October 29, 2021

The Honorable Shannon Estenoz
Assistant Secretary for Fish, Wildlife, and Parks
Department of the Interior
1849 C Street NW
Washington D.C. 20240

Re: Docket FWS-HQ-MB-2020-0023, Advance Notice of Proposed Rulemaking; Eagle Take Permits
Submitted via http://www.regulations.gov

Dear Assistant Secretary Estenoz:

In response to the U.S. Fish and Wildlife Service's (FWS or the Service) advance notice of proposed rulemaking[1] (ANPR) on Eagle Take Permits, the American Clean Power Association (ACP)[2] offers the following comments.

I. INTRODUCTION

ACP and our members can say with authority that the existing individual take permit program, as currently structured, is not viable for most projects that may seek coverage. This is largely due to uncertainty associated with the permitting process—the length of time and cost it takes to obtain and implement permits. Therefore, we applaud the Service initiating this rulemaking and support its intent "to improve and make more efficient the permitting process for incidental take of eagles in a manner that is compatible with the preservation of bald and golden eagles."[3] We also appreciate the broad scope of the ANPR, including the fact that it seeks comment on the challenges with the existing permit program, recommendations to improve this program, and "potential new regulatory approaches . . .particularly for projects that can be shown in advance to have minimal impact to eagles."[4]

In these comments, ACP offers recommendations in response to the questions posed by the Service, including offering a framework for a workable general permit pathway for renewable generation facilities that have limited impacts to eagles. ACP and our members

[1] 86 Fed. Reg. 51,094 September 14, 2021, available at: https://www.govinfo.gov/content/pkg/FR-2021-09-14/pdf/2021-19717.pdf ("Eagle ANPR").
[2] ACP is the national trade association representing the renewable energy industry in the United States, bringing together hundreds of member companies and a national workforce located across all 50 states with a common interest in encouraging the deployment and expansion of renewable energy resources in the United States. By uniting the power of wind (both land-based and offshore), solar, storage, and transmission companies and their allied industries, we are enabling the transformation of the U.S. power grid to a low-cost, reliable, and renewable power system. The American Wind Energy Association (AWEA) merged into ACP on January 1, 2021. Additional information is available at http://www.cleanpower.org.
[3] Eagle ANPR at 51094.
[4] *Id.*

worked for more than a year on a joint general permit proposal with three wildlife conservation organizations that we are jointly submitting separately in this proceeding. This coalition has coalesced around a proposed general permit approach that would benefits eagles, the Service, the public, and the clean energy industry, if adopted.[5]

ACP recognizes bandwidth limitations within the Service and competing priorities means it may be a long time until the eagle take permit program is again subject to potential revision. Therefore, it is essential to get it right this time. We urge the Service not to limit rule changes to those that can be made within the existing programmatic environmental impact statement (PEIS).[6] The regulated community encourages the Service to re-open the prior review under the National Environmental Policy Act (NEPA) as necessary to ensure a workable individual permit pathway. In ACP's view, minor changes are unlikely to result in a satisfactory outcome for the Service or the regulated and conservation communities.

It is particularly important to have this conversation now. President Biden has rightfully made addressing the climate crisis a national priority via his Executive Order (EO) "Tackling the Climate Crisis at Home and Abroad."[7] The EO calls for a "government-wide" approach to the climate crisis, including "to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a government-wide approach that reduces climate pollution in every sector of the economy."[8] In Sec. 213 of the EO, the President establishes a policy to "accelerate the deployment of clean energy and transmission projects in an environmentally stable manner."[9] This builds on the goal established by Congress to permit 25 gigawatts of renewable energy (wind, solar, and geothermal) on public lands by 2025.[10]

Rapid deployment of wind energy is essential to addressing the climate crisis. Various studies have found the need to expand renewable energy deployment, including wind energy, by two to four times the most recent record levels of annual installations over the next two decades to achieve the President's climate goals.[11] The Service can play an important role in the President's government-wide approach to climate, as well as helping the Bureau of Land

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[5] While it would be "new" to implement a general permit pathway under BGEPA, the concept itself is not new even to the eagle take permit program. Indeed, the Service sought comment on general permit pathways and definitions of "low-risk" during the rulemaking that led to the final rule five years ago in December 2016. While indicating they were beyond the scope of that rulemaking, the Service noted their intent to keep the comments "for consideration in a future rulemaking."

[6] U.S. Dept. of Interior, Fish and Wildlife Service, Final Programmatic Environmental Impact Statement for the Eagle Rule Revision (Dec., 2016) available at https://www.fws.gov/migratorybirds/pdf/management/FINAL-PEIS-Permits-to-Incidentally-Take-Eagles.pdf("2016 Eagle PEIS").

[7] Executive Order 14008 *Tackling the Climate Crisis at Home and Abroad* (Jan. 27, 2021), 86 F.R. 7619 available at https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad.

[8] Id.

[9] Id.

[10] Energy Act of 2020 § 3104, Public Law 116-260 available at: https://www.congress.gov/116/bills/hr133/BILLS-116hr133enr.pdf.

[11] Princeton *Net Zero America Project Report* available at: https://netzeroamerica.princeton.edu/the-report; the University of California Berkeley *Analysis on Achieving 90 Percent Carbon Reduction Emissions by 2035* available at: https://www.2035report.com/electricity/; Lawrence Berkeley National Lab (LBNL) *Halfway to Zero Report* available at: https://eta-publications.lbl.gov/sites/default/files/halfway_to_zero_report.pdf; LBNL and Evolved Energy Research *Carbon Neutral Pathways* available at: https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2020AV000284.

Management (BLM) achieve the Congressional target for renewable energy, by adopting revisions to the individual permit pathway under the eagle take permit program and establishing a reasonable general permit pathway for wind facilities with limited impact to eagles, both of which would help facilitate the needed growth of wind energy and the cost-effective operation of existing facilities.

Fortunately, there does not need to be a tradeoff between eagle conservation and wind energy deployment. The Service's own analysis shows that wind energy is not the primary cause of eagle mortality, with wind energy behind many other anthropogenic and natural causes even when combined with other collision related incidents. It is simply not having population level impacts on bald or golden eagles.[12] Indeed, at the same time wind energy has continued to expand significantly within the range of the bald eagle over the last decade, the Service reported earlier this year that the bald eagle population has quadrupled since 2009 to 71,400 nesting pairs and 316,700 individual bald eagles.[13] Wind energy and eagle population growth is clearly compatible based on real world experience. Despite its demonstrated low impact to eagles, the wind industry has been disproportionately impacted by the eagle rule.[14]

ACP's comments are organized to respond to ANPR question 4 ("new regulatory approaches") first given the priority our members place on a workable general permit pathway for projects having limited impacts. We then respond to ANPR questions 1 (specific aspects of the current permitting regime that "hinder permit application, processing, or implementation") and 3 ("targeted revisions to the existing regulations") together as they are two sides of the same coin on improving the existing individual permit program for those projects not eligible for the general permit. Finally, we include recommendations in response to ANPR question 2 ("guidance, protocols, analyses, tools"). We address the Service's questions on cost throughout.

II. EXECUTIVE SUMMARY

ACP's comments make the following recommendations, in order of priority, but all of which are important to having a workable eagle take permit program.

1. Create a workable general permit pathway based on the joint conservation organization and industry proposal for wind energy

The vast majority of wind energy facilities have limited or no impact on eagles. Yet, those facilities may still want to seek take coverage to secure legal and economic certainty and to help promote eagle conservation. However, the individual take permit program is ill-suited to the task given that growing demand will overwhelm the Service and the individual take permit program process, while the requirements are overly burdensome for projects with limited impacts. By contrast, done right, a general permit program for wind energy can provide

[12] 2016 Eagle PEIS *supra* note 8 at 76.
[13] U.S. Fish and Wildlife Service, Division of Migratory Bird Management, *Final Report: Bald Eagle Population Size: 2020 Update*. (Dec. 2020) available at https://www.fws.gov/migratorybirds/pdf/management/bald-eagle-population-size-2020.pdf ("2020 Bald Eagle Population").
[14] Of note, ACP's review of publicly available eagle permit information assessed the number of issued eagle permits, with 23 issued eagle permits for wind, 2 for mining, and one for solar.

significant conservation benefits for eagles, improve the Service's ability to manage eagle populations and administer the eagle take permit program effectively, and increase the ability for the wind industry to secure timely and cost-effective permit coverage.

Three conservation organizations and a negotiating team of ACP staff and our member companies, working on behalf of the broader industry, prepared a general permit framework with project take coverage that includes:

- Details on eagle population management;
- Eigibility for operating facilities and those in development;
- Periodic programmatic reviews;
- Duration of project take coverage;
- Take limits for project coverage; monitoring requirements;
- Compensatory mitigation; and
- Conservation fees, among several other issues.

We believe this proposal is consistent with the Service's goal to maintain stable or increasing breeding populations in all eagle management units (EMUs) and supporting local populations. ACP requests the Service incorporate the conservation organization-industry general permit framework into the draft rule.

2. Discontinue use of evidence of absence (EoA) model in the eagle take permit program

ACP opposes the continued use of the EoA model in eagle take permitting. There are several challenges with utilizing EoA:

- It drives unreasonable levels of monitoring for lower take levels (i.e., lower impact projects) requiring more expensive levels of monitoring to achieve a particular detection probability ("g" value), as described in Attachments 1 and 2.
- Pre-determined g values are not always practicable.
- While models may be necessary to estimate take for purposes of setting take limits or establishing monitoring protocols, EoA should not be used for determining compliance and triggering adaptive management.
- The complexity of EoA means it is not possible to monitor the compliance status throughout the season. Rather, the estimate can only be generated at the end of a monitoring period, often a monitoring year, which results in projects being held to an unreasonable "after the fact" standard based on a model's output.

As a result of these challenges, the conservation organization-industry general permit proposal does not incorporate EoA. ACP recommends EoA no longer be used with respect to the eagle take permit program.

3. Remedying the use of the Collision Risk Model (CRM)

ACP has several concerns with the implementation of the CRM:

- The CRM estimates appear in the NEPA documents, which is often the first time the applicant sees them.
- The Service does not provide the inputs and outputs to the application; therefore, the applicant does not have the opportunity to error check the take estimate.
- The exclusive focus of running the CRM with Service staff or contractors creates significant inefficiencies and delays given strained Service resources
- Having the take estimate toward the end of the process, i.e., in the NEPA document, means the business decision to secure a permit is ill-informed early in the permitting process, leaving all other elements of the application developed and negotiated without the benefit of knowing the project's potential impact to eagles.
- While the regulations are clear that project-specific datasets can and should be used for the model, in practice, the Service regularly rejects use of project-specific data. This results in projects being forced to rely on overly conservative 'priors' datasets that are not as representative for individual projects.
- The Service's application of the CRM is intended to be conservative for eagles, particularly golden eagles, so take estimates are purposely inflated yet might not be biologically representative of the project site.
- Changes in priors can result in compliance issues when EoA is used.

ACP recommends the following to address our concerns with the CRM:

- Publish the datasets upon which the priors are derived to allow applicants to run, evaluate priors- versus project data-derived CRM results, and submit representative CRM results to the Service for review.
- Provide the CRM and priors datasets to the public so independent review and verification can occur consistent with scientific practice.
- Remove the rigid pre-construction data requirements from the rule.
- Allow for flexibility in the data standards so that representative site- and species-specific data can be used where available.
- Allow applicants to leverage any data-supported method to derive take estimates including location-specific priors and local fatality data.

4. Reform the use and development of guidance

In the industry's experience, guidance has often made the eagle take permit program less workable and certain, which disincentivizes participation in the program.

ACP notes that at least three Service regions in the last year or so have developed guidance directed at eagle permit applicants in the wind energy industry. None of these documents have been published for notice and comment, and in each region, applicants encounter meaningful consequences for not following the recommendations in the guidance documents. Case law is clear that guidance that has a regulatory effect (i.e., is in effect binding) on the regulated community must be published for notice and comment in accordance with the Administrative Procedure Act. On a bipartisan basis, Congress has expressed concern about the

overreach in guidance documents per the recent House of Representatives' passage of H.R. 1508, the Guidance Clarity Act of 2021.[15]

Further, because each Service region is delegated the responsibility of administering the eagle take permit program, region-specific guidance is sometimes published seemingly without consideration of other regional guidance and in many instances, such guidance deviates from, rather than compliments, the national Eagle Conservation Plan Guidance (ECPG). This complicates the ability for the regulatory community to comply with the statute and secure permits in a timely and cost-effective manner.

ACP makes the following recommendations related to the issuance of guidance:

- The Service should not issue additional guidance to implement the eagle permitting rule without publishing draft guidance for public comment first.
- Guidance should be generalized to be applicable across Service regions and not so prescriptive as to discourage innovative approaches to fulfilling the intent of the Eagle Rule; Guidance documents cannot possibly replace case-by-case engagement with applicants with unique circumstances, project owner needs, and environmental and biological attributes;
- Guidance should not be written with an implication that any deviation from the guidance would result in unspecified delays.
- Guidance should be drafted to accommodate differences inherent in regional and project-specific contexts, yet underlying elements should be consistent with the ECPG and Eagle Rule.
- Guidance should not be written such that only the Service will be able to determine whether a permittee has satisfied the recommendations, leaving it unclear how much flexibility will be accommodated.
- Guidance should not create new recommendations that have no basis in law, regulation, or best available science, nor violate the practicability standard.

5. Develop and publish mitigation options beyond power pole retrofits

The 2016 final eagle rule indicates the Service planned to publish guidance for different types of compensatory mitigation for eagles. To date, however, power pole retrofits remain the sole Service-approved compensatory mitigation option. Power pole retrofits have proven challenging for a variety of reasons, including:

- It is awkward, at best, to have one industry responsible for mitigating the impacts of another industry;
- It creates tensions with the power line owner/operator's own retrofit programs under an Avian Protection Plan (APP), which is designed to minimize their own avian impacts;
- ACP members find it increasingly difficult to identify power line owners who are willing to be liable for wind energy related mitigation; and

[15] Reps. B. Luetkemeyer and J. Golden, H.R. 1508, *Guidance Clarity Act of 2021*. U.S. House of Representatives, passed on October 22, 2021.

- When evaluating an applicant's mitigation proposal for retrofits, the Service is insisting on applying the methodology in a paper that is not intended for the purpose of identifying high risk poles for eagles.

To the extent power pole retrofits remain a primary mitigation option, the Service should provide additional implementation flexibility by:

- Affirming the ECPG's allowance for mitigation agreements directly between a transmission and distribution (T&D) utility and a wind facility applicant, or internal arrangements within companies that own both T&D assets and the wind project seeking a permit.
- No longer relying on the methodology in Dwyer et al. 2013 and instead referencing the Avian Power Line Interaction Committee's (APLIC) *Eagle Risk Framework: A Practical Approach for Power Lines* document.
- Recognizing that not all T&D infrastructure has a negative impact on eagles, e.g., most new power line construction is built avian-safe and may not pose the same risk as legacy wires. This is a success story for the utility industry in terms of reducing wildlife impacts, but it also means less opportunity for mitigation.

Given the challenges with power pole retrofit mitigation and the value of having more flexibility in compensatory mitigation, ACP encourages the Service to develop and publish guidance for public comment on additional compensatory mitigation options, some of which already have peer reviewed methodologies published, including: (1) roadside carcass removal to reduce vehicle collision risk for golden eagles; (2) voluntary lead abatement programs; (3) managing prey populations to increase eagle productivity; (4) nest-site enhancement; and (5) raptor rehabilitation.

6. Reconsideration of local area population (LAP) analysis for general permits

Even though BGEPA does not explicitly state that the Service has the authority to regulate eagles on the local area population ("LAP") level, the Service has interpreted the Preservation Standard to include a LAP analysis in permit issuance criteria. While the Service's review of each permit application for individual incidental take permits thus requires a LAP analysis be performed, in crafting a new general permit program, for the reasons discussed herein, the Service should revise its regulations to clarify that the LAP analysis does not have to be performed prior to the authorization for project level coverage under a such a program.

7. Additional Comments

In addition to our priority issues highlighted above, ACP also responds to the Service's inquiries on eagle abundance mapping as a potential framework for limited impact projects as well as the pooled monitoring concept. In summary, our feedback is as follows:

- ACP opposes the eagle abundance mapping concept to identify limited impact projects. ACP recommends limited impact facilities be determined using the conservation organization-industry general permit framework eligibility criteria.

- The Service has noted that use of the mapping framework would potentially apply to 40 percent of existing wind energy facilities. This would mean that several hundred facilities with known limited impact would not qualify.
- Additionally, eagle abundance does not automatically equate to risk. Behavior is also important. Some areas with documented higher eagle use have resulted in little to no eagle collisions with nearby wind facilities. Conversely, areas with documented low eagle use have had instances of unexpected eagle fatalities.
- In practicality, the mapping framework is only for facilities that pose no risk, not for a facility that poses low or limited risk because the Service has placed no value on take between zero and 1. No risk projects are not going to pursue a permit.
- The monitoring requirements are overly burdensome for projects with limited impacts.
- Another challenge with such geospatial methods is it provides a "snapshot" in time, and like many such temporally dynamic datasets, likely would not be updated frequently enough to illustrate changes in population or distribution as conditions change.

- ACP opposes pooled monitoring for purposes of verifying compliance among multiple permit holders. ACP would be favorable to pooled monitoring for purposes other than demonstrating compliance and where such an approach offers cost efficiencies in meeting other monitoring commitments of the permit program, such as evaluating the health of the applicable EMU population.

III. COMMENTS

1) ACP Comments in Response to ANPR Question 4 ("Are there potential new regulatory approaches to authorizing incidental take under the Eagle Act, particularly for projects that can be shown in advance to have minimal impacts on eagles, that would reduce the time and/ or cost associated with applying for and operating under long-term permits for incidental take of eagles?")

a) ACP Supports the Conservation Organization-Industry Joint General Permit Framework with Project Take Coverage and Urges the Service to Include it in the Draft Rule

ACP appreciates the Service again seeking comment on a potential general permit pathway with project take coverage for facilities having only a limited impact on eagles, building on the feedback sought in 2015 and 2016. Done right, a general permit program for wind energy can provide significant conservation benefits for eagles, improve the Service's ability to manage eagle populations and administer the eagle take permit program, and increase the ability for the wind industry to secure timely and cost-effective permit coverage. A successful general permit framework for the wind industry can serve as a model for other commercial activities that impact eagles.

In response to the mutual concerns of industry and conservation organizations regarding the need for a reasonable general permit pathway under BGEPA, three conservation organizations and a negotiating team of ACP staff and our member companies working on behalf of the broader industry collaborated for more than a year to develop a detailed general permit program framework. This partnership between conservation organizations and the wind industry on a wildlife regulatory issue impacting renewable energy is built upon significant, material collaborative efforts among industry and the conservation community over the years (e.g., American Wind Wildlife Institute and Bats Wind Energy Collaborative). ACP and the conservation organizations have filed joint comments in this docket in which we've summarized our proposed general permit framework with project take coverage, provided the full 10-page framework, and included flow charts that graphically illustrate how the proposed program would work. ACP does not duplicate that filing in these comments, but we do reiterate some key points and strongly urge the Service to give the proposal careful consideration and, ideally, incorporate the proposal into the draft rule to be published next year.

b) The Demand for Permits will Outstrip the Service's Ability to Administer the Program without a Workable General Permit Pathway

As of the end of 2020, based on ACP's CLEANPOWER IQ clean energy project database[16], there were 1,229 operating wind energy facilities in the U.S. Roughly 820 facilities (67%), are not in areas that would qualify for a general permit based on the eagle abundance mapping approach identified by the Service in its December 2018 webinar, but may still want to seek an eagle take permit. To achieve the President's climate objectives requires roughly 300 gigawatts of additional wind energy by 2030, or approximately 640 new projects. If 67% of those are also interested in seeking take permit coverage, then 429 additional take permit applications could be filed. Collectively that equates to a possible demand of more than 1,200 permits from wind energy facilities alone over the next decade.

The existing individual take permit program, which has issued 23 of their 26 eagle permits for wind energy facilities since 2009, is clearly inadequate for the task ahead. A well-structured general permit pathway for projects that have limited impact, while maintaining the individual permit pathway for higher risk projects, is a necessity and is ACP's highest priority in this rulemaking.

c) Army Corps Nationwide Permit (NWP) Program as a Model General Permit Framework

In the ANPR, the Service notes that it has received proposals for a new, regulatory approach to further streamline the permitting process for incidental take of eagles by establishing a ''nationwide'' or ''general'' permit program similar to the U.S. Army Corps of Engineers' NWP Program. ACP appreciates and welcomes the Service's consideration of an eagle incidental take permitting program that would have certain resemblances to the USACE NWP Program for authorizing impacts to wetlands and other waters of the United States related to activities that only have minimal individual and cumulative adverse environmental effects.[17]

[16] Available at https://cleanpower.org/cleanpower-iq/.
[17] 86 Fed. Reg. at 51,096.

We agree with the Service's conclusion that the NWP Program provides an example of expedited, or even eliminated review, of proposed activities that have minimal potential impacts.[18] We note that it by no means is the only incidence of a federal permitting scheme that uses a general permitting framework to authorize activities—without complex permitting or monitoring schemes.[19] While we think some aspects of the NWP program and its overall intent can serve as models for the Service's consideration of a general permit program for incidental take of eagles, to the best of our knowledge, no stakeholder has argued that the program should serve as a complete model that can be grafted onto the eagle context, as the Service seems to infer. The key is there are many elements of the NWP program that could serve as guidance for how to structure a general permit program for eagles under BGPEA. In other words, while not precisely analogous to all aspects of an eagle general permit program, FWS should consider adopting certain aspects of the USACE NWP program as it considers how to implement BGEPA. Importantly, the NWP program allows for expedited permitting for certain activities, and ACP's members frequently use NWPs in developing renewable energy generation and electric transmission projects.

Multiple components of the NWP should be considered as a model. First, there is a clear, objective threshold for qualification. For example, the NWPs allow for certain activities *without* a pre-construction notification (PCN). ACP submits that wind energy development could be eligible for general permit take coverage without the equivalent of a PCN— that is, an individual permit—for projects that have limited impacts to eagles. ACP has developed such a framework, in conjunction with certain conservation organizations, and we strongly urge the Service to incorporate such an approach into the draft rule. This same concept is reflected in the Service's MBTA ANPR, which contemplates "[t]he general permit would be effective upon submission of the request and would not require Service staff review prior to being effective. General permit conditions would not be customized to the applicant."[20]

Second, consistent with our proposal for a general permit for eagles, under the NWP Program, NEPA analysis is done at the programmatic level and not the project-specific level. The terms and conditions (eligibility, best management practices, monitoring, etc.) are also set at the general permit level (i.e., programmatic level), subject to public comment, and incorporated into covered project permits.

Third, under the NWP program, applicants self-certify as to their eligibility for qualification based on pre-construction assessments and commitment to conservation measures and are then covered. Under our general permit proposal, an applicant files a notice of intent (NOI) to seek coverage, attests to meeting eligibility criteria and pays applicable fees. The

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[18] *Id.*

[19] For instance, under the Clean Water Act 's Section 402 National Pollutant Discharge Elimination System Program, permittees must comply with measures to authorize activities related to discharging wastewater or stormwater directly from a point source (a pipe, ditch or channel) into a surface water of the United States without complex permitting or monitoring schemes. Available at https://www.epa.gov/cwa-404/clean-water-act-section-402-national-pollutant-discharge-elimination-system.

[20] *Federal Register*, Vol. 86 No. 189, October 4, 2021, at 54,669 available at: https://www.govinfo.gov/content/pkg/FR-2021-10-04/pdf/2021-21474.pdf ("MBTA ANPR").

Service reviews for accuracy and completeness of the NOI (i.e., meets eligibility requirements, is attested to, fees are paid). If accurate and complete, coverage is automatic.

All these elements reduce risk to the regulated industry, improve the timeliness of permit coverage, and ease the administrative burden on the regulatory agency. Moreover, all these elements are included in the joint conservation organization-industry general permit framework for wind energy.

The Service raises concern in the ANPR about the appropriateness of the NWP Program for eagles due to monitoring. Specifically, the ANPR states that the USACE nationwide permit can be monitored once to assess loss but obtaining an accurate estimate of eagle incidental take requires systematic monitoring of project impacts throughout the life of the project.[21] Therefore, the Service suggests a challenge for adopting the general permit concept for eagle incidental take permits is the uncertainty over the actual effects of such permits, individually and cumulatively, on eagle populations.

The focus on monitoring misses the point. Under the NWP Program, the value and purpose of wetlands differs across the nation, similar to the variability of bald and golden eagle populations within the flyways and across the nation. Nevertheless, the NWP program still makes assumptions about the loss of wetlands function based on an acreage threshold. Similarly, with respect to an eagle general permit program, certain assumptions can be made about the level of impacts to eagles based on permitting low-impact wind energy facilities and regularly checking in on a larger scale without exposing each permitted project to the monitoring imposed on higher risk projects under the individual permit program.

Finally, the ANPR states some concern with paperwork burdens caused by administering a general permit program for eagles.[22] In the experience of ACP's member companies, the data requirements for PCNs under the NWP Program are manageable and worthwhile, as they provide certainty that projects can move forward under a stable and predictable permitting framework. Moreover, those burdens are much less than they would be for applicants to fill out such applications and for the Service to process individual eagle permits.

d) Key Elements of the Joint Conservation Organization-Industry General Permit Framework

Key elements of the joint conservation organization-industry general permit framework are summarized and provided in full in the joint comment letter filed in this docket. ACP highlights and expands on just two elements below: (1) eligibility criterion for operating facilities/project coverage take limits and (2) monitoring requirements.

i. Operating facility eligibility criterion/project coverage take limits

The operating facility eligibility criterion and project coverage take limit of two (2) golden and/or two (2) bald eagles over five (5) years was established with conservation

[21] Eagle ANPR at 51906.
[22] *Id.*

organization and industry input. It was selected because (1) it represents minimal impact to eagle populations, (2) provides more flexibility than a take level set at one eagle, which should encourage participation in the general permit program, (3) with compensatory mitigation expected for golden eagles, take will be fully offset and (4) as detailed in the following section, it is our expectation that most facilities will take less than two eagles (bald, golden, or both) and, therefore, the conservation fee provided up front based on the full take level, and which is paid again during the 5-year renewal cycle (and not adjusted based on actual take), will result in a net benefit for eagles. Importantly, the individual permit program remains available for those wind energy facilities that cannot meet this fatality rate criterion.

ii. ACP supporting data for the general permit take estimate of 2 eagles over 5 years

To test the assumption regarding fatality rates at wind energy facilities generally being zero to two eagles over 5 years, ACP conducted a survey of facility owner/operator member companies. ACP requested members categorize their wind energy fleets by operating facilities and cumulative operating years and assign them to one of three bins for each eagle species: (1) zero eagle fatalities in a five-year period; (2) one to two eagle fatalities in a five-year period; and (3) greater than two eagle fatalities in a five-year period, assigning each facility to the bin representing the highest 5-year rate experienced during the operational life of the facility. Given the exponential population growth of bald eagles the Service recently documented,[23] ACP's survey further classified the bald eagle responses into decadal time ranges of (a) prior to 2001, (b) 2002 through 2011, and (c) 2012 through year-to-date 2021. The following data illustrate that to facilitate a workable general permit program, the 2 eagles every 5-year threshold is empirically supported and comports with decades worth of post-construction monitoring results, years of eagle-related research conducted at wind facilities, and continuous monitoring at sites with high eagle use and relatively higher fatality rates.

Responding facilities represent approximately 38% of operating U.S. wind facilities and are representative of the U.S. operating fleet. All fleet types and sizes are included in the survey – small and large operators, regulated and non-regulated utilities, and build-to-own and acquired assets. Responses are divided across the four eagle flyways and are, therefore, geographically diverse. Operators from all permitting stages – those with eagle permits, those actively seeking permits, and those not actively seeking permits – responded to the survey. Each respondent was also asked the number of their facilities that utilize some form of standard procedure-based monitoring protocol by third parties or O&M staff (e.g., Bird and Bat Conservation Strategy, Avian and Bat Protection Plan, Eagle Conservation Plan, etc.). ACP confirmed with each respondent that they were reporting 100% of their operating fleet and verified no double counting via operators with business partnerships with another operator for one or more facilities.

The data show 407 facilities representing ~3,200 years of operation have not reported a golden eagle fatality during post construction monitoring or O&M monitoring. Another 36 facilities representing ~320 years' worth of facilities have an eagle fatality rate of 1-2 eagles every five years. 24 facilities representing ~200 facility years report a rate of >2 eagles/5-years. Similarly, 393 facilities representing ~3,300 years of operation did not report a bald eagle

[23] 2020 Bald Eagle Population *supra* note 13.

fatality. Another 47 facilities representing ~380 years' worth of facility operations have an eagle fatality rate of 1-2 bald eagles every five years. Seven facilities representing ~65 facility years report a rate of >2 eagles/5-years.

While the survey results do not represent a random sample and do not represent a full census of operating facilities, they are sufficiently robust to assess overall trends and represent similar surveys done to assess overall trends.[24] [25] Further, given the fatality data reported to the Service by industry, the Service could undertake a similar exercise to verify the results.

Approximately 95% of responding facilities (n=445) affirmed use of systematic monitoring protocols, either by O&M staff or third parties, for the life of the project. Operators noted fatalities were discovered during post-construction monitoring, by trained O&M personnel conducting protocol-based searches, and incidentally. Total facilities and operating years represent an approximate average of eight years/facility with facility operations representing one to over 20 years of operation.

Table 1. Summary Fatality Data that Demonstrates Reasonableness of 2 Eagles Over 5 Year Threshold

		GOEA			BAEA		
Take Threshold	Flyway (EMU)	Number of Facilities	Operating years	% of facilities at each take threshold	Number of Facilities	Operating years	% of facilities at each take threshold
0-2 eagles/5-yr	Pacific	58	591	83%	69	677	100%
	Central	234	1741	95%	237	1863	99%
	Mississippi	119	937	100%	109	927	96%
	Atlantic	32	278	100%	25	287	100%
>2 eagles/5-yr	Pacific	12	117	17%	0	0	-
	Central	12	87	5%	3	19	1%
	Mississippi	0	0	-	4	46	4%
	Atlantic	0	0	-	0	0	-

Even if only a portion of these qualifying projects pursued permits under the conservation organization-industry proposed general permit framework, a net benefit is being provided due to the conservation fees required by all permittees, representing a level of unprecedented investment in eagle conservation. Such an investment could be leveraged to ameliorate the various other anthropogenic and natural sources of impact that the Service has estimated represents more than 90% of known causes of eagle mortality. In parallel to this conservation investment, the indirect benefit of wind energy's contribution to reducing the impacts of climate change is yet another benefit for eagles, their habitats and prey base upon which they depend.

[24] Gonyea. 2005. *Self-Reported Data in Institutional Research: Review and Recommendations.* Wiley New Directions for Institutional Research, Vol. 2005 (127), pgs. 73-89.

[25] Behrend et al. 2011. *The Viability of Crowdsourcing for Survey Research.* Behavior Research Methods, Vol. 43, Article 800.

For example, Audubon finds golden eagles are moderately vulnerable due to due to spring heat waves endangering young birds in nests and fire incinerating habitat.[26]

The Service may respond to this data as in the ANPR by suggesting take is much larger than the number of eagles actually discovered.[27] However, this is an overly simplistic, worst-case scenario solely based on the misapplication of the evidence of absence (EoA) methodology. As demonstrated above, the actual level of eagle take does not approach this worst-case, statistical exercise. Furthermore, the use of EoA in this context highlights the misapplication of EoA in general for the eagle permit program. The Service has unnecessarily set a significantly high bar of statistical confidence that absent excessively expensive monitoring, results in overly conservative take estimates that are not reflective of reality, as evidenced by 20+ years of post-construction fatality, compliance, and research study monitoring results at virtually every wind facility. Nor does it comport with the overall fatality rate trend shows in the data above from wind energy operators. While not every eagle may be found, even the most intensively monitored sites (full-time observers, daylight hours, seven days a week, year-round) at sites with relatively high eagle activity and fatalities has never evidenced rates of fatalities as asserted in the ANPR.

We describe our concerns with EoA as utilized in the individual eagle take permit program further in these comments in Section 2.b. Given studies demonstrating the efficacy and broad use of fatality monitoring by trained on-site personnel, the limited impact from eligible projects under the general permit under our proposal, and the flaws in EoA, our proposed general permit framework relies on eagles found rather than estimated take.

iii. Joint Conservation Organization-Industry General Permit Framework Includes Systematic Monitoring

In the ANPR, the Service distinguishes between "systematic monitoring" and "mortalities discovered opportunistically during normal operations and maintenance activities…"[28] The Service then proceeds to largely dismiss the concept of opportunistic (also commonly referred to as "incidental") finds, suggesting the probability of detection is very low so the Service would have to assume for every 1 eagle found, 10 more were taken. To be clear, the monitoring protocol of the joint conservation organization-industry general permit framework calls for systematic, regular monitoring. That is the core of our monitoring provisions. The robust monitoring framework is detailed below, though to be clear, it is distinct from the transect method. The latter may be appropriate for some individual permits with unique landscape characteristics (e.g., high vegetation impeding commonly used scanning methods), but not for the limited impact projects eligible under the general permit framework. Our joint proposed framework provides that:

- Each permittee shall implement a standardized wildlife monitoring and reporting program for all on-site personnel with annual training required for all personnel. The standardized

[26] Audubon Guide to North American Birds, *How Climate Change Will Reshape the Range of the Golden Eagle* available at https://www.audubon.org/field-guide/bird/golden-eagle#bird-climate-vulnerability.
[27] Eagle ANPR at 51096.
[28] *Id.*

monitoring protocol is conducted throughout the permit term and includes the following elements:
    - Each wind turbine being searched at least once every 3 months corresponding to highest eagle use seasonal periods to the maximum extent practicable;
    - Monitoring may be conducted by trained site operations personnel and/or qualified consultants, at the permittee's election; and,
    - May incorporate advanced technologies or techniques e.g., use of dogs or UAV/drones if demonstrated to be equally effective as human searches.
- Incidental finds between periodic searches made by site operations personnel are also recorded, reported and count toward the take limit.
- Independent third-party monitoring and/or additional monitoring protocols and searches may be required under the General Permit program if a Covered Project has exceeded the take limit within any permit term as part of the Compliance Correction Plan.
- Any new eagle nest established after application date (including for existing projects) within 1 mile of the closest turbine will be monitored 3 times from the ground during the nesting season at no less than 30-day intervals to provide nest and nest success data to FWS.

ACP also directs the Service's attention to the Migratory Bird Treaty Act (MBTA) ANPR.[29] With respect to monitoring, the ANPR describes, "The Service would not need to…require extensive monitoring requirements in the permit conditions for the registration system."[30] The Service goes on to state, "For example, the Service could require permittees to report dead birds found during routine maintenance and operation activities rather than requiring an active monitoring program."

Peer reviewed literature has documented the efficacy of monitoring by trained on-site personnel.[31] In general, the rate of finding carcasses by operations staff were equivalent to those of third-party biologists. The Hallingstad et. al. study, as well as other studies, also show generally long-term persistence of raptor carcasses. Both findings support our general permit approach of regular, systematic monitoring that is less intensive than transect protocols.

Importantly, to provide additional protections, our joint general permit framework also provides:

- While not required under project take coverage, carcass persistence trials, searcher efficiency trials, and bias corrections may inform regional or programmatic bias corrections to inform the Service's management of the general permit program.
- The Service may audit an individual facility's monitoring program and results upon written notice to the holder of the project take coverage.

[29] Federal Register, Vol. 86 No. 189, October 4, 2021, pages 54667-54672 available at: https://www.govinfo.gov/content/pkg/FR-2021-10-04/pdf/2021-21474.pdf.
[30] MBTA ANPR at 54669.
[31] Hallingstad EC, Rabie PA, Telander AC, Roppe JA, Nagy LR (2018) *Developing an efficient protocol for monitoring eagle fatalities at wind energy facilities*. PLoS ONE 13(12): e0208700. https://doi.org/10.1371/journal.pone.0208700.

What the industry and conservation organizations have proposed for monitoring for a wind energy general permit under BGEPA is much more intensive and systematic than the Service has described as potentially acceptable for the MBTA general permit program. But, it is noteworthy that the Service is comfortable with on-site personnel monitoring in the context of both Endangered Species Act (ESA) permits and an MBTA general permit program.[32]

e) ACP Does Not Support the Relative Eagle Abundance Mapping Framework as the Basis for General Permit Eligibility

The Service seeks comment on using maps of relative eagle abundance that the Service shared with the public in a December 2018 webinar[33] as the basis for where general permits may be available with respect to wind energy facilities. The Service's approach assumes that exposure rates equate to risk and that all eagle takes are of equal population level impact. ACP does not support this approach and has, in conjunction with environmental organizations, proposed a general permit based on impact that aligns with low impacts by most wind facilities and therefore will generate conservation funding for eagle conservation efforts currently left unaddressed.

i. Challenge – Mapping Framework

The Service has noted that use of the mapping framework would potentially apply to 40 percent of existing wind energy facilities. Based on the real experiences summarized in the survey data noted above, this would mean that several hundred facilities with known limited impact would not qualify. Additionally, eagle abundance does not automatically equate to risk. Behavior is also important.[34] Some areas with documented higher eagle use have resulted in little to no eagle collisions with nearby wind facilities. Conversely, areas with documented low eagle use have had instances of unexpected eagle fatalities. For example, The Service's

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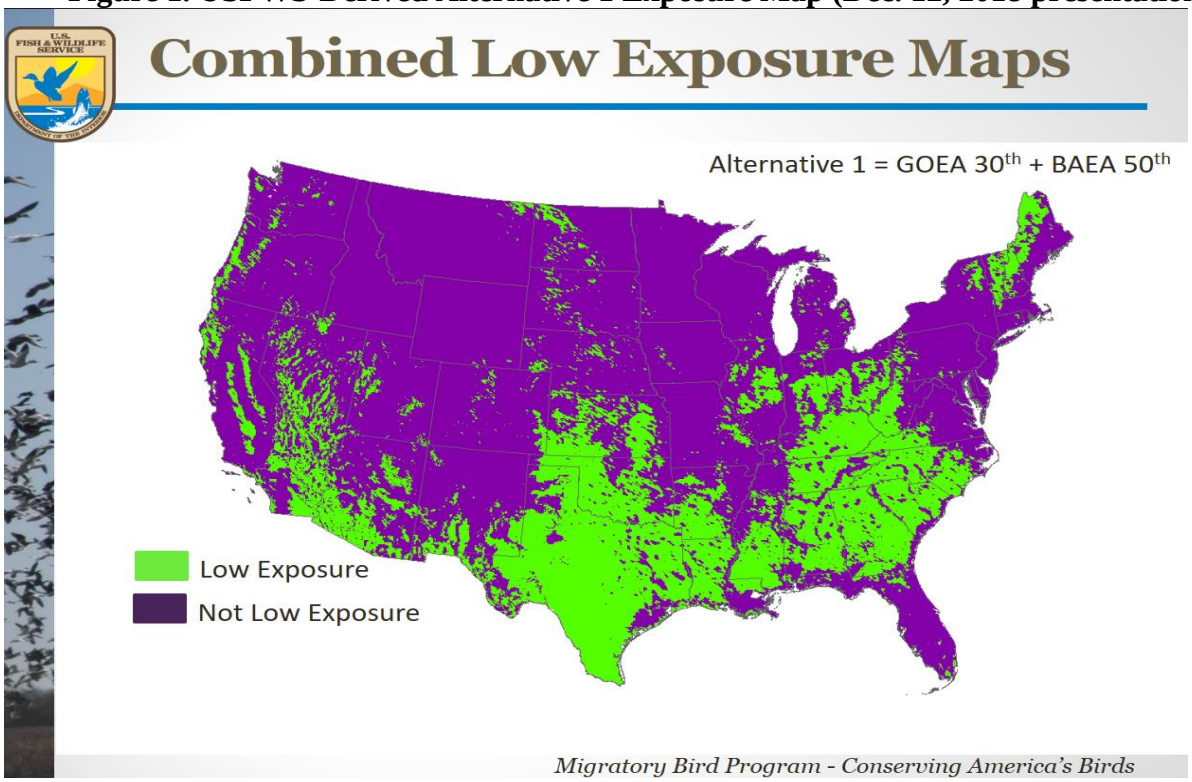
[32] Interestingly, the Service also argues for the use of citizen science (eBird data) to inform policy making specifically for identifying "low risk" eagles areas for wind energy in a March 14, 2021 Journal of Applied Ecology article ("The value and utility of CS data for biological monitoring is best evidenced by the corresponding growth in the number of peer-reviewed publications and other applications of CS data in the last decade (Chandler et al., 2017; Pocock et al., 2018; Theobald et al., 2015). Although a common source of criticism has been the assumption that the quality of CS data is not equivalent to that collected by trained technicians or professionals (Kosmala et al., 2016), there is evidence that both sources of information are subject to similar sources of uncertainty and error (Bird et al., 2014)."). Ruiz-Gutierrez, V., E. R. Bjerre, M. C. Otto, G. S. Zimmerman, B. A. Millsap, D. Fink, E. F. Stuber, M. Strimas-Mackey, and O. J. Robinson. 2021. *A pathway for citizen science data to inform policy: A case study using EBIRD data for defining low-risk collision areas for wind energy development*. Journal of Applied Ecology 58:1104–1111. If, in the Service's view, citizen science is sufficient to inform eagle policy, then ACP believes the data collected via more rigorous and systematic monitoring by trained on-site operations personnel should pass the Service's test as well.

[33] U.S. Fish and Wildlife Service, Migratory Bird Program, Conserving America's Birds, *Presentation of Assistant Director Jerome Ford: Proposed Expedited Eagle Permit Process for Low Risk Sites* (Dec. 12, 2018) available at https://www.fws.gov/migratorybirds/pdf/management/Lowriskwebex.ppsx

[34] USFWS. 2013. *Eagle Conservation Plan Guidance.* Division of Migratory Bird Management. Eagle Risk Factors (Table 1) includes bird density, bird age, proximity to nests, bird residency status, season, flight style, interaction with other birds, active hunting/prey availability, turbine height, rotor speed, rotor swept area, topography, and wind speed. The ECPG notes that "[n]ot all of these factors apply to eagles, and the influence of these factors may vary in association with other covariates on a case-by-case basis."

Alternative 1 map[35] (Figure 1) delineates the state of Iowa as a "not low exposure" area. However, intensive, 15-month fatality monitoring at 18 wind facilities in Iowa estimated 14 of the 18 facilities having no bald eagle fatalities, two of 18 estimate two bald eagles, and one estimates 3 bald eagles. [36]

Figure 1. USFWS-Derived Alternative 1 Exposure Map (Dec. 12, 2018 presentation)



Several other flaws exist with the mapping framework:

- Three years since the presentation of the proposed model and the Service has not demonstrated that best available science was used to create the mapping framework or that the model is based in practical application.
- In practicality, the mapping framework is only for facilities that pose no risk, not for a facility that poses low or limited risk because the Service has placed no value on take between zero and 1. If a facility were to take 1 eagle, the facility would no longer be considered low risk by the Service. Facilities with no risk would not pursue a take permit. So, the Service has proposed a framework that provides no value to industry or eagles.

[35] Proposed Expedited Eagle Permit Process for Low Risk Sites, *supra* note 34

[36] Nasman et al. 2021. *Predicting Bald Eagle Collision at Wind Energy Facilities.* Journal of Wildlife Management. 1-11, Table 4.DOI: 10.1002/jwmg.21994..

- The Service has stated that monitoring by O&M personnel would have no overall probability of detection value (i.e., a 0 g value); however, Pagel et al. (2013) reported that 54% of eagle fatalities were discovered by the property or facility owner, which clearly demonstrate that the probability of site-wide detection is not zero.[37] Hallingstad et al. (2018) likewise noted trained O&M personnel using a systematic scanned monitoring protocol can achieve detections of 0.50 to 0.69 with a 30-day search interval.[38]
- Having an overall probability of detection (g) value requirement (10-year average probability of detecting a dead eagle is at least 25%) will not allow for much, if any for a reduction in monitoring cost, thereby dissuading companies from using a program based on this mapping framework, as well as diverting funding away from conservation and into compliance monitoring.
- The required (g) value means the Service is still relying on evidence of absence (EoA), which is a non-starter from industry's perspective for a program that is supposed to be focused on limited impact facilities.
    - 10-year average (g) value means you must have a 100% probability in a survey 1 in 4 years; or have 50% percent in 1 of 2 years; or be surveying every year. That level of survey activity is not commensurate with sites the Service itself is defining as "low risk."
- For operational facilities, there was no allowance for site specific data to be factored into the risk versus impact assumptions.
- It is unclear how areas the Service considers low risk for bald eagles but not for golden eagles, or vice versa, would be handled. Is a general permit under the mapping framework only available if an area is "low risk" for both, which of course would even more drastically limit its relevance as a permit pathway?
- It is unclear if project-specific NEPA reviews would still be required and, if so, how much more efficient that process could be. Would a categorical exclusion be possible? Or, would the minimum be an environmental assessment (EA), with the potential to still require an environmental impact statement (EIS)?

ii. Recommendation – Mapping Framework:

The general permit framework proposed by ACP and conservation organizations provides solutions to the above-mentioned problems with the proposed Service approach. The general permit framework is based on best available science, it eliminates the misapplication of EoA, it uses site-specific data, and prescribes realistic and manageable measures to respond to changes of predicted impacts. The implementation and use of the general permit as proposed, in lieu of the Services' mapping approach, would result in more projects qualifying and using the permit program resulting in a structure designed to manage actual risk with more dollars being routed towards conservation instead of monitoring.

f) ACP does not support limiting a general permit to bald eagles

[37] Pagel et al, 2013, *Bald Eagle and Golden Eagle Mortalities at Wind Energy Facilities in the Contiguous United States*. Journal of Raptor Research, 47(3):311-315.

[38] Hallingstad EC, Rabie PA, Telander AC, Roppe JA, Nagy LR (2018) *Developing an efficient protocol for monitoring eagle fatalities at wind energy facilities*. PLoS ONE 13(12): e0208700. https://doi.org/10.1371/journal.pone.0208700.

ACP strongly recommends that a general permit option be made available for golden eagles as well as bald eagles. Although most wind facilities have little to no golden eagle risk (see summary data and discussion in Section 1.d.2 and Table 1), heightened concerns expressed by the Service and some state agencies result in developers or operators being compelled to seek individual permits. The cost of individual permits is excessive in comparison to the conservation benefit to eagles and not commensurate with the magnitude of the impact for most facilities. Thus, wind companies are hesitant to pursue these individual permits. Moreover, to not include golden eagles in the general permit, the Service would forego generating a long-term revenue source to fund conservation efforts to ameliorate the other 90+% of unaddressed eagle mortality.

ACP believes it is important to have the general permit program cover both bald eagles and golden eagles, with the applicant having the choice to include one or both species. The status of golden eagle populations alone does not warrant precluding a general permit program for the species, particularly for a commercial activity that represents a single digit percentage of eagle fatality sources.[39] It should be noted that the ESA has a low effect Habitat Conservation Plan (HCP) option for commercial activities with low levels of impact to threatened and endangered species. The general permit program jointly proposed by the conservation organizations and ACP creates a pathway to incidental take coverage with mandatory eagle conservation fees, and in the case of golden eagles, mandatory compensatory mitigation. ACP is concerned that not including golden eagles or delaying including golden eagles in a general permit program would mean a missed opportunity for immediate conservation benefits to eagles and for the Service to gather significantly more data on wind turbine and eagle interactions. Significant uplift for golden eagles can be delivered through this general permit framework, reserving the individual permit pathway for those projects where a more tailored approach is needed. It is critical that a simple, quick, and efficient general permit pathway, commensurate with the impacts of wind energy facilities on bald and golden eagles, be available under the eagle permit rule. Based on the data collected by ACP (presented in Section 1.d), many projects would quality for a general permit for five-year terms where adjustments can be made at renewal, has mechanisms in place to trigger a "special" review if assumptions are wrong, and includes penalties for projects that exceed their take limits. To limit a general permit program to only bald eagles essentially closes off a workable and predictable general permit option for most wind facilities in the western U.S. and many in the eastern U.S. As discussed elsewhere in our comments, the individual permit program should be reserved for projects that have relatively higher eagle fatality risk.

2) ACP Comments in Response to ANPR Questions 1 ("Are there specific protocols, processes, requirements, or other aspects of the current permitting process for incidental take of eagles that hinder permit application, processing, or implementation?") and 3 ("What targeted revisions could be made to existing regulations consistent with the overall permitting framework and PEIS that would reduce the time and/or cost associated with applying for and processing long-term permits for incidental take of eagles?")

[39] USFWS. 2016. *Bald and Golden Eagles: Population demographics and estimation of sustainable take in the United States, 2016 update*. Division of Migratory Bird Management, Washington D.C., USA. Table 8, pg. 14. (Wind energy is aggregated with other collision risks in a single line item 'collisions' that represent 9% of the overall sources of fatalities for golden eagles).

a) The Service should not limit changes to those that can be done in the existing PEIS

ACP believes that the eagle permit program needs a general permit to be effective and that would likely require a new NEPA analysis. In addition, the Service should evaluate the changes outlined in this letter and should not limit changes to only those that would fit in the existing PEIS.

b) Challenges and recommendations related to evidence of absence (EoA)

When the Service proposed the 2009 Eagle Rule creating a permit pathway for the incidental take of eagles, it asserted that the "permitting process [proposed] under the Eagle Act would be less burdensome for the public" than the Endangered Species Act's incidental take process, which applied to the bald eagle until it was delisted.[40] The failing of that regulatory objective was acknowledged in the proposed 2016 revised rule with the stated intent to revise the rule to be more workable and predictable because "permitting long-term activities that are likely to incidentally take eagles, including working with project proponents to minimize the impacts and secure compensatory mitigation, is far better for eagle conservation than having companies avoid the permitting process altogether because they perceive the process as overly onerous."[41] The following challenges and recommended solutions are all inclusive and represent a holistic approach to remedy that should start with reevaluating the utility of EoA for the eagle permit program.

i. Challenge – lower take levels require more expensive levels of monitoring to demonstrate compliance

Unfortunately, the Service referenced the use of Evidence of Absence (EoA) in their responses to comments on the 2016 eagle rule and Service regions are either requiring its use or including it in guidance (e.g., legacy Region 3). Additionally, by blanket adoption of EoA, the Service established a standard of detection that gets exponentially more expensive the lower the permitted take being monitored for. For example, if we consider the low take level requested in the NGO-wind industry general permit (2 eagles found over 5 year), if 1 eagle were found, the facility will have to meet a g-level of 0.43 over the 5-year period to stay within the allowable take. Because the 5-year g is a mean across each year, this would require either 5 years of searching at a g of 0.43, a very high, often non-obtainable level or several years of searching at higher g value than 0.43 to account for unsearched years. If the take level was 1 eagle found over 5 years (note that the Service recommends permits at the level of 1 eagle over 30 years), then to "prove" a single eagle in a 5-year period, it would require perfect searching in all years (i.e., a g value of 1.0). In other words, projects with expected limited impact, i.e., in which take is very rare, are expected to execute more expensive monitoring to prove that is the case. That acts as a disincentive for limited impact projects to try to secure take coverage, which is one of the reasons why the conservation organization-industry general permit framework does not utilize EoA.

[40] 72 Fed. Reg. 31141 (June 5, 2007)

[41] E*agle Permits; Revisions to Regulations for Eagle Incidental Take and Take of Eagle Nests*, 81 Fed. Reg. 91494 at 91498 (Dec. 16, 2016) ("Proposed Rule").

Table 2. Example data showing how the overall detection probably can change the interpretation of one (1) eagle found at a facility.

Measured g value	1 eagle found becomes # of eagles
0.1	10
0.2	5
0.3	3.33
0.4	2.50
0.5	2.00
0.6	1.66
0.7	1.42
0.8	1.25
0.9	1.11
1	1.00

This relationship of increasing monitoring costs as a function of lower eagle fatality rates is in direct conflict with the 2016 Eagle Rule's intent that "[t]he frequency and duration of required monitoring will depend on the form and magnitude of the anticipated take and the objectives of associated avoidance, minimization, or other mitigation measures, not to exceed what is reasonable to meet the primary purpose of the monitoring…"[42]

Based on simulations, we found that EoA proportionately overestimates take more when the underlying mortality rate is low, thereby penalizing low-risk / low-impact projects, which would be required to conduct more monitoring or "search harder" under the EoA framework to prove compliance. In addition, the statistical properties of EoA modeling greatly influence the mean, which has significant ramifications in eagle permits when the EoA mean is used to establish take limits. Because of the shape of the distribution, there is a long tail to the right (i.e., a higher-level eagle take). This long tail has a greater influence on the mean value than on the median value; the Service should therefore use the median value for predicting take.

ii. Recommendation – lower take levels require more expensive levels of monitoring to demonstrate compliance

ACP recommends that the Service not apply EoA to eagle permits. If the Service continues to rely on EoA in eagle permits, rule revisions must (1) only use EoA for individual permits, which by definition are not "low impact" according to the general permit framework proposed by conservation organizations and industry; and (2) use the median value rather than the mean value to estimate eagle take in individual eagle permits.

i. Challenge – pre-determined g levels are not always practicable

[42] 50 C.F.R. § 22.26(c)(2)(ii). *See also,* The Service's Five Point Policy, which states, "The scope of the monitoring program should be commensurate with the scope and duration of the operating conservation program and the project impacts."" 65 Fed. Reg. 35,242, 35,254 (June 1, 2000).

Unlike typical compliance monitoring approaches, the use of EoA means that what is not potentially found is still factored in as an estimated take. Moreover, the method of deriving these estimates is intentionally an overestimate, creating unnecessary expense for applicants, artificially depleting regional take allotments, and leaving the public to assume more take is occurring at wind facilities than is true. EoA numbers are not based on the biology of the species. Rather, rather the results are the same for bald eagles, golden eagles, red-tailed hawks, or other birds of the same size, despite the different risk profiles. While models may be necessary to estimate take for purposes of setting take limits or establishing monitoring protocols, it is an entirely different and wholly unreasonable expectation that use of a model to estimate *possible* take given the cost implications of adaptive management and compensatory mitigation. Attachments 1 and 2 of our comments illustrate the implication of a g-value based monitoring protocol creates inequity for the wind industry as required level of effort to achieve the g-value is not equal for all facilities, negating the Service's intention to standardize the compliance monitoring requirement for eagle permits.

ii. Recommendation – pre-determined g levels are not always practicable

ACP recommends that the Service not apply EoA to eagle permits.

i. Challenge – Compliance cannot be determined mid-study

As a result of the complexity of EoA, it is not possible to monitor the results throughout the season, but rather the estimate can only be generated at the end of a monitoring period, often a monitoring year. This leaves operators without any insight to compliance status of their permits until sometime after the monitoring season (i.e., after the point in which they could take action). A permit holder is expected to be operating within their permit requirements and cannot be held to an unreasonable "after the fact" standard based on a model's output. This is important because (1) each step of an adaptive management plan represents an increase in cost or complexity of operating a facility and (2) additional compensatory mitigation represents cash outlays that are unplanned and unbudgeted, affecting costs to operate the facility.

ii. Recommendation– Compliance cannot be determined mid-study

ACP recommends that the Service not apply EoA to eagle permits.

c) Challenges and recommendations related to the collision risk model (CRM)

The current individual permit application process includes evaluating a project for the potential estimate of eagle take over the life of the proposed permit term. The current tool that must be used for estimating take,[43] CRM, is designed to estimate predicted take while incorporating project-specific eagle use data or the Service's prior probability distributions (priors). The CRM output preferred by the Service overestimates take by design[44] and the priors are often used in lieu of project-specific data.

[43] 50 CFR § 22.26 (d)(3)(i).
[44] Eagle ANPR at 51094.

i. Challenge – model run execution and transparency:

The Service's application process has a small team of Service personnel or contractors run the CRM estimates and then uses those estimates to derive the take estimate incorporated by the USFWS for its NEPA document. This creates multiple problems. First, the Service does not provide the inputs and outputs to the application; therefore, the applicant does not have the opportunity to error check the take estimate. Second, this focus of internally running the CRM estimates creates significant inefficiencies given strained Service resources. In addition, the business decision to secure a permit is ill-informed absent insight on the take estimate early in the permitting process, leaving all other elements of the application developed and negotiated without the benefit of the predicted magnitude of their impact to eagles. ACP members experience unspecified differences in CRM usage by the Service due to differences in pre- and post-construction data or confusion created with updated priors.

ii. Recommendation – model run execution

As eagle permits are voluntary and therefore applicant-driven, ACP recommends that applicants may run and include their own CRM take estimates to provide to the Service along with all supporting information and data for review. If the Service finds discrepancies or issues with the CRM, the Service and applicant review collaboratively and resolve as part of the permit negotiations.

i. Challenge – overly rigid input data

While the regulations are clear that project-specific datasets can and should be used for the model, in practice the Service regularly rejects use of project-specific data when these data don't perfectly match the 2-year and 30% project coverage identified in the 2016 rule.[45] The failure to match may occur for many reasons throughout the development process and include changes in landowner participation, local/state/federal required changes, tax incentives, and power purchase agreement timing. This results in projects being forced to rely on overly conservative 'priors' datasets that are not as representative for the applicant's project. The priors dataset was updated in 2020 to be more reflective of modern wind technologies, but it remains a surrogate dataset that continues to fall well short of representative compared with project-specific data. Additionally, neither the regulated community nor the public has any insight into what data was used when the new priors were developed. The Service's application of the CRM is intended to be conservative for eagles, particularly golden eagles, so take estimates are purposely inflated yet might not be biologically representative of the project site.

ii. Recommendation – overly rigid input data

ACP recommends that the Service (1) provide the CRM and datasets that informed the priors to the public so that independent review and verification can occur consistent with scientific practice; (2) remove the rigid pre-construction data requirements from the rule; and (3)

[45] 2016 Rule at 91552.

allow for flexibility in the data standards so that representative site- and species-specific data can be used where available.

i. Challenge – changes in priors can result in compliance issues when EoA is used

The May 05, 2021 published priors update are anticipated to result in reduced take predictions for most permit applicants, and consequently reduced compensatory mitigation required for golden eagles. Because compensatory mitigation is not typically required for bald eagles, the updated priors do not affect bald eagle mitigation requirements. However, drastically reduced bald eagle take predictions that are still sufficiently high to warrant seeking a permit will likely require intensive and costly compliance monitoring to demonstrate that the predicted take has not been exceeded (Table 2). For example, a project with one predicted bald eagle take every 5 years that actually detected one bald eagle every 5 years would need to achieve an overall detection probability ***in excess of 0.65 every year of a 30-year permit term*** to demonstrate that the permitted take was not exceeded. Assuming an annual monitoring, best-case cost scenario of $300,000-350,000 per year to achieve a 0.65 detection probability would result in $9-10.5 million in monitoring costs over the duration of a permit that includes no compensatory mitigation requirement. Put another way, out of a ~$9 million cost for compliance, no conservation value for bald eagles is realized.

ii. Recommendation – changes in priors can result in compliance issues when EoA is used

ACP recommends that EoA is not used for eagle permits. See Section 2.e.

i. Challenge – Service only accepts the CRM

While the regulations contemplate use of alternatives to the CRM, the Service to date has dismissed all other modeling tools as untested or otherwise deemed insufficient without any substantive explanation. This stifles innovation and leaves the potential for other viable modeling approaches that are more accurate predictors of take. Examples include the use of location-specific priors (i.e., the MidAmerican HCP) or the use of fatality data collected from the project or nearby projects.

ii. Recommendation – – Service only accepts the CRM

Authorize additional methods beyond the CRM as contemplated in the regulations ACP recommends the Service allow applicants to leverage any reasonable and comparable data-supported method to derive take estimates including location-specific priors and local fatality data.

i. Challenge - Pre-construction survey requirements (e.g., 2 years of surveys)

The minimal requirements established in the 2016 Eagle Rule are more onerous than the level of effort otherwise undertaken by many applicants and that are nonetheless still consistent

with the Eagle Conservation Plan Guidance (ECPG). By codifying the ECPG recommendations as requirements for pre-construction surveys, the Service eliminated the ability for applicants to cost effectively tailor the specific needs for assessing the risk profile of a project. As a result, ACP members report that the Service has been inconsistent in accepting all or parts of pre-construction datasets, often rendering data as less than meeting a strict requirement of a full two years, regardless of the immaterial nature of the deviated datasets from the recommendation-turned-requirement. This forces prospective applicants to either "over collect" data (i.e., conduct more than two years of surveys) or conduct a significantly greater survey effort (i.e., collect more data points over two years) in the hopes that the Service will accept it for use in estimating take with actual onsite data rather than the more conservative and often unrepresentative collision priors dataset. Here again, this challenge disincentivizes participation in the permit program, which is completely at odds with the intent of the 2016 Eagle Rule revision.

ii. Recommendation – Pre-construction survey requirements (e.g., 2 years of surveys)

To address the challenge presented by the codification of the ECPG monitoring recommendations as requirements for pre-construction surveys, ACP Recommends the Service revert it back to a recommendation of the ECPG, leaving it for each permittee and the Service to iron out the particulars of pre-construction surveys for a given facility.

In summary, ACP recommendations to ameliorate the challenges associated with CRM are: (1) provide a stepwise instruction how and assumptions the Service uses in the CRM and publish the datasets upon which the priors are derived to allow applicants to run and submit CRM results to the Service for review. Doing so would also allow potential applicants to assess the priors for representativeness, potentially reducing or eliminating the need for extensive pre-application data collection. (2) As highlighted in prior comments on CRM,[46] the Service should move away from exclusive use of the priors, a dataset that is unreasonably not accessible to the regulated community and the public. Foreclosing on project-specific datasets that otherwise meet best available science standards prevents take estimates based on representative data. For example, a recent peer-reviewed publication detailing how to incorporate site- and species-specific information into the CRM well fits within the Best Available Science standard and therefore no reason for it and similar research efforts to not inform a more robust and representative application processes.[47] (3) Free up Service resources from running CRMs for every application, improving a significant area of inefficiency in the permitting process. (4) Rely on the ECPG for guidance to develop project-specific pre-construction surveys.

d) The Service should Approve Mitigation Options Beyond Power Pole Retrofits

While ACP is pleased that in the 2016 final rule the Service expanded available compensatory mitigation vehicles to include "conservation banking, in-lieu fee programs, and

[46] American Wind Energy Association, Comments on Eagle Permits: Revisions to Regulations for Eagle Incidental Take and Take of Eagle Nests, FWS-R9-MBG-2011-0094, July 05, 2016.
[47] Nasman et al., 2021. *Predicting Bald Eagle Collision at Wind Energy Facilities*. The Journal of Wildlife Management 1-11 - Wiley Online Library

other third-party mitigation projects or arrangements,"[48] unfortunately, as of this writing, power pole retrofits remain the sole Service-approved compensatory mitigation method. Even the two in lieu/mitigation banking programs approved by the Service for eagle mitigation are both focused on power pole retrofits.[49] This despite the fact in the 2016 rule, the Service highlighted plans to "develop guidance for different types of compensatory mitigation projects for eagles…".[50]

ACP has identified several challenges to a power pole retrofit program as the primary means of compensatory mitigation and recommends additional mitigation options the Service should develop and publish for comment below.

- The Service is asking one commercial activity (wind energy generation) to secure mitigation through another commercial activity (power lines) when entities involved in the other commercial activity often have plans to mitigate their own impacts through that same method.
    - It is awkward, at best, to have one industry responsible for mitigating the impacts of another industry.
    - Having the wind industry's (or any other industry's) only option to secure mitigation compliance be through actions taken by another industry that may have its own compliance obligations is often impractical.
        - It creates tensions with the power line owner/operator's own retrofit programs under an Avian Protection Plan (APP), which is designed to minimize their own avian impacts.
        - ACP members find it increasingly difficult to identify power line owners who are willing to be liable for wind energy related mitigation, particularly if line owners are not provided legal protection for the mitigatable infrastructure.
        - When evaluating an applicant's mitigation proposal for retrofits, the Service applies a published methodology that is not intended for the purpose of identifying high risk poles for eagles.[51] The sole reliance on this methodology greatly reduces the number of poles available for compensatory mitigation (and for power line providers own risk management practices), ignores input from subject matter experts, and has created an impasse on several permits in process.
- To the extent power pole retrofits remain a primary mitigation option, the Service should provide additional implementation flexibility by:
    - Affirming the ECPG's allowance for mitigation agreements directly between a transmission and distribution (T&D) utility and a wind facility applicant, or

[48] *Federal Register*, Vol. 85 No. 242, December 16, 2016, page 91505. (2016 Rule)
[49] *See*: Eagle Protection and Offset Program, at burnsmcd.com; and Bald Eagle And Golden Eagle Electrocution Prevention In-lieu Fee Program, at eaglemitigation.com/.
[50] 2016 Rule at 91505
[51] J.F. Dwyer, et al., 2013. *Predictive Model of Avian Electrocution Risk on Overhead Power Lines.* Conservation Biology, Volume 00, No. 0, 1-10. This study is focused on high-risk power pole and impacts to red-tailed hawks and crows in a predominantly urban environment. The authors specifically state in the paper that the methodology is not appropriate for use in determining high-risk poles for eagles. Yet, that is what some regional offices are requiring.

internal arrangements within companies that own both T&D assets and the wind project seeking a permit.
    - This may help reduce costs, improve the ability to leverage utility experience and knowledge regarding power pole retrofits and risk areas in their service territories.
    - However, the Service also needs to recognize that some utilities that own both wires and wind may not be able to offer power pole retrofits from wires to compensate for the impact of wind operations on eagles because:
        - There may be a different set of customers served by electric wires and wind generation that make public utility commission approval a non-starter.
        - Their wires business needs to retain retrofit opportunities for its own impacts, as provided for in company APPs.
- No longer relying on the methodology in Dwyer et.al. 2013 and instead referencing the Avian Power Line Interaction Committee's (APLIC) *Eagle Risk Framework: A Practical Approach for Power Lines* document.[52]
- Recognizing that not all T&D infrastructure has a negative impact on eagles, e.g., most new power line construction is built avian-safe and may not pose the same risk as legacy wires. This is a success story for the utility industry in terms of reducing wildlife impacts, but it also means less opportunity for mitigation.
    - Similarly, some new construction is replacing older infrastructure – done for reliability and other reasons, not as a mitigation retrofit – resulting in infrastructure that is using current best practices to avoid and minimize impacts to eagles and other wildlife.
- Recognizing that eventually, we will run out of power poles to retrofit.

Given the challenges with power pole retrofits, ACP recommends the Service prioritize the 2016 commitment to authorize additional options for compensatory mitigation. Draft materials should be put out for public comment prior to finalization.[53] ACP suggests the following options be prioritized for consideration by the Service:

i. Carcass removal to reduce vehicle collisions for golden eagles

The American Wind Wildlife Institute (AWWI), along with partners at the University of Minnesota, United States Geological Survey, and Texas Tech, published a model to establish how many golden eagles can be saved through roadside carcass removal and in what circumstances. They published their analysis in the *Journal of Wildlife Management* in 2018.[54]

[52] APLIC, 2018. Available at: https://www.aplic.org/uploads/files/15798/APLICEagleRISKFramework-APraticalApproachforPowerLines-December132018FinalwAppendixPUBLIC.pdf

[53] The 2016 final rule noted that "When practical, we will involve stakeholders in the development of such guidance" [on compensatory mitigation]. ACP respectfully requests that soliciting public comment/stakeholder input should always be practical.

[54] Lonsdorf, Eric; Sanders-Reed, Carol; Boal, Clint; Allison, Taber. Modeling Golden Eagle Collisions to Design Mitigation Strategies. *Journal of Wildlife Management*. August 16, 2018. Available at: https://wildlife.onlinelibrary.wiley.com/doi/10.1002/jwmg.21527. A summary is also available on the AWWI website: https://awwi.org/wp-content/uploads/2018/12/Eagle-Vehicle-Collision-Results-Summary.pdf

As reported in the AWWI summary: "The model simulations predicted that as roadkill carcass numbers increase, so does eagle mortality. All else being equal, increasing carcass density caused eagle mortality to increase most at relatively low amounts of traffic. Increasing from 0 to 5 carcass removals per month resulted in a 30% reduction in eagle mortality caused by collisions regardless of vehicles per hour (vph)."

The authors concluded, "The model could be used to plan strategic removal programs, with credits awarded based on actual carcass removals. Potential mitigation credits could be dependent on expected carcasses encountered, traffic volume, and the current removal intervals from maintenance crews or other activities."

Further, the Bureau of Land Management (BLM) issued a record of decision[55] for the Mojave County Wind Farm in Arizona in that included approval of an Eagle Conservation Plan[56] (ECP) with carcass monitoring/removal as compensatory mitigation.

HawkWatch International is in the middle of a 5-year study assessing vehicular eagle collision as a function of roadkill incidence, noting a strong spatial association among 3,176 observed vehicle/eagle interactions across three study sites in Oregon (1,140 road miles surveyed), Utah (435 road miles) and Wyoming (275 road miles). Interim results suggest a mitigation measure as simple as moving carcasses 12 meters or more from a roadside could significantly reduce collision and energetic stress for scavenging golden and bald eagles.[57]

ACP urges the Service to consider these already published approaches for utilizing carcass removal as compensatory mitigation and accelerate Service development and approval of a similar option under the eagle take permit program.

ii. Voluntary Lead Abatement

As described in an article in the *Journal of Raptor Research*,[58] citing the results of several different studies: (1) Eagles are exposed to lead when scavenging on animal carcasses and gut piles that hunters using lead ammunition leave in the field, (2) Direct mortality from lead poisoning has been estimated in several raptor populations and may range from 3–9%, (3) Programs to reduce lead exposure due to big-game harvest have been attempted in California, Arizona, and Wyoming with measurable results and (4) Blood lead levels of bald and golden eagles have dropped in response to reductions in the use of lead ammunition even without complete voluntary participation.

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[55] Record of Decision, Mohave County Wind Farm Project, Decision to Grant Right-of-Way, Decision to Grant Right of Use Contract (June 2013) available at https://eplanning.blm.gov/public_projects/nepa/77804/104169/127717/ROD.pdf

[56] Mojave County Wind Farm Eagle Conservation Plan: Chapter 8, at 69, available at: https://eplanning.blm.gov/public_projects/nepa/77804/104171/127720/rod-Attach_2-Eagle_Conservation_Plan_n_BCS.pdf

[57] S. Slater, pers. comm.

[58] Allison, Taber; Cochrane, Jean Fitts; Lonsdorf, Eric; Sanders-Reed, Carol. A Review of Options for Mitigating Take of Golden Eagles at Wind Energy Facilities. *Journal of Raptor Research*. September 1, 2017. https://awwi.org/wp-content/uploads/2018/05/Allison-et-al-2017-Journal-of-Raptor-Research.pdf

The authors of this article have developed a method for quantifying effects of voluntary strategies to abate lead poisoning of eagles due to lead ammunition, which was published in the peer-reviewed journal *Ecological Applications*.[59] ACP encourages the Service to utilize this model as the basis for developing a compensatory mitigation approach to support voluntary lead abatement.

iii. Other options worthy of consideration for compensatory mitigation

The *Journal of Raptor Research* article referenced above details several additional mitigation options the Service should consider developing methods for so applicants can utilize them for compensatory mitigation, including:

- Managing prey populations to increase eagle productivity.
    - As the report notes, "Various studies have suggested that Golden Eagle productivity, defined as the number of fledglings produced per nesting attempt, may be limited by abundance of prey, at least in some parts of Golden Eagle range (Steenhof et al. 1997). Management actions leading to increased eagle productivity within the eagle management unit (U.S.F.W.S. 2016b) may therefore be a viable mitigation option in some areas. Unlike mitigation to reduce mortality, where one can assume a comparable age structure of eagle deaths from wind energy and other mortality sources, increases in eagle productivity need to account for time discounting and age-specific survival rates."
- Nest-site enhancement:
    - The report suggests, "Heat stress has been recorded as a significant source of mortality for nestlings in Idaho and providing shading to exposed nests could reduce mortality and increase productivity (Kochert et al. 2002). Such actions may be applicable in specific locations where repeated nest failure and the causes of that failure are known."
- Raptor rehabilitation:
    - The report argues, "A common practice and thousands of raptors, including golden eagles, have been rehabilitated and released back into the wild. Captive breeding and rehabilitation of eagles injured in ways other than by wind turbine strikes would seem to provide possible options for offsetting eagle take; injuries to eagles struck by wind turbines are typically severe, to the point that birds that survive treatment cannot be released. There are multiple studies documenting reasonably high survival of rehabilitated and captive-bred raptors (Wiemeyer 1981, Martell et al. 1991), but questions remain about the longer-term viability and reproductive success of these birds compared with the wild birds that are killed at wind energy facilities."

Related to these suggested mitigation measures is use of conservation banks as a means of mitigation implementation. ACP encourages the Service to expand upon and quickly

[59] Cochrane, Jean Fitts; Lonsdorf, Eric; Allison, Taber; Sanders-Reed, Carol. Modeling with Uncertain Science: Estimating Eagle Mitigation Credits from Abating Lead Poisoning in Golden Eagles. *Ecological Applications*. September 2015 available at https://awwi.org/wp-content/uploads/2018/05/Cochrane-et-al.-2015_GOEA-lead-mitigation.pdf.

implement guidance for the creation of landscape-based eagle conservation banks. There are good examples of conservation banks for both wildlife species and wetlands. Similar to issuing permits, a significant threat to successful implementation of eagle banks is seeking precision too impractical to obtain. The Service should avoid insisting upon using models of impact and conservation lift that operate at too fine a scale and with too many variables to be effective. There are many laudable examples of endangered species bank agreements that have successfully used more generalized proxies for habitat health and productivity. Particularly in so called checkerboard landscapes in the western U.S., large landowners should be encouraged to create conservation banks that include the cooperation of state wildlife and land agencies in implementing measures on both relevant state and private land such as regulating recreational access, requiring non-lead ammunition, reducing hunting of prey species such as prairie dogs and rabbits, retaining prey species habitats, and creating public education opportunities.

e) The Local Area Population Concept Should Be Reconsidered with Respect to a General Permit Program

Even though BGEPA does not explicitly state that the Service has the authority to regulate eagles on the local area population ("LAP") level, in the 2016 Final Eagle Rule, the Service interpreted and redefined the Preservation Standard to include a LAP analysis. Specifically, the Service revised its regulations to consider the protection of eagles at the local scale by incorporating a LAP cumulative effect analysis into the permit issuance criteria.[60] While the Service's review of each permit application for individual incidental take permits thus requires a LAP analysis be performed, in crafting a new general permit program, the Service should revise its regulations to clarify that the LAP analysis does not have to be performed prior to the authorization for project level coverage under a such a program. The LAP would lend analytical support to the 5-year review of the general permit program.

ACP and various environmental/wildlife conservation organizations have proposed a general permit program in separate comments in this proceeding.[61] The purpose of the proposed program is to authorize take of each eagle species for wind energy projects that present low collision risk to eagles, thereby enhancing permitting under BGEPA to improve conservation outcomes for eagles, ease the administrative burden on the Service, and provide a workable pathway for industry to secure take coverage permits in order to support the necessary growth in wind energy to meet the President's objectives for clean energy deployment and address the climate crisis. Requiring a LAP analysis to be performed before the issuance of each individual permit under such a program would defeat the purpose of such a program. This is the case because such individualized analysis would, in effect, compromise the ability to accelerate the issuance of permits under a general permit program and impose unnecessary burden on the Service's resources. Moreover, as this analysis is not necessary to ensure the Preservation Standard is met, it will support eagle conservation goals.

[60] Proposed Rule at 91498. E*agle Permits; Revisions to Regulations for Eagle Incidental Take and Take of Eagle Nests*, 81 Fed. Reg. 91494 at 91498 (Dec. 16, 2016).

[61] ACP, Audubon, Defenders of Wildlife, NRDC. Docket FWS-HQ-MB-2020-0023, Advance Notice of Proposed Rulemaking; Eagle Take Permits. October 29, 2021.

Under the general permit program, the Service would develop specific eagle population size goals for each EMU and then use those targets to inform permit decisions within the EMUs. The Service must also identify, based on data collected and reported under the general permit program, information submitted as part of either the 5-year renewal or a "special" review regarding whether wind energy impacts contribute, in a scientifically credible and statistically significant manner, to local eagle population decline in a flyway. If exceedance of the general permit take limit occurs at multiple wind projects within a flyway, or subsection of a flyway, resulting in a trend towards local population level impacts, the Service may amend or terminate the general permit program following appropriate notice.

In short, a general permit program can be structured so that the LAP analysis is being done at the programmatic level for a general permit program and not on the issuance of individual permits thereunder. This would be consistent with the Preservation Standard as the LAP analysis would be considered prior to the issuance of any individual permit under the general permit framework. Moreover, to the extent any issued general permit was demonstrated to have local population level impacts that were deemed inconsistent with the Preservation Standard within in a flyway, or a flyway region, it would be subject to the multiple measures discussed above to protect those local eagle populations.

i. Challenge – The LAP is biologically limited and not publicly disclosed

The potential consequences that stem from the LAP analysis far outweigh the limited biological value the analysis serves. In fact, both eagle species are migratory and breed throughout their population's range, often migrating long distances and in many instances outside the political boundaries of the United States, spatiotemporally fluctuating throughout their ranges. ACP is unaware of any dataset analysis that evidences local area populations of eagles are disproportionately impacted by proximate wind facilities. To the contrary, a genetic study of the Altamont Pass Wind Resource Area's local eagle populations show (1) that resident eagle populations are stable despite relatively high fatality rates, and (2) that the range of immigration contributing to the maintenance of the local population was continental in scale.[62] Moreover, the relatively small contribution of eagle mortality by wind energy facilities further begs the biological relevance of LAPs for purposes of issuing permits. This is especially the case for bald eagles with an exponentially expanding population throughout its range, raising the question of the need for a LAP analysis for bald eagles to meet the Preservation Standard.

The inclusion of a cumulative unauthorized take threshold of 10% LAP that can result in denial of an eagle permit or increased compensatory mitigation for the permittee seems wholly unreasonable, given applicant, regulated community, and the public have no visibility on this unauthorized take portion of eagle fatalities.[63] The Service also does not have the resources to keep the population data up to date to accurately assess LAP analyses for permit applications,

[62] Katzner et al. 2016. *Golden Eagle Fatalities and the Continental-Scale Consequences of Local Wind-Energy Generation.* Conservation Biology. Vol. 00, No. 0, 1-11.

[63] The LAP analysis data that is unavailable to the public: (1) cumulative authorized take, including the applicant's take levels; and (2) cumulative unauthorized take. The total cumulative authorized take and cumulative unauthorized take are then divided by the eagle population of the LAP; if the result of the calculation for (1) is greater than 5%, or the result of the calculation for (2) is greater than 10%, there are potential consequences for the applicant's permit.

likely resulting with overly conservative assumptions to the detriment of applicants. This issue will only continue to grow as the number of permit applications increase and, in turn, the LAP threshold is exceeded on more occasions.

The lack of transparency in the LAP process also creates uncertainty. Currently, the LAP is run by the Service and the applicant isn't informed of how LAP value was calculated. In addition, the LAP permitted and unpermitted values often change from the start of the eagle permitting process until the end; thereby, building in a level of uncertainty that such that it leaves open to interpretation whether a permit is available, or what mitigation is required, whether LAP thresholds are exceeded.

ii. Recommendation – The LAP is biologically limited and not publicly disclosed

ACP suggests the Service eliminate the LAP analysis from the eagle permit program. If the Service elects to retain a consideration of local eagle populations into permitting decisions, the EMU rather than LAP seems the more biologically relevant scale to do so. Furthermore, the Service should incorporate the most recent population data into this analysis.[64] Setting the project and cumulative thresholds on superseded datasets is not in alignment with the best available science standard, yet older data seems to still be used in recently issued permits. Potentially an additional inconsistency is if the LAP analysis does not take into consideration permitted take is offset at a 1.2:1 net benefit ratio, meaning baseline compensatory mitigation is already offsetting other unpermitted take. If this is so, should the LAP not factor this into its calculation? Finally, the Service could use the data gathered from eagle program fatality monitoring to inform its understanding of LAPs and use it as an analytic tool, rather than to create permit conditions.

f) Permit duration and reviews

Eagle permits longer than 5 years require permit reviews every 5 years under the 2016 rule. The rules states that the Service will determine if "Eagle take does not exceed the amount authorized to occur within the period of review."[65]

i. Challenge – 5-year versus 30-year permit

This language implies that permittees are not getting 30 year permits but rather a series of 5-year permits because the language implies there is an amount of take authorized to occur within a 5-year permit. This defeats the point of having a 30-year permit and represents a higher standard than under the Endangered Species Act, where permit terms are not time-limited in this way and check-ins are not required.

[64] U.S. Fish and Wildlife Service. 2016. U.S. Fish and Wildlife Service. 2016. Bald and Golden Eagles: Population demographics and estimation of sustainable take in the United States, 2016 update; Division of Migratory Bird Management, Washington D.C., USA, U.S. Fish and Wildlife Service (Service). 2020. Final Report: Bald Eagle Population Size: 2020 Update. U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Washington, D.C. U.S.A.
[65] 2016 Rule at 91552.

ii. Recommendation – 5-year vs. 30-year permit

ACP recommends that the 5-year review be revised to negate the need for a 5-year review if in compliance with all permit terms and conditions. Additionally, revise language in the rule to ensure that permittees are evaluating their risk based on exceedance of their 30-year permit and not a shorter duration of time.

i. Challenge – changes in take levels

The language in the 2016 rule states "In consultation with the permittee, the Service will update fatality predictions, authorized take levels and compensatory mitigation for future years,…".[66] Some regions of the Service have asserted this update authority could include changing the take levels without the agreement of the permittee. This can have significant impacts on the permittee because of potential permit exceedances, by actual take or trajectory, triggering costly adaptive management.[67] In addition, as mentioned in Section 2.e, the lower the take level, the harder it is to demonstrate compliance using EoA.

Recommendation – changes in take levels:

ACP recommends that the language in the rule should be changed to clearly state that take levels cannot be changed without mutual agreement from the Service and the permittee. ACP also recommends that EoA not be used for eagle permits.

g) FWS should eliminate any requirement that post-construction monitoring be carried out by third-party monitors approved by and reporting directly to the Service

The 2016 Eagle Rule implemented a requirement that third-party monitors undertake compliance monitoring for permits with terms greater than five years.[68] There is no evidence that supports the conclusion that professional biologists (either in-house or third-party contractors) retained by wind companies have produced inadequate demonstrations of compliance. Additionally, this requirement goes beyond typical reporting requirements under other permitting programs and exemplifies a contradictory outcome of the 2016 Eagle Rule's stated intent of revising the permit program to be more workable, predictable, and therefore utilized more by the regulated community than the 2009 Eagle Rule.

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[66] *Id*.

[67] "Costly" as used in our comments encapsulate tangible costs and less tangible costs that combined make the current permitting program challenging and unworkable for most of the industry. As an example, circumstances where 'consultation' does not mean 'agreement', changing take levels mid-term of a compliant permit is unreasonable as it incurs tangible costs for monitoring, adaptive management efforts, or both. The indirect costs associated with such changes can be equally if not more challenging to absorb. Energy generation facilities operate as optimally as possible – mechanically but also labor, contract support, budget, and management wise. Depending on the change, a sub-optimal state for one or all areas of operation for some duration is created. Increases due to arbitrary changes in take estimates affect compliance monitoring, operational changes per adaptive management plans, and compensatory mitigation triggers that cannot be planned or budgeted for, particularly if conditions of a permit are being met.

[68] 50 CFR Section 22.26(b)(7)(i).

Similar to pre-construction surveys, compliance monitoring costs also vary among sites and with permit conditions. Table 3 provides a summary of cost ranges for third-party eagle permit compliance monitoring per year (12 months). Four different scenarios of actual project summaries are included that vary among project size and target detection probability (g-value), in addition to other permit conditions and project-specific circumstances that affect monitoring costs. All four scenarios in Table 3 represent a best-case set of methodological elements: employing a 100-meter search plot radius, searches limited to walking roads and pads, and using binoculars to scan the remainder of the search plot. Differences of bias correction trial sizes and trial frequencies reflect variation among permit conditions for the four scenarios. Standard analysis using EoA to generate take estimates and preparation of an annual report to USFWS are included. Note that the examples in Table 3 representing best case-scenarios for compliance monitoring costs are for landscape attributes that derive high searcher efficiency without the need of transects or plot maintenance or higher search frequencies. Table 8 and Attachment 1 provide insight how to factor in costs for facilities that necessitate more intense or more frequent search effort to achieve high g-value.

Table 3. Third-Party Compliance Monitoring Cost Ranges (per year) – Best Case Scenario*

Ballpark Pricing Examples	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Project Scope Context				
Number of Turbines	>200	<25	>100	<50
Extreme Weather Conditions Present	No	No	Yes	No
Search Frequency	monthly	twice monthly	monthly	monthly
Carcass Persistence Trial Duration (variable across scenarios due to varying permit conditions)	90 days	70 days	42 days	90 days
Target overall detection probability (g-value)	0.3	0.4	0.25	0.3
Carcass Searches (includes field set-up and delineation of scanning plots)	$40,000-50,000	$35,000-40,000	$60,000-80,000	$40,000-50,000
Search Efficiency (20 carcasses per season)	$15,000-20,000	$10,000-15,000	$8,000-10,000	$15,000-20,000

Carcass Persistence (10 carcasses per season)	$20,000-25,000	$25,000-30,000	$15,000-20,000	$20,000-25,000
Data Analysis/Reporting (includes USFWS review and SPUT reporting)	$15,000-20,000	$20,000-25,000	$15,000-20,000	$12,000-15,000
TOTAL (Annual low-high)	**$90,000-115,000**	**$90,000-110,000**	**$98,000-130,000**	**$87,000-110,000**
GRAND-TOTAL (One year/5-yr period of a 30-yr permit + one contingency to preserve g-value)	**$630,000-805,000**	**$630,000-770,000**	**$686,000-910,000**	**$609,000-770,000**

* The four scenarios represent a best-case scenario whereby scanning methods of searches are employed. Costs would significantly if transect searches were necessary to meet the g-value requirement. Depending on landscape characteristics, scanning or transects could include crop/vegetation clearing, the estimated costs of which are provided in Table 8 and Attachment 1.

To further illustrate the significant cost implication of current monitoring requirements for individual permits, relative to the level of estimated impact to eagles by an applicant, Table 4 provides an approximation of mitigation costs over 5 years for a theoretical project and compares these costs to the third-party compliance monitoring costs over the same period. Table 4 compares a best-case scenario for monitoring (Table 3) with a best-case mitigation scenario utilizing the Eagle In-Lieu Fee Program. Other applicants that cannot use such a program or otherwise opt to seek compensatory mitigation options elsewhere incur additional costs difficult to quantify and variable across applicants. (see Table 9, one eagle take for worst-case scenarios) The theoretical project has 100 turbines with one eagle predicted to be taken per year. Calculation of the number of poles to offset take is based on the USFWS Resource Equivalency Analysis.[69] Retrofit costs are upwardly conservative based on ACP's polling of service providers working with utilities on behalf of eagle take permittees. Table 4 demonstrates a not uncommon gross imbalance in eagle permit costs in which the costs of monitoring, which delivers no conservation benefit, outweighs the costs of mitigation. When comparing Attachment 1 as a worst-case scenario for compliance monitoring (crop compensation, plot maintenance included), the disparity between monitoring and mitigation is amplified.

Table 4. Monitoring Costs Relative to Mitigation Costs for a Theoretical Wind Project

Mitigation Cost Over 5 years	Monitoring Cost Over 5 Years
1 eagle = 1.2 for mitigation	Road and pad searches with scanning at all 100 turbines

[69] USFWS. 2018. Resource Equivalency Analysis (excel spreadsheet). Version dated 2018 October 22.

1.2 eagles require 78 poles (30-year effectiveness)	Sufficient to meet overall detection probability of 0.35
$3,000 per pole (avg. over various client permits)	$125,000 per year
$234,000	**$625,000**

In addition to the excessive monitoring costs, practical complications (e.g., safety, contract management, liability) and the loss of quality control oversight by permittees disincentivizes companies to pursue 30-year permits due to the third-party requirement. As noted and cited earlier in our comments, research studies have demonstrated that in-house, i.e., O&M staff, monitoring methods are effective tools to demonstrate compliance. Such in-house monitoring protocols can be fine-tuned to address site- and operation-specific circumstances; reduce cost of monitoring commensurate with the magnitude of the impact; and effectively work around constraints of land access, safety, and liabilities implicated by long-term, contracted monitoring.

ACP recommends the Service eliminate the requirement for third-party monitoring, which is expensive and does not improve the data collected nor conservation outcomes for eagles. Permittees should be told what the goal posts are for compliance monitoring and then be provided flexibility in how they meet those requirements. Protocols based on the unique environmental attributes of each facility can be developed in collaboration with the Service. Data collection and analysis methods are described in each report to verify that agreed upon protocols were followed. The risk of civil and criminal penalties for inappropriately manipulating datasets and analyses is an effective "good behavior" assurance tool. To deviate from this standard practice of environmental regulation suggests the Service does not trust permittees. Yet to ACP's knowledge the Service has not evidenced one instance of a permittee manipulating a compliance monitoring report.

h) The Service Should Resolve Legacy Take Issues

While the 2016 Eagle Rule does not explicitly require that previously unauthorized "legacy" take be resolved prior to issuance of a permit to an applicant, it is our understanding that in practice some Service offices have required that prior take be resolved prior to permit issuance. This creates significant permit delays. In addition, a permit can be issued without resolving unauthorized past eagle take; thus, the applicant continues to be potentially subject to an enforcement action at any time for unpermitted prior take of eagles. If an enforcement action has been taken to address past eagle take by an applicant, then the Service may also consider any pending or completed resolution of that enforcement when evaluating an application and determining whether to issue an eagle incidental take permit.

ACP recommends the Service provide more certainty and clarify that resolution of legacy take is not a precondition to permit issuance and is only to be considered in rare circumstances.

3) ACP Comments in Response to ANPR Question 2 ("What additional guidance, protocols, analyses, tools, or other efficiencies could the Service develop…?")

a) The Service regions should not be issuing guidance without notice and comment

As discussed further in EWAC's comments,[70] at least three regions have developed guidance directed at eagle permit applicants in the wind energy industry. Neither of the regions has published these guidance documents for notice and comment, and in both regions, applicants encounter meaningful consequences for not incorporating the recommendations in the guidance documents. Case law is clear that guidance that has a regulatory effect (in effect binding) on the regulated community must be published for notice and comment in accordance with the Administrative Procedure Act.[71] Guidance also cannot exceed an agency's authority. ACP agrees with EWAC and cautions the Service in its development of any further guidance, without first publishing it in draft form with notice and comment.

b) Challenges and recommendations related to guidance documents

Guidance documents from the Service are rarely if ever done with any opportunity for input from the regulated community and while perhaps not the intent, the mere existence of a guidance document often means it is treated as a regulatory requirement rather than a guideline. For example, some field offices require that applications not be submitted until the Eagle Conservation Plan (ECP) is finalized. However, as opposed to a template approach to ECPs that was intended by the original national guidance, each ECP is characterized as a long negotiating process with resulting terms and conditions different from one ECP to the next and not informed by other elements of an application.

Furthermore, because each Service region is delegated the responsibility of administering the eagle take permit program, region-specific guidance is sometimes published seemingly without consideration of other regional guidance. Service (legacy) Regions 3, 8, and 6 have undertaken region-specific guidance, in many instances deviating from, rather than complimenting, the national ECPG.

Guidance should be just that: guidance. Yet, guidance documents are often treated as requirements. Some guidance is written to coerce applicants to follow the recommendations (e.g., (emphasis added) "If your project is able to adhere to these monitoring standards and respond to the comments we provided on your ECP, our review will be streamlined and we can proceed to the Environmental Assessment phase.")[72]

The current process for drafting and issuing guidance results in inconsistencies for the regulated community and in some cases recommendations that go beyond statutory authorities, leading to uncertainty and inefficiency that has the opposite outcome from the Service's stated intention. In other words, in the industry's experience, guidance has often made the eagle take permit program less workable and certain, not more, which disincentivizes participation in the program.

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[70] *See*, Energy and Wildlife Action Coalition, Comments on Eagle ANPR.

[71] *See e.g., CropLife America v. EPA*, 329 F.3d 876 (D.C. Cir. 2003); *General Electric Co. v. EPA*, 290 F.3d 377 (D.C. Cir. 2002); 208 F.3d 1015 (D.C. Cir. 2000); 711 F.3d 844, 863-65 (8th Cir. 2013); 809 F.3d 134 (5th Cir. 2015), aff'd, 136 S. Ct. 2271 (2016).

[72] USFWS, unpublished draft. *USFWS Region 3 Recommended Eagle Fatality Monitoring.* USFWS MBPO Interior Region 9 (January 08, 2021).

As such, before the Service consider issuing any more guidance or regulatory tools as teed up in the ANPR, a comprehensive review of ***how*** guidance should be developed and vetted with the regulatory community should be undertaken. Consideration should also be made about the level of effort required for a given guidance document, which will divert limited resources from working on current permitting workload and other programmatic efforts. Based on experiences to date, the Service should not issue additional guidance to implement the eagle permitting rule without publishing draft guidance for public comment first, because:

- Examples of Service guidance to date under the eagle rule penalizes any applicant that chooses (or needs) to deviate from that guidance by having their application de-prioritized by the Service. Legacy Region 3's pending "minimum *g*" guidance was clearly developed without any input from CRM practitioners, and as written is practically impossible to achieve without significant costs associated with far too unreasonable levels of effort. Yet, as stated in the unpublished guidance, if an applicant does not include this minimum g-value as a permit condition, their application may not be "streamlined" by the Service. The guidance is completely silent on what the process is if the minimum g-value is unattainable, only that "…[Service and applicant] can discuss what would be possible for your project and continue to coordinate on finalizing the monitoring plan." What alternatives are on that table? How long will these discussions take? If the unaccepted is a stated *minimum*, then what room is there for negotiation?
- Guidance documents cannot possibly replace case-by-case engagement with applicants with unique circumstances, project owner needs, and environmental and biological attributes. Guidance should be generalized to be applicable across Service regions and not so prescriptive as to discourage innovative approaches to fulfilling the intent of the Eagle Rule.
- To the extent that the Service identifies a need for guidance, it should be drafted and vetted with the regulated community to assure that elements are able to be adhered to and are reasonable to accomplish the intent of a given effort (e.g., compliance monitoring). Industry knows facilities and operations best and can provide their experiences with the various components of the ECPG and the eagle rule to better inform the Service to ultimately result in practicable and achievable permit.
- Accommodating differences inherent in regional and project-specific contexts would more closely harmonize with the practicable standard while underlying elements of the guidance remain consistent with the ECPG and Eagle Rule.
- Guidance should not be written such that only the Service will be able to determine whether a permittee has satisfied the recommendations, leaving it unclear how much flexibility will be accommodated. A permittee has no way of knowing whether it sufficiently adheres to the guidance before it's too late, setting permittees up for failure and creating another chilling effect on the entire permit program.
- Guidance should not create new recommendations that have no basis in law, regulation, or best available science. For example, (legacy) Region 6 drafted a set of recommendations dated March 31, 2021, one of which a recommendation that "seasonal curtailment between January 15 and May 1 for turbines located within 0.5-1.0 mile of an unoccupied nest and 0.5-2.0 miles of an occupied nest." Such blanket curtailment is not

required or recommended anywhere else in the Eagle Rule nor does the CRM even account for proximity nests in its take prediction objective.

Areas identified by ACP as potentially benefiting from guidance with the intention of expediting the current trend of years-long application queues and inconsistency among applications include, and with proper notice and comment prior to finalizing and making effective:

- Guidance for Service personnel that Eagle Conservation Plans (ECPs) should inform permit terms and conditions. ACP members report applications with negotiated terms and conditions in the ECP are then unknowingly supplemented with additional terms and conditions in the draft permit published for public review and comment without the benefit to the applicant to review for reasonableness.
- Establishment of an internal policy by which all NEPA-related agency reviews for eagle permit applications be contracted to a third-party, reducing the level of effort required of Service personnel. Such a practice is common with all other federal agencies under most circumstances.
- Guidance that addresses transparency around the CRM. The method and assumptions used in the eagle model are inconsistently applied by different field offices and over time by the same field offices. As noted earlier in our comments, a regulatory tool such as the eagle CRM should be crafted in such a way that the regulated community can navigate its use, effectively replicate the use of inputs, methods, and assumptions used by the Service. Guidance describing the stepwise method and assumptions used and publishing the priors datasets would accomplish two outcomes: 1) consistent application of the eagle model across field offices and over time, and 2) applicants that want to complete a CRM for their application eliminate the administrative burden on Service resources to complete the model, leaving a review and quality assurance role for the Service.
- Standardize the monitoring requirement by guidance that defines a certain number of years of monitoring, search frequency, bias trials, and other standard monitoring protocol elements that are not derived by an arbitrary g-value. Requiring a specific *g* has a wide range of impacts on wind facilities – some will have to spend significantly more due to more scavengers or unsearchable terrain, for example. Requiring a minimum *g* above what is needed to demonstrate compliance results in inconsistent permit conditions, creating a chilling effect for participation, which undercuts eagle conservation goals.

ACP also offers high level feedback on guidance and tools mentioned in the ANPR on which the Service is currently working:

i. Guidance for fatality monitoring at wind-energy facilities

The Service should provide opportunity for review and comment by the regulated community and public of any guidance prior to publication. As discussed in our comments, guidance developed of late by regional offices creates inconsistency in requirements and agency expectations of what constitutes an agreeable monitoring program. ACP recommends the Service reaffirm that the ECPG provides sufficient detail on or reference to pre- and post-permit monitoring approaches, leave the specific protocols for each individual permit to be determined

on a case-by-case basis that considers both the unique biological (eagle) and project circumstances to the applicant and permitting office.

ii. Revised protocols for minimizing disturbance of nesting bald eagles

The Service's most recent (2019) estimate of bald eagle population size in the lower 48 United States is 316,700 birds, which is 4.4 times more birds than estimated only 10 years earlier.[73] This increase has occurred despite increases in human activity, including energy development, and would seem to indicate an ability to coexist and even thrive alongside human activities, which has been previously noted.[74] Eagle nest disturbance guidelines have recognized three factors that affect potential nest disturbance: existing vs. novel activities, line of sight, and seasonal variation in behavior. Additionally, there is evidence that bald eagles will habituate to human activity over the course of a nesting period.[75]

There are few research studies investigating anthropogenic disturbance to nesting bald eagles; therefore, existing protocols to minimize disturbance to nesting bald eagles are based largely on anecdotal information. [76,77] Nonetheless, we believe that the existing protocols are a reasonable framework based on the current state of knowledge, the increase in the bald eagle population in the United States, their increasing use of upland agricultural areas for nesting, and the increasing demand for clean energy sources.[78, 79] The exceptions built into the protocols for cases where eagles have demonstrated tolerance for the activity in question allows sufficient flexibility to accommodate the behavioral shifts that have been observed anecdotally over the past decade and more. Frequent nest monitoring would be anticipated to coincide with any activities implemented within the applicable non-disturbance buffers. ACP, therefore, does not believe revising minimization protocols are necessary.

Finally, the Service should encourage alternatives to using manned aerial aircraft for eagle nest monitoring to reduce human safety risks. Ground based or use of unmanned aircraft (e.g., UAVs) in ways that are less risky to human life and less disturbing to nesting eagles should be prioritized.

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[73] USFWS, 2020, *Final Report: Bald Eagle Population Size: 2020 Update*. U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Washington, D.C. U.S.A.

[74] Guinn, J. E. 2013. *Generational habituation and current bald eagle populations*. Human-Wildlife Interactions 7:69-76.

[75] Steidl, R. J. and R. G. Anthony. 2000. *Experimental effects of human activity on breeding bald eagles*. Ecological Applications 10:258-268.

[76] USFWS (U.S. Fish and Wildlife Service). 2007. *National Bald Eagle Management Guidelines*. Available at: https://www.fws.gov/birds/management/managed-species/eagle-management.php.

[77] USFWS. 2017. *Recommended Buffer Zone for Human Activities around Nesting Sites of Bald Eagles in California and Nevada*. Pacific Southwest Region Migratory Birds Program. December 2017. Available at: https://www.fws.gov/cno/conservation/migratorybirds/pdf-files/USFWS_PacificSouthwestRegion_BaldEagle_NestBuffer.pdf

[78] Garvin, J., J. Taylor, K. Dick, and M. Martell. 2017. *Trends in Bald Eagle Nesting Habitat in the Western U.S. – Insights Gained from the Wind Industry*. Presentation at the 2017 Raptor Research Foundation Annual Meeting. October 2017.

[79] Harrison, J., E. Hallingstad, C. Foo, D. Riser-Espinoza, and T. Matson. 2021. *Upper Midwest Bald Eagle Nesting Habitat Expansion: Implications to Diet and Productivity*. Presentation at the 2021 Raptor Research Foundation Annual Meeting. October 2021.

c) ACP perspectives on pooled monitoring

In response to industry concerns of the increasing cost of monitoring, the Service solicited feedback on the idea of pooled monitoring in the ANPR[80] as one way to offset the high cost of intensive monitoring protocols driven by the CRM and EoA.

It is impractical to use pooled monitoring approaches for purposes of verifying compliance among multiple permit holders. Even if it were practical, there are no efficiencies of scale achieved by pooling monitoring that uses a method requiring such a high level of effort over the life of a permit term, particularly a method not designed for very rare events. Whether monitoring at all permitted facilities or a subset of permitted facilities, the cost implications of using EoA remains high as more frequent and intense monitoring is needed to keep actual take and estimated take as close to 1:1 as possible. Intensive monitoring such as this is far in excess to the magnitude of the impact of eagles by most permitted projects.

The Service asks whether a pooled monitoring approach would be feasible to address the cost concerns. ACP's response is as follows: (1) the excessive monitoring costs are associated with demonstrating compliance and therefore the notion of pooling monitoring for this purpose means that compliance is likewise pooled among participating facilities, which the industry opposes and (2) the concerns described in our comments regarding the third-party monitoring requirement remain relevant whether monitoring is done per permitted facility or in a pooled fashion.

Therefore, in response to the three questions in the ANPR, it is ACP's informed opinion that industry would be favorable to pooled monitoring for purposes other than demonstrating compliance and where such an approach offers cost efficiencies in meeting other monitoring commitments of the permit program, such as evaluating the health of the applicable EMU population. The question of tradeoffs between pooled monitoring and project-specific fatality estimates is moot as the industry opposes pooling compliance. ACP believes if structured well, there is merit to using a randomly selected subset of projects to ascertain the overall EMU health of eagle populations. However, ACP cautions the safety, land rights, and liability issues described above under our response to third-party monitoring remain relevant. Therefore, any pooled monitoring approach needs to be well coordinated with candidate facilities.

i. How would a general permit impact small business?

A general permit for low impact sites would provide a lower cost option for most sites, but with the added benefit of a straightforward and predictable application process for members with less financial capacities to undertake the excessively expensive process for individual permits. A general permit option would increase the number of operators seeking a compliance mechanism for projects with little perceived eagle risk but given the possibility of an impact, benefit from relying on a BGEPA compliance mechanism. Currently small business-scale wind developers and operators are encumbered to engage with the Service for an individual permit, regardless of applicability, given 1) high overall cost to complete the permitting process, 2) the

[80] Eagle ANPR at 51095.

inability to withstand unexpected costs borne after the application process has started, 3) excessive monitoring requirements, and 4) compensatory mitigation that is purposely based on overly conservative take estimates, doubly so due to the 1.2:1 mitigation requirement and reliance on the 80% confidence interval. A lower cost of compliance mechanism (i.e., a general permit program) ameliorates many of these impediments to participating in the individual permit program and, therefore, to some extent will generate increased and more sustainable conservation value for eagles by incentivizing participation by all types and economic scales of commercial interests – small operators, big operators, off-takers with ownership interest, develop-to-sell and develop-to-own developers, and merger/acquisition parties.

4) ACP provides data in response to the Service request on industry costs associated with the eagle take permit program

a) Pre-application/pre-construction surveys for eagles

The cost to implement eagle-specific pre-construction surveys and mortality monitoring studies varies greatly among sites and varies among Service Regions due to Region-specific preferences or documented survey recommendations, both published and unpublished. Table 5 provides a summary of approximate cost ranges of standard types of pre-construction eagle studies used to inform the application process. Studies incorporate survey recommendations or requirements from the Service, where applicable. These costs were estimated for a theoretical wind facility of 100 megawatts and a project boundary of 20,000 acres as one approach to illustrate the magnitude of costs to merely derive the necessary data to inform an application process. Table 6 represent costs for non-standard pre-construction eagle studies that may be applicable for a permit application, though not typically necessary.

Table 5. Standard Pre-construction Eagle Survey Cost Ranges

Eagle-specific Surveys	Approximate Average Cost	Low Range	High Range
Protocol development including one agency meeting (one time)	$10,000	$5,000	$15,000
Eagle use surveys achieving 30 percent spatial coverage (two years)	$140,000	$100,000	$200,000
Helicopter nest surveys using a 2-mile survey buffer (up to two aerial surveys in a single breeding season) (two years)	$70,000	$30,000	$100,000
Ground-based monitoring of a single territory (Hawkwatch-style method, one breeding season)	$15,000	$8,000	$25,000
Ground-based roost surveys (one winter) - ECPG	$25,000	$20,000	$75,000
Prey base assessment, primarily desk-top based (one time)	$5,000	$2,000	$10,000

Post-survey agency meeting (one time)	$8,000	$5,000	$10,000
Sub-total for Standard Pre-Construction Eagle Survey Cost Ranges	$273,000	$170,000	$435,000

Table 6. Non-Standard Pre-construction Eagle Survey Cost Ranges

Non-Standard Pre-Construction Surveys	**Approximate Average Cost**	**Low Range**	**High Range**
Telemetry deployment and monitoring including data analysis (one year, per eagle)	$15,000	$10,000	$20,000
Nest camera(s) installation and monitoring (one breeding season, per nest)	$12,500	$10,000	$15,000
Sub-total for Standard Pre-Construction Eagle Survey Cost Ranges	$27,500	$20,000	$35,000

Another approach to illustrate magnitude of costs is ACP members contributing cost summaries of eagle take application processes underway or concluded. Summary information in Table 7 is provided to illustrate that the cost to secure an individual permit is unreasonable, relative to the magnitude of most wind facilities' impacts on eagles. This is particularly true when factoring in the other areas of inefficiencies detailed in our comments that implicate additional, intangible costs. The first two rows of the following table respond to the question of pre-application surveys for eagles but to understand the complete cost associated with securing a permit, we include the other cost elements associated with the application process. The following costs are real estimates of multiple applications by an operator for just purposes of collecting data to inform an eagle permit application.

Table 7. Illustrative costs to secure an eagle take permit

Pre-Application Survey Costs Informing Application Costs (Range represents feedback of multiple applications)	**Approximate Average Cost**	**Low Range**	**High Range**
2-years of pre-construction eagle surveys	$300,000	$200,000	$400,000
2-years of eagle nest surveys	$60,000	$40,000	$80,000
Eagle Conservation Plan Development	$175,000	$100,000	$250,000

Permit Fees (30-yr term) (assumes $36k, $8k/5-yr renewal)	$76,000	$76,000	$76,000
NEPA Development	$112,500	$75,000	$150,000
Sub-total Cost Ranges	**$723,500**	**$491,000**	**$956,000**

b) Monitoring requirements of the permit itself, including paying for required third-party monitors

Cost of compliance monitoring varies significantly depending upon the level of effort necessary to achieve a detection probability that assures high confidence enough to mute the potential of statistical take estimates higher than actual. Costs also vary significantly based on the landcover, particularly if an agricultural setting where costs to landowners to forego planting and/or maintain a search plot to accommodate high g-value target is necessary. Table 8 assumes a minimum of seven years of monitoring, factored into the table's total, the average crop compensation cost is average of low (soybeans) and high (corn) ranges for simplicity's sake.

Table 8 illustrate the non-trivial cost impact when treating g-value as the sole metric for scaling a compliance monitoring effort. This approach also substantially influences the frequency, duration, and intensity of fatality monitoring, another non-trivial cost function. Attachments 1 and 2 of our comments provide a more nuanced summary of cost implications for two diverse wind facilities, searchability wise. Along with the other stated assumptions in the attachments, both scenarios use the same g-value of 0.35, and a 0.15 detection probability for O&M staff, as asserted in the ANPR. It is understood that not all issued ECP/ITPs use these values as requirements or assumptions, this is for illustrative purposes. However, it should be noted that these illustrative requirements and assumptions are in some issued permits, and reflected in published and unpublished Service guidance.

Combined, the tables illustrate that (1) some wind farms in the West (i.e., in non-agricultural/forested areas) can achieve an average of 0.35 with less effort than some wind farms in other regions such as the Midwest (i.e., in agricultural areas), and (2) within each region, some wind farms will expend less effort achieving an average of 0.35, e.g., due to favorable terrain and/or smaller scavenger populations. The implications of a g-value requirement are not the same for all wind farms, which negates any intention the Service has to equitably standardize the g-value monitoring requirement. Please see footnote 6 of Attachment 1 that crop compensation and search plot maintenance is not included in the Attachment 1 estimate. Table 8 provides a rolling 3-yr commodity price to estimate soybean- and corn-based crop compensation costs. Plot maintenance is highly variable with fluctuations at landowner-scale, so costs are unique for each wind energy facility, potentially unique within a given facility with multiple landowners. Landowner negotiations to accommodate compliance monitoring is another example of intangible cost that is difficult to quantify here but, along with cost for permits, should be a discussion topic between applicant and the Service.

Table 8. Costs of compliance monitoring

Eagle Permitting Compliance Costs (per application) (Range represents feedback of multiple applications)	Approximate Average Cost	Low Range	High Range
3rd Party Compliance Monitoring (per year for 30% of 100-turbine facility)	$237,500	$175,000	$300,000
Compensation for 100-m radius search area crop damage, when applicable (varies by commodity price*, landowner sensitivities, and assumes high g-value, i.e., >0.15, 30% of 100-turbine wind facility, round to nearest $500)	$68,500	$61,000-	$76,000+
Search area maintenance, where applicable (e.g., mowing, clear forest understory for 30% of 100-turbine wind facility)	$70,000	$40,000	$100,000
Total Compliance Monitoring Cost for seven years (One year/5-yr period of a 30-yr permit + one contingency to maintain g-value >0.15)	$2,632,000	$1,932,000	$3,332,000

* Commodity price for corn derived by 3-year rolling average market rate
- Low range for crop compensation is market rate for soybeans, 70 bushels/acre, $11.78/bushel
+ High range for crop compensation is market rate for corn, 225 bushels/acre, $4.55/bushel

c) Compensatory mitigation

Compensatory mitigation varies depending on the estimated take authorized the term of the permit. Table 9 below illustrates range of costs for one to four eagle take authorizations, per year, and total costs for mitigation for a 5-year and 30-year permit term. As with the Table 4 example, it should be noted that the cost range below is an incomplete assessment of compensatory mitigation. Less tangible costs hard to estimate include effort to negotiate compensatory mitigation, identifying sources of compensatory mitigation, contracting an agreement with a provider, and sundry other costs including budgeting for the potential of additional compensatory mitigation needed during the term of the permit.

Table 9. Compensatory mitigation costs

Eagle Compensatory Mitigation Costs (per application) (Range represents feedback of multiple applications)	5-Year Permit Term		30-Year Permit Term	
Annual Take Level	**Low**	**High**	**Low**	**High**
1	$429,000	$585,000	$2,574,000	$3,510,000
2	$858,000	$1,170,000	$5,148,000	$7,020,000

3	$1,287,000	$1,755,000	$7,722,000	$10,530,000
4	$1,710,500	$2,332,500	$10,263,000	$13,995,000

The cumulative total represented in the representative cost summaries (Tables 5-9) are sourced from multiple applications underway or concluded. For a comprehensive, illustrative example of the cost implications of participating in the eagle permit program, we combine these costs using average costs to complete and implement an eagle permit for a project with the following characteristics:

- From Table 7 - Data collection and application process for a 30-year permit ($723,500)
- From Table 8 - Seven years of compliance monitoring ($2,623,000)
- From Table 9 - Compensatory mitigation for a two eagle/year take authorization ($6,084,000)
    - i.e., total take authorization of 60 eagles over 30 years
- **Grand Total - $9,430,500**

IV. CONLCUSION

On behalf of its members, ACP reiterates its appreciation for the Service initiating this rulemaking and support its intent "to improve and make more efficient the permitting process for incidental take of eagles in a manner that is compatible with the preservation of bald and golden eagles."[81] Our hope is that our comments sufficiently respond to the breadth of the ANPR's inquiries of challenges and recommendations to improve the eagle program, including "potential new regulatory approaches…particularly for projects that can be shown in advance to have minimal impact to eagles."[82] Please do not hesitate to contact me if you have any questions on these comments.

Sincerely,

Stu Webster

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American Clean Power

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Attachments

[81] Eagle ANPR at 51094.
[82] *Id.*

1. Regional Cost Impact of Monitoring Effort for a Midwest Wind Facility with Required g-value of 0.35
2. Regional Cost Impact of Monitoring Effort for a West Wind Facility with Required g-value of 0.35

Attachment 1 – Regional Cost Impact of Monitoring Effort for Midwest Wind Facility with Required g-value of 0.35

Monitoring Levels			
Annual Starting Third-Party Cost	$250,000	$110,000	$90,000
Annual Starting Third-Party Cost (w/o bias trials)[1]	$225,000	$85,000	$65,000
Annual Reduced Effort Third-Party Cost (w/o bias trials)[1]	-	$65,000	-
Year	**Annual Detection Probabilities (g-values) for Third-Party and Operational Staff[2]**		
	Low[3]	**Moderate[4]**	**High[5]**
1	0.36	0.38	0.52
2	0.36	0.38	0.52
3	0.36	0.38	0.52
4	0.36	0.38	0.15
5	0.36	0.29	0.15
Average g-value	**0.36**	**0.36**	**0.37**
Third-Party[6]	*$1,150,000*	*$430,000*	*$220,000*
Operational Staff[7]	*$0*	*$0*	*$50,000*
5-Year Total	**$1,150,000**	**$430,000**	**$270,000**
30-Year Total	**$6,900,000**	**$2,580,000**	**$1,620,000**

1. A $25,000 deduction is applied to each year after the first year of third-party monitoring in each 5-year period, assuming that bias trials will only be required for one year in each 5-year period.

2. Incidental operational staff values based on the range assumed by the USFWS in the ANPR

3. Third-party detection probabilities (low) assume: carcass persistence = 15 days; plot searcher efficiency = 0.70; eagle scan searcher efficiency = 0.50; area correction for scans = 0.75, area correction for plots = 0.96; exposure during crop-out period = 0.60; achieved by weekly plot searches (200-meter x 200-meter) at 50% of the turbines during the crop-in period (June - October) and weekly scan searches within 100 meters of each turbine during the crop-out period (November - May).

4. Third-party detection probabilities (moderate) assume: carcass persistence = 30 days; road and pad searcher efficiency = 0.95; eagle scan searcher efficiency = 0.70; area correction for scans = 0.85; area correction for road & pad = 0.02; exposure during crop-out period = 0.70; achieved by monthly road and pad searches during the crop-in period (June - October) and scan searches within 100 meters of each turbine during the crop-out period (November - May) conducted twice/month for the first 4 years and once/month for the final year.

5. Third-party detection probabilities (high) assume: carcass persistence = 45 days; road and pad searcher efficiency = 0.95; eagle scan searcher efficiency = 0.90; area correction for scans = 0.95; area correction for road & pads = 0.02; exposure during crop-out period = 0.80; achieved by

monthly road and pad searches during the crop-in period (June - October) and scan searches within 100 meters of each turbine once/month during the crop-out period (November - May).

[6.] Third-party monitoring costs are estimated for a 100-turbine wind farm. They include analysis (yearly), reporting (yearly), and bias trials (once every 5 years). Assumptions include 10-minute travel between searches. Crop clearing and compensation costs are not included.
[7.] Operational staff costs for third-party testing conducted once/5-year period (no internal operational costs are included). Includes analysis and reporting. Assumes carcass persistence trials are conducted during third-party monitoring.

Attachment 2 – Regional Cost Impact of Monitoring Effort for West Wind Facility with Required g-value of 0.35

Monitoring Levels			
Annual Starting Third-Party Cost	$120,000	$120,000	$90,000
Annual Starting Third-Party Cost (w/o bias trials)[1]	$95,000	-	$65,000
Annual Reduced Effort Third-Party Cost (w/o bias trials)[1]	$65,000	$65,000	-

Year	Annual Detection Probabilities (g-values) for Third-Party and Operational Staff[2]		
	Low[3]	**Moderate[4]**	**High[5]**
1	0.37	0.60	0.70
2	0.37	0.48	0.70
3	0.37	0.48	0.15
4	0.37	0.13	0.15
5	0.27	0.13	0.15
Average g-value	**0.35**	**0.36**	**0.37**
Third-Party[6]	*$470,000*	*$250,000*	*$155,000*
Operational Staff[7]	*$0*	*$50,000*	*$50,000*
5-Year Total	**$470,000**	**$300,000**	**$205,000**
30-Year Total	**$2,820,000**	**$1,800,000**	**$1,230,000**

1. A $25,000 deduction is applied to each year after the first year of third-party monitoring in each 5-year period, assuming that bias trials will only be required for one year in each 5-year period.

2. Incidental operational staff values based on the range assumed by the USFWS in the ANPR

3. Third-party detection probabilities (low) assume: carcass persistence = 30 days; eagle scan searcher efficiency = 0.50; area correction = 0.75; achieved by scan searches within 100 meters of each turbine twice/month for the first 4 years and once/month for the final year.

4. Third-party detection probabilities (moderate) assume: carcass persistence = 45 days; eagle scan searcher efficiency = 0.70; area correction = 0.85; achieved by scan searches within 100 meters of each turbine twice/month for the first year and once/month for the second and third year.

5. Third-party detection probabilities (high) assume: carcass persistence = 60 days; eagle scan searcher efficiency = 0.90; area correction = 0.95; achieved by scan searches within 100 meters of each turbine once/month for the first 2 years.

[6.] Third-party monitoring costs are estimated for a 100-turbine wind farm. They include analysis (yearly), reporting (yearly), and bias trials (once every 5 years). Assumptions include 10-minute travel between searches.

[7.] Operational staff costs for third-party testing conducted once/5-year period (no internal operational costs are included). Includes analysis and reporting. Assumes carcass persistence trials are conducted during third-party monitoring.