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Supplement of

Satellite remote sensing reveals a positive impact of living oyster reefs on microalgal biofilm development

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Table S1. List of the images (n = 47) and their main parameters used for the analysis at the scale of the experimental site (LAT = Lowest Astronomical Tide).

Satellite	Sensor	Spatial resolution (m)	Date	Acquisition time	Low tide (LAT)	Water height (Pornic)
Landsat5	TM	30	1985-03-05	10:29	08:50	2.13
Landsat5	TM	30	1987-04-12	10:22	09:02	1.82
Landsat5	TM	30	1987-07-10	10:18	08:54	1.91
SPOT2	HRV2	10	1991-08-28	11:36	11:35	1.39
SPOT2	HRV1	10	1993-08-20	11:33	11:30	0.68
SPOT2	HRV2	10	1996-09-16	11:33	11:45	1.53
SPOT1	HRV2	10	1997-10-18	11:26	11:15	0.69
SPOT1	HRV2	10	1998-09-21	11:32	10:19	1.86
Landsat5	TM	30	2002-06-24	10:35	09:22	1.65
Landsat5	TM	30	2003-07-13	10:36	09:20	1.69
Landsat5	TM	30	2003-08-30	10:37	11:36	1.12
Landsat5	TM	30	2004-06-06	10:34	12:14	2.17
SPOT2	HRV2	10	2007-06-02	11:23	10:38	1.69
SPOT2	HRV1	10	2008-07-22	11:13	12:25	2.25
Landsat5	TM	30	2009-05-26	10:43	10:59	0.85
Landsat5	TM	30	2009-08-23	10:43	11:47	1.05
SPOT5	HRG1	10	2009-09-08	11:22	11:56	1.30
Landsat5	TM	30	2010-04-27	10:43	08:55	2.09
Landsat5	TM	30	2010-06-30	10:43	12:19	2.29
Landsat5	TM	30	2011-04-07	10:43	11:59	1.97
Landsat5	TM	30	2011-09-14	10:42	11:00	1.20
Landsat5	TM	30	2011-09-30	10:41	11:37	0.81
Landsat5	TM	30	2011-10-16	10:41	12:07	2.22
SPOT5	HRG1	10	2012-11-16	11:09	11:22	0.94
SPOT4	HRVIR	20	2013-03-28	09:54	10:36	1.28
Landsat8	OLI	30	2013-07-08	11:01	10:00	1.79
Landsat8	OLI	30	2013-07-24	11:00	10:53	0.42
SPOT6		6	2013-08-20	10:46	09:01	2.07
Landsat8	OLI	30	2013-10-05	10:55	09:51	1.37

SPOT5	HRG1	10	2014-03-20	10:40	12:15	2.38
Landsat8	OLI	30	2014-03-30	10:53	09:33	1.30
Landsat8	OLI	30	2014-04-15	10:53	10:02	1.22
Landsat8	OLI	30	2014-05-17	10:53	11:36	1.05
Landsat8	OLI	30	2014-08-28	10:59	11:24	1.26
SPOT5	HRG1	10	2014-10-09	10:22	10:15	0.34
Landsat8	OLI	30	2014-11-09	10:53	11:23	0.98
SPOT6		6	2015-02-05	10:41	11:05	1.19
SPOT6		6	2015-04-19	10:28	10:12	0.26
SPOT6		6	2015-05-20	10:39	11:20	1.05
SPOT6		6	2015-06-06	10:57	12:22	1.90
SPOT7		6	2015-06-19	10:59	11:42	1.37
SPOT6		6	2015-07-04	10:42	11:24	1.02
SPOT6		6	2015-07-16	10:51	10:04	1.34
SPOT5	HRG2	10	2015-08-12	09:51	08:22	2.24
SPOT7		6	2015-08-17	10:54	11:29	1.22
SPOT7		6	2015-09-12	10:53	09:26	2.04
Landsat8	OLI	30	2015-11-28	10:53	11:28	0.86

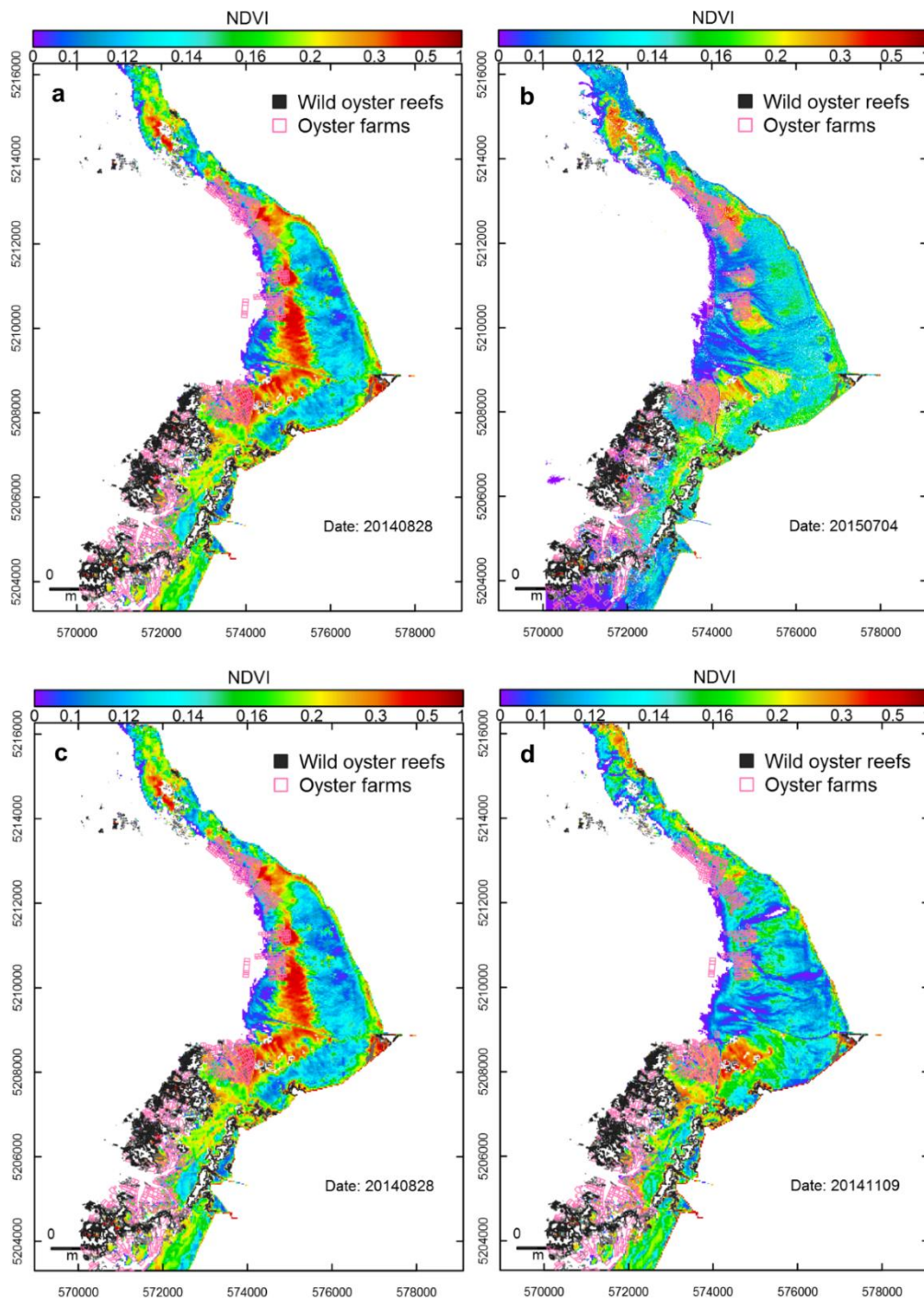
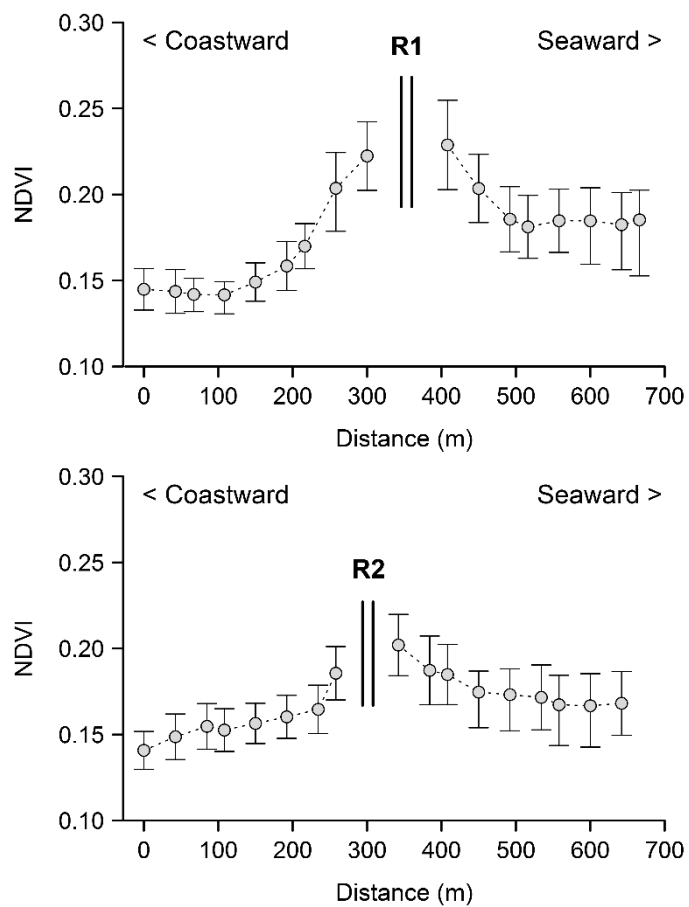


Figure S1. NDVI maps at the scale of the whole mudflat representative of the different seasons: (a) spring – (b) summer – (c) autumn – (d) early winter. Some of the highly concentrated MPB biofilms seem to be coinciding with the proximity of oyster farms or reefs.



15 **Figure S2.** NDVI extracted from two transects going respectively through R1 and R2, perpendicularly to the bathymetric lines, based on satellite data acquired before the burning (1985-2014 time series, mean \pm 95% CI, n = 33). Black vertical bars correspond to the location of the reefs.

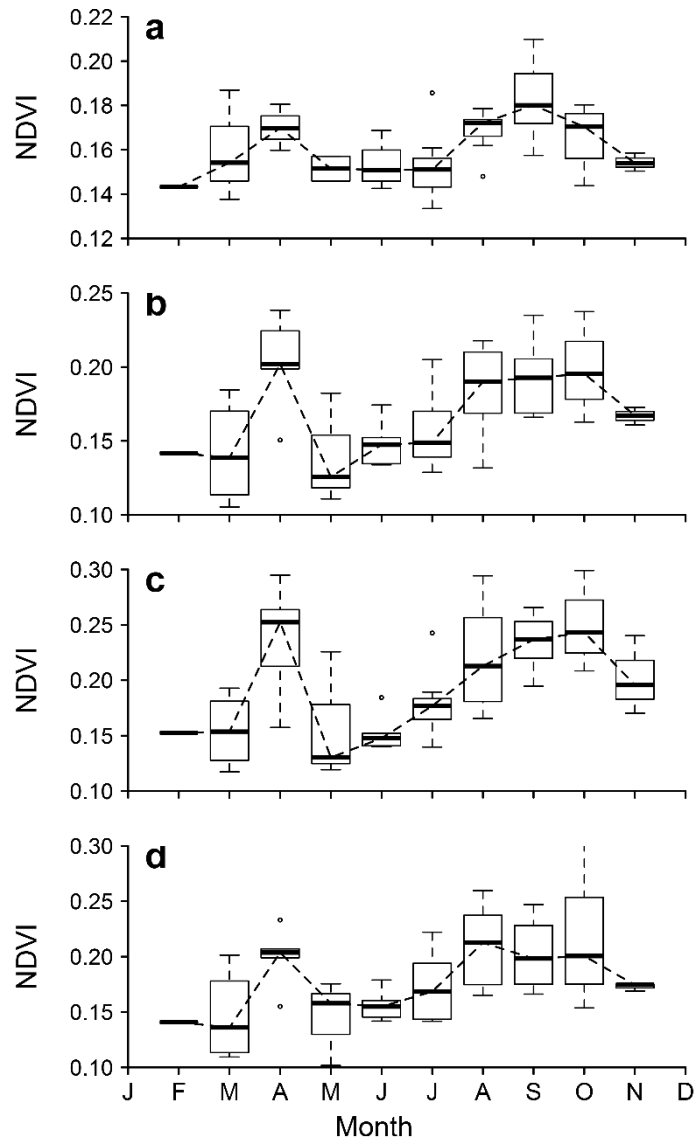


Figure S3. NDVI monthly variations at the scale of (a) the whole mudflat, (b) the experimental site, (c) MPB around the R1 oyster reef, and (d) MPB around the R2 oyster reef (1985-2015 multi-sensor time series). Horizontal lines denote the median value, boxes represent first and third quartiles, and whiskers represent the last value within 1.5 times the interquartile distance.

Table S2. Contribution of each satellite mission to the number of images available per month.

	Landsat 5	Landsat 8	SPOT 1-4	SPOT 5	SPOT 6-7	Total
January	0	0	0	0	0	0
February	0	0	0	0	1	1
March	1	1	1	1	0	4
April	3	1	0	0	1	5
May	1	1	0	0	1	3
June	3	0	1	0	2	6
July	2	2	1	0	2	7
August	2	1	2	1	2	8
September	2	0	2	1	1	6
October	1	1	1	1	0	4
November	0	2	0	1	0	3
December	0	0	0	0	0	0