## Supplementary Material

### Freshwater microplastic concentrations vary through both space *and* time

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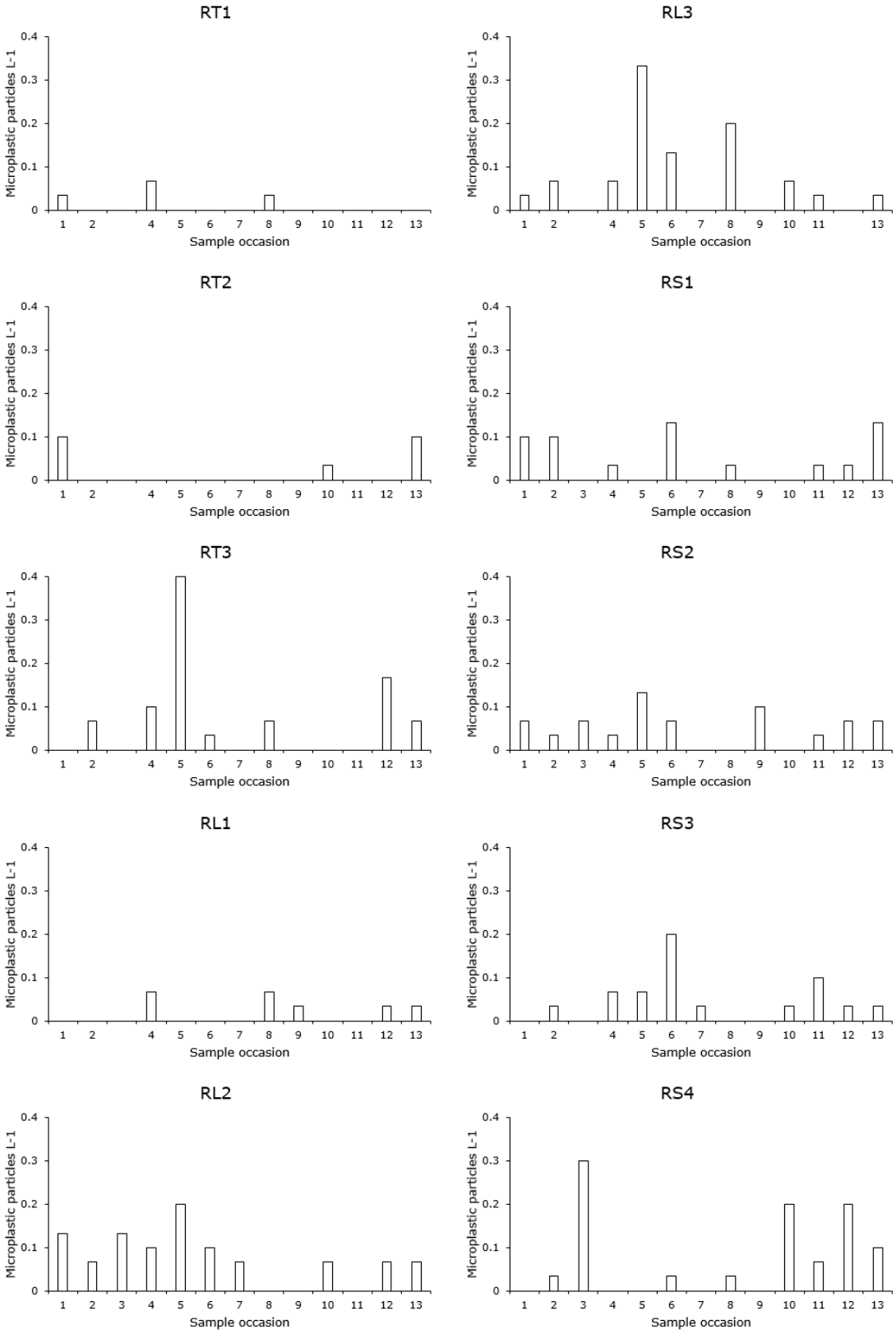


**Figure S1: Microplastic concentrations at each freshwater site and sampling occasion throughout the 12 month sampling campaign.**

**Figure S2: Photograph of sampling apparatus indicating the shallow nature of the some of the sampled sites. In the photograph the approximate water depth is 77.5 mm**

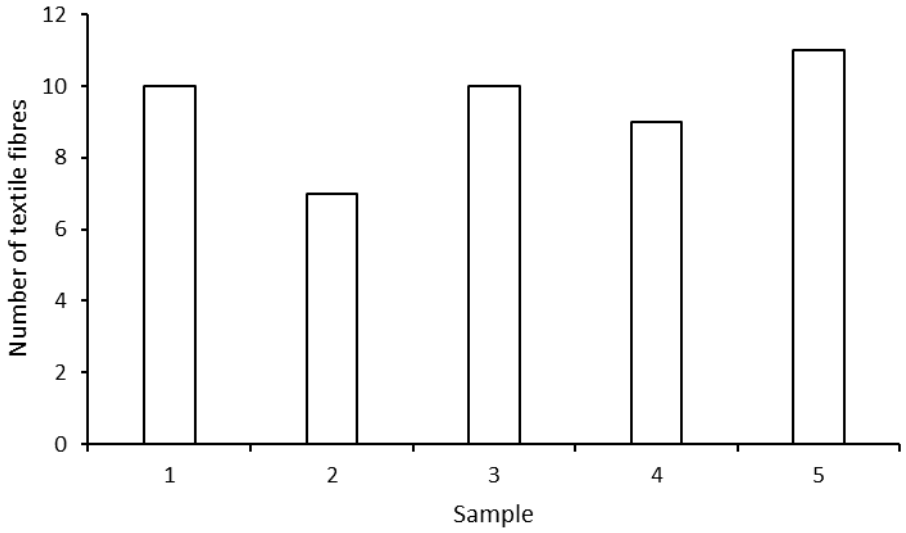


**Figure S3: Textile fibre deposition in each of the five samples of atmospheric deposition between 04/12/2018 to 11/12/2018 at site D.**

**Table S1: Approximate latitude and longitude of freshwater and atmospheric sample locations throughout the Trent catchment.**

| Site | Longitude | Latitude |
|---|---|---|
| RT1 | 53.095340 | -2.151879 |
| RT2 | 53.039984 | -2.146000 |
| RT3 | 52.964096 | -2.199166 |
| RL1 | 53.055322 | -1.188614 |
| RL2 | 53.009579 | -1.190167 |
| RL3 | 52.939850 | -1.163495 |
| RS1 | 52.522831 | -1.296512 |
| RS2 | 52.675515 | -1.116381 |
| RS3 | 52.793172 | -1.229301 |
| RS4 | 52.867430 | -1.269636 |
| Atmospheric A | 52.936752 | -1.196312 |
| Atmospheric B | 52.939426 | -1.206909 |
| Atmospheric C | 52.951042 | -1.186041 |
| Atmospheric D | 52.829792 | -1.250764 |

**Table S2: p values for Mann-Whitney U tests between sites on each river. Where $p < 0.05$, the difference between the compared sites is significant.**

| A | Site number for respective river in column A | | |
|---|---|---|---|
| | **1** | **2** | **3** |
| RT1 | | 0.849 | |
| RT3 | 0.045 | 0.106 | |
| RL1 | | 0.007 | |
| RL3 | 0.022 | 0.699 | |
| RS1 | | 0.561 | 0.755 |
| RS2 | | | 0.593 |
| RS4 | 0.709 | 0.813 | 0.978 |

**Table S3: Variations in flux calculations, for each of the three sites in close proximity to UK NRFA gauging stations, throughout the sampling campaign. Results are presented to three significant figures. Numbers in brackets represent the codes for the NRFA gauging station used. Missing values are explained in Stanton et al. (2019) with the exception of samples collected on 22nd and 23rd October 2018, for which no NRFA data was available at the time of publication. Samples were collected from sites RT2 and RL3 were collected on Mondays, and samples from site RS4 were collected on Tuesdays.**

| Date | RT2 (28040) | | RL3 (28035) | | RS4 (28074) | |
|---|---|---|---|---|---|---|
| | $\bar{x}$ flow ($m^3s^{-1}$) | Microplastic flux (Particles/day) | $\bar{x}$ flow ($m^3s^{-1}$) | Microplastic flux (Particles/day) | $\bar{x}$ flow ($m^3s^{-1}$) | Microplastic flux (Particles/day) |
| Mon 20/11/17 | 0.295 | 2 550 000 | 0.323 | 930 000 | | |
| Tue 21/11/17 | | | | | 4.66 | 0 |
| Mon 18/12/17 | 1.356 | 0 | 0.396 | 2 280 000 | | |
| Tue 19/12/17 | | | | | 10.9 | 31 400 000 |
| Mon 15/01/18 | 1.266 | - | 1.13 | - | | |
| Tue 16/01/18 | | | | | 24.8 | 643 000 000 |
| Mon 12/02/18 | 1.048 | 0 | 0.637 | 3 670 000 | | |
| Tue 13/02/18 | | | | | 15.4 | 0 |
| Mon 12/03/18 | 1.8 | 0 | 3.07 | 88 400 000 | | |
| Tue 13/03/18 | | | | | 63.8 | 0 |
| Mon 09/04/18 | 0.573 | 0 | 1.92 | 22 100 000 | | |
| Tue 10/04/18 | | | | | 56.1 | 162 000 000 |
| Mon 07/05/18 | 0.245 | 0 | 0.656 | 0 | | |
| Tue 08/05/18 | | | | | 8.35 | 0 |
| Mon 04/06/18 | 0.148 | 0 | 0.499 | 8 620 000 | | |
| Tue 05/06/18 | | | | | 5.48 | 15 800 000 |
| Mon 02/07/18 | 0.086 | 0 | 0.319 | 0 | | |
| Tue 03/07/18 | | | | | 3.59 | 0 |
| Mon 30/07/18 | 0.14 | 403 000 | 0.614 | 3 540 000 | | |
| Tue 31/07/18 | | | | | 5.2 | 89 900 000 |
| Mon 27/08/18 | 0.159 | 0 | 0.38 | 1 090 000 | | |
| Tue 28/08/18 | | | | | 4.46 | 25 700 000 |
| Mon 24/09/18 | 0.2 | 0 | 0.326 | - | | |
| Tue 25/09/18 | | | | | 3.54 | 61 200 000 |
| Mon 22/10/18 | | | | | | |
| Tue 23/10/18 | | | | | | |

**Supplementary references: Reference list of the 93 studies collated from the Web of Science literature search used to produce Figure 1. Bold citations indicate those for which there was no access, or where the necessary information was lacking or unclear.**


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