



ARCTIC BASIN

Best population estimate: Unknown

Status trend: Unknown

Summary: Currently, there is no clear population of polar bears in the Arctic Basin (a geographic “catchall”). The low densities are likely due to the region’s low productivity. The Arctic Basin may be an important area in the future as the climate warms and sea ice continues to decline (IUCN/SSC PBSG 2016).

BAFFIN BAY

Best population estimate: 2,826 (95% CI = 2,059-3,593) (SWG 2016)

Status trend: Unknown (likely stable)

Summary: Estimates from the 1990s (2,173 95% CI = 1,252-3,093; Taylor et al. 2005) and 2000s (2,286 95% CI = 2,059-3,593; SWG 2016) are not directly comparable, due to potential underestimation in the earlier surveys. Therefore, trend information is uncertain. Sea ice loss is associated with reduced body condition, reduced range size, and increased time on land—all of which are associated with population declines in other regions (Rode et al 2012, Laidre et al 2018).

BARENTS SEA

Best population estimate: 2,644 (95% CI: 1,899 – 3,592) (Aars et al. 2009)

Status trend: Unknown (likely stable)

Summary: Estimates from 2015 only covered the western portion of the Barents Sea. That area did not show any evidence of decline (Aars et al. 2009, 2017). Although the Barents Sea population appears to be stable, this may be reflective of a population increase after harvesting ceased in the 1970s. Harvesting may have brought the population far below carrying capacity, and whether or not numbers have rebounded to the previous capacity of the environment is unknown. We may expect to see population declines in the

future as the population stabilizes from past harvest and is impacted by declining carrying capacity from drastic sea ice changes in the Barents Sea (Stern and Laidre 2016).

CHUKCHI SEA

Best population estimate: 2,937 (95% CRI: 1,552 – 5,994) (Regehr et al. 2018)

Status trend: Unknown

Summary: This population lacks trend information, as abundance estimates from the 1970s and 1990s were unreliable compared to the recent estimate of 2,937 (Regehr et al. 2018). It is suggested that the population has stable body condition and survival rates, despite sea ice loss, possibly due to the area's biological richness (Rode et al. 2014). The population is experiencing some of the highest sea ice losses in the Arctic along with increased rates of ice drift, which may have future negative impacts (Rigor and Wallace 2004, Durner et al. 2017).

DAVIS STRAIT

Best population estimate: 2,158 ± 180 (SE) (Peacock et al. 2013)

Status trend: Increased

Summary: This population has increased to over 2,000 bears, from an estimate of 1,650 in 2005 (Peacock et al. 2013, IUCN/SSC PBSG 2016). This may be due to an increase in harp seal abundance and a decrease in harvesting rates, although recruitment rates of young are low (Peacock et al. 2013). The population may be vulnerable to sea ice loss in the future, but is currently of low concern (Hamilton and Derocher 2019).

EAST GREENLAND

Best population estimate: Unknown

Status trend: Unknown

Summary: There are currently no population abundance estimates for East Greenland. Sea ice loss of nearly 10% per decade has led to changes in habitat use, including use of lower ice concentrations and decreased distance to open water (Laidre et al. 2015). Vulnerability (based on abundance, prey species, and sea ice concentration) is considered moderate – high (Hamilton and Derocher 2019). A new effort to assess this region is currently being led by Greenland (Laidre pers com).

FOX E BASIN

Best population estimate: 2,585 (95% CI = 2,096 – 3,189) (Stapleton et al. 2016)

Status trend: Stable

Summary: Survey results from 1994 ($2,197 \pm 260$ (SE)) and 2010 ($2,585$ (95% Ci = $2,096-3,189$)) are not significantly different, indicating population stability (IUCN/SSC PBSG 2016). Increased sea ice fragmentation and habitat loss may decrease body condition and reproduction in the future, as seen in other populations within the Hudson Bay ecozone (Sahanatien and Derocher 2012).

GULF OF BOOTHIA

Best population estimate: $1,592 \pm 361$ (SE) (Taylor et al. 2009)

Status trend: Unknown

Summary: This estimate was obtained from a mark-recapture study in 2000, at which time the population was projected to grow (Taylor et al. 2009). Based on those results, harvest rates were increased in 2005 (IUCN/SSC PBSG 2016). The GB population was classified as moderately – highly vulnerable, mainly due to summer sea ice loss and an increase in the ice-free period (Hamilton and Derocher 2019). A genetic mark-recapture study was conducted from 2015-2018, but results are unavailable at this time (IUCN/SSC PBSG 2016).

KANE BASIN

Best population estimate: 357 (95% CI = 221-493) (SWG 2016)

Status trend: Increased

Summary: A genetic mark-recapture study in 2013-2014 suggests the population has increased to over 300 bears from an estimate of just over 200 bears in the 1990s (SWG 2016). The same study found an increase in body condition, likely linked to increased primary productivity and seal densities (SWG 2016). Despite this, these bears are considered moderately vulnerable due to summer ice loss (Hamilton and Derocher 2019).

KARA SEA

Best population estimate: Unknown

Status trend: Unknown

Summary: This population is data deficient. These bears may be moderately vulnerable due to summer sea ice loss and a longer ice-free period (Hamilton and Derocher 2019).

LANCASTER SOUND

Best population estimate: $2,541 \pm 391$ (SE) (Taylor et al. 2008)

Status trend: Unknown

Summary: This population estimate is in need of an update, as the current estimate is from the 1990s (Taylor et al. 2008). Vulnerability is ranked low by Hamilton and Derocher (2019), but the population may be susceptible to relatively high harvest rates (Taylor et al. 2008).

LAPTEV SEA

Best population estimate: Unknown

Status trend: Unknown

Summary: This population is data deficient. It is considered highly vulnerable due to summer sea ice loss, an increased ice-free period, and low prey diversity (Hamilton and Derocher 2019).

M'CLINTOCK CHANNEL

Best population estimate: 284 ± 59.3 (SE) (Taylor et al. 2006)

Status trend: Unknown

Summary: This population was estimated at approximately 900 bears in the 1970s, and decreased to 284 in the 1990s (Taylor et al. 2006). Harvest rates were reduced as a result of this population decline and abundance may be increasing as a result (IUCN/SSC PBSG 2016). A three-year genetic mark-recapture study began in 2014, but results are not yet available (IUCN/SSC PBSG 2016). The population may be vulnerable due to low prey diversity and decreased sea ice (Hamilton and Derocher 2019).

NORTHERN BEAUFORT SEA

Best population estimate: 980 (95% CI = 825 – 1,135)

Status trend: Likely Stable

Summary: Mark-recapture study from the early 2000s indicate a stable population over the past three decades (Stirling et al. 2011). The region is considered highly vulnerable to sea ice loss, and the population may decline similarly to the neighboring Southern Beaufort Sea and nearby Western/Southern Hudson Bay populations (Stirling et al. 2011, Hamilton and Derocher 2019).

NORWEGIAN BAY

Best population estimate: 203 ± 44 (SE) (Taylor et al. 2008)

Status trend: Unknown

Summary: Abundance and survival estimates were derived from a mark-recapture study during 1993-1997 (Taylor et al. 2008). Due to low abundance, the population may be susceptible to overharvest (Taylor et al. 2008), although it is currently considered low vulnerability (Hamilton and Derocher 2019).

SOUTHERN BEAUFORT SEA

Best population estimate: 907 (95% CI = 548-1,270) (Bromaghin et al. 2015)

Status trend: Declined

Summary: This population decreased from approximately 1,800 bears in 1986 to approximately 900 in 2014 (Bromaghin et al. 2015, IUCN/SSC PBSG 2016). The population is considered highly vulnerable, due to low prey abundance and decreasing sea ice, which has been linked to decreased body condition and reproductive success (Rode et al. 2010, Hamilton and Derocher 2019). Polar bear energy expenditure may also be increasing with faster ice drift over time, which may also contribute to lowered body condition and survival (Durner et al. 2017).

SOUTHERN HUDSON BAY

Best population estimate: 780 (95% CI = 590-1029) (Obbard et al. 2018)

Status trend: Declined

Summary: This population has experienced a 17% decline in abundance since 2011/2012 (Obbard et al. 2018). There have also been declines in body condition, linked to an increasing ice-free period (a 30 day increase since 1980) (Obbard et al. 2016). Therefore, it is predicted that we will see further declines in body condition and survival if ice conditions continue to decline.

VISCOUNT MELVILLE SOUND

Best population estimate: 161 ± 34 (SE) (Taylor et al. 2002)

Status trend: Unknown

Summary: This abundance estimate is from 1992 and is therefore dated (Taylor et al. 2002, IUCN/SSC PBSG 2016). A mark-recapture study was completed in 2014, but the results are not yet available (IUCN/SSC PBSG 2016). The population may be vulnerable due to low prey diversity and sea ice loss (Hamilton and Derocher 2019).

WESTERN HUDSON BAY

Best population estimate: 806 (95% CI = 653-984) (Lunn et al. 2016)

Status trend: Declined

Summary: In the 1990s, the population was estimated at approximately 1,200 bears, which has decreased to approximate 800 (Regehr et al. 2007, Lunn et al. 2016). Although an aerial survey found a population estimate of over 1,000, differences in sampling areas makes the comparison between recent studies inaccurate (Lunn et al. 2016, Stapleton et al. 2016). Trends in body condition, survival, and abundance have been linked to sea ice conditions, such as date of sea ice breakup (Regehr et al. 2007, Lunn et al. 2016).

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