

Current Biology, Volume 21

Supplemental Information

Seaweed Communities in Retreat

from Ocean Warming

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Supplemental Inventory

1. Supplemental Figures and Tables

Figure S1

Table S1, Related to Figures 1 and 2

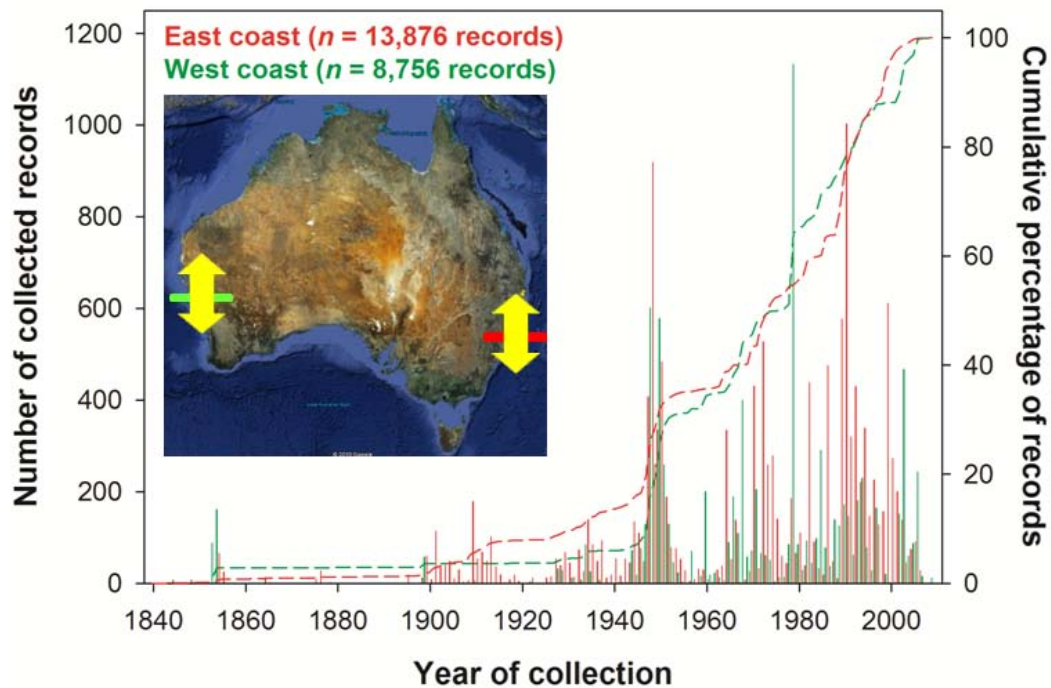


Figure S1. Frequency of Records of Seaweeds from the East and West Coasts Lodged in Australia's Public Herbaria

Insert: Map of Australia showing the temperate-tropical transition on both east (~33 °S) and west (~31 °S) coasts.

Collection effort has been similar on both coasts. The first records were collected around 1850, but collection effort was low until ~1940 where there was a substantial increase in the number of records. Approximately half of all records were collected before 1970.

Table S1, Related to Figures 1 and 2

A: West coast 1940-49 vs. 2000-09 (N2 ≥ 10)					
	<i>Total shifts</i>	4		<i>Median RS</i>	-0.59
	<i>Shifts south</i>	3		<i>Mean RS</i>	-0.68
Species	Max Lat T1	N1	Max lat T2	N2	RS
<i>Pterocladia lucida</i>	-27.70	12	-30.12	10	-2.42
<i>Carpopeltis phyllophora</i>	-27.71	2	-28.37	10	-0.66
<i>Cladurus elatus</i>	-28.78	5	-29.30	12	-0.52
<i>Zonaria turneriana</i>	-29.28	5	-28.38	13	0.90
B: East coast 1940-49 vs. 2000-09 (N2 ≥ 10)					
	<i>Total shifts</i>	0		<i>Median RS</i>	0
	<i>Shifts south</i>	0		<i>Mean RS</i>	0
Species	Max Lat T1	N1	Max lat T2	N2	RS
No species satisfied the criteria					
C: West coast 1940-49 vs. 2000-09 (N2 ≥ 5)					
	<i>Total shifts</i>	29		<i>Median RS</i>	-0.52
	<i>Shifts south</i>	22		<i>Mean RS</i>	-0.64
Species	Max Lat T1	N1	Max lat T2	N2	RS
<i>Plocamium preissianum</i>	-27.71	4	-30.54	5	-2.83
<i>Caulerpa sedoides</i>	-28.92	7	-31.45	5	-2.53
<i>Pterocladia lucida</i>	-27.70	12	-30.12	10	-2.42
<i>Erythroclonium muelleri</i>	-28.79	5	-30.56	6	-1.77
<i>Caulerpa flexilis</i>	-28.87	12	-30.48	5	-1.61
<i>Thuretia quercifolia</i>	-28.79	3	-30.13	5	-1.35
<i>Nizymania conferta</i>	-28.78	9	-30.12	5	-1.34
<i>Laurencia elata</i>	-28.87	3	-30.16	9	-1.29
<i>Craspedocarpus blepharicarpus</i>	-29.26	2	-30.28	9	-1.02
<i>Dasyclonium incisum</i>	-27.70	17	-28.38	5	-0.68
<i>Metagoniolithon chara</i>	-27.70	10	-28.38	5	-0.68
<i>Carpopeltis phyllophora</i>	-27.71	2	-28.37	10	-0.66
<i>Callophycus oppositifolius</i>	-27.77	13	-28.37	5	-0.60
<i>Pachydictyon paniculatum</i>	-28.79	4	-29.31	6	-0.53
<i>Cladurus elatus</i>	-28.78	5	-29.30	12	-0.52
<i>Bornetia binderiana</i>	-28.79	4	-29.30	5	-0.52
<i>Caulerpa obscura</i>	-28.79	7	-29.27	8	-0.49
<i>Pollexfenia lobata</i>	-28.79	5	-29.27	5	-0.49
<i>Kuetzingia canaliculata</i>	-28.79	10	-29.25	8	-0.46
<i>Dictyopteris muelleri</i>	-28.79	11	-29.25	6	-0.46
<i>Vidalia spiralis</i>	-28.79	6	-29.25	5	-0.46
<i>Dictyota fastigiata</i>	-29.25	1	-29.30	7	-0.05
<i>Dictyomenia sonderi</i>	-28.77	8	-28.37	8	0.40
<i>Metamastophora flabellata</i>	-28.79	7	-28.37	8	0.42

<i>Dicranema revolutum</i>	-28.79	1	-28.37	7	0.42
<i>Neurymenia fraxinifolia</i>	-28.79	6	-28.37	7	0.42
<i>Caulocystis uvifera</i>	-28.93	8	-28.20	7	0.73
<i>Glossophora nigricans</i>	-29.25	2	-28.38	7	0.87
<i>Zonaria turneriana</i>	-29.28	5	-28.38	13	0.90

D: East coast 1940-49 vs. 2000-09 (N2 ≥ 5)

<i>Total shifts</i>	1	<i>Median RS</i>	-2.84
<i>Shifts south</i>	1	<i>Mean RS</i>	-2.84

Species	Max Lat T1	N1	Max lat T2	N2	RSx
<i>Gracilaria hermonii</i>	-27.25	6	-30.09	5	-2.84

E: West coast 1940-59 vs. 1990-2009 (N2 ≥ 10).

<i>Total shifts</i>	15	<i>Median RS</i>	-0.46
<i>Shifts south</i>	8	<i>Mean RS</i>	-0.22

Species	Max Lat T1	N1	Max lat T2	N2	RS
<i>Laurencia elata</i>	-28.87	9	-30.16	10	-1.29
<i>Pterocladia lucida</i>	-27.70	32	-28.87	17	-1.17
<i>Craspedocarpus blepharicarpus</i>	-29.26	7	-30.28	11	-1.02
<i>Euptilota articulata</i>	-27.71	15	-28.68	11	-0.97
<i>Heterodoxia denticulata</i>	-27.71	25	-28.47	12	-0.76
<i>Carpopeltis phyllophora</i>	-27.71	3	-28.37	11	-0.66
<i>Bornetia binderiana</i>	-28.79	10	-29.30	11	-0.52
<i>Kuetzingia canaliculata</i>	-28.79	16	-29.25	10	-0.46
<i>Dictyopteris muelleri</i>	-28.79	16	-28.72	12	0.07
<i>Cladurus elatus</i>	-28.78	7	-28.65	14	0.13
<i>Caulerpa obscura</i>	-28.79	14	-28.47	12	0.32
<i>Dictyomenia sonderi</i>	-28.77	13	-28.37	15	0.40
<i>Metamastophora flabellata</i>	-28.77	17	-28.37	12	0.40
<i>Caulocystis uvifera</i>	-28.93	19	-28.20	10	0.73
<i>Zonaria turneriana</i>	-29.28	6	-27.70	21	1.58

F: East coast 1940-59 vs. 1990-2009 (N2 ≥ 10)

<i>Total shifts</i>	4	<i>Median RS</i>	-1.93
<i>Shifts south</i>	3	<i>Mean RS</i>	-1.29

Species	Max Lat	N1	Max lat T2	N2	RS
<i>Gracilaria hermonii</i>	-27.25	6	-30.09	22	-2.84
<i>Dilophus marginatus</i>	-26.42	13	-28.37	18	-1.95
<i>Haliptilon roseum</i>	-26.80	16	-28.72	17	-1.92
<i>Martensia fragilis</i>	-30.37	7	-28.80	27	1.57

G: West coast 1940-59 vs. 1990-2009 (N2 ≥ 5)

<i>Total shifts</i>	45	<i>Median RS</i>	-0.46
<i>Shifts south</i>	25	<i>Mean RS</i>	-0.57

Species	Max Lat T1	N1	Max lat T2	N2	RS
<i>Cystophora brownii</i>	-29.28	10	-34.05	6	-4.77
<i>Carpopeltis elata</i>	-28.78	14	-32.02	6	-3.24
<i>Griffithsia tegea</i>	-28.72	4	-31.83	8	-3.11

<i>Plocamium preissianum</i>	-27.71	11	-30.54	7	-2.83
<i>Caulerpa sedoides</i>	-28.92	11	-31.45	5	-2.53
<i>Erythroclonium muelleri</i>	-28.79	7	-30.56	6	-1.77
<i>Caulerpa flexilis</i>	-28.87	19	-30.48	6	-1.61
<i>Scytothalia doryocarpa</i>	-28.74	9	-30.34	5	-1.60
<i>Thuretia quercifolia</i>	-28.79	11	-30.13	6	-1.35
<i>Laurencia elata</i>	-28.87	9	-30.16	10	-1.29
<i>Pterocladia lucida</i>	-27.70	32	-28.87	17	-1.17
<i>Craspedocarpus blepharicarpus</i>	-29.26	7	-30.28	11	-1.02
<i>Gigartina disticha</i>	-29.26	18	-30.28	8	-1.02
<i>Euptilota articulata</i>	-27.71	15	-28.68	11	-0.97
<i>Heterodoxia denticulata</i>	-27.71	25	-28.47	12	-0.76
<i>Dasyclonium incisum</i>	-27.70	19	-28.38	9	-0.68
<i>Metagoniolithon chara</i>	-27.70	12	-28.38	6	-0.68
<i>Carpopeltis phyllophora</i>	-27.71	3	-28.37	11	-0.66
<i>Callophycus oppositifolius</i>	-27.77	25	-28.37	7	-0.60
<i>Bornetia binderiana</i>	-28.79	10	-29.30	11	-0.52
<i>Pollexfenia lobata</i>	-28.79	17	-29.27	5	-0.49
<i>Dictyomenia tridens</i>	-28.78	8	-29.25	7	-0.47
<i>Kuetzingia canaliculata</i>	-28.79	16	-29.25	10	-0.46
<i>Dictyota fastigiata</i>	-29.25	5	-29.30	7	-0.05
<i>Platythalia angustifolia</i>	-29.25	9	-29.27	8	-0.02
<i>Clavicladium ovatum</i>	-28.75	20	-28.75	8	0.00
<i>Myriodesma quercifolium</i>	-27.71	25	-27.70	8	0.01
<i>Osmundaria prolifera</i>	-28.79	26	-28.76	7	0.03
<i>Vidalia spiralis</i>	-28.79	13	-28.73	7	0.05
<i>Dictyopteris muelleri</i>	-28.79	16	-28.72	12	0.07
<i>Cladurus elatus</i>	-28.78	7	-28.65	14	0.13
<i>Caulerpa simpliciuscula</i>	-28.79	16	-28.48	9	0.31
<i>Caulerpa obscura</i>	-28.79	14	-28.47	12	0.32
<i>Pachydictyon paniculatum</i>	-28.79	10	-28.47	8	0.32
<i>Nizymania conferta</i>	-28.78	11	-28.42	6	0.36
<i>Scaberia agardhii</i>	-28.74	18	-28.37	6	0.37
<i>Dictyomenia sonderi</i>	-28.77	13	-28.37	15	0.40
<i>Metamastophora flabellata</i>	-28.77	17	-28.37	12	0.40
<i>Metagoniolithon stelliferum</i>	-28.79	9	-28.38	9	0.41
<i>Dicranema revolutum</i>	-28.79	4	-28.37	8	0.42
<i>Hypnea ramentacea</i>	-28.79	33	-28.37	5	0.42
<i>Caulocystis uvifera</i>	-28.93	19	-28.20	10	0.73
<i>Ceramium puberulum</i>	-29.27	7	-28.42	5	0.85
<i>Glossophora nigricans</i>	-29.25	9	-28.38	7	0.87
<i>Zonaria turneriana</i>	-29.28	6	-27.70	21	1.58

H: East coast 1940-59 vs. 1990-2009 (N2 ≥ 5)

<i>Total shifts</i>	7	<i>Median RS</i>	-1.92
<i>Shifts south</i>	6	<i>Mean RS</i>	-1.41

Species	Max Lat	N1	Max lat T2	N2	RS
<i>Gracilaria hermonii</i>	-27.25	6	-30.09	22	-2.84
<i>Dilophus marginatus</i>	-26.42	13	-28.37	18	-1.95
<i>Haliptilon roseum</i>	-26.80	16	-28.72	17	-1.92
<i>Amphiroa anceps</i>	-26.80	15	-28.72	8	-1.92
<i>Champia parvula</i>	-27.22	10	-28.64	12	-1.42
<i>Dictyopteris acrostichoides</i>	-27.23	6	-28.63	6	-1.40
<i>Martensia fragilis</i>	-30.37	7	-28.80	27	1.57

I: West coast 1940-69 vs. 1980-2009 (N2 ≥ 10)

<i>Total shifts</i>	45	<i>Median RS</i>	0.00
<i>Shifts south</i>	22	<i>Mean RS</i>	-0.09

Species	Max Lat T1	N1	Max lat T2	N2	RS
<i>Scytothalia dorycarpa</i>	-26.39	15	-30.34	10	-3.95
<i>Delisea pulchra</i>	-26.39	6	-30.12	10	-3.74
<i>Ptilophora prolifera</i>	-29.02	6	-31.50	12	-2.49
<i>Glossophora nigricans</i>	-26.09	19	-28.38	13	-2.29
<i>Metamastophora flabellata</i>	-26.39	35	-28.37	20	-1.99
<i>Pollexfenia pedicellata</i>	-28.82	20	-30.12	17	-1.31
<i>Craspedocarpus blepharicarpus</i>	-29.26	7	-30.28	11	-1.02
<i>Gigartina disticha</i>	-29.26	18	-30.28	13	-1.02
<i>Euptilota articulata</i>	-27.71	24	-28.68	15	-0.97
<i>Heterodoxia denticulata</i>	-27.71	29	-28.47	21	-0.76
<i>Dasyclonium incisum</i>	-27.70	28	-28.38	10	-0.68
<i>Carpopeltis phyllophora</i>	-27.71	4	-28.37	12	-0.66
<i>Callophycus oppositifolius</i>	-27.77	33	-28.37	17	-0.60
<i>Bornetia binderiana</i>	-28.79	13	-29.30	12	-0.52
<i>Pollexfenia lobata</i>	-28.79	18	-29.27	10	-0.49
<i>Kuetzingia canaliculata</i>	-28.79	19	-29.25	14	-0.46
<i>Encyothalia cliftonii</i>	-28.29	2	-28.72	12	-0.43
<i>Lenormandia spectabilis</i>	-28.87	30	-29.25	12	-0.38
<i>Struvea plumosa</i>	-28.18	22	-28.47	21	-0.28
<i>Caulerpa simpliciuscula</i>	-28.29	22	-28.48	11	-0.20
<i>Platythalia angustifolia</i>	-29.02	22	-29.17	11	-0.15
<i>Griffithsia teges</i>	-28.72	14	-28.73	11	-0.01
<i>Caulocystis uvifera</i>	-25.47	26	-25.47	20	0.00
<i>Myriodesma quercifolium</i>	-27.71	28	-27.70	12	0.01
<i>Dictyopteris muelleri</i>	-28.79	20	-28.72	18	0.07
<i>Caulerpa flexilis</i>	-28.87	26	-28.78	19	0.08
<i>Cladurus elatus</i>	-28.78	10	-28.65	15	0.13
<i>Laurencia elata</i>	-28.87	10	-28.73	18	0.13
<i>Caulerpa obscura</i>	-28.79	17	-28.47	29	0.32
<i>Pachydictyon paniculatum</i>	-28.79	16	-28.47	12	0.32
<i>Epiphloea bullosa</i>	-29.02	1	-28.68	15	0.33
<i>Clavicornium ovatum</i>	-28.75	26	-28.42	21	0.33
<i>Dictyomenia tridens</i>	-28.78	10	-28.42	15	0.36

<i>Gloiosaccion brownii</i>	-28.83	7	-28.42	21	0.42
<i>Lobospira bicuspidata</i>	-29.28	18	-28.73	16	0.54
<i>Tylotus obtusatus</i>	-29.02	3	-28.42	19	0.60
<i>Sargassum lacerifolium</i>	-28.83	2	-28.20	13	0.63
<i>Codium galeatum</i>	-29.26	24	-28.38	11	0.88
<i>Osmundaria prolifera</i>	-28.79	33	-27.75	15	1.04
<i>Zonaria turneriana</i>	-29.02	13	-27.70	31	1.32
<i>Apjohnia laetevirens</i>	-30.07	3	-28.67	10	1.40
<i>Caulerpa cactoides</i>	-20.48	34	-17.97	29	2.51
<i>Metagoniolithon stelliferum</i>	-28.79	11	-25.93	10	2.85
<i>Pterocladia lucida</i>	-27.70	41	-24.75	32	2.95
<i>Vidalia spiralis</i>	-28.79	17	-25.47	12	3.32

J: East coast 1940-69 vs. 1980-2009 (N2 ≥ 10)

<i>Total shifts</i>	11	<i>Median RS</i>	-1.38
<i>Shifts south</i>	9	<i>Mean RS</i>	-1.22

Species	Max Lat T1	N1	Max lat T2	N2	RS
<i>Polysiphonia decipiens</i>	-32.70	68	-37.11	25	-4.41
<i>Scytosiphon lomentaria</i>	-27.23	13	-30.09	15	-2.86
<i>Gracilaria hermonii</i>	-27.25	6	-30.09	25	-2.84
<i>Dilophus marginatus</i>	-26.42	17	-28.37	19	-1.95
<i>Haliptilon roseum</i>	-26.80	22	-28.72	25	-1.92
<i>Valeriemaya geminata</i>	-27.23	3	-28.61	16	-1.38
<i>Codium fragile</i>	-30.07	54	-31.42	15	-1.35
<i>Symphyocladia marchantioides</i>	-27.88	4	-28.64	22	-0.75
<i>Spyridia dasyoides</i>	-32.70	5	-32.74	23	-0.04
<i>Martensia fragilis</i>	-30.37	9	-28.80	29	1.57
<i>Kallymenia rosea</i>	-32.70	1	-30.24	20	2.46

K: West coast 1940-69 vs. 1980-2009 (N2 ≥ 5)

<i>Total shifts</i>	70	<i>Median RS</i>	-0.24
<i>Shifts south</i>	38	<i>Mean RS</i>	-0.42

Species	Max Lat T1	N1	Max lat T2	N2	RS
<i>Cystophora brownii</i>	-29.28	17	-34.05	6	-4.77
<i>Scytothalia dorycarpa</i>	-26.39	15	-30.34	10	-3.95
<i>Wollastoniella myriophylloides</i>	-25.48	13	-29.30	6	-3.83
<i>Delisea pulchra</i>	-26.39	6	-30.12	10	-3.74
<i>Caulerpa sedoides</i>	-28.18	15	-31.45	7	-3.27
<i>Carpopeltis elata</i>	-28.78	18	-32.02	8	-3.24
<i>Ptilophora prolifera</i>	-29.02	6	-31.50	12	-2.49
<i>Glossophora nigricans</i>	-26.09	19	-28.38	13	-2.29
<i>Areschougia ligulata</i>	-26.39	12	-28.47	8	-2.08
<i>Metamastophora flabellata</i>	-26.39	35	-28.37	20	-1.99
<i>Cystophora grevillei</i>	-29.28	22	-31.02	9	-1.74
<i>Gracilaria flagelliformis</i>	-28.78	15	-30.35	8	-1.56
<i>Lenormandia latifolia</i>	-28.78	9	-30.30	7	-1.51
<i>Thuretia quercifolia</i>	-28.79	17	-30.13	7	-1.35

<i>Pollexfenia pedicellata</i>	-28.82	20	-30.12	17	-1.31
<i>Chauviniella coriifolia</i>	-28.83	10	-30.13	9	-1.30
<i>Peyssonnelia novae-hollandiae</i>	-29.02	1	-30.30	5	-1.28
<i>Craspedocarpus blepharicarpus</i>	-29.26	7	-30.28	11	-1.02
<i>Gigartina disticha</i>	-29.26	18	-30.28	13	-1.02
<i>Euptilota articulata</i>	-27.71	24	-28.68	15	-0.97
<i>Codium laminarioides</i>	-29.28	17	-30.14	7	-0.86
<i>Heterodoxia denticulata</i>	-27.71	29	-28.47	21	-0.76
<i>Dasyclonium incisum</i>	-27.70	28	-28.38	10	-0.68
<i>Metagoniolithon chara</i>	-27.70	15	-28.38	6	-0.68
<i>Carpopeltis phyllophora</i>	-27.71	4	-28.37	12	-0.66
<i>Dictyota fastigiata</i>	-28.65	6	-29.30	8	-0.65
<i>Callophycus oppositifolius</i>	-27.77	33	-28.37	17	-0.60
<i>Bornetia binderiana</i>	-28.79	13	-29.30	12	-0.52
<i>Dasya cliftonii</i>	-28.79	2	-29.28	5	-0.49
<i>Pollexfenia lobata</i>	-28.79	18	-29.27	10	-0.49
<i>Echinothamnion hystrix</i>	-28.79	15	-29.27	5	-0.49
<i>Kuetzingia canaliculata</i>	-28.79	19	-29.25	14	-0.46
<i>Encyothalia cliftonii</i>	-28.29	2	-28.72	12	-0.43
<i>Lenormandia spectabilis</i>	-28.87	30	-29.25	12	-0.38
<i>Struvea plumosa</i>	-28.18	22	-28.47	21	-0.28
<i>Caulerpa simpliciuscula</i>	-28.29	22	-28.48	11	-0.20
<i>Platythalia angustifolia</i>	-29.02	22	-29.17	11	-0.15
<i>Griffithsia teges</i>	-28.72	14	-28.73	11	-0.01
<i>Caulocystis uvifera</i>	-25.47	26	-25.47	20	0.00
<i>Myriodesma quercifolium</i>	-27.71	28	-27.70	12	0.01
<i>Asteromenia peltata</i>	-20.48	4	-20.44	25	0.03
<i>Dictyopteris muelleri</i>	-28.79	20	-28.72	18	0.07
<i>Caulerpa flexilis</i>	-28.87	26	-28.78	19	0.08
<i>Cladurus elatus</i>	-28.78	10	-28.65	15	0.13
<i>Laurencia elata</i>	-28.87	10	-28.73	18	0.13
<i>Caulerpa obscura</i>	-28.79	17	-28.47	29	0.32
<i>Pachydictyon paniculatum</i>	-28.79	16	-28.47	12	0.32
<i>Epiphloea bullosa</i>	-29.02	1	-28.68	15	0.33
<i>Clavicladium ovatum</i>	-28.75	26	-28.42	21	0.33
<i>Endosiphonia spinulosa</i>	-29.25	1	-28.91	7	0.35
<i>Dictyomenia tridens</i>	-28.78	10	-28.42	15	0.36
<i>Nizymenia conferta</i>	-28.78	17	-28.42	9	0.36
<i>Scaberia agardhii</i>	-28.74	22	-28.37	9	0.37
<i>Hypoglossum revolutum</i>	-28.79	3	-28.42	5	0.38
<i>Dicranema revolutum</i>	-28.79	6	-28.37	9	0.42
<i>Hypnea ramentacea</i>	-28.79	37	-28.37	8	0.42
<i>Gloiosaccion brownii</i>	-28.83	7	-28.42	21	0.42
<i>Heterocladia caudata</i>	-29.25	8	-28.78	5	0.47
<i>Lobospira bicuspidata</i>	-29.28	18	-28.73	16	0.54
<i>Tylotus obtusatus</i>	-29.02	3	-28.42	19	0.60

<i>Sargassum lacerifolium</i>	-28.83	2	-28.20	13	0.63
<i>Ceramium puberulum</i>	-29.27	9	-28.42	5	0.85
<i>Codium galeatum</i>	-29.26	24	-28.38	11	0.88
<i>Osmundaria prolifera</i>	-28.79	33	-27.75	15	1.04
<i>Zonaria turneriana</i>	-29.02	13	-27.70	31	1.32
<i>Apjohnia laetevirens</i>	-30.07	3	-28.67	10	1.40
<i>Caulerpa cactoides</i>	-20.48	34	-17.97	29	2.51
<i>Metagoniolithon stelliferum</i>	-28.79	11	-25.93	10	2.85
<i>Pterocladia lucida</i>	-27.70	41	-24.75	32	2.95
<i>Vidalia spiralis</i>	-28.79	17	-25.47	12	3.32

L: East coast 1940-69 vs. 1980-2009 (N2 ≥ 5)

	<i>Total shifts</i>	<i>14</i>		<i>Median RS</i>	<i>-1.39</i>
	<i>Shifts south</i>	<i>11</i>		<i>Mean RS</i>	<i>-1.06</i>
Species	Max Lat T1	N1	Max lat T2	N2	RS
<i>Polysiphonia decipiens</i>	-32.70	68	-37.11	25	-4.41
<i>Scytosiphon lomentaria</i>	-27.23	13	-30.09	15	-2.86
<i>Gracilaria hermonii</i>	-27.25	6	-30.09	25	-2.84
<i>Platysiphonia miniata</i>	-32.70	2	-35.07	7	-2.37
<i>Dilophus marginatus</i>	-26.42	17	-28.37	19	-1.95
<i>Haliptilon roseum</i>	-26.80	22	-28.72	25	-1.92
<i>Dictyopteris acrostichoides</i>	-27.23	10	-28.63	7	-1.40
<i>Valeriemaya geminata</i>	-27.23	3	-28.61	16	-1.38
<i>Codium fragile</i>	-30.07	54	-31.42	15	-1.35
<i>Symphyocladia marchantioides</i>	-27.88	4	-28.64	22	-0.75
<i>Spyridia dasyoides</i>	-32.70	5	-32.74	23	-0.04
<i>Martensia fragilis</i>	-30.37	9	-28.80	29	1.57
<i>Wrangelia plumosa</i>	-32.70	31	-30.30	5	2.40
<i>Kallymenia rosea</i>	-32.70	1	-30.24	20	2.46

Range shifts of temperate species with their northern-most record north of 33 °S (east coast) and 31 °S (west coast), respectively, in time period 1, given 10-, 20-, and 30-year time periods of comparison and a 5 or 10 records threshold for inclusion in the analyses. Max Lat T1, T2 is the latitude of the northern-most record for each species, in time period 1 and 2, respectively. N1, N2 is the number of records of each species in time period 1 and 2, respectively. RS is the ‘range-shift’ calculated as the difference between the northern-most herbarium records of time period 1 and 2.