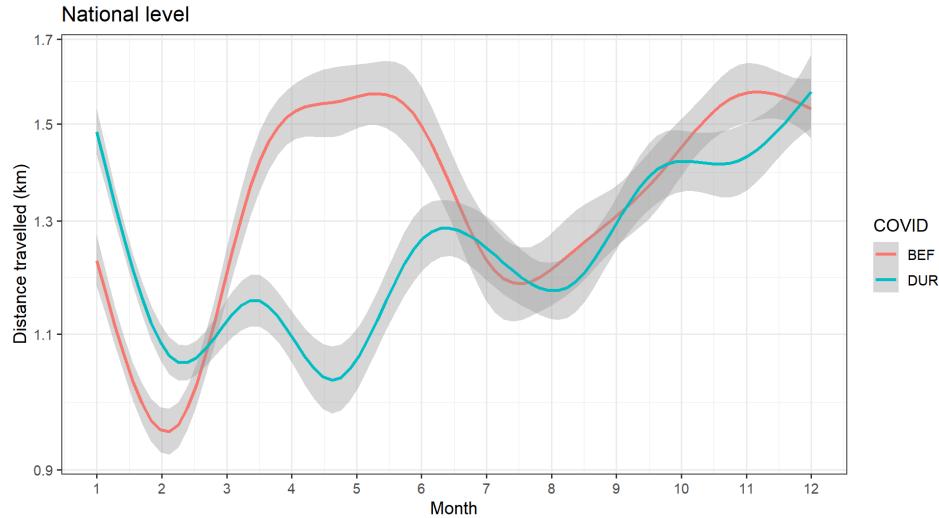


Average distance travelled

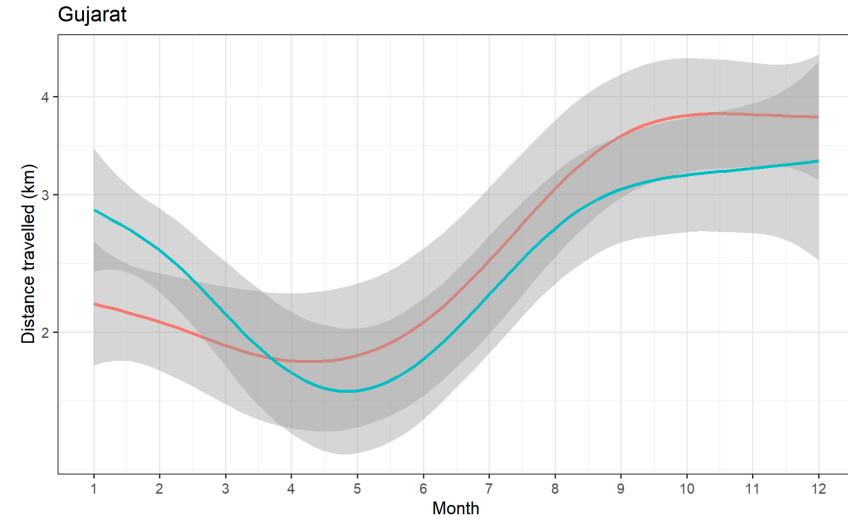
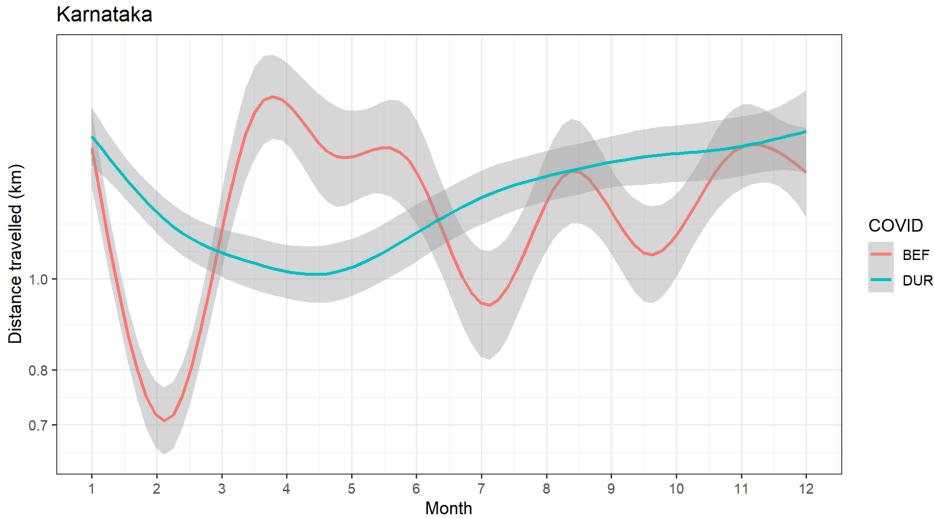
Average distance travelled



Average distance travelled



Average distance travelled



Site fidelity (per observer)

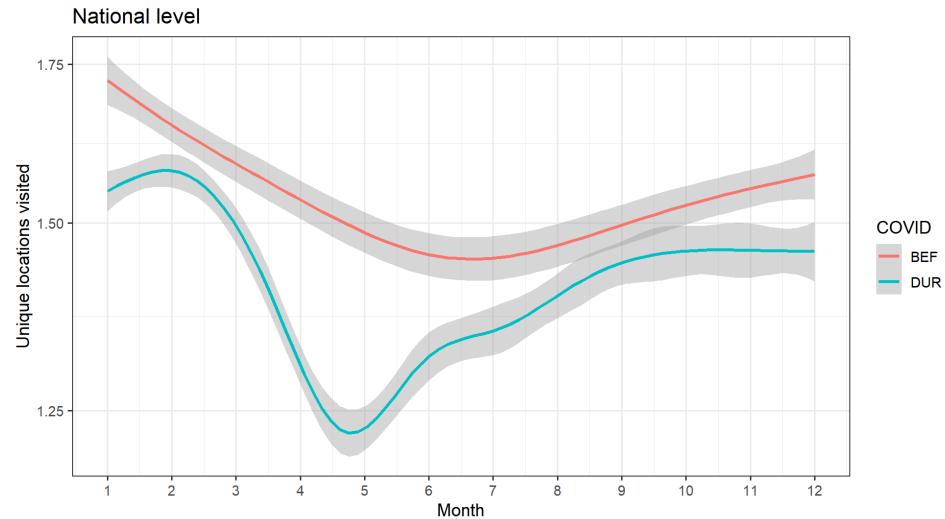
Site fidelity (per observer)

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

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

Site fidelity (per observer)

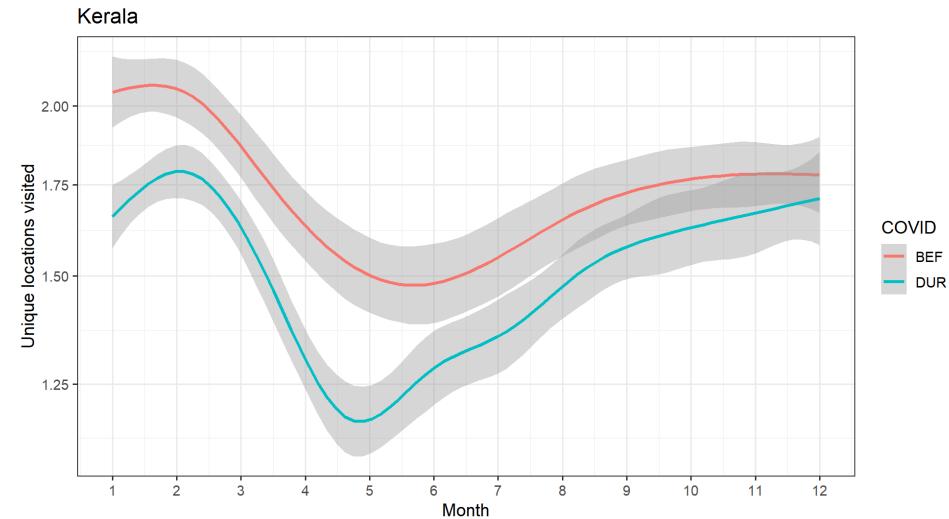
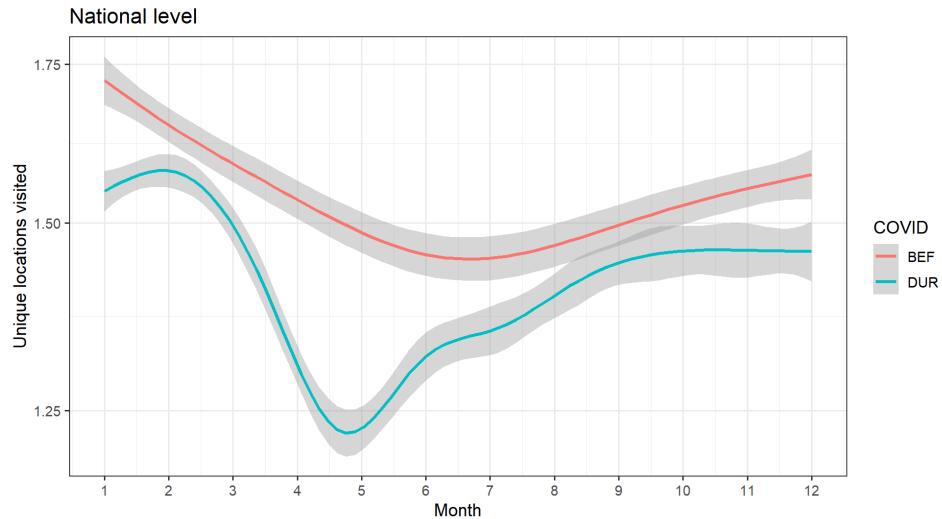
$$Site\ fidelity \propto \frac{1}{Unique^* locations\ visited}$$



Site fidelity (per observer)

Site fidelity \propto

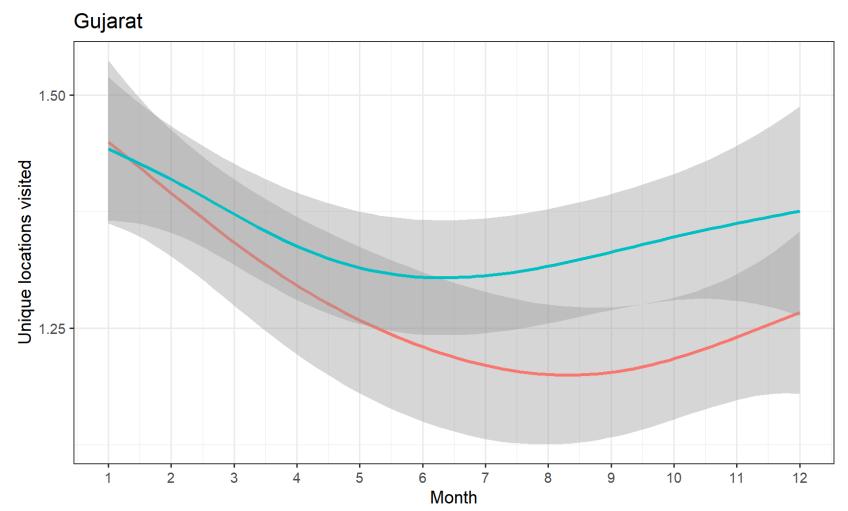
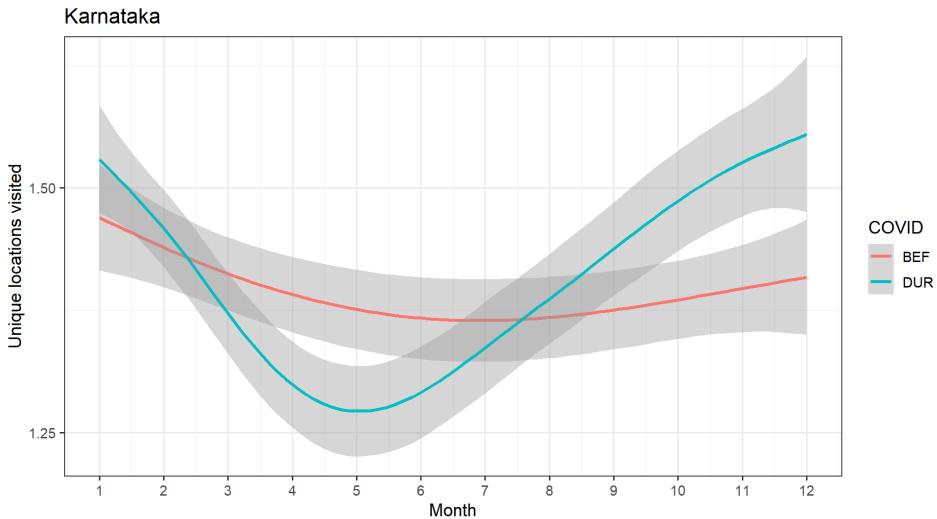
$\frac{1}{\text{Unique* locations visited}}$



Site fidelity (per observer)

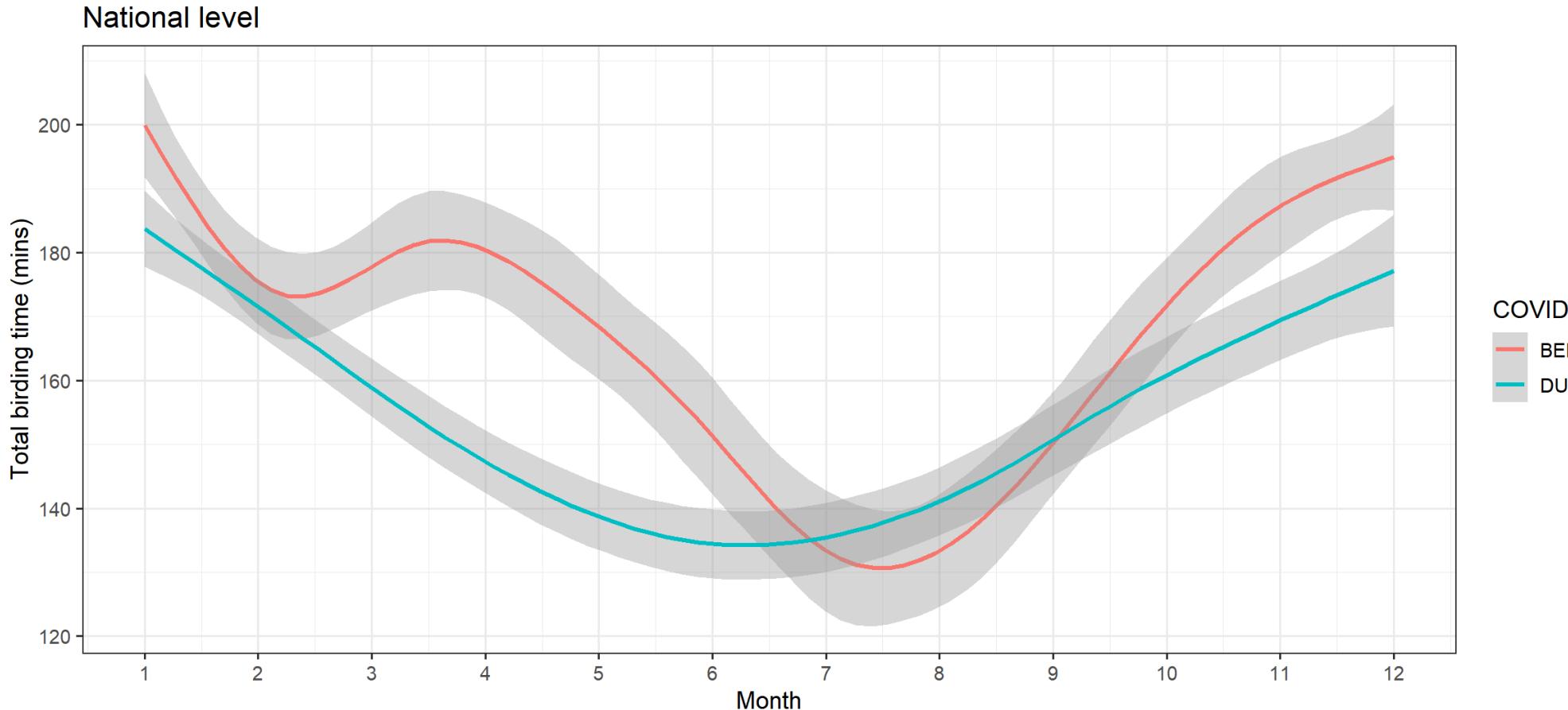
Site fidelity \propto

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

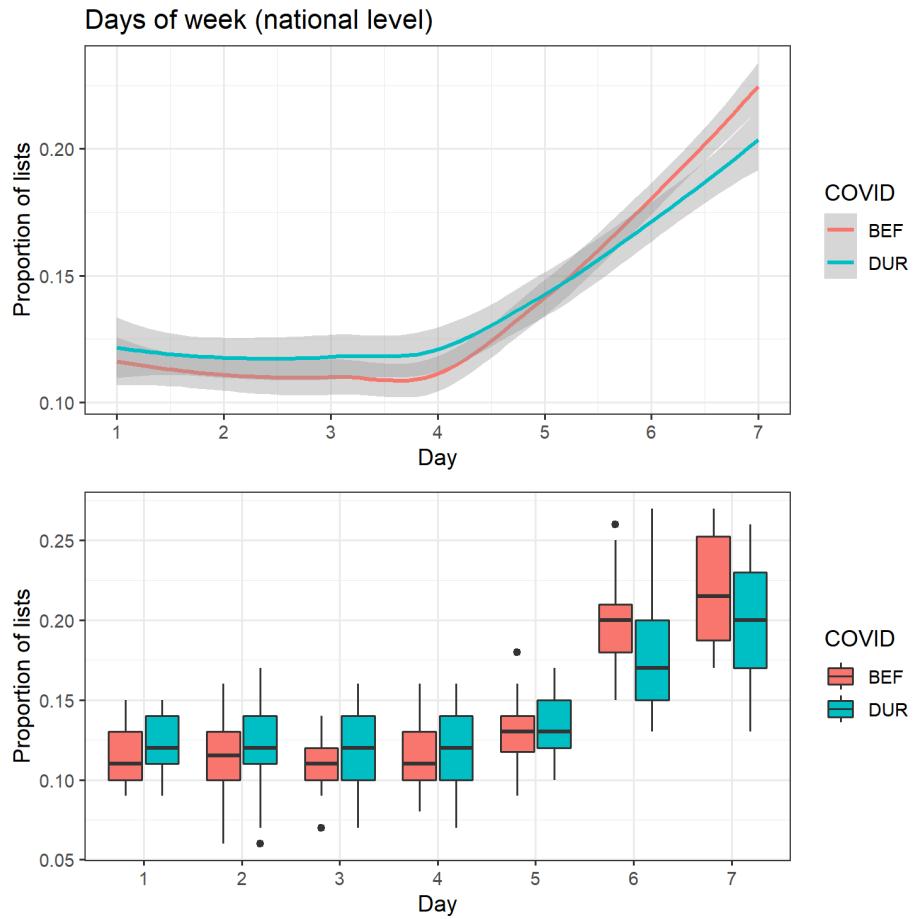


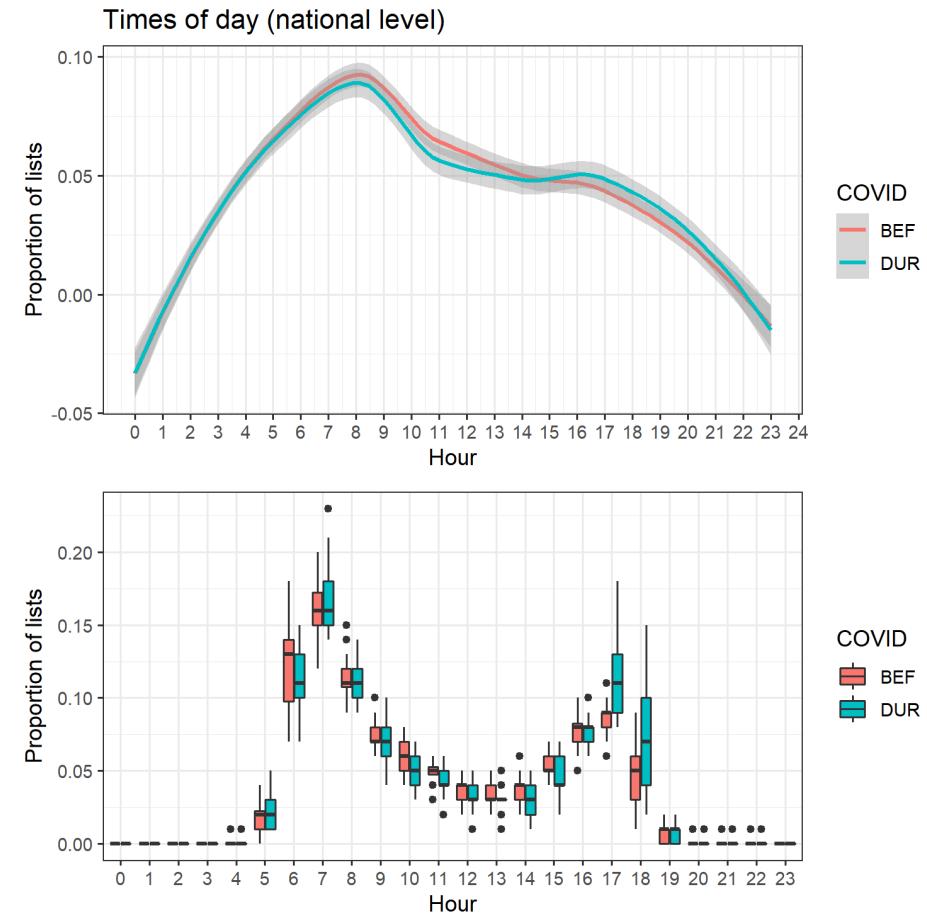
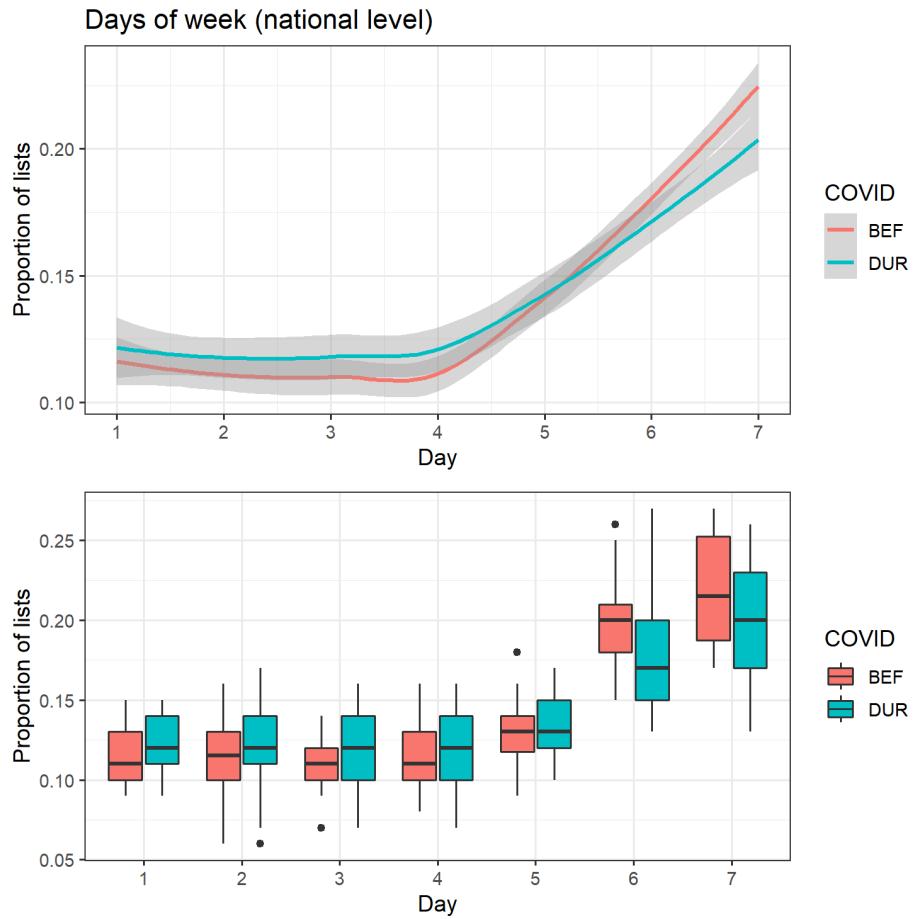
Total birding time

Total birding time



Temporal bias





Summary

Big national events had higher impact

Big national events had higher impact

(Role of novelty vs regulations?)

Big national events had higher impact

(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!