

**CITIZEN PETITION SUBMITTED TO THE COMMISSION FOR ENVIRONMENTAL
COOPERATION PURSUANT TO ARTICLE 14
OF THE NORTH AMERICAN AGREEMENT ON ENVIRONMENTAL COOPERATION**



Photo by Brendan Cummings

Submitted by:

Center for Biological Diversity

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INTRODUCTION

Pursuant to Article 14 of the North American Agreement on Environmental Cooperation (NAAEC), the Center for Biological Diversity (the Center) submits the following Petition to the Secretariat of the Commission for Environmental Cooperation (CEC).

The Center seeks a finding that Canada is failing to effectively enforce the Species at Risk Act (SARA), the country's endangered wildlife statute, by failing to timely list and protect the polar bear as an endangered or threatened species. *See Species At Risk Act*, SC 2002, C. 29. Canada is home to two-thirds of the world's polar bears, a species that is gravely imperiled due to the indisputable threats of climate change. Climate change has already affected the Arctic more severely and rapidly than the rest of the world, and increasing temperatures have rapidly shrunk the Arctic sea ice habitat upon which polar bears depend. Scientific evidence demonstrates the species' downward trend will only become more severe as greenhouse gas emissions accumulate in the atmosphere over the coming decades.

To respond to this well-documented and increasing threat, the International Union for Conservation of Nature (IUCN) Polar Bear Specialist Group (PBSG), a group of the world's foremost polar bear scientists, unanimously deemed the polar bear "Vulnerable" in 2005, a listing equivalent to a "threatened" listing under Canada's SARA. Further, the United States listed the polar bear as a "threatened" species under the U.S. Endangered Species Act (ESA) in 2008. Yet despite mounting evidence of the species' downward trend and its imminent threats, and after years of delay, Canada recently listed the polar bear as only a "species of special concern," instead of threatened or endangered, thus denying the bear any substantive legal protections under SARA, in contravention of the statute's clear requirements. The Center requests the CEC direct the development of a factual record to investigate and document Canada's failure to adequately and expeditiously protect the polar bear, as required by SARA.

STATEMENT OF FACTS AND LAW

A. The Imperiled Polar Bear and Its Threats

The polar bear (*Ursus maritimus*) inhabits ice-covered waters of the circumpolar Arctic. Approximately 60 percent of the world's 20,000 to 25,000 polar bears inhabit Canada, from the Davis Strait to the Beaufort Sea and to the southern end of Hudson Bay.¹ The species is divided into 19 geographically, ecologically, and sometimes genetically distinct subpopulations, and 13 of these subpopulations occur in Canada.² Several of the 13 populations cross Canada's borders, including the Southern Beaufort Sea population that straddles both the State of Alaska and Canada's Yukon Territory.

The polar bear is highly adapted to and highly dependant upon sea ice for survival. The species' primary food source is ice-dependent seals, including ringed seals and bearded seals.³ In addition to using sea ice as a platform for hunting these seals, polar bears depend on sea ice for mating and breeding, sometimes for maternity denning, and as a platform for long-distance movement.⁴ However, the rapid decline of Arctic sea ice from global warming has and will continue to harm the polar bear. Currently at least seven of the 13 polar bear populations that

inhabit Canada are likely declining.⁵ Scientists estimate that if the Arctic continues its melting trend, the worldwide polar bear population will decline by more than two-thirds by 2050 and will be near extinction by the end of the century.⁶ Moreover, these dire predictions likely underestimate the risk to the species as they are premised on climate models that greatly underestimate the observed rate of sea-ice loss.⁷

B. International and Provincial Responses to Predicted Polar Bear Decline

In 2005, the IUCN PBSG unanimously deemed the polar bear “Vulnerable” due to a “suspected population reduction of >30% within three generations (45 years),” primarily due to climate change.⁸ An IUCN “Vulnerable” listing “equates to . . . [a] Threatened” listing under SARA.⁹ In 2008, the IUCN confirmed that status. Also, in 2008, the Province of Manitoba listed the polar bear as “threatened” under its Endangered Species Act, and in 2009, Ontario also deemed the species “threatened.”

Further, as noted above, in 2008, in response to a petition from the Center, the U.S. Fish & Wildlife Service listed the polar bear as a “threatened” species under the U.S. Endangered Species Act. 73 Fed. Reg. 28,212 (May 15, 2008). Based upon the “best scientific and commercial data available” at the time, the U.S. found the polar bear is “likely to become endangered throughout all of its range” within 45 years due primarily to loss of sea ice habitat from climate change. *Id.* at 28,293; 28,253-54. The U.S. also determined that “harvest is likely exacerbating the effects of habitat loss in several populations.” *Id.* at 28,280.

C. The Species at Risk Act

Canada’s Species at Risk Act (SARA) was enacted in 2002 in order to “prevent Canadian indigenous species . . . and distinct populations of wildlife from becoming extirpated or extinct” and “to provide for the recovery of endangered or threatened species.” *Species at Risk Act*, SC 2002, C. 29, Summary. The statute lists several hundred species as threatened, endangered, or of special concern, provides protections for listed species and their habitat, and sets out a process for adding species to the list. *See* C. 29, Schedule I.

1. Protections for SARA-Listed Species

SARA extends varying degrees of protection depending on a species’ listing status. For threatened and endangered species, SARA prohibits the “kill[ing], harm[ing], harass[ing], captur[ing] or tak[ing]” of a listed animal and “damag[ing] or destroy[ing] the residence” of that animal on federal lands or on designated provincial or territorial lands.¹⁰ ss. 32(1), 33, 34, 35. Further, the Minister must prepare a recovery strategy and action plan for any threatened or endangered species, identifying population objectives and threats, describing a strategy for combating those threats, and “identif[ying] . . . critical habitat.” ss. 37(1), 41(1)(b)-(d). SARA then prohibits “destroy[ing] any part of the critical habitat” that is on federal land or other lands designated by the government. s. 58(1)(a). The Minister must publish the recovery strategy and critical habitat within one year of listing an endangered species and within two years of listing a threatened species. s. 42(1).

SARA also allows listing of “species of special concern,” but the statute affords no substantive protections to these species. The Minister “must prepare a management plan for the species,” including “measures for the conservation of the species that the competent minister considers appropriate,” within three years of the species’ listing.¹¹ s. 65, 68. However, SARA does not prohibit killing, harassing, or destroying the residence of a species of special concern, nor does SARA require identification or protection of critical habitat.

2. SARA Listing Process and Deadlines

SARA also provides a detailed procedure, including a series of strict deadlines, for listing species. Under the first step, a designated scientific advisory committee called the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) must commission a “status report” for any species COSEWIC considers to be “at risk.” ss. 15, 21(1), 14, 16(1), (2). Within one year of receiving that status report, COSEWIC must formally “assess the status” of the species. ss. 23(1), 15(1)(a). This assessment includes identifying its threats and classifying the species as endangered, threatened, a species of special concern, or not at risk. COSEWIC’s assessments must be prepared “on the basis of the best available information,” including scientific, community, and aboriginal traditional knowledge. s. 15(2). Once complete, COSEWIC must “provide the Minister,” “with a copy of the assessment,” and “include[]” a copy in a public, online registry. s. 25(1).

Upon receiving COSEWIC’s assessment, the Minister “must, within 90 days,” and after consulting with “the competent minister[s],” “include in the public registry a report on how the Minister intends to respond to the assessment” and provide timelines for action. ss. 25(3); 27(2). Then, the Governor in Council (GIC), *i.e.*, the Canadian cabinet, “may” “within nine months after receiving an assessment” and “on the recommendation of the Minister,” accept COSEWIC’s assessment and add a species to the SARA list, reject the assessment, or refer the assessment back to COSEWIC for further consideration. s. 27(1), (1.1). *However*, if the GIC has not made such a determination “within nine months after receiving an assessment . . . by COSEWIC, the Minister *shall*, by order, amend the List in accordance with COSEWIC’s assessment.” s. 27(3) (emphasis added). **Accordingly, SARA requires that, within nine months of when COSEWIC completes an assessment, the GIC must act or the species is automatically listed.**

SARA’s legislative history confirms that Parliament intended strict compliance with the statute’s deadlines. *See* House of Commons Debates, 37th Parl., 1st Sess. No. 202 (June 10, 2002) at 1640 (Mr. John McKay) (“When the committee on the status of endangered wildlife in Canada proposes a list there has to be a decision made within nine months.”); *see also id.* No. 203 (June 11, 2002) at 1020 (Hon. David Anderson) (“There are binding timelines for the development of ministerial responses to a COSEWIC assessment, and that must happen within 90 days, three months. As well, we have guaranteed . . . that the government of the day will make a decision to list a species or not within nine months of receiving the COSEWIC assessment.”); *id.* No. 149 (Feb. 26, 2002) at 1205 (Hon. Charles Caccia) (“Deadlines are important. In this particular area time is of the essence in ensuring that a species is protected.”).

Further, legislators adopted the “reverse onus” concept, in which species are *automatically* listed unless the government timely rejects COSEWIC’s listing recommendation,

as a compromise to allow time-limited political consideration into an otherwise scientifically-based listing process. *Id.* No. 161 (Mar. 21, 2002) at 1345 (Mr. Larry Spencer) (“the reverse onus listing . . . would give cabinet the final decisions about the listing of species but it would have to make them within a limited time. Listing decisions it did not make within the allowed time would default to the list compiled by the scientists.”); *id.* No. 203 (June 11, 2002) at 1255 (Hon. Charles Caccia) (“a provision was made whereby once the scientific community proposes future additions to the list of endangered species, cabinet has nine months to reject them and must give reasons. If no action is taken by cabinet during the nine months, the list automatically becomes official. Thus the accountability of elected representatives is retained but within a limited period of time and the independent role of scientists is thus given greater significance.”).

In sum, SARA clearly requires a species to be listed within nine months of when COSEWIC completes an assessment, unless the GIC rejects the listing during that time. s. 27(3).

3. Endangered, Threatened, and Species of Special Concern

SARA defines when a species is endangered, threatened, or a species of special concern. An “endangered” species is “facing imminent . . . extinction.” s. 2(1). A “threatened” species “is likely to become an endangered species if nothing is done to reverse the factors leading to its . . . extinction.” *Id.* A “species of special concern” “may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.” *Id.* Lastly, a “wildlife species” under SARA includes “a species, subspecies, variety or geographically or genetically distinct population.” *Id.*

Despite having authority to do so, the Minister has never issued regulations governing any part of SARA, including the listing provisions. However, COSEWIC has further defined when a species may be listed, “based on” IUCN listing criteria.¹² Specifically, under Indicator E, a species is “endangered” if “[q]uantitative analysis . . . show[s] the probability of extinction . . . is at least . . . 20% within . . . 5 generations,” and a species is “threatened” if extinction probability is at least “10% within 100 years.”¹³ Alternatively, under Indicator A3, a species is endangered if “a reduction in total number of mature individuals, projected . . . to be met within the next . . . 3 generations” is at least 50%, “based on . . . a decline in . . . area of occupancy, extent of occurrence and/or quality of habitat,” or other factors.¹⁴ A species is threatened under Indicator A3 if the reduction is projected to be at least 30%.

Finally, COSEWIC acknowledges that wildlife may be listed in units smaller than the species level, including “designatable units.”¹⁵ A population is “designatable” based on taxonomy, genetic evidence, range disjunction, or biogeographic distinctions.

D. Canada’s Extensive Delay in Listing the Polar Bear

1. 2005 Listing Denial

COSEWIC has evaluated the polar bear’s status on numerous occasions. COSEWIC first designated the polar bear to be of “special concern” in 1991, then re-examined and confirmed that status in 1999, and then again in 2002.¹⁶ The 2002 “special concern” assessment was based

on threats from potential overhunting, toxic contamination, and “possible long-term effects of climate change on polar bears [that] are unknown.”¹⁷

On April 21, 2004, following the passage of SARA, the Minister issued a “Response Statement,” formally acknowledging COSEWIC’s 2002 polar bear assessment.¹⁸ The Minister announced he would “immediately forward” the assessment to the GIC, initiate consultation with various territories, provinces, and aboriginal peoples, and then make a recommendation as to listing. The GIC formally acknowledged receipt of the COSEWIC assessment the same day, triggering SARA’s nine-month deadline.¹⁹ On January 12, 2005, the GIC declined to list the polar bear. The GIC believed COSEWIC’s assessment did not sufficiently incorporate aboriginal traditional knowledge. Specifically, the GIC stated that the polar bear was “not being added . . . at this time in order to consult with the Nunavut Wildlife Management Board on [their] concerns . . . These consultations will be undertaken *on an urgent basis* and are expected to be completed *this spring*, at which time the Minister will reconsider this matter.”²⁰

2. COSEWIC’s 2008 Status Report and Assessment

Despite the GIC’s call for the polar bear’s status to be revisited “urgent[ly]” in spring 2005, the listing process stalled. In 2008, COSEWIC again re-examined the polar bears’ status, and at its April 20-25, 2008 meeting, COSEWIC formally assessed the polar bear’s status as a species of special concern.²¹ COSEWIC found the species did not qualify as threatened or endangered.²² SARA then required COSEWIC to “provide the Minister . . . with a copy of the assessment” and “include[]” a copy in the public registry. s. 25(1).

As discussed in detail below, in making this determination, COSEWIC entirely discounted the critical impact climate change will have on the species, in direct conflict with polar bear expert opinions. COSEWIC found the “negative effects of continued global warming cannot be reliably assessed,” dismissing credible analyses demonstrating that *two-thirds of the Canadian polar bear population* will face a sufficient probability of extinction in just 45 years to qualify the species as “endangered.”²³ Further, COSEWIC refused to identify “designatable units” (DUs) of polar bears, and instead evaluated the status of the Canadian polar bear population as a whole. COSEWIC dismissed without explanation a scientific paper identifying five polar bear DUs and finding that “the continued consideration of polar bears as a single biological unit is untenable.”²⁴

3. Minister’s Delayed Response

As noted above, once COSEWIC completes an assessment, a series of strict deadlines are triggered. Specifically, “[o]n receiving a copy of an assessment . . . of a wildlife species from COSEWIC . . . , the Minister must, *within 90 days*, include in the public registry a report on how the Minister intends to respond.” s. 25(3). Accordingly, the Minister’s response on the polar bear was due in late July 2008. However, the Minister did not issue a “Response Statement” until November 26, 2008 – seven months after COSEWIC assessed the polar bear.²⁵ In his response, the Minister indicated he would, after consulting with various parties, recommend the polar bear be listed as a species of special concern under SARA.

4. GIC’s Non-Response and Minister’s Failure to Timely Order Listing

In addition to requiring the Minister to respond within 90 days, SARA separately requires that “within nine months after receiving an assessment . . . by COSEWIC,” the GIC “may review the assessment and may, on the recommendation of the Minister,” accept, reject, or refer the assessment back to COSEWIC. s. 27(1.1). Further, if the GIC “has not taken” action “within nine months after receiving” the COSEWIC assessment, “the Minister shall, by order, amend the List in accordance with COSEWIC’s assessment.” s. 27(3). **Accordingly, SARA required the polar bear to be *automatically* listed as a “species of special concern” by January of 2009**, nine months after COSEWIC assessed the polar bear.

However, the GIC did not act within nine months, and the Minister failed to issue a timely order listing the species, as required by SARA. Instead, the GIC claimed it did not “receive” COSEWIC’s assessment until February 3, 2011, *nearly 3 years after COSEWIC completed its assessment*, even though the assessment had been widely available in the SARA public registry and online and had been sent directly to several ministers who are part of the GIC.²⁶

5. Inadequate and Delayed Species of Special Concern Listing

After proposing listing on July 2, 2011, the GIC formally listed the polar bear as a species of special concern under SARA on November 9, 2011, relying on COSEWIC’s 2008 assessment.²⁷ The GIC acknowledged it had received comments arguing that COSEWIC’s status assessment had failed to fully evaluate climate change effects and failed to properly consider designatable units of polar bears. Yet without citation or explanation, the GIC deemed COSEWIC’s assessment “appropriate in the face of uncertainty over . . . climate change” and the polar bear’s purported ability to adapt to changing habitat conditions.²⁸ While Canada has finally taken some action on the polar bear under SARA, the much delayed “species of special concern” listing provides no substantive protections for the species.

ARGUMENT

Canada has failed to list the polar bear as endangered or threatened, violating both the procedural and substantive provisions of SARA. Had Canada fully complied with SARA, the polar bear would have been listed as endangered two and a half years ago, and the species would be protected by a recovery strategy and have identified critical habitat by now. s. 42(1). Instead, Canada’s much-delayed “species of special concern” listing is unlawful and inadequate to protect the polar bear from the very serious threats it faces throughout its Canadian habitat.

A. Failure to Meet Statutory Deadlines for the Polar Bear Listing

As described in detail above, SARA contains a series of carefully crafted deadlines, intended to expedite the listing process and thus the actual protection of species. However, Canada missed at least two key deadlines in listing the polar bear:

Statutory Deadline	SARA Section	Deadline for Polar Bear Listing	Canada’s Timing	Amount of Unlawful Delay

Minister's Response due 90 days after receiving COSEWIC assessment	s. 25(3)	Due end of July 2008	Response issued Nov. 2008	4 months late
GIC's finding due nine months after receiving COSEWIC assessment	s. 27(1.1)	Due end of Jan. 2009	Issued Nov. 9, 2011	33 months late
Alternatively, Minister's Order listing species if GIC fails to act within nine months of receiving COSEWIC assessment	s. 27(3)	Due end of Jan. 2009	Not issued	33 months late

In an apparent effort to avoid SARA's statutory deadlines for listing the polar bear, as well as a myriad of other imperiled species, Canada has unlawfully interpreted SARA to grant itself an *unlimited* amount of time for species listings.²⁹ Specifically, Canada believes that, after the Minister receives COSEWIC's assessment, the Minister may constructively withhold the assessment from the GIC while the Minister conducts extended economic and political consultations, thus delaying when the GIC "receives" the assessment.³⁰ Accordingly, Canada believes the Minister may indeterminately delay species' listing well beyond the nine month deadline set in the statute.

Canada's interpretation clearly contravenes SARA's plain language and Parliament's intent, unreasonably ignores the carefully drawn deadlines, and frustrates the statute's purposes.³¹ First, as described in detail above, the statutory language is clear, and the "reverse onus" deadline was crafted to trigger automatic listing within nine months of a species' assessment, thereby allowing only *time-limited* political considerations. s. 27(3). Canada's unlawful interpretation violates the plain language of the statute and renders the carefully negotiated "reverse onus" requirement meaningless.

Further, pretending the GIC does not "receive" COSEWIC's assessment until formally provided by the Minister is irrational, as COSEWIC's assessment is widely available almost immediately following the assessment. SARA specifically requires COSEWIC, upon completing an assessment, to publish a copy in the SARA public registry, which is easily accessible online. s. 25(1). COSEWIC also issued a press release in April 2008 formally announcing it had completed its polar bear assessment.³² Further, SARA requires COSEWIC to "provide . . . a copy" of each completed assessment to the "Canadian Endangered Species Conservation Council," which includes numerous ministers who are also members of the GIC, including the Minister of the Environment, the Minister of Fisheries and Oceans, and the Minister of Canadian Heritage. ss. 25(1), 2(1). Canada may not arbitrarily deem the GIC ignorant of COSEWIC's assessments *for years* in order to avoid SARA's clear deadlines.

Additionally, Canada's unlawful delay in listing species defeats the purpose of other SARA provisions. SARA requires the Minister to issue a recovery plan and identify critical habitat within one year of an endangered species' listing and two years of a threatened species' listing. s. 42(1). By unlawfully delaying listings, Canada renders these short deadlines meaningless, and denies even highly endangered species much needed protections. SARA also requires COSEWIC to base its assessment on the "best," most up-to-date science and

information. s. 15(2). However, if the GIC delays its determination for multiple years after the assessment is completed, the science may be outdated upon listing, diluting the purpose behind this strong standard.³³ In sum, Canada's delay of listing the polar bear violates SARA, and Canada's unfounded interpretation of the statute contravenes SARA's plain language and purposes.

B. Failure to List the Polar Bear as Endangered

In addition to Canada's unlawful and extensive delay in listing the polar bear, Canada's decision to list the bear as a "species of special concern," instead of endangered or even threatened, also violated SARA's substantive provisions. First, COSEWIC failed to apply the best available information in assessing the polar bear's status. Second, COSEWIC wrongly assessed the polar bear as a "species of special concern," even though the polar bear qualifies as "endangered" and certainly at least "threatened" under COSEWIC's definitions. The Minister and the GIC have now confirmed and compounded these violations by making their recommendations and orders based on COSEWIC's invalid and unlawful assessment.

1. COSEWIC Failed to Use the Best Available Information in its Polar Bear Status Report and Assessment by Ignoring Climate Change and Designatable Populations.

SARA requires COSEWIC to base its status reports and assessments on "the best available information," including scientific, community, and aboriginal traditional knowledge. s. 15(2). COSEWIC violated this requirement by issuing a polar bear status report and assessment that entirely ignored the serious impacts of climate change and by failing to identify "designatable units" of polar bears.

First, COSEWIC's 2008 status report and assessment found the Canadian polar bear population did not meet the criteria to be listed as threatened or endangered.³⁴ However, in making this determination, *COSEWIC entirely ignored the future effects of climate change on the species*. As one polar expert recently noted in an editorial on the listing, Canada gave "the most eager climate-sceptic among experienced polar bear scientists the task of assessing the status of polar bears for COSEWIC" and "[n]ot surprisingly, the assessment concluded" the species is not endangered.³⁵ Using a model that discounted all future and even some current climate change impacts, COSEWIC found that only four polar bear subpopulations have a substantial risk of decline, and thus the whole polar bear population did not qualify as even threatened.³⁶

In making its determination, COSEWIC dismissed several key studies that document the significant impacts climate change will have on this Arctic species and that represent the "best available [scientific] information" on polar bear populations. s. 15(2). Most importantly, COSEWIC ignored the Amstrup et al. (2007) study, which estimates polar bear extinction probabilities in 45, 75, and 100 years under a middle-of-the-road A1B greenhouse gas emissions scenario.³⁷ Amstrup et al. (2007) concludes that – after factoring in climate change impacts – *seven Canadian polar bear populations*, or approximately 68% of Canadian polar bears, will face over a 30% probability of extinction in 45 years – enough to qualify Canadian polar bears as "endangered."³⁸

While COSEWIC acknowledges the Amstrup et al. (2007) study, it arbitrarily and incorrectly dismisses it as “preliminary.”³⁹ However, the U.S. Fish & Wildlife Service based its ESA “threatened” listing in part on the Amstrup (2007) study, deeming it part of the “best scientific and commercial data available.” 73 Fed. Reg. at 28,238. The study’s robustness was later confirmed when *Nature*, one of the world’s leading scientific journals, published the work as its cover story in 2010.⁴⁰ COSEWIC also failed to include or adequately address numerous other studies that were available in 2008 that forecast declines and document climate change threats to Canadian polar bear populations.⁴¹

Further, COSEWIC’s dismissal of climate change impacts on the polar bear directly contravenes the findings of the IUCN’s Polar Bear Specialist Group (PBSG), a group of the world’s most respected polar bear scientists, in addition to the findings of experts at the U.S. Fish & Wildlife Service. COSEWIC acknowledged that in 2005, the PBSG unanimously found the polar bear qualified as “Vulnerable,” a status that “equates to COSEWIC threatened status,” “in response to modelling of trends in sea ice extent, thickness, and timing of coverage . . . due to climate warming.”⁴² *Despite applying the very same standard as the IUCN*, COSEWIC nonetheless dismissed these predictions and failed to explain how it reached a different conclusion than polar bear experts. COSEWIC’s finding also contravenes the U.S. Fish & Wildlife Service’s finding that the bear is “threatened” or “likely to become an endangered species within the foreseeable future throughout all of its range.” 73 Fed. Reg. at 28,212.

Second, COSEWIC ignored the best available information when it refused to identify “designatable units” (DUs) of polar bears. Had COSEWIC properly identified DUs, some or all of these units would have qualified for endangered (or at least threatened) listing under COSEWIC’s standards.⁴³ A 2008 paper by Thiemann et al. was developed specifically to address the “ecological basis for identifying designatable units” for the SARA polar bear listing.⁴⁴ The paper identified five DUs in Canada that are “genetically, geographically, and ecologically separable” and “capture[] broad patterns of polar bear biodiversity.” These experts concluded, “[c]onsidering the vast geographical distribution of the species and the spatially variable ecological impacts of climate change, *the continued consideration of polar bears as a single biological unit is untenable.*”⁴⁵ COSEWIC acknowledged but cursorily dismissed this analysis, stating only that “identified subpopulations cannot be considered Designatable Units as per COSEWIC guidelines,” providing no rationale.⁴⁶

In sum, COSEWIC clearly failed to apply the best available scientific information in its polar bear assessment when it ignored the impacts of climate change on the species, in violation of SARA’s requirements. s. 15(2).

2. COSEWIC Wrongly Assessed the Polar Bear as a Species of Special Concern, Instead of as Endangered.

In addition to its extensive delay and failure to consider the best available information, Canada’s COSEWIC also wrongly applied the SARA listing criteria in assessing the polar bear as a “species of special concern,” instead of “endangered.” The GIC confirmed this serious error by formally listing the species as “of special concern” based on COSEWIC’s assessment. However, even if Canadian polar bears are considered in a single unit, instead of as separate DUs, the polar bear clearly qualifies as endangered because it “is facing imminent . . .

extinction.” s. 2(1); *see also id.* (defining a threatened species as one that it “is likely to become an endangered species if nothing is done to reverse the factors leading to its . . . extinction”). As described below, the polar bear meets the definition of an endangered species under both Indicator E and Indicator A3 of the COSEWIC listing criteria.⁴⁷

a. Indicator E: Quantitative Analysis Shows Probability of Extinction Is 20% or Greater within Five Polar Bear Generations

Under COSEWIC’s listing criteria, a species is endangered if “[q]uantitative analysis (population projections) show[s] the probability of extinction . . . is at least . . . 20% within . . . 5 generations,” which COSEWIC determined is 60 years for the polar bear.^{48, 49} The Amstrup et al. (2007) study concluded that more than two-thirds of Canada’s polar bears (68% or 10,439 of Canada’s total population of 15,361 bears) have an extinction probability of at least 35% in just 45 years, well-exceeding the SARA endangered threshold of 20% in 60 years.⁵⁰ Further, *all* Canadian polar bear populations face a probability of extinction of at least 37% within 75 years.⁵¹ Although the Amstrup et al. (2007) study did not expressly provide extinction probabilities at 60 years, based on the study’s projections for 45 years and 75 years, *all* Canadian polar bear populations will almost certainly exceed 20% probability of extinction within 60 years, again meeting the endangered threshold. Further, the PBSG and IUCN’s decision to list the polar bear was “based on a suspected population reduction of >30% within three generations (45 years).”⁵² Accordingly, the polar bear qualifies for SARA endangered status under COSEWIC’s criteria.

Further, it is likely Amstrup et al. (2007) *underestimates* the actual extinction risk to polar bears. The IPCC climate models used in Amstrup et al. project slower melting trends for sea ice than have actually been observed. For example, there was less ice in the Arctic in September 2007 than the mean IPCC model ensemble projected for 2050.⁵³ The Amstrup et al. study also used the IPCC’s mid-range A1B emissions scenario for its assumptions about future greenhouse gas emissions. Unfortunately, actual carbon dioxide emissions have largely tracked the trajectory of the most fossil-fuel intensive emissions scenario, A1FI, since 2000.⁵⁴

Lastly, COSEWIC mis-stated and thus failed to apply the Indicator E criteria in making its determination. *See* Ex. D at 6 (COSEWIC listing guidelines requiring COSEWIC to assess a species’ status “according to the quantitative COSEWIC criteria,” including Indicators A through E). Specifically, in considering whether the polar bear met Indicator E, COSEWIC found it “unlikely that the Canadian population of polar bears will decline by 30% over the *next 36 years*,” or three polar bear generations.⁵⁵ However, Indicator E requires an endangered listing if the “probability of extinction . . . is at least . . . 20% within . . . 5 *generations*,” or 60 years for the polar bear.⁵⁶ COSEWIC clearly violated SARA and its own guidance by failing to list the polar bear as endangered.

b. Indicator A3: A 50% Reduction in the Total Number of Individuals Projected within Three Polar Bear Generations

In addition to meeting Indicator E, the polar bear also qualifies as endangered under COSEWIC’s Indicator A3. Specifically, under Indicator A3, a species is endangered if there is at least a 50% “reduction in total number of mature individuals, projected . . . within the next . . . 3

generations,” or 36 years under COSEWIC’s 12-year generation time for the polar bear.⁵⁷ A species is threatened under the same criteria if a 30% reduction is projected in three generations.

Amstrup et al. (2007) demonstrates that all of the Canadian bears in the Seasonal Ice Ecoregion (Southern Hudson Bay, Western Hudson Bay, Foxe Basin, Davis Strait, and Baffin Bay populations) and all the bears in the Divergent Ice Ecoregion (Southern Beaufort population) will likely (77% to 80% probability) be extinct by 2050, just over 36 years from now. This equates to a loss of about 9,000 bears and a 60% reduction in Canada’s approximately 15,000-bear population. In addition, Amstrup et al. (2007) predicted that the remaining Canadian bear populations in the Convergent Ice and Archipelago Ecoregions will likely be smaller in 2050 than at present, meaning that the Canadian polar bear population in total is likely to be reduced by more than 60% over the next three generations. Thus, the Canadian polar bear population meets the A3 COSEWIC criteria for an endangered listing.

In sum, the polar bear meets COSEWIC’s and thus SARA’s criteria for listing as an endangered species. Canada’s failure to assess the species as endangered, in addition to COSEWIC’s failure to apply best available science or even the correct listing standard, violates SARA. ss. 15(1), (2); 21(1). The Minister and the GIC have now compounded this violation by making their recommendations and orders based on COSEWIC’s invalid and unlawful assessment.

THE CENTER SATISFIES THE REQUIREMENTS OF ARTICLE 14

Under Article 14 of the NAAEC, “the Secretariat may consider a submission from any non-governmental organization or person asserting that a Party is failing to effectively enforce its environmental law.”⁵⁸ The Center meets all submission requirements.

Identity of Petitioner: The Center for Biological Diversity (the Center) is the petitioner.⁵⁹ The Center is a U.S. non-profit corporation incorporated under the laws of the State of New Mexico. The Center “resides” in the State of Arizona. The Center has offices across the U.S., including in Tucson, San Francisco, Anchorage, and Seattle.

Sufficient evidence, not drawn exclusively from mass media reports: The Center believes this Petition and attached exhibits provide sufficient information to allow the Secretariat to determine whether a factual record should be developed.⁶⁰ Evidence to support the Center’s allegations is drawn primarily from formal Canadian administrative documents and published scientific studies. However, if the Secretariat would like additional information, the Center can provide further information upon request.

Notice to relevant authorities: This matter has been communicated in writing to the relevant authorities of Canada.⁶¹ By letter and email dated October 6, 2011, the Center explained how Canada is failing to effectively enforce the Species at Risk Act by failing to timely list and protect the polar bear as an endangered species. *See* Ex. J. These allegations track the allegations detailed in this letter. As of the date of this Petition, the Center has received no response.

Allegations of harm: The Center and its members are suffering harm from Canada’s failure to list the polar bear as an endangered species under SARA.⁶² Canada’s failure to properly list and protect the polar bear will allow the continued take of bears and degradation of their

habitat, compounding the risk faced by the species due to climate change. As described in the Declaration of Kassia Siegel, the Center is a U.S. non-profit corporation dedicated to the preservation, protection, and restoration of biodiversity, native species, ecosystems, and public lands. *See* Ex. K. The Center has over 320,000 members and online activists residing within the U.S., in Canada, and abroad.

The Center also has a long-standing interest in polar bear protection. The Center submitted the original petition to list the species under the U.S. ESA, triggering the U.S.'s polar bear listing process, and the Center participated in litigation over that decision. *See* Ex. K (Siegel Decl. ¶¶ 6-7). The Center regularly participates in both domestic and international efforts to protect the species. Further, the Center's members and staff have educational, scientific, spiritual, and recreational interests in the Arctic and the conservation of the polar bear. *Id.* ¶¶ 13-16. The Center's members regularly visit polar bear habitat in both the U.S. and Canada, and the Center's members recognize the vital need to preserve the species' diminishing habitat. *Id.*

Study of the matter advances the NAAEC's goals: Investigating Canada's failure to timely and properly protect the polar bear as an endangered species "raises matters whose further study . . . would advance the goals of" the NAAEC.⁶³ Specifically, promoting effective enforcement would "better conserve, protect, and enhance the environment, including wild . . . fauna" by providing protections for the polar bear; "foster the protection and improvement of the environment . . . for the well-being of present and future generations" by conserving current populations for future generations to view and enjoy; and "improve[] . . . environmental . . . procedures, policies and practices" of Canada and "enhance compliance with, and enforcement of, environmental laws and regulations" by promoting correct legal interpretations.⁶⁴

Private remedies are not available: The Center has taken reasonable actions to pursue private remedies with respect to Canada's failure to enforce SARA for the polar bear.⁶⁵ The Center has made several efforts to communicate its concerns to Canadian officials. The Center submitted substantive and detailed comments on the Canadian government's proposal to list the bear as a "species of special concern" on August 1, 2011. *See* Ex. G. Further, the Center provided relevant Canadian officials detailed notice of Canada's failure to timely list the polar bear as endangered under SARA and offered to meet with officials to discuss the issue. Ex. J; *see also* Art. 6(3)(c) (defining "private access to remedies" to include "request[ing] the competent authorities to take appropriate action to enforce that Party's environmental laws"). The Center received no response.

Ongoing administrative processes: On November 9, 2011, Canada formally listed the polar bear as a species of special concern, terminating its extended administrative process. However, as noted throughout this letter, the listing was unlawfully delayed and legally and factually inadequate, and the Center specifically requests that the Secretariat direct development of the factual record to investigate these important legal violations.

CONCLUSION

For all of the reasons set forth above, the Center respectfully requests the Secretariat to find that this submission satisfies the requirements of Article 14(1) of the NAAEC and that this submission merits requesting a response from Canada under Article 14(3). Please contact us if

any additional argument, evidence, or documentation would assist the Secretariat in evaluating this submission.

Sincerely,



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Supporting Information:
LIST OF EXHIBITS

- Ex. A:** COSEWIC. 2008. COSEWIC assessment and update status report on the polar bear *Ursus maritimus* in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa.
- Ex. B:** Amstrup, S.C., B.G. Marcot, and D.C. Douglas. 2007. Forecasting the rangewide status of polar bears at selected times in the 21st Century. USGS Alaska Science Center, Anchorage, Administrative Report.
- Ex. C:** Amstrup, S.C., E.T. DeWeaver, D.C. Douglas, B.G. Marcot, G.M. Durner, C.M. Bitz, and D.A. Bailey. 2010. Greenhouse gas mitigation can reduce sea ice loss and increase polar bear persistence. *Nature* 468:955-960.
- Ex. D:** COSEWIC Assessment Process and Criteria (Apr. 2010)
- Ex. E:** COSEWIC, Guidelines for Recognizing Designatable Units Below the Species Level (2005).
- Ex. F:** Thiemann, G.W., A.E. Derocher, and I. Stirling. 2008. Polar bear *Ursus maritimus* conservation in Canada: an ecological basis for identifying designatable units. *Oryx* 42:504-515.
- Ex. G:** Center for Biological Diversity Comments on Proposed Order Amending Schedule 1 for Polar Bears (Aug. 1, 2011). [Attachment omitted]
- Ex. H:** Vongraven, D. 2009. Guest editorial: the ballyhoo over polar bears. *Polar Research* 28: 323-326.
- Ex. I:** Hunter, C. M., H. Caswell, M. C. Runge, E. V. Regehr, S. C. Amstrup, and I. Stirling. 2007. Polar bears in the Southern Beaufort Sea II: Demography and Population Growth in Relation to Sea Ice Conditions. USGS Science Strategy to Support U.S. Fish and Wildlife Service Polar Bear Listing Decision. U.S. Geological Survey, Reston, Virginia. [Tables omitted]
- Ex. J** Center for Biological Diversity Letter regarding SARA Violations and NAAEC Petition (Oct. 6, 2011)
- Ex. K** Declaration of Kassia Siegel, Member and Center for Biological Diversity Staff

Supporting Information: ENDNOTES

¹ See Ex. A: COSEWIC. 2008. COSEWIC assessment and update status report on the polar bear *Ursus maritimus* in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa, at vi, 35 (referred to herein as “COSEWIC Status Report (2008)”).

² *Id.* at 8; IUCN/SSC Polar Bear Specialist Group. 2006. Polar bears: Proceedings of the 14th Working Meeting of the IUCN Polar Bear Specialist Group. Aars, J., A. Derocher, and N. J. Lunn (eds.), IUCN, Gland, Switzerland and Cambridge, U.K. Available at: data.iucn.org/dbtw-wpd/edocs/SSC-OP-032.pdf (last visited Nov. 11, 2011).

³ Ex. B: Amstrup, S.C., B.G. Marcot, and D.C. Douglas. 2007. Forecasting the rangewide status of polar bears at selected times in the 21st Century. USGS Alaska Science Center, Anchorage, Administrative Report, at 3; COSEWIC Status Report (2008), at 14.

⁴ Amstrup et al. (2007), at 4.

⁵ Obbard, M.E., G.W. Thiemann, E. Peacock, and T.D. DeBruyn. 2010. Polar Bears: Proceedings of the 15th Working Meeting of the IUCN/SSC Polar Bear Specialist Group, Copenhagen, Denmark, 29 June–3 July 2009. Gland, Switzerland and Cambridge, UK: IUCN, at 62-67. Available at: www.iucn.org/dbtw-wpd/edocs/SSC-OP-043.pdf (last visited Nov. 11, 2011); Amstrup et al. (2007).

⁶ See Amstrup et al. (2007), at 2; Ex. C: Amstrup, S.C., E.T. DeWeaver, D.C. Douglas, B.G. Marcot, G.M. Durner, C.M. Bitz, and D.A. Bailey. 2010. Greenhouse gas mitigation can reduce sea ice loss and increase polar bear persistence. *Nature* 468:955-960.

⁷ *Id.*

⁸ Schliebe, S., Wiig, Ø., Derocher, A. & Lunn, N. 2008. *Ursus maritimus*. In: IUCN 2011. IUCN Red List of Threatened Species. Available at: www.iucnredlist.org/apps/redlist/details/22823 (last visited Nov. 11, 2011).

⁹ COSEWIC Status Report (2008), at 52.

¹⁰ For most species, including most mammals, these prohibitions apply only on federal lands, unless the Governor in Council specifically orders the prohibitions to apply in provincial or territorial lands. ss. 34, 35.

¹¹ SARA’s provisions are implemented by different ministers, including the Minister of the Environment, the Minister of Fisheries and Oceans, or the Minister of Canadian Heritage, depending on the species involved or location of the action. s. 2(1). Canada treats the polar bear as a terrestrial species under the Minister of the Environment’s authority.

¹² See Ex. D: COSEWIC Assessment Process and Criteria (Apr. 2010), at 8 (adopting longstanding COSEWIC practice since 2001).

¹³ *Id.*

¹⁴ *Id.* at 10, citing Indicators A3 and A1.

¹⁵ Ex. E: COSEWIC, Guidelines for Recognizing Designatable Units Below the Species Level (2005).

¹⁶ See COSEWIC Status Report (2008), at iii.

¹⁷ COSEWIC. 2002. COSEWIC assessment and update status report on the polar bear *Ursus maritimus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. pp. 19-20. Available at: http://www.sararegistry.gc.ca/virtual_sara/files/cosewic/as_polar_bear_e.pdf (last visited Nov. 11, 2011).

¹⁸ Minister’s Response Statement for Polar Bear (Apr. 21, 2004). Available at:

http://www.sararegistry.gc.ca/virtual_sara/files/statements/rs167_e.pdf (last visited Nov. 11, 2011).

¹⁹ *Canadian Gazette*, Part II, Vol. 138, No. 9 (May 5, 2005).

²⁰ *Canadian Gazette*, Part II, Vol. 139, No. 2 (Jan. 26, 2005), at 96 (emphasis added).

²¹ See COSEWIC Press Release, *Polar Bear and other Species at Risk Assessed by Independent Canadian Science Body* (Apr. 25, 2008). Available at: http://www.cosewic.gc.ca/eng/sct7/sct7_3_11_e.cfm (last visited Nov. 23, 2011).

²² COSEWIC Status Report (2008), at 59, iii.

²³ *Id.*; Amstrup et al. (2007); see also Amstrup et al. (2010).

²⁴ COSEWIC Status Report, at 13 (2008); Ex. F: Thiemann, G.W., A.E. Derocher, and I. Stirling. 2008. Polar bear *Ursus maritimus* conservation in Canada: an ecological basis for identifying designatable units. *Oryx* 42:504-515.

²⁵ See Response Statement - Polar Bear (Nov. 26, 2008). Available at: http://www.sararegistry.gc.ca/document/default_e.cfm?documentID=1676 (last visited Nov. 23, 2011).

²⁶ *Canada Gazette*, Part II, Vol. 145, No. 4. (Feb. 3, 2011) (noting a “decision was made to delay [GIC’s] receipt of this wildlife species [assessment] to allow for extended consultations with the Nunavut Wildlife Management Board and the Nunavut Government. The consultations are now complete.”).

²⁷ *Canada Gazette*, Part I, Vol. 145, No. 27 (July 2, 2011); *Canada Gazette*, Part I, Vol. 145, No. 23 (Nov. 9, 2011).

²⁸ *Canada Gazette*, Part I, Vol. 145, No. 23 (Nov. 9, 2011), at 2310.

²⁹ See Submission to CEC under NAAEC by Sierra Club, et al. (Oct. 2006), at 5 (listing 45 other species whose listing has been severely delayed under Canada’s unlawful interpretation of SARA). Available at: http://www.cec.org/Storage/83/7899_06-5-SUB_en.pdf (last visited Nov. 11, 2011). This petition was withdrawn in January of 2011, after the Secretariat severely narrowed the petition’s scope by limiting both the claims and the species covered and after significant delay. Nonetheless, the Center is hopeful that the CEC will promptly and fully respond to this narrow and specific request regarding Canada’s failures.

³⁰ See Environment Canada, Consultation on Amending the List of Species under the Act: Terrestrial Species, at 5 (Dec. 2009) (explaining that some species will undergo “extended consultations” by the Minister, and listing may be delayed several years after the assessment). Available at: http://dsp-psd.pwgsc.gc.ca/collection_2010/ec/EN1-36-2009-eng.pdf (last visited Nov. 11, 2011); see also Draft Species at Risk Act Policies (2009) (“Receipt of the assessments by the Governor in Council will generally occur within three months of posting the response statements. Delivery by the Minister of the Environment and receipt by the Governor in Council may be delayed in certain circumstances.”). Available at: dsp-psd.pwgsc.gc.ca/collection_2009/ec/En4-113-2009-eng.pdf (last visited Nov. 11, 2011).

³¹ See also Sierra Club CEC Submission, at 4-6 (2006) (explaining Canada’s unlawful interpretation of “receipt”).

³² See generally, SARA Public Registry: www.sararegistry.gc.ca; COSEWIC Press Release, *Polar Bear and other Species at Risk Assessed by Independent Canadian Science Body* (Apr. 25, 2008).

³³ See Ex. G: Center for Biological Diversity Comments on Proposed Order Amending Schedule 1 for Polar Bears (Aug. 1, 2011), at 5-6 (citing numerous studies issued since COSEWIC issued its assessment in 2008, further demonstrating the dire threat to polar bears).

³⁴ COSEWIC Status Report (2008), at 58-59.

³⁵ Ex. H: Vongraven, D. 2009. Guest editorial: the ballyhoo over polar bears. *Polar Research* 28: 323-326.

³⁶ COSEWIC Status Report (2008), at 58-59. Specifically, COSEWIC assessed the polar bear’s risk of extinction using a “RISKMAN” model that did not take future climate change and sea ice loss into account. *Id.* at 37 (under RISKMAN model, “due to unknown effects of directional climate change on survival and recruitment, results should be used to interpret current and short-term likelihoods of decline only”). Further, for many populations, the model used pre-2000 demographic data that does even reflect existing impacts from sea ice decline over the past decade.

³⁷ Amstrup et al. (2007).

³⁸ *Id.*; see also Ex. G, Center Comments, at 10. Amstrup et al. (2007)’s projections are supported by Hunter et al. (2007), who used a populations dynamic model to similarly forecast that the Southern Beaufort Sea polar bear population had an extinction probability of ~45% to 75% in the next 50 years and ~75% to 95% by the end of the century. See Ex. I: Hunter, C. M., H. Caswell, M. C. Runge, E. V. Regehr,

S. C. Amstrup, and I. Stirling. 2007. Polar bears in the Southern Beaufort Sea II: Demography and Population Growth in Relation to Sea Ice Conditions. USGS Science Strategy to Support U.S. Fish and Wildlife Service Polar Bear Listing Decision. U.S. Geological Survey, Reston, Virginia.

³⁹ Amstrup et al. (2007).

⁴⁰ Amstrup et al. (2010).

⁴¹ See Ex. I: Hunter et al. (2007); see also Ex. G: Center Comments, citing Fischbach et al. (2007) (finding significant decrease in the proportion of polar bear maternal dens on pack ice between 1985 and 2005 in the Southern Beaufort Sea related to delays in autumn freeze-up, reductions in stable old ice, increases in open water, and reductions in snow cover on pack ice); Durner et al. (2006) (degradation of land denning habitats by coastal erosion of shorelines due to climate change); Monnett & Gleason (2006) (drowning and stress from increased open water swimming due to sea ice loss) and more.

⁴² COSEWIC Status Report (2008), at 52, citing IUCN (2006).

⁴³ As discussed below, all Canadian polar bear populations qualify as endangered under COSEWIC Indicators E and A3 based on Amstrup et al. (2007), and thus population subsets designated as DUs would also qualify as endangered.

⁴⁴ Thiemann et al. (2008), at 511.

⁴⁵ *Id.* at 512 (emphasis added).

⁴⁶ COSEWIC Status Report (2008), at 13.

⁴⁷ COSEWIC Assessment Process and Criteria, at 8.

⁴⁸ See *id.* at 10. A species is “threatened” if extinction probability is at least “10% within 100 years.” *Id.* A quantitative analysis is: “[a]n estimate of the extinction probability of a taxon based on known life history, habitat requirements, threats and any specified management options. Population viability analysis (PVA) is one such technique . . . If there is limited information, available data can be used to provide an estimate of extinction risk (for instance, estimating the impact of stochastic events on habitat). In presenting quantitative analyses, the assumptions, the data used and the uncertainty in the data or quantitative model must be documented.” *Id.* at 18. While the underlying modeling of Amstrup et al. (2007, 2010) is not a PVA and does not include standard confidence intervals, there is no question the work meets SARA’s definition of a “quantitative analysis” and must be considered in the SARA listing.

⁴⁹ The COSEWIC status assessment used a generation time of 12 years, despite the uniform use of a 15-year generation time by the IUCN, PBSG, and U.S. Fish & Wildlife Service. While the Center believes that the use of a 12-year generation time was incorrect, the polar bear must be classified as endangered even under COSEWIC’s truncated 12-year generation time.

⁵⁰ Amstrup et al. (2007); see also Ex. G: Center Comments, at 10 (Table 2) (showing Amstrup et al. (2007)’s probabilities of extinction by ecoregion for Canadian polar bear populations).

⁵¹ Amstrup et al. (2007).

⁵² Schliebe et al. (2008) (concluding that due to sea ice decline, risk “makes it fair to suspect population reduction of >30%”).

⁵³ Stroeve, J., M.M. Holland, W. Meier, T. Scambos, and M. Serreze. 2007. Arctic sea ice decline: Faster than forecast. *Geophysical Research Letters* 34, L09501.

⁵⁴ Raupach, M.R., G. Marland, P. Ciais, C. Le Quéré, J.G. Canadell, G. Klepper, and C.B. Field. 2007. Global and regional drivers of accelerating CO₂ emissions. *Proceedings of the National Academy of Sciences of the United States of America* 104:10288-10293. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1876160/pdf/zpq10288.pdf> (last visited Nov. 11, 2011); Friedlingstein, P., R. A. Houghton, G. Marland, J. Hackler, T. A. Boden, T. J. Conway, J. G. Canadell, M. R. Raupach, P. Clais, and C. Le Quéré. 2010. Update on CO₂ emissions. *Nature Geoscience* 3:811-812; Global Carbon Project. 2010. Carbon Budget 2009. Available at: www.globalcarbonproject.org/index.htm (last visited Nov. 11, 2011).

⁵⁵ COSEWIC Status Report (2008), at 59.

⁵⁶ See COSEWIC Assessment Process and Criteria, at 8.

⁵⁷ *Id.* citing Indicator A3, A1. Under Indicator A3, the reduction must be “based on . . . a decline in index of area of occupancy, extent of occurrence and/or quality of habitat,” or other factors. *Id.* Amstrup et al. (2007)’s results were reached based on these factors.

⁵⁸ *See* NAEEC Art. 14(1).

⁵⁹ Art. 14(1)(b).

⁶⁰ Art. 14(1)(c), (2)(d).

⁶¹ Art. 14(1)(e).

⁶² Art. 14(2)(a).

⁶³ Art. 14(2)(b).

⁶⁴ Art. 1(c), (a), (f), (g).

⁶⁵ Art. 14(2)(c).