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On May 15, 2008, the U.S. Fish and Wildlife Service (FWS or Service) listed the polar bear as a threatened species under the Endangered Species Act (ESA or the Act). Though the polar bear was not the first species listed under the ESA due to the impacts of global climate change,, it was certainly the most prominent, garnering extensive media coverage and spurring extensive litigation.

Based on the Service’s rationale for listing the polar bear as threatened, and the consensus that the impacts of climate change will likely overcome the resilience of many ecosystems — increasing the risk of extinction for many species — future ESA listings are likely. While the implications of climate change to the ESA may be limited, in the wake of the Service’s recognition of the connection between climate change and habitat modification, more litigation is expected — particularly in the context of the “consultations” required under Section 7 of the ESA for agency actions that may have adverse impacts on listed species. In exploring the question of whether climate change considerations will result in the application of the Act to the authorization of projects with greenhouse gas (GHG) emissions, this article examines the polar bear listing itself, discusses the limitations of those protections afforded by the ESA, and considers impacts to the Section 7 consultation process — with particular attention to the Service’s obligation to consider projects that emit GHGs and the impacts of climate change more generally.

The authors conclude that while environmental groups will likely continue to pressure agencies to consider the climate change induced impacts of projects on potentially geographically distant listed species like the polar bear, the Service has already rejected the contention that Section 7 consultations would be required for attenuated GHG-related impacts. Thus, environmental plaintiffs will likely face an uphill battle establishing any causal connection between GHG emissions from a given project in the lower 48 states to the adverse impacts on species like the polar bear (resulting from undifferentiated global climate change). Nonetheless, environmental groups have had some success in requiring the Service to analyze global climate change in its Section 7 consultation process. Whether this climate change analysis will result in additional species protections, however, remains to be seen (and litigated).

The Polar Bear Listing

ESA protection begins with a decision by either the FWS or the National Marine Fisheries Service (NMFS), to list a species as “endangered” or “threatened.” An endangered species is “in danger of extinction throughout all or a significant portion of its range,” and a threatened species is “likely to become an endangered species within the foreseeable future.” The distinction between these two designations is important, as threatened species are not automatically afforded the same statutory protections as endangered species. Listings are based on the following five statutory criteria: (1) present or threatened destruction, modification, or curtailment of the species’ habitat; (2) exploitation for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; or (5) other natural or manmade factors affecting the species’ continued existence. Concurrent with the listing decision, the Services must also designate “critical habitat” — habitat essential to the conservation of the species — unless it finds that such a designation is imprudent.

In February 2005, based on the decline in populations and habitat caused by climatic changes, environmental plaintiffs petitioned the Service to list the polar bear as a threatened species. Although FWS initially resisted, on May 15, 2008, following two lawsuits to enforce statutory listing deadlines, the Service ultimately issued a final listing of the polar bear as a threatened species.
FWS concluded that arctic sea ice would “continue to be affected by climate change” and, more dramatically, that “catastrophic mortality events that have yet to be realized on a large scale are expected to occur.” In light of the five statutory criteria listed above, FWS based its determination to list the polar bear as threatened primarily because “changes in sea ice negatively impact polar bears by increasing the energetic demands or movement in seeking prey, causing seasonal redistribution of substantial portions of populations into marginal ice or terrestrial habitats with limited values for feeding, and increasing the susceptibility of bears to other stressors . . . .” FWS concluded that these adverse impacts on the polar bear’s habitat threatened the species throughout its range. However, FWS did not designate a critical habitat for the polar bear, concluding that there was too much uncertainty as to which specific areas within the United States "might be essential to the conservation of the polar bear" and that, as a result, a "critical habitat" was indeterminable.

Not surprisingly, environmental groups are already pursuing additional ESA listings based on climate change impacts, and in the wake of the polar bear listing — pressure on the Service to list additional species will likely increase. For example, in the weeks following the polar bear listing, environmental groups petitioned the Service to list three arctic seal species, as well as threatening to sue the Service based on its failure to act on a petition to list the Pacific walrus, which is subject to many of the same environmental stressors as the polar bear.

**What the Listing Means for the Polar Bear**

At least in the short term, the practical effect of the polar bear listing on human activity may be limited, as a "threatened" designation does not automatically provide the same degree of protection as an "endangered" designation. Typically, however, "threatened" species have been afforded the same protection as those designated as "endangered" through a regulation that simply incorporates by reference the statutory protective provisions for endangered species. Section 4(d) of the ESA authorizes the Service to issue regulations deemed "necessary and advisable to provide for the conservation of the species." In the case of the polar bear, the FWS issued a Special Rule pursuant to Section 4(d) that incorporated the existing protective measures for the polar bear provided under the Marine Mammal Protection Act (MMPA) by authorizing those activities "conducted in a manner consistent with the requirements of the MMPA."

This provision of the Special Rule directly relates to commercial fishing, oil and gas exploration and development activities that have long been regulated under the MMPA. Notably, in its final listing, the Service concluded that, based on low levels of documented direct impacts and existing protective measures provided by the MMPA, “oil and gas exploration, development and production activities do not threaten the [polar bear] throughout all or a specific portion of its range.” Consistent with this conclusion, the Service issued a final rule three weeks after the polar bear listing that provided MMPA coverage for any "nonlethal, incidental, unintentional take" of polar bears during oil and gas industry activities in the Chukchi Sea and adjacent western coast of Alaska. Thus, the polar bear listing will likely have a minimal effect on ongoing commercial activities in the polar bear’s habitat.

The Special Rule also explicitly exempted any taking of polar bears incidental to "an otherwise lawful activity within any area subject to the jurisdiction of the United States except Alaska." This language clearly suggested that the Service did not intend the polar bear listing to affect industrial activities in the lower 48 states, including those activities that directly result in GHG emissions and, in the aggregate, adversely affect polar bears. While expressly recognizing the link between GHG-induced climate change and the reduction in polar bear habitat, the Service was cautious in its assessment of the steps that could actually be taken to reduce GHG-induced impacts. As a result, the discussion of existing regulatory mechanisms focused on international and domestic species, and specific mechanisms that regulate human impact on polar bears (e.g., the 1973 International Agreement on the Conservation of Polar Bears, the MMPA, and the Outer Continental Shelf Lands Act). The Service concluded that "although there are some existing regulatory mechanisms to address anthropogenic causes of climate change, there are no known regulatory mechanisms in place at the national or international level that directly and effectively address the primary threat to polar bears — the range-wide loss of sea ice habitat." Notably, the final
listing did not mention the Clean Air Act or other regulatory mechanisms directly targeted at air quality and emissions.

Immediately following the issuance of the Special Rule, the same environmental plaintiffs (that had petitioned to list the polar bear) filed suit challenging the rule’s adequacy, alleging that it provided inadequate protection for the polar bear and impermissibly "create[d] an exemption for greenhouse gas emissions." Put another way, attorney for the plaintiffs, Kassie Seigel, stated that "[t]he listing lets the [polar] bear into the hospital, but then the [Special Rule] says the bear's insurance doesn't cover the necessary treatments." Further, it is likely that environmental groups will continue to challenge federal permitting actions in the lower 48 states that authorize GHG emissions on the basis that they result in illegal takings of listed species under the ESA. Going forward, however, these plaintiffs will undoubtedly face resistance from the Service.

Section 7 Consultations After the Polar Bear Listing

Section 7 of the ESA requires federal agencies to insure that any action they authorize, fund or carry out is not likely to jeopardize the continued existence of any endangered or threatened species (or to result in the destruction or adverse modification of critical habitat). To meet this requirement, the ESA requires such federal "action agencies" to consult with either the FWS or the NMFS whenever an action may affect a listed species. To facilitate the consultation process, action agencies are required to prepare biological assessments describing the project and identifying any listed species likely to be affected by the action. If the Service determines that the action will result in adverse impacts to listed species, it will issue a biological opinion evaluating the effects of the proposed action on the listed species (and designated critical habitat) requiring conservation measures to address the impacts.

Notably, based on the polar bear listing, the Service concluded that a review of agency action potentially affecting a listed species would not be triggered solely by agency action authorizing GHG emissions. While this conclusion has not yet been judicially tested, courts have held that an agency’s consideration of whether an action will jeopardize the continued existence of a given species must at least include an analysis of climate change. Whether this analysis itself will lead to jeopardy findings or additional species protections has not yet been decided, however, Section 7 of the ESA will undoubtedly be a fertile battle ground for ESA-based climate change litigation.

In a guidance document issued immediately following the polar bear listing, the Service stated that it did "not anticipate that the mere fact that a Federal agency authorize[d] a project that [was] likely to emit GHGs [would] require the initiation of Section 7 consultation." Further, the Service stated that "GHGs that are projected to be emitted from a facility would not, in and of themselves, trigger Section 7 consultation for a particular action unless it is established that the . . . proposed action cause[d] an . . . impact to the species . . . [that] must be reasonably certain to occur." The Service maintained that, in order for it to list the species or their habitats, there must be a sufficient "causal connection" between the GHG emissions at an individual facility and an individualized impact. Concurrent guidance issued by the U.S. Geological Survey concluded that "current science and models cannot link individual actions that contribute to atmospheric carbon levels to specific responses of species, including polar bears." The Service similarly concluded:

The best scientific data available today do not allow us to draw a causal connection between GHG emissions from a given facility and effects posed to listed species or their habitat, nor are there sufficient data to establish that such impacts are reasonably certain to occur. Without sufficient data to establish the required causal connection — to the level of reasonably certainty — between a new facility's GHG emissions and impacts to listed species or critical habitat, Section 7 consultation would not be required to address impacts of a facility's GHG emissions.

The Service reiterated this interpretation in its Special Rule, observing that "literally every agency action that contributes greenhouse gases to the atmosphere would arguably result in consultation with respect to every listed species or critical habitat that may be affected by climate change."
Despite these statements, and despite the exemption recently granted to local oil and gas developers, the State of Alaska remains concerned that developers must now apply for permits and consult with the Service (a requirement that may cause unfair, harmful economic consequences to the State). Whether or not environmental plaintiffs will be able to establish a sufficient causal connection for the purpose of challenging a Section 7 consultation remains to be seen. However, the practical challenges to pursuing ESA claims, especially in the conventional context of the lower 48 states, are apparent.

Consider, for example, this conventional Section 7 consultation: A development project of 10,000 residential units in California that would require a dredge and fill permit under the Clean Water Act and would also result in the taking of the endangered California tiger salamander and its critical habitat. Any increased emissions and electricity consumption associated with the development would result in an increase of roughly 300,000 metric tons of GHG emissions per year. In order to issue the dredge and fill permit, Section 7 of the ESA would require the Army Corps of Engineers to consult with the Service regarding the project's impacts to the tiger salamander. In the wake of the polar bear listing, however, project opponents might also wield the ESA to argue that the adverse affects of the project's GHG emissions on any listed species — from polar bears (impacted by depleting habitats) to corals (impacted by more severe weather events — should also be considered in the consultation. And, while the Service's guidance indicates that it intends to limit the scope of Section 7 consultations to more localized impacts, climate change can be expected to continue to be fertile ground in ESA litigation.

The pending polar bear listing action is not the first time that the ESA and climate change issues have been litigated. Indeed, the ESA's "best scientific and commercial data available" standard has already been the subject of a successful lawsuit by environmental plaintiffs. In two companion cases, a federal district court in California considered biological opinions issued in connection with the combined water storage and supply operations of the Central Valley Project, operated by the federal Bureau of Reclamation, and the State Water Project, operated by the California Department of Water Resources. Together, these projects provide potable water for most of California. These lawsuits were based, in part, on allegations that the Service failed to consider climate change in their Section 7 consultation regarding the impacts of the projects on several aquatic species. The court agreed, finding that climate change was "an important aspect of the problem" of water supply in the western United States and that the Service acted "arbitrarily and capriciously by failing to address the issue of climate change" in the biological opinions. Noting the statutory requirement to use the "best scientific and commercial data available", the court found that the Service’s conclusions were impermissibly "based in part on the assumption that the hydrology of the water bodies affected by the [water project] will follow historical patterns for the next 20 years" and that there was "readily available data . . . regarding the potential effects of global climate change" on the project area's hydrology. Thus, the Service must have at least considered impacts to listed species in the context of climate change, if not the attenuated impacts to listed species via climate change.

In response to the court's decision, in May 2008, the action agency prepared a revised biological assessment that incorporated climate change into its assessment of water project impacts on listed aquatic species in the Sacramento-San Joaquin Delta. That assessment concluded that there were several important reasons that future climate change might have negative long-term influences on habitat for listed species within the impacted area. Here, demonstrable, "reasonably certain" climate change related impacts were identified as affecting the context of a localized jeopardy analysis. Precisely what conclusions the Service will draw from this climate change analysis, and whether it tips in favor of a jeopardy opinion, will be determined in subsequent rounds of litigation. However, the Delta cases clearly provide a blueprint for future environmental plaintiffs to challenge biological opinions through the lens of climate change.

**Conclusion: The Only Certainty Is More ESA Climate Change Litigation**

Although the polar bear listing represents a milestone under the ESA, the ultimate reach of its impact is still unknown. The ESA has been used as a powerful tool for the protection of listed species for the last 35 years, but whether it can truly protect species from the impacts of GHG emissions is questionable. It is likely that additional ESA listings based on GHG-induced climate change impacts will follow. Further, the
Service’s conclusions regarding the destruction of polar bear habitat due to the impacts of global climate change are inescapable. However, whether additional ESA listings will translate into concrete regulatory steps aimed at mitigating GHG emissions is less certain. In any case, environmental plaintiffs can be expected to continue to combat climate change using the ESA. Whether a link can be established between GHG emissions at a given facility and the impacts of habitat reduction on the polar bear is still an open question, but one that will likely face judicial scrutiny in the coming months, as will the question of whether consideration of the best scientific data available will lead to additional jeopardy opinions and/or additional mitigation measures to address GHG emissions.

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1 “Does the flap of a butterfly's wings in Brazil set off a tornado in Texas?” was a question posed by Edward Lorenz to coin the theory of the “butterfly effect.” See Kenneth Chang, Edward N. Lorenz, a Meteorologist and Father of Chaos Theory, Dies at 90, N.Y. Times, Apr. 17, 2008.
2 See 71 Fed. Reg. 26,852 (May 9, 2006) (listing two coral species based, in part, on climate change impacts)
3 For example, following the polar bear listing, Center For Biological Diversity (CBD) filed lawsuits and notices of intent to sue regarding the Pacific walrus and three arctic seal species, as well as challenges to FWS rules concerning oil and gas exploration activities in polar bear habitat, see, CBD web site, available at http://www.biologicaldiversity.org; the State of Alaska also announced its intention to challenge the listing decision claiming that the Service’s “decision to list a currently healthy species is based on not only the uncertain modeling of future climate change, but also the unproven long-term impact of any future climate change on the species”, Press Release, State of Alaska, “State to Sue Over Polar Bear Listing: Alaska Filing to Challenge Decision” (May 21, 2008) available at http://gov.state.ak.us/archive.php?id=1163&type=1; Safari Club International (SCI) filed a lawsuit challenging the FWS polar bear rules, Press Release, Safari Club International, “SCI Files Lawsuit to Reverse Ban on Polar Bear Imports” (May 23, 2008) available at http://www.scifirstforhunters.org/articles/index.cfm?action=view&Article_ID=3292; and the Pacific Legal Foundation (PLF) has indicated their intent to challenge the listing as well, press release available at PLF’s website, http://community.pacificlegal.org/NETCOMMUNITY/Page.aspx?pid=596&srcid=191.
7 16 U.S.C. §§ 1532, 1536(b)(6)(C) (“critical habitat” is defined as habitat that is essential to the conservation of the species and which may require special management considerations).
9 Such stressors include increased competition for limited food resources, increased risk of drowning, and reduced availability of prey seal species (whose populations are also expected to decline).
10 Id. at 28,251, 28,298.
13 See 50 C.F.R. § 17.31.  
14 16 U.S.C. 1533(d).  
15 See 16 U.S.C. § 1361 et seq.  
17 Id.  
19 Id. at 28,318.  
21 Id.  
26 See Memorandum from Dale Hall, Director, FWS, to Regional Directors, Regions 1-8, Expectations for Consultations on Actions that Would Emit Greenhouse Gases, (May 14, 2008) (Hall Memorandum).  
27 See 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.02 (the statutory phrase "jeopardize the continued existence of" refers to an action that can be expected to reduce the likelihood of both the survival and recovery of the species).  
28 Hall Memorandum.  
29 Id.  
31 Hall Memorandum.  
32 73 Fed. Reg. 28,306 at 28,313. Note that the Service specifically discussed potential section 7 consultations for oil and gas development activities in polar bear habitat, distinguishing between local direct impacts, such as drilling activities and vehicular traffic, which would be subject to section 7 consultation, and the "future effects of any emissions that may result from the consumption of petroleum products refined from crude oil pumped from a particular drilling site," which the Service concluded would not be considered during section 7 consultations. Id.  
37 Kempthorne, 2007 BL 151906.  
38 Gutierrez, 2008 BL 79596.  
39 E.g., (1) more precipitation earlier in the year increases the likelihood of winter floods, affecting reproduction of listed species; (2) rising sea levels increase salinity intrusion, causing shifts in fish distributions and further reductions in habitat; and (3) warmer air and water in central California could reduce the geographical extent of suitable habitat for temperature-sensitive species. See U.S. Dept. of the Interior, Bureau of Reclamation, Mid-Pacific Region, "Central Valley Project and State Water Project Operations and Criteria Plan Biological Assessment" at p. 7-20 (May 2008).