AZA SUPPORTS STUDY TO ENHANCE POLAR BEAR PROPAGATION

The polar bear has become an icon for global warming in political and public arenas. Because sea ice is an essential component of their ecosystem, a change in its distribution and longevity could profoundly affect the species' future. Acknowledging the imminent threats to this species, the U.S. Department of the Interior listed the polar bear as a threatened species under the Endangered Species Act in 2008.

Polar bears have always been popular with zoo visitors, but now more than ever these charismatic ambassadors are needed to help educate visitors about global warming and wildlife conservation while serving as both an insurance population and a research population for studies that directly help wild bears. However, despite diligent efforts by the Polar Bear Species Survival Plan® (SSP) to develop a robust breeding program, high neonatal mortality and poor reproductive success threaten the genetic health and long-term viability of this species in zoos.

In response to these challenges, the AZA Conservation Endowment Fund supported a study conducted by the Center for Conservation and Research of Endangered Widlife (CREW) at the Cincinnati Zoo & Botanical Garden to establish non-invasive hormone monitoring methodologies for tracking the reproductive status of female polar bears. Partnering with 19 AZA zoos, CREW scientists have generated 30 year-long hormone profiles on bears in different management situations (breeding, non-breeding, contracepted) and can now determine if a female bear is exhibiting reproductive activity and if she might be pregnant entering the denning season. Interestingly, it is the analysis of testosterone metabolites (not estrogen) that yields the most useful information about female polar bear reproductive cycles. Study results are increasing our knowledge about the species' basic biology while assisting our partner zoos and the SSP with animal husbandry and population management decisions, respectively.

There are still challenges ahead, such as accurately distinguishing pseudopregnancy from true pregnancy and/or embryo loss, but thanks to the CEF grant that served as a catalyst for this project, CREW has secured funding from the Shumaker Family Foundation of Kansas to support this research for the next three years.

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