

# **Life Period of Cyclonic Disturbances over the North Indian Ocean during recent years**

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Regional Specialized Meteorological Centre (RSMC), New Delhi, has prepared life period of cyclonic disturbances for different seasons and year as a whole over the Bay of Bengal (BOB), Arabian Sea (AS) and North Indian Ocean (NIO) from 1990 to the present. Also, the duration of different stages of cyclonic disturbances, viz., depression (D) with maximum sustained surface wind speed (MSW) of 17-27 knots, deep depression (DD) with MSW of 28-33 knots, cyclonic storm (CS) with MSW of 34-47 knots, severe cyclonic storm (SCS) with MSW of 48-63 knots, very severe cyclonic storm (VSCS) with MSW of 64-119 knots and super cyclonic storm (SuCS) with MSW of 120 knots or more. The category of extremely severe cyclonic storm has been merged with the category of VSCS.

These are presented in Table 1 to Table 5 for cyclonic disturbances (Depression and above) and Table 5 to Table 8 for tropical cyclones (cyclonic storm and above). For details about the data and for referring this data for further research the following publication may kindly be referred.

S.V.J. Kumar, V.Vijay Kumar, S.S. Ashthikar and M. Mohapatra, 2016, Life Period of Cyclonic Disturbances over the North Indian Ocean during recent years in Tropical Cyclone Activity over the North Indian Ocean, Co-published by Springer and Capital Publishers Pvt Ltd, New Delhi, pp.169-184



**Table 2. Duration (hrs) of cyclonic disturbances in different stages over the NIO from 1990-2020 in pre-monsoon**

Year	Bay of Bengal							Arabian Sea							NIO						
	D	DD	CS	SCS	VSCS	SuCS	Total	D	DD	CS	SCS	VSCS	SuCS	Total	D	DD	CS	SCS	VSCS	SuCS	Total
1990	18	12	18	12	72	18	150	0	0	0	0	0	0	0	18	12	18	12	72	18	150
1991	30	24	48	24	42	24	192	0	0	0	0	0	0	0	30	24	48	24	42	24	192
1992	30	24	30	0	0	0	84	0	0	0	0	0	0	0	30	24	30	0	0	0	84
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	75	9	24	12	41	0	161	0	0	0	0	0	0	0	75	9	24	12	41	0	161
1995	90	69	0	0	0	0	159	0	0	0	0	0	0	0	90	69	0	0	0	0	159
1996	15	9	0	0	0	0	24	0	0	0	0	0	0	0	15	9	0	0	0	0	24
1997	12	15	30	18	39	0	114	0	0	0	0	0	0	0	12	15	30	18	39	0	114
1998	18	12	21	21	0	0	72	24	0	0	0	0	0	24	42	12	21	21	0	0	96
1999	0	0	0	0	0	0	0	6	18	30	6	84	0	144	6	18	30	6	84	0	144
2000	39	12	21	0	0	0	72	0	0	0	0	0	0	0	39	12	21	0	0	0	72
2001	0	0	0	0	0	0	0	18	12	45	30	78	0	183	18	12	45	30	78	0	183
2002	9	15	0	0	0	0	24	48	27	27	0	0	0	102	57	42	27	0	0	0	126
2003	9	78	75	36	36	0	234	0	0	0	0	0	0	0	9	78	75	36	36	0	234
2004	9	9	27	9	12	0	66	6	9	81	33	0	0	129	15	18	108	42	12	0	195
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	3	45	18	45	0	117	0	0	0	0	0	0	0	6	3	45	18	45	0	117
2007	57	6	21	0	0	0	84	0	0	0	0	0	0	0	57	6	21	0	0	0	84
2008	9	12	15	27	90	0	153	0	0	0	0	0	0	0	9	12	15	27	90	0	153
2009	51	21	75	9	0	0	156	0	0	0	0	0	0	0	51	21	75	9	0	0	156
2010	12	15	45	30	0	0	102	66	66	57	27	45	0	261	78	81	102	57	45	0	363
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	66	21	129	0	0	0	216	0	0	0	0	0	0	0	66	21	129	0	0	0	216
2014	48	0	0	0	0	0	48	0	0	0	0	0	0	0	48	0	0	0	0	0	48
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	27	30	63	0	0	0	120	42	0	0	0	0	0	42	69	30	63	0	0	0	162
2017	27	24	51	21	0	0	123	0	0	0	0	0	0	0	27	24	51	21	0	0	123
2018	15	9	0	0	0	0	24	78	24	87	12	69	0	270	93	33	87	12	69	0	294
2019	27	9	57	18	90	0	201	0	0	0	0	0	0	0	27	9	57	18	90	0	201
2020	12	6	24	9	63	24	138	54	0	0	0	0	0	54	66	6	24	9	63	24	192

Table 3. Duration (hrs) of cyclonic disturbances in different stages over the NIO from 1990-2020 in Monsoon

Year	Bay of Bengal							Arabian Sea							NIO							
	D	DD	CS	SCS	VSCS	SuCS	Total	D	DD	CS	SCS	VSCS	SuCS	Total	D	DD	CS	SCS	VSCS	SuCS	Total	
1990	264	6	0	0	0	0	270	0	0	0	0	0	0	0	264	6	0	0	0	0	0	270
1991	216	0	0	0	0	0	216	0	0	0	0	0	0	0	216	0	0	0	0	0	0	216
1992	84	102	0	0	0	0	186	30	48	24	0	0	0	102	114	150	24	0	0	0	0	288
1993	33	24	0	0	0	0	57	0	0	0	0	0	0	0	33	24	0	0	0	0	0	57
1994	63	15	0	0	0	0	78	21	21	42	6	0	0	90	84	36	42	6	0	0	0	168
1995	90	0	0	0	0	0	90	0	0	0	0	0	0	0	90	0	0	0	0	0	0	90
1996	15	21	60	0	0	0	96	21	21	24	9	0	0	75	36	42	84	9	0	0	0	171
1997	174	387	63	6	0	0	630	0	0	0	0	0	0	0	174	387	63	6	0	0	0	630
1998	12	24	0	0	0	0	36	30	30	27	36	48	0	171	42	54	27	36	48	0	207	
1999	108	36	0	0	0	0	144	0	0	0	0	0	0	0	108	36	0	0	0	0	0	144
2000	21	0	0	0	0	0	21	0	0	0	0	0	0	0	21	0	0	0	0	0	0	21
2001	33	0	0	0	0	0	33	12	27	48	0	0	0	87	45	27	48	0	0	0	0	120
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	57	39	0	0	0	0	96	0	0	0	0	0	0	0	57	39	0	0	0	0	0	96
2004	24	54	0	0	0	0	78	36	81	27	15	0	0	159	60	135	27	15	0	0	0	237
2005	207	72	33	0	0	0	312	120	0	0	0	0	0	120	327	72	33	0	0	0	0	432
2006	297	102	0	0	0	0	399	9	24	21	33	0	0	87	306	126	21	33	0	0	0	486
2007	234	159	0	0	0	0	393	18	15	25	21	69	6	154	252	174	25	21	69	6	547	
2008	96	54	0	0	0	0	150	48	0	0	0	0	0	48	144	54	0	0	0	0	0	198
2009	18	72	0	0	0	0	90	42	0	0	0	0	0	42	60	72	0	0	0	0	0	132
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	99	96	0	0	0	0	195	24	0	0	0	0	0	24	123	96	0	0	0	0	0	219
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	48	0	0	0	0	0	48	0	0	0	0	0	0	0	48	0	0	0	0	0	0	48
2014	46	39	0	0	0	0	85	24	9	57	0	0	0	90	70	48	57	0	0	0	0	175
2015	165	33	27	0	0	0	225	69	42	87	0	0	0	198	234	75	114	0	0	0	0	423
2016	30	78	0	0	0	0	108	0	0	0	0	0	0	0	30	78	0	0	0	0	0	108
2017	39	24	0	0	0	0	63	0	0	0	0	0	0	0	39	24	0	0	0	0	0	63
2018	75	9	0	0	0	0	84	0	0	0	0	0	0	0	75	9	0	0	0	0	0	84
2019	54	24	0	0	0	0	78	24	33	45	46	15	0	163	78	57	45	46	15	0	0	241
2020	0	0	0	0	0	0	0	36	15	21	12	0	0	84	36	15	21	12	0	0	0	84

Table 4 .Duration (hrs) of cyclonic disturbances in different stages over the NIO from 1990-2020 in Post-monsoon

Year	Bay of Bengal							Arabian Sea							NIO						
	D	DD	CS	SCS	VSCS	SuCS	Total	D	DD	CS	SCS	VSCS	SuCS	Total	D	DD	CS	SCS	VSCS	SuCS	Total
1990	138	72	36	18	0	0	264	36	12	0	0	0	0	48	174	84	36	18	0	0	312
1991	132	12	42	0	0	0	186	0	0	0	0	0	0	0	132	12	42	0	0	0	186
1992	102	180	90	90	6	0	468	96	60	54	0	0	0	210	198	240	144	90	6	0	678
1993	30	42	15	9	24	0	120	54	24	39	9	12	0	138	84	66	54	18	36	0	258
1994	81	30	15	18	0	0	144	24	9	69	9	9	0	120	105	39	84	27	9	0	264
1995	27	24	45	30	51	0	177	39	27	60	0	0	0	126	66	51	105	30	51	0	303
1996	117	84	55	65	45	0	366	63	24	9	33	0	0	129	180	108	64	98	45	0	495
1997	3	6	120	0	0	0	129	12	54	0	0	0	0	66	15	60	120	0	0	0	195
1998	66	108	45	30	24	0	273	126	93	45	42	0	0	306	192	201	90	72	24	0	579
1999	85	27	57	36	57	21	283	0	0	0	0	0	0	0	85	27	57	36	57	21	283
2000	129	123	84	30	63	0	429	0	0	0	0	0	0	0	129	123	84	30	63	0	429
2001	42	9	24	0	0	0	75	9	12	18	0	0	0	39	51	21	42	0	0	0	114
2002	147	60	126	3	0	0	336	0	0	0	0	0	0	0	147	60	126	3	0	0	336
2003	144	42	30	33	0	0	249	18	15	18	30	0	0	81	162	57	48	63	0	0	330
2004	51	0	0	0	0	0	51	108	48	33	12	0	0	201	159	48	33	12	0	0	252
2005	204	162	138	0	0	0	504	0	0	0	0	0	0	0	204	162	138	0	0	0	504
2006	12	6	18	0	0	0	36	0	0	0	0	0	0	0	12	6	18	0	0	0	36
2007	42	9	15	6	75	0	147	18	120	0	0	0	0	138	60	129	15	6	75	0	285
2008	93	114	63	0	0	0	270	66	24	0	0	0	0	90	159	138	63	0	0	0	360
2009	33	48	33	0	0	0	114	24	21	18	0	0	0	63	57	69	51	0	0	0	177
2010	168	42	45	39	18	0	312	0	0	0	0	0	0	0	168	42	45	39	18	0	312
2011	33	42	39	6	39	0	159	225	93	15	0	0	0	333	258	135	54	6	39	0	492
2012	72	78	39	0	0	0	189	51	63	30	0	0	0	144	123	141	69	0	0	0	333
2013	204	75	96	111	147	0	633	0	78	0	0	0	0	78	204	153	96	111	147	0	711
2014	87	48	27	33	21	48	264	30	6	27	21	36	27	147	117	54	54	54	57	75	411
2015	18	33	0	0	0	0	51	66	63	66	27	159	0	381	84	96	66	27	159	0	432
2016	210	90	114	24	45	0	483	27	0	0	0	0	0	27	237	90	114	24	45	0	510
2017	222	54	27	18	81	0	402	0	0	0	0	0	0	0	222	54	27	18	81	0	402
2018	120	192	162	48	33	0	555	33	24	72	30	51	0	210	153	216	234	78	84	0	765
2019	27	33	27	18	0	0	105	132	120	105	114	123	0	594	159	153	132	132	123	0	699
2020	153	72	48	0	0	0	273	75	39	33	27	33	0	207	228	111	81	27	33	0	480

Table 5 .Duration (hrs) of cyclonic disturbances in different stages over the NIO from 1990-2020 in years as a whole

Year	Bay of Bengal							Arabian Sea							NIO						
	D	DD	CS	SCS	VSCS	SuCS	Total	D	DD	CS	SCS	VSCS	SuCS	Total	D	DD	CS	SCS	VSCS	SuCS	Total
1990	420	90	54	30	72	18	684	36	12	0	0	0	0	48	456	102	54	30	72	18	732
1991	378	36	90	24	42	24	594	0	0	0	0	0	0	0	378	36	90	24	42	24	594
1992	216	306	120	90	6	0	738	126	108	78	0	0	0	312	342	414	198	90	6	0	1050
1993	63	66	15	9	24	0	177	54	24	39	9	12	0	138	117	90	54	18	36	0	315
1994	219	54	39	30	41	0	383	45	30	111	15	9	0	210	264	84	150	45	50	0	593
1995	207	93	45	30	51	0	426	39	27	60	0	0	0	126	246	120	105	30	51	0	552
1996	147	114	115	65	45	0	486	84	45	33	42	0	0	204	231	159	148	107	45	0	690
1997	189	408	213	24	39	0	873	12	54	0	0	0	0	66	201	462	213	24	39	0	939
1998	96	144	66	51	24	0	381	180	123	72	78	48	0	501	276	267	138	129	72	0	882
1999	226	78	66	36	57	21	484	6	18	30	6	84	0	144	232	96	96	42	141	21	628
2000	189	135	105	30	63	0	522	0	0	0	0	0	0	0	189	135	105	30	63	0	522
2001	75	9	24	0	0	0	108	39	51	111	30	78	0	309	114	60	135	30	78	0	417
2002	156	75	126	3	0	0	360	48	27	27	0	0	0	102	204	102	153	3	0	0	462
2003	210	159	105	69	36	0	579	18	15	18	30	0	0	81	228	174	123	99	36	0	660
2004	84	63	27	9	12	0	195	150	138	141	60	0	0	489	234	201	168	69	12	0	684
2005	429	267	216	0	0	0	912	120	0	0	0	0	0	120	549	267	216	0	0	0	1032
2006	315	111	63	18	45	0	552	36	33	21	33	0	0	123	351	144	84	51	45	0	675
2007	333	174	36	6	75	0	624	36	135	25	21	69	6	292	369	309	61	27	144	6	916
2008	198	180	78	27	90	0	573	114	24	0	0	0	0	138	312	204	78	27	90	0	711
2009	102	141	108	9	0	0	360	66	21	18	0	0	0	105	168	162	126	9	0	0	465
2010	180	57	90	69	18	0	414	66	66	57	27	45	0	261	246	123	147	96	63	0	675
2011	147	138	39	6	39	0	369	249	93	15	0	0	0	357	396	231	54	6	39	0	726
2012	72	78	39	0	0	0	189	51	63	30	0	0	0	144	123	141	69	0	0	0	333
2013	318	96	225	111	147	0	897	0	78	0	0	0	0	78	318	174	225	111	147	0	975
2014	181	87	27	33	21	48	397	54	15	84	21	36	27	237	235	102	111	54	57	75	634
2015	185	66	27	0	0	0	276	135	105	153	27	159	0	579	318	171	180	27	159	0	855
2016	267	198	177	24	45	0	711	69	0	0	0	0	0	69	336	198	177	24	45	0	780
2017	288	102	78	39	81	0	588	0	0	0	0	0	0	0	288	102	78	39	81	0	588
2018	210	210	162	48	33	0	663	111	48	159	42	120	0	480	321	258	321	90	153	0	1143
2019	132	84	126	36	90	0	468	156	153	150	160	138	0	757	288	237	276	196	228	0	1225
2020	165	78	72	9	63	24	411	165	54	54	39	33	0	345	330	132	126	48	96	24	756

