Table 1. PBSG Status Table (PBSG 2006)

DRAFT PBSG STATUS TABLE (in prep.)													
	Aerial Survey/M-R Analysis		Additional/Alternative Analysis										
Subpopulation	Number (year of estimate)	±2 SE	Number (year of estimate)	±2 SE[1] or min-max[2] range	Simulation	Density	TEK/IQ	Historical annual removals (5 yr mean)	Potential maximum annual removals	Observed or predicted trend	Status	Estimated risk of future decline (10 yrs)	Comments
East Greenland	unknown							70	50	Data deficient	Data deficient	No Estimate	No population inventories have been conducted in East Greenland and therefore the size of the population is not known. During the last decades the extent of sea ice has decreased in the East Greenland area (e.g. Parkinson 2000). This decline is likely to continue (e.g. Rysgaard et al. 2003) resulting in a continued habitat destruction for polar bears in this area. Furthermore, various studies indicate that East Greenland polar bears may be negatively affected by relatively high body burden of organic pollutants (cf. Born & Sonne, this volume). During the last 5 years the total catch from the East Greenland population has decreased from 81 (1999) to 59 (2003) (Born & Sonne, this volume). Proposed quota (effective 1 Jan 2006) for East Greenland is 50 bears/year.
Barents Sea	3000 (2004)									Data deficient	Data deficient	No Estimate	
Kara Sea	unknown									Data deficient	Data deficient	No Estimate	The population size is unknown and no population surveys have been conducted in the Kara Sea.
Laptev Sea	800-1200 (1993)									Data deficient	Data deficient	No Estimate	The population is based on Belikov (1993) using aerial counts of dens on the Severnaya Zemlya in 1982 and on anecdotal data collected in 1960-80s on the number of females coming to dens on Novosibirsk Islands and on mainland coast. The estimate should therefore be regarded as preliminary.

Chukchi Sea			2000 (1993)			a		43 - Alaska, unk. but substantial in Chukotka	uncertain	Data deficient	Data deficient	No Estimate	The population was estimated at 2000-5000 animals (Derocher et al. 1998) based on extrapolation of multiple years of spring den numbers data collected on Wrangel Island. The estimate was revised to 2000 animals with low confidence (Lunn et al. 2002). Abundance estimates with measurable levels of precision are not available. The population trend is believed to be declining and the status relative to historical levels is believed to be reduced based on harvest levels that were demonstrated to be unsustainable in the past. These harvest levels have been occurrng for approximately the past 10-15 years. Without implementation of US-Russia polar bear treaty the levels of harvest are expected to continue and the risk for population depletion is rated as high.
Southern Beaufort Sea	1500 (2006)	1000 - 2000						58	81	Declining	Reduced	No Estimate	The 2006 population estimate is based on a preliminary analysis of capture-recapture data collected jointly by the U.S. and Canada, from 2001-2006. The 2006 population estimate was derived using the historic management boundaries for the SB sub-population (i.e. from Icy Cape, Alaska, to Pierce Point, Northwest Territories, Canada). A final analysis of the recent capture-recapture data will be reported in 2007, along with suggestions for new management boundaries based on recent analyses of radiotelemetry data.
Northern Beaufort Sea	1200 (1986)	133 - 2097						36	65	Stable	Not reduced	No Estimate	A coordinated, intensive mark and recapture study covering the whole of the Beaufort Sea and Amundsen Gulf will be completed in 2006; a final analysis and report will follow.
Viscount Melville	161 (1992)	121 - 201	215 (1996)	99 - 331[1]	a			4	7	Increasing	Severely reduced	Very Low	14.0% of PVA simulation runs resulted in population decline after 10 years (86.0% resulted in population increase after 10 years). Simulations based on 1996 projected abundance.
Norwegian Bay	190 (1998)	102 - 278						3	4	Declining	Not reduced	Higher	79.7% of PVA simulation runs resulted in population decline after 10 years (20.3% resulted in population increase after 10 years).
Lancaster Sound	2541 (1998)	1759 -3323						74	85	Stable	Not reduced	Higher	78.3% of PVA simulation runs resulted in population decline after 10 years (21.7% resulted in population increase after 10 years). PVA estimate should be regarded as conservative due to unique male-bias in harvest (males decline over short term but not females); over longer time horizons PVA suggests sustainability of harvest.
M'Clintock Channel	284 (2000)	166 - 402						3	3	Increase	Severely reduced	Very Low	3.1% of PVA simulation runs resulted in population decline after 10 years (96.9% resulted in population increase after 10 years).
Gulf of Boothia	1523 (2000)	953 - 2093						46	74	Stable	Not reduced	Lower	21.0% of PVA simulation runs resulted in population decline after 10 years (79.0% resulted in population increase after 10 years).

Foxe Basin	2197 (1994)	1677 - 2717	2300 (2004)	1780 - 2820[1]	a		a	97	109	Stable	Not reduced	Lower	N = 2197, SE = 260 in 1994 based on Jolly-Seber M-R with tetracycline biomarking and harvest recoveries. Using Baffin Bay survival and recruitment rates, 25.9% of PVA simulation runs resulted in population decline after 10 years (74.1% resulted in population increase after 10 years).
Western Hudson Bay	935 (2004)	794 - 1076						45	64	Declining	Reduced	Very High	100.0% of PVA simulation runs resulted in population decline after 10 years (0.0% resulted in population increase after 10 years).
Southern Hudson Bay	1000 (1988)	684 - 1116						37	43	Stable	Not reduced	Lower	22.7% of PVA simulation runs resulted in population decline after 10 years (77.3% resulted in population increase after 10 years).
Kane Basin	164 (1998)	94 -234						11	15	Declining	Reduced	Very High	100.0% of PVA simulation runs resulted in population decline after 10 years (0.0% resulted in population increase after 10 years).
Baffin Bay	2074 (1998)	1544 - 2604	1546 (2004)	690 - 2402[1]	a			217	234	Declining	Reduced	Very High	100.0% of PVA simulation runs resulted in population decline after 10 years (0.0% resulted in population increase after 10 years).
Davis Strait			1650 (2004)	1000 - 2300[2]	a		a	65	74	Data deficient	Data deficient	Lower	The population was estimated at 1400 in 1996 based on traditional ecological knowledge (TEK) that the population had increased with historical harvest levels; and simulation results suggesting that population could not have sustained the historcal harvest at numbers less than 1400. In 2004, the population estimate was increased to 1650 based on TEK that the population had continued to increase; and simulations suggesting that an increase of about 250 (from 1400 to 1650) from 1996 was reasonable at post-1996 harvest levels. In 2005 a multi-year M-R survey was initiated to confirm population numbers and status. Using Baffin Bay survival and recruitment rates, and abundance as above, 23.4% of PVA simulation runs under projected harvest (potential maximum removals) resulted in population decline after 10 years (76.6% resulted in population increase after 10 years).
Arctic Basin	unknown												

* Where PVA simulations have been conducted, risk of decline is classed as Very Low (0-20%), Lower (20-40%), Moderate (40-60%), Higher (60-80%), and Very High (80-100%).

Table 2. Survival rates for population with data

Mean (and standard error [SE]) of natural (i.e. unharvested) survival parameters used in the assessment of risk for sub-populations listed in Table 1, and best estimates of parameters to model natural survival in FB, SH, WH, DS, NB, and SB. It is to these rates that anticipated annual removal rate are added for simulation.

	Males				Females			
	Survival estimates of unharvested bears				Survival estimates of unharvested bears			
Sub-population	Cubs-of-the-year	1-4 yrs	5-20 yrs	>20 yrs	Cubs-of-the-year	1-4 yrs	5-20 yrs	>20 yrs
BB	0.570 (0.094)	0.938 (0.045)	0.947 (0.022)	0.887 (0.060)	0.620 (0.095)	0.938 (0.042)	0.953 (0.020)	0.919 (0.050)
DS[1]	0.570 (0.094)	0.938 (0.045)	0.947 (0.022)	0.887 (0.060)	0.620 (0.095)	0.938 (0.042)	0.953 (0.020)	0.919 (0.050)
FB[2]	0.570 (0.094)	0.938 (0.045)	0.947 (0.022)	0.887 (0.060)	0.620 (0.095)	0.938 (0.042)	0.953 (0.020)	0.919 (0.050)
GB	0.817 (0.201)	0.907 (0.084)	0.959 (0.039)	0.959 (0.039)	0.817 (0.201)	0.907 (0.084)	0.959 (0.039)	0.959 (0.039)
KB	0.345 (0.200)	0.663 (0.197)	0.997 (0.026)	0.997 (0.026)	0.410 (0.200)	0.756 (0.159)	0.997 (0.026)	0.997 (0.026)
LS[3]	0.634 (0.123)	0.838 (0.075)	0.974 (0.030)	0.715 (0.095)	0.750 (0.104)	0.898 (0.005)	0.946 (0.018)	0.771 (0.054)
MC	0.619 (0.151)	0.983 (0.034)	0.921 (0.046)	0.921 (0.046)	0.619 (0.151)	0.983 (0.034)	0.977 (0.033)	0.977 (0.033)
NB[4]	0.651 (0.020)	0.838 (0.075)	0.974 (0.030)	0.715 (0.095)	0.651 (0.020)	0.860 (0.040)	0.996 (0.005)	0.996 (0.005)
NW[3]	0.634 (0.123)	0.838 (0.075)	0.974 (0.030)	0.715 (0.095)	0.750 (0.104)	0.898 (0.005)	0.946 (0.018)	0.771 (0.054)
SB[5]	0.651 (0.020)	0.838 (0.075)	0.974 (0.030)	0.715 (0.095)	0.651 (0.020)	0.860 (0.040)	0.996 (0.005)	0.996 (0.005)
SH[2]	0.570 (0.094)	0.938 (0.045)	0.947 (0.022)	0.887 (0.060)	0.620 (0.095)	0.938 (0.042)	0.953 (0.020)	0.919 (0.050)
VM	0.448 (0.216)	0.924 (0.109)	0.924 (0.109)	0.924 (0.109)	0.693 (0.183)	0.957 (0.028)	0.957 (0.028)	0.957 (0.028)
WH[6]	0.625 (0.072)	0.625 (0.072)	0.974 (0.030)	0.715 (0.095)	0.709 (0.065)	0.709 (0.065)	0.975 (0.029)	0.832 (0.048)

[1] Incorporates 1993-1998 BB data (Taylor *et al.* 2005).

[2] Incorporates 1993-1998 BB data (Taylor *et al.* 2005).

[3] Survival estimates pooled for LS and NW (see text for LS and NW).

[4] Based on female, cub, and yearling survival rates for SB provided by E. Regehr (USGS, Alaska Science Centre, Anchorage, AK). Subadult survival (ages 2-4) from WH (0.900, SE = 0.058 males, SE = 0.048 females [not shown]). Adult male survival rates from LS-NW (see text).

[5] Based on female, cub, and yearling survival rates for SB provided by E. Regehr (USGS, Alaska Science Centre, Anchorage, AK). Subadult survival (ages 2-4) from WH (0.900, SE = 0.058 males, SE = 0.048 females [not shown]). Adult male survival rates from LS-NW (see text).

[6] Based on survival rates provided by E. Regehr (USGS, Alaska Science Centre, Anchorage, AK). Subadult survival (ages 2-4) from WH is 0.900, SE = 0.058 males, SE = 0.048 females (not shown]). Adult male survival rates from LS-NW (see text).

Table 3. Reproductive parameters for polar bear populations with data

Mean (and standard error [SE]) of reproductive parameters (standing age capture data) used in the assessment of risk for populations listed in Table 1, and best estimates of parameters to model FB, SH, WH, DS, NB, and SB.

		Litter-production rate				
Sub-population	Litter size	4-year-olds	5-year-olds	6-year-olds	>6-year-olds	Proportion male cubs
BB	1.587 (0.073)	0.096 (0.120)	0.881 (0.398)	1.000 (0.167)	1.000 (0.167)	0.493 (0.029)
DS[1,2]	1.587 (0.073)	0.096 (0.120)	0.881 (0.398)	1.000 (0.167)	1.000 (0.167)	0.493 (0.029)
FB[1]	1.587 (0.073)	0.096 (0.120)	0.881 (0.398)	1.000 (0.167)	1.000 (0.167)	0.493 (0.029)
GB	1.648 (0.098)	0.000 (0.000)	0.194 (0.178)	0.467 (0.168)	0.334 (0.300)	0.460 (0.091)
KB	1.667 (0.083)	0.000 (0.000)	0.000 (0.000)	0.357 (0.731)	0.478 (0.085)	0.426 (0.029)
LS	1.688 (0.012)	0.000 (0.000)	0.107 (0.050)	0.312 (0.210)	0.954 (0.083)	0.531 (0.048)
MC	1.680 (0.147)	0.000 (0.000)	0.111 (0.101)	0.191 (0.289)	0.604 (0.928)	0.545 (0.057)
NB[2]	1.756 (0.166)	0.000 (0.000)	0.118 (0.183)	0.283 (0.515)	0.883 (0.622)	0.502 (0.035)
NW	1.714 (0.081)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.689 (0.534)	0.544 (0.066)
SB[2]	1.600 (0.300)	0.000 (0.000)	0.103 (0.046)	0.338 (0.241)	0.942 (0.193)	0.515 (0.077)
SH[2]	1.575 (0.116)	0.087 (0.202)	0.966 (0.821)	0.967 (0.022)	0.967 (0.022)	0.467 (0.086)
VM	1.640 (0.125)	0.000 (0.000)	0.623 (0.414)	0.872 (0.712)	0.872 (0.712)	0.535 (0.118)
WH[2]	1.540 (0.098)	0.000 (0.000)	0.257 (0.442)	0.950 (0.352)	0.950 (0.022)	0.490 (0.022)

[1] Reproductive estimates from BB (Taylor et al. 2005).
[2] Best estimates for modeling exercise only (from standing age capture data).