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U.S. Fish and Wildlife Service
MS: BPHC
5275 Leesburg Pike
Falls Church, VA 22041-3803

National Marine Fisheries Service
Office of Protected Resources
1315 East-West Highway
Silver Spring, MD 20910

Re: Fish and Wildlife Service and National Marine Fisheries Service Proposals to Revise the Regulations for Listing Species and Designating Critical Habitat, Revise the Regulations for Interagency Cooperation, and Revise the Regulations for Prohibitions to Threatened Wildlife and Plants, 83 Fed. Reg. 35,193, 35,178, 35,174 (July 25, 2018), Docket Nos. FWS-HQ-ES-2018-0006, 0009, 0007

Dear Sir or Madam:

The ESA Cross-Industry Coalition, comprised of the American Gas Association, Association of Oil Pipe Lines, American Petroleum Institute, International Association of Geophysical Contractors, Interstate Natural Gas Association of America, National Association of Home Builders, National Association of Manufacturers, National Rural Electric Cooperative Association, and the Utility Water Act Group, submits the attached comments in response to the three proposals from the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to amend their Endangered Species Act regulations.

The ESA Cross-Industry Coalition appreciates the opportunity to comment on these important proposals.

Sincerely,

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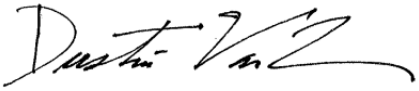

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Comments of the ESA Cross-Industry Coalition comprised of the American Gas Association, Association of Oil Pipe Lines, American Petroleum Institute, International Association of Geophysical Contractors, Interstate Natural Gas Association of America, National Association of Home Builders, National Association of Manufacturers, National Rural Electric Cooperative Association, and the Utility Water Act Group

In Response to the Fish and Wildlife Service and the National Marine Fisheries Service Proposals to Revise the Regulations for Listing Species and Designating Critical Habitat, Revise the Regulations for Interagency Cooperation, and Revise the Regulations for Prohibitions to Threatened Wildlife and Plants

83 Fed. Reg. 35,193, 35,178, 35,174 (July 25, 2018)
Docket Nos. FWS-HQ-ES-2018-0006, 0009, 0007

September 24, 2018

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I. Executive Summary

The ESA Cross-Industry Coalition is pleased to provide the unified position of a major portion of our nation's economic sectors on three proposals from the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) (together, the Services) to amend their Endangered Species Act (ESA or the Act) regulations. 83 Fed. Reg. 35,193, 35,178, 35,174 (July 25, 2018) (collectively, the proposals). The proposals, if issued as final rules, will have important – and in many circumstances beneficial – implications for a wide range of activities undertaken by the Coalition's members, for the public, and for efficient and effective conservation of listed species. Based on the close interrelationship of the proposals, and the need for the regulated public and regulators to consider the proposals as whole, the Coalition has prepared one comprehensive set of comments.

The American Gas Association (AGA), Association of Oil Pipe Lines (AOPL), American Petroleum Institute (API), International Association of Geophysical Contractors (IAGC), Interstate Natural Gas Association of America (INGAA), National Association of Home Builders (NAHB), National Association of Manufacturers (NAM), National Rural Electric Cooperative Association (NRECA), and the Utility Water Act Group (UWAG) (collectively, the ESA Cross-Industry Coalition or the Coalition) represent a broad cross-section of U.S. industry, including public and private entities engaged in the petroleum, natural gas, manufacturing, homebuilding, geophysical exploration, and electric energy sectors. The conservation of threatened and endangered species is important to the Coalition and its members, who voluntarily undertake many activities to further the conservation of species and their habitats. Coalition members undertake a wide range of activities across the nation that are vital to a thriving U.S. economy, and provide much needed products, services, and jobs across the country. The Coalition's members have extensive experience in the development and implementation of the ESA

regulatory program and associated case law, developed through decades of work ensuring compliance with the ESA and pursuing effective and efficient advancement of the ESA's goals, often in cooperation with the Services, State wildlife agencies, and non-profit organizations.

Coalition members frequently undertake projects, such as utility line and pipeline construction and operation, residential homebuilding, commercial development, oil and gas exploration and development, manufacturing, electrical power generation, renewable energy projects, and geophysical exploration, all of which can require federal authorizations and thus trigger ESA section 7 consultation and other ESA compliance requirements. Accordingly, the Coalition and its members have considerable experience with the ESA, including the section 7 consultation process, and appreciate the Services' efforts to review and modify their regulations to reduce the burdens and delays of consultation, while ensuring that the Coalition members' projects advance in a timely and effective manner in keeping with the Act and its goals.

In 2014, Coalition members filed detailed cross-industry comments in response to the Services' proposals to revise the critical habitat regulations. After the Services promulgated those rules in 2016, Coalition members challenged the 2016 critical habitat rules. The proposals respond to key concerns raised by that litigation and its settlement.

The Coalition endorses, and is encouraged by, the Services' efforts to clarify and improve their ESA regulations, and to reduce duplication and inefficiency, so that the Services, the regulated communities, and the public can focus their limited resources on actions that truly improve environmental outcomes. We support many of the Services' proposed modifications, which are consistent with the Act, its legislative history, and the case law, and reflect concerns the Coalition expressed in prior comments and litigation. There are a number of areas, however, where changes to the proposals are warranted to ensure consistency with the statute and settled

precedent and to improve implementation of the Act. Specifically, the Coalition recommends that the Services:

Proposed Listing and Designating Rule, 83 Fed. Reg. 35,193

- Adopt and apply the proposed "foreseeable future" definition and framework with specific revisions to acknowledge limits on the ability to accurately forecast the future conditions of specific species or habitat areas.

- Require the Services to provide detail on economic and other impacts of listing decisions to the public.

- Clarify that the criteria for delisting is equivalent to the criteria for listing a species.

- Restore the two-step approach to designating critical habitat: unoccupied habitat is designated only if a designation limited to occupied habitat would be inadequate to ensure the conservation of the species.

- Remove the proposal to allow designation of unoccupied areas merely because designating only occupied areas would "result in less efficient conservation for the species."

- Modify the factors used to determine whether an unoccupied area is reasonably likely to contribute to the conservation of the species, and confirm that unoccupied habitat cannot be designated based on potential, future conditions and, instead, must be designated based on current conditions.

- Amend the definition of "geographical area occupied by the species" to avoid the inclusion of areas not used or used only temporarily or periodically by the species.

- Amend the definition of "physical or biological features" to restore the emphasis on primary constituent elements or, at a minimum, revise the definition to clarify that critical habitat can be designated only where features essential to a species are actually present at the time of designation.

- Codify the additional circumstances where a not prudent determination is warranted.

Proposed Consultation Rule, 83 Fed. Reg. 35,178

- Clarify that a determination of destruction or adverse modification should be made at the scale of the entire critical habitat designation.

- Remove the second sentence of the adverse modification definition.

- Adopt a more limited interpretation of the term "appreciably diminish" that recognizes that "appreciably diminish" should be limited to an effect that is demonstrably adverse or harmful to the conservation function of the designated critical habitat as a whole.

- Revise the "environmental baseline" definition to clarify that the environmental baseline is the condition that would exist in the absence of the agency action.

- Modify the "effects of the action" definition to clarify that the Services may attribute effects to an action only where those effects are *proximately caused* by the action.

- Adopt the proposed "programmatic consultation" definition.

- Clarify that, where a federal rulemaking will have either no effect or only beneficial effects on listed species or designated critical habitat, no consultation is required.

- Confirm that the proper scope of environmental analysis for intra-Service consultation on ESA section 10 permits includes only those discrete effects caused by the proposed action – the authorization of incidental take.

- Adopt a number of the proposed modifications and clarifications to streamline the consultation process.

Proposed Section 4(d) Rule, 83 Fed. Reg. 35,174

- Adopt the proposed changes requiring FWS to develop species-specific rules for each threatened species.

All Proposed Rules

- Delay issuance of the final rules until the Supreme Court issues a decision in *Weyerhaeuser v FWS*, to allow the Services to consider the implications of the Court's decision.

II. Introduction

A. The Coalition Represents a Broad Cross-Section of Industry with Significant Interests in the Implementation of the ESA.

The Coalition's members' activities are essential to the reliable, safe and affordable supply of energy, goods, and other services to U.S. consumers. As such, administration of the ESA regulatory program is important not only to the Coalition and its members, but also to the public at large, whose health, safety and general welfare depend on the affordable and reliable delivery of the products and services provided by the Coalition's members.

AGA, founded in 1918, represents more than 200 local energy companies that deliver clean natural gas throughout the United States. There are more than 71 million residential, commercial, and industrial natural gas customers in the United States, of which 94 percent – over 68 million customers – receive their gas from AGA members. AGA is an advocate for natural gas utility companies and their customers and provides a broad range of programs and services for member natural gas pipelines, marketers, gatherers, international natural gas companies, and industry associates.

AOPL is a national trade association that represents owners and operators of oil pipelines across North America before state and federal agencies, legislative bodies, and the judiciary, and educates the public about the vital role oil pipelines serve in the daily lives of Americans. AOPL members bring crude oil to the nation's refineries and important petroleum products to our communities, through pipelines that extend approximately 212,500 miles across the United States. These pipelines safely, efficiently, and reliably deliver approximately 18.4 billion barrels of crude oil and petroleum products each year. AOPL strives to ensure that the public and all branches of government understand the benefits and advantages of transporting crude oil and petroleum products by pipeline as the safest, most reliable, and cost-effective method of serving energy consumption demand.

API is a nationwide, non-profit trade association that represents over 650 companies involved in all aspects of the petroleum and natural gas industry, from the largest integrated companies to the smallest independent oil and gas producers. API's members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to

meeting environmental requirements, while economically developing and supplying energy resources for consumers.

IAGC is the international trade association representing the industry that provides geophysical services (geophysical data acquisition, processing and interpretation, geophysical information ownership and licensing, and associated services and product providers) to the oil and natural gas industry. IAGC member companies play an integral role in the successful exploration and development of hydrocarbon resources through the acquisition and processing of geophysical data. Environmental issues, including ESA compliance, are a priority for IAGC member companies. Over the years, IAGC member companies have consistently demonstrated their ability to conduct both land and seismic exploration in an environmentally responsible manner. IAGC proactively engages, on behalf of its members, with government agencies, such as the Services, in their development of regulations for both land and marine seismic operations.

INGAA is a non-profit trade association that represents the vast majority of the interstate natural gas transmission pipeline companies operating in the United States. INGAA's members operate a network of approximately 200,000 miles of pipelines. INGAA advocates for regulatory and legislative positions of importance to the natural gas pipeline industry, representing the interstate natural gas pipeline industry's interests in operational, engineering, environmental, safety, security, and research and development matters before federal and state agencies.

NAHB is a nationwide federation of more than 800 state and local home builder associations. NAHB represents more than 140,000 members including individuals and firms engaged in land development, single and multifamily construction, multifamily ownership, building material trades, and commercial and industrial projects.

The NAM is the largest manufacturing association in the United States, representing small and large manufacturers in every industrial sector and in all 50 states. Manufacturing employs nearly 12 million men and women, contributes more than $1.8 trillion to the United States economy annually, has the largest economic impact of any major sector, and accounts for two-thirds of private-sector research and development. The NAM is the powerful voice of the manufacturing community and the leading advocate for a policy agenda that helps manufacturers compete in the global economy and create jobs across the United States. The NAM is committed to protecting the environment and to environmental sustainability, and fully supports the ongoing national effort to protect our environment and improve public health through appropriate laws and regulations. The choice between environmental protection and a strong economy is not an either/or proposition. We can have both.

NRECA is the national service organization dedicated to representing the national interests of cooperative electric utilities and the consumers they serve. NRECA represents over 900 private consumer-owned rural electric cooperatives and public power districts, who collectively provide electric service to an estimated 42 million people in 47 states, or nearly 13 percent of the nation's electric customers. They serve more than 19 million businesses, homes, schools, churches, hospitals, farms, irrigation systems, and other establishments. NRECA serves its members as an advocate for legislative and regulatory policies that are scientifically sound and cost-effective, and balance consumer interests and environmental protection. Electric cooperatives are an integral part of the United States electric utility industry, and play a critical role in our nation's economy and in local communities. NRECA members deliver safe, reliable, and affordable electric service to vast rural areas of the United States. Electric cooperatives own

and maintain 2.6 million miles, or 42 percent, of the nation's electric distribution lines, covering three quarters of the nation's landmass.

UWAG is a voluntary, ad hoc, non-profit, unincorporated group of more than 145 individual energy companies and three national trade associations of energy companies: the Edison Electric Institute, the American Public Power Association, and NRECA. UWAG's purpose is, among other things, to participate on behalf of its members in federal agency rulemakings under the Clean Water Act (CWA) and related statutes, such as the ESA, and in litigation arising from those rulemakings. Electric utilities operate and maintain a wide range of existing facilities across the nation. Many of the individual energy companies that comprise UWAG have public service obligations to ensure a reliable and safe supply of electricity to their customers.

B. The Coalition and its Individual Members Have Long Been Actively Engaged in ESA Regulatory Actions and Litigation.

Members of the Coalition have participated in a range of regulatory actions. In 2008, for example, Coalition members filed comments in response to the Services' proposed revisions to simplify and clarify the ESA section 7 consultation process. 73 Fed. Reg. 47,868 (Aug. 15, 2008). Coalition members also submitted comments in response to the U.S. Department of Interior and NMFS requests for public comment on existing policies and regulations that may warrant repeal, replacement, or modification.[1] 82 Fed. Reg. 28,429 (June 22, 2017); 82 Fed. Reg. 31,576 (July 7, 2017). These comments support the Services' regulatory reform efforts and identify a number of aspects of the ESA regulations that should be modified, including using the proper environmental baseline, causation standard, and effects analysis during section 7

[1] The Services sought public assistance in identifying existing policies and regulations that: eliminate jobs or inhibit job creation; are outdated, unnecessary, or ineffective; impose costs that exceed benefits; and create a serious inconsistency or otherwise interfere with regulatory reform initiatives, policies, or Executive Orders.

consultations. The proposals reflect several of these suggestions and are consistent with Executive Orders to reduce regulatory burdens where appropriate, while maintaining and protecting the environment and species. Members of the Coalition routinely participate in ESA rulemakings through submission of comments on proposed listing determinations and proposals to designate critical habitat for listed species.[2]

Coalition members filed detailed comments on the Services' 2014 proposals to revise the critical habitat regulations. When the group's concerns were not addressed in the final rules, members of the Coalition challenged the Services' 2016 critical habitat rules. *UWAG v. NMFS*, No. 17-cv-00206 (S.D. Ala.). The Coalition's complaint explained how the 2016 critical habitat rules: unlawfully expand federal regulatory authority and control over lands and waters in violation of the ESA and Administrative Procedure Act (APA); allow the Services unbounded authority to designate areas critical habitat, including on lands that are not occupied by the listed species; and allow the Services to determine, during section 7 consultation, that almost any federal agency action (e.g., permits, licenses, and easements) results in a prohibited "adverse modification." Twenty states, led by Alabama, filed a similar, separate action in the same court. *Alabama v. NMFS*, No. 16-cv-00593 (S.D. Ala.). The actions settled, and the Services agreed to review and reconsider the 2016 rules. The Coalition and the states voluntarily dismissed their pending complaints, but retain the right to refile should the Services' new proposals not address these fundamental problems.

[2] *See*, *e.g.*, Comments on U.S. Fish and Wildlife Service Proposal to Designate Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo, 79 Fed. Reg. 48,548 (Aug. 15, 2014), 79 Fed. Reg. 67,154 (Nov. 12, 2014) (Jan. 12, 2015), Docket No. FWS-R8-ES-2013-0011-1149; Comments on Listing the Northern Long-Eared Bat With a Rule Under Section 4(d) of the ESA (Mar. 17, 2015), Docket No. FWSR5- ES-2011-0024-3547; Comments on the U.S. FWS's 90-Day Finding on a Petition to List the Rusty-Patched Bumble Bee as an Endangered Species under the ESA (Nov. 17, 2015), FWS-R3-ES-2015-0112-0010; Comments on the U.S. FWS's Proposed Decision to List the Rusty-Patched Bumble Bee as Endangered under the ESA (Nov. 21, 2016), FWS-R3-ES-2015-0112-0171; Comments on the NMFS's 12-Month Finding on a Petition to List the Gulf of Mexico Bryde's Whale as Endangered under the ESA (Feb. 6, 2017), NOAA-NMFS-2014-0157-0927.

Members of the Coalition are actively engaged in other ESA litigation, including filing an *amici curiae* brief in *Weyerhaeuser v. FWS*, which involves the designation of private land as critical habitat for the endangered dusky gopher frog.[3] In *Weyerhaeuser*, the Fifth Circuit upheld FWS's designation of over 1,500 acres of private land in Louisiana as critical habitat, even though the land is unoccupied by the frog, cannot be occupied by the frog unless it is significantly altered, and does not play any supporting role in sustaining habitat for the frog. The case is set for oral argument on October 1, 2018. As discussed below, the Court's decision in *Weyerhaeuser* could have important implications for the proposals that should be accounted for by the Services in their final rules.

C. The Coalition's Members Are Committed to and Extensively Involved in Conservation Efforts to Protect Species and Their Habitat.

The protection of listed species and their habitat is important to the Coalitions' members and is often closely tied to their corporate values and roles in their communities. To minimize and avoid adverse impacts to wildlife and habitat, Coalition members routinely engage in conservation actions, responsible planning and permitting, and best management practices. For example, Coalition members, in partnership with the Services and other State and local agencies, often place lands containing listed species habitat under conservation easements, engage in wildlife study and recovery efforts, and develop Habitat Conservation Plans (HCPs), candidate conservation agreements with assurances (CCAAs), and safe harbor agreements for the purpose of obtaining incidental take coverage under section 10 of the ESA. These types of public-private partnerships are encouraged by the Services because they implement conservation actions the Services would be unable to accomplish without private landowner participation and funding.

[3] Coalition Members' Briefs of *Amici Curiae*, *Weyerhaeuser v. FWS*, No. 17-71 (Apr. 30, 2018).

Coalition members often participate in voluntary conservation measures to protect species and their habitat before those species are listed, which not only produce important environmental benefits, but also reduce the need for listings and designations of critical habitat. Indeed, voluntary conservation measures can provide equal or better protections without the burdens associated with an ESA listing or designation of critical habitat. For example, Coalition members are implementing extensive and important voluntary conservation measures to ensure that the Lesser Prairie-Chicken (LPC) and its habitat are protected, without any need for a listing under the ESA. Over 10 million acres (more than half of which is privately owned land) are currently under protections for the benefit of the LPC, improving habitat quality and connectivity, and contributing to the resiliency of the species. Survey results confirm that LPC populations have stabilized and are growing in key areas, demonstrating that the LPC and its habitat are well protected without any listing of the species or designation of critical habitat. As another example, a member's HCP for the Florida scrub-jay (FSJ), which provides a blueprint for public-private partnerships by which Coalition members coordinate land management activities with State and local governmental agencies, has led to a steady increase in the FSJ's population.

As these examples demonstrate, Coalition members are fully invested in the Services' efforts to balance species protection with a regulatory program that reflects Congressional intent, meets the terms of the Act, and is consistent with the case law interpreting key provisions of the Act. The proposals, in many respects, advance these important goals.

III. Background

The Coalition has worked together on and addressed the issues under consideration in these proposals for years. The Coalition's understanding of these issues is framed by the Act, its legislative history, the case law, and its members' experiences. Returning to the fundamental

principles set forth in the Act, and recognizing appropriate and required limits on the Services' exercise of its regulatory authority, is critical. To provide context for the proposals and the Coalition's recommendations and suggestions, as well as support for the proposed changes, a brief overview of the statutory and regulatory history follows.

A. When Congress Enacted the ESA in 1973, it Provided Specific Mechanisms for Protecting Imperiled Species.

Congress enacted the ESA in 1973 to conserve threatened and endangered species. Among other things, the ESA specified the process for listing species as threatened or endangered; prohibited the take of endangered animal species; authorized extension of the take prohibition and other protections to threatened animal species by special rules; and required federal agencies to ensure, through consultation with the Services, that their actions would not jeopardize listed species or destroy or modify designated critical habitat.

When the ESA was first enacted, section 7 required federal agencies to consult with the Services to ensure that their actions did not "jeopardize the continued existence" of listed species or "result in the destruction or modification of habitat of such species which is determined by the Secretary … to be critical." Pub. L. No. 93-205, 87 Stat. 884, 892 (1973). However, the Act did not require the Services to designate critical habitat when listing a species as endangered or threatened, nor did it define the term "critical habitat."[4] *Id*.

[4] Prior to the 1978 ESA amendments, the Services defined critical habitat as "any land, air, or water area … and constituent elements thereof, the loss of which would *appreciably decrease* the likelihood of conserving such species." *See* 43 Fed. Reg. 870, 874-75 (Jan. 4, 1978). In discussions leading up to the 1978 ESA Amendments, Congress expressed concern that the term "appreciably decrease" could be misinterpreted to allow for designation of "all areas, the loss of which would cause any decrease in the likelihood of conserving the species so long as that decrease would be capable of being perceived or measured." *See* House Report No. 95-1625, at 749 (1978).

B. When Congress Amended the ESA in 1978, it Established Specific Limits Governing the Designation of Critical Habitat.

In 1978, Congress revised the Act. Leading up to the 1978 ESA Amendments, Congress was concerned that, under then-current regulations, the Services were treating areas covering the entire range of a species as "critical to the continued existence of a species" and, in particular, noted concern about "the implications of this policy when extremely large land areas are involved in a critical habitat designation." S. Rep. No. 95-874, at 948 (1978). In response to these concerns, the 1978 Amendments defined "critical habitat" narrowly and in detail. The 1978 Amendments included several new provisions relating to critical habitat, including a new requirement that, "to the maximum extent prudent," the Services "specify any habitat … considered to be critical" at the time it proposed to list a species. Pub. L. No. 95-632, 92 Stat. 3751, 3764 (1978) (codified at 16 U.S.C. § 1533(a)(3)(A)).

Congress described those features that must be found on the area to support designation and the steps that must be met to designate areas as critical habitat – particularly unoccupied areas – as follows:

> (i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of this Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and
>
> (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of this Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.

16 U.S.C. § 1532(5).

Through the statutory definition of "critical habitat," Congress imposed five specific limits on those areas subject to designation as "occupied" critical habitat. They must be: (1)

specific areas within the area occupied by the species; (2) at the time the species is listed; (3) on which are found physical or biological features; (4) essential to conservation of the species; that (5) may require special management considerations or protection.

Congress also defined the term "conservation," which it used within the definition of critical habitat for both occupied and unoccupied habitat. Congress' definition of "conservation" demonstrates that it did not have in mind designation of wide areas to be left static, but instead specific areas where proactive efforts would be taken by the government and other resource bodies to recover the species:

> [T]o *use* and the use of all *methods and procedures* which are necessary *to bring* any endangered species or threatened species *to the point at which the measures provided* pursuant to this chapter are *no longer necessary*. Such methods and procedures include, but are not limited to, all *activities* associated with *scientific resources management* such as *research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation*, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include *regulated taking*.

16 U.S.C. § 1532(3) (emphases added).

Congress specifically distinguished between occupied and unoccupied habitat by including more stringent requirements for the designation of unoccupied habitat. Designation of *unoccupied* areas requires the Secretary to separately find that such designation is itself "*essential*" to the conservation of the species.[5] Further demonstrating Congress's concern with

[5] The legislative history is instructive to understanding how Congress arrived at the requirement that designation of unoccupied areas be "essential" to the conservation of the species. The House bill included a provision allowing for designation of critical habitat to include "specific areas *periodically inhabited by the species* which are outside the geographical area occupied by the species at the time of listing," 95 Cong. Rec. H14104, at 879 (Oct. 14, 1978) (Amendment Offered by Rep. Duncan) (emphasis added), while the Senate bill allowed for designation of critical habitat to include "specific areas outside the geographical area occupied by the species … *into which the species can be expected to expand naturally*." S. 2899 (July 19, 1978) (emphasis added). During Conference, these provisions were removed, and the definition of "critical habitat" was revised to include only those unoccupied areas that are "*essential*" to conservation. Pub. L. No. 95-632, 92 Stat. 3764 (1978) (codified at 16 U.S.C. § 1532(5)).

the impacts of designating critical habitat, even where designation would otherwise meet the statutory criteria, Congress provided that the Services may exclude areas where the benefits of exclusion outweigh the benefits of designation, unless the Services determine that failure to designate the area "will result in the extinction of the species concerned." 16 U.S.C. § 1533(b)(2).

Thus, Congress established limited, specific objectives for the designation of critical habitat, placed specific restrictions and limits on the Services governing that designation, and required the Services to consider all impacts – including economic impacts – of the designation of critical habitat. In particular, the designation must be "prudent and determinable," 16 U.S.C. § 1533(a)(3)(A), "tak[e] into consideration the economic impact" of the designation, *id.* § 1533(b)(2), and consider impacts on national security and any other relevant impacts. *Id.*

C. The Services Promulgated Critical Habitat Regulations in 1984 that Incorporate and Recognize Many of These Important Statutory Limits.

A number of key principles relevant to the proposals were emphasized in the 1984 critical habitat regulations. The regulations provided that critical habitat should not be designated if doing so is not prudent or if critical habitat is not determinable. 49 Fed. Reg. 38,900 (Oct 1, 1984). Designation of critical habitat was determined not *prudent* if designation will increase the threat of taking or other human activity to the species and/or if designation would not be beneficial for the species. *See* 50 C.F.R. § 424.12(a)(1). Designation of critical habitat is not *determinable* when information to analyze the impact of the designation is lacking and/or the biological needs of the species are not well known enough to enable identification of an area as critical habitat. *See id*. § 424.12(a)(2).

Consistent with the plain language of the ESA, the preamble to the 1984 regulations recognized that all critical habitat designations must be based on finding that the "designated

area contains features that are *essential* in order to conserve the species concerned. This finding of need will be a part of all designations of critical habitat, whether or not they extend beyond a species' currently occupied range." 49 Fed. Reg. at 38,903 (emphasis added). The regulatory history further demonstrates that the Services intended to designate unoccupied habitat "*only when a designation limited to its present range would be inadequate* to ensure the conservation of the species." 49 Fed. Reg. at 38,909 (codified at 50 C.F.R. § 424.12(e) (1984)) (emphasis added).

The 1984 regulations emphasized the statutory element of "physical or biological features … essential to the conservation of the species," 16 U.S.C. § 1532(5). The regulations thus focused critical habitat designations on the presence of features (or elements) essential to the species: "When considering the designation of critical habitat, the Secretary *shall focus on the principal biological or physical constituent elements* within the defined area that are essential to the conservation of the species," including sites for roosting, nesting, spawning, and feeding, geological formations, vegetation, soil, and water quality. 49 Fed. Reg. at 38,909 (codified at 50 C.F.R. § 424.12(b)(1-5) (1984)) (emphasis added). This emphasis on the statutory requirement that an area contain the requisite physical or biological features was similarly reflected in the 1984 regulatory definition of "destruction or adverse modification," which directly references the physical or biological features that were the basis for the critical habitat designation: "alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical." 50 C.F.R. § 402.02 (1986).

D. The Services Promulgated Comprehensive ESA Section 7 Consultation Regulations in 1986 on which Decades of Regulatory Experience Rests.

Under ESA section 7, each federal agency (the "action agency") is responsible for ensuring, in consultation with the FWS or NMFS, that any action it authorizes, funds, or carries

out is not likely to jeopardize any endangered or threatened species or adversely modify the critical habitat of any such species. *See* 16 U.S.C. § 1536(a)(2). The ESA does not define "consultation" or explain what kind of action triggers the obligation to engage in consultation. That process is instead established by regulations promulgated by the Services in 1986. *See* 51 Fed. Reg. 19,926 (June 3, 1986) (amending 50 C.F.R. Part 402).

The 1986 regulations define key terms and describe the consultation process federal action agencies must follow when they take an action that "may affect" listed species or critical habitat. The Services' regulations define "action" as "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies," including the "granting of … permits." 50 C.F.R. § 402.02. The consultation requirements "apply to all actions in which there is discretionary Federal involvement or control." 50 C.F.R. § 402.03; *see also Nat'l Ass'n of Home Builders v. Defs. of Wildlife*, 551 U.S. 644, 652 (2007).

Not all proposed actions of federal agencies are subject to consultation under section 7. The existing regulations require consultation only when a federal agency determines that its proposed action "may affect" listed species or critical habitat. 50 C.F.R. § 402.14(a). Action agencies, thus, must determine whether the proposed action "may affect" a listed species, or whether there will be "no effect." If the action agency determines that a proposed action will not affect listed species or critical habitat, then the regulations do not require consultation with the Services.

The section 7 regulations establish a tiered process for consultation: If the action agency determines that the proposed action "may affect, but is not likely to adversely affect," a listed species or critical habitat, the Service and the action agency will enter into informal consultation, and, if the Service concurs in the not likely to adversely affect determination, the consultation

obligation is satisfied. For actions that may adversely affect listed species or critical habitat, the action agency will initiate formal consultation, which concludes with the Service's issuance of a Biological Opinion (BO) that determines whether the proposed action will result in jeopardy and/or adverse modification, and includes, if appropriate, an incidental take statement. 50 C.F.R. §§ 402.13(a), 402.14(a), (b).

The ESA section 7 consultation provisions thus focus on the "effects" of a particular federal agency action. As discussed below, the Coalition support efforts to clarify critical terms and process requirements.

E. The Services' 2016 Regulations Improperly Loosened the Criteria for Designation of Critical Habitat and the Definition of "Adverse Modification."

On February 11, 2016, the Services published a final rule to amend the critical habitat designation criteria ("2016 Critical Habitat Rule") and a final rule to amend the definition of "adverse modification" of critical habitat ("2016 Adverse Modification Rule").

The 2016 Critical Habitat Rule creates an overbroad framework for designating critical habitat, and established several new, problematic definitions of key terms, such as "geographic area occupied by the species" and "physical or biological features." Among other things, under the 2016 regulations, the Services may designate land and water not actually occupied by a listed species as critical habitat for the species where the Services conclude that, as a result of *potential future* changes to the habitat and the potential for the species to *start using that area in the future* (e.g., as a result of possible climate change effects), the area is "essential for the conservation of the species." 81 Fed. Reg. at 7,435. This overbroad framework has undergirded sweeping critical habitat designations, such as NMFS's designation of nearly 4,000 linear river miles (an area likely far greater than 4,000 square miles) bank to bank, with no differentiation or exclusion of areas within designated segments based on lack of or poor habitat conditions, as critical

habitat for the Atlantic sturgeon. *See* 82 Fed. Reg. 39,160 (Aug. 17, 2017). The entire Potomac River from the Little Falls Dam downstream to where the main stem river discharges at its mouth into the Chesapeake Bay (approximately 480 miles) is now, for example, designated critical habitat.

The 2016 Adverse Modification Rule likewise includes an overbroad definition of "destruction or adverse modification." The prior regulations, promulgated in 1978, defined "destruction or adverse modification" as:

> a direct or indirect alteration of critical habitat which *appreciably diminishes* the value of that habitat for survival and recovery of a listed species. Such alterations include, but are not limited to those diminishing the requirements for survival and recovery listed in § 402.05(b). *There may be many types of activities or programs which could be carried out in critical habitat without causing such diminution*.

43 Fed. Reg. 870, 875 (Jan. 4, 1978) (emphases added). The Services noted that not every activity conducted in critical habitat areas would rise to the level of "adverse modification."

Under the 2016 regulations, however, "destruction or adverse modification" is defined as "a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features." 81 Fed. Reg. at 7,226 (codified at 50 C.F.R. § 402.02). As a result of this broad definition, federal agency action subject to ESA section 7 consultation is much more likely to be found by the Services to result in adverse modification of critical habitat.

IV. Comments on the Proposed Changes to the Regulations for Listing Species and Designating Critical Habitat

The listing of species and designation of land and water as critical habitat have significant consequences for industry, States, local governments, and private parties. Considerable regulatory burdens and corresponding economic costs are borne by private entities and local and state governments as a result of species listings and critical habitat designations, often without commensurate benefit to the species.[6]

Accordingly, the Coalition and its members appreciate the Services' efforts to revisit the listing and critical habitat regulations and to propose modifications that, in important ways, are in keeping with Congressional intent, the limits of the Act, and the case law. The proposals address some of the issues raised in the challenges brought by the Coalition and States to the 2016 critical habitat regulations, but do not adequately address others. The proposed modifications do not fully recognize and effectuate statutory limits and, in some instances, do not sufficiently limit potential designation of unoccupied areas as critical habitat, consistent with the statute and legislative history. The Coalition encourages the Services to issue final rules with the improvements suggested in these comments.

A. The Coalition Supports, with Clarification, a Framework for Consideration of "Foreseeable Future" with Appropriate Limits.

The Services propose to amend section 424.11 to include a framework for determining what constitutes the foreseeable future for purposes of analyzing the status of a species. 83 Fed. Reg. at 35,200-01. In evaluating whether species should be listed as threatened, the Services must determine whether the species is "likely to become endangered within the *foreseeable future* …." 16 U.S.C. § 1532(20). Consideration of the "foreseeable future" can arise when, for

[6] These significant costs and regulatory burdens can be a disincentive to private parties from undertaking voluntary conservation actions that would benefit the species or habitat, which runs counter to the purposes of the Act.

example, the Services propose to list species based on potential future effects, such as climate change.

The proposal states that "[t]he term foreseeable future extends only so far into the future as the Services can reasonably determine that the conditions potentially posing a danger of extinction in the foreseeable future are probable." 83 Fed. Reg. at 35,201 (proposed 50 C.F.R. § 424.11(d)). The foreseeable future will be determined on a case-by-case basis, taking into account the species' life-history, threat-projection timeframes, and environmental variability. *See* 83 Fed. Reg. at 35,195. The Coalition supports the inclusion of a framework and definition for foreseeable future, but suggests important revisions to ensure that the approach is consistent with the Act and the limits of available science and data, as discussed further below and in Attachment A, which provides a technical analysis and comments prepared by Dr. Rob Ramey, II, Wildlife Science International.

First, foreseeable future must be applied in a manner that acknowledges the limits of projection and analysis. The Services must recognize the inherent uncertainties and limitations of forecasting specific species population changes or habitat changes on the basis of global industrial and trade trends, climate change projections, or other complex biological and sociological projections. ESA section 4 authorizes listing only on the basis of "the best scientific and commercial data available." 16 U.S.C. § 1533(b)(1)(A). This statutory requirement is intended to avoid listing decisions based on insufficient information or conjecture, and to "ensure that the ESA not be implemented haphazardly, on the basis of speculation or surmise." *Bennett v. Spear*, 520 U.S. 154, 176-77 (1997). All relevant hypotheses must be developed based on information produced through reliable scientific methods (e.g., a method by which a hypothesis is tested and demonstrated by repeatable results). *See* Attachment A, at pp. 2-6. The Services

may not list a species where the best scientific information available does not constitute sufficient evidence to allow the agency to find that the species "is in danger of extinction" or "likely to become" so endangered.[7] 16 U.S.C. § 1532.

Key to determining whether a species meets the statutory criteria for a "threatened" listing (that it is likely to become an endangered species within the "foreseeable future"), *id.*, is ensuring that the term "foreseeable future" is properly understood and appropriately cabined. For example, while climate change models may provide a basis for making broad estimates of future climate conditions, those models often cannot provide reliable predictions of future conditions at narrow geographical scales or on short time horizons sufficient to support specific conclusions about the future condition of species or habitat at precise locations. *See* Attachment A, at pp. 3, 7-8. The limitations of these models have been recognized by the Intergovernmental Panel on Climate Change (IPCC).[8] In particular, the current models cannot support climate impact projections below a continental or regional scale, and specifically not to the localized level of any effects for a particular species or its habitat. Accordingly, as FWS has recognized, there is significant disagreement and uncertainty regarding the accuracy of localized climate change projections for a species' habitat or population persistence. *See, e.g.*, 79 Fed. Reg. 47,522, 47,533 (Aug. 13, 2014) (withdrawal of proposal to list wolverine as threatened). The proposed framework for foreseeable future should be revised to ensure that listing decisions will

[7] Nor can the Services list a species as a precautionary matter. To do so would "result in all or nearly all species being listed as threatened." *Trout Unlimited v. Lohn*, 645 F. Supp. 2d 929, 947 (D. Or. 2007); *see also In re Polar Bear Endangered Species Act Listing & 4(d) Rule Litig.*, 794 F. Supp. 2d 64, 110 (D.D.C. 2011) ("[Petitioner] has cited not one instance where a court has found that the Service was required to list a threatened species as endangered based on the 'benefit of the doubt' standard, nor is the Court aware of any such authority.").

[8] IPCC, Climate Change 2013: The Physical Science Basis, Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (2013), http://www.ipcc.ch/report/ar5/index.shtml.

not rely on uncertain projections of future conditions, but instead be based on best available scientific and commercial data, as mandated by the statute.

Second, it is unclear how the Services intend to determine whether future conditions are "probable." The Coalition recommends that the term "probable" be explained in the final rule to provide context and certainty. For example, the scientific literature defines "probable" as having a greater than 75% likelihood. *See* Attachment A, at p. 7. Interpreting "probable" to refer to conditions that have a high likelihood or probability of occurring is consistent with both the plain and technical meanings of the term probable, and with the overall structure of the Act, which authorizes the listing of a species as threatened only when the species is "likely" to become endangered. *See* 16 U.S.C. § 1532. Indeed, the Merriam-Webster Dictionary defines "likely" as "having a high probability of occurring or being true: very probable," and synonymous with "expected."[9] Any determination whether future conditions are "probable" must be based on the application of accepted scientific methods, not on uncertainty, speculation or surmise. *See* Attachment A, at p. 8.

Third, the Services should eliminate the use of vague terms that interject uncertainty into the analysis, or which are contrary to the statutory standard. A species may be listed as threatened only if it is "likely to become an endangered species within the foreseeable future." The phrase "conditions *potentially* posing a danger of extinction" confuses the standard. Endangerment must be "likely," not potential. A standard that relies on a mere "potential" for future conditions to pose a danger invites speculation about future circumstances, and is especially inappropriate given that the Services need not list a species before future conditions become likely, but instead can (and under the Act may only) list a species at a later time when

[9] Merriam-Webster Online, *available at* https://www.merriam-webster.com/dictionary/likely (last visited Sept. 9, 2018).

the future conditions found to pose a danger will impact a species such that it is likely the species will become endangered. As the Services acknowledge, they should "avoid speculating as to what is hypothetically possible." 83 Fed. Reg. at 35,196.

Finally, the Services should not include a defined term within the definition of that term, because doing so produces circular logic and reasoning. Specifically, the definition of the term "foreseeable future" should not repeat the term "foreseeable" in the definition. When defining future conditions, repeating the word "foreseeable" in the definition is unnecessary and confuses the analysis.

Accordingly, the Coalition proposes the following edits to the proposed regulatory language:

> The foreseeable future "extends only so far into the future as the Services can reasonably determine that the conditions ~~potentially~~ posing a danger of extinction in the ~~foreseeable~~ future are probable."

B. The Coalition Supports the Proposed Modification that Would Allow the Services to Reference Economic and Other Impacts in Listing Decisions.

The Coalition supports proposed revisions to allow the Services to reference economic and other impacts in listing determinations. 83 Fed. Reg. at 35,194-95, 35,200 (proposed 50 C.F.R. § 424.11(b)). This information could be useful to the public, state, local and tribal governments in considering the regulatory impacts of any listing decision, and thus provides important information to the public.

The current regulation provides that the Services shall make any listing or delisting determination "solely on the basis of the best available scientific and commercial information regarding a species' status, without reference to possible economic or other impacts of such determination." 50 C.F.R. § 424.11(b). The Services propose to remove the phrase "without

reference to possible economic or other impacts of such determination." 83 Fed. Reg. at 35,194-95.

The Services intend to continue to make listing determinations based solely on biological considerations, but they appropriately recognize that it may be helpful to the public and others to reference economic or other impacts of the listing determination. Indeed, providing this information will better enable members of the public, state, local and tribal governments to assess the economic impacts of a listing decision, and collect relevant data that may inform any future proposals to designate critical habitat for the listed species.

The Services' proposal is consistent with other federal requirements that apply to rulemakings. For example, the Regulatory Flexibility Act and Executive Order 12866 require, in specific circumstances, an evaluation of the economic impacts of federal actions on the public and small businesses. This proposal is also consistent with Executive Order 13777, which directs federal agencies to improve the implementation of regulatory reform initiatives and alleviate unnecessary regulatory burdens. The Coalition supports this modification and encourages the Services to detail the economic or other impacts of listing decisions on the public in listing decisions.

C. The Coalition Agrees that the Standard for Delisting a Species Is and Should Be the Same as the Standard for Listing.

The Coalition supports the Services' clarification that the standard to delist a species is equivalent to the standard that applies to a decision whether or not to list the species in the first instance, and the proposal to provide more clarity regarding the circumstances under which delisting is appropriate.

Consistent with the Act, the Services consider five factors in determining whether to list a species. 16 U.S.C. § 1533(a)(1). These same five factors establish proper parameters for

delisting species. The Services propose to remove extraneous language in the regulations, which was intended to provide examples of when a species should be removed from the lists of endangered or threatened species but instead has been misinterpreted as establishing a heightened standard for delisting. *See* 83 Fed. Reg. at 35,196 (proposed 50 C.F.R. § 424.11(e)).

By removing the extraneous language, the Services will simplify the regulations and confirm that no heightened standard applies to the Services' determination whether to delist a species. The Coalition supports this modification, which is consistent with the Act, ensures predictability as to the delisting criteria, and encourages non-federal entities to pursue conservation actions that benefit species and may thereby lead to decisions to delist species. The Coalition requests that the Services also include the existence of conservation plans and agreements as a factor to consider in delisting decisions.

D. The Coalition Supports the Services' Proposal to Return to the Step-Wise Approach When Designating Critical Habitat.

The Coalition strongly supports the Services' proposal to restore the requirement that the Services will first evaluate whether designation of areas occupied by the species is adequate to ensure the conservation of the species before considering designation of unoccupied areas. *See* 83 Fed. Reg. at 35,197 (proposed 50 C.F.R. § 424.12(b)(2)).

Prior to 2016, the regulations incorporated a step-wise approach, pursuant to which the Services designated unoccupied areas as critical habitat only when a designation limited to the species' occupied habitat would be inadequate to ensure the conservation of the species. *See* 50 C.F.R. § 424.12(e) (2015). The 2016 Critical Habitat Rule, however, eliminated the requirement that the Services first establish that inclusion of all "occupied areas" in a designation is insufficient to conserve the species before considering the designation of unoccupied areas. *See* 81 Fed. Reg. at 7,424.

As the Coalition explained in its challenge to the 2016 rules, the Services' new approach is contrary to law because, if designation of occupied areas would be adequate to conserve the species, then the unoccupied areas cannot be "essential." For unoccupied areas, the term "essential" means that, without those areas being designated (i.e., if only occupied areas are designated), the remaining designated habitat would not be adequate for conservation of the species. Thus, to determine whether unoccupied areas are "essential" to the conservation of the species, the Services must first consider occupied habitat.

Returning to the step-wise approach is consistent with the case law. The courts have properly recognized the ESA's distinction between occupied and unoccupied areas for purposes of designating critical habitat. The Ninth Circuit concluded that the ESA imposes a more onerous procedure on the designation of unoccupied areas by requiring the Secretary to make a showing that unoccupied areas are essential for the conservation of the species. *See Arizona Cattle Growers' Ass'n v. Salazar*, 606 F.3d 1160, 1163 (9th Cir. 2010); *see also Cape Hatteras Access Preservation Alliance v. Dep't of the Interior,* 344 F. Supp. 2d 108, 125 (2004) ("Designation of unoccupied land is a more extraordinary event than designation of occupied lands.").

The Coalition supports the Services' proposal to restore the two-step approach to designating critical habitat. The two-step approach properly requires the Services to first consider designation of occupied habitat, and then to consider designation of critical habitat outside of occupied habitat *only* if a designation limited to the species' present range (i.e., occupied habitat) would be inadequate to ensure the conservation of the species. This approach is consistent with the statute, Congressional intent, and the case law, and provides much needed

predictability and accountability in determining when designation of unoccupied habitat may be appropriate.

E. The Coalition Opposes the Proposal to Allow Designation of Unoccupied Areas if Designation Limited to Occupied Areas Would Be "Less Efficient."

The Coalition recommends that the Services eliminate a portion of proposed section 424.12(b)(2), which would allow the Services to consider unoccupied areas to be essential "where a critical habitat designation limited to geographical areas occupied would … result in less efficient conservation for the species." 83 Fed. Reg. at 35,201. The proposal states that "[e]fficient conservation for the species refers to situations where the conservation is effective, societal conflicts are minimized, and resources expended are commensurate with the benefit to the species." *Id*.

Creating a "less efficient" standard for designation is problematic and unsupported by law. Such a standard has no limiting principle, has no basis in the language of the statute, and introduces vague considerations such as minimizing "societal conflicts," which are indeterminate. This language would provide broad discretion to the Services to designate unoccupied areas of land or water simply on the basis of efficiency, rather than on the basis that the area actually constitutes "habitat" for the species which is "essential" to the conservation of the species. Thus, the Coalition recommends this language be removed.

Instead, the Coalition encourages the Services to recognize in the preamble to any final rule that the Services can consider relative efficiency, including, for example, the economic benefits and costs, in evaluating whether or not to designate occupied or unoccupied habitat as critical habitat.

F. The Proposal to Allow a Determination that Unoccupied Areas Are Essential Based on "Reasonable Likelihood the Area Will Contribute to the Conservation of the Species" Should Be Modified.

The Coalition generally supports the Services' efforts to clarify when the Secretary may determine that an unoccupied area may be essential to conservation of the species. *See* 83 Fed. Reg. at 35,198. The Services propose that an unoccupied area will be considered "essential" if the Secretary determines that there is a "reasonable likelihood that the area will contribute to the conservation of the species," taking into account the best available science regarding species-specific and area-specific factors. *Id.* The preamble includes a number of factors to determine whether an unoccupied area is reasonably likely to contribute to the conservation of the species.[10] *Id.*

The proposed approach emphasizes the importance of considering whether an area "is now, or is likely to become, usable habitat for the species." *Id.* Drawing from the facts in *Weyerhaeuser* as an example, the Services state that they might conclude that an area is unlikely to contribute to the conservation of the species where "it would require extensive affirmative restoration that does not seem likely to occur such as when a non-federal landowner or necessary partners are unwilling to undertake or allow such restoration." *Id.*

Problematically, however, the Services suggest that, in determining how valuable the potential contributions of an area are to the biological needs of the species, there may be a "rare instance where the *potential* contribution of the unoccupied area to the conservation of the listed species is extremely valuable, [and] a lower threshold than 'likely' may be appropriate." *Id.* (emphasis added). There is no basis for a "lower threshold than 'likely'" in the Act. And

[10] The Services suggest considering: (a) whether the area is currently or is likely to become usable habitat for the species; (b) the likelihood that interagency consultation under section 7 will be triggered, i.e., whether any federal agency actions are likely to be proposed with respect to the area; and (c) how valuable the potential contributions of the area are to the biological needs of the species. *Id.*

applying such a vague standard, where an area could be designated even if it is not likely to contribute to the conservation of the species, is contrary to the requirements of the Act, including that designated areas "are essential" to the conservation of the species "at the time it is listed." 16 U.S.C. § 1532(5). Furthermore, such a standard would be subject to numerous different interpretations and controversy. Finally, there may be little, if any, benefit to the species in designating such areas, as the Services acknowledge: "For example, where an area represents the only *potential* habitat of its type … the Services may reasonably classify that area as essential *even in the face of a low likelihood* that the area would contribute to species conservation." 83 Fed. Reg. at 35,198-99 (emphasis added).

It is far more appropriate for the Services to address designation of areas with a low likelihood of value to the species through future revisions to a critical habitat designation, if the area later develops features essential for the conservation of the species. 16 U.S.C. § 1533(a)(3)(A)(ii); 50 C.F.R. § 424.12(g). As it stands, the proposed provision would allow for critical habitat designations based on the potential, future conditions for the areas, which is contrary to the text and structure of the Act.

The Services should reconsider this aspect of the proposal, remove the "potential contribution" statement from the preamble, and consider appropriate revisions to section 424.12 to clarify that unoccupied habitat cannot be designated based on potential, future conditions, but must be designated based on an evaluation of current circumstances.

Relatedly, in the preamble to any final rule, the Services should specifically reject those aspects of the 2016 Critical Habitat Rule's preamble that would support designation of unoccupied areas as critical habitat based on potential, future effects to those areas, including projected climate change impacts. 81 Fed. Reg. at 7,434-35. The 2016 preamble, for example,

notes that, "[a]s the effects of global climate change continue to influence distribution and migration patterns of species, the ability to designate areas that a species has not historically occupied is expected to become increasingly important." *Id*. at 7,435. The 2016 preamble fails to acknowledge the limitations in the ability to forecast population changes projected to be caused by climate change, and the significant uncertainty and variability inherent in projections that attempt to estimate future responses by species and their habitats to climate change.

G. The Services Should Modify the Definition of "Geographical Area Occupied by the Species."

The Coalition urges the Services to modify the definition of "geographical area occupied by the species," *see* 83 Fed. Reg. at 35,194, which currently is defined in a manner that allows inclusion of wide areas around species' recorded occurrences at the time of listing (including developed areas and uninhabitable areas internal to the designation), as well as areas that are used only periodically or temporarily by the species.

The 1984 regulations did not define the term "geographical area occupied by the species," and the term was generally applied to mean the area *actually* occupied by the species. The 2016 Critical Habitat Rule, however, broadly defines this term to include all areas within a series of connected dots where the species has been known to occur, even if just occasionally:

> An area that may generally be delineated around species' occurrences, as determined by the Secretary…. Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (e.g., migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals).

81 Fed. Reg. at 7,439 (codified at 50 C.F.R. § 424.02). Under the current definition, therefore, "occupied" critical habitat includes areas around the species' occurrences, including those areas

that are used only periodically or temporarily by the species. *See id*. This would include specific areas of land or water not (and which may never be) actually occupied by the species.[11]

The Coalition raised concerns with the Services' promulgation of this definition in its challenge to the 2016 regulations, and urges the Services to amend the definition for "geographical area occupied by the species" to avoid the inclusion of areas not used at all, or used only rarely or irregularly by the species. Congress has specified that areas *outside* the geographical area occupied by the species may be designated only upon a separate, specific, additional determination by the Secretary that doing so is essential to the conservation of the species. 16 U.S.C. § 1532(5). Thus, designating areas where species are not actually found (e.g., "unoccupied" areas) as "occupied" critical habitat short-circuits Congress' direction for designation of unoccupied habitat, and is contrary to the statute.

The current definition is also inconsistent with the Ninth Circuit's decision in *Arizona Cattle Growers' Ass'n v. Salazar*, which held that "FWS has authority to designate as 'occupied' areas that the [species] uses *with sufficient regularity that it is likely to be present during any reasonable span of time*." 606 F.3d at 1165 (emphasis added).[12] A species' rare "occurrence" in an area is not "use with sufficient regularity." Accordingly, it is appropriate and consistent with the ESA and case law interpreting the Act to revise this definition to specifically exclude areas that are not actually used by the species with regularity.

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[11] It is important to draw the distinction between designating an entire migratory corridor for a listed bird as critical habitat, and seasonal breeding or stopover habitat that may actually meet the statutory definition. Specific areas periodically occupied by a species, e.g. within migration corridors, may appropriately qualify as critical habitat if they are used repeatedly year-to-year and are essential to conservation of the species, even if occupied only temporarily during each migration cycle.

[12] *See also Cape Hatteras Access Preservation Alliance v. Dep't of the Interior*, 344 F. Supp. 2d 108 (2004) (deferring to the FWS interpretation of areas "occupied" by the piping plover where the Service looked for areas with "consistent use," where "observations over more than one wintering season" demonstrated plovers' presence); *Alaska Oil and Gas Ass'n v. Salazar*, 916 F. Supp. 2d 974, 988-89 (D. Alaska 2013) (deferring to FWS interpretation of areas "occupied" by the polar bear as "areas that the [species] uses with sufficient regularity that it is likely to be present during any reasonable span of time").

H. The Services Should Modify the Definition of "Physical or Biological Features."

The Coalition urges the Services to eliminate the definition of "physical or biological features," section 424.02, and instead restore the emphasis on primary constituent elements (PCEs). *See* 83 Fed. Reg. at 35,194.

Prior to the 2016 Rule, the Services' regulations provided that, "[w]hen considering the designation of critical habitat, the Secretary shall focus on the *principal biological or physical constituent elements* within the defined area that are essential to the conservation of the species." 50 C.F.R. § 424.12(b) (2015) (emphasis added). PCEs were defined to include roost sites, nesting grounds, spawning sites, water quality, soil type, etc. And the Coalition and the Services generally agreed that PCEs were quantifiable, scientifically-based criteria that provided a consistent, objective direct measure of potential critical habitat.

The 2016 Critical Habitat Rule, however, adopted a broad, subjective requirement that replaced PCEs with "physical and biological features essential to the conservation of the species." The Services defined these features to include "ephemeral or dynamic" habitat features and features that allow for the "development of habitat characteristics … usable by the species." 81 Fed. Reg. at 7,439 (codified at 50 C.F.R. §§ 424.02, 424.12(b)(1)(ii)). Thus, under the 2016 Rule, physical and biological features essential to a species would not need to actually be present at the time of designation so long as the habitat has the potential to support the emergence or development of such features *in the future*. *See id*. at 7,439.

Designation of areas based on *potential* future occurrence of features that could be used by the species is contrary to the Act's present tense definition of critical habitat, which allows for designation of occupied areas on which essential physical or biological features "are found." *See* 16 U.S.C. § 1532(5)(A)(i). The ESA does not allow designations where such features *may* be

found in the future. In addition, the ESA requires that critical habitat determinations be based on the "best scientific data available." 16 U.S.C. § 1533(b)(2). Allowing for designation of areas based on physical or biological features that have been absent for years and may or may not occur in the future is not scientific, is arbitrary, and is contrary to the Act's definition of critical habitat and "best available" science standard.

The Coalition raised concerns with the Services' promulgation of this definition in its challenge to the 2016 regulations, and recommends that the Services eliminate the "physical or biological features" definition and restore the use of PCEs. At a minimum, the Services should revise the "physical or biological features" definition to clarify that critical habitat can only be designated where features essential to a species are actually present at the time of designation, not merely when the habitat has the potential to support the emergence or development of such features in the future.

I. The Coalition Supports the Services' Proposed Clarifications of "Not Prudent" Determinations.

The Coalition supports the Services' proposal to clarify under which circumstances the Services are authorized to find it is not prudent to designate critical habitat. *See* 83 Fed. Reg. at 35,196-97, 35,201 (proposed 50 C.F.R. § 424.12(a)(1)). The designation of critical habitat must be "prudent and determinable," 16 U.S.C. § 1533(a)(3)(A), and the current regulations provide a non-exhaustive list of two situations where the designation of critical habitat is not prudent. *See* 50 C.F.R. § 424.12(a)(1)(i)-(ii). The Services propose to modify the second circumstance and add three additional circumstances to this non-exhaustive list.

The Coalition supports the proposed revisions to remove language indicating that it would not be prudent to designate when "designation of critical habitat would not be beneficial

to the species." 83 Fed. Reg. at 35,197. This revision should help avoid the confusion that has resulted from court decisions construing the language in ways contrary to the Services' intent.

The Coalition also supports the Services' proposal to focus the analysis on current circumstances, consistent with the requirement to consider whether "the present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species." 83 Fed. Reg. at 35,197, 35,201 (proposed 50 C.F.R. § 424.12(a)(1)(ii)). The Services enumerate a number of circumstances in which designation of critical habitat would generally be not prudent. *See* 83 Fed. Reg. at 35,197. We concur with the Services' clarification, consistent with the Act, that it may not be prudent to designate critical habitat where threats to the species stem solely from causes such as disease (e.g., white-nose syndrome for northern long-eared bats) that cannot be addressed through proactive conservation management actions, and thus create a regulatory burden without providing any commensurate benefit to the species. *See* 83 Fed. Reg. at 35,197. Designation of critical habitat in this situation would not be prudent because it would not conserve or benefit the species. The Coalition also suggests that the Services consider additional bases for concluding that critical habitat designation would not be prudent, such as minor or negligible incremental benefits relative to significant economic impacts.

Further, the Coalition supports the Services' proposal to move "no areas meet the definition of 'critical habitat'" to a stand-alone provision. *See* 83 Fed. Reg. at 35,197, 35,201 (proposed 50 C.F.R. § 424.12(a)(1)(iv)). The Coalition agrees that it is important to clarify that designation is not prudent when there are no areas that meet the "critical habitat" definition.

The Coalition supports the Services' proposal to confirm that where critical habitat areas under the jurisdiction of the United States provide negligible conservation value for a species that primarily occurs in areas outside of United States jurisdiction, this could be a basis for

determining that critical habitat designation would not be prudent. *See* 83 Fed. Reg. at 35,197, 35,201 (proposed 50 C.F.R. § 424.12(a)(1)(iii)). This is a common sense clarification, consistent with the purposes and language of the Act.

Finally, the Coalition requests that the Services consider adding another circumstance to the list specifying that it is not prudent to designate critical habitat if the species' habitat will be protected pursuant to conservation plans or agreements. For example, Coalition members routinely partner with the Services to implement conservation actions. In 2014, the Service and Coalition members entered into a Candidate Conservation Agreement (CCA) for the Georgia aster (*Symphyotrichum georgianum*) that includes, in part, implementing management strategies that maintain or enhance Georgia aster populations. This CCA has been instrumental in preventing the need for this species to be listed or for critical habitat to be designated. In addition, in 2002, the Service worked with Coalition members to develop a CCAA for the robust redhorse (*Moxostoma robustum*). As a direct result of the CCAA, populations have been enhanced and listing/critical habitat designation remains unwarranted. These examples demonstrate that where threats to habitat are already being addressed through conservation plans, conservation agreements, and other commitments to protect and enhance habitat, it could be a disincentive to such private conservation actions – and not be prudent – to designate critical habitat in that area. Moreover, any designation in this situation would impose unnecessary regulatory burdens with little, if any, conservation benefits.

V. Comments on the Proposed Changes to the Regulations for Interagency Cooperation

The Services propose changes to "clarify and improve" the interagency consultation process under ESA section 7. Given the multitude of federal agency actions and authorizations that can be necessary for Coalition members to conduct their business activities, the Services'

section 7 regulatory requirements routinely impact the Coalition members' activities – often resulting in delays of or higher costs for important infrastructure, energy diversification, or other projects. In many cases, these costs and delays affect not only the Coalition members, but also consumers, institutions, and other members of the public.

The consultation process imposes significant burdens on the Coalition's activities due to the expense and time required for consultation, the potential for imposition of costly and time-consuming additional requirements, and litigation risk.[13] Accordingly, the Coalition is encouraged by the Services' efforts to reduce the regulatory burdens associated with the consultation process, and supports those aspects of the proposal directed at improving and streamlining the section 7 consultation process. The Coalition has additional recommendations to further improve implementation of the ESA regulatory program, consistent with the Act.

A. The Coalition Generally Supports the Services' Proposal to Modify the Adverse Modification Definition, but Further Changes Are Warranted.

The Coalition supports the Services' proposed revisions to the definition of "adverse modification" to: (1) clarify that an adverse modification determination is made at the scale of the entire critical habitat designation; and (2) remove the second sentence in the adverse modification definition. In addition to the above, we encourage the Services to revise the "appreciably diminish" standard.

[13] Consultation can result in imposition of costly conservation measures that provide little to no benefit to a species or its habitat. In some circumstances, Coalition members will accept these conditions, rather than continue to negotiate with the Services to avoid additional costs and project delays. For example, a Coalition member was forced to accept costly conservation measures that provided no measureable benefit to a species and its habitat (rather than continuing negotiations over reasonable revisions with the FWS) because a delay of one additional week would have led the project's start date to overlap with the start of an endangered species' breeding season. If the negotiations had continued, the project proponent would have been forced to wait an additional four months, until the end of the species' breeding season, to begin construction – at significant cost.

1. The Coalition Supports Confirmation of the Scale of an Adverse Modification Determination.

The preamble to the 2016 Adverse Modification Rule recognizes that some adverse impacts to protected habitat are permissible, so long as the overall conservation value of the area remains intact: "Even if a particular project would cause adverse effects to a portion of critical habitat, the Services must place those impacts in context of the designation to determine if the overall value of the critical habitat is likely to be reduced." 81 Fed. Reg. at 7,222. The Coalition supports codification of this language by adding "as a whole" to the "adverse modification" definition. *See* 83 Fed. Reg. at 35,180-81.

The revised definition properly emphasizes the value of critical habitat as a whole for the conservation of a species. Accordingly, in evaluating whether a proposed action would adversely modify designated critical habitat, the Services would evaluate impacts of a proposed project in the context of the overall critical habitat designation, and determine whether the overall value of the critical habitat is likely to be reduced. Size or proportion of the affected area would not be determinative.

The Coalition supports this change, which would clarify that, just as the determination of jeopardy is made at the scale of the entire listed species, a determination of destruction or adverse modification is made at the scale of the entire critical habitat designation. Therefore, even if a proposed project would impact a portion of designated critical habitat for purposes of an adverse modification determination, the Services would evaluate those impacts in context of the designation as a whole to determine if the overall value of the critical habitat is likely to be reduced.

2. The Coalition Supports Removal of the Second Sentence in the Adverse Modification Definition.

The Coalition supports the Services' proposal to remove the second sentence of the adverse modification definition, *see* 83 Fed. Reg. at 35,181, which states that "[s]uch alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features." 50 C.F.R. § 402.02. This language sets a virtually unlimited standard that is inconsistent with the ESA.

The 2016 preamble noted that an adverse modification finding may be made even if the area currently does not have the requisite "physical or biological features" and is in "degraded condition," based on its potential to "improv[e] over time relative to its pre-action condition." 81 Fed. Reg. at 7,216-17. This approach would allow the Services to make findings of adverse modification based on impacts to unoccupied areas that are currently degraded by natural or human activities and have no physical or biological features that support the needs of the species, based solely on the potential of the area – if modified in the future – to have features that would support the future recovery of the species, which is contrary to the Act. The statute requires that, for occupied areas, such physical and biological features must be "found" and in existence at the time of designation, not be based on the potential for such features to be found at some point in the future. 16 U.S.C. § 1532(5)(A)(i).

Moreover, the approach adopted in the 2016 rules is without a limiting principle and therefore allows the Services substantial discretion to determine that virtually any activity conducted on critical habitat triggers an adverse modification finding. The vague standard creates unnecessary litigation risks for the Services and project proponents. Because the standard is ambiguous, there will be room for wide interpretation in its application, which is

likely to result in challenges to the results or adequacy of section 7 consultation. Such litigation is costly, and often significantly delays the projects at issue. Furthermore, such an approach can be a disincentive to voluntary conservation and environmental stewardship efforts where property owners decline to conserve landscape areas out of a fear that a federal designation may result. Accordingly, the Coalition supports the Services' proposal to remove the second sentence of the adverse modification definition to reduce unnecessary confusion about the scope of the analysis.

The Coalition is concerned, however, that the Services plan to retain the approach described in the second sentence, because the preamble states that the Services do not plan to change "their underlying view" that, in some circumstances, it may be necessary to consider how alterations to critical habitat "could affect the ability of the habitat to develop or support features essential to the conservation of the species." 83 Fed. Reg. at 35,181. The Services should confirm that findings of adverse modification cannot be based on impacts to unoccupied areas that have no physical or biological features that support the needs of the species based solely on the potential of the area to have features in the future that would support the future recovery of the species, and remove any contrary statements from a final rule. The Act plainly limits designation of critical habitat to areas that have the requisite habitat features at the time of listing, 16 U.S.C. § 1532(5), and thus an adverse modification determination cannot rest on impacts to an area that lacks those features.

3. The Coalition Urges the Services to Revise Their Broad Interpretation of the Term "Appreciably Diminish."

The section 7 proposal does not address one of the most problematic aspects of the 2016 Adverse Modification Rule – the Services' broad interpretation of the term "appreciably diminish." Previously, "appreciably diminish the value" meant "to *considerably reduce* the

capability of designated or proposed critical habitat to satisfy requirements essential to both the survival and recovery of a listed species."[14] In the preamble to the 2016 Rule, however, the Services set forth a new interpretation, stating that the term "considerably" means "worthy of consideration." 81 Fed. Reg. at 7,218. Under the 2016 Rule, an activity is found to "[a]ppreciably diminish" critical habitat where the Services "can recognize or grasp the quality, significance, magnitude, or worth of the reduction in the value of critical habitat." *Id*.[15] This revised approach allows the Services significant discretion to find adverse modification based on any measurable effect.

The Coalition disagrees with the Services' decision to maintain the overbroad appreciably diminish standard. The Services state that they "continue to conclude" that the phrase "appreciably diminish" means "'worthy of consideration and is another way of stating that we can recognize or grasp the quality, significance, magnitude, or worth of the reduction in the value of critical habitat." 83 Fed. Reg. at 35,182. The Services should revisit this interpretation, which is contrary to Congress's intent to strictly limit designations of critical habitat and inconsistent with case law that has upheld "no adverse modification determinations" in instances where there was a discernable loss in critical habitat. Indeed, courts have held that that "[a]n area of a species' critical habitat can be destroyed without appreciably diminishing the

[14] FWS and NMFS, Consultation Handbook; Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act at 4-36 (Mar. 1998) ("Consultation Handbook") (emphasis added).

[15] The word "appreciably" is also used in the "jeopardize the continued existence of" standard. *See* 50 C.F.R. § 402.02. Importantly, the Services correctly state in the proposal that when the Services are evaluating the impacts of a project, adverse impacts must still meet the jeopardy or adverse modification standard even when the status of a species may already be "in jeopardy," "in peril," or "jeopardized" by baseline conditions. *See* 83 Fed. Reg. 35,182 *(citing contra Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 930 (9th Cir. 2008); *Turtle Island Restoration Network v. United States Dep't of Commerce*, 878 F.3d 725, 735 (9th Cir. 2017). We agree that there is no "'baseline jeopardy' status even for the most imperiled species," and that this approach is consistent with the statute and regulations. *Id*. at 35,183. A jeopardy or adverse modification determination is a determination made about the effects of the federal action and not the status of the environmental baseline. Thus, the term "appreciably" does not have a different meaning when the species already faces serious threats.

value of critical habitat for the species' survival or recovery." *Butte Environmental Council v. U.S. Army Corps of Engr's*, 620 F.3d 936, 948 (9th Cir. 2010) (finding FWS was not arbitrary in its no adverse modification determination where a portion of critical habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, and slender Orcutt grass would be destroyed); *see also Forest Guardians v. Veneman*, 392 F. Supp. 2d 1082, 1092 (D. Ariz. 2005) (finding no adverse modification from a discernable loss in fairy shrimp habitat). The Services' standard, however, allows for adverse modification determinations whenever there is some discernable diminishment in critical habitat in direct contravention of these decisions and others.

The Coalition recommends that the Services adopt a more precise interpretation in any final rule, and recognize that "appreciably diminish" should not mean any measurable or recognizable effect on critical habitat, but instead must mean an effect that is demonstrably adverse or harmful to the conservation function of the designated critical habitat as a whole. Mere recognition or discernibility of an effect is not enough to constitute "adverse modification."

B. The Coalition Strongly Supports Modifying the Definition of Environmental Baseline and Adopting the Clarifying Language Offered in the Preamble for a New Environmental Baseline Definition.

A BO must "detail[] how the agency action affects the species or its critical habitat." 16 § 1536(b)(3)(A). The statute makes plain that the focus of the consultation is on the effects to species *that result from an agency's action*. Correspondingly, the consultation regulations specify that the "effects of the action" are the direct and indirect effects of an action … that will be *added to the environmental baseline*." 50 C.F.R. § 402.02 (emphasis added). The Coalition supports the Services' proposal to include a stand-alone definition of "environmental baseline," as follows:

> Environmental baseline *is the state of the world absent the action under review and* includes the past, present *and ongoing* impacts of all *past and ongoing* Federal, State, or private actions and other

> human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early § 7 consultation, and the impact of State or private actions in the action area which are contemporaneous with the consultation in process. *Ongoing means impacts or actions that would continue in the absence of the action under review*.

83 Fed. Reg. at 35,184 (proposed new language indicated in italics). The Coalition supports the modified environmental baseline definition, which is consistent with the statute and is needed to clarify those effects that may properly be attributed to the action under review, and how the baseline concept applies to ongoing federal actions (including, for example, ongoing operation of a hydropower facility).

The environmental baseline is critical to the analysis of potential jeopardy or adverse modification because it identifies the existing biological and other environmental conditions against which the effects of the agency action are measured. The Services' current regulations provide that the baseline is comprised of "*past and present*" impacts of activities as well as anticipated impacts of other actions "that have *already undergone* consultation." 50 C.F.R. § 402.02 (emphasis added). The Handbook describes the environmental baseline as "a 'snapshot' of a species' health at a specified point in time … [which] does not include the effects of the action under review in the consultation." Consultation Handbook at 4-22. The Handbook states that the baseline includes actions "already affecting the species…" *Id.* at 4-23. As the statute, current regulations, and Handbook make plain, the Services must determine the effects of the action based on changes to current baseline conditions today, and not based on additional restrictions that the Services believe the action agency *could* impose as part of the action. Baseline effects that exist prior to and would continue in the absence of the action are *not* effects of the action.

The Services note in the preamble that there has been some confusion regarding the environmental baseline for ongoing agency actions. For example, one question that has arisen, particularly with environmental rulemakings that are beneficial, is how to evaluate an agency action where "a change is made to an ongoing action that lessens, but does not eliminate, the harmful impact to listed species or critical habitat." 83 Fed. Reg. at 35,184. In most, if not all cases, environmental rulemakings and standards that are purely beneficial should not be subject to formal section 7 consultation. Where an action would have purely beneficial effects, the action agency should make a "not likely to adversely affect" determination, and the Services should, through informal consultation, issue a statement concurring with the determination. *See* 50 C.F.R. § 402.13. Unfortunately, the Services have not been consistent in the approach taken for beneficial actions, and, in some cases, confusion over how to address beneficial actions has led the Services and action agencies in formal consultation on beneficial actions to rely on an artificial environmental baseline that does not include effects that existed prior to and would continue after the beneficial action, but are not caused by that action.

For example, the Services constructed a wholly artificial and improper environmental baseline in consultation on the U.S. Environmental Protection Agency's (EPA) final rule establishing requirements for cooling water intake structures (CWIS) at existing facilities under CWA § 316(b) ("§ 316(b) Rule"). As EPA – the action agency – recognized, the § 316(b) Rule would have only beneficial effects, by requiring many owners and operators of CWIS to install new technology to reduce impingement mortality and entrainment of aquatic organisms.[16] Unfortunately, rather than evaluating whether requiring existing facilities to meet the new, more protective standards set by the § 316(b) Rule that would reduce adverse impacts relative to

[16] *See* U.S. EPA, ESA Biological Evaluation for CWA Section 316(b) Rulemaking, at 77 (June 18, 2013).

current conditions, the Services instead created an artificial baseline in which existing CWIS were not operated. By that artificial measure, any future adverse effects of CWIS were (equally artificially) attributed to the rule, despite the fact that the rule only reduced adverse effects. The Services premised this approach on the misguided theory that "the operation of [existing] CWIS is within EPA's discretion,"[17] even though EPA's authority under CWA § 316(b) is not to determine whether or how CWIS may operate in general, but is instead limited to specifying standards that require the location, design, construction, and capacity of CWIS reflect the "best technology available" for minimizing adverse environmental impacts. 33 U.S.C. § 1326(b). Yet the Services attributed to the § 316(b) Rule all of the estimated effects of ongoing operation of the CWIS not otherwise prevented by EPA's rule. *See* Programmatic BO at 28. In other words, they incorrectly treated the § 316(b) Rule as the proximate cause[18] of all impacts resulting from the operation of those intakes, and failed to include present and ongoing effects of CWIS operations in the environmental baseline. This led the Services to take a beneficial rule and, through use of an artificial baseline, view the rule as harmful and in need of additional measures supposedly needed to avoid jeopardy and adverse modification from the Rule.[19]

Courts have recognized that distinguishing between an environmental baseline and the *new* effects that would result from the agency action is essential to determining whether the agency action will jeopardize listed species. *See*, *e.g.*, *Nat'l Wildlife Fed'n v. NMFS*, 524 F.3d.

[17] FWS and NMFS, ESA Section 7 Consultation Programmatic BO on the U.S. Environmental Protection Agency's Issuance and Implementation of the Final Regulations Section 316(b) of the CWA, at 28 (May 19, 2014).

[18] See Section C below for more discussion of proximate cause as the appropriate causation standard for ESA section 7 consultation.

[19] For more discussion of the Services' consultation and resulting BO on EPA's § 316(b) Rule, see *Cooling Water Intake Structure Coalition, et. al. v. EPA*, No. 14-4645 (lead), Opening Brief of the Cooling Water Intake Structure Coalition, Utility Water Act Group, Entergy Corporation, and American Petroleum Institute (2d Cir. filed Feb. 6, 2017). The Second Circuit's decision, deferring to the Services' approach in the BO, *Cooling Water Intake Structure Coalition, et al. v. EPA*, No. 14-4645 (2d Cir. July 23, 2018), does not directly address the environmental baseline issue and thus does not restrict the Services from further clarifying in this rulemaking that an appropriate baseline includes historic and ongoing impacts that would continue in the absence of the action under review.

917, 930 (9th Cir. 2008) ("Agency action can only 'jeopardize' a species' existence if *that* agency action causes some deterioration in the species' pre-action condition." The term jeopardize "implies causation, and thus some *new* risk of harm.") (emphases added). Indeed, it would both be illogical and contrary to law to find that a specific action that *improves* conditions for a species – such as a protective environmental rule or standard – causes jeopardy due to effects that continue after and are not caused by the rule or standard. By this logic, if an agency was proposing to reduce the current speed limit on a road from 50 miles per hour to 40 miles per hour based on studies showing that doing so would reduce traffic accidents, the new speed limit would not be seen as having a net beneficial effect of reducing traffic accidents. Instead, the new speed limit would be seen as the cause of *all* future traffic accidents on the road, simply because the new speed limit did not eliminate the risk of future traffic accidents. This approach defies common sense and basic principles of causation, and is a disincentive to beneficial actions. The use of such an approach to the environmental baseline, which does not account for ongoing activities and effects, and instead artificially turns a protective rulemaking into one causing harm, is illogical and inconsistent with the fundamental purpose of section 7 consultation.

Whatever more the Services may want a rulemaking agency to do to improve conditions for listed species, they may not force such an outcome by creating an artificial baseline or altering the action simply in order to consult on what more the agency *might have done*. *See WildEarth Guardians v. EPA*, 759 F.3d 1196, 1209 (10th Cir. 2014). Indeed, "requiring consultation on everything the agency *might do* would hamstring government regulation in general and would likely impede rather than advance environmental protection." *Id.* (emphasis added). The Services may not expand consultation – and thus their own role in interpreting and implementing other federal statutes – by evaluating effects that existed prior to, and that will

continue after, the agency action but which are not caused by the action. Such an approach would lead to the impossible result that agency rules and other agency actions violate the jeopardy prohibition even where those actions are not the proximate cause of the potential jeopardy.

Along these lines, the Coalition appreciates the Services' clarification regarding the appropriate scope of jeopardy analyses and adverse modification determinations and the relationship between that analysis and the environmental baseline. Specifically, the Services clarify that the terms "jeopardize the continued existence of" and "destruction or adverse modification" are determinations "made about the effects of the agency actions, *not* determinations about the environmental baseline or about the pre-action condition of the species." 83 Fed. Reg. at 35,182 (emphasis added). The Coalition supports the Services' clarification that the term "jeopardy" does not describe environmental baseline or pre-action conditions of a species, nor does "appreciably diminish" have a different meaning where the species already faces threats. *Id.* We agree that the jeopardy and adverse modification analysis requires the Services to evaluate the effects of the proposed action on the species in light of the overall status of the species, the baseline conditions within the action area, and any cumulative effects occurring within the action area. Sometimes, these concepts have been confused, particularly in the context of historic conditions. *See, e.g., American Rivers v. Fed. Energy Regulatory Comm'n,* 895 F.3d at 46-47.[20] Indeed, as the Services recognize, historic conditions

[20] In *American Rivers*, the court evaluated a FERC decision to grant a 30-year license renewal for the Coosa River hydropower project. The court focused on a particular statement in the BO that "the relicensing of the Coosa Project at this time cannot take into account the historic impacts of these actions, but rather only the current and proposed future operations and their impacts . . . [Certain activities that] began as early as the 1920's . . . are beyond the scope of the consultation." *Id.* at 46-47. The court found FWS acted arbitrarily in establishing an environmental baseline without considering the historic and continuing impacts of the Project. *Id.* at 47. However, the court appeared to confuse or place excessive weight on this single FWS statement, since the Court elsewhere acknowledged that FWS noted in the BO the long-term impacts of historical impoundments within the Coosa Basin.

are included in the baseline to allow the Services to understand the effects *of the action* compared to the state of the world as it now exists and would exist in the absence of the action.

Similarly, the Coalition supports the Services' clarification that, for purposes of section 7(a) determinations, "there is no 'baseline jeopardy' status even for the most imperiled species," and no requirement to ascribe a "tipping point" beyond which a species cannot recover. 83 Fed. Reg. at 35,183. The Services explain that it is sometimes mistakenly asserted that species may already be in "jeopardy" by baseline conditions, such that "any additional adverse impacts must be found to meet the regulatory standards for 'jeopardize the continued existence of' or 'destruction or adverse modification.'" *Id.* at 35,182 (citing *Nat'l Wildlife Fed'n*, 524 F.3d at 930 (9th Cir. 2008)); *see also, e.g., American Rivers,* 895 F.3d at 47 (asserting that "even where baseline conditions already jeopardize a species, an agency may not take action that deepens the jeopardy by causing additional harm."). The Services note that this approach is "inconsistent with the statute and our regulations." 83 Fed. Reg. at 35,182. The proper focus during consultation is on whether the agency action causes jeopardy. Neither the ESA nor the Services' regulations "state any requirement for the Services to identify a 'tipping point' as a necessary prerequisite for making section 7(a)(2) determinations." *Id.* The Services clarify that ESA section 7(a)(2) and the related regulations "do *not* require that each proposed action improve or increase the likelihood of survival and recovery of the species, or improve the conservation value of critical habitat." *Id.* Instead, the analysis must focus on the incremental impacts of the action, even where a species already faces severe threats prior to the action. *Id.* The Coalition supports this clarification.

Finally, the Coalition recommends that the Services include in the preamble to the final rule a clarification regarding the term "aggregate effects" as used in the Consultation Handbook. Page 4-33 of the Handbook states:

> The conclusion section [of a BO] presents the Services' opinion regarding whether the aggregate effects of the factors analyzed under "environmental baseline," "effects of the action," and "cumulative effects" in the action area—when viewed against the status of the species or critical habitat as listed or designated—are likely to jeopardize the continued existence of the species or result in destruction or adverse modification of critical habitat.

The Services state in the preamble that the proposal to amend section 402.14(g)(4) to clarify that the effects of the action are *added to* the environmental baseline reflects the Services' existing approach as set forth in the "Conclusion" section on page 4-33 of the ESA Handbook. 83 Fed. Reg. at 35,186-87. But the term "aggregate effects" is not included in the statute or the ESA regulations and its use in the Handbook is confusing. The Coalition urges the Services to clarify that "aggregate effects," as used in on pages 4-33 and 4-37 of the Handbook, simply means the incremental effects of the action, after the "effects of the action" and "cumulative effects" are *added to* the "environmental baseline" and considered *in light of* the current status of the species or designated critical habitat. It is not a separate term of art within the context of section 7 consultation.

In sum, to address these important issues and avoid confusion in the future, it is critical that the Services clarify the proper determination of baseline conditions. The Services should revise their regulations to clarify that the scope of section 7 consultation is limited to the effects that the agency action would add to the environmental baseline. And, where there are ongoing actions or activities that would continue absent the action under consultation, including continued, ongoing impacts caused by existing structures and facilities, those should be considered as part of the environmental baseline or cumulative effects, as appropriate, and not

evaluated as effects of the agency action. As such, the Coalition strongly supports the Services' proposal to create the stand-alone "environmental baseline" definition and to adopt the proposed language provided at 83 Fed. Reg. at 35,184.

C. The Coalition Urges the Services to Clarify that Proximate Causation is the Proper Standard for Determining "Effects of the Action."

The proposal consolidates various concepts of direct and indirect effects, and effects of interrelated and interdependent actions, into a new definition of "effects of the action." The proposal defines "effects of the action" as:

> [A]ll effects on the listed species or critical habitat that are caused by the proposed action, including the effects of other activities that are caused by the proposed action. An effect or activity is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include effects occurring outside the immediate area involved in the action.

83 Fed. Reg. at 35,191. The Coalition agrees that the proposed revised definition simplifies the definition of "effects of the action."

The Coalition supports the way in which the Services' proposal addresses the "reasonably foreseeable" prong of causation, but we urge the Services to adopt a proximate causation standard.[21] The Coalition disagrees with the proposal's inclusion and codification of a "but for" standard of causation. Adopting a "but for" standard, as opposed to a "proximate cause" standard, would be inconsistent with applicable law and create an unnecessary regulatory burden.[22]

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[21] To be "reasonably foreseeable," the effect must be "sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision." *City of Shoreacres v. Waterworth*, 420 F.3d 440, 453 (5th Cir. 2005) (quoting *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992)).

[22] The law generally distinguishes between proximate cause and but for causation: Proximate cause is "[a] cause that is legally sufficient to result in liability[;] [a] cause that directly produces an event and without which the event would not have occurred." Black's Law Dictionary 213. "But for" causation, on the other hand, casts a wider net, capturing a broader series of events that can be traced to a particular action without regard to whether the actor

Pursuant to the section 7 regulations, the Services must "[e]valuate the *effects of the action* and cumulative effects on the listed species or critical habitat." 50 C.F.R. § 402.14(g)(3) (emphasis added). In evaluating the effects of a federal action, such as issuing a CWA section 404 permit or an incidental take permit, the Services may attribute effects to an action only where those effects are reasonably foreseeable and *proximately caused* by the action. Proximate cause is the established standard for National Environmental Policy Act (NEPA) effects analyses and ESA take analyses. There is substantial case law on these points.[23] Other effects, such as effects of other activities or conditions (if relevant), must be included in the baseline or cumulative effects analysis where appropriate.

For both the NEPA and ESA section 7 consultation effects analysis, a "but for" causal relationship, as proposed by the Services, is insufficient to make an agency responsible for a particular effect. Principles of reasonable foreseeability and proximate cause are critical to developing an appropriate effects analysis under the ESA, and thus should be properly reflected in the Services' regulations. The case law and the HCP Handbook support the Coalition's position that proximate cause is the correct standard, and we urge the Services to revise their proposal to adopt a proximate cause (rather than "but for") standard.

The Supreme Court has explained that "a 'but for' causal relationship is insufficient to make an agency responsible for a particular effect under NEPA and the relevant regulations…. NEPA requires a reasonably close causal relationship between the environmental effect and the alleged cause [analogous] to the familiar doctrine of proximate cause from tort law." *Dep't of*

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is in a position to control those events, and considers whether an injury would have occurred "but for" the action at issue.

[23] *See, e.g., Babbitt v. Sweet Home Chapter, Communities for Great Ore.,* 515 U.S. 687, 709, 712 (1996) (finding that regulation defining the ESA's take prohibition to include "significant habitat modification or degradation that actually kills or injures wildlife" is limited by ordinary principles of proximate causation and foreseeability) (O'Connor, J., concurring).

Transp. v. Pub. Citizen, 541 U.S. at 767 (citations omitted).[24] "But for" causation has similarly been rejected as a basis for attributing effects to an agency action, including in the form of "indirect" effects. *See, e.g., Winnebago Tribe of Nebraska v. Ray*, 621 F.2d 269 (8th Cir. 1980) (rejecting application of "but for" causation to determine indirect effects and finding that NEPA analysis for federal permit authorizing construction of transmission line across the Missouri River was properly limited to the effects of the crossing authorized by the permit and did not have to consider the impacts of the entire line (including potential impacts of other portions of the line on the bald eagle) even if the line could not be built "but for" the river crossing).

These same principles naturally apply to an effects analysis under the ESA, and indeed have been applied in the ESA context. *See, e.g., Nat'l Ass'n of Home Builders v. Defenders of Wildlife*, 551 U.S. 644 (2007) (scope of section 7 consultation on EPA's decision to transfer CWA section 402 permitting authority to Arizona state agencies should not include potential harm from increased development because EPA has no discretion over the National Pollutant Discharge Elimination System (NPDES) permitting transfer authority, and thus is not the legal cause of effects of the NPDES transfer); *Aransas Project v. Shaw,* 775 F.3d 641, 657-58 (5th Cir. 2014) ("[a]pplying a proximate cause limit to the ESA must therefore mean that liability may be based neither on the 'butterfly effect' nor on remote actors in a vast and complex ecosystem.").

[24] In *Public Citizen*, the Court rejected a NEPA challenge to regulations issued by the Federal Motor Carrier Safety Administration (FMCSA) that established safety and inspection requirements for trucks and buses crossing the border from Mexico to operate in the United States. Petitioners contended that FMCSA had violated NEPA by not considering the environmental impacts of those trucks and buses. While FMCSA's issuance of the regulations allowed the President to lift a congressionally imposed moratorium on the entry of Mexican trucks into the United States, and thus were a "but for" cause of increased truck traffic from Mexico, the Supreme Court deemed that causal connection insufficient to require FMCSA to consider the environmental effects of increased Mexican truck traffic as part of its NEPA review. *Id.* at 768. According to the Court, the "legally relevant" cause of any increased truck traffic would be the President's lifting of the moratorium, not the issuance of the FMSCA regulations. *Id*. at 769. Moreover, because FMCSA had no authority to prevent cross-border truck movements, the Court found that requiring the agency to evaluate the environmental effects of increased truck traffic "would have no effect on FMCSA's decisionmaking—FMCSA simply lacks the power to act on whatever information might be contained in the [NEPA review]." *Id*. at 768.

The revised HCP Handbook, finalized in 2016, adopts a causation standard for NEPA analyses that reflects proximate – not "but for" – causation:

> [T]he specific activity that [an incidental take permit (ITP)] authorizes, the incidental take of endangered species, may be merely one component of a large project involving non-Federal activities that do not require Federal review or authorization. Determining whether our NEPA analysis should consider the impacts of that larger activity requires analysis of the extent of our '*control and responsibility*' over the applicant's overall project.

Revised HCP Handbook at 13-4 (citing 40 C.F.R. § 1508.18) (emphasis added). Critically, the Revised HCP Handbook specifies that "*[s]imple 'but for' causation is not enough*" and that "[t]here must be a reasonably close *causal relationship* between issuance of the ITP and the effects under consideration to require analysis under NEPA." *Id*. (emphases added).

Nonetheless, the Services now propose a new definition for "effects of the action" that states "[a]n effect or activity is caused by the proposed action if it would not occur *but for* the proposed action and it is reasonably certain to occur." 83 Fed. Reg. at 35,183. To support the "but for" causation standard, the Services' proposal cites the 1998 Consultation Handbook, which was issued long before the Supreme Court's decision in *Public Citizen*, and one Ninth Circuit case (relying on a 1987 Ninth Circuit decision) discussing the test for interrelatedness or inter-dependentness, which does not support the notion that a "but for" standard should be used to determine direct or indirect effects of the action. More recent court decisions, including specific direction from the Supreme Court, and agency practice supersede these authorities and must be acknowledged.

The Services must use a causation standard that is consistent with applicable legal authority.[25] Just as proximate cause is the proper standard for determining effects in the NEPA

[25] Relatedly, and consistent with these proposed revisions, the Coalition supports a clarification that the scope of a consultation under section 7(a)(2) should be limited to only the activities, areas, and effects within the

review and ESA take contexts (including indirect effects), it is also the proper standard in the ESA consultation context. In fact, applying inconsistent causation standards to NEPA and ESA reviews for the same action, or applying proximate cause to determine take and but for causation to identify other effects within a single BO for the same action, can cause confusion and create problems. For example, a project opponent could point to conditions treated as effects in a BO under a "but for" standard of causation to challenge the agency's failure to treat those conditions as effects in the NEPA review or ESA take analysis, forcing the agencies to defend that difference in approaches on the basis of complex theories of causation. Applying a consistent proximate causation standard, therefore, not only rests on strong legal footing, but will result in stronger (and more internally consistent) administrative records in support of agency actions.

Adoption of a "but for" causation standard, on the other hand, would create significant problems because it can attribute to an agency action far reaching effects over which the agency has no control. Adoption of a "but for" standard would leave the analyses without a limiting principle, and impose upon the Services an arbitrary burden to address effects beyond their control. It would also require applicants to mitigate for effects of third party actions outside their control. Appropriate limits not only promote informed agency decisionmaking by ensuring that decisions are based on environmental impacts over which the federal agency has control, but also protect agencies and those private entities whose permit or license applications are subject to

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jurisdictional control and responsibility of the regulatory agency. *See* 83 Fed. Reg. at 35,185. As a general matter, the Services' consultation should be limited to the activities within the action agency's jurisdiction. There may be some limited circumstances in which it may be appropriate for the Services, based on their authority under the ESA to regulate and authorize take, to conduct a broader analysis on a project level to consider impacts of – and authorize – take beyond the activities subject to the action agencies' jurisdiction. For example, many Coalition members' projects require authorization from the U.S. Army Corps of Engineers for discharges of dredged or fill material into waters of the United States associated with a larger project. While the scope of consultation should generally be limited to the specific discharges being authorized, in some circumstances, such as a project for which some limited incidental take is expected elsewhere on the project site (outside of CWA discharge areas), it may be appropriate for the Services to analyze the impacts of and authorize take associated with other parts of the larger project.

consultation against unnecessary delay, burden, and litigation over hypothetical or tangential environmental impacts.

The Services' confirmation of the appropriate causation standard is critical to the efficient and timely review and authorization of permits that allow important projects the Coalition's members undertake. Therefore, the Coalition urges the Services to modify the proposed "effects of the action" definition to clarify that, consistent with case law and the Services' practice, the Services may attribute effects to an action only where those effects are *proximately caused* by the action. The Coalition recommends that the Services revise the proposed definition of "effects of the action" as follows (recommended new language shown in bold below):

> [A]ll effects on the listed species or critical habitat that are caused by the proposed action, including the effects of other activities ~~that~~ **to the extent those effects** are **proximately** caused by the proposed action. An effect or activity is caused by the proposed action if it is **within the agency's control and responsibility** ~~would not occur but for the proposed action~~ and it is reasonably certain to occur. Effects of the action may occur later in time and may include effects occurring outside the immediate area involved in the action.

These recommended changes would properly incorporate the correct causation standard, ensure the Services' analysis focuses on the appropriate "effects," improve "the effects of the action" decision, and help alleviate confusion.

D. The Coalition Supports the Addition of a "Programmatic Consultation" Definition, But Recommends the Services Provide Additional Clarity.

The Coalition supports the addition of a definition of "programmatic consultation" which encourages programmatic approaches, where applicable, to streamline the consultation process for a suite of actions. *See* 83 Fed. Reg. at 35,191. In particular, the Coalition supports programmatic consultations to address similar activities that occur in certain geographic areas because this process should increase consistency in consultation approaches across FWS field

offices and decrease consultation process timelines. As the Services suggest, the U.S. Army Corps of Engineers' general permitting program at the regional level, for example, may benefit from the use of programmatic consultation. 83 Fed. Reg. at 35,185. Coalition members often rely on regional, general CWA section 404 permits to authorize water crossings and other dredge and fill activities, and support efforts to streamline ESA consultation obligations for such permits through an appropriately tailored and efficient programmatic consultation.

Programmatic consultations have been used in the past to streamline the consultation process for certain transportation projects, which could serve as a model for other federally permitted linear projects, such as pipelines and electric transmission lines. In 2015, FWS engaged in programmatic consultation with the Federal Highway Administration (FHA) and Federal Railroad Administration (FRA) to streamline the process of evaluating potential impacts of highway and rail projects for the Indiana bat and the northern long-eared bat.[26] The agreement between the agencies included a range-wide consultation and conservation strategy and a concurrence letter from FWS confirming that certain FHA and FRA activities are not likely to adversely affect the species. Those transportation projects could then proceed without the need for separate individual ESA section 7 consultations. Similarly, many Coalition members rely on programmatic consultations for reservoir shoreline permitting activities in certain reservoirs, which significantly reduces the time and resources necessary for landowners to obtain a permit while providing certainty and consistency in the permitting process.[27] The Coalition supports this type of programmatic consultation to address multiple similar, frequently

[26] *See* Programmatic BO for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat (revised Feb. 2018).

[27] Programmatic approaches are useful in the ESA section 10 context as well. For example, a programmatic approach was effective in implementing the Georgia Department of Natural Resource's statewide Habitat Conservation Plan for the endangered red-cockaded woodpeckers on private land, including the development of Safe Harbor Agreements.

occurring or routine actions expected to be implemented in particular geographic areas. However, the Coalition requests that the Services revise the regulations to require the inclusion of all likely applicants in the development of the programmatic agreement, and to provide that non-federal applicants may opt-out of coverage or implement alternative conservation measures.

The Services' proposal suggests that programmatic consultation is appropriate for federal agency programs, plans, policies, or regulations. While programmatic consultation may be appropriate for certain agency rulemakings and programs,[28] the Coalition has some concerns with the use of programmatic consultations on federal environmental rulemakings, particularly where (as is often the case) such rulemakings are environmentally beneficial. The trend toward formal consultation on environmental rulemakings, and the resulting influence on the outcome of those rulemakings, can have detrimental, and unnecessary and unhelpful consequences for regulators and the regulated community.

Formal consultation on federal environmental rulemaking creates a number of problems and may not always be appropriate or useful:

- Consultation can give the Services an inappropriate and overly weighted role in the rulemaking agency's decision-making process;
- Consultation is generally conducted without public notice and comment, and often does not allow for public awareness or input on the Services' analysis of the federal rulemaking under consideration or any changes to the federal rulemaking that the Services may recommend; and
- As discussed above, confusion over the appropriate environmental baseline and the effects of the rulemaking on listed species and habitat has, in some cases, led the Services to suggest substantial and burdensome new requirements

[28] For example, in 2016, FWS conducted intra-service programmatic consultation on the Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions, which provided a streamlined process for federal agencies to comply with the ESA section 7 consultation provisions in connection with activities that may impact the bat.

While federal agencies have increasingly been encouraged to engage in formal consultation on beneficial environmental rulemakings, often formal consultation is not required or appropriate as a matter of law. Consultation may be completed informally where the rulemaking is not likely to adversely affect listed species or critical habitat, particularly where the rulemaking will establish additional environmental protections (as is often the case). 50 C.F.R. § 402.13.

The recommendations provided above regarding revisions to the "environmental baseline" and "effects of the action" definitions would help avoid confusion and the issues that can arise with programmatic consultation on environmental rulemakings. Likewise, to help alleviate confusion, the Coalition supports the Services' proposal to revise section 402.03 to preclude the need to consult when the proposed action will result in effects to listed species or critical habitat that are "wholly beneficial." 83 Fed. Reg. at 35,185. We agree that where a rulemaking establishes additional environmental protections that will likely benefit endangered or threatened species, no consultation should be required.

Similarly, the Coalition supports the Services' proposal to amend the applicability section to clarify that federal action agencies are under no obligation to consult when the federal action agency does not anticipate take and the proposed action (i) would have no effect on listed species or critical habitat or (ii) would "have effects that are manifested through global processes" and cannot be reliably predicted or measured at the scale of the species' current range or would result in insignificant impacts on listed species or critical habitat. 83 Fed. Reg. at 35,185.

The Coalition further recommends that the Services clarify in the preamble to the final rule that the federal action agency need not seek confirmation from the Services when the action agency does not anticipate take and the proposed action will not affect listed species or critical

habitat. Coalition members have found that the action agency may be hesitant to issue a "no effect" determination without confirmation from the Services, which can add significant delay to the permitting process, particularly where the Services do not respond to a request for confirmation. Confirmation from the Services that the action agency need not seek Service confirmation in this circumstance would be beneficial.

The Services propose to add a new regulatory provision at 50 C.F.R. § 402.17 to define which activities are "reasonably certain to occur." *See* 83 Fed. Reg. at 35,193. The Coalition agrees that it would be helpful to further clarify the "effects of the action" definition by specifying which activities are reasonably certain to occur; however, the proposed language may create additional confusion. The three factors the Services propose to consider when evaluating whether an activity is reasonably certain to occur are ambiguous. For example, the first two factors, "past relevant experiences" and "any existing relevant plans," are remarkably broad. If this provision is finalized, the Coalition recommends that the Services either remove this non-exclusive list of factors or sufficiently limit their interpretation. Furthermore, subsection (b) of the proposed provision, indicates that subsection (a) applies only to activities "caused" by the proposed action. The Services should, when evaluating whether an effect or an activity is caused by the proposed action, apply the proximate causation standard to ensure the development of appropriate and defensible effects analyses under the Act.

E. The Coalition Supports the Services' Clarification of the Proper Scope of Analysis for Intra-Service Consultation on ESA Section 10 Permits.

In the preamble discussion about streamlining formal intra-Service consultation for ESA section 10 permits, the Services state that "the Service issuing the permit would have to ensure that its determination regarding jeopardy and destruction or adverse modification is not limited to the species for which the permit is authorizing take, but that it covers all listed species and all

designated critical habitat under the Service's jurisdiction affected by the proposed action." 83 Fed. Reg. at 35,188. The Coalition agrees with the principle that consultation on an ITP needs to consider all species impacted by an ITP, not just those for which take is authorized. Thus, for example, if authorizing take of one species by a project would result in non-take impacts to other listed species, those impacts must be considered. In addition, to provide further clarity, the Services should provide more detail with respect to the scope of the "proposed action," and clarify that the proposed action is the authorization of take, not the overall project or development (i.e., take that will result from construction of the project, not the project itself). Most projects for which applicants are seeking section 10 authorization will be authorized by various local, county, state, and potentially federal permits, and could proceed without the ITP. Pursuant to ESA section 7, the issuance of an ITP by the Service is a discretionary federal action that triggers the obligation to engage in intra-Service consultation with FWS's Ecological Services Office. Ultimately, the purpose of the consultation analysis is to determine whether the issuance of the ITP is likely to cause jeopardy or adverse modification in light of its effects when considered in light of baseline conditions and projected future activities.

Therefore, the Services must focus their environmental reviews on those discrete effects caused by its proposed action – the authorization of incidental take – and tailor the environmental analysis accordingly. Applying the proper scope of environmental analysis is critical to ensuring an efficient and effective review process, and thereby developing a focused and well-supported ITP. The HCP Handbook emphasizes:

> [I]t is important to be precise about the underlying Federal action. For some projects, there has been considerable confusion over what the actual 'scope' of a Federal action was in response to an [ITP] application. Misunderstanding the scope often leads to an overstatement of impacts, . . . and encumbering applicants and the

> Services with unwarranted, costly, and time-consuming [environmental analyses].

HCP Handbook at 4-14. An overly narrow scope would fail to consider all effects of the action. An overbroad scope, however, would attribute events – such as changes in traffic patterns– to the Service's issuance of the ITP despite the fact that those events are not caused by the ITP, exaggerate the effects attributed to the ITP, preclude the ability to meaningfully shape the ITP to offset attributed effects, and leave the analysis without a solid limiting principle to guide the Service's action. Consistent with the HCP Handbook and to avoid confusion, the Services should clarify in any final rule that the "proposed action" subject to intra-agency consultation for section 10 permits is the authorization of take, not the authorization of the overall project.

Further, the Services should specify that if all listed species and critical habitat involved are within the jurisdiction of the Service issuing an ITP, no consultation with the other Service is required.

F. The Coalition Supports the Modifications Proposed to Streamline and Improve the Consultation Process.

The Services' proposals and above recommendations to improve key terms and definitions would significantly improve the consultation process. In addition, the Services have proposed a number of other modifications and clarifications to streamline and improve the ESA consultation process. The Coalition supports the following proposed changes:

- The proposed addition of a 60-day deadline for informal consultations, subject to extension by mutual consent. *See* 83 Fed. Reg. at 35,186.
    - The Coalition would support a shorter timeframe, such as a 30 or 45-day deadline, which is sufficient for most informal consultations. As the preamble notes, FWS completes 78-85% of its informal consultations in less than 30 days, averaging between 26 and 39 days to complete informal consultation. 83 Fed. Reg. at 35,186. A 30 or 45-day timeline would align with other low-impact permit programs, such as the Corps' nationwide permits and states' general NPDES permit processes. Such a deadline would be useful to ensure consultation is timely and avoid delays.

- If the Services adopt a deadline for informal consultation, the Coalition encourages the Services to explain which events trigger the beginning of the 60-day period. In the Coalition's experience, it would be appropriate to determine that the time period begins when the project proponent or lead federal action agency provides the results of the search for listed species and designated habitat in the project area, a project description, and an analysis of potential impacts to listed species. For projects or activities where a biological assessment (BA) is needed, the submission of the BA to the Services should begin the time period for informal consultations.

- The option for extension by mutual consent, which may be necessary in some cases for complex agency actions. The Coalition requests that the Services clarify that the "mutual consent" for an extension must be agreed upon by the Service, the action agency, *and* the applicant.

- The proposed clarifications to the documentation necessary to initiate formal consultation, particularly the clarification that NEPA documents can serve as initiation packages. *See* 83 Fed. Reg. at 35,186, 35,192 (proposed 50 C.F.R. § 402.14(c)(2)). This change would help increase the efficiency of the process and avoid confusion.

- The proposed clarification of the Services' role and the analytical steps to be taken by the Services in drafting BOs, including clarification that the Services should consider mitigation measures in a proposed action and presume such measures will be implemented. *See* 83 Fed. Reg. at 35,186, 35,192 (proposed 50 C.F.R. § 402.14(g)(8)). The Coalition agrees with the Services' clarification that there is no heightened requirement that Services evaluate whether mitigation measures will be implemented. This is particularly important for projects that operate pursuant to long-term licenses or permits, such as hydropower projects, which may require implementation of such measures over time, as there may be some uncertainty with details at the time of licensing. In addition, this clarification should assist in avoiding future judicial decisions that misconstrue the standard for considering mitigation measures. *See American Rivers*, 895 F.3d at 54 (holding that FERC acted "irrationally" by accepting "anticipated-but-unidentified mitigation measures, the specifics of which did not even have to be submitted for examination until six months after the license issued, or installed for eighteen months."); *Nat'l Wildlife Fed'n*, 524 F.3d at 936 (9th Cir. 2008) (indicating that the court was "not persuaded that even a sincere general commitment to future improvements may be included in the proposed action in order to offset its certain immediate negative effects, absent specific and binding plans"). The proposed language would further incentivize project proponents and federal action agencies to develop beneficial conservation measures to include in the proposed action.

- The proposal to allow the Services to adopt in a BO all or part of a federal agency's initiation package, and the analysis/findings required for a section 10 permit. *See* 83 Fed. Reg. at 35,186, 35,192 (proposed 50 C.F.R. § 402.14(h)(3), (4)). Such a provision should include situations in which some or all of the agency initiation package and/or analysis required for a section 10 permit is prepared by the applicant. This provision would help

streamline consultation and avoid duplication of efforts and agency resources. Of course, the Services would retain their independent judgment in such a process.

- The proposal to add a new provision allowing expedited consultations for actions that would have minimal adverse effects or effects that are known/predictable (e.g., habitat restoration projects). *See* 83 Fed. Reg. at 35,186, 35,192-93 (proposed 50 C.F.R. § 402.14(l)).

VI. The Coalition Supports the Proposed Changes to the Regulations Extending Species-Specific Protections to Threatened Wildlife and Plants.

The Coalition supports the proposed changes to the "blanket § 4(d)" rule. Pursuant to the proposal, FWS would develop a species-specific rule, as warranted, for each species it lists as threatened or reclassifies as threatened in the future, mirroring NMFS's process. The proposed changes would remove the automatic extension of the ESA's take prohibition for threatened species under FWS jurisdiction, and would instead allow FWS to tailor any necessary protections to the specific conservation needs of each species, as is appropriate and consistent with the statute.

ESA section 4(d) allows the Services to regulate take of threatened species if "necessary and advisable" for the conservation of the species. 16 U.S.C. § 1533(d). NMFS makes these determinations on a case-by-case basis for each species listed as threatened. Decades ago, FWS promulgated a regulation prohibiting the take of all threatened species, known as the "blanket § 4(d) rule." 50 C.F.R. § 17.31(a). Accordingly, the current FWS regulation automatically extends the ESA's section 9 take prohibition, which applies to endangered species, to threatened species under FWS jurisdiction. *See* 16 U.S.C. § 1538(a). Thus, FWS treats endangered and threatened species as needing the same protections. FWS will occasionally adopt species-specific rules that circumscribe or provide limits on the take prohibition as it applies to threatened species, known as 4(d) or "special" rules, pursuant to 50 C.F.R. § 17.31(c). These species-specific 4(d) rules will exempt certain activities that have minor or even beneficial

effects on species recovery from the FWS blanket rule's prohibition of take, thereby eliminating the need for FWS to expend resources reviewing and issuing permits for those activities.

FWS now seeks to amend its regulations to parallel NMFS's approach. Thus, under the proposal, for each species FWS lists in the future as threatened, it would promulgate appropriate regulations to put in place prohibitions, protections, or restrictions tailored specifically to that species, as warranted. The Coalition supports these changes because they provide greater flexibility to customize any appropriate prohibitions. The changes promote a closer look at the threats to the species and corresponding conservation needs before FWS finalizes a threatened listing, which could be helpful where significant public and private conservation measures are already underway to protect the species. The proposal could reduce FWS's workload, and regulatory burdens for proposed activities that have minor adverse effects on threatened species.

FWS notes that it intends to finalize any species-specific rules concurrent with final listing. *See* 83 Fed. Reg. at 35,175. The Coalition supports the Service's goal of issuing species-specific rules concurrent with listing determinations. Concurrent species-specific rules would help provide certainty for Coalition members' project planning. Of course, FWS has discretion to revise or promulgate species-specific rules at any time after the final listing determination. *See id.* For the most part, until FWS has determined that a species should be listed as threatened, it will not have occasion to propose a species-specific section 4(d) rule for that species. As such, in some cases, it may be appropriate for the Service to issue a listing determination prior to finalizing a species-specific section 4(d) rule for that species. The Coalition suggests that the Service not include any binding requirement in its revised regulations that would set a specific timeframe or would require FWS to issue a species-specific rule concurrently with a listing

decision in all circumstances. FWS should, however, take all efforts necessary to collect and analyze data for listing decisions and provide final decisions in a timely manner.

The Coalition further recommends the Services utilize the five year status review process to assess the appropriate status and protections for species listed by FWS as threatened, prior to the issuance of any final rule. Section 4(c)(2) of ESA requires the Service to review the status of each listed species at least once every 5 years to ensure appropriate levels of protection under ESA. Through this process, the Service determines whether the listed species' status should remain the same, be removed (delisted), or reclassified (uplisted or downlisted). During the species' status review, for species listed as threatened prior to any final rule, the Service should consider whether to remove the "blanket § 4(d) rule" prohibition for that species, and, for those FWS-listed threatened species for which the "blanket § 4(d) rule" is removed during the species' status review, to the extent warranted, develop customized protections for species conservation, through a species-specific section 4(d) rule, based on best available scientific and commercial data.

Finally, the Coalition stresses the importance of nationwide consistency in implementing 4(d) rules. For example, despite the existence of a 4(d) rule for the northern long-eared bat, some regional offices still request mitigation for any take during operation even though the action is covered under the 4(d) rule.

VII. The Final Rules Should Await the Supreme Court's Decision in *Weyerhaeuser*.

The Coalition recommends that the Services wait to issue the proposed rules as final rules until late Spring 2019, to provide time for the Supreme Court to issue a decision in *Weyerhaeuser*. The Supreme Court is likely to issue a ruling on the merits in *Weyerhaeuser*. The Court granted *certiorari* despite opposition from the Services, was well aware of the superseding 2016 critical habitat regulations, and is aware of this rulemaking. Although

Weyerhaeuser is focused on designation of critical habitat, the Court's analysis of the ESA statutory framework and relevant provisions could have important implications for each of the proposed rules. If the case is decided on *Chevron* step one grounds, the Court's statutory analysis will carry critical weight for any new rule regarding the same statutory provisions. Even if the case is decided on *Chevron* step two grounds, the Supreme Court's statutory analysis could have important implications for any new rules. As a result, the Services may want or need to adjust any final rules to account for the Court's decision. Therefore, the Coalition suggests that, to develop strong final rules and supporting administrative records on these issues, the Services wait for the Court's decision, which is expected by late Spring 2019, if not earlier, before finalizing the proposals. Such an approach would allow the Services to consider whether a supplemental notice or other modifications are needed and to address the *Weyerhaeuser* decision in any final rules.

VIII. Conclusion

The Coalition supports the Services' efforts to review and revise their regulations and make important modifications to reflect the Services' experience implementing the regulations and case law interpreting the Services' authority. The Coalition encourages the Services to expeditiously complete these proposed rulemakings, consistent with the recommended suggestions.

Attachment A

Technical Analysis and Comments on Foreseeable Future Framework

Prepared by Dr. Rob Roy Ramey II
Wildlife Science International, Inc.

September 24, 2018

Wildlife Science International, Inc.
Scientific Review, Advising, and Research

Technical Analysis and Comments on Foreseeable Future Framework

Prepared by Dr. Rob Roy Ramey II
September 24, 2018

We welcome the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (hereafter referred to as the *Services*) proposal to refine the analysis of "foreseeable future" in ESA listing decisions. The Services propose that:

> In determining whether a species is a threatened species, the Services must analyze whether the species is likely to become an endangered species within the foreseeable future. The term foreseeable future extends only so far into the future as the Services can reasonably determine that the conditions potentially posing a danger of extinction in the foreseeable future are probable. The Services will describe the foreseeable future on a case-by-case basis, using the best available data and taking into account considerations such as the species' life-history characteristics, threat-projection timeframes, and environmental variability. The Services need not identify the foreseeable future in terms of a specific period of time, but may instead explain the extent to which they can reasonably determine that both the future threats and the species' responses to those threats are probable.

83 Fed. Reg. at 35,195. We offer several additional improvements to further clarify and refine the Services' analyses of foreseeable future. Our specific suggestions include the following:

1. Comply with the Information Quality Act (IQA) by explicitly requiring that all data, metadata, computer code, input parameters and assumptions used in predictive models be fully documented and made available in a publicly accessible archive. This would ensure reproducibility, as well as facilitate independent review and analysis.

2. For species listed as "threatened," require the Services to periodically test the reliability of population and threat prediction models against updated empirical data. This would allow the Secretary to determine whether the species is indeed threatened with extinction in the foreseeable future. Such analyses, incorporating updated data, could be carried out during 5-year status reviews as part of that informed decision-making process.

3. To more consistently convey the reliability of predictions of species status and threats in the foreseeable future, the Services should define and make use of words of estimative probability for decision-makers and the public (i.e., a certain outcome=100%, virtually certain >95%, probable>75%, etc.). Alternatively, the Services could more precisely express the estimative probability of model

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predictions in terms of their likelihood and confidence in those predictions, given the limitations of data, assumptions, and model design.

4. The Services should acknowledge the inherent methodological issues and the reasons why uncertainty exists in population and threat model predictions, especially the farther into the future these are made (i.e., beyond 30 years).

We believe that if the Services integrate these suggestions, in whole or in part, it would introduce an algorithmic decision-making process, thus contributing to more consistent and scientifically defensible ESA listing decisions, including analysis of the foreseeable future. Each of these four suggestions is discussed in greater detail below.

1. Comply with the Information Quality Act by explicitly requiring that all data, metadata, computer code, input parameters and assumptions used in predictive models be fully documented and made available in a publicly accessible archive. This would ensure reproducibility, as well as facilitate independent review and analysis.

The ESA requires that the Services rely on the best available scientific and commercial data in making listing determinations, including those involving the evaluation of potential endangerment in the foreseeable future. However, in practice, experience has shown that what can pass for "data" in the decision record has included: models and results that were not reproducible because the data and computer code were withheld or otherwise unavailable; models that contained mathematical errors, built-in biases, or relied upon expert opinion; and in some cases, no data at all.

The fundamental problem is the lack of minimum thresholds for what constitutes acceptable data in ESA listing decisions. This problem is particularly acute when the Services are faced with decisions that require reliance on predictive models that make forecasts into the "foreseeable future." With data and models becoming increasingly complex, it is reasonable that the Secretary require minimum standards for data quality in ESA decision-making, particularly when considering the degree of reliability that can be assigned to models and their predictions into the foreseeable future.

The IQA (OMB 1999, 2002) could provide a solution to this problem. Federal agencies have developed guidance for implementation of the IQA. The Department of Interior guidance (DOI 2002, 2011) provides considerable latitude and discretion to the Services, with a deferential standard of judicial review. As a result, the Services are caught between the ESA's statutory requirement to consider the best available data (which can include data of low quality and quantity) and IQA guidance on data quality and reproducibility. While the ESA refers to *data*, the Services often rely on published and unpublished studies and models and professional opinion, rather than the underlying *data*. In practice, the Services rarely review the data and computer code used in analyses.

Compounding this problem is the fact that for many rare or declining species there are only limited data available, and those data may be incomplete or inadequate for the

purposes of assessing population numbers and long-term trends. Additionally, historic data may have been collected over many years for other purposes (i.e., setting hunting quotas) and now applied to answer questions that were not originally anticipated (e.g., evaluating threats to greater sage-grouse). Or, the agencies monitoring the species may have been reluctant to apply improved methods of data collection. Therefore, listing decisions and recovery actions may be made on the basis of limited or sub-optimal data, which can hinder the analyses and inferences that can be drawn from them, especially for predictions far into the future.

In other cases, underlying data used in studies may not be made public because access has been withheld by state agencies, NGOs, or researchers. This may be because agencies, NGOs, or researchers consider the data proprietary, or they may not want to reveal the locations of species. Regardless, when data are not made public, it prevents independent reanalysis and review (Fischman and Meretsky 2001).

Climate models used in long-range predictions suffer from reproducibility problems as well.

In the case of climate models that are used to make long-range predictions, there are three additional issues.

First, is the difficulty in applying downscaled global climate models to the current and potential future habitat of a species of concern. This issue was noted in the FWS's 2014 decision not to list the wolverine as a threatened species.

The second issue arises if the outputs of models are treated as "data" that can be analyzed with additional models and/or if the models are parameterized with "expert opinion" rather than data. Both approaches can introduce bias and artifacts that can lead to erroneous conclusions. This problem is illustrated with the models used in the decision to list the polar bear as a threatened species (Amstrup et al. 2007). There, model inputs included empirical data, interpretations of data, outputs from general circulation models, and professional judgment (from one expert – the lead author of Amstrup et al. 2007).

And third, there is a problem common to both long-term population demographic models and climate models: cones of uncertainty that extend both into the past and into the future. This is best illustrated with the case of the greater sage-grouse. Historic sage-grouse population trend data was gathered without standardization and from few large leks that were easy to access. This resulted in inflated historic population estimates accompanied by great uncertainty, such that the confidence intervals estimated by Garton (2009, 2011) were larger than some of the population estimates themselves. More recent estimates are based upon higher quality data as a result of increases in sampling intensity and data quality. However, the problem with using inflated historic population estimates to predict future trends, 70 to 100 years into the future, introduces a built-in downward bias in predicted population sizes.

Half of Population Viability Analyses (PVAs) are not reproducible.

A recent paper (Morrison et al. 2016) presented analyses that indicate that half of the PVA models surveyed fail the test of reproducibility because the data, code, and/or input parameters were poorly documented or never made publicly available. If the PVA models are not reproducible, there is no way to assess the accuracy of their predictions against new data at a later date, such as during a 5-year status review. As concluded by Morrison et al. (2016):

> Our analysis has revealed that a substantial number of current PVAs for "popular" species are not repeatable due largely to the fact that the model parameters required to repeat these analyses were poorly communicated in papers or reports. The importance of communicating all inputs and outputs of PVA models in a systematic manner to ensure that studies can be repeated was recently highlighted by Pe'er et al. (2013). Here we provide an empirical demonstration of the consequences should these model parameters not be reported. Of course this has immediate effects on whether conservation practitioners can repeat the models. More broadly, however, this also diminishes the ability of practitioners to reliably make decisions on conservation actions.

These issues and examples underscore the importance of the Services requiring that the data they rely on for ESA listings be consistent with the IQA. In simple, effective terms this means that all of the underlying data, metadata, input parameters, computer code, and assumptions be publicly archived. In the rare case of sensitive location data for some endangered species, appropriate safeguards could be implemented (i.e., data share and non-disclosure agreements). A checklist, similar to that used in evaluating 5-year status reviews, could be developed and used to ensure consistent compliance with the IQA.

The suggestions above regarding minimum standards of data availability are consistent with those made by the National Research Council. In their 2012 report, *Assessing the Reliability of Complex Models: Mathematical and Statistical Foundations of Verification, Validation, and Uncertainty Quantification* (NRC 2012), they stressed that:

> Predictions with uncertainty are necessary for decision makers to assess risks and take actions to mitigate potential adverse events with limited resources. In addition to providing an estimate of the uncertainty, it is also crucial to assess the quality of the prediction (and accompanying uncertainty), describing and assessing the appropriateness of key assumptions on which the estimates are based, as well as the ability of the modeling process to make such a prediction. The way that one assesses the quality, or reliability, of a prediction and describes its uncertainty depends on a variety of factors, including the availability of relevant physical measurements, the complexity of the system being modeled, and the ability of the computational model to reproduce the important features of the physical system on which the QOI [quantity of interest] depends.

Solutions

Additionally, a growing number of frontline scientific journals, including *Science* and *Nature*, are signatories to the policies of the Center for Open Science. These are called: *Guidelines for Transparency and Openness Promotion (TOP) in Journal Policies and Practices* (https://osf.io/9f6gx/wiki/Guidelines/ and https://www.the-scientist.com/features/replication-failures-highlight-biases-in-ecology-and-evolution-science-64475). Briefly, the TOP Level II and III guidelines require that data, materials, and code must be posted to a trusted, publicly-accessible data repository, and that authors prove that analysis plans were preregistered in order to ensure objective hypothesis testing rather than a potentially subjective interpretation of results. The Level III standard also requires that analyses be reproduced independently prior to publication. Requiring studies to meet either of these levels would both ensure that the Services comply with the statutory language of the ESA that listing decisions be based upon "best available scientific and commercial data" and requirements of the IQA and Office of Management and Budget guidelines (OMB 1999, 2002), as noted below:

> for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies

and

> The reproducibility standard applicable to influential scientific, financial, or statistical information is intended to ensure that information disseminated by agencies is sufficiently transparent in terms of data and methods of analysis that it would be feasible for a replication to be conducted. The fact that the use of original and supporting data and analytic results have been deemed "defensible'' by peer-review procedures does not necessarily imply that the results are transparent and replicable.

The Services have the opportunity and the responsibility under the ESA to implement approaches to transparency and replicability for studies relied upon and disseminated in support of listing decisions that reflect these principles.

Efforts similar to the TOP Guidelines and National Research Council report may also be found at the *Reproducibility Project* and the *Replication Network.* A recent paper titled, *Questionable research practices in ecology and evolution*, noted instances of ecologists and evolutionary biologists engaging in practices such as selective use of data, not reporting statistically significant results, or hypothesizing after results are known. "*Such practices have been directly implicated in the low rates of reproducible results uncovered by recent large scale replication studies in psychology and other disciplines*." Our suggestions are intended to avoid these problems and promote fully transparent and reproducible research in ESA listings.

In our view, the Services should not rely on scientific journals and the peer review process to ensure information quality and reproducibility for two reasons. First, the 2002 OMB guidelines on implementation of the IQA recognize that peer review is an imperfect filter on information quality. Therefore, the adequacy of peer review was determined by the OMB to be a rebuttable presumption. The inadequacy of standards, checks and balances in peer review process is a well-documented issue in the scientific and legal literature (Jasanoff 2006; Ferguson et al. 2014; Fraser et al. 2018) and by watchdog organizations (i.e., https://retractionwatch.com). And second, it is the statutory responsibility of the Services, in implementing the ESA and adhering to the IQA, to ensure that decisions are based upon quality data, not determinations made by external third-party organizations.

2. **For species listed as "threatened," the Services should be required to periodically test the reliability of population and threat prediction models against updated empirical data. This would allow the Secretary to determine whether the species is indeed threatened with extinction in the foreseeable future. Such analyses, incorporating updated data, could be carried out during 5-year status reviews as part of that informed decision-making process.**

Although predictive models are central to ESA decisions in determining the status of species in the foreseeable future, we are unaware of any program at the Services to systematically test the reliability of predictions against empirical data *after* the predictions have been made. In our view, and that of others (Dormeus 2006), this is a critical oversight, as these models effectively carry the weight of law and influence the allocation of scarce conservation efforts.

In its least complicated form, model predictions could be tested against more recent population data than that used to produce the original model. For example, in the case of the greater sage-grouse, a model was developed by Garton et al. (2009, 2011) using reconstructed historic population estimates from lek count data to predict population carrying capacity changes 70 to 100 years into the future. As the study was cited 62 times in the FWS 2010 "warranted but precluded" decision, it is reasonable to conclude that it was, and remains, a highly influential scientific study. The fact that the model included lek counts from 1965-2007 invites the opportunity to test its predictions for each of the sage grouse populations against 12 years of new data (2008-2019) during the court-mandated 2020 status review.

In a more complex system, the test of predictions could also include revised models that include new data on threats, stochastic events, species' adaptations, technological innovation, and/or conservation measures. The decision to include or exclude these or additional variables would depend upon time and resources available.

3. **To more consistently convey the reliability of predictions of species status and threats in the foreseeable future, the Services should define and make use of words of estimative probability for decision-makers and the public (i.e. a certain outcome=100%, virtually certain >95%, probable>75%, etc.). Alternatively, the Services could more precisely express the estimative probability of model predictions in terms of their likelihood and confidence in those predictions, given the limitations of data, assumptions, and model design (Friedman and Zeckhauser 2015).**

Estimative probability has a long history of use in the fields of national intelligence, finance, medicine, climate and weather forecasting, where it has been used to provide decision makers and the public with a distillation of information about estimates that are inherently uncertain (Sherman 1964; Olsen and O'Neil 1989; O'Brien 1989; IPCC 2013; Handmer and Proudley 2007).

4. **The Services should acknowledge the inherent methodological issues and the reasons why uncertainty exists in population and threat model predictions especially the farther into the future these are made (i.e., beyond 30 years).**

Below, we present two key factors, regional climatic variation and ecological regime shifts, that are both complex and not readily predictable. We explain why they will confound long-range climatic and population foreseeable future forecasts.

Complex patterns of regional climate variability confound long-term regional climatic and population forecasts.

Numerous papers in the peer-reviewed scientific literature have reported that inter-annual, multi-decadal, and centennial-level fluctuations in regional climate, which affect the abundance of many species are driven by large-scale patterns of sea surface temperature and their interaction other climatic forces (Stenseth et al., 2002, 2003; Hallett et al. 2004; Kilduff et al. 2015; Ramey et al. 2018). Indices of these patterns important to North America include, but are not limited to, the Pacific Decadal Oscillation (PDO), Atlantic Multi-decadal Oscillation (AMO), El Niño Southern Oscillation (ENSO) and North Pacific Gyre Oscillation (NPGO). While post-hoc analyses produce discernable patterns, the reliability of future predictions is generally unimpressive (Ault et al. 2013; Newman et al. 2016). These studies generally conclude that even short-term (1-2 year) regional climatic and/or population forecasts will be unreliable unless these indices are taken into account, and longer-term regional forecasts will remain unreliable.

Ecological regime shifts are not reliably predictable.

Ecological regime shifts present an additional challenge in producing reliable long-term population predictions. These are large, abrupt shifts in ecosystems between alternative contrasting states, when pushed past one or more tipping points by stochastic events such as invasive species, overharvest, hurricanes, climatic or other human-related and/or

natural environmental factors (Scheffer et al. 2001 and 2003). As noted by Moore (2018), the problem boils down to:

> The difficulty in predicting tipping points stems from the large number of species and interactions (high dimensionality) within ecological systems, the stochastic nature of the systems and their drivers, and the uncertainty and importance of initial conditions that the nonlinear nature of the systems introduce to outcomes.

When predictions regarding tipping points have been made on species of conservation concern they have by necessity involved post-hoc analysis of data rather than forward-looking predictions (i.e., Deriso et al. 2008; Miller et al. 2012; Mahardja et al. 2017; Falcy and Suring 2018). Even the most recent, sophisticated attempts to predict future regime shifts have involved relatively simple, plant-pollinator systems and made no reference to time-scale (e.g., Jiang et al. 2018). Thus, their practicality is strictly limited to use as heuristic tools.

As a practical matter, given the complexity and non-stationary nature of both ecological systems and human actions, it is unreasonable to expect that models can reliably predict the status of species 30 to 100 years into the future, much less 200 years (McGowan et al. 2017). Marine species are even more uncertain than terrestrial species because less is known about them in general (Hilborn 2006; Schindler and Hilborn 2015). Therefore, the Services should limit use of predictive models to short timeframes in all but the least complex ecological systems.

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