Table S1. The results of the analysis of ART two-way ANOVA for both stressors PS-NPs, enrofloxacin and their interaction on the life history parameters and on the respiration rate of gut microbiota of *Daphnia*. Statistically significant differences effect are marked with bold (df – degree of freedom, *F* – F-ratio, *P* – *p*-value corrected).

Parameters		Factor; Interaction	df	*F*	*P*
Life history parameters	Body length	NPs	3	2.008	0.111
		ENR	2	2.582	0.076
		NPs × ENR	6	3.474	0.071
	Body volume	NPs	**3**	**5.252**	**0.001**
		ENR	**2**	**11.223**	**< 0.001**
		NPs × ENR	**6**	**2.914**	**0.008**
	Cluth size	NPs	**3**	**17.129**	**< 0.001**
		ENR	**2**	**20.299**	**< 0.001**
		NPs × ENR	**6**	**5.061**	**< 0.001**
	Egg volume	NPs	**3**	**14.358**	**< 0.001**
		ENR	**2**	**25.442**	**< 0.001**
		NPs × ENR	**6**	**8.055**	**< 0.001**
	Cluth volume	NPs	**3**	**31.188**	**< 0.001**
		ENR	**2**	**60.368**	**< 0.001**
		NPs × ENR	**6**	**6.664**	**< 0.001**
Metabolic rate		NPs	**3**	**16.062**	**< 0.001**
		ENR	**2**	**81.844**	**< 0.001**
		NPs × ENR	**6**	**13.375**	**< 0.001**

Table S2. The results of planned contrasts of estimated marginal means based on two-way ART ANOVA for the effect of single and combined stressors on the life history parameters and on the respiration rate of gut microbiota of *Daphnia* for the combined data from all levels of NPs density (N_l = 10^3, Nm = 10^6, and N_h = 10^9 particles L^{-1}) and from all levels of enrofloxacin concentration (E_l = 10 and E_h = 100 ng L^{-1}). Statistically significant differences effect are marked with bold (E – estimate, T – T-ratio, P corr. – *p*-value corrected).

Parameters		Contrast	E	T	*P* corr.
Life history parameters	Body length	N_{mean} − Control	−109	−1.987	0.188
		E_{mean} − Control	−93	−1.621	0.315
		NE_{mean} − N_{mean}	−28	−0.832	0.498
		NE_{mean} − E_{mean}	−43	−1.153	0.498
	Body volume	N_{mean} − Control	−94	−1.736	0.083
		E_{mean} − Control	−127	−2.224	0.071
		NE_{mean} − N_{mean}	**−138**	**−3.577**	**0.001**
		NE_{mean} − E_{mean}	**−105**	**−2.263**	**0.031**
	Cluth size	N_{mean} − Control	**−98**	**−5.127**	**< 0.001**
		E_{mean} − Control	**−82**	**−4.280**	**< 0.001**
		NE_{mean} − N_{mean}	−22	−1.127	0.260
		NE_{mean} − E_{mean}	−37	−1.913	0.112
	Egg volume	N_{mean} − Control	**−108**	**−4.614**	**< 0.001**
		E_{mean} − Control	**−115**	**−5.026**	**< 0.001**
		NE_{mean} − N_{mean}	−49	−2.077	0.076
		NE_{mean} − E_{mean}	−42	−1.809	0.076
	Cluth volume	N_{mean} − Control	**−115**	**−7.111**	**< 0.001**
		E_{mean} − Control	**−117**	**−7.338**	**< 0.001**
		NE_{mean} − N_{mean}	−40	−2.495	0.056
		NE_{mean} − E_{mean}	−39	−2.433	0.056
Metabolic rate		N_{mean} − Control	**104**	**5.801**	**< 0.001**
		E_{mean} − Control	−43	−2.242	0.051
		NE_{mean} − N_{mean}	**−125**	**−11.395**	**< 0.001**
		NE_{mean} − E_{mean}	22	1.699	0.090

Table S3. The results of planned contrasts of estimated marginal means based on two-way ART ANOVA for all relevant comparisons between nanoplastic and enrofloxacin treatments on the body length of *Daphnia*. Statistically significant differences effect are marked with bold (E – estimate, SE – standard error, *T* – T-ratio, $P_{corr.}$ – *p*-value corrected).

Contrast	E	SE	*T*	$P_{corr.}$
N_l – Control	−67	67	−0.994	1.000
N_m – Control	−206	68	−3.036	0.146
N_h – Control	−53	65	−0.813	1.000
E_l – Control	−19	66	−0.293	1.000
E_h – Control	−167	66	−2.544	0.551
N_m - N_l	−140	68	−2.062	1.000
N_h – N_l	13	65	0.207	1.000
N_lE_l – N_l	−161	66	−2.457	0.649
N_lE_h – N_l	55	70	0.788	1.000
N_h – N_m	153	66	2.318	0.924
N_mE_l – N_m	−29	68	−0.432	1.000
N_mE_h – N_m	165	65	2.53	0.561
N_hE_l – N_h	−44	65	−0.687	1.000
N_hE_h – N_h	−151	65	−2.303	0.942
N_lE_l – E_l	−209	65	−3.22	0.082
N_mE_l – E_l	−216	66	−3.281	0.067
N_hE_l – E_l	−78	65	−1.193	1.000
E_h – E_l	−147	64	−2.287	0.959
N_mE_l – N_lE_l	−8	66	−0.118	1.000
N_hE_l – N_lE_l	130	65	2.004	1.000
N_lE_h – N_lE_l	216	69	3.152	0.100
N_hE_l – N_mE_l	138	66	2.082	1.000
N_mE_h – N_mE_l	194	64	3.027	0.147
N_hE_h – N_hE_l	−106	67	−1.593	1.000
N_lE_h – E_h	155	68	2.271	0.976
N_mE_h – E_h	125	63	2.012	1.000
N_hE_h – E_h	−37	66	−0.563	1.000
N_mE_h – N_lE_h	−30	67	−0.444	1.000
N_hE_h – N_lE_h	−192	70	−2.744	0.318
N_hE_h – N_mE_h	−162	64	−2.517	0.561

Table S4. The results of planned contrasts of estimated marginal means based on two-way ART ANOVA for all relevant comparisons between nanoplastic and enrofloxacin treatments on the body volume of *Daphnia*. Statistically significant differences effect are marked with bold (E – estimate, SE – standard error, *T* – T-ratio, $P_{corr.}$ – *p*-value corrected).

Contrast	E	SE	*T*	$P_{corr.}$
N_l – Control	−36	67	−0.533	1.000
N_m – Control	−201	67	−2.984	0.161
N_h – Control	−46	65	−0.712	1.000
E_l – Control	−74	66	−1.134	1.000
E_h – Control	−180	66	−2.737	0.331
N_m - N_l	−166	67	−2.464	0.662
N_h – N_l	−11	65	−0.165	1.000
N_lE_l – N_l	−204	65	−3.125	0.106
N_lE_h – N_l	−106	69	−1.533	1.000
N_h – N_m	155	66	2.364	0.835
N_mE_l – N_m	−159	67	−2.377	0.825
N_mE_h – N_m	60	65	0.924	1.000
N_hE_l – N_h	−138	64	−2.153	1.000
N_hE_h – N_h	−161	65	−2.475	0.656
N_lE_l – E_l	−165	64	−2.563	0.522
N_mE_l – E_l	**−286**	**65**	**−4.391**	**0.001**
N_hE_l – E_l	−110	65	−1.69	1.000
E_h – E_l	−106	65	−1.631	1.000
N_mE_l – N_lE_l	−121	65	−1.862	1.000
N_hE_l – N_lE_l	55	65	0.849	1.000
N_lE_h – N_lE_l	98	68	1.433	1.000
N_hE_l – N_mE_l	176	65	2.682	0.383
N_mE_h – N_mE_l	209	64	3.231	0.057
N_hE_h – N_hE_l	−22	66	−0.338	1.000
N_lE_h – E_h	38	68	0.559	1.000
N_mE_h – E_h	39	63	0.615	1.000
N_hE_h – E_h	−27	66	−0.407	1.000
N_mE_h – N_lE_h	1	67	0.011	1.000
N_hE_h – N_lE_h	−65	69	−0.937	1.000
N_hE_h – N_mE_h	−66	64	−1.020	1.000

Table S5. The results of planned contrasts of estimated marginal means based on two-way ART ANOVA for all relevant comparisons between nanoplastic and enrofloxacin treatments on the clutch size of *Daphnia*. Statistically significant differences effect are marked with bold (E – estimate, SE – standard error, *T* – T-ratio, $P_{corr.}$ – *p*-value corrected).

Contrast	E	SE	*T*	$P_{corr.}$
N_l – Control	**−214**	**55**	**−3.89**	**0.005**
N_m – Control	**−304**	**57**	**−5.355**	**< 0.001**
N_h – Control	**−283**	**54**	**−5.227**	**< 0.001**
E_l – Control	**−216**	**55**	**−3.92**	**0.005**
E_h – Control	**−262**	**54**	**−4.822**	**< 0.001**
N_m - N_l	−89	58	−1.549	1.000
N_h – N_l	−68	55	−1.238	1.000
N_lE_l – N_l	32	58	0.548	1.000
N_lE_h – N_l	−146	59	−2.498	0.542
N_h – N_m	21	57	0.374	1.000
N_mE_l – N_m	−153	60	−2.547	0.482
N_mE_h – N_m	−13	57	−0.229	1.000
N_hE_l – N_h	−41	56	−0.738	1.000
N_hE_h – N_h	−170	58	−2.947	0.146
N_lE_l – E_l	33	58	0.571	1.000
N_mE_l – E_l	**−241**	**58**	**−4.129**	**0.002**
N_hE_l – E_l	−108	57	−1.907	1.000
E_h – E_l	−47	55	−0.843	1.000
N_mE_l – N_lE_l	**−274**	**60**	**−4.559**	**< 0.001**
N_hE_l – N_lE_l	−141	59	−2.412	0.638
N_lE_h – N_lE_l	−178	60	−2.956	0.145
N_hE_l – N_mE_l	133	59	2.248	0.889
N_mE_h – N_mE_l	140	58	2.407	0.638
N_hE_h – N_hE_l	−129	59	−2.173	1.000
N_lE_h – E_h	−98	58	−1.699	1.000
N_mE_h – E_h	−55	55	−0.994	1.000
N_hE_h – E_h	−190	58	−3.282	0.052
N_mE_h – N_lE_h	44	58	0.751	1.000
N_hE_h – N_lE_h	−92	61	−1.509	1.000
N_hE_h – N_mE_h	−136	58	−2.33	0.740

Table S6. The results of planned contrasts of estimated marginal means based on two-way ART ANOVA for all relevant comparisons between nanoplastic and enrofloxacin treatments on the egg volume of *Daphnia*. Statistically significant differences effect are marked with bold (E – estimate, SE – standard error, *T* – T-ratio, $P_{corr.}$ – *p*-value corrected).

Contrast	E	SE	*T*	$P_{corr.}$
N_l – Control	**−302**	**70**	**−4.318**	**0.001**
N_m – Control	**−302**	**71**	**−4.238**	**0.001**
N_h – Control	**−330**	**66**	**−4.967**	**< 0.001**
E_l – Control	−202	68	−2.979	0.137
E_h – Control	**−445**	**66**	**−6.716**	**< 0.001**
N_m - N_l	0	75	−0.005	1.000
N_h – N_l	−29	71	−0.405	1.000
N_lE_l – N_l	−114	72	−1.585	1.000
N_lE_h – N_l	−76	74	−1.023	1.000
N_h – N_m	−28	72	−0.392	1.000
N_mE_l – N_m	−30	75	−0.396	1.000
N_mE_h – N_m	**−270**	**70**	**−3.882**	**0.006**
N_hE_l – N_h	16	70	0.234	1.000
N_hE_h – N_h	−171	70	−2.444	0.613
N_lE_l – E_l	−214	70	−3.071	0.104
N_mE_l – E_l	−130	71	−1.828	1.000
N_hE_l – E_l	−112	71	−1.576	1.000
E_h – E_l	**−243**	**68**	**−3.57**	**0.018**
N_mE_l – N_lE_l	84	71	1.176	1.000
N_hE_l – N_lE_l	102	71	1.423	1.000
N_lE_h – N_lE_l	38	72	0.521	1.000
N_hE_l – N_mE_l	18	73	0.244	1.000
N_mE_h – N_mE_l	**−241**	**68**	**−3.557**	**0.019**
N_hE_h – N_hE_l	−187	73	−2.574	0.435
N_lE_h – E_h	67	71	0.943	1.000
N_mE_h – E_h	−128	64	−1.985	1.000
N_hE_h – E_h	−56	70	−0.811	1.000
N_mE_h – N_lE_h	−195	69	−2.829	0.217
N_hE_h – N_lE_h	−123	74	−1.673	1.000
N_hE_h – N_mE_h	72	68	1.060	1.000

Table S7. The results of planned contrasts of estimated marginal means based on two-way ART ANOVA for all relevant comparisons between nanoplastic and enrofloxacin treatments on the clutch volume of *Daphnia*. Statistically significant differences effect are marked with bold (E – estimate, SE – standard error, *T* – T-ratio, $P_{corr.}$ – *p*-value corrected).

Contrast	E	SE	*T*	$P_{corr.}$
N_l − Control	**−305**	**49**	**−6.233**	**< 0.001**
N_m − Control	**−349**	**50**	**−6.968**	**< 0.001**
N_h − Control	**−302**	**48**	**−6.343**	**< 0.001**
E_l − Control	**−265**	**48**	**−5.525**	**< 0.001**
E_h − Control	**−405**	**47**	**−8.535**	**< 0.001**
N_m - N_l	−44	51	−0.877	1.000
N_h − N_l	2	48	0.049	1.000
N_lE_l − N_l	−41	49	−0.830	1.000
N_lE_h − N_l	**−171**	**50**	**−3.381**	**0.031**
N_h − N_m	47	49	0.946	1.000
N_mE_l − N_m	−119	52	−2.275	0.645
N_mE_h − N_m	**−206**	**48**	**−4.268**	**0.001**
N_hE_l − N_h	−126	49	−2.580	0.339
N_hE_h − N_h	−241	49	−4.958	**< 0.001**
N_lE_l − E_l	−80	48	−1.654	1.000
N_mE_l − E_l	**−202**	**50**	**−4.030**	**0.003**
N_hE_l − E_l	**−162**	**49**	**−3.312**	**0.038**
E_h − E_l	−140	47	−2.963	0.115
N_mE_l − N_lE_l	−122	51	−2.399	0.497
N_hE_l − N_lE_l	−82	50	−1.653	1.000
N_lE_h − N_lE_l	−130	50	−2.575	0.339
N_hE_l − N_mE_l	40	51	0.775	1.000
N_mE_h − N_mE_l	−87	49	−1.790	1.000
N_hE_h − N_hE_l	−116	50	−2.300	0.627
N_lE_h − E_h	−70	49	−1.428	1.000
N_mE_h − E_h	**−150**	**45**	**−3.289**	**0.040**
N_hE_h − E_h	−138	48	−2.854	0.158
N_mE_h − N_lE_h	−79	48	−1.653	1.000
N_hE_h − N_lE_h	−68	51	−1.340	1.000
N_hE_h − N_mE_h	11	47	0.237	1.000

Table S8. The results of planned contrasts of estimated marginal means based on two-way ART ANOVA for all relevant comparisons between nanoplastic and enrofloxacin treatments on the respiration rate of gut microbiota of *Daphnia* expresed as V_{max} values. Statistically significant differences effect are marked with bold (E – estimate, SE – standard error, *T* – T-ratio, $P_{corr.}$ – *p*-value corrected).

Contrast	E	SE	*T*	$P_{corr.}$
N_l – Control	**130**	**22**	**5.909**	**< 0.001**
N_m – Control	**118**	**22**	**5.375**	**< 0.001**
N_h – Control	64	22	2.927	0.120
E_l – Control	−37	22	−1.687	1.000
E_h – Control	−48	22	−2.197	0.717
N_m - N_l	−12	22	−0.533	1.000
N_h – N_l	−66	22	−2.982	0.107
N_lE_l – N_l	**−125**	**22**	**−5.66**	**< 0.001**
N_lE_h – N_l	**−178**	**22**	**−8.103**	**< 0.001**
N_h – N_m	−54	22	−2.449	0.444
N_mE_l – N_m	**−163**	**22**	**−7.392**	**< 0.001**
N_mE_h – N_m	**−136**	**22**	**−6.184**	**< 0.001**
N_hE_l – N_h	−11	22	−0.491	1.000
N_hE_h – N_h	**−140**	**22**	**−6.356**	**< 0.001**
N_lE_l – E_l	43	22	1.936	1.000
N_mE_l – E_l	−7	22	−0.33	1.000
N_hE_l – E_l	**91**	**22**	**4.122**	**0.002**
E_h – E_l	−11	22	−0.510	1.000
N_mE_l – N_lE_l	−50	22	−2.266	0.626
N_hE_l – N_lE_l	48	22	2.186	0.717
N_lE_h – N_lE_l	−54	22	−2.443	0.444
N_hE_l – N_mE_l	**98**	**22**	**4.452**	**< 0.001**
N_mE_h – N_mE_l	27	22	1.208	1.000
N_hE_h – N_hE_l	**−129**	**22**	**−5.866**	**< 0.001**
N_lE_h – E_h	0	22	0.003	1.000
N_mE_h – E_h	31	22	1.389	1.000
N_hE_h – E_h	−27	22	−1.233	1.000
N_mE_h – N_lE_h	31	22	1.386	1.000
N_hE_h – N_lE_h	−27	22	−1.236	1.000
N_hE_h – N_mE_h	−58	22	−2.622	0.283