



National SARS-CoV-2 Wastewater Surveillance Programme

Week 34 2021 (22/08/2021—28/08/2021)

Report prepared on 02/09/2021

Background

People with COVID-19/SARS-CoV-2 infection can shed the virus in their stool, which can then be detected in wastewater, making environmental surveillance of wastewater a feasible means to monitor the circulation of SARS-CoV-2, the virus that causes COVID-19 disease, in the population.

The National SARS-CoV-2 Wastewater Surveillance Programme (NWSP) has been established through a partnership with Irish Water, the National Virus Reference Laboratory (NVRL), University College Dublin (UCD), the HSE Health Protection Surveillance Centre (HPSC) and Health Intelligence Unit (HIU). Samples from 68 wastewater catchment areas across Ireland are taken on a weekly basis and analysed for the presence of SARS-CoV-2. The wastewater catchment area of Ringsend in Dublin is sampled twice a week given the size of the population it captures. These 68 wastewater catchment areas (see Figure 2) cover 80% of the population connected to public wastewater treatment facilities.

The NWSP is an additional tool in Ireland's response to COVID-19/ SARS-CoV-2. The NWSP aims to complement our case-based surveillance systems (i.e. monitoring the number of people testing positive or presenting to a healthcare provider with symptoms) through acting as an early warning system for the circulation, or an increase in the circulation, of SARS-CoV-2 in a wastewater catchment area.

Please note that stool or wastewater are not recognised sources of transmission for SARS-CoV-2. Standard hygiene measures should be used after using the toilet. [Guidance from the WHO](#) for water and sanitation providers recommends standard best practices, including PPE for those working in proximity to wastewater, be followed.

Summary of results from week 34, 2021

In week 34¹, 2021 SARS-CoV-2 was detected in wastewater samples from 65 of the wastewater catchment areas analysed (n=68). These results are in keeping with the high incidence rate of COVID-19 currently being seen throughout Ireland.

Please read 'Data uses' and 'Data limitations and uncertainties' in the technical notes prior to making any interpretation of the data.

¹ Dates of epidemiological weeks are available in the technical notes and at: <https://www.hpsc.ie/notifiablediseases/resources/epidemiologicalweeks/>

Overview of SARS-CoV-2 detection in wastewater in Ireland

Results are presented as the numerical value of the concentration of SARS-CoV-2 in the wastewater sample and as a descriptive category. The descriptive categories used are ‘positive’ when SARS-CoV-2 RNA was detected and could be quantified; ‘weak positive’ when SARS-CoV-2 RNA was detected but was below the quantification limit (BQL); ‘undetected’ when the numerical value was below the detection limit (BDL); and ‘unavailable’ if a result was not available because either a sample was not received or could not be fully analysed e.g. if flow data were not available. Please see the glossary and technical notes for further explanations.

In week¹ 34, 2021, 70 samples were received and analysed for the 68 wastewater catchment areas (Ringsend catchment area served by Ringsend wastewater treatment plant is sampled twice a week; in addition, an extra sample was received from the Shanganagh in week 34) (Table 1). SARS-CoV-2 RNA was detected in samples from 65 wastewater catchment areas. The number of wastewater catchment areas where SARS-CoV-2 RNA was detected has increased gradually since week 23, when it was detected in 13 wastewater catchment areas (Figure 1).

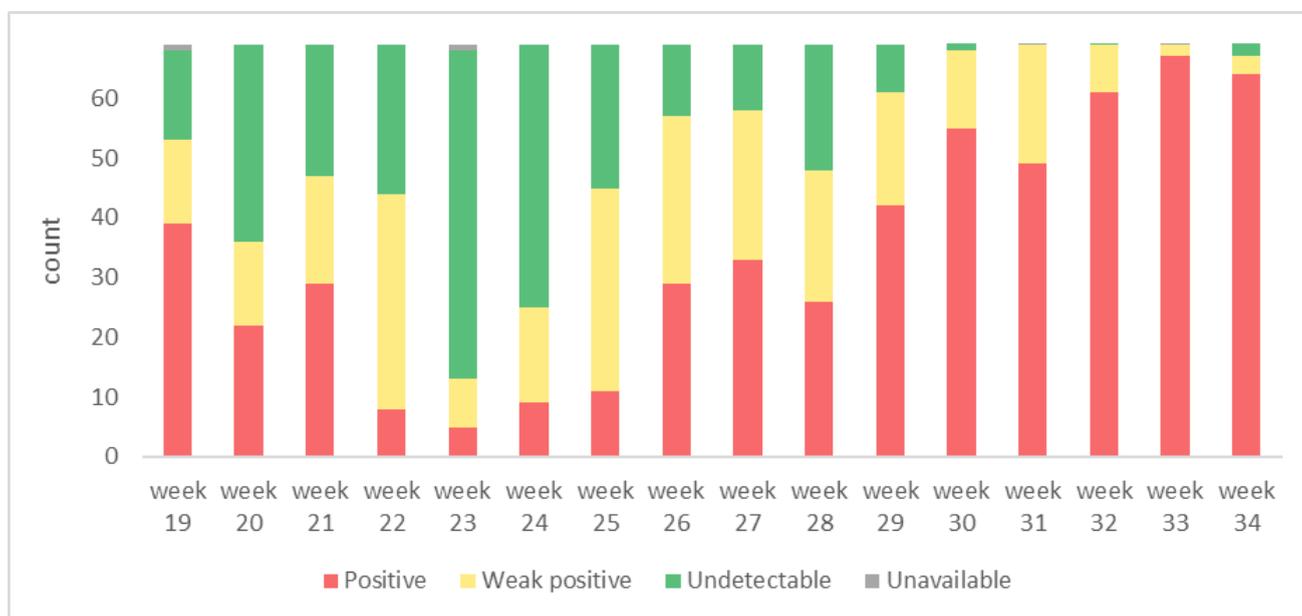


Figure 1. SARS-CoV-2 detection categories in Ireland by week, NWSP, weeks 19–34, 2021

**Samples with an undetected result may have SARS-CoV-2 present but the amount was too low to be detected by the test. It does not mean that SARS-CoV-2 is not circulating in the wastewater catchment area of the Wastewater treatment plant (WWTP).*

Table 1 and Figures 1 and 2 summarise the results from wastewater samples taken during week 34. Table 2a summarises the results by category for each wastewater catchment area during weeks 19–34, 2021 for all NWSP catchment areas except Ringsend. Results for the Ringsend catchment area is summarised separately in Table 2b as samples are taken at Ringsend biweekly.

Figure 3 summarises the SARS-CoV-2 RNA levels and 3 week moving average of those levels by wastewater catchment area each week since the start of the NWSP in week 19. Figure 4 focuses on data from the last 7 weeks.

Please note that wastewater data from different wastewater catchment areas should not be directly compared. All data are subject to ongoing validation.

Table 1. National Wastewater Surveillance Programme sampling results by wastewater catchment area, week 34, 2021

County	Wastewater catchment area	Sample type	Sample date	Result category ^A
Carlow	Carlow	Complete (composite)	24/08/2021	Positive*
	Tullow	Complete (composite)	24/08/2021	Positive*
Cavan	Cavan	Complete (composite)	23/08/2021	Positive*
	Virginia	Complete (composite)	23/08/2021	Positive*
Clare	Ennis North	Complete (composite)	22/08/2021	Weak positive
	Shannon	Complete (composite)	22/08/2021	Positive
Cork	Ballincollig	Complete (composite)	23/08/2021	Positive
	Clonakilty	Complete (composite)	23/08/2021	Positive*
	Cork City	Complete (composite)	23/08/2021	Positive
	Cork Lower Harbour	Complete (composite)	23/08/2021	Positive*
	Fermoy	Complete (composite)	23/08/2021	Positive
	Mallow	Unknown	23/08/2021	Undetectable*
	Midleton	Complete (composite)	23/08/2021	Weak positive
	Youghal	Complete (composite)	22/08/2021	Undetectable
Donegal	Buncrana	Complete (composite)	24/08/2021	Positive
	Letterkenny	Complete (composite)	24/08/2021	Positive*
Dublin	Balbriggan	Complete (composite)	23/08/2021	Positive
	Malahide	Complete (composite)	24/08/2021	Positive
	Portrane Donabate	Complete (composite)	23/08/2021	Positive
	Ringsend	Complete (composite)	22/08/2021	Positive
	Ringsend	Complete (composite)	25/08/2021	Positive*
	Shanganagh	Complete (composite)	23/08/2021	Weak positive
	Shanganagh [#]	Grab	24/08/2021	Positive
	Swords	Complete (composite)	23/08/2021	Positive
Galway	Galway	Complete (composite)	22/08/2021	Positive*
	Tuam	Complete (composite)	22/08/2021	Positive*
Kerry	Killarney	Complete (composite)	23/08/2021	Positive
	Tralee	Complete (composite)	23/08/2021	Positive
Kildare	Athy	Complete (composite)	24/08/2021	Positive
	Kildare	Complete (composite)	24/08/2021	Positive
	Lower Liffey Valley Regional Sewerage Scheme (Leixlip)	Complete (composite)	24/08/2021	Positive
	Upper Liffey Valley Sewerage Scheme (Osberstown)	Complete (composite)	24/08/2021	Positive
Kilkenny	Kilkenny	Complete (composite)	22/08/2021	Positive
	Thomastown	Complete (composite)	22/08/2021	Undetectable
Laois	Portarlinton	Complete (composite)	22/08/2021	Positive*
	Portlaoise	Complete (composite)	22/08/2021	Positive*
Leitrim	Carrick on Shannon	Complete (composite)	24/08/2021	Positive
	Manorhamilton	Complete (composite)	24/08/2021	Positive
Limerick	Castletroy	Complete (composite)	23/08/2021	Positive
	Limerick City	Complete (composite)	23/08/2021	Positive
Longford	Edgeworthstown	Grab	24/08/2021	Positive*
	Longford	Complete (composite)	24/08/2021	Positive
Louth	Drogheda	Complete (composite)	23/08/2021	Positive
	Dundalk	Complete (composite)	23/08/2021	Positive
Mayo	Ballina	Complete (composite)	23/08/2021	Positive
	Castlebar	Complete (composite)	22/08/2021	Positive

[#] extra sample submitted to due to lack of sample for week 33

Table 1(continued). National Wastewater Surveillance Programme sampling results by wastewater catchment area, week 34, 2021

County	Wastewater catchment area	Sample type	Sample date	Result category [^]
Meath	Navan Trim	Complete (composite)	23/08/2021	Positive
		Complete (composite)	24/08/2021	Positive*
Monaghan	Carrickmacross Monaghan	Complete (composite)	23/08/2021	Positive
		Complete (composite)	23/08/2021	Positive
Offaly	Birr Tullamore	Complete (composite)	22/08/2021	Positive
		Incomplete (composite)	22/08/2021	Positive*
Roscommon	Monksland Roscommon	Complete (composite)	23/08/2021	Positive*
		Complete (composite)	23/08/2021	Positive
Sligo	Enniscrone Sligo	Unknown	22/08/2021	Positive
		Complete (composite)	24/08/2021	Positive
Tipperary	Clonmel Nenagh Roscrea Thurles	Complete (composite)	23/08/2021	Positive
		Complete (composite)	23/08/2021	Positive
		Complete (composite)	23/08/2021	Positive
		Complete (composite)	22/08/2021	Positive
Waterford	Dungarvan Tramore Waterford	Complete (composite)	22/08/2021	Positive
		Complete (composite)	22/08/2021	Positive
		Complete (composite)	22/08/2021	Positive
Westmeath	Athlone Mullingar	Complete (composite)	22/08/2021	Positive
		Complete (composite)	24/08/2021	Positive
Wexford	Courtown Gorey Enniscorthy Wexford	Complete (composite)	24/08/2021	Positive*
		Complete (composite)	22/08/2021	Positive
		Complete (composite)	22/08/2021	Positive
Wicklow	Greystones Wicklow	Complete (composite)	24/08/2021	Positive*
		Complete (composite)	24/08/2021	Positive

[^] Samples with an 'undetectable' result may have SARS-CoV-2 present but the amount was too low to be detected by the test. It does not mean that SARS-CoV-2 is not circulating in the wastewater catchment area.

* Flow rate was not available at time of reporting, the average 2020 flow rate for the wastewater plant is used to calculate result.

Table 2b. Biweekly results for SARS-CoV-2 detections in the Ringsend WWTP, week 19 to week 34, 2021

Week	Specimen date	Result category	Result category
19	09/05/2021	Positive*	Positive*
	12/05/2021		Positive*
20	16/05/2021	Positive*	Positive
	19/05/2021		Positive*
21	23/05/2021	Undetectable	Weak positive
	26/05/2021		Undetectable
22	30/05/2021	Weak positive	Weak positive
	02/06/2021		Weak positive
23	07/06/2021	Undetectable	Weak positive
	09/06/2021		Undetectable
24	13/06/2021	Undetectable	Undetectable
	16/06/2021		Undetectable
25	20/06/2021	Weak positive	Weak positive
	23/06/2021		Weak positive
26	27/06/2021	Positive	Positive
	30/06/2021		Positive
27	04/07/2021	Positive	Positive
	07/07/2021		Positive
28	11/07/2021	Weak positive	Positive
	14/07/2021		Weak positive
29	18/07/2021	Weak positive	Positive
	21/07/2021		Weak positive
30	25/07/2021	Positive*	Positive*
	28/07/2021		Positive*
31	01/08/2021	Weak positive*	Weak positive
	04/08/2021		Weak positive*
32	08/08/2021	Positive*	Positive*
	11/08/2021		Positive*
33	15/08/2021	Positive*	Positive*
	18/08/2021		Positive*
34	22/08/2021	Positive*	Positive
	25/08/2021		Positive*

* Flow rate was not available at time of reporting, the average 2020 flow rate for the wastewater plant is used to calculate result

Figure 2. Map showing the approximate location of wastewater catchment areas and results for SARS-CoV-2 detections during week 34, 2021.

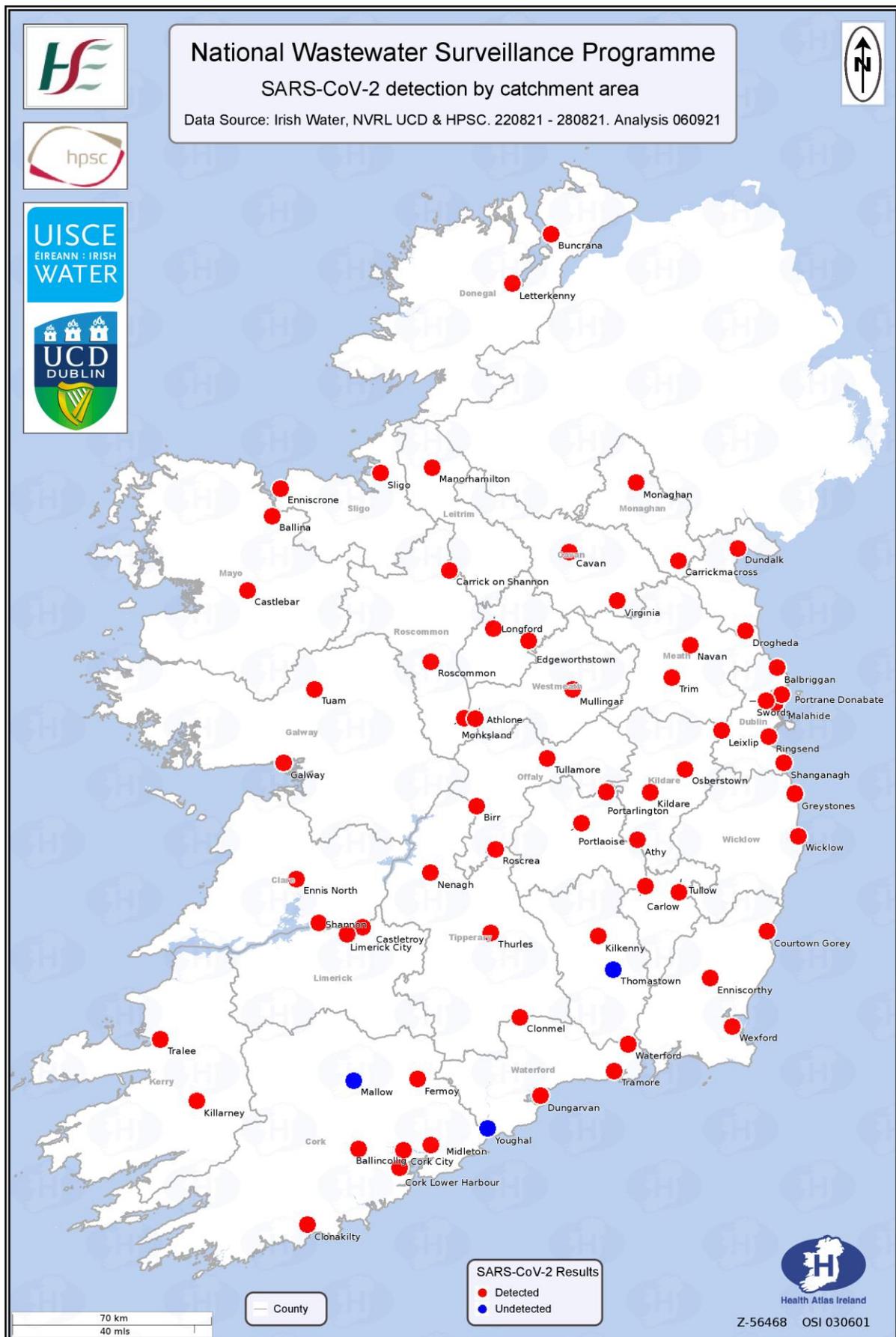


Figure 3. SARS-CoV-2 concentration by wastewater catchment area by week (grey connected line), and 3 week moving average (maroon line), NWSP, weeks 19–34, 2021

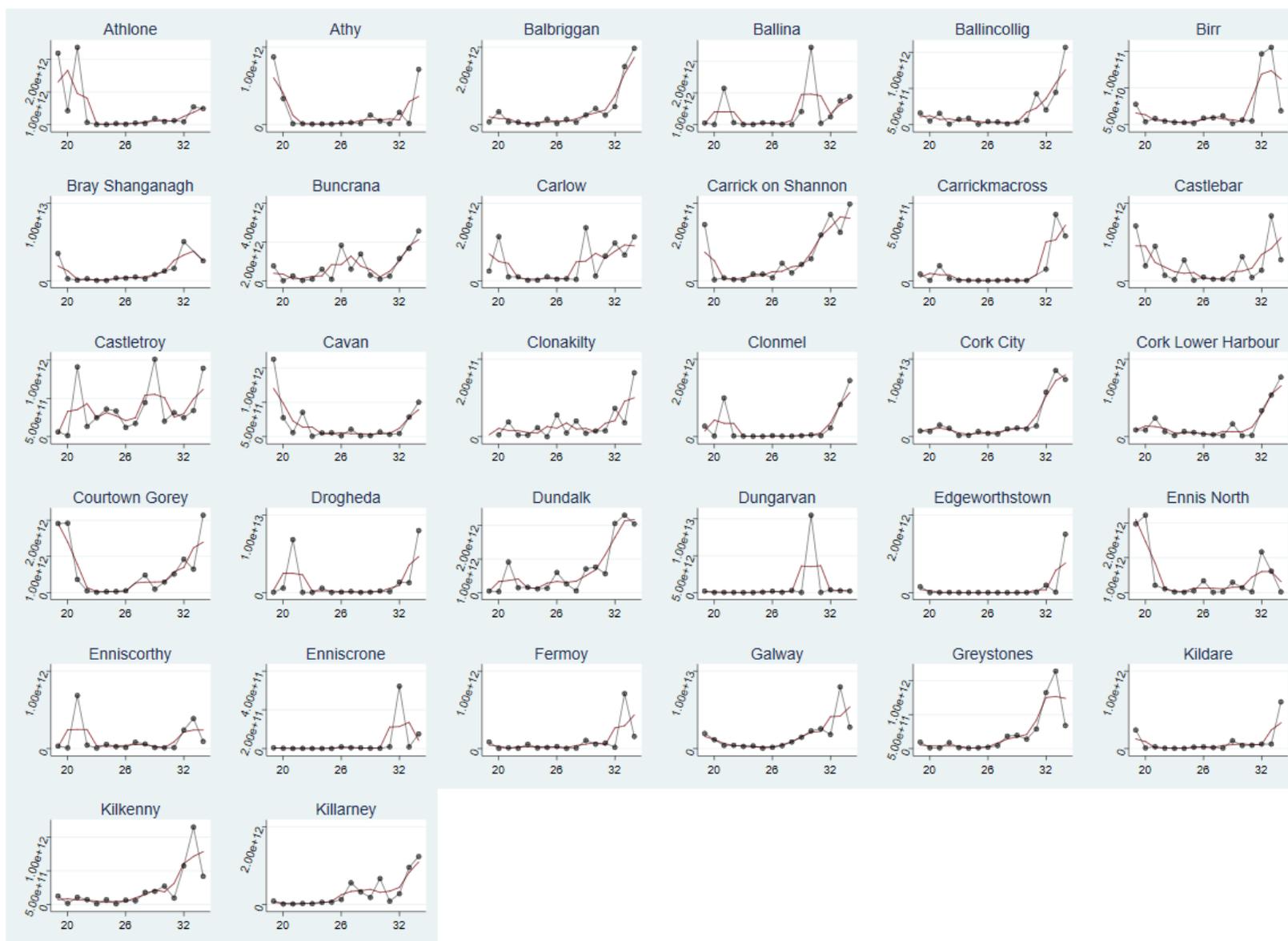


Figure 3 (continued). SARS-CoV-2 concentration by wastewater catchment area by week (grey connected line), and 3 week moving average (maroon line), NWSP, weeks 19—34, 2021

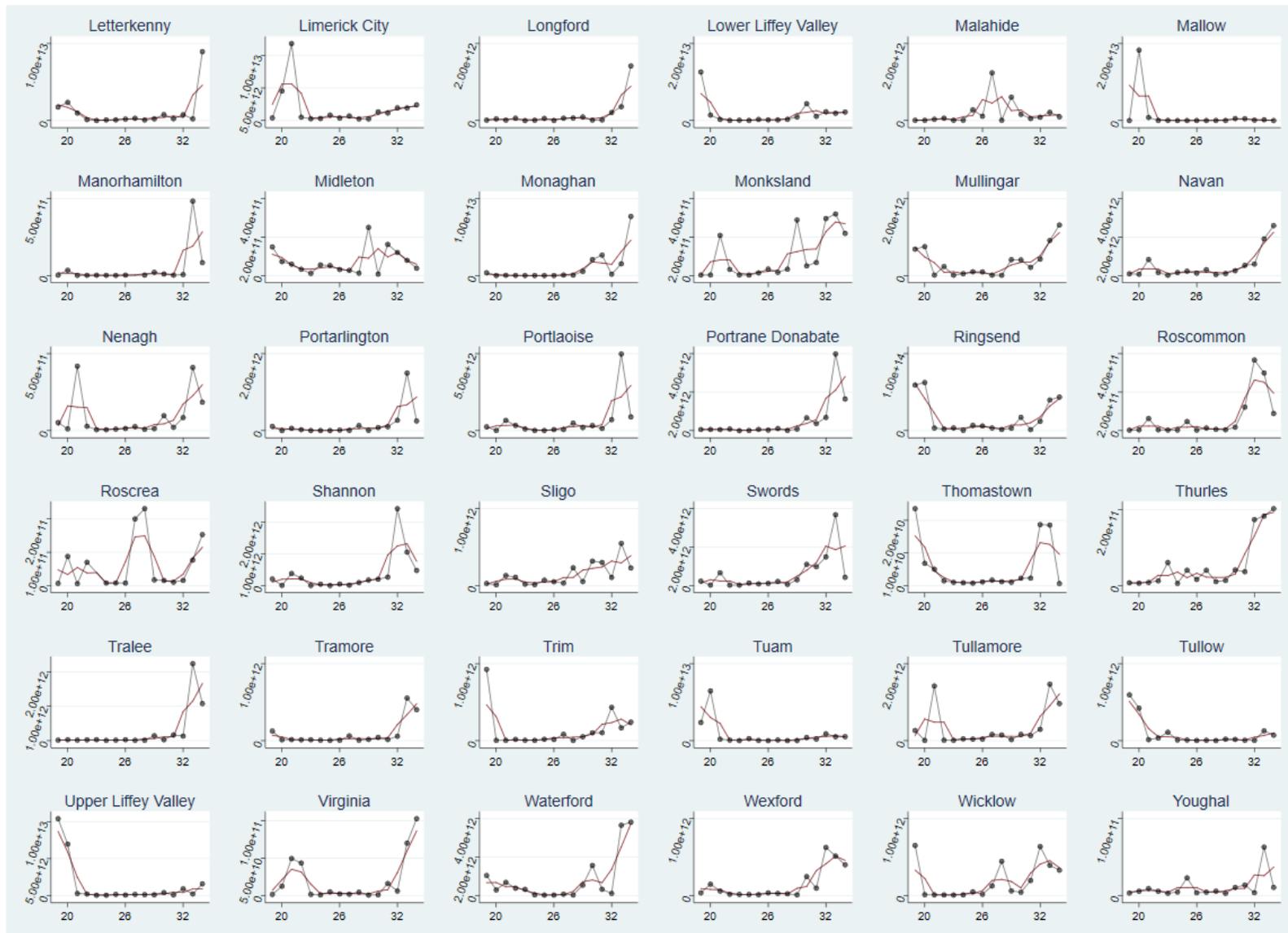


Figure 4. SARS-CoV-2 concentration by wastewater catchment area by week (grey connected line), and 3 week moving average (maroon line), NWSP, weeks 28—34, 2021

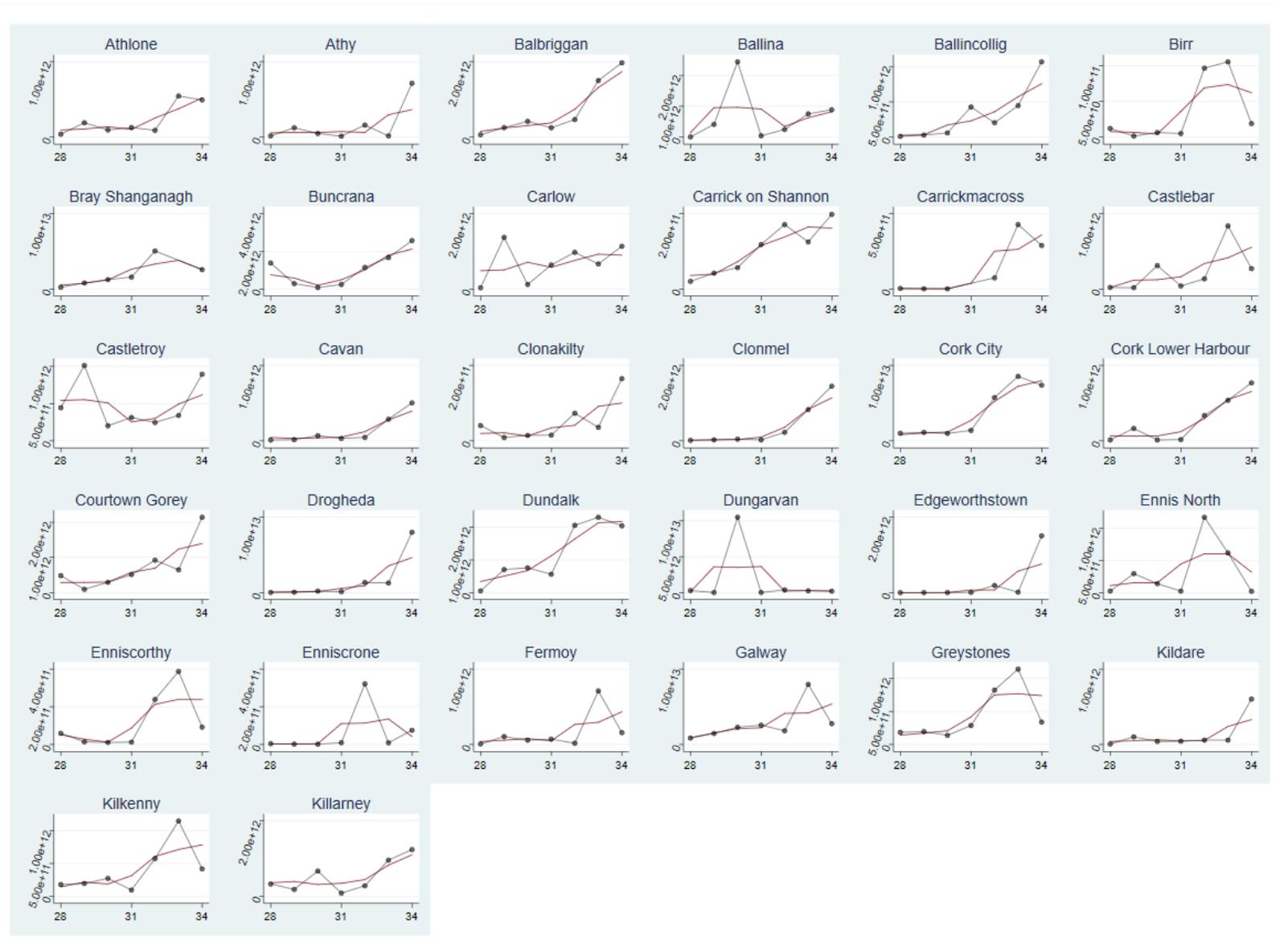


Figure 4 (continued). SARS-CoV-2 concentration by wastewater catchment area by week (grey connected line), and 3 week moving average (maroon line), NWSP, weeks 28—34, 2021

