The following Supplement accompany the article

Spatial and temporal variability within marine isoscapes: implications for interpreting stable isotope data from marine systems

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Supplement 1. Creating an 'Isoscape' in ESRI's ArcGIS 10.2

Step 1. *Prepare the spreadsheet*. The spreadsheet being used should only have a header labeling each column. Column names should not have any special characters. The spreadsheet should not contain any formulas or functions, if so, copy and paste data 'as values' in excel. The latitude and longitude values should be in decimal degrees. The last step would be to save the file as a '.csv' or 'comma delimited' file type.

Step 2. *Bring these data into ArcMap*. When opening ArcMap, select the blank map option. Then, select the icon on the top right of the screen for 'Catalog'. The 'Catalog' will provide a way to easily find files and folders. Within 'Catalog' select the 'Connect to Folder' icon, find the path of the folder with the '. csv' file and select it. The 'Connect to Folder' should leave a path of the file within the 'Catalog' window. Simply drag the '.csv' into the ArcMap blank map document; this will be displayed under the 'Table of Contents' window. Right click on the '.csv' document, and select 'Open' to view the table or commonly known in ArcGIS as an attribute table. Select 'File', then 'Save as' and save your map as an '.mxd'.

Step 3. Display these data as 'X,Y' coordinates. To display these data in ArcMap, right click on the '.cvs' file and select, 'Display XY Data', in the window select the longitude attribute for X, the latitude attribute for Y. The next important step is to select the coordinate system that best fits the geographic location and analysis processes. In the case of these data, choose 'WGS_1983', or "World Geodetic System" which is a projected geographic ellipsoid. After selecting a coordinate reference system, click 'Ok'.

Step 4. *Export data as a shapefile*. After displaying these data, it is important to create not just a display but, an actual file containing these data. Right click on the display file and select, "Data", then "Export Data". In the new window, select the location and rename the file.

Step 5. *Create a raster*. On the top right of the screen select an icon that says 'Search'. In the window search for 'IDW' or 'Inverse Distance Weighted' then select the 'IDW' tool. This tool uses an interpolation method that estimates cell values by averaging each processing cell's

values of sample data points in the neighborhood. If the point is closer to the center of the cell being estimated it has more influence or weight on the averaging process. In this case, select the file as the 'Input feature data', select your isotope value (whether carbon or nitrogen) as the 'Z- value field', select 'Output raster' in order to save the new file and for 'Number of points' we used 6 in order to smooth the interpolation (this number will vary based off of how spatially auto-correlated the data are). Then select, 'Ok' and the raster will soon be displayed on the map.

Step 6. *Change the symbology*. Right click on the raster file, and select 'Properties' and then 'Symbology', within this window, select, 'Classified', set the desired number of 'Classes' and select a 'Color Ramp'. Select 'Ok' and be sure to re-save the map.

Step 7. *Publishing the map*. On the top left part of the map document select 'View' then 'Layout View', this will place the data into a format to be printed or exported as an image or '.pdf'. By selecting 'Insert', a number of map document properties are available such as a scale bar, text, legend, north arrow, etc. Then select 'File', 'Export Map'.

Supplement 2. Raw data and stable isotope contour maps

Table S1. Data detailing all parameters related to the individual particulate organic matter (POM) samples collected in the Southern California Bight and analyzed for this study. Data shown are timing, location (California Cooperative Oceanic Fisheries Investigations (CalCOFI) line and station numbers (see Figure 1 in text) along with latitude (N) and longitude (W) in decimal degrees), oceanographic variables measured at the same time the POM was collected, and the stable carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) isotope values (‰) and C:N ratios for each POM sample collected. All samples were collected at 10 meter depths.

Season	Year	Line	Station	Latitude	Longitude	SST (°C)	Chl. a (µg/L)	NO_3 (µM)	NH_3 (µM)	O_2 (ml/L)	$\delta^{13}C$	$\delta^{15}N$	C:N
Summer	2012	80	50.5	34.46667	120.48906	12.98	1.39	6.10	1.65	4.88	-17.94	8.17	7.10
Summer	2012	80	55	34.31667	120.80245	14.50	12.61	0.00	0.03	6.79	-21.47	4.98	5.60
Summer	2012	80	60	34.15000	121.15000	14.73	0.67	1.80	0.54	5.92	-14.92	8.28	10.02
Summer	2012	82	43.5	34.40555	119.80037	13.35	3.94	0.80	0.24	5.53	-18.40	7.00	5.82
Summer	2012	82	46.9	34.27490	120.02524	15.26	3.87	0.70	0.14	6.22	-13.46	8.51	6.71
Summer	2012	83	39.4	34.26509	119.32781	14.63	3.94	0.00	0.04	6.37	-18.92	8.11	7.30
Summer	2012	83	42	34.17842	119.50851	16.42	2.08	0.10	0.00	6.22	-15.48	8.37	7.68
Summer	2012	83	51	33.87842	120.13258	13.45	5.97	5.80	0.10	5.37	-19.82	7.59	6.94
Summer	2012	83	55	33.74509	120.40923	14.32	2.27	4.30	0.15	5.67	-21.97	6.03	5.50
Summer	2012	83	60	33.57842	120.75443	14.73	0.67	1.80	0.54	5.92	-21.77	6.90	5.74
Summer	2012	85	35.8	34.02136	118.83413	18.87	1.36	0.10	0.13	6.60	-17.97	9.28	5.26
Summer	2012	87	35	33.82286	118.62873	17.95	0.33	0.00	0.00	6.12	-25.40	8.55	8.17
Summer	2012	87	40	33.65619	118.97425	17.74	0.42	0.00	0.06	6.14	-21.31	7.34	6.45
Summer	2012	87	45	33.48953	119.31910	16.48	0.53	0.00	0.00	6.19	-21.33	8.90	7.81
Summer	2012	87	50	33.32286	119.66327	16.62	1.20	0.00	0.00	6.41	-21.04	9.16	7.49
Summer	2012	87	55	33.15619	120.00678	14.97	3.06	1.00	0.02	6.53	-19.80	6.99	6.16
Summer	2012	87	60	32.98953	120.34964	15.44	0.38	1.90	0.01	5.93	-24.34	5.64	5.38
Summer	2012	87	32.5	33.88887	118.44423	17.64	4.65	0.10	0.01	8.21	-19.16	7.41	5.09
Summer	2012	89	30.1	33.67442	118.08369	15.26	0.70	0.00	0.00	7.28	-20.13	7.87	7.08
Summer	2012	90	27.7	33.49462	117.74741	17.13	3.40	0.00	0.05	6.61	-19.05	8.20	7.23
Summer	2012	90	30	33.41795	117.90582	18.72	0.18	0.00	0.00	5.68	-23.31	6.09	6.37
Summer	2012	90	35	33.25128	118.24971	18.71	0.24	0.00	0.07	5.67	-21.93	7.54	8.19
Summer	2012	90	37	33.18462	118.38708	19.23	0.16	0.00	0.06	5.59	-23.36	7.39	6.81
Summer	2012	90	45	32.91795	118.93551	17.15	0.31	0.00	0.00	5.74	-22.12	8.18	6.80
Summer	2012	90	53	32.65128	119.48228	16.15	1.07	0.00	0.01	5.96	-21.19	8.54	6.95
Summer	2012	90	60	32.41795	119.95935	14.41	0.77	2.20	1.00	5.89	-20.31	4.75	5.51

Season	Year	Line	Station	Latitude	Longitude	SST (°C)	Chl. a (μg/L)	NO_3 (μM)	NH_3 (μM)	O_2 (ml/L)	$\delta^{13}C$	$\delta^{15}N$	C:N
Summer	2012	92	26.4	33.24350	117.46542	16.13	1.12	0.00	0.23	6.79	-20.08	8.47	5.81
Summer	2012	93	26.7	32.95637	117.30538	13.40	1.00	1.40	0.12	6.54	-20.29	8.70	5.85
Summer	2012	93	30	32.84637	117.53122	17.11	0.72	0.00	0.40	7.09	-21.40	7.74	7.52
Summer	2012	93	35	32.67971	117.87286	17.39	0.17	0.10	0.30	5.78	-23.29	7.18	6.94
Summer	2012	93	40	32.51304	118.21386	17.42	0.24	0.00	0.03	5.67	-22.73	8.76	6.21
Summer	2012	93	45	32.34637	118.55423	16.70	0.34	0.60	0.11	5.83	-21.79	7.06	6.36
Summer	2012	93	50	32.17971	118.89396	16.12	1.41	0.50	0.03	5.93	-20.86	8.44	6.49
Summer	2012	93	55	32.01304	119.23306	15.65	0.85	1.90	0.35	5.84	-22.70	6.95	5.66
Summer	2012	93	60	31.84637	119.57154	16.21	0.63	1.50	0.04	5.80	-22.52	7.12	5.74
Summer	2012	93	26.4	32.94905	117.27357	12.69	2.03	5.10	0.48	5.85	-19.67	7.94	6.70
Fall	2012	80	50.5	34.46667	120.48906	14.57	2.04	2.70	0.12	5.64	-20.44	7.80	6.19
Fall	2012	80	51	34.45000	120.52390	13.45	2.59	5.90	0.02	5.26	-21.20	7.02	5.89
Fall	2012	80	55	34.31667	120.80245	15.55	1.56	0.10	0.06	5.97	-20.33	8.69	8.32
Fall	2012	80	60	34.15000	121.15000	16.51	0.61	0.10	0.00	5.90	-22.12	8.54	8.35
Fall	2012	82	43.5	34.40555	119.80037	17.32	1.00	0.00	0.04	5.97	-20.41	8.31	8.51
Fall	2012	82	46.9	34.27490	120.02524	16.92	0.47	0.00	0.01	5.92	-20.11	9.36	8.52
Fall	2012	83	39.4	34.26509	119.32781	15.22	2.26	1.30	0.16	5.54	-21.35	8.90	5.68
Fall	2012	83	40.6	34.22509	119.41124	16.65	1.07	0.10	0.00	6.13	-20.97	8.96	7.83
Fall	2012	83	42	34.17842	119.50851	17.54	0.59	0.00	0.02	5.79	-21.93	8.94	7.20
Fall	2012	83	51	33.87842	120.13258	17.15	0.54	0.50	0.11	5.66	-22.64	8.04	6.27
Fall	2012	83	55	33.74509	120.40923	17.91	0.19	0.00	0.00	5.67	-23.57	7.89	6.67
Fall	2012	83	60	33.57842	120.75443	16.98	0.42	0.00	0.00	5.86	-22.53	8.43	6.94
Fall	2012	85	35.8	34.02136	118.83413	17.51	0.49	0.00	0.03	5.77	-20.60	9.08	8.02
Fall	2012	87	35	33.82286	118.62873	18.29	0.13	0.00	0.00	5.67	-23.89	7.68	7.03
Fall	2012	87	40	33.65619	118.97425	18.02	0.16	0.00	0.04	5.68	-27.17	7.10	8.39
Fall	2012	87	45	33.48953	119.31910	17.83	0.42	0.30	0.00	5.63	-23.82	7.35	6.40
Fall	2012	87	50	33.32286	119.66327	18.28	0.18	0.40	0.03	5.45	-23.54	7.05	6.18
Fall	2012	87	55	33.15619	120.00678	16.92	0.40	0.50	0.09	5.60	-23.24	6.88	6.50
Fall	2012	87	60	32.98953	120.34964	17.79	0.49	0.00	0.00	5.62	-24.53	7.85	7.36
Fall	2012	87	32.5	33.88887	118.44423	17.49	0.91	0.30	0.51	5.76	-20.66	8.01	6.39
Fall	2012	89	30.1	33.67442	118.08369	16.23	0.97	0.70	2.69	5.78	-21.94	4.89	5.19

Season	Year	Line	Station	Latitude	Longitude	SST (°C)	Chl. a (µg/L)	NO_3 (µM)	NH_3 (µM)	O_2 (ml/L)	$\delta^{13}C$	$\delta^{15}N$	C:N
Fall	2012	90	27.7	33.49462	117.74741	16.47	0.95	0.40	0.15	5.65	-21.01	8.64	5.89
Fall	2012	90	30	33.41795	117.90582	19.55	0.16	0.00	0.00	5.47	-24.14	5.80	7.40
Fall	2012	90	35	33.25128	118.24971	19.22	0.22	0.00	0.02	5.67	-22.81	8.16	7.85
Fall	2012	90	37	33.18462	118.38708	19.60	0.12	0.00	0.00	5.41	-23.64	7.90	7.85
Fall	2012	90	45	32.91795	118.93551	17.59	0.65	0.00	0.00	5.67	-23.68	9.24	5.93
Fall	2012	90	53	32.65128	119.48228	17.35	0.19	0.10	0.05	5.54	-23.15	7.24	7.39
Fall	2012	90	60	32.41795	119.95935	17.67	0.13	0.00	0.00	5.56	-23.26	8.20	7.69
Fall	2012	92	26.4	33.24350	117.46542	19.05	0.88	0.00	0.07	5.80	-20.68	9.10	7.43
Fall	2012	93	26.7	32.95637	117.30538	20.32	0.24	0.20	0.76	5.49	-23.20	6.91	7.92
Fall	2012	93	30	32.84637	117.53122	20.18	0.18	0.00	0.05	5.30	-23.48	8.40	6.58
Fall	2012	93	35	32.67971	117.87286	20.38	0.17	0.10	0.08	5.35	-22.74	8.48	6.92
Fall	2012	93	40	32.51304	118.21386	19.72	0.19	0.00	0.02	5.37	-23.49	6.58	10.13
Fall	2012	93	45	32.34637	118.55423	18.72	0.14	0.00	0.06	5.43	-23.13	6.90	7.60
Fall	2012	93	50	32.17971	118.89396	18.87	0.16	0.00	0.00	5.44	-22.19	8.61	5.98
Fall	2012	93	55	32.01304	119.23306	19.22	0.14	0.00	0.04	5.40	-22.33	6.04	7.20
Fall	2012	93	60	31.84637	119.57154	19.99	0.18	0.00	0.04	5.27	-22.60	5.81	6.76
Fall	2012	93	26.4	32.94905	117.27357	18.08	0.77	0.10	0.13	5.64	-21.64	8.27	6.86
Winter	2013	80	50.5	34.46667	120.48906	12.25	2.21	5.00	0.08	5.96	-23.74	6.26	6.41
Winter	2013	80	51	34.45000	120.52390	12.45	4.29	3.30	0.00	6.39	-24.49	4.74	7.12
Winter	2013	80	55	34.31667	120.80245	12.84	0.38	1.50	0.15	6.10	-25.22	6.00	7.01
Winter	2013	80	60	34.15000	121.15000	13.49	0.26	0.50	0.15	6.03	-24.43	7.14	6.80
Winter	2013	82	43.5	34.40555	119.80037	12.38	2.29	4.90	0.06	6.01	-25.12	6.36	8.35
Winter	2013	82	46.9	34.27490	120.02524	12.21	2.77	4.70	0.07	6.32	-24.36	3.52	6.19
Winter	2013	83	39.4	34.26509	119.32781	12.30	1.18	6.30	0.00	5.69	-23.14	6.56	5.64
Winter	2013	83	42	34.17842	119.50851	12.51	0.94	5.00	0.06	5.68	-23.87	7.49	6.43
Winter	2013	83	51	33.87842	120.13258	12.53	0.78	4.50	0.54	5.81	-23.07	6.37	6.93
Winter	2013	83	55	33.74509	120.40923	13.68	0.71	0.40	0.06	6.16	-24.19	6.96	7.58
Winter	2013	83	60	33.57842	120.75443	12.73	1.47	2.70	0.02	6.16	-24.57	3.46	7.19
Winter	2013	87	35	33.82286	118.62873	13.01	2.50	1.50	0.25	6.18	-20.77	8.12	6.85
Winter	2013	87	40	33.65619	118.97425	13.55	0.89	0.70	0.27	6.10	-23.19	8.06	6.82
Winter	2013	87	45	33.48953	119.31910	12.77	2.53	3.10	0.22	5.92	-21.79	8.35	7.40
Winter	2013	87	50	33.32286	119.66327	12.65	0.74	3.90	0.65	5.82	-23.00	6.34	6.70

Season	Year	Line	Station	Latitude	Longitude	SST (°C)	Chl. a (μg/L)	NO_3 (μM)	NH_3 (μM)	O_2 (ml/L)	$\delta^{13}C$	$\delta^{15}N$	C:N
Winter	2013	87	55	33.15619	120.00678	12.89	0.69	3.00	0.10	5.86	-25.06	7.25	8.31
Winter	2013	87	60	32.98953	120.34964	13.66	0.63	0.80	0.04	6.08	-24.27	6.67	8.31
Winter	2013	87	32.5	33.88887	118.44423	11.83	4.71	7.20	0.94	5.43	-19.83	8.36	6.22
Winter	2013	89	30.1	33.67442	118.08369	11.86	7.46	6.80	0.34	5.78	-20.14	8.45	5.81
Winter	2013	90	27.7	33.49462	117.74741	12.72	2.80	4.70	0.28	5.55	-20.79	9.59	6.22
Winter	2013	90	30	33.41795	117.90582	13.44	1.76	0.80	0.11	6.01	-22.54	9.69	7.49
Winter	2013	90	35	33.25128	118.24971	13.96	1.34	0.40	0.08	6.03	-21.99	9.05	6.69
Winter	2013	90	37	33.18462	118.38708	13.72	1.32	1.40	0.12	5.92	-23.68	7.42	8.34
Winter	2013	90	45	32.91795	118.93551	13.57	0.79	1.80	0.19	5.87	-22.76	7.04	7.42
Winter	2013	90	53	32.65128	119.48228	13.92	0.46	1.10	0.20	5.79	-24.28	7.77	7.41
Winter	2013	90	60	32.41795	119.95935	13.32	1.05	2.00	0.10	5.87	-23.40	7.31	7.92
Winter	2013	93	26.7	32.95637	117.30538	13.44	1.93	2.70	0.48	5.67	-22.00	9.21	7.82
Winter	2013	93	28	32.91304	117.39438	14.34	0.86	0.80	0.18	5.86	-23.72	10.74	7.69
Winter	2013	93	30	32.84637	117.53122	14.36	1.21	0.60	0.33	5.84	-23.30	10.27	8.07
Winter	2013	93	35	32.67971	117.87286	14.80	0.41	0.50	0.07	5.74	-24.19	10.67	7.39
Winter	2013	93	40	32.51304	118.21386	14.61	0.43	1.00	0.01	5.69	-23.51	10.70	6.21
Winter	2013	93	45	32.34637	118.55423	14.09	1.10	0.90	0.07	5.78	-23.04	10.37	7.77
Winter	2013	93	50	32.17971	118.89396	14.40	0.75	0.50	0.04	5.82	-22.91	8.52	7.40
Winter	2013	93	55	32.01304	119.23306	15.33	0.37	0.30	0.07	5.69	-24.17	8.35	8.57
Winter	2013	93	60	31.84637	119.57154	14.97	0.26	0.10	0.05	5.75	-24.70	9.07	7.69
Spring	2013	80	60	34.15000	121.15000	11.86	0.70	8.60	1.00	5.85	-24.40	6.94	6.82
Spring	2013	82	43.5	34.40555	119.80037	12.20	7.97	8.10	0.85	5.55	-21.18	8.90	6.65
Spring	2013	82	46.9	34.27490	120.02524	10.59	5.79	16.80	0.19	4.64	-21.63	8.57	6.65
Spring	2013	83	39.4	34.26509	119.32781	12.91	10.00	0.10	0.02	6.71	-20.35	8.86	6.81
Spring	2013	83	42	34.17842	119.50851	13.23	2.50	4.70	0.40	5.89	-22.71	8.12	7.41
Spring	2013	83	51	33.87842	120.13258	11.60	1.82	13.90	0.27	5.01	-22.47	7.58	6.68
Spring	2013	83	55	33.74509	120.40923	11.75	2.17	13.00	0.05	5.46	-24.45	4.15	6.89
Spring	2013	83	60	33.57842	120.75443	12.68	0.78	5.60	0.20	6.00	-26.27	8.12	6.67
Spring	2013	87	35	33.82286	118.62873	12.43	3.13	8.50	0.00	5.30	-22.35	8.17	6.20
Spring	2013	87	40	33.65619	118.97425	14.06	2.05	3.20	0.14	5.80	-24.01	8.03	6.69
Spring	2013	87	45	33.48953	119.31910	13.11	2.22	4.40	0.19	6.02	-23.43	6.34	7.05
Spring	2013	87	50	33.32286	119.66327	12.42	2.44	7.90	0.14	5.76	-22.85	5.44	6.03

Season	Year	Line	Station	Latitude	Longitude	SST (°C)	Chl. a (μg/L)	NO_3 (μM)	NH_3 (μM)	O_2 (ml/L)	$\delta^{13}C$	$\delta^{15}N$	C:N
Spring	2013	87	55	33.15619	120.00678	11.91	0.63	10.10	0.85	5.74	-23.92	5.76	7.65
Spring	2013	87	60	32.98953	120.34964	11.82	0.87	9.80	0.97	5.75	-21.96	7.75	5.81
Spring	2013	87	32.5	33.88887	118.44423	11.54	1.35	13.50	0.00	4.30	-22.60	8.80	7.60
Spring	2013	87	32.5	33.88887	118.44423	14.53	3.66	0.80	0.00	6.01	-22.12	8.76	6.56
Spring	2013	89	30.1	33.67442	118.08369	13.66	2.68	5.20	0.49	5.64	-21.49	8.19	7.14
Spring	2013	90	27.7	33.49462	117.74741	14.75	2.86	3.40	0.31	5.76	-23.46	7.80	9.92
Spring	2013	90	30	33.41795	117.90582	13.83	6.67	1.40	0.18	6.32	-22.44	8.30	9.32
Spring	2013	90	35	33.25128	118.24971	15.09	0.83	0.00	0.13	6.11	-23.96	9.44	7.96
Spring	2013	90	37	33.18462	118.38708	15.46	0.37	0.10	0.03	6.03	-23.81	9.03	7.59
Spring	2013	90	45	32.91795	118.93551	13.70	0.86	2.60	0.05	6.17	-22.90	7.22	7.95
Spring	2013	90	53	32.65128	119.48228	12.76	1.19	6.30	0.30	5.89	-24.97	6.34	6.82
Spring	2013	90	60	32.41795	119.95935	13.08	0.63	3.70	0.24	5.99	-24.34	7.14	7.45
Spring	2013	93	30	32.84637	117.53122	15.86	0.21	0.00	0.00	6.13	-23.86	10.68	7.84
Spring	2013	93	35	32.67971	117.87286	15.98	0.23	0.00	0.00	6.05	-25.10	11.93	7.64
Spring	2013	93	40	32.51304	118.21386	15.29	0.41	0.00	0.00	6.04	-23.77	11.36	6.61
Spring	2013	93	40	32.51304	118.21386	15.29	0.41	0.00	0.00	6.04	-24.91	10.87	8.50
Spring	2013	93	50	32.17971	118.89396	14.32	0.60	0.20	0.04	6.10	-23.59	10.68	6.97
Spring	2013	93	55	32.01304	119.23306	13.45	0.52	3.50	0.40	5.96	-23.78	7.26	6.96
Spring	2013	93	60	31.84637	119.57154	14.16	0.41	0.10	0.02	6.00	-23.46	9.21	7.20
Spring	2013	93	26.4	32.94905	117.27357	13.67	2.07	7.50	0.26	5.38	-25.23	6.81	7.23
Summer	2013	80	55	34.31667	120.80245	12.73	6.01	9.10	0.13	5.35	-21.54	6.60	6.11
Summer	2013	80	60	34.15000	121.15000	14.24	5.60	3.50	0.06	6.00	-22.89	6.56	6.80
Summer	2013	82	43.5	34.40555	119.80037	14.21	5.35	1.30	0.30	5.24	-19.85	9.09	7.89
Summer	2013	83	39.4	34.26509	119.32781	15.03	5.13	0.00	0.17	6.50	-22.01	8.88	8.86
Summer	2013	83	42	34.17842	119.50851	17.18	1.76	0.10	0.03	5.89	-23.32	9.01	7.89
Summer	2013	83	51	33.87842	120.13258	14.09	2.90	6.30	0.08	5.84	-24.02	7.95	6.99
Summer	2013	83	60	33.57842	120.75443	15.67	1.09	1.10	0.33	5.89	-23.03	7.84	6.47
Summer	2013	87	35	33.82286	118.62873	17.34	0.46	0.00	0.11	6.26	-24.69	9.10	7.05
Summer	2013	87	45	33.48953	119.31910	11.94	2.57	5.00	0.03	5.57	-23.89	7.05	6.83
Summer	2013	87	55	33.15619	120.00678	15.79	3.49	0.70	0.20	6.13	-21.04	9.03	6.75
Summer	2013	87	60	32.98953	120.34964	15.76	0.81	1.80	0.24	5.92	-22.96	6.59	7.68
Summer	2013	87	60	32.98953	120.34964	15.76	0.81	1.80	0.24	5.92	-24.37	8.78	6.67

Season	Year	Line	Station	Latitude	Longitude	SST (°C)	Chl. a (μg/L)	NO_3 (μM)	NH_3 (μM)	O_2 (ml/L)	$\delta^{13}C$	$\delta^{15}N$	C:N
Summer	2013	87	32.5	33.88887	118.44423	15.62	2.95	0.10	0.00	6.51	-23.95	7.91	9.72
Summer	2013	89	30.1	33.67442	118.08369	15.53	0.00	0.00	0.04	6.42	-23.62	9.69	8.90
Summer	2013	90	27.7	33.49462	117.74741	15.08	0.00	0.00	0.07	6.65	-22.64	8.21	8.21
Summer	2013	90	30	33.41795	117.90582	18.40	0.21	0.00	0.02	6.04	-25.34	9.32	7.74
Summer	2013	90	35	33.25128	118.24971	19.98	0.22	0.00	0.09	5.43	-25.75	8.37	8.34
Summer	2013	90	53	32.65128	119.48228	17.08	1.05	0.00	0.01	5.99	-24.12	10.47	8.26
Summer	2013	90	60	32.41795	119.95935	16.09	1.10	1.70	0.35	5.76	-25.15	9.05	7.31
Summer	2013	92	26.4	33.24350	117.46542	15.80	0.00	1.10	2.60	6.46	-23.73	8.45	7.67
Summer	2013	93	26.7	32.95637	117.30538	17.16	0.55	0.30	2.03	6.11	-25.15	8.91	8.48
Summer	2013	93	30	32.84637	117.53122	18.44	0.17	0.10	0.73	5.68	-26.53	8.89	10.79
Summer	2013	93	35	32.67971	117.87286	18.90	0.17	0.00	0.24	5.70	-26.10	9.06	9.16
Summer	2013	93	40	32.51304	118.21386	17.39	0.20	0.00	0.21	5.78	-24.44	10.78	6.15
Summer	2013	93	45	32.34637	118.55423	18.21	0.27	0.00	0.47	5.71	-24.61	9.92	7.56
Summer	2013	93	50	32.17971	118.89396	18.13	0.20	0.00	0.45	5.63	-24.61	9.92	7.64
Summer	2013	93	55	32.01304	119.23306	18.23	0.32	0.00	0.13	5.66	-24.31	9.63	6.79
Summer	2013	93	60	31.84637	119.57154	17.46	0.37	0.00	0.19	5.74	-24.53	9.90	6.64
Summer	2013	93	26.4	32.94905	117.27357	19.44	2.97	0.10	0.22	5.83	-22.11	9.45	7.73

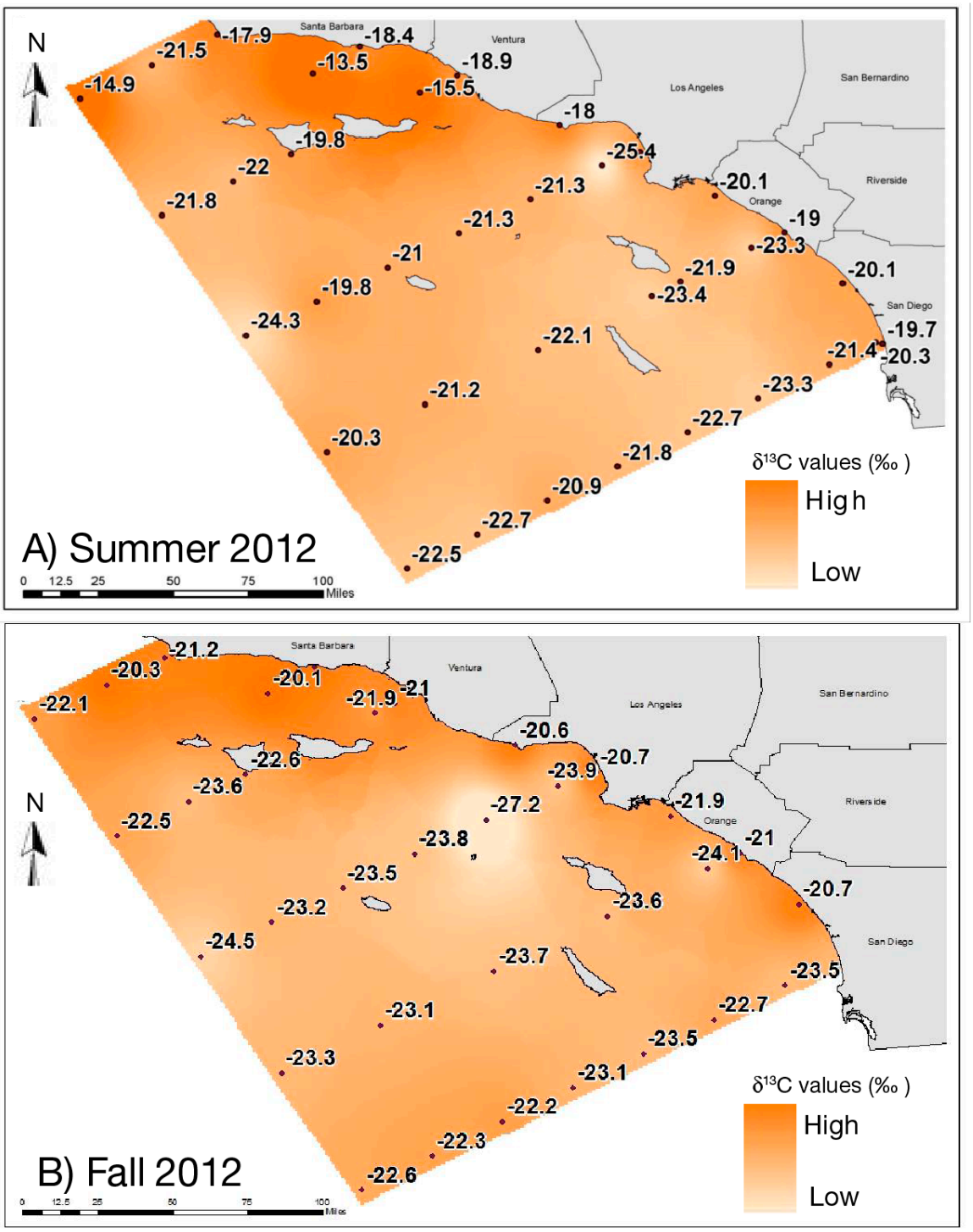


Fig. S1. The marine isoscapes depicting the $\delta^{13}C$ values (‰) from particulate organic matter (POM) collected at CalCOFI stations in the Southern California Bight (see Fig. 2 in the main article for CalCOFI site map) over five seasons, A) summer 2012, B) fall 2012, C) winter 2013, D) spring 2013, and E) summer 2013. As our data were not spatially autocorrelated, there were not enough values to interpolate with certain. Therefore, these maps are for visual purposes only and should not be taken as fact in the areas of interpolation (see 'Materials and methods').

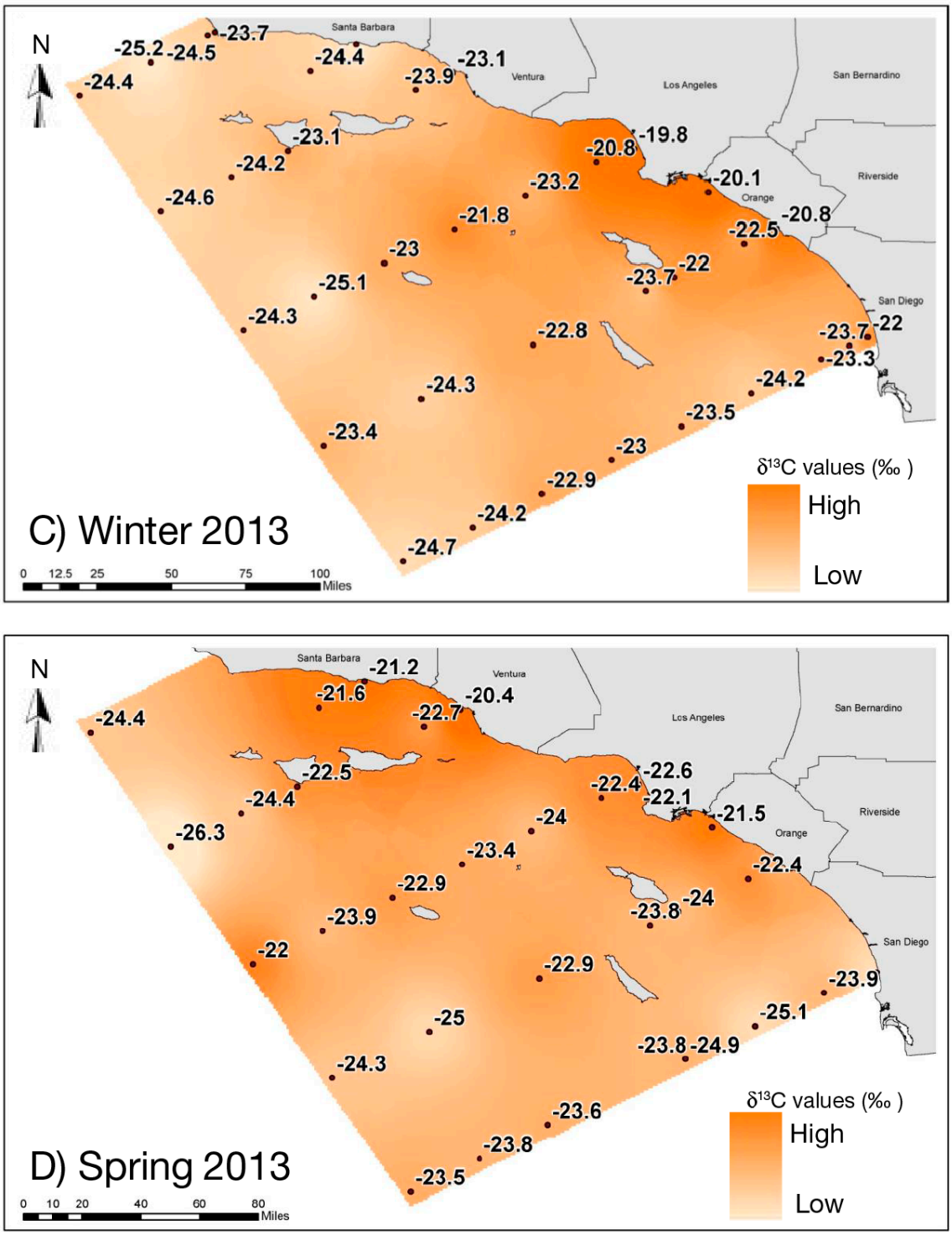
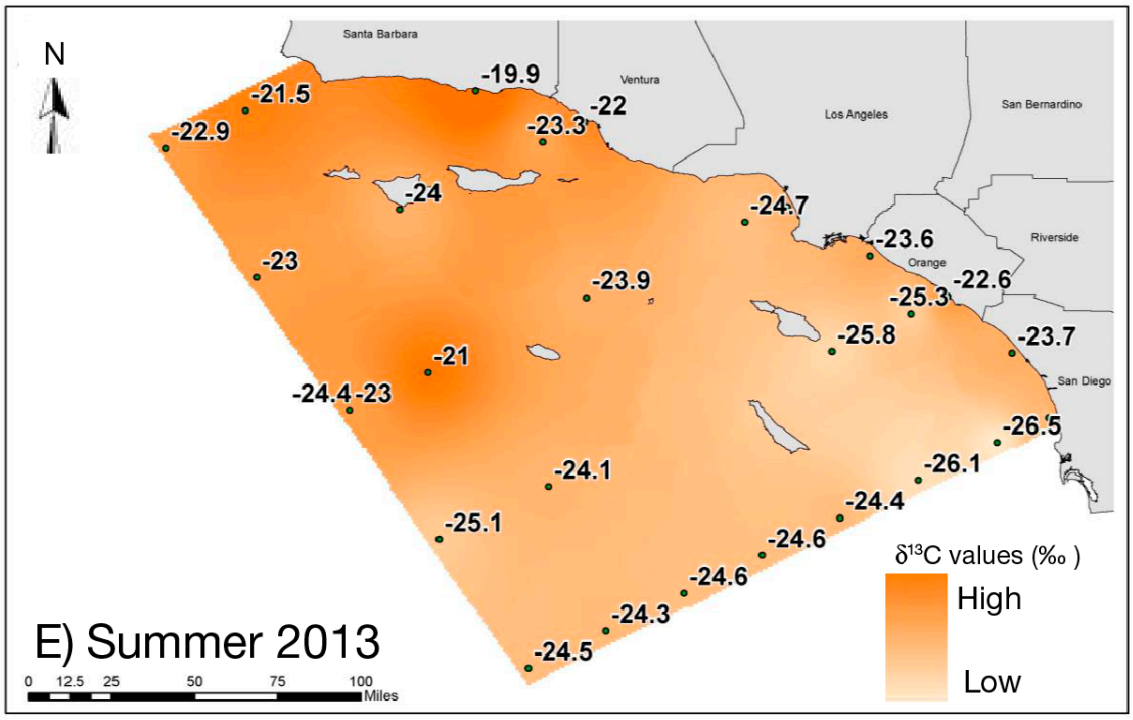


Fig. S1 (continued)



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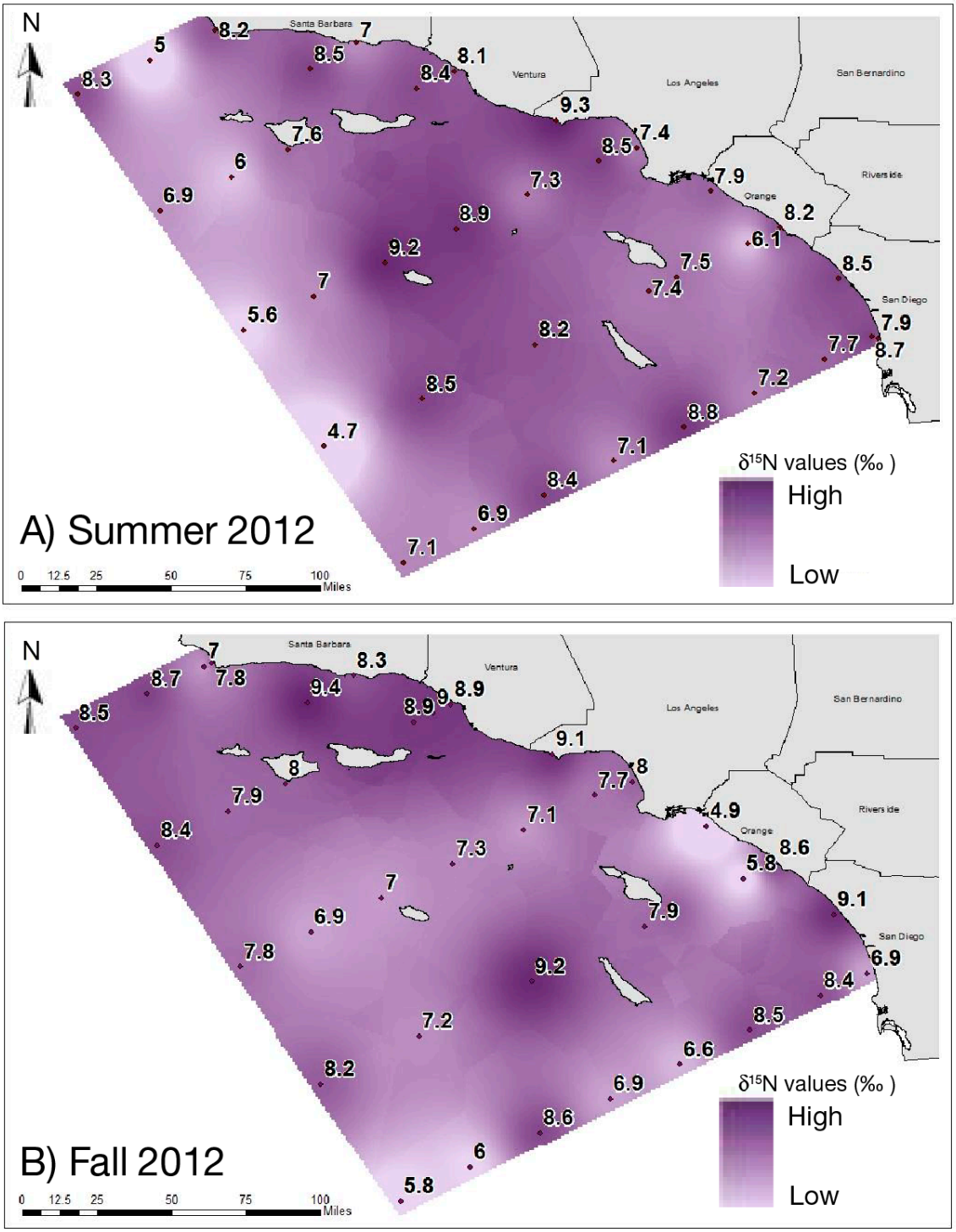

Fig. S2. The marine isoscapes depicting the δ^{15}N values (‰) from particulate organic matter (POM) collected at CalCOFI stations in the Southern California Bight (see Fig. 2 in the main article for CalCOFI site map) over 5 seasons, A) summer 2012, B) fall 2012, C) winter 2013, D) spring 2013, and E) summer 2013. As our data were not spatially autocorrelated, there were not enough values to interpolate with certain. Therefore, these maps are for visual purposes only and should not be taken as fact in the areas of interpolation (see 'Materials and methods').

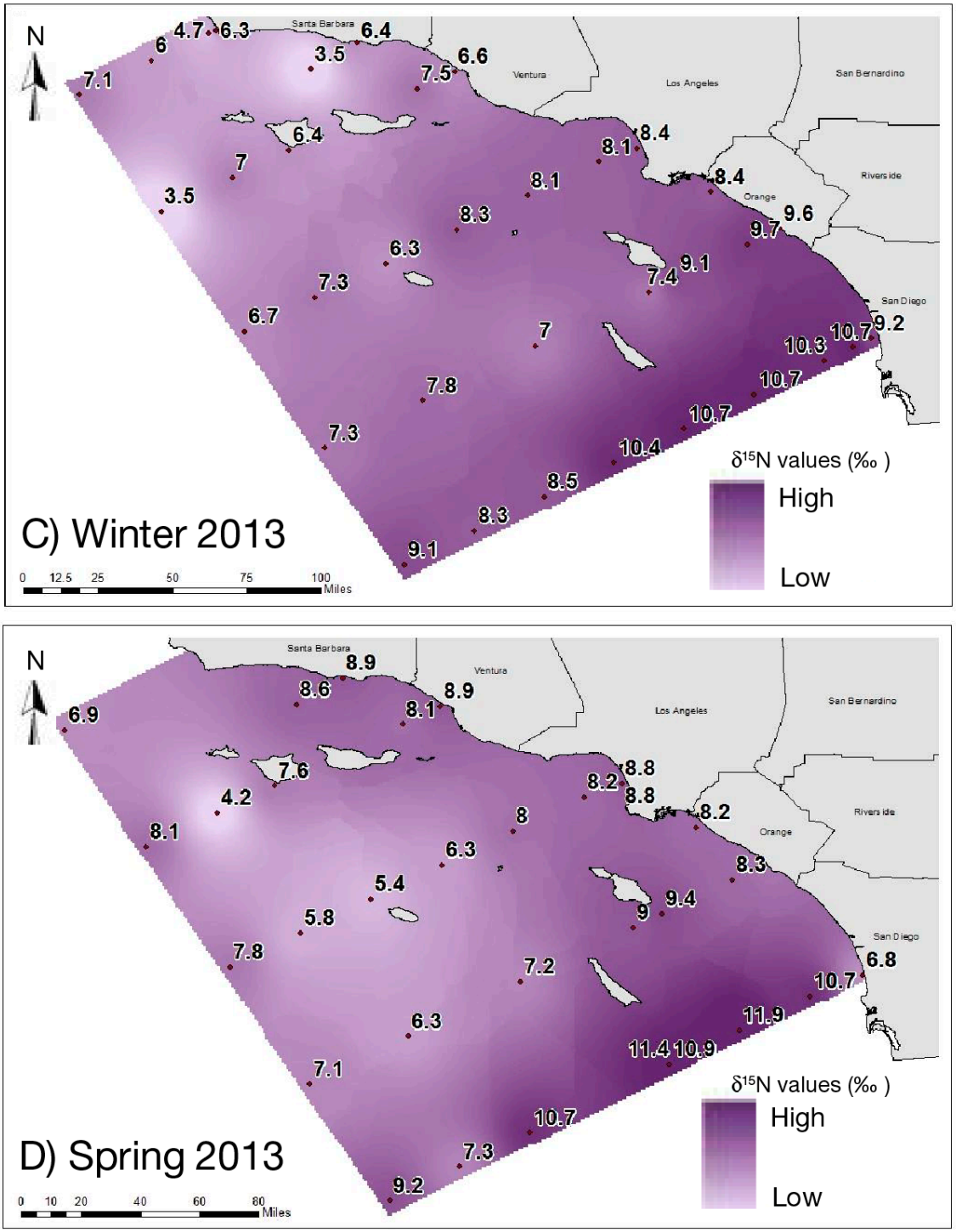

Fig. S2 (continued)

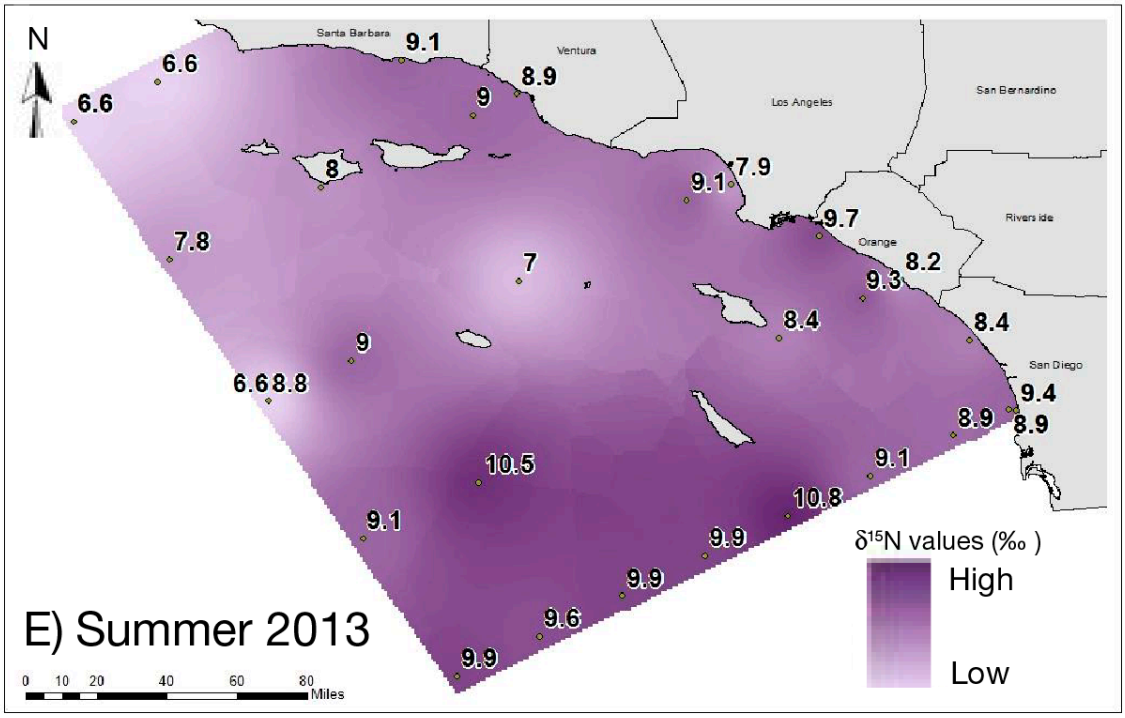

Fig. S2 (continued)