

# eBirding and the pandemic

## Preliminary results

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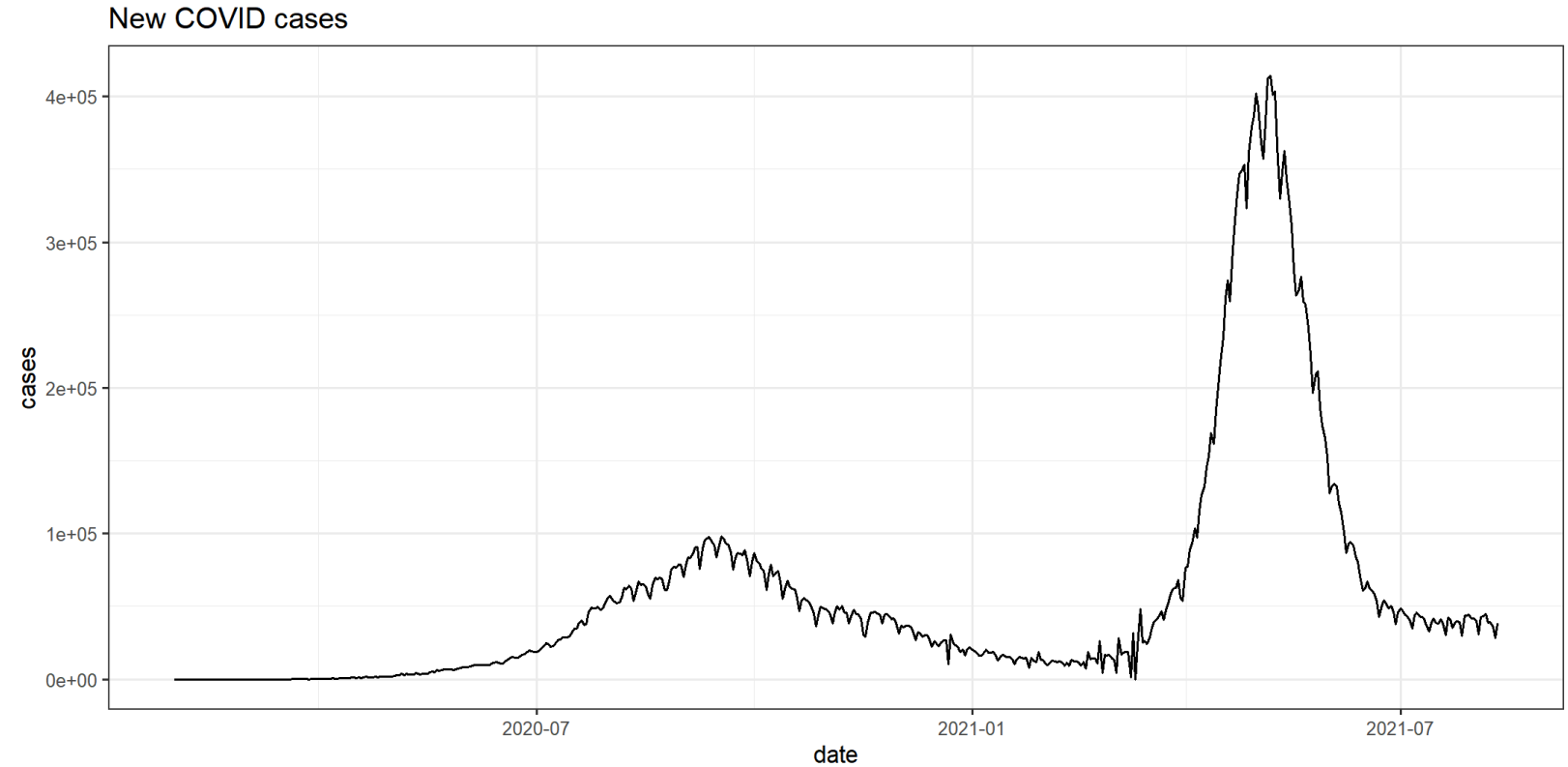
# The COVID-19 timeline

## National level

COVID-19 waves

Lockdowns

Vaccination phases



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	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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2	Arunachal Pradesh				x	x																			
3	Gujarat				x	x																			
4	Karnataka				x	x												x			x	x			
5	Kerala				x	x										x	x								
6	Maharashtra				x	x											x	x							
7	Sikkim				x	x																			
8	Tamil Nadu				x	x																			
9	Uttarakhand				x	x																			
10	West Bengal				x	x																			
11																									
12																									
13																									
14																									

Timeline information scarce!

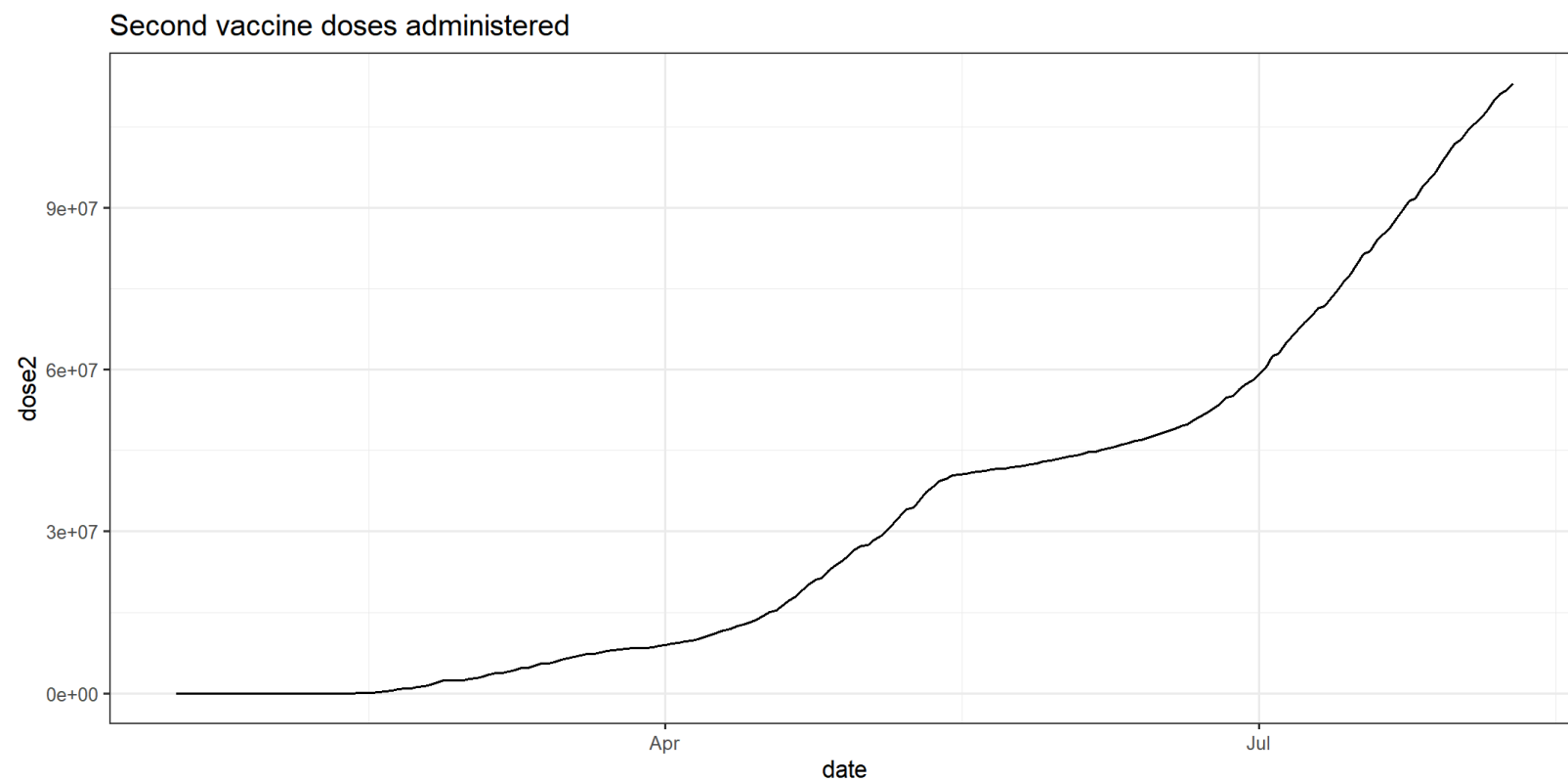
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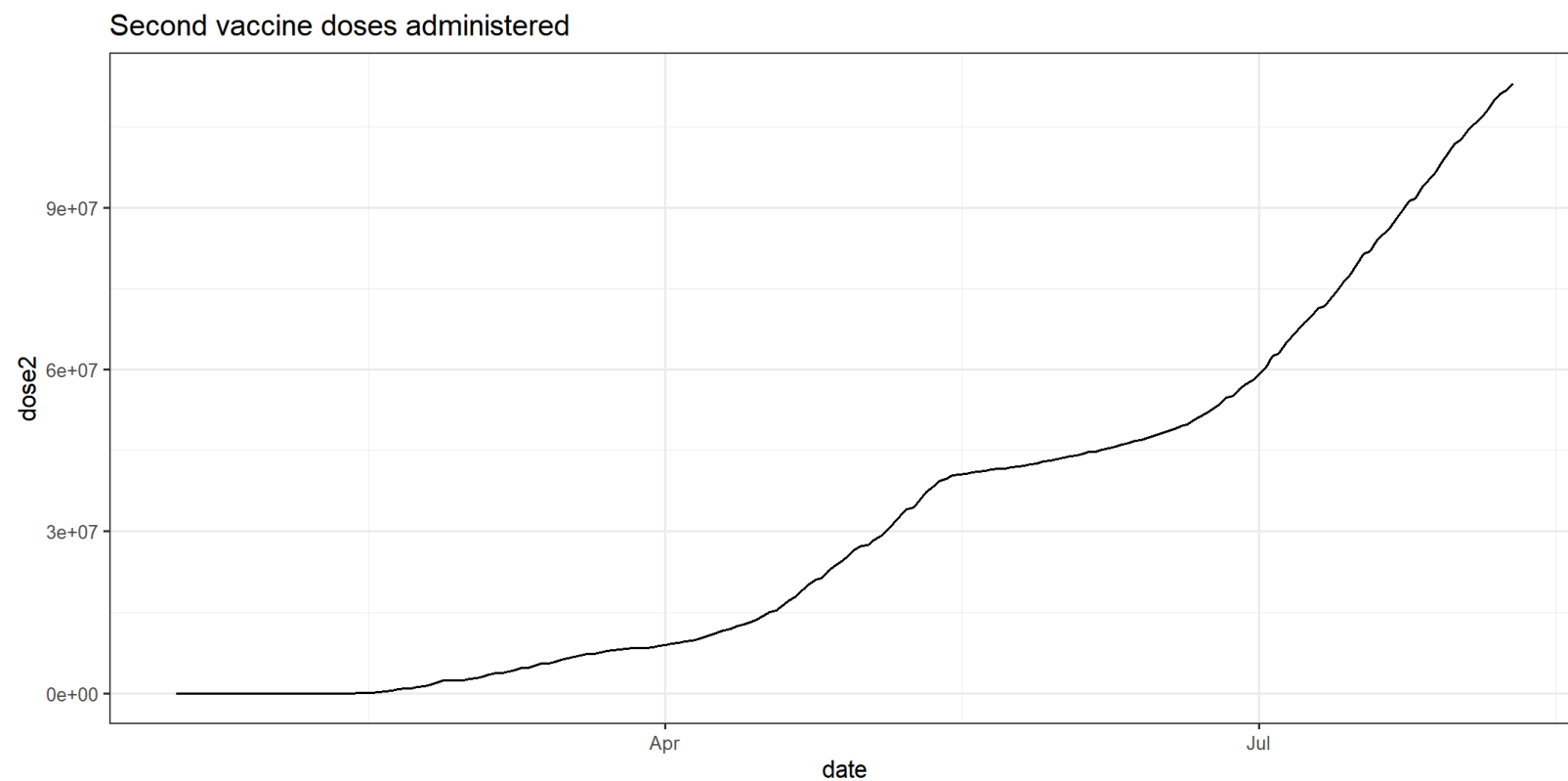
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Similarly for states of interest

# Birder behaviour

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

1. Number of submitted checklists
  - 1.1. Total lists
  - 1.2. Shared lists
2. Number of submitted checklists per observer
  - 2.1. Total lists
  - 2.2. Shared lists
3. Hotspot birding
4. Birding protocol
5. Birding distance
6. Site fidelity per observer
7. Habitats surveyed
8. Spatial spread of birding activity.
  - 8.1. Spatial spread by absences
  - 8.2. Spatial spread by densities
9. List duration
10. List length
11. Birding time per observer
12. Temporal spread of birding activity
  - 13.1. Temporal spread within day
  - 13.2. Temporal spread within week
14. Media
15. Number of new birders

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- Different states show different patterns
  - Biotic-abiotic factors (latitude/climate, species pool, habitat diversity, etc.)
  - Different impacts of pandemic and implementations of regulations

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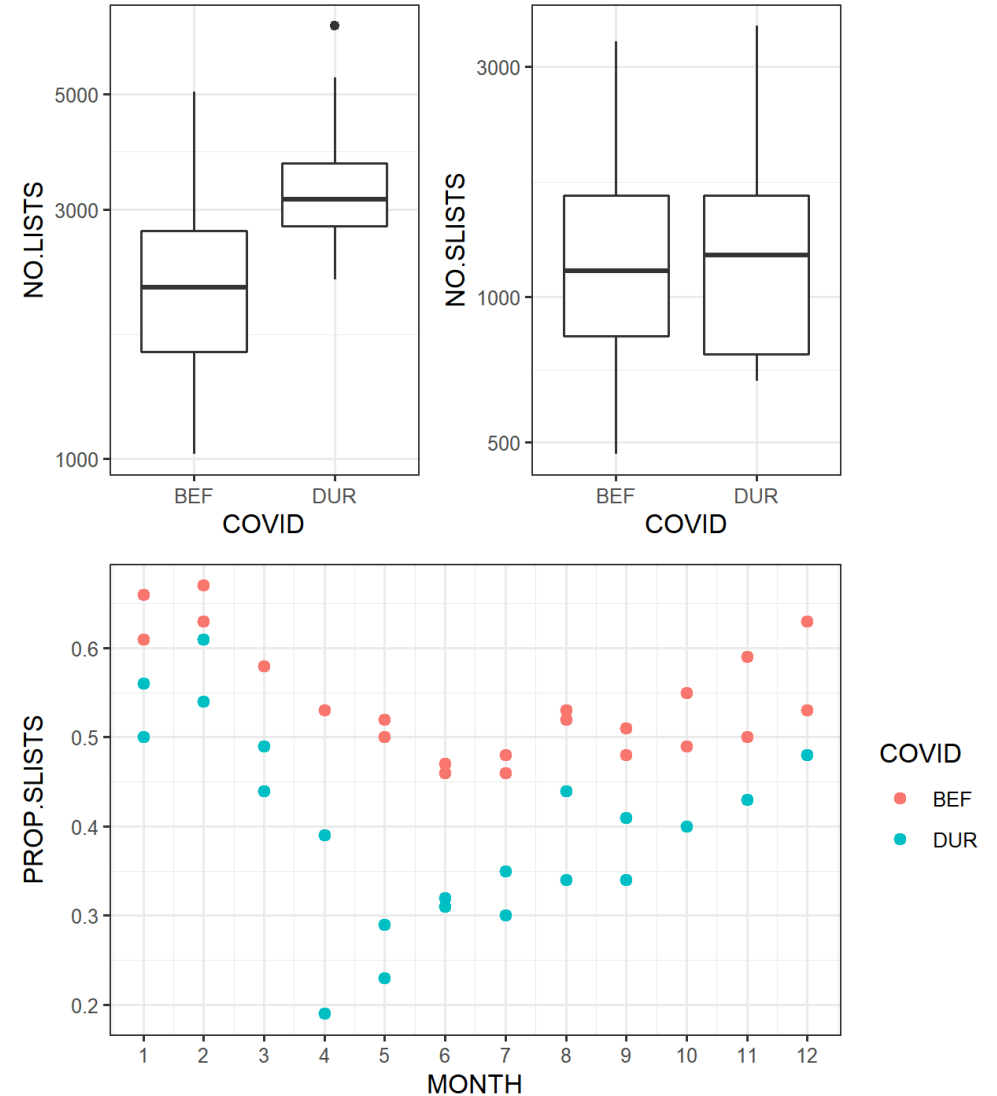
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- w.r.t. pandemic, mostly only national level events impacted eBirding (lockdown, second wave)
  - May have to compare 2020 and 2021 to discern roles of restrictions and of novelty
- Lots of *general* interesting patterns in metrics

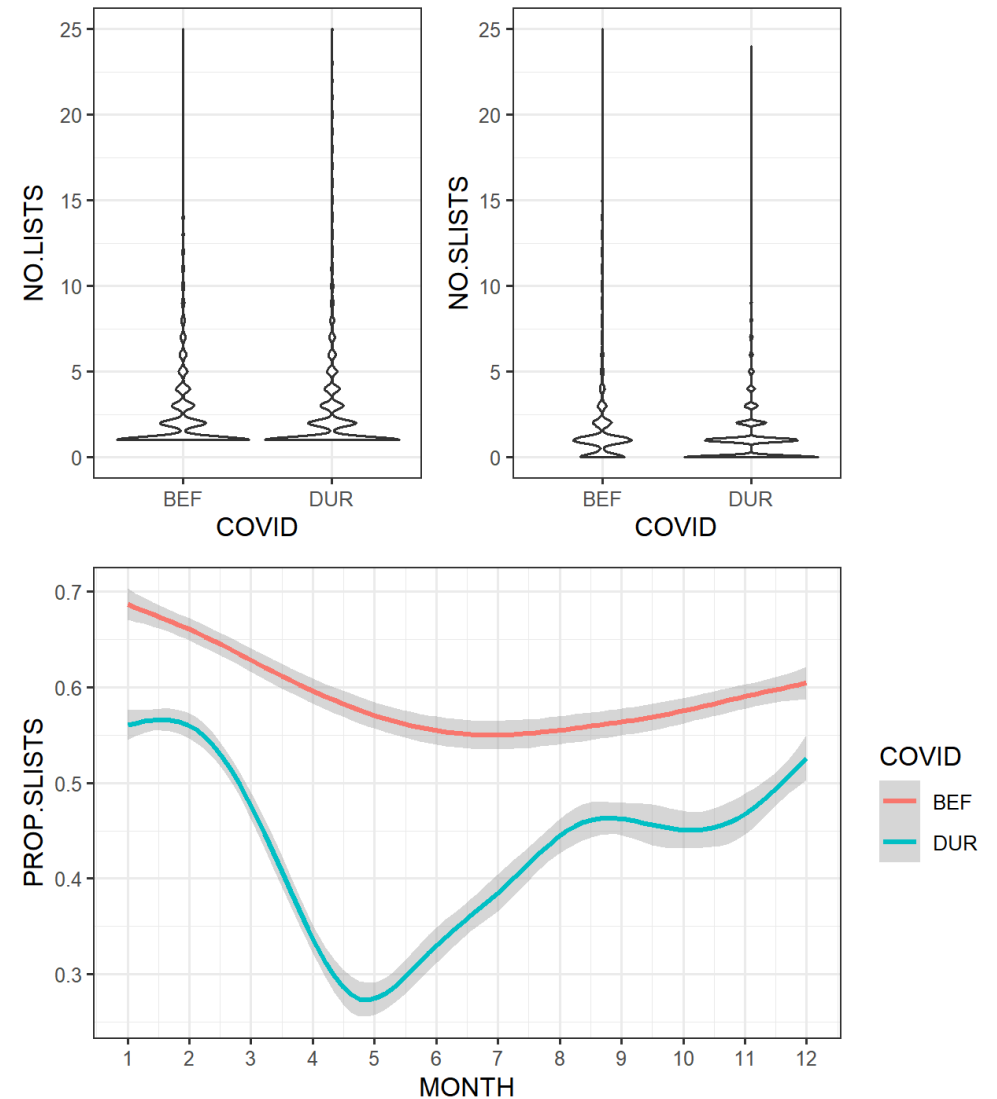
- There is growth at all levels (lists, new eBirders, media)
- Hard to distinguish this continuing temporal trend from impact of pandemic
- Group birding has taken a hit (although some outliers present like Karnataka)

Change in no. of lists with pandemic at national level

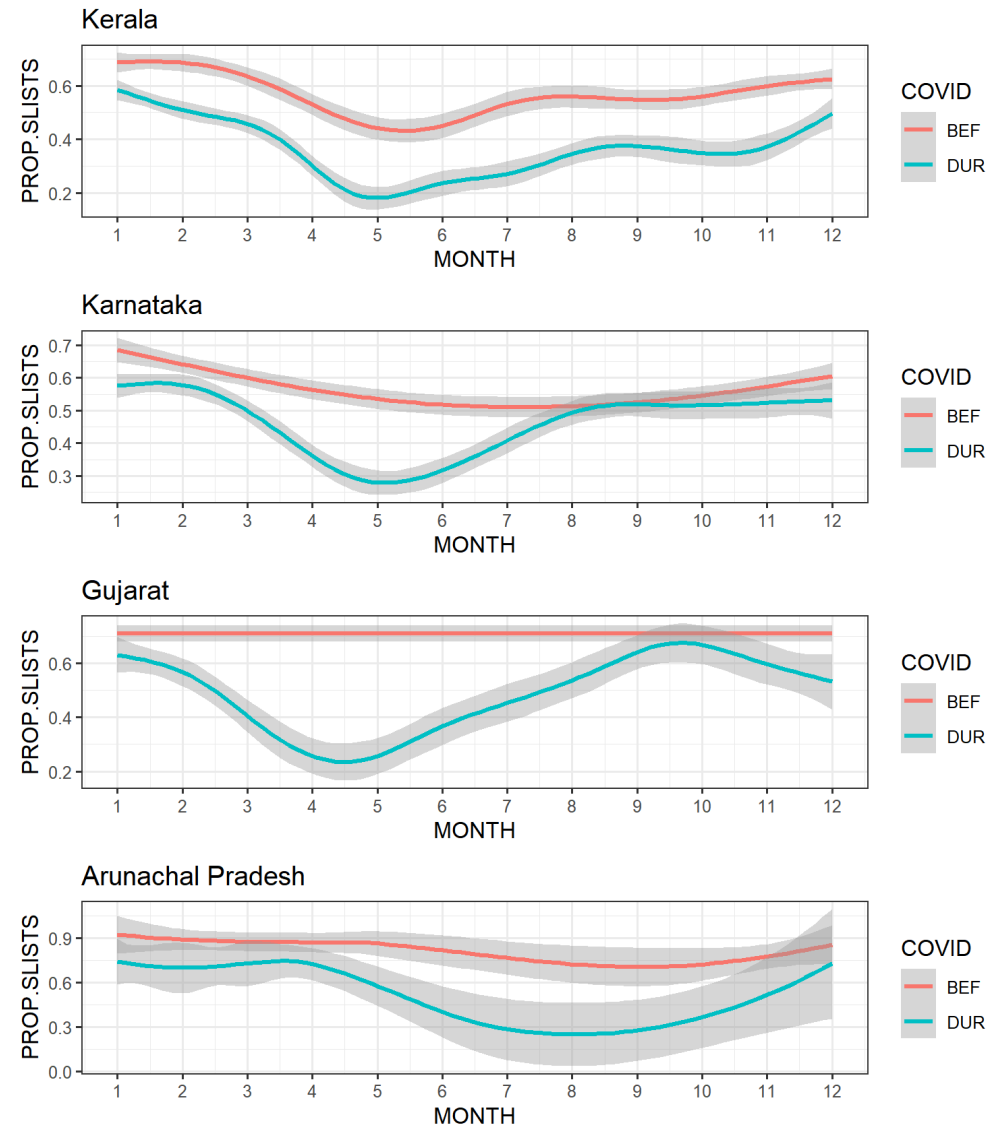


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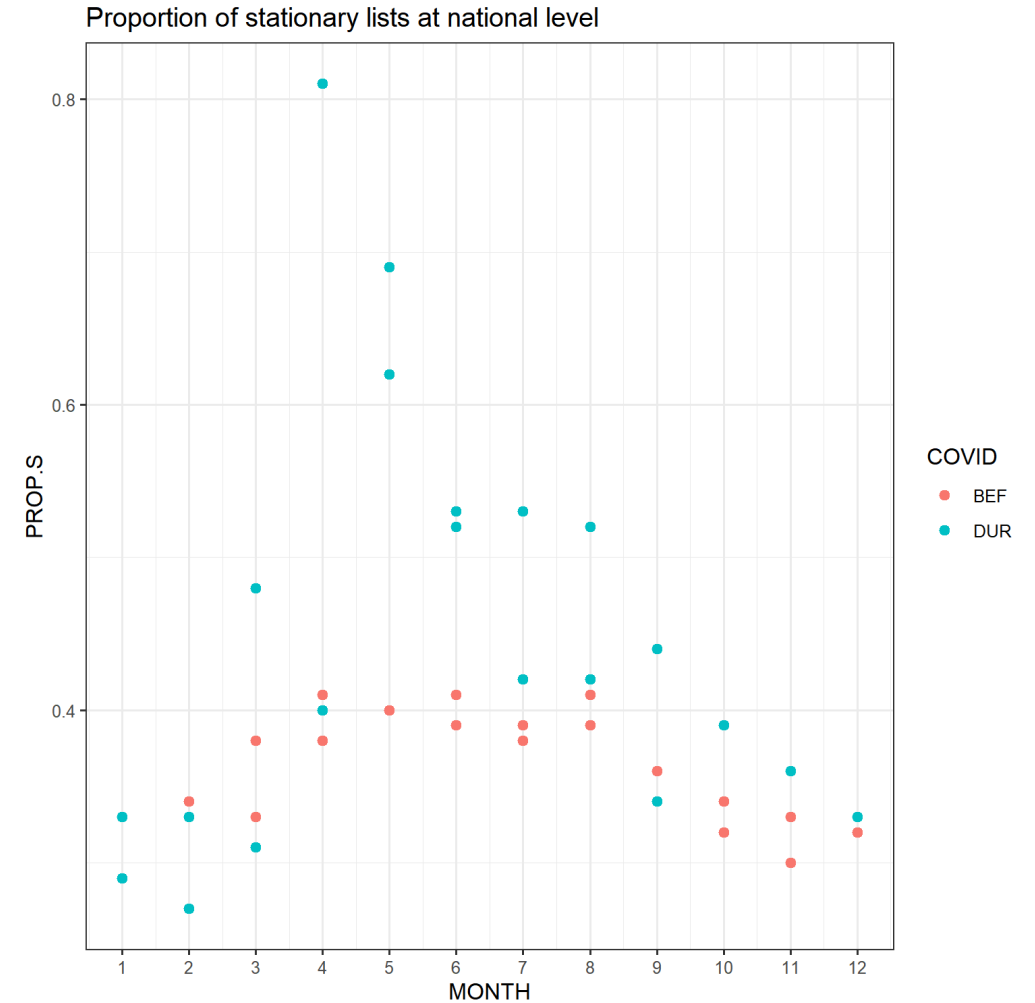
Change in no. of lists per observer with pandemic at national level



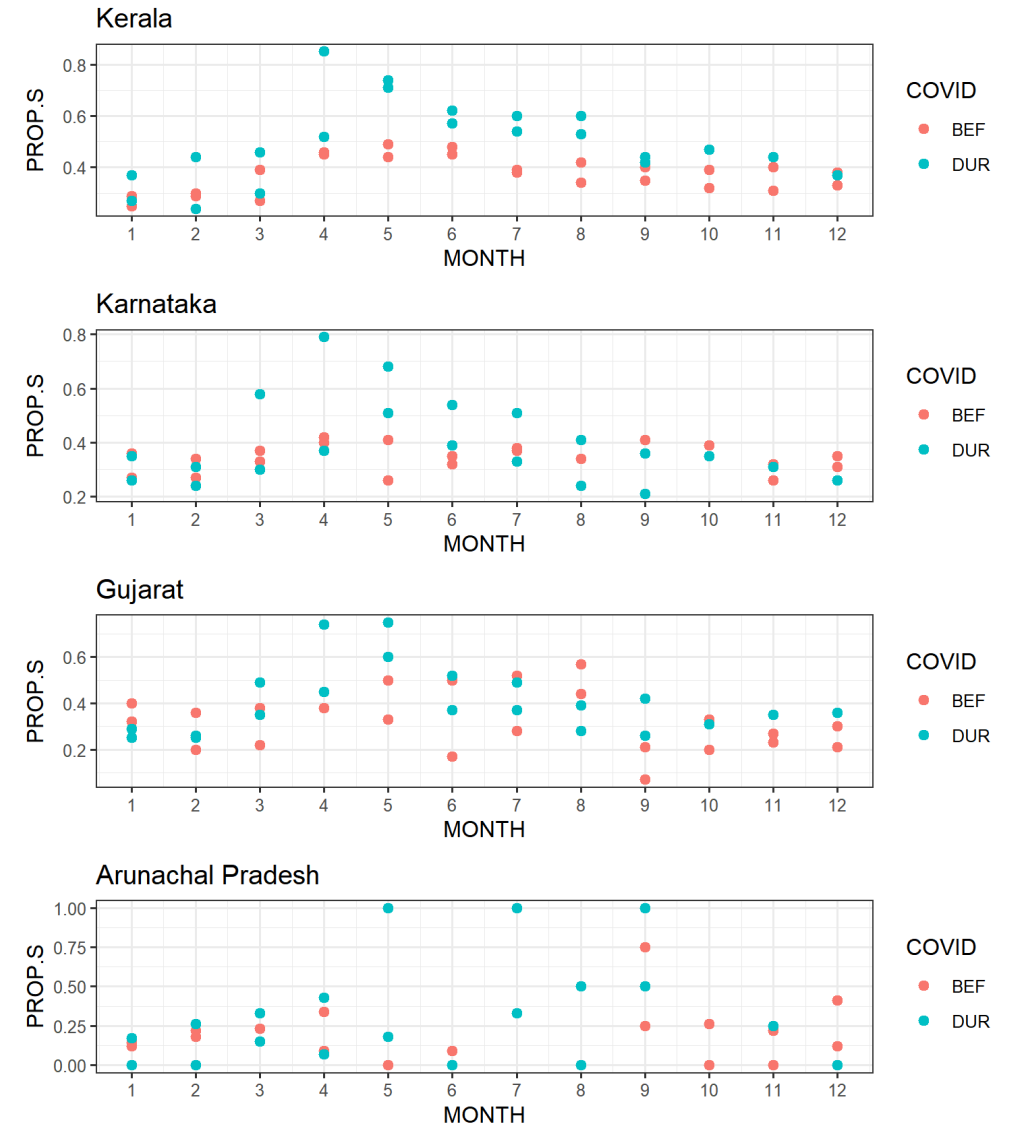
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- Hard to distinguish this continuing temporal trend from impact of pandemic
- Group birding has taken a hit (although some outliers present like Karnataka)
- Kerala mirrored national patterns. Drastic during April–May.
- Karnataka also affected during April–May, but otherwise very similar!
- Gujarat also affected during April–May, but group birding rose sharply in winter.



- No disproportionate birding in personal locations (than hotspots)
- Higher proportion of stationary lists, though mostly during April–May

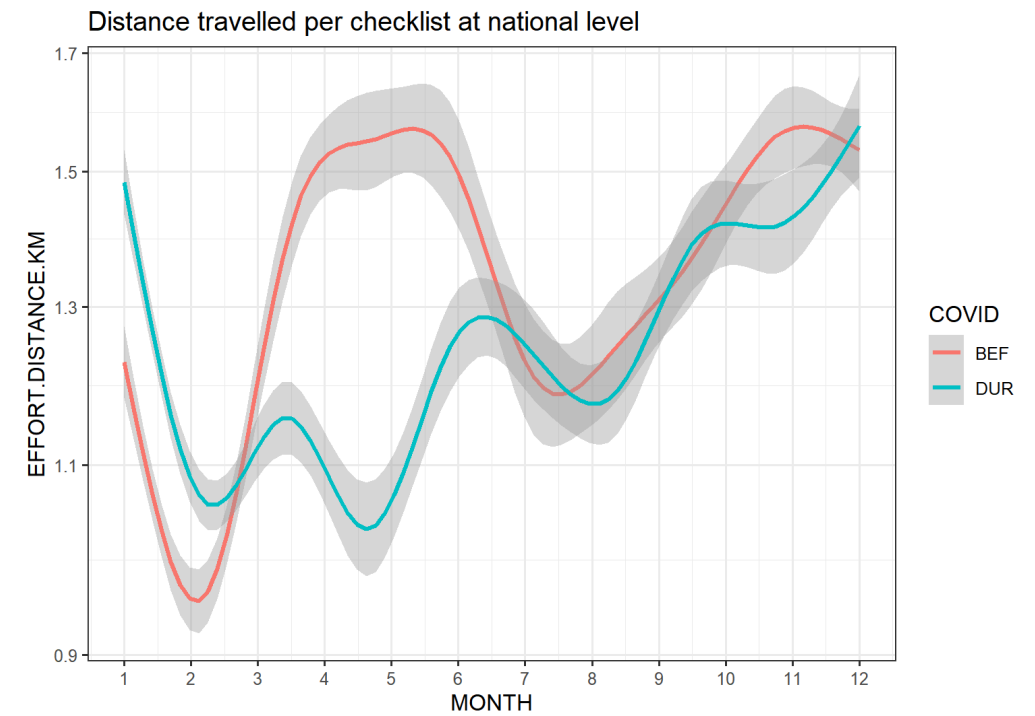


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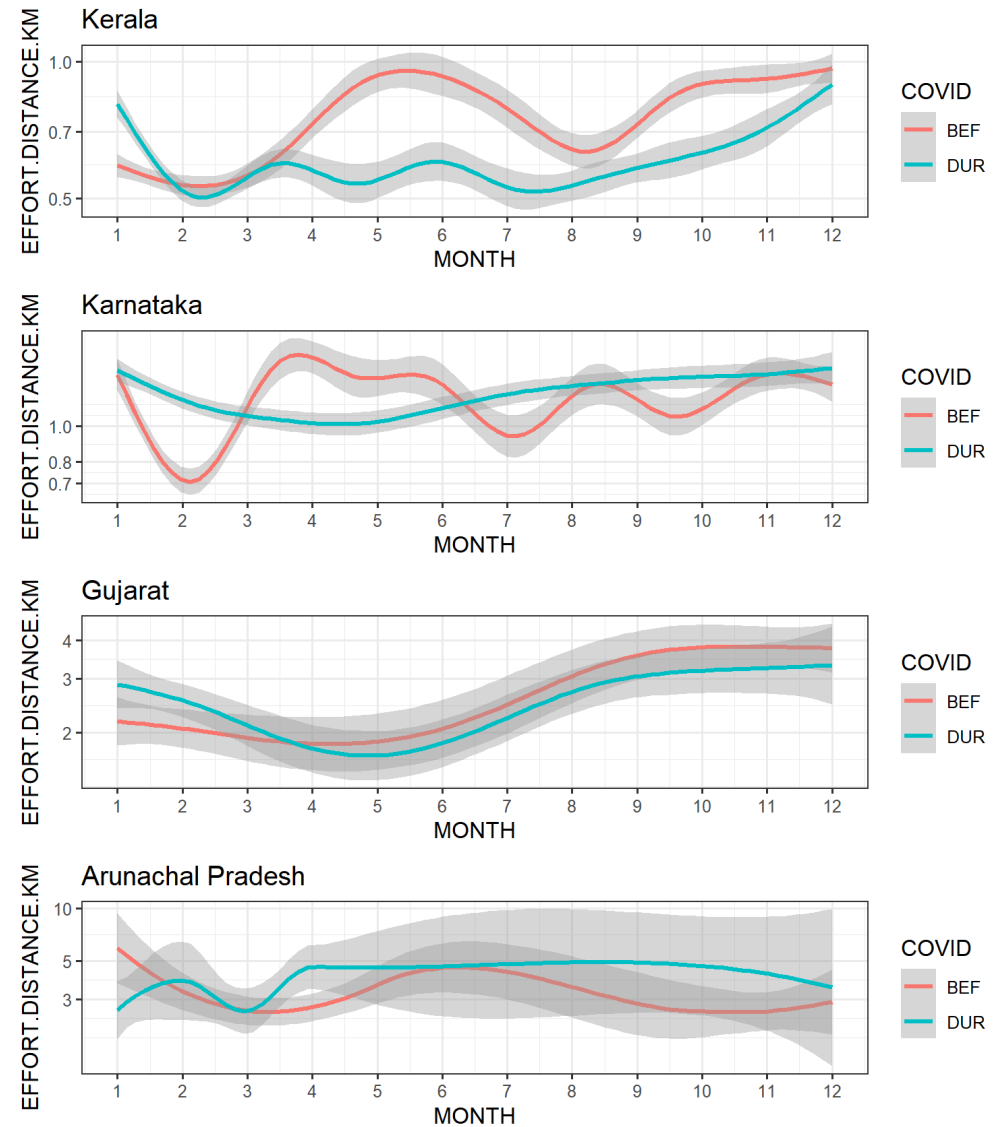




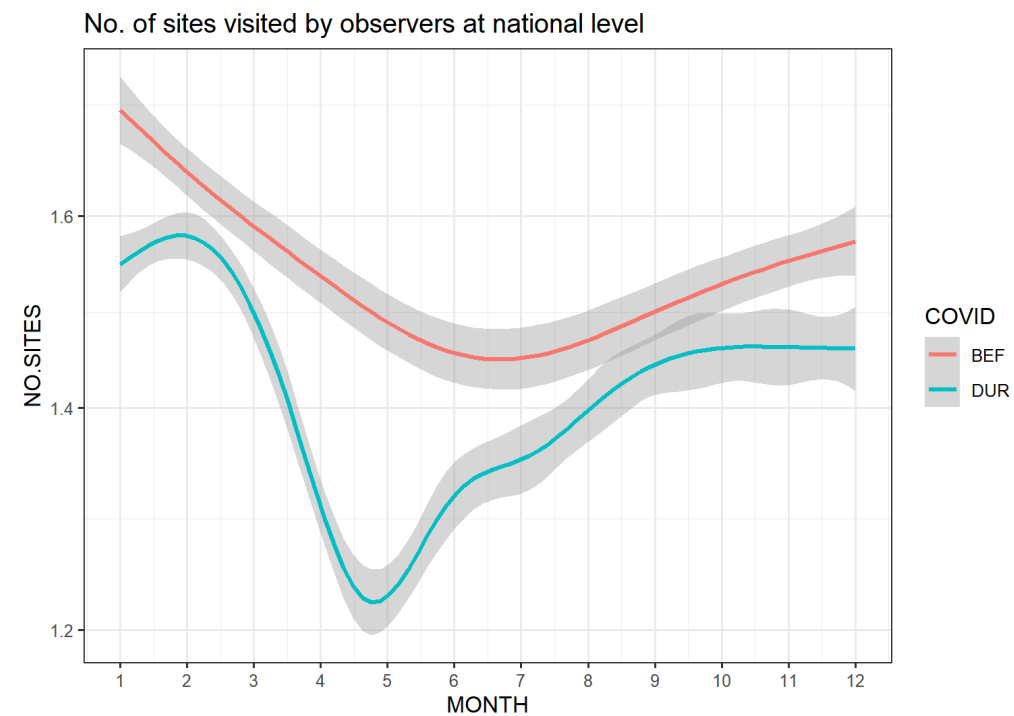
- Distance covered (among travelling lists) decreased greatly during April–May
- Kerala different from others



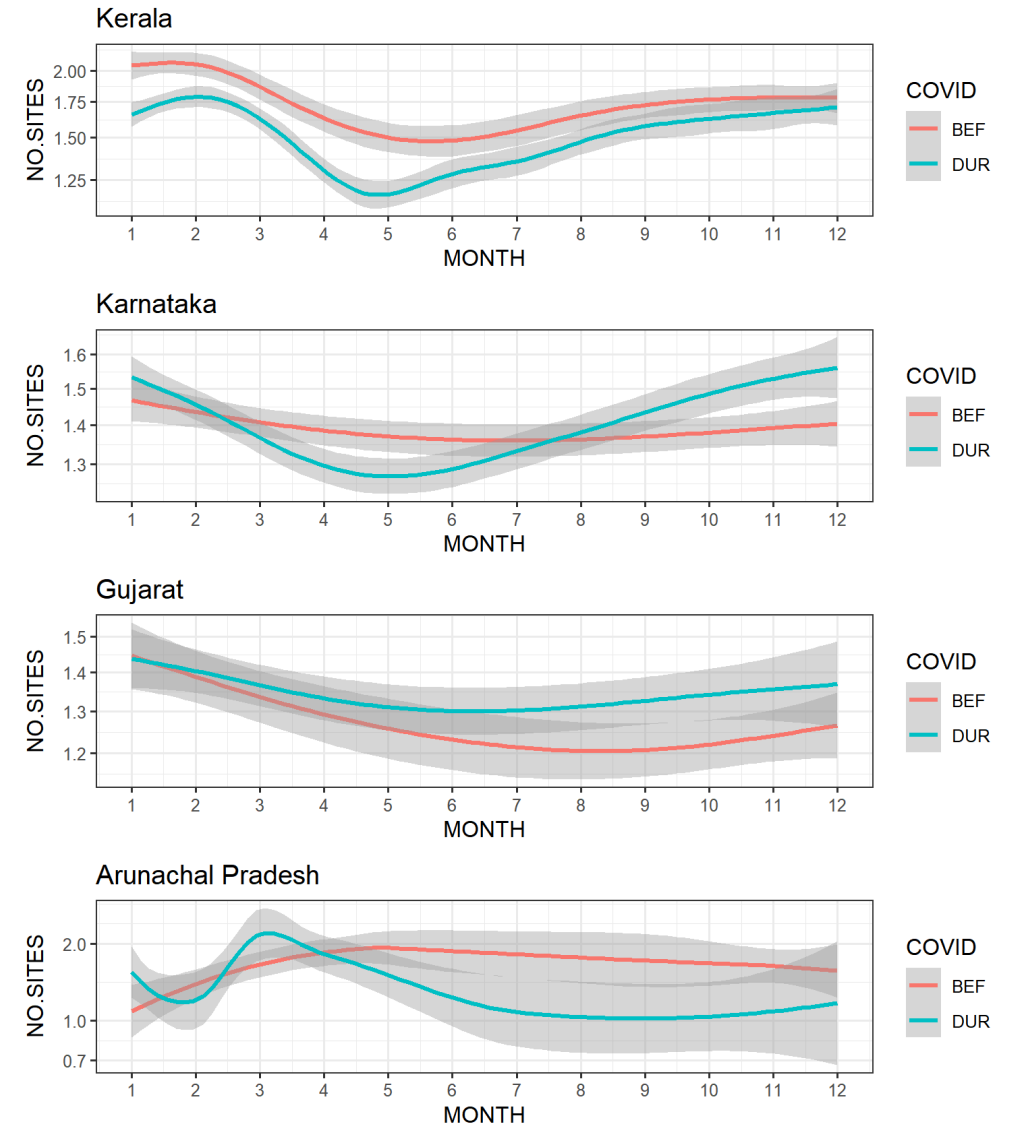
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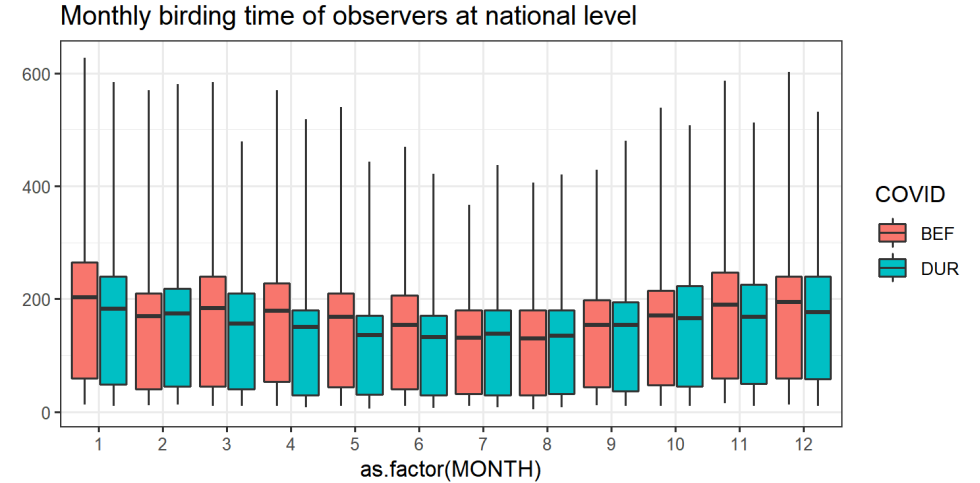
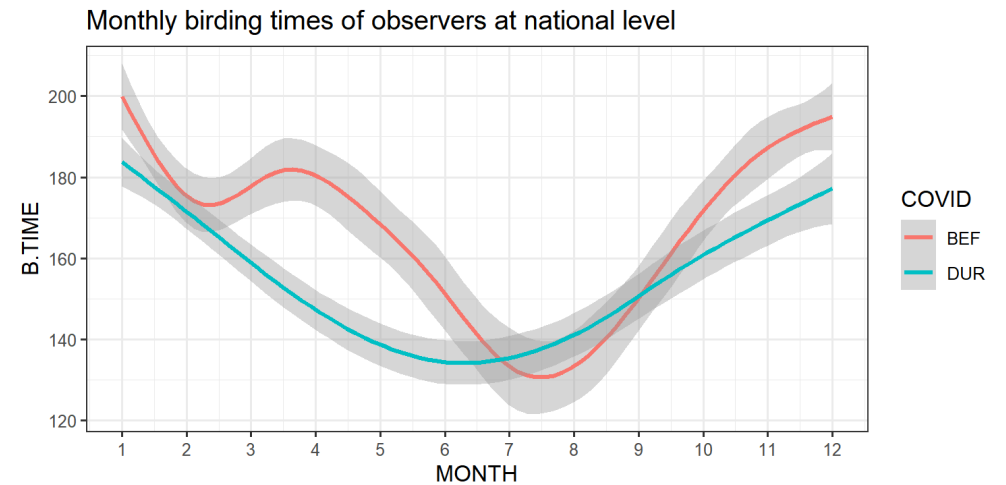
- Similarly, site fidelity increased (no. of sites decreased) mostly during April–May
- Different states with contradicting patterns
- Kerala again different: tighter restrictions or more reluctant birders



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- The average birder birded less during April–May (lockdown and strong wave)
- Otherwise rather normal
- List duration, list length, no. of lists with media all similar



**Thanks!**