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Figure S1. A cube frame used for *in situ* observations (dimensions: 0.5x0.5x0.5 m).

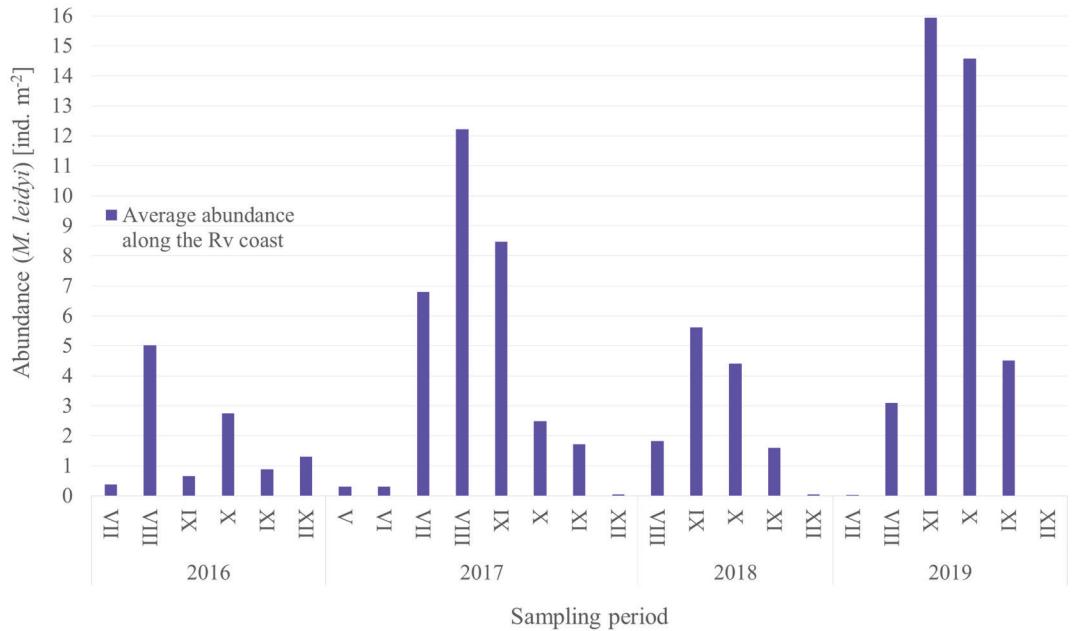


Figure S2. Monthly average abundances of *M. leidyi* along the coast of Rovinj for months when its presence was recorded during the four-year monitoring.

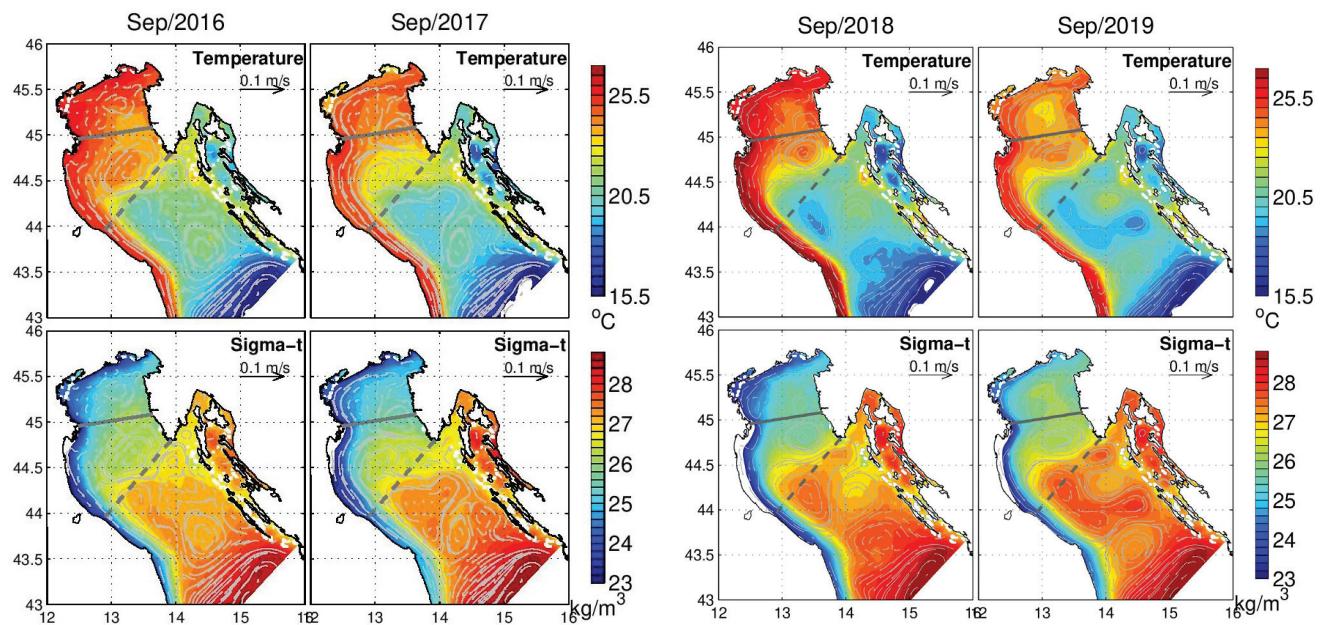


Figure S3. Monthly means of vertically averaged temperatures and sigma-t values for September 2016, 2017, 2018 and 2019, obtained by the numerical hydrodynamical model. Solid line is drawn between the Po River delta and Rovinj, and dashed line between Pesaro (Italy) and the tip of Istria (Cape Kamenjak). Isolines 38.1 and 38.5 are depicted in black.

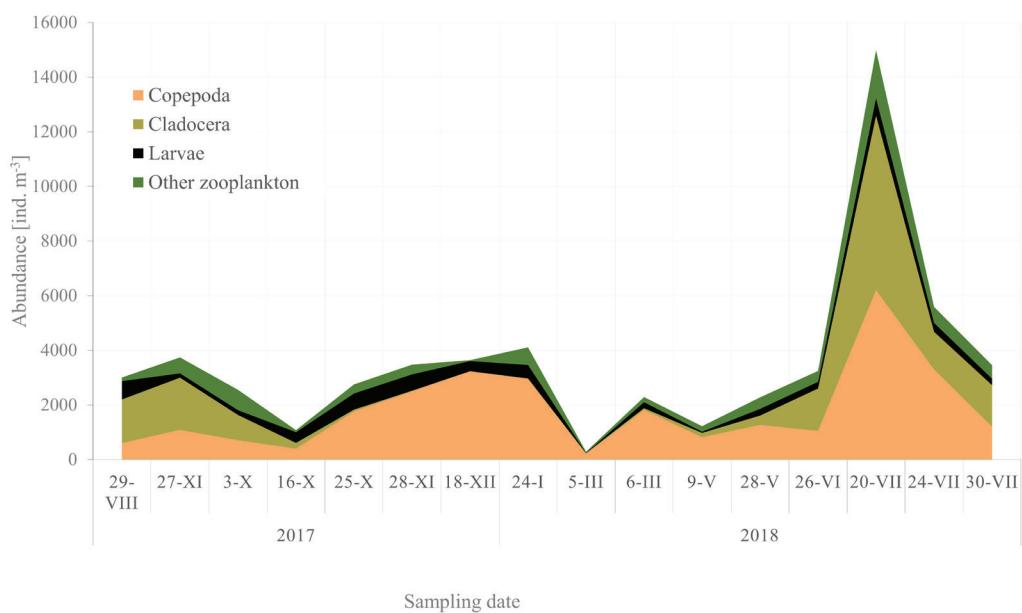


Figure S4. Annual distribution of zooplankton abundances at Rv station.

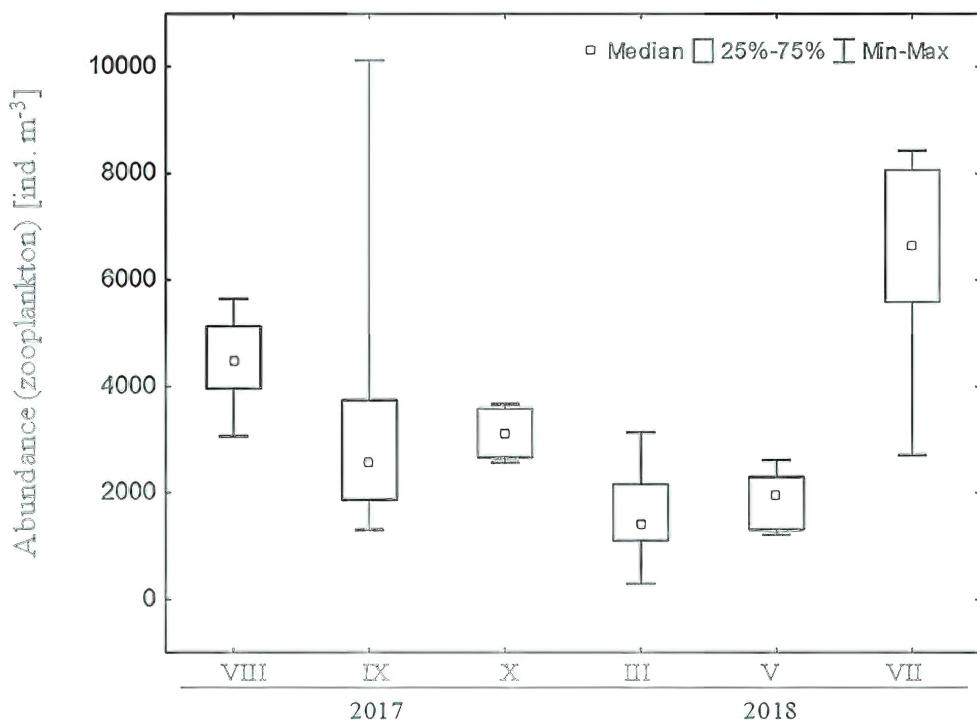


Figure S5. Zooplankton abundances (ind. m⁻³) at stations along the western Istrian coast from Agust 2017 to July 2018.

Table S1. *M. leidyi*'s abundance (ind. m⁻³) at the sea surface measured in September (from 2016 to 2019) at each of the stations accompanied with the depth at the location. Asterisks (*) mark the locations where *M. leidyi*'s distribution extended beyond the surface layer reaching the thermocline (15 m).

Station	Depth (m)	Surface abundance <i>M. leidyi</i> (ind. m ⁻³)			
		2016	2017	2018	2019
3	50	0	0	0	0
4	60	0	0	0	0
5	45	0	0	0	0
6	70	0	0	0	0
7	92	0	0	0	0
8	60	0	0	0	0
9	52	0	0.1	0	0
10	51	0.005	0.01	0.005	0
12	23	0.02	0.25	0.01	0
13	23	0.005	0	0.01	0
14	25	0.06	0	0.03	0
15	26	0.1	0.75	1	0.1
16	24	0	0.125	0.5	0.3
17	33	0	0.55	0.8	2
18	44	0	0	0	0.5
19	45	0.05	0.07	0.02	0.5
21	25	0.01	0.001	0.03	1.8
23	40	0.02	0.255	0.01	6*
24	49	0	0.14	0	0
25	51	0	0.14	0	0.02
27	49	0	0.13	0	0.1
30	55	0	0	0	0
31	60	0	0.001	0	0.01
32	63	0	0	0	0
33	59	0	0	0	0
38	62	0	0	0	0
39	50	0	0	0	0
36	50	0	0.0001	0	0.01
37	80	0	0	0	0
S	20	0.01	0.5	0.4	0
S1	30	0.005	0.1	0.8	0
U	25	0.001	4.5	0.7	0
D	25	0.03	2.8	0.1	0.05
N	25	1.5	2.9	3.1	0.6
N1	26	0.03	0.1	0.7	1
P ₀	24	2	8.9*	1.4	4
P1	25	3.4	4	1	2
P2	24	0.01	0.03	0.5	0.6
P3	25	0.1	0.1	0.05	0.01
V	25	0.5	3.8	2	0.08
L	27	0.001	2.8	0.1	0.02
Rv	29	0.1	6.6*	6	7*
ZI032	35	0.2	15*	3	3
Ba	32	0.05	3.8	0.6	6*
Br	40	0.15	0.06	0.3	4
Pu	37	0.2	5.8	0.4	18*
Pu1	38	0.03	0.4	0.2	13*
Pu2	40	0.01	0.3	0.3	2.5
Pu3	42	0.06	0.1	0.5	2