

Written Statement to the Committee on Science, Space and Technology
U.S. House of Representatives

The Endangered Species Act: reviewing the Nexus of Science and Policy

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Thank you for the invitation to speak with you today. My name is Doug Vincent-Lang. I am a Special Assistant to the Commissioner of the Alaska Department of Fish and Game (ADF&G).

Today I would like to address concerns the State of Alaska has with the application of science in several recent Endangered Species Act (ESA) decisions in Alaska. Congress passed the ESA as a tool to ensure that species would not become extinct. The act was meant as the ultimate safeguard and has been used successfully to prevent species extinctions where species were in significant decline and facing immediate risk of extinction, and when the threats to the species' survival were imminent and easily identifiable and manageable. It is a goal we all should support. It is one Alaska supports.

An example of the successful application of the ESA in Alaska was the Aleutian Canada (Cackling) Goose. These geese were in precipitous decline. The main threats were identified to be predation by foxes and loss of overwintering habitat. The threats were addressed and the species recovered and was removed from the ESA, notably without designation of critical habitat.

Recent ESA actions, however, have caused concern about how the ESA is being applied in Alaska. Species in Alaska have increasingly been targeted for listing based solely on speculated risks such as climate change, despite currently healthy and stable numbers. This is best exemplified by the decision by the U.S. Fish and Wildlife Service (USFWS) to list the polar bear as a threatened species worldwide. The polar bear was listed as a threatened species based on habitat envelope models that hypothesized that climate change will result in a decline of sea-ice habitats, and on speculation that lost habitat will threaten currently healthy populations with extinction by mid-century. This listing was made despite the fact that the polar bear population remains at all-time record numbers, despite past sea ice loss which should have caused population declines if the models are right, and despite that many underlying hypotheses and assumptions in the models were and remain untested.

The decision to list polar bears was based largely on “habitat envelope models”. These models use present-day species–habitat relationships to speculate on the potential distributions and viability of species under future climate conditions. The utility of these models, however, to assess species viability is questionable. Predictions of species responses based solely on projected changes in the quantity and quality of suitable habitat are likely to be inaccurate because they fail to account for important ecological processes that influence extinction. Furthermore, shifts and contractions of suitable habitats do not easily translate into viability assessments or extinction risks. Consequently, these models have increasingly come under question by a wide range of experts, especially when they are applied into the distant future (those beyond about 15 years).

In the case of the polar bear, the USFWS used a habitat envelope model to assess the future viability of polar bears based on changing habitat and its carrying capacity related to changing ice conditions. In short, the model predicted the amount of sea ice habitat that would be lost due to a warming climate and used this to speculate upon the future viability of polar bear populations into the distant future (in this case 45 years) based on potential loss in habitat.

In our review of this model we raised several concerns including, but not limited to:

1. A declining trend in habitat may not correlate to a decrease in numbers unless polar bears are at carrying capacity throughout their range. If bears are not at their carrying capacity, they could lose a significant portion of their habitat and not suffer any loss in numbers or viability. This critical assumption was not tested or verified by the USFWS. In fact, recent data has shown that it is not likely valid. Polar bears sampled in the Chukchi Sea, an area that has experienced the greatest amount of sea ice loss in the Arctic, have demonstrated they are not under nutritional stress and do not have reduced survival.
2. The model assumed that polar bear numbers would decrease in response to lower observed survival rates in recent years associated with increased loss of sea ice. However, in their analysis the USFWS only used 5 years of recent data despite historic data being available dating back to the 1980s. These data showed that about one-third of the years between 1986 and 2006 had survival less than those required to sustain the population, yet the population over this period actually grew or remained stable, strongly suggesting that the assumption about ice loss and survival is not valid. Simple hind-casting of the model to verify this assumption should have been performed.

Despite the fact that the USFWS candidly acknowledged the weaknesses in their models, the District Court for the District of Columbia stated in its upholding of the USFWS’s decision to list the polar bear that it is “*bound to uphold the agency’s determination that the polar bear is a threatened species as long as it is reasonable, regardless of whether there may be other*

reasonable, or even more reasonable, views". The State believes this grants too much deference to a federal agency's interpretation of fundamentally flawed analyses. The State continues to believe that the science does not justify the listing of polar bears and is appealing this decision. There is little evidence that polar bears are threatened with extinction now or within the near term foreseeable future.

Alaska disagrees that the ESA should be used as a precautionary tool to list currently healthy species based solely on model results of future threats such as climate change. The State is challenging this listing and seeking to overturn it and the precedent it is setting. The National Marine Fisheries Service (NMFS) recently proposed to list ringed seals, which number between 3-7 million, based on this same modeling approach, an action we are also opposing. Ultimately, what species could not be listed?

It is apparent to us that the ESA is being used by federal agencies to gain control over landscapes and seascapes, rather than to arrest species extinction. We do not believe Congress intended the act to be used in this manner. Nor do we believe Congress intended the Act to be used by federal agencies to wrest control of currently healthy populations from state management authority. We also believe it is imperative that underlying assumptions within models be tested before they are used to list a species.

Another issue is a threshold question regarding when it is necessary to list a species. In the past, species were listed based on relatively high risks of extinction within the near term future (10-20 years). Recently, however, federal agencies have begun extending the period of "foreseeable future" into the more distant future, yet retaining low risks of extinction probability. An example is the beluga whale in Cook Inlet. The NMFS listed the beluga whale as an endangered species based on modeling that showed that the population had a greater than 1% chance of going extinct beyond 50 years. Put another way, the models predicted that the population had more than a 99% of NOT becoming extinct within the next half century. Their decision to list was partially based on modeled extinction probabilities. The NMFS actually modeled, and used as a basis for their decision, extinction probabilities for these whales out to 300 years based on a 12-year data base. Alaska is challenging the decision to list beluga whales in Cook Inlet as endangered. We feel the decision is unjustified given the low risk of immediate extinction and questions related to the validity of modeling extinction risks out to 300 years based on 12-year data sets.

This raises the question as to whether species that have low risks of extinction within the immediate future should be listed at all. It also raises the questions as to how far into the future

can population trends be reasonably predicted – 10 years, 50 years, 100 years, or 300 years?
Finally, what is a reasonable level of extinction risk – 1%, 10%, 20%, or 25%?

We are also concerned with how recovery goals are being established and used in Section 7 consultations. For example, the recovery goal for delisting Steller sea lions in western Alaska numbers over 100,000 animals. This is far higher than needed simply to remove the risk of extinction. However, despite the population currently numbering over 73,000 animals and growing overall across its range, the NMFS has released a new Biological Opinion (BiOp) that found that fishing in some areas of the western Aleutians is jeopardizing the stock and adversely modify its habitat, and has adopted new closures and restrictions to fishing in the western Aleutians. These closures are economically devastating to local economies and raise environmental justice concerns.

The conclusion that fishing is affecting the western stock of Steller sea lions was based on speculation, not hard facts. Let's look at the scientific data upon which the NMFS based their jeopardy and adverse modification:

1. The western stock of Steller sea lions as a whole is recovering and is not in jeopardy at this time. This stock is growing at a rate of 1.4% per year and now numbers over 73,000 animals. As noted in the BiOp itself "Since 2000, the decline has ceased and in most sub-regions the wSSL population is increasing."
2. Recovery objectives established by the 2008 Steller Sea Lion Recovery Plan are not being violated; rather the current status of the stock achieves the criteria established by the Recovery Plan. To achieve recovery, the plan criteria dictate that the population trend in any two adjacent sub-regions cannot be significantly declining. In fact, the data show that no two adjacent sub-regions are significantly declining: one area does show a decline, but it is not possible to determine if this decline is significant. The plan also dictates that the population trend in any one sub-area cannot have declined by more than 50%. The data show that the population in one sub-region, the Western Aleutians, has declined, but at a rate less than 50%.
3. The primary rationale for the positive jeopardy and adverse modification finding is that the Atka mackerel and Pacific cod fisheries are causing "nutritional stress" to Steller sea lions. There is little sound evidence, however, that nutritional stress is causing the slower-than-desired rate of recovery in the western Aleutians, and the scant available evidence is extremely weak. For example, of the 17 possible life history indicators

identified to assess nutritional stress for which the NMFS has data to evaluate, only 1 indicator showed a positive relationship: reduced birth rate. The remaining 16 biological indicators showed a negative relationship. These negative findings included emaciated pups, reduced pup body size, reduced pup weight, reduced growth rate, reduced pup survival, reduced juvenile survival, reduced adult survival, reduced overall survival, reduced pup counts, reduced non-pup counts, changes in blood chemistry, and increased incidence of disease. And even the reduced birth rate relationship should be viewed with caution given the lack of life history data for sea lions in the western Aleutians. Low birth rates could be attributed to factors other than nutritional stress, for example, predation. Other recent data, collected by the ADF&G and funded by cooperative research monies from the NMFS, confirms that first-year Steller sea lions pups in the western stock show no evidence of poor body condition. This is yet another source of data that calls into question the Service's unproven and untested nutritional stress theory, on which their onerous Reasonable and Prudent Alternative is based. In addition, other NMFS funded research demonstrates out-migration of branded Steller sea lions that move between the western and eastern Steller sea lion stock boundaries, which calls into question the assertion in the BiOp that there is no cross-migration between the two stocks.

4. The case for restrictions for Pacific cod as an important prey species for Steller sea lions in the western Aleutians is tenuous at best and the basis for its inclusion in the Reasonable and Prudent Alternatives and interim final rule is unjustified. Information available to assess sea lion diets in the western Aleutians is extremely limited. Only 46 total scat (feces) samples are available, and within that limited sample, 94% of the scat samples collected contained no cod at all. Information to assess the extent of sea lion feeding ranges is also extremely limited. The primary justification for the expansive closures in the western Aleutians is the foraging behavior of 3 juvenile males, which may not be representative of all Steller sea lions, particularly adult females, the population component most critical for determining population trends.
5. While it may be theoretically possible for commercial fisheries to adversely impact the prey field of Steller sea lions, the data are very inconclusive. Studies funded by the NMFS, but largely ignored in the BiOp, reveal that correlations between Steller sea lion population growth and fishing intensity over time and space indicate no significant relationship, much less a negative relationship.

6. The biomass of both Pacific cod and Atka mackerel were increasing under the prior management regime, thus negating the need for the drastic changes implemented by the NMFS. As a result, the management measures imposed by the final Reasonable and Prudent Alternatives are not consistent with the most recent 2010 biomass estimates for either Pacific cod or Atka mackerel, which were not considered in the BiOp and Reasonable and Prudent Alternative analysis even though they were available before the final BiOp was signed. These most recent (November 2010) biomass surveys for these two species show increasing biomass in the western Aleutians, even to levels sought as targets in the Reasonable and Prudent Alternative.
7. Finally, even accepting as true the false conclusion that fishing is negatively affecting Steller sea lions in the western Aleutians, the BiOp presented no information demonstrating that this effect is adversely modifying critical habitat as a whole for the western stock, as required under the ESA.

In summary, there is simply insufficient scientific evidence to conclude that fishing is causing any nutritional stress and thus jeopardy to western Steller sea lions and adverse modification of their critical habitat, much less any level of effect that would require immediate implementation of corrective actions at this time.

Alaska submitted extensive comments identifying these foundational science issues, as well as regarding issues with the process used by the NMFS to reach their decision. We do not believe that the NMFS adequately considered the State's concerns. Instead, they strongly relied on their deference to justify their conclusions.

In reaching their conclusion, the Service failed to conduct an independent review of their work, as is normally undertaken and which we believe would have highlighted these shortcomings. In fact, a subsequent independent analysis contracted by the States of Alaska and Washington substantiated many of the scientific concerns identified by affected users.

Another example is the northern sea otter. In this case, the USFWS recommended threshold for delisting is 103,417 otters. We question whether a population of over 100,000 sea otters is really necessary **before** delisting can occur. We note that the recovery objective for the southern sea otter is much lower (the average population must exceed 3,090 for 3 years) and appears aimed at removing the risk of near term extinction rather than attainment of long term recovery to some historic level of abundance or supportable carrying capacity.

This plan also includes an ecosystem based criteria. This criterion states that “*sea otters must be sufficiently abundant to either maintain, or bring about, a phase shift to the kelp-dominated state.*” So not only must sea otter number over 100,000, but kelp must be also be restored, before delisting could occur. We believe it is inappropriate to establish criteria which stipulate that listed species (in this case sea otters) could not be delisted, despite the fact that they had attained a desired population goal, unless an ecosystem goal (in this case a target level of kelp forests) is also restored. This is beyond the scope of species recovery.

Finally, the criterion which states that “*All known threats are being adequately mitigated*” is problematic. All populations face a multitude of threats that potentially impact their growth rate in varying degrees throughout time. The key question is whether the overall impact of the threats in combination is negatively impacting over species viability. If the population is meeting its desired growth rate, the influence individual threats have is somewhat irrelevant. Inclusion of criteria for single threats allows such criteria to be used as de facto vetoes on down- or delisting decisions regardless of overall population health. As such, it is inappropriate to include specific criteria for each known threat that could prevent down- or delisting if overall the population is meeting stated growth rate objectives.

In total, these recovery goals and their application raise the question as to whether recovery objectives are being set too high. Should recovery measures reflect the required number required to remove the risk of extinction, or be set to a number that represents some level of historic abundance or full recovery? Can threats ever be completely removed? Should recovery plans contain non-population objectives that must be achieved (e.g., greenhouse gas emission targets)? We believe that ESA recovery goals and objectives should appropriately be designed to remove the risk of extinction in the near future, not fully recover the population to some level of past abundance or supportable carrying capacity. Once the threat of extinction in the near term foreseeable future is removed, the species should be delisted and ESA protections should be removed.

Another concern is the manner in which the two Services identify subspecies or Distinct Population Segments for listing under the ESA. In 1973, Congress had no way to predict that the genome of a several plants and animals could actually be mapped. We now know enough about genetics to detect even the most subtle differences between not just species, but individuals within a given species. Couple this knowledge with the ability to use the ESA to list “subspecies” and “distinct population segments”, and every local population with slight geographic or genetic differences, or populations on the edge of the species’ range become candidates for ESA listing, regardless of the overall abundance of the species.

Alaska is also concerned with how critical habitat is being designated. Following its decision to list the polar bear as a threatened species, the USFWS designated a vast area of Alaska and its offshore areas as critical habitat. The area designated is the largest ever designated for a species, and encompasses an area larger than the State of California. The habitat designated includes any place a polar bear might roam during its life. This is a dramatic deviation from previous critical habitat designations where specific areas of critical importance to recovery were designated. The State and others are challenging this designation as well as to what we believed was a serious underestimation of the economic impacts associated with the designation.

With respect to the economic impacts, the USFWS's Final Economic Impact Analysis for the critical habitat designation did not adequately consider the relevant factors as required under the ESA. Among other things, the Service specifically failed to adequately consider:

- The economic impacts of the additional ESA Section 7 consultations or portions of consultations and project requirements and modifications that the adverse modification of critical habitat standard imposes;
- The economic impact of the additional costs of litigation, project delay, project slippage, deferred production or closure, uncertainty and risk (The Service stated that “potential for indirect impacts, such as litigation, uncertainty, and project delays is real” but failed to analyze such impacts); and,
- The economic impact to the oil and gas industry, construction and development, and commercial shipping and marine transportation. Specifically, the Final Economic Impact Analysis did not include a regional economic impact analysis of reduced oil and gas activity or an assessment of the economic impacts of critical habitat designation on commercial shipping and marine transportation.

The area designated includes the largest areas of potential oil and gas deposits in the United States and are of economic importance to the State as well as of strategic importance to the Nation. The designation puts the area under federal control and opens all permit decisions to potential litigation and delay.

Finally, when passing the Act Congress clearly identified a unique role for states in all Endangered Species Act decisions. This role is contained in Section 4(i) of the Act. This section clearly grants states a place at the table in all Endangered Species Act decisions, including the application of science in these decisions. Unfortunately, states are not being given equal deference on science during the implementation of the Act. Instead, the Services are

increasingly using their deference to discount valid questions raised by states on federal science. They are also using their deference as a basis of their defense of flawed science. We believe that states should have equal deference on science during all ESA decisions.

In closing, these examples point to how recent application of the ESA has stretched the original intent of this well intentioned Act. We are challenging what we believe is unsound science application as well as unwarranted applications of the Act hoping to bring it back to its original intent. We believe there needs to be increased scientific rigor applied in ESA decisions. We also believe that there needs to be limits placed on the amount of deference granted to federal agencies in ESA decisions. States should have equal deference. We welcome legislation to fix the act. We believe reform is needed and the time is now.

Thank you for the opportunity to speak with you.