January 18, 2019

Andy Mezirow, Chairman
ABM Workshop Committee
North Pacific Fishery Management
605 W. 4th Ave., Ste 306
Anchorage, AK 99501-2252

RE: **BSAI Halibut Abundance-Based Management**
ABM of PSC Limits Work Group Recommendations

Dear Chairman Andy Mezirow:

The purpose of the following recommendation is to assist in refining ABM alternatives for Council analysis. The following scenario is first intended to protect the halibut resource and, second, to provide an opportunity for directed halibut fishing along with the other multifarious trawl and fixed fisheries in the BSAI.

The starting point: The average of the 2017 and 2018 actual usages of those fisheries covered by halibut PSC CAPs.

2017 Usage	1961 Mt
2018 Usage	2074 Mt* (Est. from 11-29-18)
	4035 ÷2 = 2018 Mt

The rationale for using the average of the last 2 years as the starting point is (1) that this average best reflects the current ability of the fleets affected by PSC CAPs to avoid halibut and (2) the last two years are influenced by the current health and abundance of halibut in the BSAI. With a similar rationale, the last three years' average would be (2017 – 1961 Mt) + (2018 – 2074 Mt) + (2016 - 2345 Mt) ÷ 3 = 2127 Mt.

The starting point would be allocated to the Amendment 80, BSAI trawl limited access, Non-trawl and CDQ sectors based on current allocation assignments.

It is assumed that the Council will adopt a PSC limit responsiveness to the adoption of a new starting point based on their previous motion, somewhere between 5% and 25%. This scenario recommends a mid-point option of 15%.

Existing BSAI Overall CAP: 3,515 Mt

The trawl and longline gear groups affected by PSC CAPs have not exceeded this level of bycatch in the last 10 years.

Floor: The idea of a floor needs further discussion by the Council. In this scenario there is no floor. Bycatch appears to be significantly driven by abundance and density of the halibut resource. Fleet maneuvering, using escape panels, and deck sorting also clearly reduce halibut bycatch. However, as density and year class strength have fallen since 2005 in the BSAI, fleet encounters with halibut have also diminished. The directed halibut fishery, freezer longline and trawl fleets have all experienced this as has the BSAI trawl survey.

If the starting point were 2018 Mt, (the average usage for 2017 and 2018), with the floor of 1,777 Mt, taken from the NPFMC ABM motion, this would be 11 percent below the new starting point. It is not unrealistic for an 11% or more fluctuation in halibut abundance over time. If the halibut resource were to have such a downward fluctuation in abundance, a fixed floor could actually result in encouraging bycatch at a time when a more cautious PSC CAP was in order. Once the PSC fleets begin operating at a floor when the index is less than the level that results in the PSC floor, the incentive that ABM introduces to reduce bycatch to the extent possible, would be eliminated. When a starting point has been determined, it is unclear why there would be a fixed floor. Additionally, the Council has expressed a desire to protect the spawning stock at low abundance levels of halibut and having a floor seems to work counter to that concern.

Rate of Increase and Decline of Future CAPS: For this scenario a rate of decline in the CAP, from any chosen starting point will be 1-to-1, regardless of whether there is a floor. So, if the index were to drop 1%, the CAP would drop 1%. The rise in the CAP would be .5% for a 1% increase in the index above the starting point, otherwise the movement would be 1-to-1. Further, there would be no reduction in the CAP greater than 10% in any given year and no increase in the CAP greater than 5% in any given year, following activation of a new starting point

In an attempt to be conservative with the halibut resource, which is currently at a very low point, the recommendation is for a slow up approach of .5% increase in the PSC CAP when the CAP is greater or equal to the new starting point. Also when the CAP is above the new starting point the rate of decrease in the CAP would be 1 for 1 or a fast down approach should the index drop. When the CAP is below the new starting point we recommend a 1 to 1

movement in the CAP to reflect concern for the halibut resource when the index drops and to provide some economic relief for the PSC affected fleets when the index rises.

Index: The index should be based on the IPHC setline survey, which accounts for most year classes beginning with ages 6 and 7 and older. As noted above, one of the Council's concerns in its motion is to protect spawning biomass, which is fully accounted for in the setline survey, but not in the trawl survey. The setline survey has tracked the results of the WPUE declines and increases experienced by the commercial directed fishing on halibut. See WPUE 4CDE; See tables A-2, A-3, C-1.

The trawl survey may experience a similar bycatch trend as the commercial trawl fleet, but this catch is significantly made of immature halibut over time and ultimately does not reflect the health of the halibut resource. The catch of juvenile halibut in the BSAI trawl survey does not have a positive correlation to ultimate successful year class strengths later in the life cycle. For instance, figure 1-3 from C6 Halibut ABM PSC limits, suggests from 2006 to 2016 a very large total biomass and some of the highest index of juvenile abundance from 2006 to 2011. This timeframe actually has resulted in some of the poorest recruit years in the last 20 years. IPHC Recruitment Comparisons from the 2018 IPHC Interim Meeting, shows the extraordinary below average abundance of these year classes from 2006 to 2012. The trawl survey encounters with halibut do not accurately predict successful mature year classes that the directed halibut fleet depends on, nor is it a good index for protecting spawning biomass. The directed halibut fleets WPUE however, tracks with the declines and increases reflected by the setline survey.

Conclusion: In summary, the scenario being submitted will have a starting point of 2018 MT; an overall CAP or ceiling of 3,515 MT; no floor; for increases of the CAP above or equal to 2018 MT they will be based on a .5% raise for each 1 % raise in the index; for any decreases in the CAP a 1% decrease in the index will result in a 1% decrease in the CAP and any increase in the index when the CAP is less than 2018 MT, the movement will be based on a 1% to 1% basis. In any single year the CAP will not raise more than 5% and in no single year will the CAP decrease more than 10%, following activation of any new starting point.

Sincerely,

Robert D. Alverson
Member of the ABM Work Group
Committee

RDA:cb

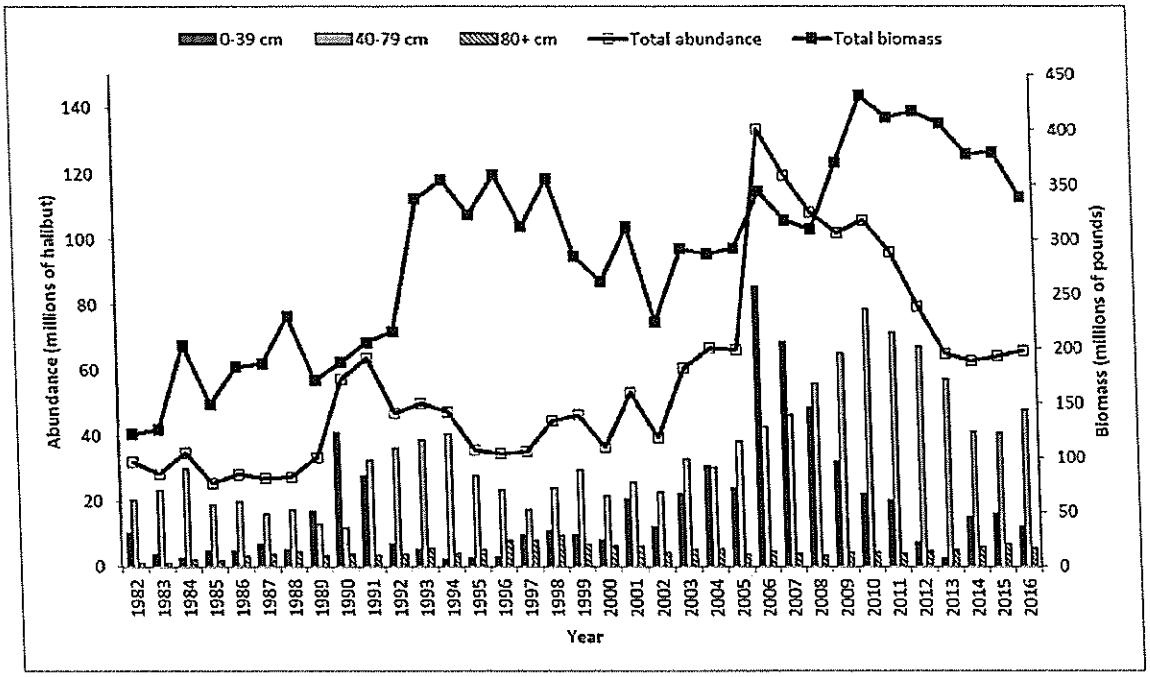


Figure 1-3 Estimated abundance (numbers of Pacific halibut) by length category, total biomass (pounds) as estimated by the NMFS Bering Sea Trawl survey data, 1982-2016. Source: 2016 IPHC RARA.

The trawl survey index was the area-swept biomass (catch-per-unit-effort multiplied by stratum area) estimated for the EBS by the annual NMFS EBS trawl survey during 1998–2017. These include all the standard core area strata (10+20+31+32+41+42+43+50+61+62) (Table 1-3), but not the northwest area strata (82 + 90).

Table 1-3 Estimated trawl survey index for the year 1998–2017.

Year	Trawl Index	Year	Trawl Index
1998	161,256	2008	140,247
1999	129,116	2009	168,102
2000	118,677	2010	195,535
2001	141,219	2011	186,666
2002	101,706	2012	189,000
2003	132,151	2013	183,989
2004	130,075	2014	171,427
2005	132,518	2015	172,237
2006	155,964	2016	153,704
2007	143,903	2017	126,684

1.4.2 IPHC Standardized Coastwide Stock Assessment (SSA) Survey or Setline Survey

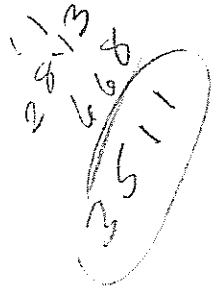
The IPHC's annual standardized stock assessment (SSA) survey (referred to as the setline survey in this document) is the most important and comprehensive data input to the annual Pacific halibut stock assessment. The main priority of the setline survey is to measure catch rates and biological information

Table 1-4 IPHC setline survey Total WPUE for the entire coast (coastwide), specific areas in IPHC Regulatory Area 4, and the sum of all areas in IPHC Regulatory Area 4 (4ABCDE). The indices are standardized to their means (1998-2017) for comparison, except for "Index 4ABCDE," which is the calculated weight-per-unit-effort index (WPUE) for all sizes of Pacific halibut.

Year	Coastwide	4A	4B	4CDE	4ABCDE	Index 4ABCDE
1998	1.48	2.09	2.53	0.99	1.75	18,179
1999	1.37	1.82	2.02	0.96	1.52	15,850
2000	1.41	1.83	1.85	1.05	1.53	15,867
2001	1.27	1.53	1.35	1.02	1.29	13,441
2002	1.26	1.37	1.01	0.96	1.14	11,815
2003	1.14	1.18	0.82	0.96	1.02	10,609
2004	1.13	1.06	0.74	0.92	0.94	9,773
2005	1.03	0.97	0.71	0.93	0.90	9,344
2006	0.97	0.83	0.81	1.09	0.93	9,643
2007	0.97	0.79	0.99	1.01	0.92	9,525
2008	0.91	0.91	1.00	1.02	0.97	10,109
2009	0.84	0.89	0.82	1.03	0.93	9,700
2010	0.80	0.76	0.71	1.05	0.87	9,009
2011	0.79	0.68	0.74	1.02	0.82	8,561
2012	0.84	0.67	0.62	1.01	0.79	8,267
2013	0.73	0.53	0.74	1.00	0.76	7,868
2014	0.78	0.55	0.64	1.03	0.76	7,872
2015	0.80	0.56	0.66	1.05	0.77	8,021
2016	0.82	0.49	0.67	1.02	0.74	7,665
2017	0.68	0.50	0.58	0.89	0.67	6,976

Table 2-8 As for Table 2-4 (the trawl index, the PSC limits for trawl gear corresponding to Alternatives 2, 4, and 6, and historical trawl bycatch mortality and PSC limits), but using a three-year moving average of index values to calculate PSC limits for each alternative.

Year	Primary (trawl) index	Secondary (longline) index	Alternative 2 PSC limit	Alternative 4 PSC limit	Alternative 6 PSC limit	Historical bycatch mortality	Historical PSC limit
1998	161,256	18,179	NA	NA	NA	3,379	3,734
1999	129,116	15,850	NA	NA	NA	3,481	3,734
2000	118,677	15,867	2,488	3,532	2,894	3,208	3,734
2001	141,219	13,441	2,366	2,366	2,366	3,245	3,734
2002	101,706	11,815	2,200	2,200	2,200	3,423	3,734
2003	132,151	10,609	2,282	2,282	2,282	3,545	3,734
2004	130,075	9,773	2,214	2,214	2,214	3,402	3,734
2005	132,518	9,344	2,401	2,401	2,401	3,552	3,734
2006	155,964	9,643	2,546	2,546	2,546	3,457	3,734
2007	143,903	9,525	2,630	2,630	2,630	3,526	3,734
2008	140,247	10,109	2,677	2,677	2,677	2,843	3,734
2009	168,102	9,700	2,751	2,751	2,751	2,885	3,693
2010	195,535	9,009	3,065	3,065	3,065	2,823	3,684
2011	186,666	8,561	3,348	3,348	3,348	2,611	3,634
2012	189,000	8,267	3,475	3,475	3,475	3,117	3,593
2013	183,989	7,868	3,404	3,404	3,404	3,080	3,593
2014	171,427	7,872	3,312	3,312	3,312	3,029	3,593
2015	172,237	8,021	3,210	3,210	3,210	1,999	3,593
2016	153,704	7,665	3,026	1,879	3,017	2,132	2,805
2017	126,684	6,976	2,753	1,879	2,587	1,324	2,805



Recruitment comparisons

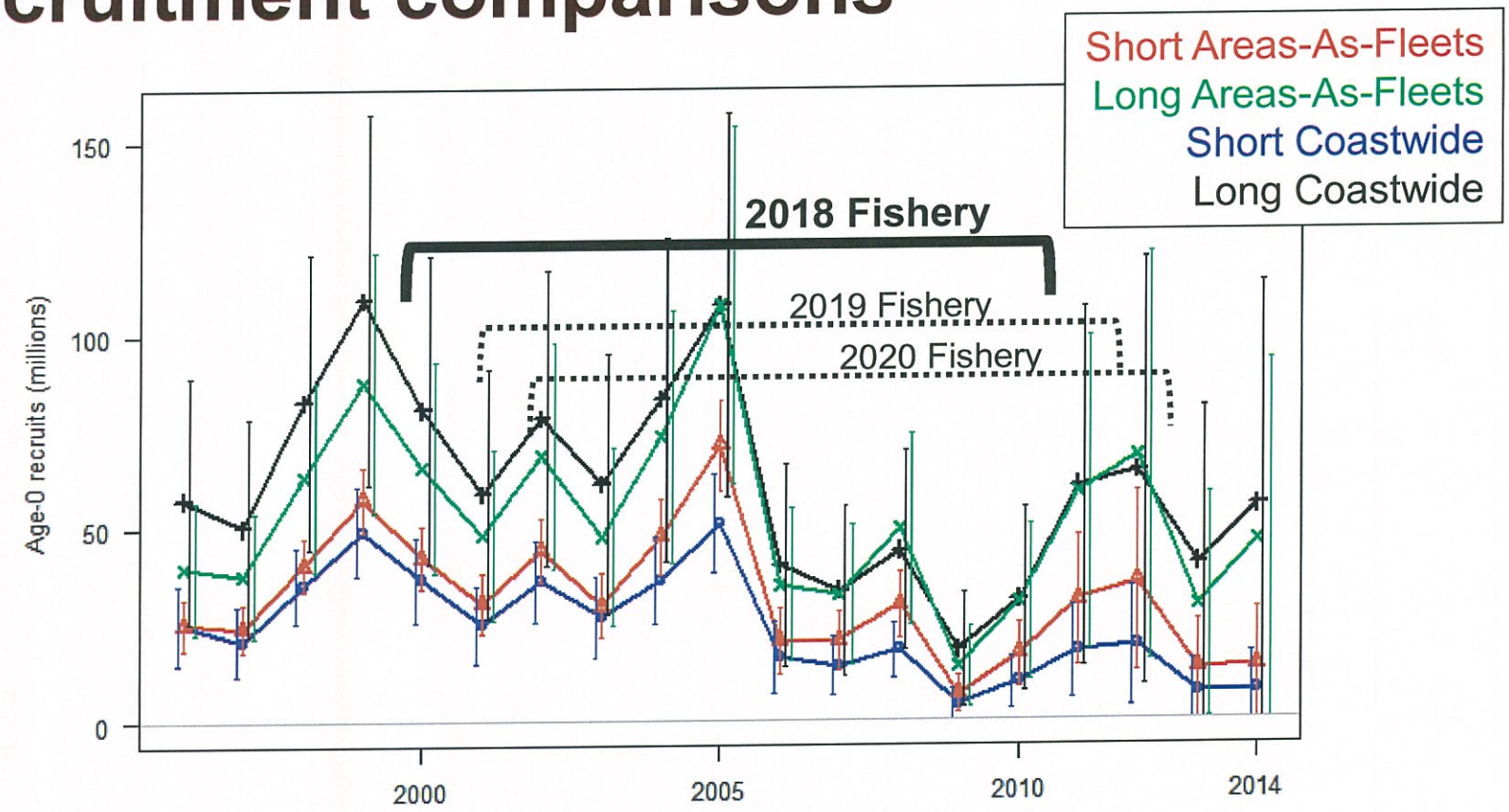


TABLE A2. Recent time-series of modelled FISS WPUE (all sizes) by IPHC Regulatory Area (net lb/skate).

Year	2A	2B	2C	3A	3B	4A	4B	4CDE	Total
1993	44.3	134.0	308.2	480.0	547.5	192.7	305.6	19.9	158.8
1994	42.3	164.9	357.5	443.9	553.6	218.3	305.4	19.7	160.0
1995	40.8	202.5	414.9	476.2	585.6	236.9	304.7	18.0	171.1
1996	43.1	173.2	388.8	461.6	649.2	296.5	305.4	18.2	174.3
1997	44.7	133.6	400.3	513.2	592.4	390.3	305.0	17.4	178.1
1998	44.4	105.0	318.9	374.7	665.3	444.6	272.7	19.0	163.6
1999	42.6	87.6	254.8	335.3	695.0	389.4	218.0	18.5	151.6
2000	41.0	102.8	275.2	413.9	595.1	391.9	200.0	19.9	155.5
2001	38.3	116.8	304.4	393.1	484.4	327.8	147.1	19.5	140.5
2002	29.8	116.8	333.0	459.6	410.6	293.3	110.7	18.3	139.5
2003	27.0	85.9	274.9	392.4	447.8	251.7	89.4	18.4	126.5
2004	28.3	81.2	202.5	454.0	396.8	225.2	80.8	17.6	125.1
2005	30.5	86.5	222.5	416.3	299.2	205.8	76.3	17.8	113.3
2006	23.2	82.6	210.2	363.8	307.7	176.7	87.8	20.6	107.0
2007	21.4	91.7	215.0	351.0	314.8	166.3	107.5	19.2	106.4
2008	22.8	95.5	204.8	306.4	280.6	192.5	108.4	19.4	99.8
2009	16.3	105.3	186.9	261.9	264.3	187.1	89.9	19.6	91.8
2010	21.2	106.4	186.9	260.9	234.2	159.6	77.6	20.1	88.0
2011	26.8	102.7	213.9	269.0	214.4	142.2	80.1	19.3	87.3
2012	26.4	118.1	265.0	299.5	204.8	141.6	67.2	19.3	92.6
2013	25.5	117.0	264.9	224.8	168.4	110.6	80.2	19.1	79.6
2014	27.1	117.9	272.6	264.0	172.3	115.3	69.0	19.7	85.1
2015	34.3	130.4	279.9	260.9	176.5	116.6	71.2	20.0	86.9
2016	30.3	128.5	301.5	269.5	193.7	105.6	72.6	19.5	89.0
2017	21.2	88.8	290.4	231.0	119.5	108.4	66.0	17.2	73.4
2018	20.6	91.8	228.6	222.1	110.1	96.7	73.6	17.1	69.3

TABLE A3. Recent time-series of modelled FISS O32 WPUE by IPHC Regulatory Area (net lb/skate).

Year	2A	2B	2C	3A	3B	4A	4B	4CDE	Total
1993	37.0	120.7	307.1	418.7	485.0	271.4	280.6	14.5	145.0
1994	35.3	147.0	357.2	381.0	487.5	284.8	282.2	14.1	144.8
1995	33.7	176.9	411.4	398.2	519.5	286.0	283.4	14.5	153.7
1996	36.7	149.3	357.0	388.8	574.6	318.4	283.7	17.5	156.1
1997	39.1	116.6	366.2	428.8	515.5	345.7	283.5	18.3	156.3
1998	39.5	90.1	286.4	324.4	582.1	404.1	252.5	20.6	146.5
1999	39.0	74.1	227.8	294.3	614.1	368.6	206.3	20.6	137.8
2000	37.6	87.9	244.7	352.7	526.3	364.6	184.3	22.1	139.4
2001	35.6	100.3	271.3	342.0	428.3	283.4	135.4	21.2	125.6
2002	27.3	99.1	294.4	389.3	346.9	253.1	103.2	18.5	121.0
2003	25.0	70.9	240.1	329.6	349.0	215.4	84.1	17.1	106.1
2004	26.4	64.7	167.7	373.7	287.4	186.0	77.0	15.3	101.1
2005	27.3	65.8	184.1	342.9	222.6	164.1	72.6	12.5	90.3
2006	21.0	61.4	166.8	290.0	224.2	136.9	80.8	13.8	82.4
2007	18.7	64.4	165.1	272.6	218.0	121.7	94.4	12.0	78.8
2008	18.9	68.3	157.1	233.0	174.8	130.7	97.0	12.1	71.3
2009	14.4	76.6	137.3	187.2	164.0	120.1	80.5	12.7	63.5
2010	19.1	79.9	138.3	175.3	132.0	100.8	70.3	12.3	58.5
2011	23.7	80.9	171.8	173.9	114.6	93.9	71.3	11.6	57.8
2012	22.6	92.6	219.0	199.7	113.6	93.2	59.4	12.3	63.2
2013	21.9	90.7	219.8	151.7	96.6	75.7	64.3	12.3	55.2
2014	23.5	89.1	222.7	162.7	94.5	79.9	55.7	13.6	57.0
2015	28.9	98.3	228.8	150.8	103.0	79.6	57.9	14.8	58.1
2016	25.4	96.7	250.5	172.2	111.4	75.4	56.9	14.5	61.4
2017	19.7	73.9	254.1	163.0	71.4	76.9	55.8	13.6	54.9
2018	18.8	78.3	206.7	158.6	62.1	69.5	62.8	13.3	52.1

Appendix C

Time series' of fishery catch-rates

TABLE C1. Time-series of commercial fishery WPUE by Regulatory Area (net lb/skate). Years prior to 1984 are based on fishing conducted with "J" hooks.

Year	2A	2B	2C	3A	3B	4A	4B	4C	4D	4E	Total
1907	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	280
1910	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	271
1911	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	237
1912	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	176
1913	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	129
1914	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	124
1915	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	118
1916	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	137
1917	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	98
1918	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	96
1919	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93
1920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	96
1921	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	88
1922	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73
1923	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	78
1924	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	74
1925	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	68
1926	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	67
1927	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	65
1928	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	58
1929	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	51
1930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	46
1931	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50
1932	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	60
1933	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	63
1934	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	62
1935	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76
1936	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	71
1937	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	80
1938	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	88
1939	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	80
1940	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81
1941	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	85
1942	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90
1943	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	95
1944	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	110
1945	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	102
1946	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	101
1947	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	99
1948	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	99
1949	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	95
1950	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	95
1951	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	96

TABLE C1. Continued.

Year	2A	2B	2C	3A	3B	4A	4B	4C	4D	4E	Total
1952	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	110
1953	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	131
1954	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	133
1955	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	119
1956	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	129
1957	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	110
1958	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	121
1959	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	129
1960	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	132
1961	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	127
1962	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	115
1963	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	105
1964	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100
1965	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	99
1966	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100
1967	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	101
1968	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	103
1969	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	95
1970	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	91
1971	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	89
1972	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	78
1973	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	63
1974	59	64	57	65	57	NA	NA	NA	NA	NA	61
1975	59	68	53	66	68	NA	NA	NA	NA	NA	61
1976	33	53	42	60	65	NA	NA	NA	NA	NA	55
1977	83	61	45	61	73	NA	NA	NA	NA	NA	63
1978	39	63	56	78	53	NA	NA	NA	NA	NA	71
1979	50	48	80	86	37	NA	NA	NA	NA	NA	75
1980	37	65	79	118	113	NA	NA	NA	NA	NA	94
1981	33	67	144	142	160	158	99	110	NA	NA	111
1982	22	69	146	168	203	103	NA	91	NA	NA	127
1983	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1984	63	147	284	502	474	366	161	NA	197	NA	291
1985	62	139	345	500	592	337	234	594	330	NA	351
1986	55	118	290	506	506	260	238	427	218	NA	315
1987	53	130	260	498	478	342	220	384	241	NA	316
1988	134	137	281	503	654	453	224	371	201	NA	363
1989	113	133	258	457	590	409	268	333	432	NA	353
1990	168	176	270	354	484	418	209	288	381	NA	315
1991	158	149	233	319	466	471	329	223	399	NA	314
1992	117	171	230	397	440	372	280	249	412	NA	315
1993	147	208	256	393	514	463	218	257	851	NA	369
1994	93	215	207	354	377	463	197	167	480	NA	302
1995	116	219	234	417	476	349	189	286	475	NA	326
1996	159	227	239	473	557	515	269	297	543	NA	387
1997	226	241	246	458	563	483	275	335	671	NA	400
1998	194	232	236	452	611	525	287	287	627	NA	403
1999	342	213	199	437	538	497	310	271	535	NA	390
2000	263	229	187	443	579	548	320	223	556	NA	399
2001	171	227	196	469	431	474	270	203	511	NA	358

TABLE C1. Continued.

Year	2A	2B	2C	3A	3B	4A	4B	4C	4D	4E	Total
2002	181	223	244	508	399	402	245	148	503	NA	356
2003	173	221	233	485	365	355	196	105	388	NA	325
2004	143	203	240	486	328	315	202	120	445	NA	315
2005	137	195	203	446	293	301	238	91	379	NA	293
2006	156	201	170	403	292	241	218	72	280	NA	267
2007	96	198	160	398	257	206	230	65	237	NA	249
2008	69	174	161	370	234	206	193	94	247	NA	229
2009	98	188	155	318	211	234	189	88	249	NA	220
2010	149	222	158	285	173	182	142	82	188	NA	202
2011	92	240	175	280	140	189	165	75	166	NA	196
2012	102	248	207	263	133	194	149	60	155	108	193
2013	110	246	195	238	112	160	127	56	157	NA	178
2014	106	282	204	234	100	136	146	60	196	NA	183
2015	109	291	212	274	144	156	149	98	164	NA	202
2016	88	288	226	257	150	162	123	73	180	NA	196
2017	95	282	234	268	141	119	120	87	308	NA	202
2018	107	268	206	247	101	111	133	86	185	NA	180