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E N V I R O N M E N T A L L A W

Protecting Polar Bears Under the Endangered Species Act

BY KENNETH J. WARREN

Special to the Legal

Scientists have carefully documented the serious effects likely to result from global warming. Well-respected entities such as the International Panel on Climate Change (IPCC) and the U.S. Global Change Research Program have predicted that rising sea levels, increased frequency and intensity of storm events and longer periods of drought will stress living conditions, water supplies and agricultural production.

Scientists have identified greenhouse gases in the atmosphere, which are persistent and still increasing, as the likely cause of global warming. Yet, despite floods, droughts and other serious effects of changing climate conditions, humans have the ability to employ mitigation and adaptation measures that are almost certain to allow our survival as a species.

Other species may not be as fortunate. Migrating to new locations or adjusting to changed conditions in their existing habitats are options for some species, but others do not have adaptive capability. The habitat changes caused by climate disruption are expected to accelerate the rates of species population decline and extinction.

Warnings from the scientific community concerning the decline or extinction of many species due to changing habitat have heightened the resolve of some members of the legal community to take actions based on existing law and sound science to protect species from the effects of climate change. How the scientific findings and legal requirements will work together is a chapter now being written.

A poignant example of a species at the intersection of scientific and legal conservation efforts is the polar bear. Polar bears are marine mammals that rely on sea ice to travel to feeding areas or to locate mates. Seals living on the sea ice serve as the major source of food for polar bears. Consequently, the survival of polar bears depends on the availability of sufficient sea ice habitat. As global warming causes the melting of sea ice, the long-term survival of the species is in peril.

Recognizing the serious plight of the polar bear, the Center for Biological Diversity (CBD)



KENNETH J. WARREN
is a shareholder in the environmental practice group at Hanglely Aronchick Segal & Pudlin. He is a former chair of the American Bar Association section of environment, energy and resources.

petitioned the secretary of the interior to list the polar bear under the Endangered Species Act (ESA). The service classifies species as endangered or threatened under the ESA by making a listing determination. Among the factors specified in the ESA that the service must consider are the present or threatened destruction, modification or curtailment of the species' habitat or range and any overutilization of the species for commercial, recreational, scientific or educational purposes.

After examining all of the scientific evidence, the U.S. Fish and Wildlife Service listed the polar bear under the ESA as a threatened species. Various appeals were promptly filed raising, among others, the question of whether existing climate change science can support an ESA listing.

Challenges to the listing decision were consolidated in the U.S. District Court for the District of Columbia, which issued its decision on June 30 in *In re Polar Bear Endangered Species Act Listing and §4(d) Rule Litigation*. The substantive framework for the court's review is set forth in the ESA, the primary federal statute focused on conserving endangered and threatened species and the ecosystems on which they depend.

The ESA defines an endangered species as "any species which is in danger of extinction throughout all or a significant portion of its range." The ESA defines a threatened species as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."

Following the listing of a species, various prohibitions and other statutory protections

apply. The ESA prohibits the "taking" of an endangered species, a term which includes acts causing any harm to an individual member of the species. Species classified as threatened often receive a lower level of protection than do species classified as endangered. The Fish and Wildlife Service may by regulation establish prohibitions and other requirements to protect threatened species. Listing also triggers various interagency consultation, permitting and other requirements. The listing determination is therefore a critical step in the ESA process.

As the district court emphasized, in making its listing determination for the polar bear, the Service credited the existing body of science on climate change. Some of the evidence consisted of hard data showing that the summer/fall ice melt season in the Arctic lengthened by two weeks per decade commencing in 1979. Likewise, studies showed that warmer temperatures reduced the extent of sea ice in the winter and its overall thickness. Other evidence required more interpretation. For example, based on IPCC climate models and related data, the Service attributed changes in sea ice to increased Arctic temperatures caused by greenhouse gas emissions and related changes in atmospheric and oceanic circulation.

Some of the scientific analyses upon which the Service relied involved the use of predictive tools. IPCC models predicted a significant decline in polar bear habitat. Forecasting models developed by the U.S. Geological Survey (USGS) and traditional ecological knowledge from native people living in the same habitat as the polar bears also showed that habitat modification will put the polar bear population at risk. In particular, USGS found that as the extent of sea ice diminishes, the loss of habitat necessary to support polar bear populations will lead to a reduction in polar bear numbers.

The Service recognized that less ice will result in fewer seals available for polar bears to hunt, shorter hunting seasons and increased energy demands from swimming long distances. In turn, these conditions will result in poor physical condition, lower reproductive rates and population decline. Based upon all of the scientific evidence, the Service concluded that

all polar bear populations will be affected by substantial loss of sea ice within the foreseeable future.

The Service next evaluated whether these findings justified listing the polar bear as “threatened” or “endangered.” The Service found that at the time of their listing the species was not yet on the brink of extinction. Rather, polar bears were abundant throughout their range and had yet to experience precipitous population decline. The scientific evidence showed, however, that the polar bear will likely become imminently at risk of extinction by mid-century. As such, in the Service’s view, the listing of polar bears as a threatened species, not as an endangered species, was appropriate.

Various plaintiffs challenged the Service’s listing determination and its underlying scientific support from opposing perspectives. Conservation organizations such as CBD claimed that the polar bear should have been classified as endangered and afforded the highest level of protection. Other plaintiffs contended that the polar bear should not have been listed at all. The Service, like Goldilocks, asserted that its choice was just right.

The *In re Polar Bear* court began its analysis by noting that the deferential arbitrary and capricious standard of the Federal Administrative Procedure Act applied. Where as here an expert administrative agency resolved complex scientific questions, a court should not substitute its own judgment. Nevertheless, the court must examine whether the ESA commands or prohibits a particular result, whether the Service’s interpretation of the ESA was permissible, and whether the Service considered the relevant factors and articulated a rational connection between the facts and the choices made.

CBD challenged the legal basis for the Service’s decision to list the polar bear as threatened, not endangered. CBD contended that global warming is destroying the polar bears’ habitat and is unlikely to be reversed. Therefore, according to CBD, the polar bear is in danger of extinction.

The Service, however, distinguished between endangered and threatened species based on temporal proximity of the risk of extinction. The Service interpreted the statutory phrase “in danger of extinction” to describe a species that is currently on the brink of extinction in the wild, not a species likely to become extinct many years in the future. The court held that the Service’s definition is a permissible construction of the ESA. Despite CBD’s

contention that the polar bear is in danger of ultimate extinction, the Service had rationally determined that at the time of listing, the polar bear was not on the brink of extinction.

In contrast to CBD, other plaintiffs argued that the Service failed to show that the polar bear is “likely to become an endangered species in the foreseeable future,” a statutory requirement for listing as a “threatened” species. These plaintiffs asserted that the Service defined “likely” by using the IPCC’s fourth assessment report (AR4) that defined likely outcomes for purposes of climate models and projections as having a 67 percent to 90 percent probability of occurring, and that this standard was not met. This argument required the court to determine the degree of certainty necessary for a listing determination. The court rejected the plaintiffs’ argument that the Service had adopted the stringent 67-90 percent numerical standard of likelihood or that it was required to do so. The court concluded that it was not necessary for the Service to apply the high probability standard used for models and projections when evaluating whether the statutory standard has been met.

The court further noted that in the context of its decision to list the polar bear, the Service’s use of a 45-year period as the “foreseeable future” was rational. The Service made a reasoned decision to rely on the IPCC AR4 to select the maximum time frame for which impacts to Arctic sea ice could be predicted with confidence. In addition, the 45-year time span served as a reliable measure because it encompassed three polar bear generations, rather than only a single generation. The Service also found additional support for its selection of the 45-year projection in the standards issued by the International Union for the Conservation of Nature, the life history and population dynamics of polar bears, documented changes in multiyear and annual sea ice, and the direction of projected rates of change of sea ice.

Even though it accepted the Service’s threshold for demonstrating that a species is “likely” to become endangered, and allowed use of the IPCC reports and other information for selecting the “foreseeable future,” the court still had to determine whether scientific uncertainty and data limitations precluded the Service from relying on existing climate change science. The court acknowledged that the Service is “operating at the frontiers of science” and addressing issues that are “exceedingly complex and rapidly developing.” Seizing on these uncertainties, plaintiffs opposing the listing contended that complex systems like

the Arctic are inherently unpredictable and too uncertain to reliably model.

Based upon a careful review of the evidence, the court concluded that the scientific uncertainties and the limited data available did not preclude the Service from listing the polar bear. The court noted that the Service must rely on the best available science even where some uncertainty exists. Although the Service may not implement the ESA “haphazardly,” the Service is entitled to particular deference where it has drawn conclusions from scientific data. The IPCC AR4 report was generally accepted by the scientific community to be the best available climate change data available at the time of the listing decision. Plaintiffs did not meet their burden of showing that information superior to the IPCC reports were available. Consequently, the reports, when combined with other available information, served as a rational basis for the listing determination.

In sum, using a deferential standard of review under the Administrative Procedure Act, the court upheld the Service’s listing determination based on existing climate change science, notwithstanding the uncertainties of predictive modeling. Because the polar bear is only one of many species that may be adversely affected by global warming, it remains to be seen whether additional courts will follow the *In Re Polar Bear* court in concluding that existing climate change science adequately supports listing of species under the ESA. •