

**Average NHC Eastern North Pacific Track Forecast Errors (n mi)**  
**All Tropical Cyclones<sup>1, 2</sup>**

Year	0 h		12 h		24 h		36 h		48 h		72 h		96 h <sup>3</sup>		120 h <sup>3</sup>	
	Error	N	Error	N	Error	N	Error	N	Error	N	Error	N	Error	N	Error	N
1989	16.6	248	46.9	247	89.6	241	132.1	227	176.5	203	256.9	155				
1990	14.1	566	41.9	548	76.8	519	113.4	474	152.4	437	216.1	364				
1991	14.2	420	39.5	407	73.2	376	110.1	351	145.0	325	206.7	278				
1992	23.8	675	39.9	651	73.5	615	108.8	561	144.7	519	211.4	432				
1993	11.4	391	41.5	376	77.8	349	113.2	318	147.0	295	209.1	247				
1994	13.0	322	40.3	304	77.0	280	111.8	258	143.3	234	201.5	187				
1995	12.3	265	39.3	252	76.5	232	115.2	211	148.2	189	190.2	149				
1996	15.9	219	44.7	202	76.5	179	102.4	148	122.6	122	184.8	86				
1997	12.1	390	38.7	370	75.3	336	113.5	294	150.8	256	224.7	197				
1998	10.3	321	36.3	306	70.5	281	104.7	257	132.1	231	183.0	187				
1999	10.5	204	36.1	189	62.6	165	87.8	144	112.4	126	155.6	102				
2000	10.8	328	36.0	298	66.1	266	93.5	236	114.9	205	161.7	151				
2001	10.2	321	38.7	292	68.5	262	92.1	234	115.2	208	163.5	156	202.1	107	218.9	73
2002	8.6	301	36.4	275	59.6	245	81.4	216	99.0	188	137.4	143	191.4	103	227.9	70
2003	9.7	287	35.6	258	64.3	228	91.4	198	116.1	169	173.0	118	248.2	73	340.0	36
2004	8.5	239	30.5	212	51.9	184	72.7	158	93.0	135	136.3	97	201.4	72	308.0	45
2005	9.1	290	33.0	263	53.4	233	71.7	203	86.2	177	112.4	138	138.4	110	160.6	89
2006	8.8	379	30.2	341	54.5	302	77.4	264	99.7	228	142.3	159	186.1	107	227.5	71
2007	10.2	233	30.0	208	50.2	182	71.4	156	92.5	140	117.2	108	146.9	77	186.3	52
2008	10.7	311	30.9	275	47.5	239	63.7	205	78.0	175	107.6	124	138.8	85	161.4	53
2009	9.7	268	29.5	236	50.9	204	71.9	173	89.0	143	119.2	99	162.5	69	240.4	45
2010	9.0	161	26.0	138	40.1	115	48.6	97	54.7	83	85.3	63	119.3	43	145.4	29
2011	9.7	258	25.1	234	40.4	213	53.2	193	68.6	171	103.3	129	149.2	93	166.1	58
2012	9.2	310	23.2	278	36.1	246	49.2	214	63.8	183	88.6	125	107.6	76	100.7	39
2013	12.1	288	25.3	255	40.2	222	51.3	189	63.1	159	89.9	111	125.5	78	166.6	56
2014	7.6	439	20.3	405	29.9	367	38.5	327	50.1	293	82.4	237	119.4	188	177.0	136

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Year	0 h		12 h		24 h		36 h		48 h		72 h		96 h <sup>3</sup>		120 h <sup>3</sup>	
	Error	N	Error	N	Error	N	Error	N	Error	N	Error	N	Error	N	Error	N
2015	8.9	350	25.5	319	38.1	288	49.4	260	60.2	234	85.1	188	117.8	146	159.5	115
2016	7.7	391	18.5	359	28.7	323	37.4	288	46.1	256	63.7	196	82.5	154	104.2	119
2017	8.3	334	20.7	297	31.9	260	43.1	226	55.7	199	84.5	159	108.0	120	136.0	86
2018	7.4	450	20.5	413	32.3	373	42.0	337	49.6	300	66.9	242	82.8	196	102.7	160
2019	8.4	278	24.8	245	40.3	211	57.4	180	74.3	155	99.7	116	123.6	86	134.4	62
2020	8.6	255	23.9	217	35.6	178	46.2	149	57.5	125	81.7	83	111.0	49	150.0	31
2021	9.3	314	21.8	275	31.4	235	42.4	197	53.7	161	77.6	108	90.1	68	113.7	43
2022	7.4	354	21.3	318	32.7	283	42.9	249	52.4	217	80.1	160	115.1	109	125.6	66
2023																
2024	9.1	189	24.6	161	37.1	134	44.8	109	48.8	89	78.2	61	102.9	44	116.7	31
1990-99	14.7	3773	40.0	3605	74.5	3332	109.6	3016	143.4	2734	204.3	2229				
2000-09 <sup>3</sup>	9.6	2957	33.3	2658	57.2	2345	79.5	2043	99.3	1768	138.5	1293	178.6	803	220.1	534
2010-19	8.6	3263	22.5	2949	34.9	2626	45.7	2321	57.0	2045	82.1	1578	109.2	1192	136.9	871
2020-24	8.4	1409	22.4	1236	33.6	1064	43.5	908	53.2	768	79.4	541	108.6	363	135.2	237

Notes:

1. Verification based on NHC best track database as of 4/29/25.
2. Verification sample is homogeneous with best-track 5-day CLIPER, and includes subtropical cyclones.
3. 96- and 120-h forecasts began in 2001, but were not publicly released until 2003.