



## Spatial distribution of radar bright band intensity

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## Supplementary Tables

Table S1 — Latitude, longitude, and geography of continental locations of  $BBI_{mn}$ 

City	Country	Geography	Lat	Long
Talat Ammar, Arar	Saudi Arabia	Land	30.42° N	40.46° E
Roan Island, Montague, North Carolina	USA	Land	34.36° N	78.04° W
Hofmeyr, Queenstown	South Africa	Land	31.54° S	26.06° E
Zaltan, Maradah	Libya	Land	28.79° N	19.77° E
Yamaguchi	Japan	Land	34.17° N	131.63E
Grand Canyon Caverns	USA	Land	35.45° N	113.03° W
Hezareh, Nil Shahr	Iran	Land	35.05° N	61.00° E
Acton, Palmdale, California	USA	Land	34.48° N	118.22° W
Huangpizhen, Jian	China	Land	27.32° N	116.08° E
Nchenje, Kate	Tanzania	Land	7.78° S	31.09° E
Irian Jaya Tengah	Irian Jaya	Land	3.60° S	138.21° E
Pind Dadan Khan	Pakistan	Land	32.59° N	72.99° E
Wawutongzuxiang, Tongren	China	Land	27.62° N	109.42° E
Xinhianxiang, Qingyan	China	Land	30.44° N	118.09° E
Dzinjiriza	Mozambique	Land	15.13° S	34.54° E
Asago, Kyoto	Japan	Land	35.39° N	134.91° E
Dennard, Marshall, Arkansas	USA	Land	35.76° N	92.41° W
Zighan	Libya	Land	25.37° N	22.37° E
Maojizhen, Fengtai	China	Land	32.64° N	116.73° E
Asmadabad, Hamdan	Iran	Land	34.93° N	49.19° E
Pacla, Chachpoyas	Peru	Land	6.12° S	78.05° W
Naspandeh, Nahbandan	Iran	Land	31.67° N	60.23° E
Yongpingzhen, Puer	China	Land	23.39° N	100.29° E
Afif	Saudi Arabia	Land	22.26° N	44.27° E
Higashi Ward, Hiroshima	Japan	Land	34.44° N	132.5° E
Miniya, Suntu	Ethiopia	Land	8.142° N	37.07° E
Sevilla, Alausi	Ecuador	Land	2.29° S	78.86° W
St Jago	Jamaica	Land	17.94° N	77.46° W
Marofotsy	Madagascar	Land	20.99° S	47.50° E
Ain Berde, Al Quaryatayn	Syria	Land	34.25° N	37.52° E
Kakegawa	Japan	Land	34.77° N	137.97° E
Harrismith, New Castle	South Africa	Land	27.96° S	29.31° E
Houjiachusnxiang, Huining	China	Land	35.52° N	105.19° E
Los Almitos, San Rafael	Argentina	Land	34.16° S	68.80° W
Guadalupe Mountains National Park, Dell City, Texas	USA	Land	31.92° N	104.89° W

Maqen, Golog	China	Land	34.43° N	100.11° E
Wamboin, Bungendore, New South Wales	Australia	Land	35.21° S	149.29° E
Chamizo	Uruguay	Land	34.18° S	56.70° W
Del Campillo, Laboulaye	Argentina	Land	34.29° S	64.21° W
Marques Wildlife Area, Albuquerque	USA	Land	35.42° N	107.38° W
Nagqu	China	Land	35.13° N	91.32° E
Jiangzhaxiang, Tewo	China	Land	34.14° N	102.92° E
Jedo, Motto	Ethiopia	Land	11.34° N	38.29° E
Tebetuxinag, Darlag	China	Land	33.84° N	98.67° E
San Isidro, Cauquenes, Talca	China	Land	35.77° S	72.14° W
Matunda	Kenya	Land	0.82° N	35.15° E
Zhenqinxiang, Chindu, Yushu	China	Land	33.43° N	97.33° E
Kisubu, Kikwit	D R Congo	Land	5.62° S	17.21° E
Callala Bay, New South Wales	Australia	Land	34.98° S	150.70° E
Lake Alexandrina, South Australia	Australia	Land	35.53° S	139.00° E
Nankangxiang, Huixian	China	Land	33.68° N	105.94° E
Ismael Cortinas, Trinidad	Uruguay	Land	33.37° S	57.15° W
Quilcate, Cajamarca	Peru	Land	6.75° S	78.78° W
Novo Progresso	Brazil	Land	7.98° S	52.53° W
Boyuzangzuxiang, Lognan	China	Land	33.42° N	104.32° E
Yiwaxiang, Tewo, Gannan	China	Land	34.27° N	103.28° E
Manuelito, Gallup, New Mexico	USA	Land	35.49° N	109.03° W
Vincente Guerrero, Tehuacan	Mexico	Land	18.5° N	97.13° W
Alamo, New Mexico	USA	Land	34.47° N	107.41° W
Wan Hkai, Lai- Hka	Myanmar	Land	21.42° N	97.55° E
Chumpi, Coracora	Peru	Land	15.10° S	73.79° E
Ejido de Altamirano, Nuevo Casas Grandes	Mexico	Land	30.37° N	108.58° W
Moonies Hill, Cranbrook, Western Australia	Australia	Land	34.15° S	117.49° W
Olary, South Australia	Australia	Land	32.08° S	140.08° W
Zhudongxiang, Paxian, Qujing	China	Land	25.63° N	104.73° E
Timber Reserve, Lighting Ridge, New South Wales	Australia	Land	29.33° S	147.81° E
Supata, Zipaquira	Colombia	Land	5.04° N	74.19° W
Kohneh Osman	Iran	Land	34.91° N	54.33° E
Xiancunzhen, Wugong, Xian	China	Land	34.26° N	108.26° E
Zaouia d'Ifrane	Morocco	Land	33.20° N	5.48° W
Lyderburg	South Africa	Land	25.05° S	30.14° E
Tirbil, Jordan Junction	Iraq	Land	33.07° N	39.37° E
Rajah, Kohlineh	Iran	Land	34.48° N	45.98° E
Amirabad, Sirjan	Iran	Land	29.55° N	55.87° E
Mandeni, Eshowe	South Africa	Land	29.13° S	31.43° E

Summer City, New Harmony, Tennessee	USA	Land	35.61° N	85.02° W
Quantangzhen, Jinshanweizhen, Pinghu	China	Land	30.71° N	121.22° E
Wittenberg, Piet Retief	South Africa	Land	27.10° S	30.66° E
Suran, Hamah	Syria	Land	35.27° N	36.74° E
Pie town, Datil, New Mexico	USA	Land	34.27° N	108.17° W
Irian Jaya Timur	Irian Jaya	Land	3.84° S	138.39° E
Juntas, Tarija	Bolivia	Land	21.70° S	64.76° W

Table S2 — Latitude, longitude, and geography of continental locations of BBI<sub>mx</sub>

City	Country	Geography	Lat	Long
Kambadianga, Tshikapa	D R Congo	Land	5.61° S	20.52° E
Mungabunda, Rolleston	Australia	Land	24.78° S	149.05° E
Pegasano, Rio Cuarto	Argentina	Land	34.55° S	64.58° W
Croydon, Norman, Queensland	Australia	Land	17.76° S	142.38° E
Ntolia, Balama	Mozambique	Land	13.39° S	38.50° E
Cadoux, Northam, Western Australia	Australia	Land	30.75° S	117.07° E
Galugan-e-Bozorg, Minab	Iran	Land	27.22° N	56.65° E
Goodlands, Western Australia	Australia	Land	29.54° S	117.27° E
Vergemont, Queensland	Australia	Land	23.36° S	142.97° E
Koffiefontien, Hopetown, Kimberley	South Africa	Land	29.504° S	24.68° E
Mzunanto, Umtata	South Africa	Land	31.07° S	28.88° E
Lake Rukwa	Tanzania	Land	7.66° S	32.06° E
Sartinville, Columbia, Mississippi	USA	Land	31.37° N	90.11° W
Bokolo, Boende	D R Congo	Land	0.15° N	20.40° W
Sapo-Bumba, Demba, Kananga	D R Congo	Land	5.42° S	22.13° E
Uele, Dukpa	D R Congo	Land	3.51° N	25.23° E
Farrell, Clarksdale, Mississippi	USA	Land	34.26° N	90.70° W
Etsha, Gumare	Botswana	Land	19.13° S	22.42° E
Muaralasan, Bontang	Indonesia	Land	1.61° N	116.70° E
Benda	Angola	Land	15.68° S	21.20° E
PobladoZambullon, Curtina	Uruguay	Land	32.08° S	55.89° W
Estreito, Sao Felix do Xingu, Para	Brazil	Land	6.94° S	51.55° W
Pyramul, Mudgee, New South Wales	Australia	Land	32.90° S	149.58° E
Bora Domrasur, Madaripur	Bangladesh	Land	23.08° N	89.98° E
Ankazomateila, Fotadrevo	Madagascar	Land	23.88° S	44.18° E
Kitagara, Dunda	Tanzania	Land	7.85° S	34.85° E
Homer, Gainsville, Georgia	USA	Land	34.38° N	83.36° W
Denver City, Brownfield	USA	Land	32.90° N	102.94° W
Konadjou	Togo	Land	9.52° N	0.79° E
Canto Comprido, Mossoro, Rio Grande do Norte	Brazil	Land	5.19° S	36.84° W
Darmville, Arkansas	USA	Land	34.87° N	93.32° W
Winston, Douglasville, Athens, Georgia	USA	Land	33.72° N	84.82° W
Aguigadji, Ketou	Benin	Land	7.45° N	2.29° E
Errittau	Papua New Guinea	Land	6.99° S	144.32° E
Ridgeway, Columbia, South Carolina	USA	Land	34.34° N	80.90° W
Edema Compound, Offa	Nigeria	Land	8.14° N	4.85° E
Lake Sulunga	Tanzania	Land	6.19° S	35.14° E
Bachahalli, Karnataka	India	Land	11.75° N	76.68° E
Mbala, Inongo	D R Congo	Land	1.30° S	18.39° E
Jamaame	Somalia	Land	0.29° N	42.58° E

Warooka, Western Australia	Australia	Land	35.00° S	137.29° E
Verdun	Uruguay	Land	32.52° S	55.54° W
Nandigram, Haldia, West Bengal	India	Land	21.98° N	87.94° E
Kinshasa	D R Congo	Land	3.44° S	15.19° E
Caopuzhen, Kunming	China	Land	24.87° N	102.35° E
Mouboungou, Mouila	Gabon	Land	1.52° S	11.08° E
Novo Progresso, Para	Brazil	Land	8.99° S	54.50° W
Williams Lake, Spring Hill, Lousiana	USA	Land	32.98° N	93.47° W
Luojinzheng, Yongfu, Guilin	China	Land	24.99° N	110.19° E
Lifanga, Boende	D R Congo	Land	0.30° N	21.98° E
Nimitita, WB	India	Land	24.64° N	87.99° E
RongoroAsimgiri, Meghalaya	India	Land	25.45° N	90.4° E
Kadegaon, Sangli, Maharashtra	India	Land	17.30° N	74.39° E
Sanna, Kusni, Chattisgarh	India	Land	23.13° N	83.87° E
Novo Sarandi, Sao Miguel, Toledo, Parana	Brazil	Land	24.59° S	53.91° W
Kourokorojji, Didieni	Burkina Faso	Land	13.88° N	7.67° W
Gbalala,	Liberia	Land	6.97° N	10.27° W
Krabuang, Yawuk, Sunin	Thailand	Land	15.38° N	103.29° E
Yumbuma, Panguma	Sierra Leone	Land	8.12° N	11.01° W
Parque Nacional DuidaMarahuaka	Venezuela	Land	3.64° N	65.36° W
Tenemamadia	Mali	Land	12.34° N	10.19° W
Misig, Nyala	Sudan	Land	12.17° N	24.65° E
Luquan, Kunming	China	Land	25.57° N	102.59° E
Parauapehas, Para	Brazil	Land	6.40° S	50.51° W
Samgbamba, Kabala	Sierra Leone	Land	9.43° N	11.38° W
Lessley, Woodville, Mississippi	USA	Land	31.13° N	91.4° W
Fatoma, Toubacoro	Mali	Land	14.09° N	7.36° W
Shamrock, Natchitoches, Louisiana	USA	Land	31.75° N	93.24° W
Fuji, Shizouka	Japan	Land	35.15° N	138.67° E
Heredia, Camaguey	Cuba	Land	21.56° N	78.03° W
Brevard County Game Refuge, Orlando	USA	Land	28.73° N	80.95° W
Musari, Nguru	Nigeria	Land	13.05° N	10.41° E
Doltang, Jribam, Assam	India	Land	24.70° N	93.14° E
Toba, Lilla, Gujranwala	Pakistan	Land	32.59° N	72.85° E
Daifa, Dapchi	Nigeria	Land	12.48° N	11.15° E
Windsor, Parafield, South Australia	Australia	Land	34.39° S	138.33° E
GolengoMyo, Asango	Mali	Land	15.45° N	0.66° E
Oncas, Uarini, Amazonas	Brazil	Land	2.63° S	65.12° W
Konga, Mbandaka	D R Congo	Land	0.72° N	18.16° E
Baila, Touba	Senegal	Land	14.78° N	15.71° W
Santa Cruz	Colombia	Land	3.16° N	68.16° W
Jutal, Amazonas	Brazil	Land	5.37° S	68.06° W
Garge Wade Field, Clanton, Alabama	USA	Land	32.92° N	86.53° W
Showak	Sudan	Land	14.67° N	35.36° E
Masua, Ikela	D R Congo	Land	1.38° S	24.27° E
Toro, Hornbeck, Leesville, Louisiana	USA	Land	31.28° N	93.46° W
Mansala, Oualia	Mali	Land	13.56° N	10.22° W
Cairari, Mocajuba, Para	Brazil	Land	2.50° S	49.10° W
Niarhar	Senegal	Land	14.49° N	16.42° W
Madgoul, Dorra	Djibouti	Land	12.25° N	42.32° E
Southern National Park	Sudan	Land	6.56° N	28.16° E
Pauboula, Nigre	Cote d' Ivoire	Land	5.79° N	7.40° W
Sedinginan, Duri	Sumatra	Land	1.57° N	100.94° E
Semandai, KabupatenSanggau	Indonesia	Land	0.23° N	110.54° E
Ponta Pora	Paraguay	Land	22.66° S	55.63° W
Patrimonio, Uberaba, Goias	Brazil	Land	19.49° S	48.50° W

Champanaha, Amazonas	Brazil	Land	6.31° S	58.98° W
Muliterno, Passo Fundo, Rio Grande do Sul	Brazil	Land	28.32° S	51.82° W
Likolo, Ikela	D R Congo	Land	0.06° N	23.62° E
Tibati	Cameroon	Land	6.48° N	12.63° E
Ndoga, Maleme	Senegal	Land	13.72° N	14.10° W
Balehonnur, Chikmagalur, Karnataka	India	Land	13.39° N	75.47° E
Canlaon City	Philippines	Land	10.40° N	123.15° E
Kelkome	Senegal	Land	14.64° N	15.24° W
Xialiaoxiang, Yongjia, Wenzhou	China	Land	28.20° N	120.64° E
Clarence, Ermelo	South Africa	Land	26.25° S	30.51° E
Samri, Chattisgarh	India	Land	23.34° N	83.89° E
Garcitas, Carvo Norte	Colombia	Land	6.59° N	69.94° W
Novo Aripuana, Amazonas	Brazil	Land	4.57° S	61.07° W
Cambundo	Angola	Land	7.02° S	20.28° E
Tapaua, Amazonas	Brazil	Land	4.99° S	64.74° W
Arelias, Gurupa, Para	Brazil	Land	1.21° S	50.97° W
Para	Brazil	Land	8.09° S	52.64° W
Afouanvam, Bondoukou	Cote d' Ivoire	Land	8.04° N	2.92° W
North Yalgogrin, New South Wales	Australia	Land	33.83° S	146.75° E
Randlett, Wichita Falls, Texas	USA	Land	34.15° N	98.36° W
Irian Jaya Timur	Irian Jaya	Land	8.20° S	138.09° E
Garuhape, 2de Mayo, Foz do Iguacu	Paraguay	Land	26.85° S	54.74° W
Campo Belo do Sul, Lages, Passo Fundo, Santa Catarina	Brazil	Land	27.90° S	51.02° W
Bafwabili, Baego, Kisangani	D R Congo	Land	1.09° N	26.33° E
El Rodeo, Santa Rosa	Argentina	Land	35.71° S	65.86° W
El Rodeo, ChifosaKiyoba, Choma	Zambia	Land	16.69° S	26.78° E
Paracatu, Minas Gerais	Brazil	Land	17.15° S	46.62° W
Barra do Prata, Urugul, Piaui	Brazil	Land	7.97° S	44.53° W
Diego de Alvear, Rufino	Argentina	Land	34.38° S	62.13° W
Brasilandia, Tres Lagoas, Mato Grosso do Sul	Brazil	Land	21.31° S	52.16° W
Ash Shafa, At Taif	Saudi Arabia	Land	21.00° N	40.33° E
Mametofu, Chai Village	Mozambique	Land	22.57° S	32.99° E
Jasse	Mozambique	Land	16.83° S	35.40° E
Castro Barros, Chamental, Cordoba	Argentina	Land	30.57° S	65.75° W
Min Min, Queensland	Australia	Land	22.73° S	140.39° E
Anori, Manaus, Amazonas	Brazil	Land	3.62° S	61.99° W
Peak Hill, Western Australia	Australia	Land	24.92° S	117.79° E
Woombah, Yamba, New South Wales	Australia	Land	29.35° S	153.26° E
Jutal, Amazonas	Brazil	Land	5.97° S	66.85° W
Carnaubal, Pontes E Lacerda, Mato Grosso	Brazil	Land	15.82° S	59.43° W
Farras Creek, Queensland	Australia	Land	25.39° S	141.07° E

Table S3 — Occurrence of rainfall<sub>mx/mn</sub> and BBI<sub>mx/mn</sub>  
in the NH and SH

Month	RF <sub>mx</sub>	RF <sub>mn</sub>	2007		2008	
			BBI <sub>mx</sub>	BBI <sub>mn</sub>	BBI <sub>mx</sub>	BBI <sub>mn</sub>
Jan	SH	NH	SH	NH	eq	NH
Feb	SH	NH	SH	NH	SH	NH
Mar	SH	NH	eq	NH	SH	NH
Apr	Eq	NH	SH	NH	SH	NH
May	NH	SH	NH	NH	eq	SH
June	NH	SH	NH	SH	eq	SH
July	Eq	SH	eq	NH	SH	SH
Aug	NH	SH	NH	SH	SH	SH
Sep	NH	SH	NH	SH	NH	SH
Oct	Eq	SH	SH	SH	NH	SH
Nov	Eq	SH	SH	NH	SH	NH
Dec	Eq	NH	SH	NH	NH	SH

Eq: Equator; NH: Northern Hemisphere; and SH: Southern Hemisphere



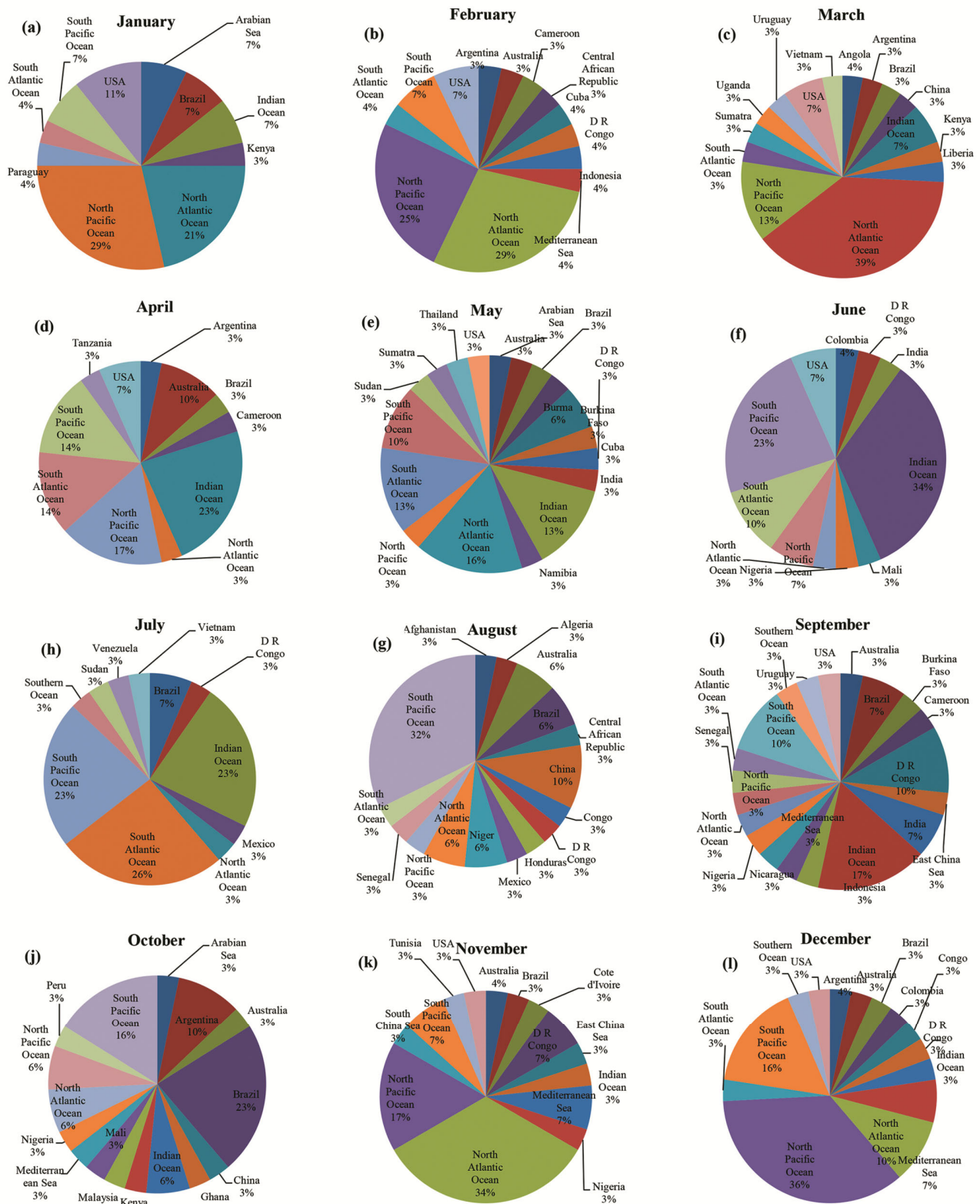


Fig. S2 — (a – l) Occurrence of BBI<sub>max</sub> in the 36N-36S in 1999

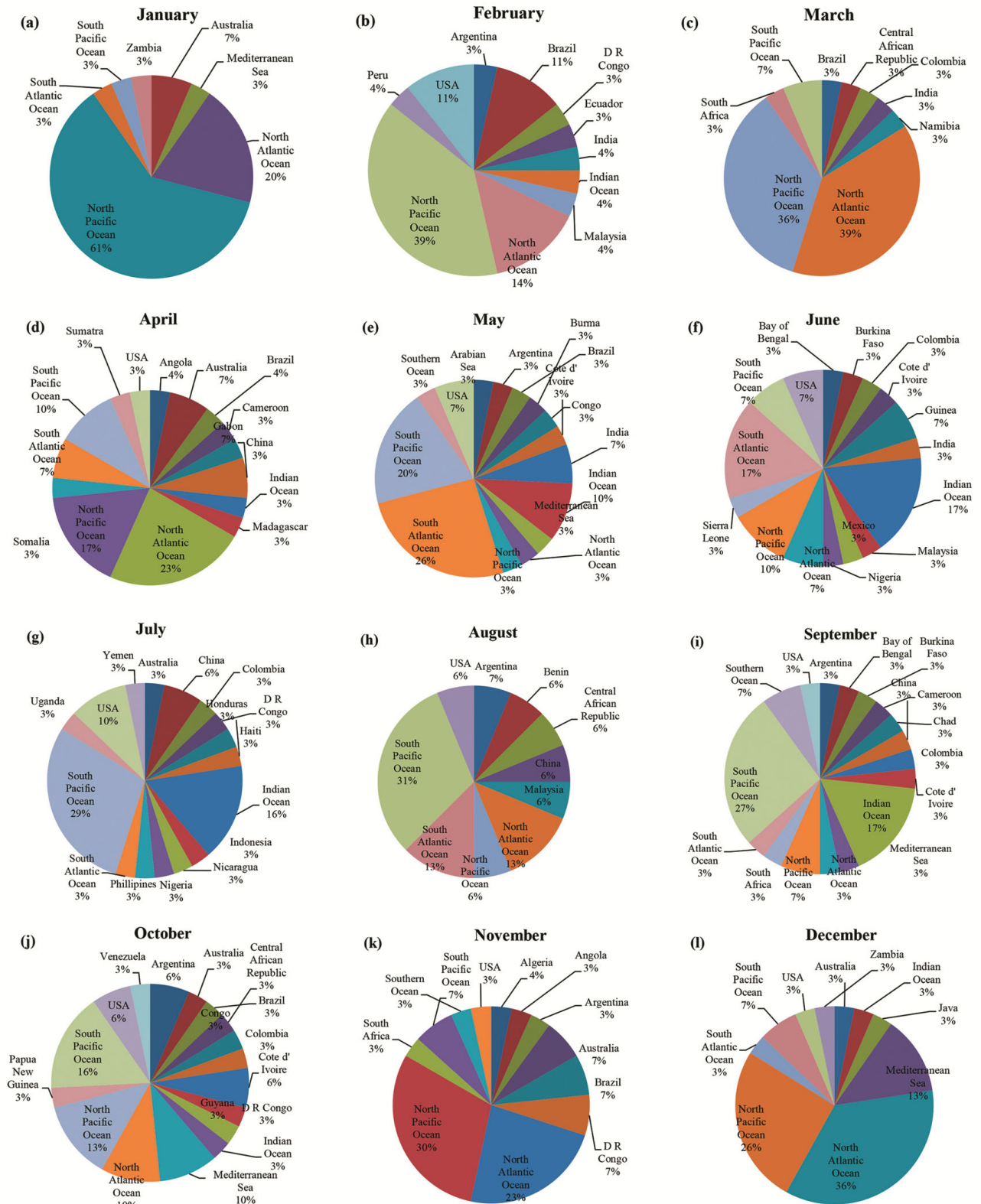


Fig. S3 — (a – l) Occurrence of BBI<sub>max</sub> in the 36N-36S in 2001

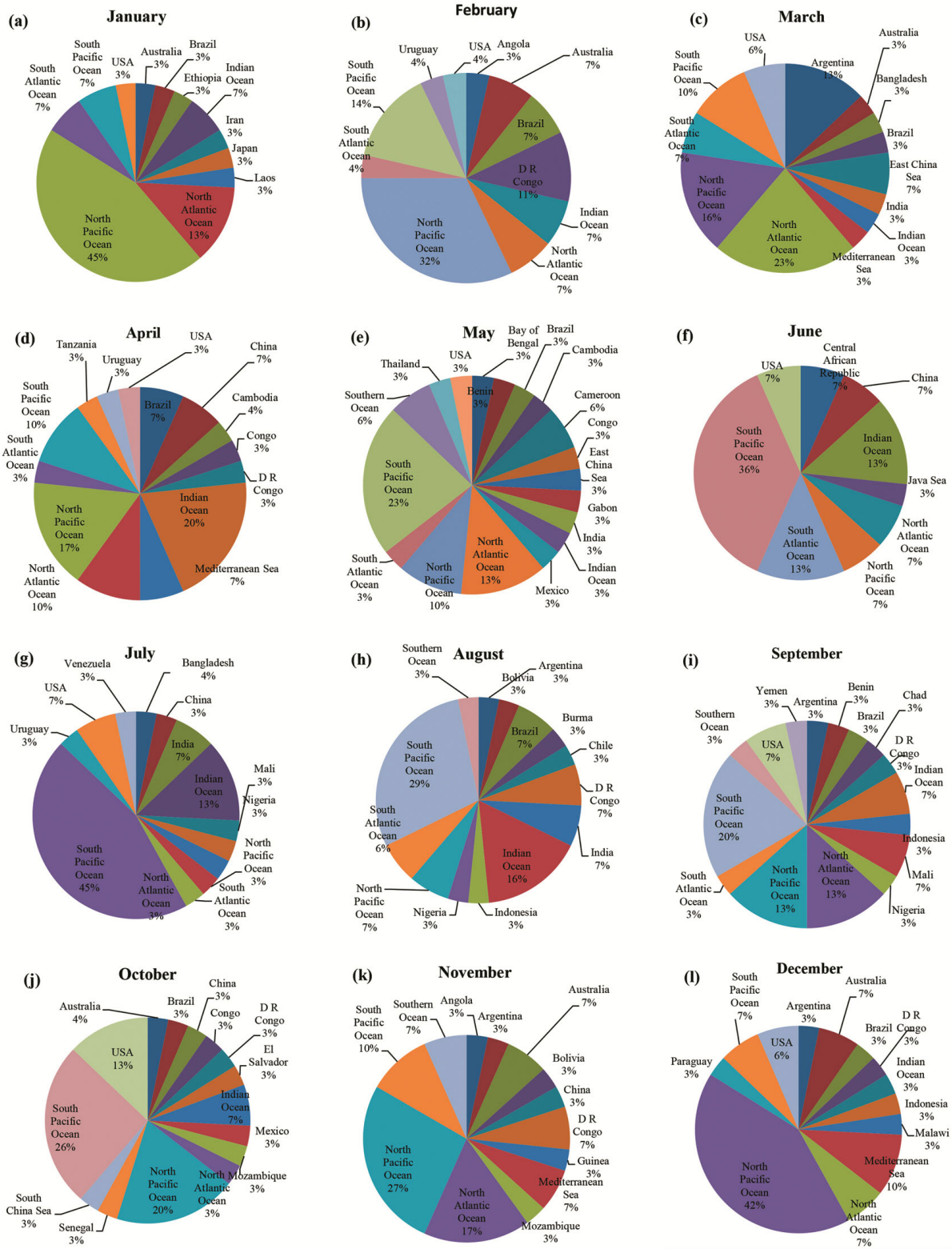


Fig. S4 — (a – l) Occurrence of BBI<sub>max</sub> in the 36N-36S in 2002

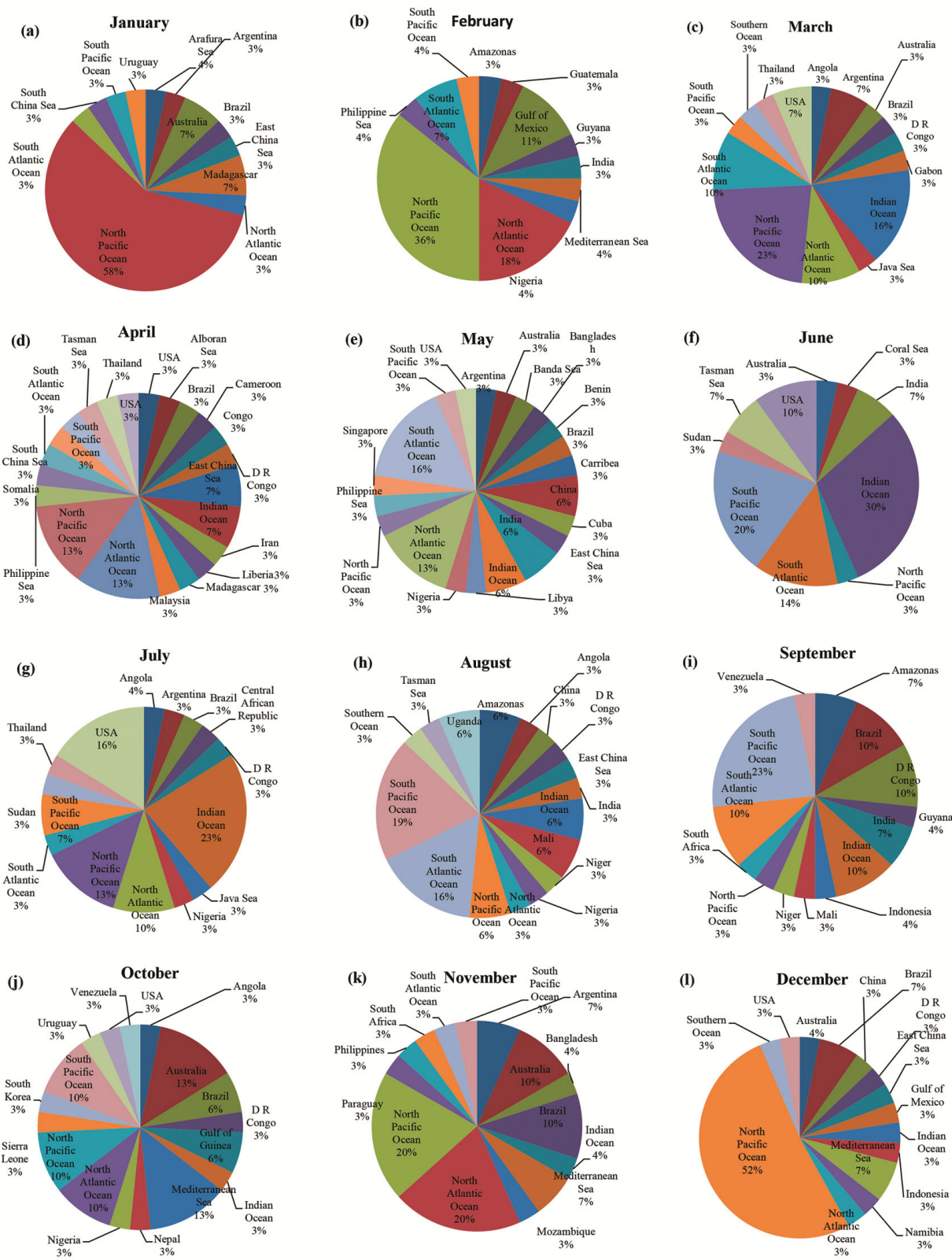


Fig. S5 — (a – l) Occurrence of BBI<sub>MX</sub> in the 36N-36S in 2007

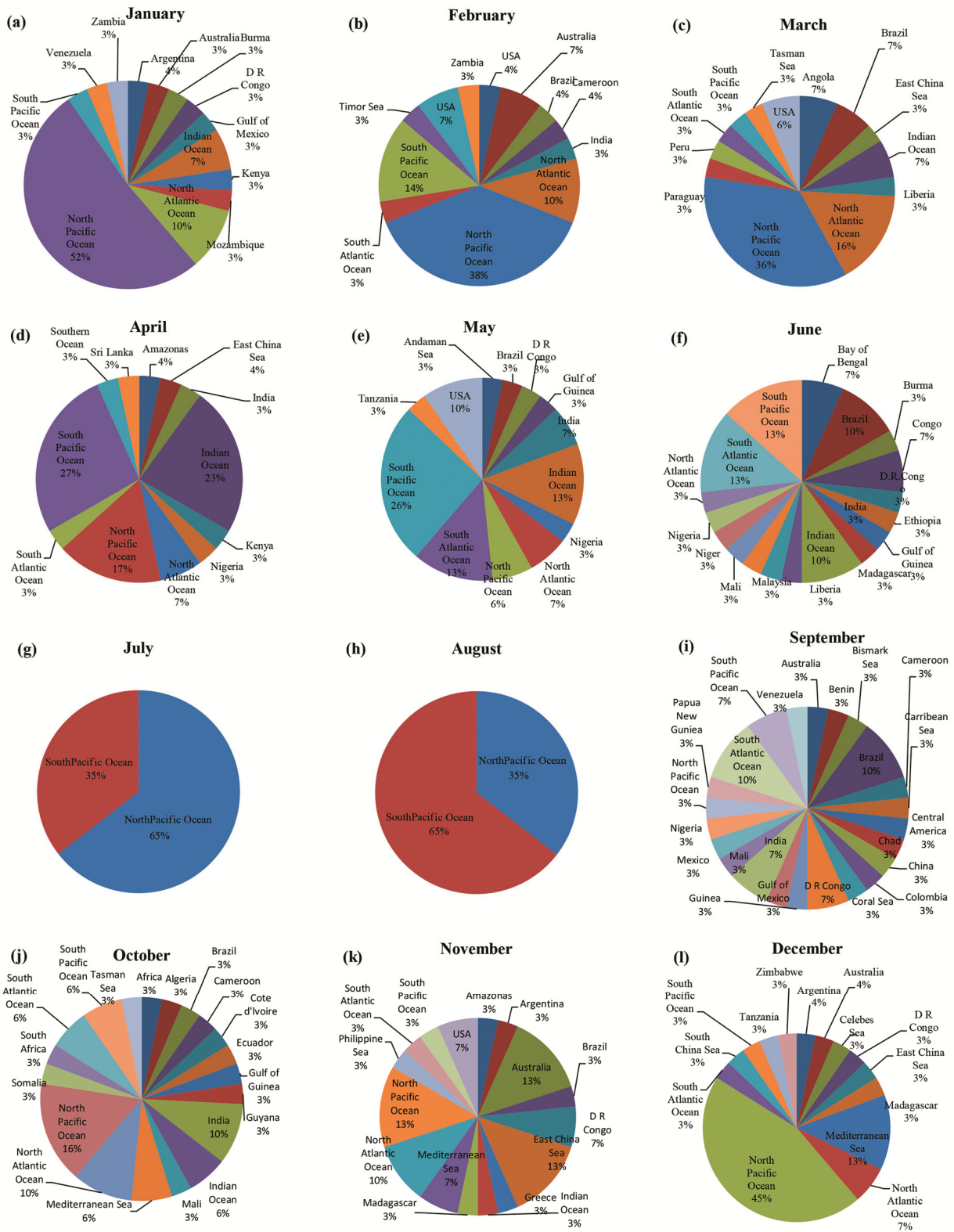


Fig. S6 — (a – l) Occurrence of  $BBI_{mx}$  in the 36N-36S in 2008

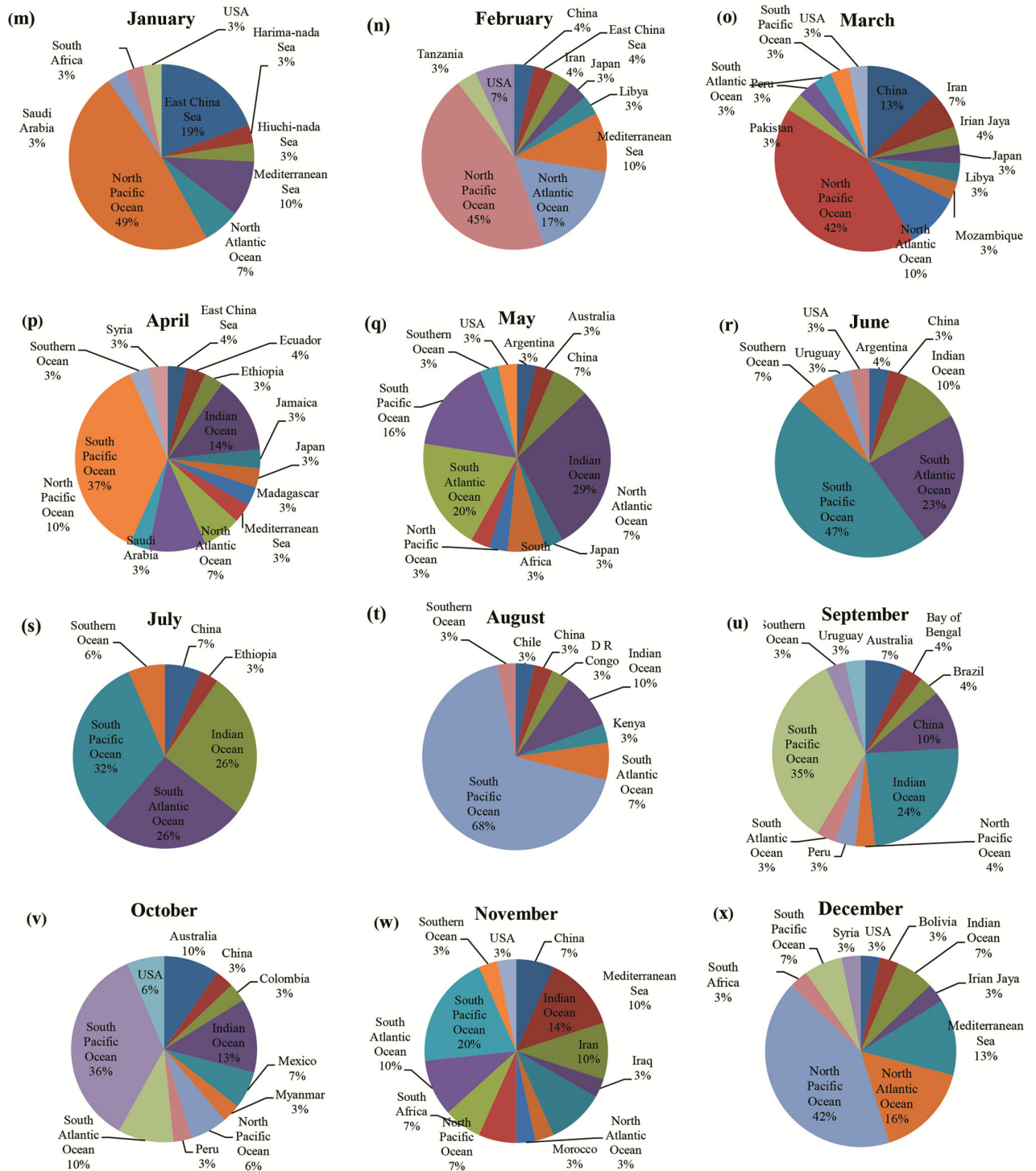


Fig. S7 — (m – x) Occurrence of  $BBI_{min}$  in the 36N-36S in 2000

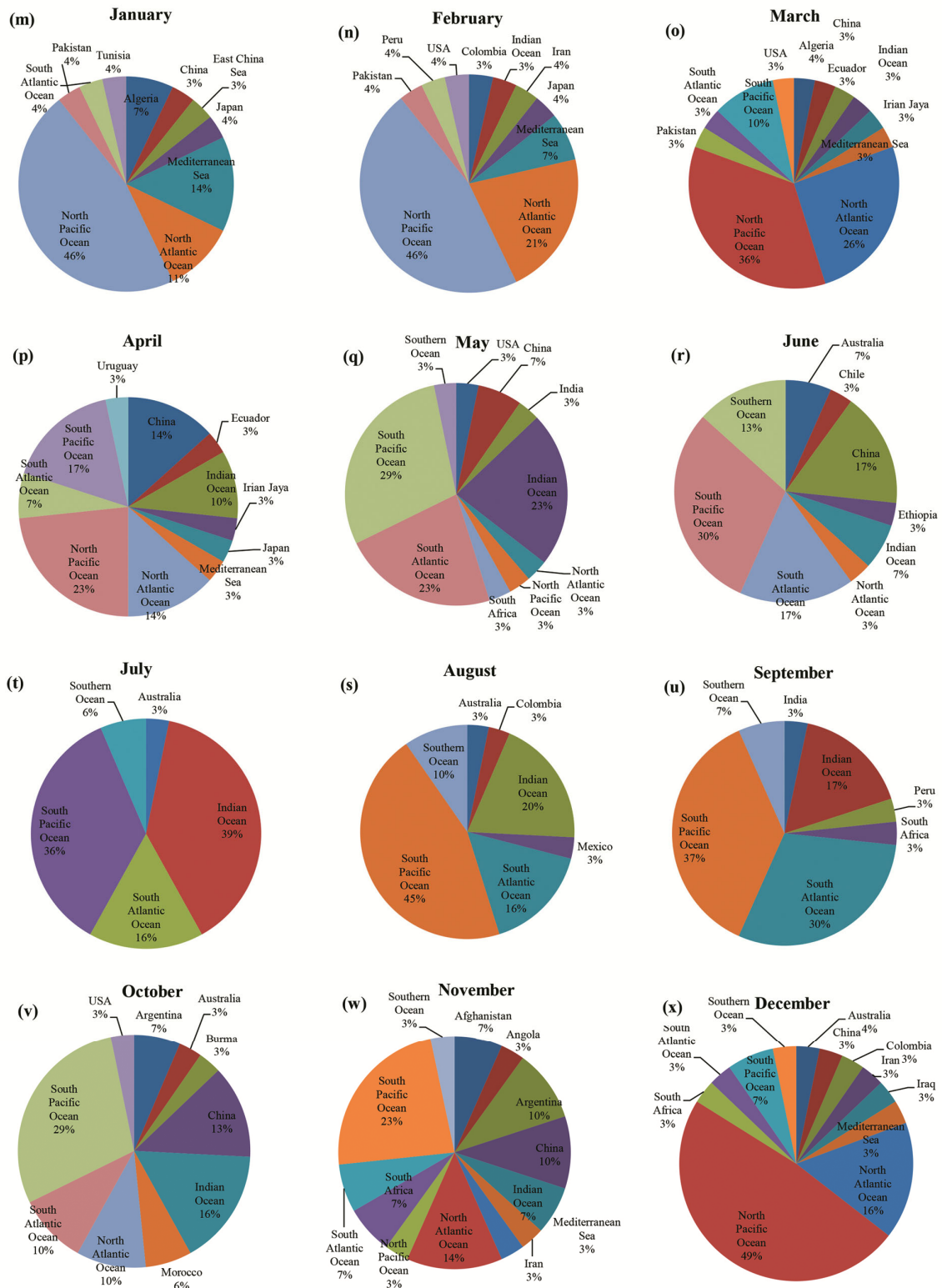


Fig. S8 — (m – x) Occurrence of BBI<sub>mn</sub> in the 36N-36S in 1999

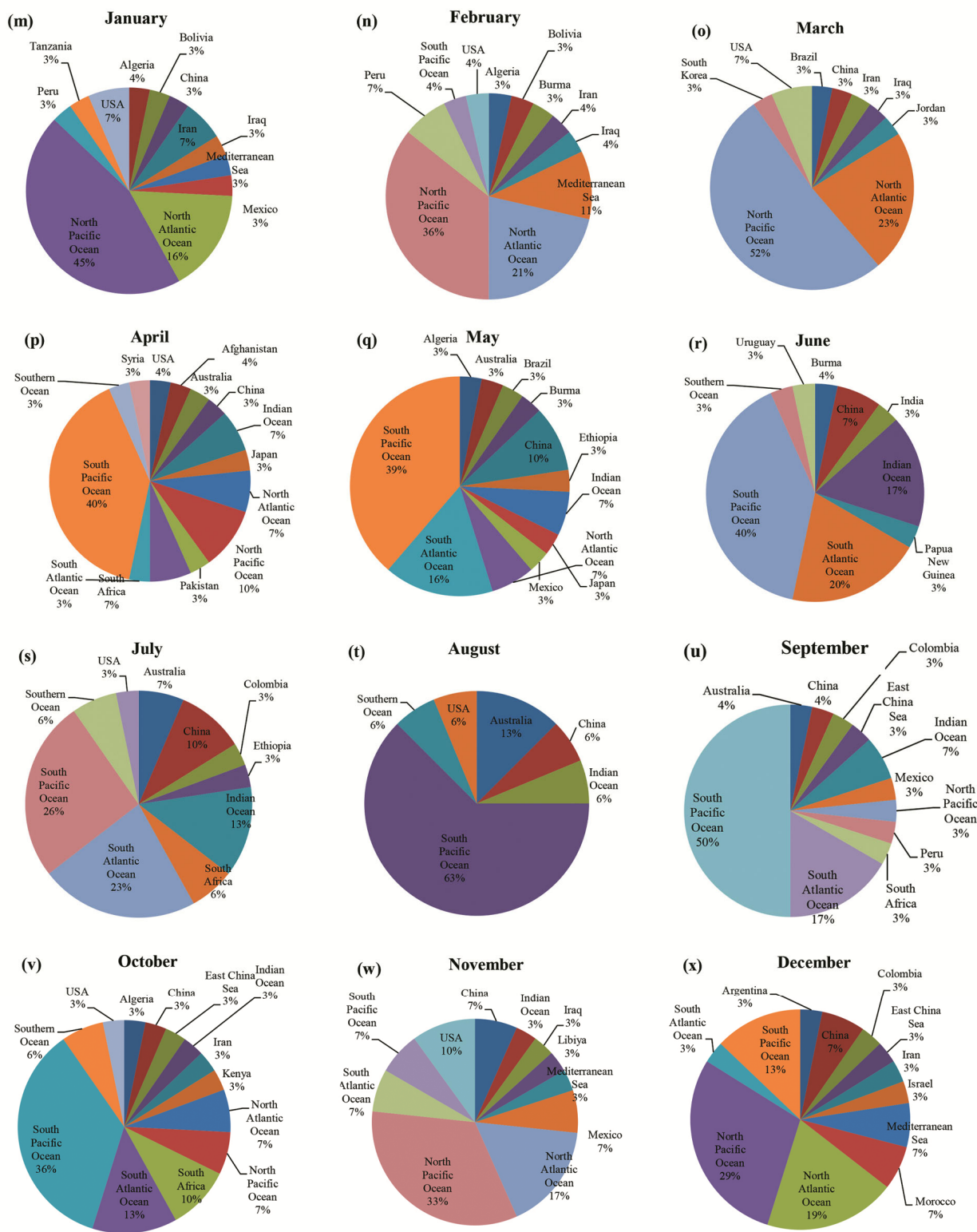


Fig. S9 — (m – x) Occurrence of BBI<sub>mn</sub> in the 36N-36S in 2001

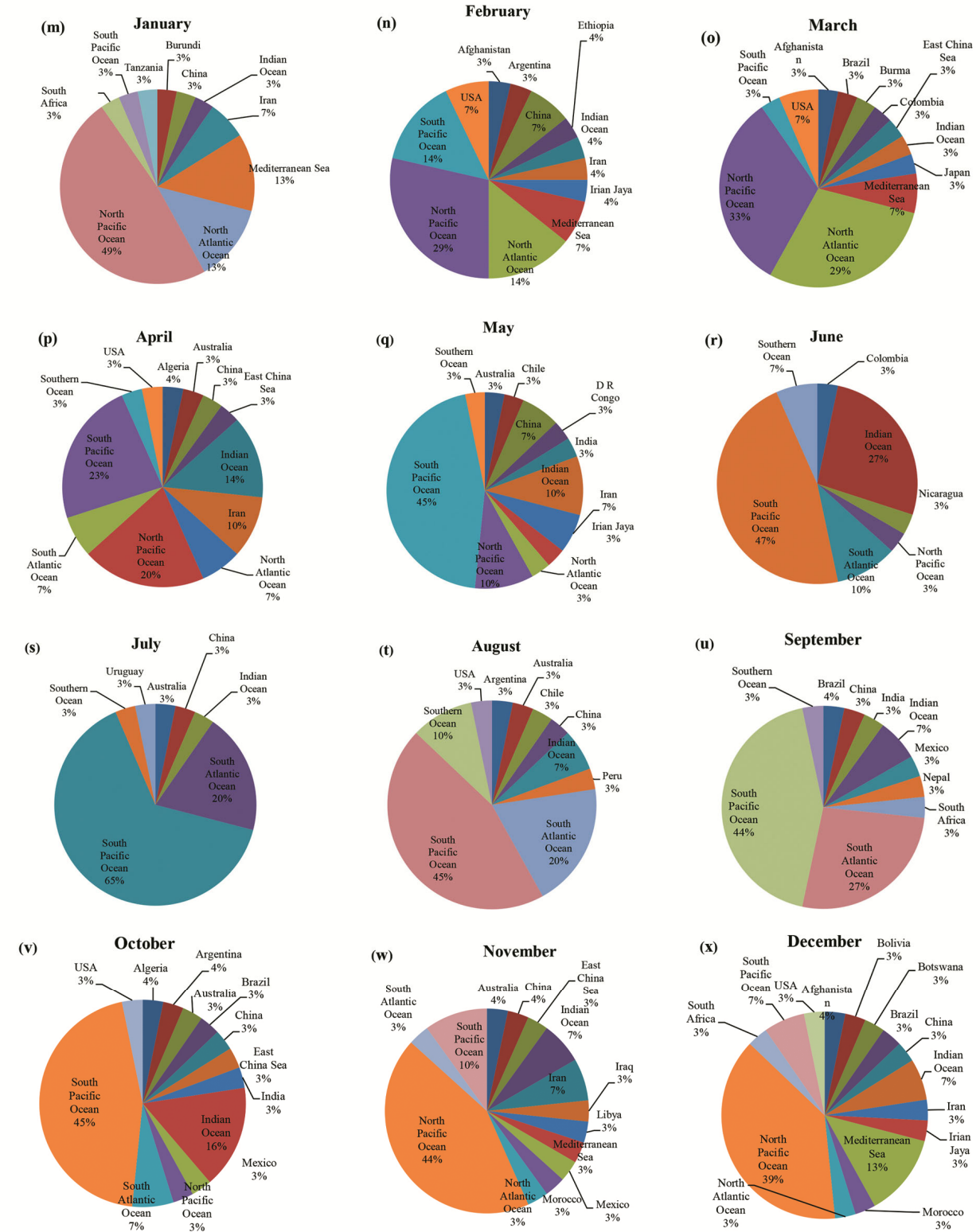


Fig. S10 — (m – x) Occurrence of BBI<sub>mn</sub> in the 36N-36S in 2002

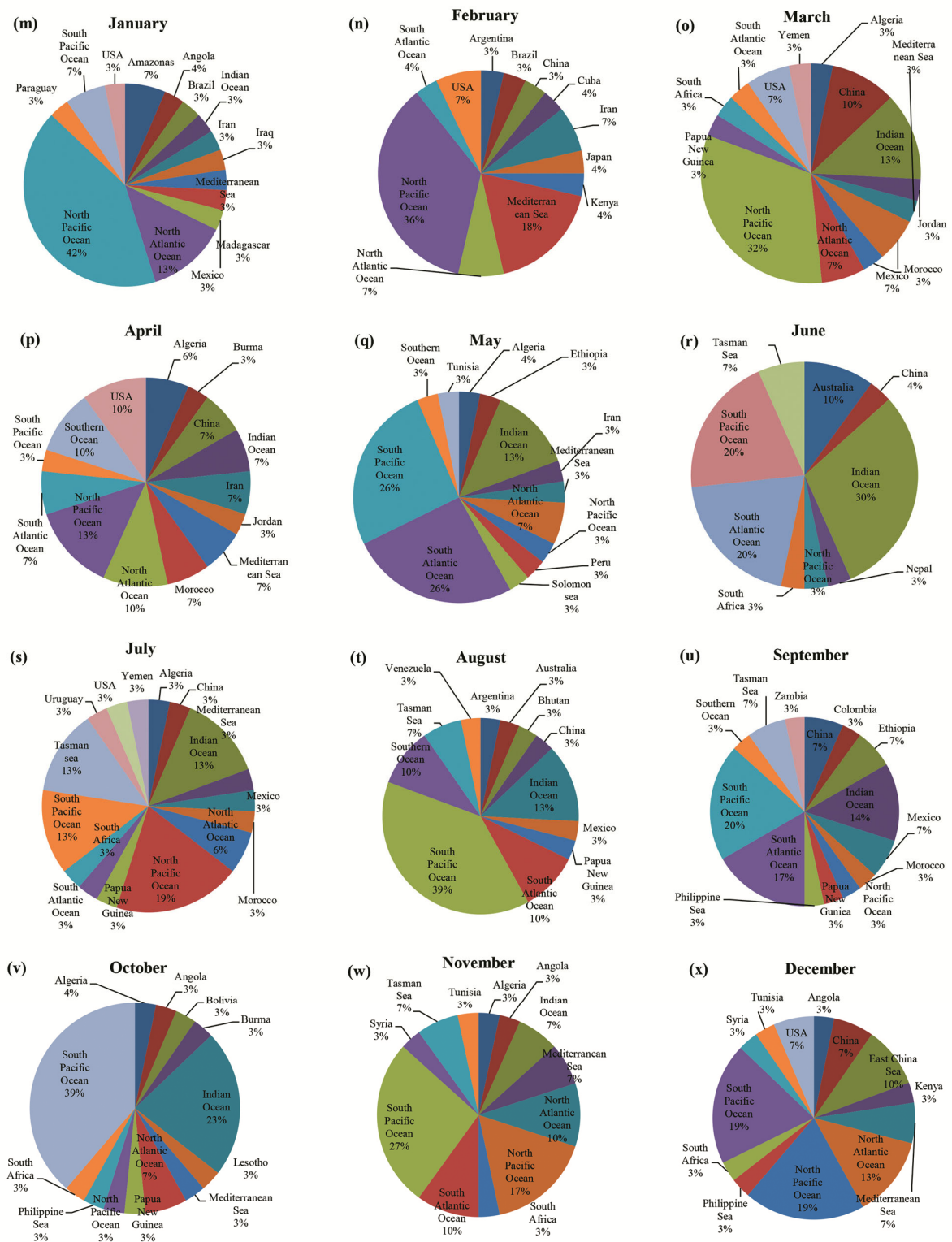


Fig. S11 — (m – x) Occurrence of  $BBI_{min}$  in the 36N-36S in 2007

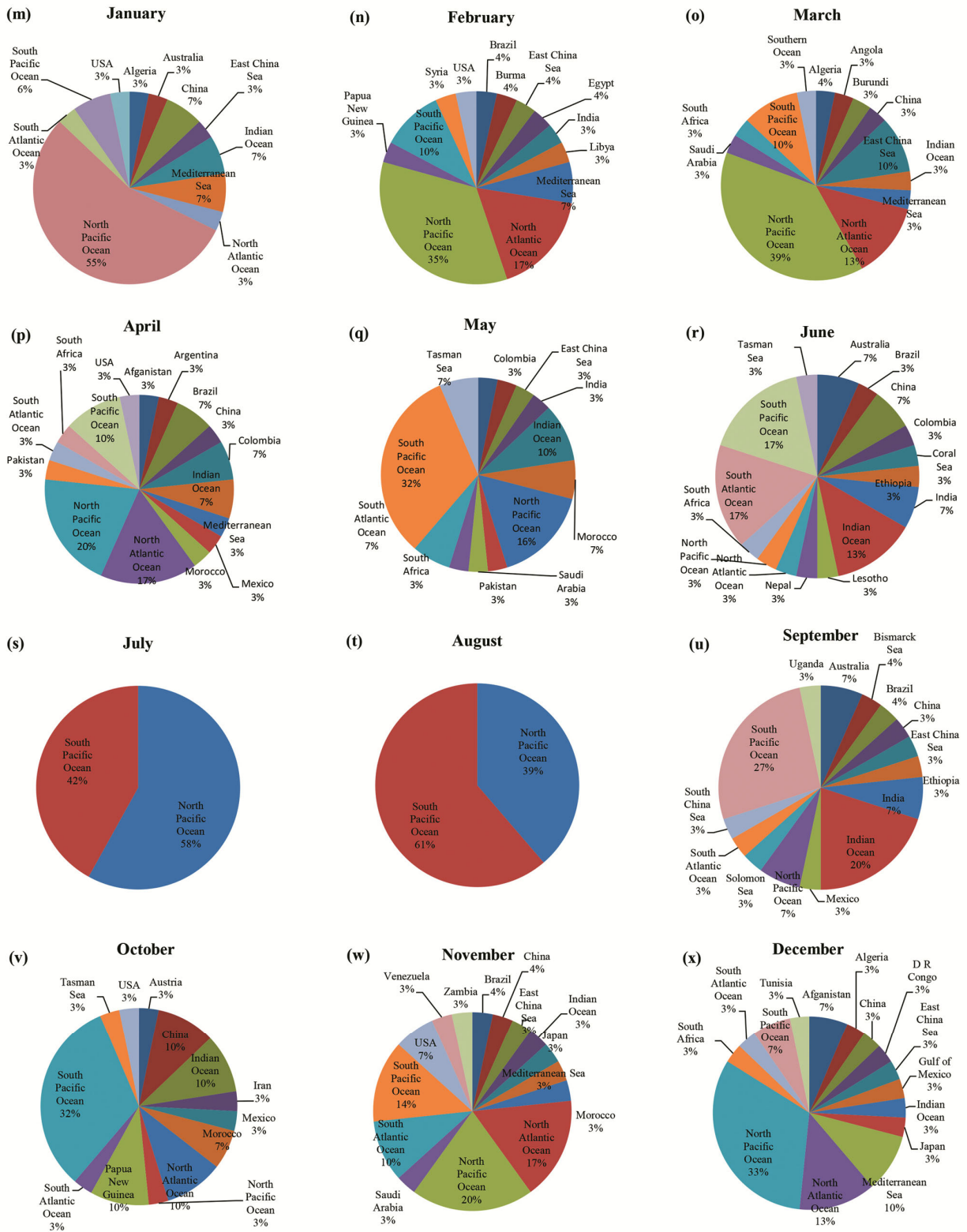


Fig. S12 — (m – x) Occurrence of  $BBI_{min}$  in the 36N-36S in 2008

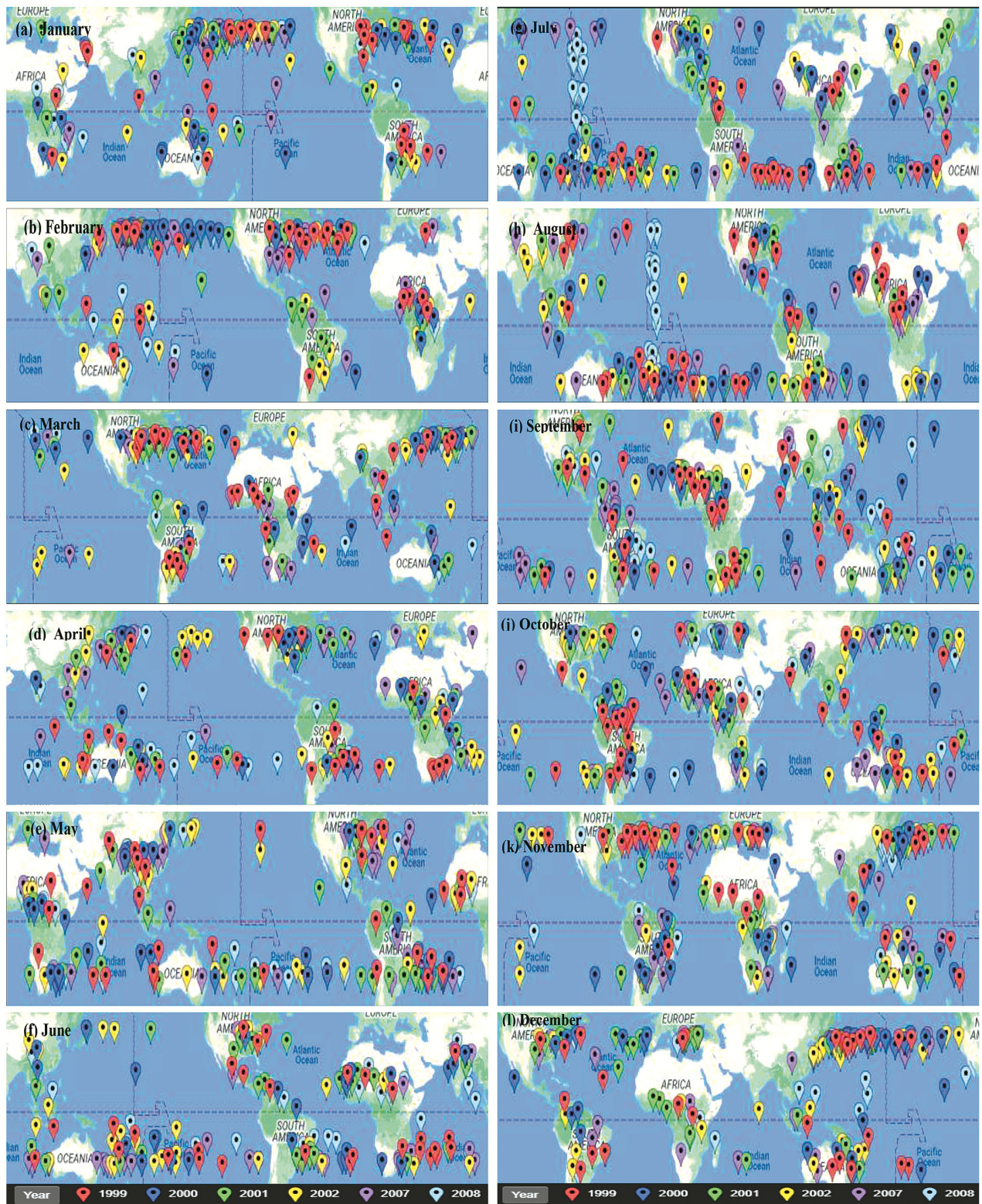


Fig. S13 — (a – l) North-South migration of  $BBI_{max}$  with the season

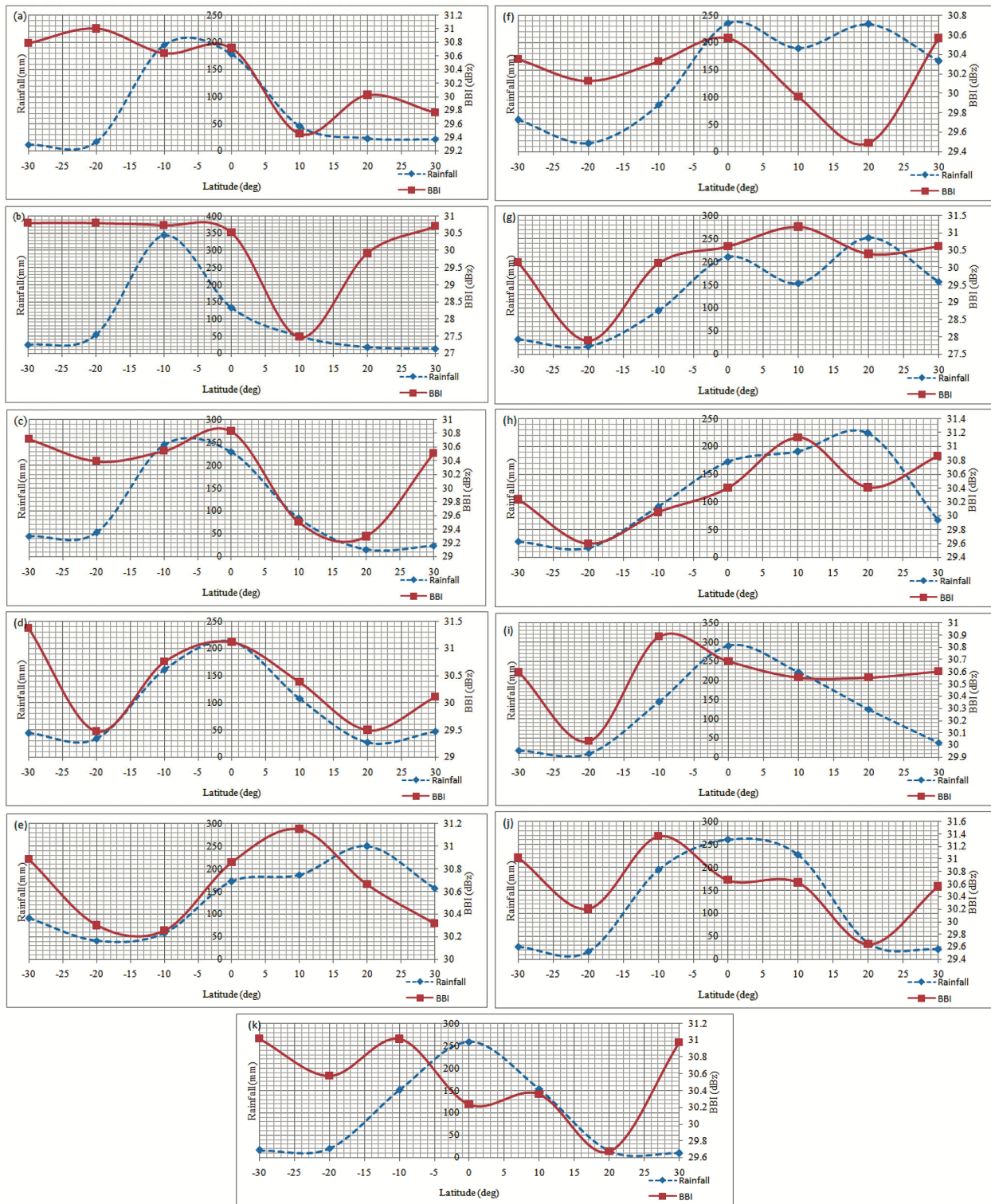


Fig. S14 — Variation of BBI and rainfall with latitude in (a) January, (b) February, (c) March, (d) April, (e) June, (f) July, (g) August, (h) September, (i) October, (j) November, and (k) December, 2007

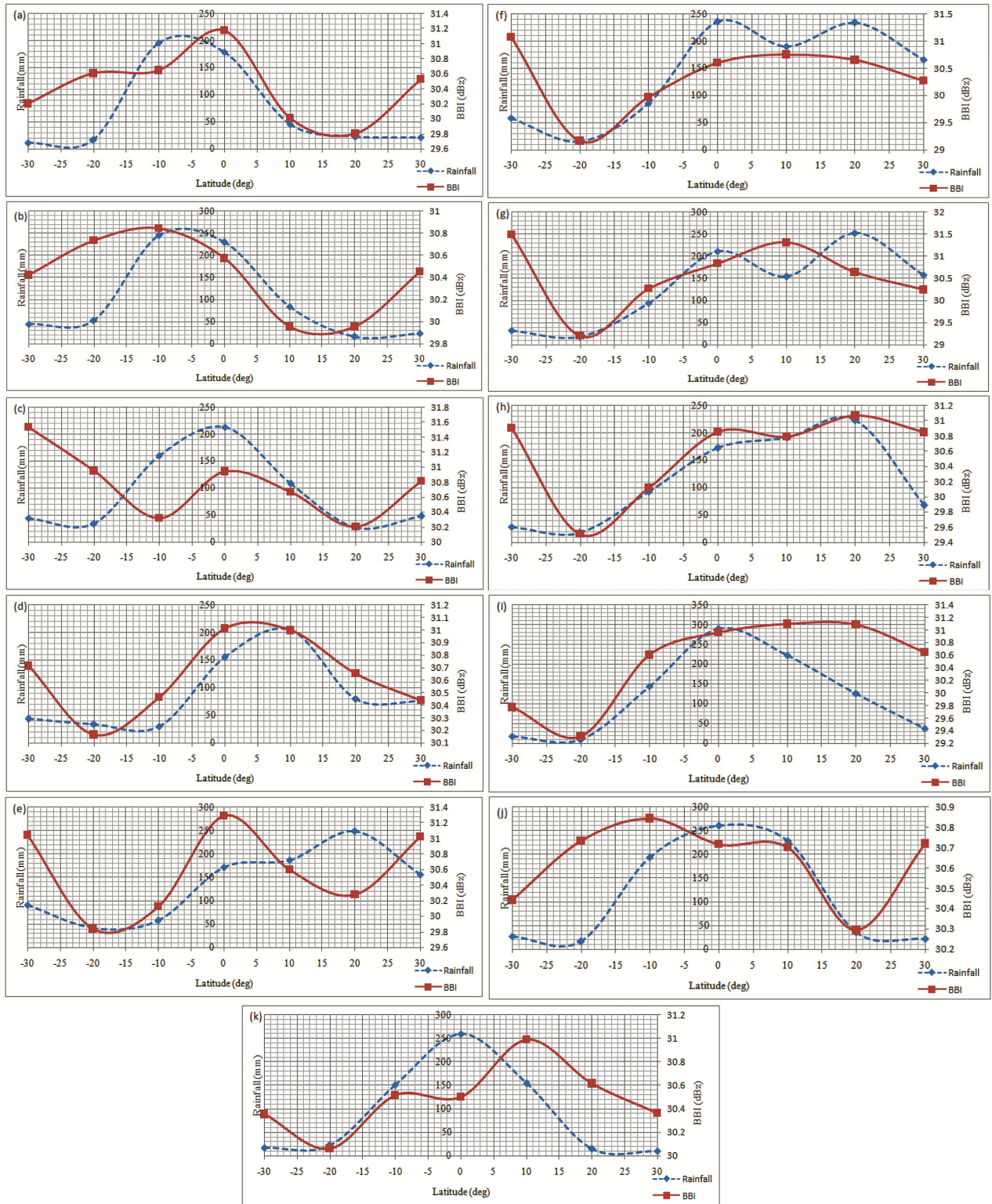


Fig. S15 — Variation of BBI and rainfall with latitude in (a) January, (b) March, (c) April, (d) May, (e) June, (f) July, (g) August, (h) September, (i) October, (j) November, and (k) December, 2008