

**Appendix C. Response to Public Comments, Pioneer Wind Park EA**

<b>Record #</b>	<b>Commenter</b>	<b>Comment</b>	<b>Response/Resolution</b>	<b>Coding</b>
1	Sally Sarvey	As I have a residence on Boxelder Creek I have opposed the building of the Pioneer Wind Farm- industry sited in a rural environment (graced with a wonderful variety of wildlife) as the wrong place. Of course, the danger is the eradication of large and small mammals and birds, including migrating and resident raptors and the Sage Grouse abandonment of traditional Leks.	This comment is noted. However, to clarify, eagle incidental take permits do not authorize construction activities; the permit, if granted, authorizes take of eagles for otherwise lawful activities, if that take were to occur. Any company can choose to proceed with their activities without such a permit from the Service. Companies that choose to pursue an eagle incidental take permit work with the Service to develop conservation measures to avoid and minimize take, thereby attempting to negotiate the best possible conservation outcome for eagles in such situations.	Non-Substantive
2	Sally Sarvey	My points include requests for Eagle carcass collection by a neutral expert, use of the technology which automatically warns turbines when a bird approaches if an effective system is proven and rejection of further plans to build additional turbines at this site or nearby when you or your office is consulted.	This comment is noted. Third party monitoring is not a requirement under the 2009 regulations under which this permit will be issued. The Service discussed various potential avoidance, minimization, and mitigation measures that are currently available (e.g., removing or relocating turbines, curtailment, etc.). At this time, the Service believes that the appropriate avoidance and minimization measures are implemented at this project, but will be reevaluated throughout the permit period and in consideration of any future permit applications.	Non-Substantive
3	Jason Whiteman	The Northern Cheyenne Tribe is part of the USFWS Region 6 (Montana). The Northern Cheyenne Tribe has two (2) known eagle nests located along the Tongue River watershed within the boundaries of the Northern Cheyenne reservation. One of the concerns is the golden eagles and/or bald eagles pairs are migratory birds that may have a migratory route through this proposed "Pioneer Wind Park Energy Facility" in Converse County, Wyoming. These eagles may be impacted by this Project. Any mitigation measures are valued including eagle take permit and monitoring plans pursuant to the Bald and Golden Eagle Protection Act and NEPA. The Northern Cheyenne Tribe highly respects and values the bald and golden eagles. These eagles are a strong cultural significant to the Northern Cheyenne Tribe. Consideration of these measures and values are appreciated by the Northern Cheyenne Tribe.	This comment is noted. We appreciate the discussion we had with Mr. Whiteman over the phone on December 10, 2018 related to eagle movements and dispersal. We understand and appreciate tribal concerns that permitted projects have the potential to directly and indirectly impact eagles at and near Indian sacred sites. The Service's goal through permitting is to work with project proponents, federal agencies, tribes, and local communities to avoid and reduce the potential of permitted projects to take eagles. By issuing permits, these benefits can be realized; otherwise operators of such projects are not required to implement conservation measure beneficial to eagles.	Non-Substantive
4	Steve Weber	At the meeting in Glenrock on October 16, 2018, I discussed with U.S. Fish and Wildlife Officer Brian Smith the use of avian radar, and recommended it as a viable means to prevent golden eagle kills at wind farms. Smith stated that it does not work, and there are other methods of prevention that work better. Please explain in detail what those other methods are, along with references that validate your opinion. Instead, I would recommend that avian radar be included, along with whatever other methods Smith said are better.	This comment is noted. Currently the effectiveness of avian radar detection systems is unproven in reducing the risk of eagle take; therefore, the Service does not endorse or require use of the technology. The Service discussed with the Applicant various potential avoidance, minimization, and mitigation measures that are currently available (e.g., removing or relocation turbines, curtailment, etc.). At this time, the Service believes that the appropriate avoidance and minimization measures are implemented at this project, but will be reevaluated throughout the permit period and in consideration of any future permit applications.	Non-Substantive
5	Steve Weber	In regard to other methods of prevention, I would note one of the prevention/mitigation methods proposed by Pioneer Wind in the Environmental Assessment - the retrofitting of 65 power poles. The power poles are apparently not owned by Pioneer Wind, if I understood it correctly. While I do not know, the owner company might already be required to retrofit those poles. That would mean Pioneer Wind is retrofitting poles that should have already been corrected; and, in essence, it means those poles are being counted twice - once for Pioneer Wind's mitigation, and once for the other company's mitigation. While that would be economic for the two companies, it remains only one tower retrofit, and that would not be maximum preservation for the eagles.	This comment is noted. "Compensatory mitigation must be additional and improve upon the baseline conditions of the impacted eagle species in a manner that is demonstrably new and would not have occurred without the compensatory mitigation measure" (2016 Eagle Rule Final Environmental Impact Statement), hereafter referred to as the 2016 PEIS. In other words, retrofits will not be double counted.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
6	Steve Weber	We also discussed the monitoring of wind farms for dead eagles. If my memory serves me, Smith said retrieval, or checking for dead birds, would be done every 30 to 60 days -as nothing will eat or drag these birds off. My extensive research since 2006 shows that you are 60 percent correct. In the Casper Star Tribune Energy Times (2007- Winter Issue), U.S. Fish and Wildlife Service Field Agent Dominic Dominici stated that what is found in the field “is less than half of what dies.” I would strongly agree with his assessment, and ask for thorough daily surveillance by an independent agent.	This comment is noted. Chapter 2 of the EA presents information on post-construction mortality monitoring and reporting requirements. Required monitoring also includes searcher efficiency trials and carcass persistence trials for the purpose of developing robust estimates of mortality at the project site in the future. The Service acknowledges that carcass persistence varies based on the site. The required post-construction monitoring is intended to provide site specific information that will enable the Service to develop robust estimates of mortality at the project site. Monitoring will be conducted for every year of the permit.	Non-Substantive
7	Steve Weber	I would further note that golden eagles needed for traditional purposes (see below) need to be what are called ‘clean eagles’, and obtained in a proper way. Allowing eagles to lay and rot for weeks or months is inappropriate protocol for Native ceremony, it is a violation, and are essentially useless. Eagles should be appropriately retrieved, and timely handled, when submitted to the Federal Eagle Repository.	This comment is noted. We ensure that the potentially affected tribes have the opportunity to consult with the Service, including about conservation measures and mitigation. Chapter 2 of the EA presents information on post-construction monitoring. Permit conditions would require the Applicant to report eagle mortality within 24 hours of discovery, or next business day, to ensure eagle remains are handled properly.	Non-Substantive
8	Steve Weber	Nearby wind farms owned by Duke Energy, and PacifiCorp, have also already greatly diminished the golden eagle population in this area, by some 60 percent. The cumulative adverse impact of these wind farms was not studied as part of the EA, as far as I can tell. I would ask that that study be done before more take permits are granted.	This comment is noted. Chapter 4 of the EA presents the LAP and Cumulative Effects analysis for this Project. More broadly, the 2016 PEIS (which is incorporated by reference to this EA) analyzed the cumulative effects of permitting take of bald and golden eagles in combination with ongoing unauthorized sources of human-caused mortality. The known unpermitted take occurring within the LAP (including, but not limited to nearby wind farms referred to in the comment) is accounted for in the cumulative effects section of this EA. The LAP and Cumulative Effects analysis are conducted for every permit under consideration.	Non-Substantive
9	Steve Weber	Hoping wind farm operators will work with the US Fish and Wildlife Service (USFWS) is foolish fallacy. It did not work with oil and gas companies, and it did not work with power companies and their transmission lines. What did work was enforcing the preservation laws to the maximum. Although jail time was not included in those actions (though part of the law), it is a viable means of compelling compliance for wind farm operators. Sentencing a violating wind farm project manager to a year in jail would bring attention to the issue all across the nation. Your approach is nothing more than pandering to the wind farm companies. In other words, enforced compliance is the only thing that has proven effective in getting industries to fully observe with the law. In the mid 1970’s the USFWS, and the Justice Department, pushed to get the wording “knowingly killing eagles” into the preservation regulations. As a result, it made very clear that preservation was part of the cost of doing business. The USFWS is knowingly allowing wind farms to kill more golden eagles than it permitted, and in my opinion, it is complicit in the illegal acts. Remember, we are in the United States, where no one, or entity, is above the law.	This comment is noted. The Service administers eagle take permits. The Service does not have the authority to authorize construction activities or project decommissioning. The Service also cannot require any entity to apply for an eagle incidental take permit (except under legal settlements), but can and does actively investigate companies that violate the Eagle Act. Project proponents that choose to pursue an eagle incidental take permit work with the Service to develop conservation measures to avoid and minimize take, thereby attempting to negotiate the best possible conservation outcome for eagles during the operation of their otherwise lawful activity. The Eagle Act requires the Service to determine that any take of eagles it authorizes is "compatible with the preservation of bald eagles or golden eagles". Permittees cannot exceed authorized take levels on their permit without consequences. As part of the permit, the Applicant will be required to monitor and report, therefore, the Service will be aware if they are approaching the authorized take of the permit, in which case the Applicant will be required to implement the adaptive management plan described in the EA and ECP, including any additional conditions of the permit.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
10	Steve Weber	Having said that, however, my major concerns are religious in nature; and, therefore, come under the Religious Freedom Restoration Act of 1993 (H.R. 1308). I would ask you to read this law, make it on the record as part of my comments, and respond as to how this EA has included and fully addressed this pertinent law. I am an active participant in Native American spiritual practices, including the Sundance, humblecheya (vision quest fast), and other traditional Native ceremonies. The fasting hill for our humblecheya is within a 3-mile radius of the Pioneer Park Wind Project, and is specifically related to this area. Eagles are an extremely significant component in these ancient religious practices. Live golden eagles in the air have always been involved with the humblecheya ceremony, in particular, and they are understood as an essential participant, without which the ceremony is substantially burdened and harmed. We believe so many golden eagles have already been “knowingly” killed by the wind projects north of Glenrock, that it has substantially altered and burdened this traditional spiritual ceremony. Our traditional Sundance practices require us to draw from a stable or increasing population of golden eagles, and my current research shows golden eagle numbers have been drastically reduced in Converse County alone. To begin to explain the significance of the golden eagle in Native American sacred traditions, and as part of my comments, I am including five articles (below) that were published in the Casper Journal newspaper. I should note that one of the articles deals with a land swap involving the State of Wyoming and private landowner Russell Gordy that was proposed in 2012 (it did not go forward). I became involved because some of the parcels being considered were adjacent to our fasting location. I believe I outlined the situation quite clearly in my letter to then State Land Board Director Ryan Lance, as well as in the included newspaper article. I would ask that you include them, as part of my comments, in relation to the eagle take permits for the Pioneer Wind Park project. Included below is the newspaper article, my letter to Director Lance, and the supporting letter from the Arapaho Council of Elders on the Wind River Indian Reservation regarding this sacred area, acknowledging its use in conjunction with our sweat lodge, medicine gathering, and other traditional purposes. Furthermore, due to the unique nature of this situation, I would request timely discourse with the project oversight administrator so we can further explain this delicate religious matter, which has not been addressed; and, before any take permit is approved. In conclusion, my true feelings are that Pioneer Wind Park, due to the extremely fragile environmental site, should be decommissioned, and no other wind towers be permitted in this area. I, along with those who have been involved in the sacred Sundance ceremony, will pray that this matter be given the dignity, and due respect, that it demands.	This comment is noted. We understand and appreciate tribal concerns that permitted projects have the potential to directly and indirectly impact eagles at and near Indian sacred sites. The Service’s goal though permitting is to work with project proponents, federal agencies, tribes, and local communities to avoid and reduce the potential of permitted projects to take eagles. By issuing permits, these benefits can be realized; otherwise operators of such projects are not required to implement conservation measures beneficial to eagles. The Service's decision to approve or deny an eagle incidental take permit does not include the authority to deny access to tribal necessities within the area; the permit, if granted, authorizes take of eagles for otherwise lawful activities, if that take were to occur. Please see the PEIS (Chapter 6, page 177) and the final EA (Section 1.6.1, page 8) for our Tribal outreach and consultation on the Eagle Rule and specifically on this project. For this project specifically, we contacted 74 sovereign nations, including the Arapaho Tribe of the Wind River Reservation, and we received very little input and directly and promptly corresponded with interested Tribes. The commenter requests dialog with "the project oversight administrator", however, we are unclear who this refers to. The Service does not administer this project, does not have oversight over the Project, nor does the Service have oversight to access to the lands. Requests for access to land should be coordinated with landowners directly.	Non-Substantive
11	Northern Laramie Range Alliance	Introduction and Background. A. The Existing and Proposed Wind Projects - Pioneer Wind Park I (“PWP”) is a 46-turbine wind farm on approximately 25,000 acres in the Northern Laramie Mountains south of Glenrock, in Converse County, Wyoming. Developed by a Utah-based entity (sPower, successor to Wasatch Wind LLC), now owned in equal shares by AES Corporation (Arlington, VA) and Alberta Investment Management Co. (“AIMCo”, Edmonton, Alberta), PWP was built and went into service in 2016 after a contentious 7-year process and in the face of overwhelming local opposition.	This comment is noted.	Non-Substantive
12	Northern Laramie Range Alliance	The legal status of PWP is unclear. Its siting permit from the Wyoming Industrial Siting Council has been challenged in the state district court prior to commencement of construction and the suit remains pending in Wyoming's 8th judicial district. The developer went ahead with construction and operation nevertheless. Similarly, construction and commercial operation proceeded without an eagle take permit ("ETP") under the Bald and Golden Eagle Protection Act ("BGEPA"). One eagle mortality caused by collision with a PWP turbine has occurred and, we have been told, is under investigation for possible prosecution.	This comment is noted. The Wyoming ISC issued a permit for this project on July 18, 2011. The permit was amended to consolidate the previously conceived two projects into a single 46 turbine project on September 23, 2015, and to date has not been rescinded. Any company can choose to proceed with their activities without an eagle incidental take permit. The Applicant applied for the ETP prior to the eagle mortality occurring at the project and no additional eagle mortalities have been documented since. The Applicant notified the USFWS Office of Law Enforcement immediately upon discovery of the mortality, and has been cooperating with the investigation.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
13	Northern Laramie Range Alliance	Notably, it now appears that a developer (likely the owner of PWP) is attempting to develop a second wind facility in the Northern Laramie Range adjacent to, and of the same size as, the existing project. It has filed with the transmission affiliate of the public utility (PacifiCorp) an application to connect this second project to the transmission grid at the same point as PWP. PacifiCorp's transmission affiliate has completed feasibility studies in connection with this application indicating that transmission access could be available as early as 2024. We do not know if it has applied for an ETP for this second project; if not, it would appear that, once again, the developer is proceeding without it.	This comment is noted. The Service is not aware of, nor has it received an application for eagle incidental take for any proposed projects adjacent to Pioneer Wind Park. The Wyoming ISC issued a permit for this project on July 18, 2011. The permit was amended to consolidate the previously conceived two projects (of 31 turbines each) into a single 46 turbine project on September 23, 2015. If in fact there is another project being proposed, the Service continues to invite prospective applicants to coordinate early in the process to ensure effective conservation of bald and golden eagle populations.	Non-Substantive
14	Northern Laramie Range Alliance	B. The Proposed Eagle Take Permit and the Draft Environmental Assessment - Meanwhile, the developer applied for a 30-year ETP for PWP under then-prevailing U.S. Fish and Wildlife Service ("FWS") practice. While this was underway, FWS, in response to a U.S. district court decision, ceased issuing 30-year permits, and the developer accordingly has amended its application to seek a 5-year permit. In response, in September 2018, FWS noticed for public comment a draft Environmental Assessment ("EA") in which it indicates that it will make a Finding of No Significant Impact ("FONSI") with respect to the project based on its conclusion that PWP will only kill one bald eagle and five additional golden eagles during the 5-year permit period. On that basis it proposes to issue a 5-year eagle take permit for this level of mortality. The draft EA does not consider the proposed second project.	This comment is noted. Please see response to Record #13 above.	Non-Substantive
15	Northern Laramie Range Alliance	C. The Northern Laramie Range Alliance - The Northern Laramie Range Alliance ("NLRA"), has participated in the PWP matter at the federal, state and local level since the inception of the project early in 2009. Representing nearly 1,000 citizens in the counties surrounding the project area, NLRA has focused on the appropriateness of the project siting, including its habitat and landscape issues, its impact on electric ratepayers and the federal and state policy environment that has enabled a development that otherwise would not have been economic. Among other things, NLRA has engaged experts in avian ecology to review the developer's submissions on this topic (which form most of the basis for FWS' conclusions in the EA). NLRA also has reviewed major independent studies with respect to the density of avian populations in and around the project area.	This comment is noted. The Service continues to encourage active participation in the NEPA process from members of the public.	Non-Substantive
16	Northern Laramie Range Alliance	II. NLRA's Concerns - On the basis of its detailed familiarity with wind energy development in and near the PWP project area, and across the region, and the experts with which it has engaged, NLRA has major concerns with respect to the scope of the draft EA, the sources of the data and science on which it appears to rely, the integrity of the process and, therefore, its principal conclusions. In particular, NLRA believes that the totality of the circumstances in this instance warrant a full Environmental Impact Statement ("EIS") to comply with the provisions of the National Environmental Policy Act of 1969, as amended ("NEPA"), the regulations thereunder and the associated administrative and judicial precedent. At the very least, FWS should defer issuance of an ETP until these issues are fully and appropriately addressed.	The purpose of the federal action in this EA is to review the eagle take permit application package. The analysis is focused on determining if issuance of a permit is compatible with the preservation standard of eagles. This EA incorporates by reference the Service's 2016 PEIS that analyzes the management approach to the 2016 Eagle Rule revision. The EA and FONSI documents that there are no significant effects on eagle populations associated with the issuance of an eagle incidental take permit to Pioneer Wind LLC for the Project, therefore preparation of an EIS is not required.	Substantive
17	Northern Laramie Range Alliance	A. The Proposed ETP - With respect to the proposed 5-year eagle take permit, NLRA engaged Dr. Rob Ramey to review the EA and the associated Eagle Conservation Plan ("ECP"). <sup>3</sup> His review is attached as Appendix 1 to this document. Briefly summarized, his conclusions are as follows.	This comment is noted. All public comments, information, and data submitted to the Service during the public comment period for the Draft Environmental Assessment, will be included in the administrative record for the Service decision on this permit.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
18	Northern Laramie Range Alliance	1) The fatality predictions for bald and golden eagles at PWP are based on an erroneous assumption that underestimates the predicted mortality from wind turbine operations at PWP. The sampling of eagle use was conducted using an outdated flight path method but the FWS model requires input data in terms of minutes that eagles were observed. When the FWS converted flight paths to minutes they simply assumed a uniform flight speed of 15 meters per second (33.55 miles an hour) for bald and golden eagles. That is higher than virtually all of the published average soaring speeds, which results in an underestimated mortality risk at PWP and potentially elsewhere.	This comment is noted. The project proponent began working with the Service in 2010 (prior to the recommendations provided in the 2013 Eagle Conservation Plan Guidance). Therefore we cannot hold the applicant to a standard that did not exist. Assumptions related to converting eagle flight paths to eagle minutes were conducted through internal consensus based on pertinent literature and expert opinion from the Service's eagle biologists. The Service's Collision Risk Model is based on scientifically peer-reviewed models that are designed to yield conservative estimates of predicted mortality that are conservative towards the conservation of each species. The Service typically uses the upper 80th credible interval around the estimated number of annual eagle mortalities for permit decisions in an effort to avoid underestimating fatality rates at wind projects. For this Project, the Service is selecting the 99th credible interval (i.e., even more conservative estimate of eagle fatalities to avoid underestimating potential take) because the preconstruction data that was used in the model was collected prior to the development of ECP guidance and survey methods were based on WGFD recommendations, therefore, only a subset of the survey data was useful for the model.	Non-substantive
19	Northern Laramie Range Alliance	2) The Eagle Conservation Plan (ECP) failed to acknowledge that the original SWCA wildlife surveys only documented the flight paths of eagles below 122 m (the maximum height of the smaller diameter turbines in the original turbine layout), and not the final turbine layout, which included five larger turbines.	This comment is noted. The Service has no knowledge of five larger turbines installed at the project site and the applicant has re-affirmed that all 46 installed turbines are of the same model and height as those described in the EA. The current turbine specifications described in the EA were used in the analysis to estimate take of eagle at the Project. Also see response to Record #18 regarding the Service's approach to addressing uncertainty in modeling results.	Non-Substantive
20	Northern Laramie Range Alliance	3) The FWS previously pointed out that the preconstruction eagle surveys were very limited in winter, and that the FWS should subsequently require more intensive sampling in winter to account for this discrepancy. However, there is no mention of this increased sampling requirement in the EA.	This comment is noted. The applicant's ECP documents the winter survey effort and additional surveys that were conducted (Chapter 3.4 of the ECP). The applicant has coordinated with the Service on survey protocols and timing throughout the process and it is the Service's position that the applicant should not be held accountable to the current survey standards recommended in the 2013 ECPG. The Service continues to take a conservative approach to estimating eagle use of the project area and related estimates of potential take to ensure that conservation measures are effective in ensuring eagles are protected to the extent practicable under the Eagle Act.	Non-Substantive
21	Northern Laramie Range Alliance	4) Despite the demonstrated threat of larger turbines to eagles and other birds and bats (due to increased rotor swept zone and height), there is no mention of any cap on future turbine diameter or height in the ECP or EA, either from the standpoint of another project redesign, retrofit of existing turbines, or placement of additional turbines near the project area in the future. This is a serious shortcoming with the EA that could be appropriately resolved through development of a regional-scale programmatic EIS that analyzes current and projected cumulative take of eagles and other species.	This comment is noted. Any changes or revisions to the Project in the future would require analysis under a new NEPA document.	Non-Substantive
22	Northern Laramie Range Alliance	5) Neither the ECP nor EA acknowledge that wind turbines represent an unnatural risk to eagles because they are recent additions to the landscape, and a deadly threat for which eagles have not evolved.	This comment is noted. Section 3.2.1.2 and Section 3.3.1.2 of the 2016 PEIS discuss the causes of mortality for bald and golden eagles respectively and is incorporated by reference into the EA.	Non-substantive
23	Northern Laramie Range Alliance	6) Carcass search protocols will undercount and underestimate the number of eagles and other species killed or injured by turbines.	This comment is noted. Post construction mortality surveys and searches are conducted according to the Service's recommendations. Chapter 2 of the Draft EA presents information on post-construction mortality monitoring and reporting requirements. Required monitoring also includes searcher efficiency trials and carcass persistence trials designed for the purpose of addressing uncertainty (e.g., undercounting) and for developing robust estimates of mortality at the project site.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
24	Northern Laramie Range Alliance	7) The EA and ECP do not suggest that eagle carcasses should be necropsied or x-rayed by an independent third party (i.e. a veterinarian).	This comment is noted. All eagle remains are handled and processed according to current Service procedures and are included as a permit condition. Eagle remains may be necropsied or x-rayed on a case-by-case basis as determined by the Service.	Non-Substantive
25	Northern Laramie Range Alliance	8) The ECP and EA are unclear as to how eagle mortality will be measured: by estimated eagle mortality or by actual eagle mortality?	This comment is noted. Chapter 4 of the Draft EA discuss eagle fatality estimation and adaptive management in response to observed mortalities. Please also see response to Record #23.	Non-Substantive
26	Northern Laramie Range Alliance	9) What happens if the permitted level of eagle "take" is exceeded?	The post-construction surveys and reporting are designed to allow the Service to track mortalities at the project. Chapter 8 of the applicant's ECP presents information on the adaptive management process and actions the Service will take in response to eagle mortality should the project approach the authorized permitted take allowance.	Substantive
27	Northern Laramie Range Alliance	10) Proposed mitigation measures to offset eagle mortality caused by wind turbines are paper offsets.	Appendix E and Appendix G of the ECPG thoroughly describes compensatory mitigation and the resource equivalency analysis that is used to estimate compensatory mitigation for the take of eagles from wind energy development. Section 2.9 of the 2016 PEIS presents discussion of compensatory mitigation and the supporting rationale for how the approach benefits eagle populations through the reduction of electrocutions.	Non-Substantive
28	Northern Laramie Range Alliance	11) Post project turbine removal is not addressed in the ECP or the EA.	Project decommissioning is addressed in the Project's Plan of Development and Conservation Plan developed during the Wyoming Industrial Siting Permit process. Best Management Practices (BMPs) discussed in the ECP and BPCS will continue to be implemented throughout the Project lifecycle including decommissioning.	Non-Substantive
29	Northern Laramie Range Alliance	In addition, FWS fails to take the required "hard look" at several other significant impacts from the PWP and/or omits significant information needed to effectively consider the significant impact of the PWP in the draft EA as described below.	This comment is noted. See response to Record #16.	Non-Substantive
30	Northern Laramie Range Alliance	FWS relies on 7 to 8-year-old pre-construction studies completed by the developer and did not use more recent data in their consultant's 2017 post-construction survey report. In addition, the developer only conducted 2 years pre-construction avian surveys where FWS requested 3 years pre-construction surveys. (Footnote 4 - Appendix 3, Letter from United States Dep. Of the Interior, Fish and Wildlife Service, Ecological Services, dated May 16, 2013 to Christine Watson Mikell, President, Wasatch Wind at page 2.) Other reviewers, including an FWS population modeler, have challenged the methodology and conclusions used to estimate eagle take, but FWS ignored all these issues in its EA. At a minimum, the science needs updating, and the FWS needs to take into consideration the conclusions of independent experts. (footnote 5 - "[F]or purposes of NEPA compliance, relying 'on data that is too stale to carry the weight assigned to it may be arbitrary and capricious.'" N. Plains Res. Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1086; (U.S. App. 2011). In Lands Council v. Forester of Region One of the United States Forest Service the court overturned the agency decision where six year old data was used. 395 F.3d 1019 (U.S. App. 2004).)	The Service has incorporated all existing and available data received to date. Additionally, the Service relies on the 2016 PEIS, the 2016 eagle population status update, and information known to date regarding direct take of eagles in the LAP, and considers other sources of data, including known sources of unpermitted take of bald and golden eagles. All of this information is presented in the EA. The applicant coordinated with the Service on survey protocols prior to recommendations provided in the ECPG; therefore, the Service could not hold the applicant to a standard that did not exist. The Service relied on available data in the absence of ECP guidance. Data collected during post construction monitoring efforts is not used for a pre-permit estimate (See response to Records #23 and #26). The post-construction data is also reviewed and considered annually by the Service and other Technical Advisory Committee (TAC) members as outlined in the Project Conservation Plan. Chapter 8 of the applicant's ECP presents information on the adaptive management process and actions the Service will take in response to eagle mortality. We are not aware of any challenges to Service methodology and conclusions used to estimate eagle take.	Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
31	Northern Laramie Range Alliance	NLRA remains concerned about the fate of both golden and bald Eagle populations at this project. FWS estimates only one bald eagle will be killed over a 5-year period and only 5 golden eagles will be killed over that same 5-year period. In fact, one golden eagle has already been killed and the permit hasn't even been issued because the developer decided to construct and operate the wind facility against the recommendation of FWS prior to receiving an ETP. (Footnote 6 - Appendix 3, Letter from United States Dep. Of the Interior, Fish and Wildlife Service, Ecological Services, dated May 16, 2013 to Christine Watson Mikell, President, Wasatch Wind.) The project was constructed and began operation in 2016. In the draft EA, FWS only requires two years of post-construction monitoring that began November 1, 2016. Post construction monitoring ends on October 31, 2018.	Chapter 8 of the applicant's ECP presents information on the adaptive management process and actions the Service will take in response to eagle mortality. Chapter 1 of the EA also discusses adaptive management commitments. The report of one golden eagle fatality during the two years that the project has been operational is consistent with our anticipated level of take discussed in Chapter 4 of the EA. The applicant has coordinated with, and currently lower than, the Service and has conducted post-construction monitoring consistent with Service recommendations. The applicant is free to conduct post-construction monitoring in the absence of a permit. If a permit is issued, the Applicant will be required to conduct Post-construction monitoring as a permit condition.	Non-Substantive
32	Northern Laramie Range Alliance	FWS only proposes in this EA for two years of site visits by PWP for self-reporting from November 1, 2016 for post construction reporting. The public and FWS will never know what the actual mortality has been or will be unless mortality data is collected by independent, third party experts using standardized methods and these data are made open to the public. Failure to do so makes it impossible for the public to be involved in decisions regarding their natural resources, risk assessments, efficacy of various mitigation methods, or to evaluate the appropriateness of compensation.	This comment is noted. Chapter 2 of the EA states that the project will be subject to a <i>minimum</i> of two years of intensive post construction monitoring. Monitoring is required for all years of the permit and summary reports may be made available to the public. Third party monitoring is not required under the 2009 regulations.	Non-Substantive
33	Northern Laramie Range Alliance	Because the PWP has already been built, despite warnings not to build until it received an eagle take permit, it is too late to modify the project unless FWS requires the removal of turbines and adding new technology to mitigate the risk to eagles.	The comment is noted. See response to Record #1. Chapter 8 of the applicant's ECP presents information on the adaptive management process and actions the Service will take in response to eagle mortality including the potential for developing, implementing, and evaluating the effectiveness of an automated detection and deterrent system for eagles approaching areas of potential risk.	Non-Substantive
34	Northern Laramie Range Alliance	The proposed mitigation by PWP falls short and is insufficient to preserve golden and bald eagles.	This comment is noted. The eagle incidental take permit regulations incorporate the Service's overall approach to mitigating effects to eagles. The level of required compensatory mitigation analyzed in the EA and committed to by the applicant has been developed according to the ECPG and the preservation standard set forth under the 2009 rules that implement the Eagle Act.	Non-Substantive
35	Northern Laramie Range Alliance	The PWP proposal and project as built was not completed to be consistent with the preservation of bald and golden eagles as required by regulations.	This comment is noted. The Applicant worked with the Service to ensure avoidance, minimization, and mitigations were achieved to the maximum extent practicable. The level of required compensatory mitigation analyzed in the EA and committed to by the applicant has been developed according to the preservation standard set forth under the Eagle Act.	Non-Substantive
36	Northern Laramie Range Alliance	The EA makes no mention of the second project proposed in the immediate area in which PWP is located. At a minimum, this should be included in any assessment of overall potential mortality, and in calculations of permissible mortality in the PWP project area. [Footnote 7 - NEPA imposes a continuing duty to supplement previous environmental documents. Stop H-3 Ass'n v. Dole, 740 F.2d 1442, 1463 (9th Cir. 1984). When "significant new circumstances or information relevant to environmental concerns" bears on the impacts or the proposed action, the agency must supplement the EA. 40 C.F.R. § 1502.9(c)(1)(ii) (referencing supplemental statements to EIS; however, courts have held that the requirement to supplement applies to EAs, as well (see Or. Natural Res. Council Action v. United States Forest Serv., 445 F. Supp. 2d 1211 (U.S. Dist. 2006).]	This comment is noted. See response to Record #13.	Non-Substantive
37	Northern Laramie Range Alliance	The EA bases its conclusion respecting permissible mortalities in part on an explicit observation that there are no "permitted" wind projects within the "local area" of PWP (EA at p. 25, para. 3). However, there are major wind developments roughly 20 miles north of the project area that have been the subject of U.S. Department of Justice prosecutions for unpermitted eagle kill. Despite the prosecutions they remain in operation, and it would seem wholly inappropriate for FWS not to consider their continuing impact on the local area population ("LAP") in determining permissible mortalities for PWP.	This comment is noted. See response to Record #8.	Non-substantive

Record #	Commenter	Comment	Response/Resolution	Coding
38	Northern Laramie Range Alliance	FWS failed to take the required hard look at the cumulative impacts in the LAP, the EMU Northern Rocky Mountain bald eagle nesting territory, and the EMU, Central Flyway. (Footnote 8 -40 C.F.R. § 1508.27(b)(7) requires FWS to consider “[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into smaller parts.”) In Wyoming alone there are 51 existing and proposed wind projects with a combined 5,597 total turbines. Within the EMU Northern Rocky Mountain bald eagle nesting territory (ID, MT, and WY) there are 158 existing and proposed wind projects with a combined 8,151 total turbines. (Footnote 9 - Appendix 4 provides information obtained from the Federal Aviation Administration GIS data located on FWS, Ecological Services, Energy Wind webpage at <a href="https://www.fws.gov/southwest/es/EnergyWindFAA.html">https://www.fws.gov/southwest/es/EnergyWindFAA.html</a> . The spreadsheets also include cites where additional information was obtained and is used to provide additional data regarding each associated wind project.) Below is an image of the FAA’s map of the U.S. identifying existing and proposed wind projects at various stages of approval by FAA. As can be clearly seen, the EMU, Central Flyway is littered with thousands of wind turbines.	This comment is noted. Also see response to Records #8 and #16. The Service conducted the EA cumulative effects analysis (Chapter 4) according to the process set forth in the 2016 PEIS (see Section 3.3.2.1. which also discusses sustainable take rates). More broadly, the 2016 PEIS (which is incorporated by reference to this EA) analyzed the cumulative effects of permitting take of bald and golden eagles in combination with ongoing unauthorized sources of human-caused mortality. The known unpermitted take occurring at nearby wind farms is accounted for in the cumulative effects section of this EA and does not exceed 10% of known permitted and unpermitted take combined, which is consistent with the preservation standard. The FAA database has known limitations. It primarily serves as a repository for preliminary turbine locations for the purposes of FAA hazard screening, however, it is not reliably updated and proposed projects are not removed if they don't get built, resulting in an overestimate of turbines on the landscape and/or double counting at project sites.	Substantive
39	Northern Laramie Range Alliance	The draft EA fails to provide information detailing the recommendations of both FWS and Wyoming Game and Fish (“WGF”) related to requested or suggested removal or relocation of specific turbines by PWP in order to reduce or mitigate risk to eagles and eagle mortality. Furthermore, the draft EA does not provide specific information related to PWP’s compliance with either FWS or WGF recommendations.	This comment is noted. Chapter 1 of the EA describes how the project layout was reduced from 62 turbines to 46 turbines, including the removal of nine turbines (those that posed the highest potential risk to eagles based on USFWS recommendations). This is also described in the ECP (Chapter 4). Implementation of Wyoming Game and Fish Department (WGFD) recommendations to the applicant are not within the scope of the Service's decision to approve or deny an eagle incidental take permit under the Eagle Act. The applicant discusses the implementation of WGFD recommendations in Section 4.1.2 of the Project ECP through the development of a Conservation Plan which was reviewed and approved by WGFD through the Wyoming Industrial Siting Council permit process for major infrastructure projects.	Non-Substantive
40	Northern Laramie Range Alliance	In short, taking into account Dr. Ramey's analysis and the foregoing points, on the basis of the ETP considerations alone, the EA does not provide an adequate basis for a FONSI or an ETP. In addition, of course, and as the EA acknowledges, NEPA requires a full consideration of the context and intensity of the impacts of proposed federal action.	This comment is noted. We respectfully disagree. The Draft EA is explicit in referring the reader to the 2016 Eagle Status Report, 2016 PEIS (to which the Final EA is tiered), and the 2016 Eagle Rule as sources for information on the context and intensity (and thus significance) of the impacts from the federal action. That action is to approve or deny the application for an eagle incidental take permit at a local site, not to authorize construction activities. The permit will authorize take of eagles for otherwise lawful activities, if that take were to occur. Those documents provide extensive detail on methods and approaches used to estimate bald and golden eagle population size at the EMU and LAP scales, demographic rates, and sustainable take rates that are compatible with the preservation standard under the Eagle Act. Because the selected alternative will not have a significant impact on the environment, and EA and FONSI are appropriate.	Non-Substantive
41	Northern Laramie Range Alliance	B. The Broader Context - FWS fails to take the required hard look at the effected environment, including but not limited to, eagles, big game (the project area is within critical winter range and a migration corridor for big game), sage grouse, migratory birds, raptors, birds and bats, endangered species, and cultural and historical properties. Instead FWS in its discussion in Chapter 3 briefly references crucial mule deer winter range, sage grouse, raptors, migratory birds, other raptors but fails to provide sufficient evidence and information needed to analyze whether the impact is significant. In fact, PWP reports 30 bird deaths in its first year of post-construction monitoring, suggesting more needs to be considered as to the significant impacts to birds, bats, and raptors in addition to bird migration impacts.	This comment is noted. The EA does take a hard look at the impacts of the proposed federal action of issuing an eagle incidental take permit (see the purpose and need stated in the EA). Section 7 intra-service consultation was also conducted. Our EA documents that that there are no significant effects associated with the issuance of an eagle incidental take permit to Pioneer Wind I, LLC for the Project.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
42	Northern Laramie Range Alliance	FWS deliberations in this matter arise in a context in which its involvement has much broader implications in areas of its authority than BGEPA and the Migratory Bird Treaty Act ("MBTA") alone. The project area is less than five miles from the Medicine Bow National Forest, and mule deer, elk and antelope migration from the National Forest to these ungulates' winter ranges are transected by the project. There are also federal lands managed by the Bureau of Land Management adjacent to the project area. The project area drains, in part, into the Boxelder and Deer Creek watersheds; both are among the few major undammed tributaries of the North Platte River. The project's collector lines and the substation to which they connect run through Mormon Canyon, a significant campsite for Mormon pioneers in their migration beginning 172 years ago. And there are other historic sites adjoining the project area, including buildings on the National Register of Historic Places and locations eligible for placement on the National Register of Historic Places. (Footnote 10 - FWS is required to consider "historic or cultural resources" including the "degree to which the action may adversely affect [...] objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources. 40 C.F.R. § 1508.27(b)(3) and (8). These circumstances obviously involve the responsibilities of, inter alia, the U.S. Forest Service (with respect to the Medicine Bow National Forest), the National Park Service (with respect to the Mormon Pioneer National Historic Trail and National Register sites) and the Environmental Protection Agency (with respect to the Boxelder and Deer Creek watersheds).	The purpose of this EA is to analyze the impacts of issuing an eagle take permit (see purpose and need as stated in the EA). There are no lands managed by other federal or state agencies within the project area. The impacts of construction of the project are not within the scope of the NEPA analysis for this federal action. Our EA documents that there are no significant effects associated with the issuance of an eagle incidental take permit to Pioneer Wind I, LLC for the Project.	Substantive
43	Northern Laramie Range Alliance	Any assessment of potential environmental impact should consider the potential effects of the project on these aspects of the environment, given the implications of a FONSI and an ETP with respect to the overall viability of PWP. While the immediate action triggering the FWS review is the developer's application for an ETP, NEPA and the regulations thereunder require that FWS integrate "to the fullest extent possible" into its review other federal and state agencies and their environmental concerns. [Footnote 11 - 40 C.F.R. § 1501.1 and § 1502.25(a) and (b). Courts have held that EAs are insufficient if appropriate experts and agencies were not consulted. <i>McDowell v. Schlesinger</i> , 404 F. Supp. 221 (W.E. Mo. 1975); <i>Simmans v. Grant</i> , 370 F. Supp. 5 (S.D. Tex. 1974).] More generally, courts have recognized that where such an action is a significant factor in an overall project context, a review covering the full range of potential impacts is required. That is certainly the case in this instance. Yet this full review, involving all potentially affected agencies, does not appear to have happened: There appears to have been no participation in the EA process by the agencies mentioned above, nor other efforts to assess these broader impacts. In addition, FWS acknowledges in the draft EA that PWP applied for a citing permit with the Wyoming Industrial Citing Counsel; however, there is no mention in the draft EA of that agency being integrated with this process.	See response to Record #42	Substantive
44	Northern Laramie Range Alliance	C. Integrity of the Process - It appears from the text of the EA that most of its key conclusions are based on work carried out by consultants to the developer. At the very least, and without in any way impugning the integrity of the consultants involved, we believe that experts in the employ of, or engaged by, FWS should have conducted these reviews if they are to be the basis for a federal action such as grant of an ETP. As noted previously, and as evident in Dr. Ramey's review of the EA and ECP, there can be widely differing views of the potential impact of PWP on avian populations and on the environment more generally. Under these circumstances, fully independent reviews are essential. Notably (and anecdotally), it can be difficult for stakeholders other than developers in these instances to engage experienced consultants, many of which rely on project developers as their principal sources of revenue. These consultants may be reluctant to reach conclusions contrary to the interest of these developers.	This comment is noted. The ECP is a required component of permit application and is the applicant's document. This document is reviewed by the Service and the Service makes its own conclusions based on the data provided in the ECP and also other sources of Service data (the 2016 PEIS, 2016 Status update, etc). The EA contains the relevant analysis conducted by the Service.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
45	Northern Laramie Range Alliance	III. Conclusion - As courts have noted, NEPA requires that federal agencies take a "hard look" at the environmental impacts of the actions they take. (Footnote 12 - NEPA's "hard look" requirement is designed "to ensure that the agency has adequately considered and disclosed the environmental impact of its actions and that its decision is not arbitrary or capricious." Minisink Residents for Env'tl. Pres. & Safety v. FERC, 762 F.3d 97, 111, 412 U.S. App. D.C. 97, 111, 2014.) In this instance, the potential for violation of BGEPA and MBTA is a key aspect of the PWP project, given its location and the documented impacts of the wind development in the immediate area. FWS appears prepared to make a FONSI, and issue an ETP, based on an overly narrow review based on questionable science and without taking into account the further wind development currently pending in the area. Under these circumstances and pending review of the existing eagle mortality FWS should defer issuance of an ETP. At a minimum, FWS should refrain from further action in this matter until it has completed a full EIS in collaboration with other affected federal and state agencies. In addition, it should engage independent agents to monitor the project closely for further violations of BGEPA (and MBTA), and vigorously prosecute the violation that already has occurred.	See responses to Records #16 and 41. The Service believes that it has fulfilled its responsibility under NEPA to analyze the potential impacts of the federal action contemplated by this EA, which incorporates by reference the 2016 PEIS (i.e., the Eagle Rule Revision).	Substantive
46	Northern Laramie Range Alliance	NLRA believes that wind energy development in Wyoming presents an economic opportunity and a potential contribution to mitigating the causes of global warming. But it must be properly sited to avoid predictable impacts on the state's matchless open-space environment and its extraordinary wildlife. Otherwise, we may be "destroy[ing] the town [in order] to save it." (Footnote 13 - Adapted from Peter Arnett, Associate Press, quoting an unnamed American officer outside Ben Tre, Vietnam, February 8, 1968.)	This comment is noted.	Non-Substantive
47	Wildlife Science International	Pioneer Wind Park I, LLC has proposed a wind turbine development in Converse County, Wyoming and prepared an eagle conservation plan (reviewed here), and bat and bird conservation plan as part of its permitting process. As the proposed wind turbine project is predicted to kill golden and bald eagles that are protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, an eagle conservation plan (ECP) is necessary for the project in order to obtain a permit to "take" (kill or injure) bald and golden eagles, and to be consistent with USFWS Eagle Conservation Plan Guidance. The following review identifies a number of substantive shortcomings of the Pioneer Wind Park's Environmental Assessment (EA) and ECP in the hope that these shortcomings can be remedied and eagle mortality further reduced.	This comment is noted. The project is not proposed, it has been operational since October 2016 as described in the EA.	Non-Substantive
48	Wildlife Science International	The fatality predictions for bald and golden eagles at PWP are based on an erroneous assumption that underestimates the predicted mortality from wind turbine operations at PWP and potentially elsewhere. These must be recalculated with new model input data for the following reasons.	This comment is noted. The Service's Collision Risk Model is based on scientifically peer-reviewed models that are designed to yield conservative estimates of predicted mortality. The EA also incorporates by reference the relevant analysis presented in the 2016 PEIS.	Non-Substantive
49	Wildlife Science International	As stated in the EA: "... the data collected for eagle use was in the form of eagle flight paths that were mapped instead of minutes of eagle use. We [the FWS] converted the eagle flight path data into eagle minutes and used those results in the collision risk model." It is critically important to point out that no science-based rationale or peer-reviewed scientific studies were cited in the ECP or EA to justify this conversion from one type of data to another, nor account for the error associated with such a conversion. The FWS analyst (P. Sweanor), who conducted the collision risk model calculation, simply assumed a uniform flight speed of 15 m s <sup>-1</sup> (15 meters per second = 33.6 miles per hour) to convert flight paths from the pre-construction surveys to flight minutes for both golden eagles and bald eagles. (See February 4, 2014 e-mail from Patricia Sweanor of the FWS to Kevin Kritz and Emily Bjerre of the FWS with the subject: Wasatch Pioneer Wind Park: WYFO analyses and model runs for use in evaluating ECP and attached spreadsheet). This assumption of applying a uniform flight speed of 15 m s <sup>-1</sup> to flight track data is erroneous and biologically unrealistic for the following reasons:	See response to Record #18.	Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
50	Wildlife Science International	1.1) Mapping a soaring bird's flight path from ground observations is notoriously difficult to judge, especially at a distance (Band et al. 2007), making the flight path data suspect to begin with.	See response to Record #18.	Substantive
51	Wildlife Science International	1.2) We could find no peer-reviewed scientific papers to support the conversion of flight path data into eagle minute data in the FWS's collision risk model (New et al. 2015).	See response to Record #18.	Substantive
52	Wildlife Science International	1.3) We could find no peer-reviewed scientific papers or data to support the claim that the average flight speeds for bald and golden eagles were a uniform 15 m s <sup>-1</sup> . The only basis to this value comes from citations of an unpublished 2007 report from the gray literature of Scotland that is not in the public domain. Briefly, the FWS published notice of their Updated Collision Risk Model Priors for Estimating Eagle Fatalities at Wind Energy Facilities in The Federal Register (FWS 2018). That notice cited a paper by Bay et al. (2016), which in turn cited as its source (for assuming golden eagle flight speed of 15 m s <sup>-1</sup> ) an unpublished report by Whitfield (2009), that cited as its source another unpublished report by Proven and Whitfield (2007) to Scottish Natural Heritage, a report that is not readily accessible in the public domain. Their recommended use of a flight speed of 15 m s <sup>-1</sup> for golden eagles in collision risk models was simply a recommendation based on three low-resolution studies (one observational, one unpublished observational, and one using surplus military radar), and their own median observational value of flight speed that assumed that the eagle was gliding, rather than soaring or hunting. Ultimately, their rationale for a value of 15 m s <sup>-1</sup> was nothing more than a recommendation based on their opinion that there was "good agreement" between their various sources. However, that recommendation ignored results from the published literature that revealed both more variable speeds (see Bruder and Boldt 2001, table 3) and lower average speeds for golden eagles (Broun and Goodwin 1943; Bruder and Boldt 2001). Therefore, tracing its origins, the assumed golden eagle flight speed of 15 m s <sup>-1</sup> appears to be nothing more than a recommendation from the unpublished gray literature and was not intended to apply to anything other than "gliding" golden eagles, and never to bald eagles. The golden eagle flight speed of 15 m s <sup>-1</sup> has gained its provenance through repeated, uncritical citations in the gray literature (Whitfield 2009), peer-reviewed literature (New et al. 2015; Bay et al. 2016), FWS regulatory documents (FWS 2018) and analyses (see February 4, 2014 e-mail from P. Sweanor, cited above). These authors apparently never questioned its basis.	See response to Record #18.	Substantive
53	Wildlife Science International	1.4) In their collision risk analysis, the FWS (P. Sweanor) erroneously used an assumed uniform flight speed of 15 m s <sup>-1</sup> that is faster than the 28-32 mph (12.5-14.3 m s <sup>-1</sup> ) reported by Kochert et al. (2002), one of the leading authorities on North American eagles. And, the 15 m s <sup>-1</sup> value is higher than the average daily flight speed of 13.36 m s <sup>-1</sup> (29.9 mph) for migrating golden eagles with high-resolution location data captured at 30-second intervals, as reported by Katzner et al. (2016).	See response to Record #18.	Substantive
54	Wildlife Science International	1.5) Published high-resolution GPS telemetry data shows that flight speed and altitude of golden eagles is highly variable and dependent upon wind speed, type of lift being utilized (orographic vs. thermal), and whether the eagles are climbing or sinking from thermal or orographic lift. The differences are significant and point to the fact that the flight speed used by the FWS in the collision risk model is well above the reported values (Lanzone et al. 2012; Katzner et al. 2016), with the exception of flight speed while sinking after an orographic lift which is typically only utilized by golden eagles during high wind situations. The reported values were: climbing during thermal lift (10.17 ± 0.74 m s <sup>-1</sup> ) vs. orographic lift (11.28 ± 0.78 m s <sup>-1</sup> ) and sinking following thermal lift (12.57 ± 1.08 m s <sup>-1</sup> ) vs. orographic lift (17.56 ± 1.35 m s <sup>-1</sup> ).	This comment is noted. We agree that flight speeds are highly variable and we relied on expert knowledge prior to these publications being available. Also see response to Record #18.	Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
55	Wildlife Science International	1.6) Similar high-resolution data is unavailable for bald eagles, however, radio- tagged migrating bald eagles in Colorado were reported to average 50 km hr <sup>-1</sup> (13.9 m s <sup>-1</sup> ) with ground speeds highly variable and ranging between 20 and 144 km/hr., depending upon whether the eagles were soaring, gliding, or diving (Harmata 2002). Laing et al. (2005), using ARGOS system tracking data reported average migration speeds of 45 km hr <sup>-1</sup> (12.5 m s <sup>-1</sup> ) for juvenile bald eagles migrating south and 27 km hr <sup>-1</sup> (7.5 m s <sup>-1</sup> ) speeds for juvenile bald eagles migrating north.	See response to Records #18 and #54	Substantive
56	Wildlife Science International	These examples, all from published studies, show that the FWS's (P. Sweanor) conversion of flight path data to "eagle minutes" for use in the collision risk model are erroneous. Virtually all reported flight speeds from the peer reviewed literature on golden and bald eagles were below the 15 m s <sup>-1</sup> flight speed assumed by the FWS. By assuming a higher flight speed than that measured in the wild, the FWS 's collision risk model will consistently underestimate the predicted mortality to both of these species from the Pioneer Wind Project because eagles are assumed to spend less time in the area, and less time translates to a lower risk of turbine mortality.	See response to Record #18.	Substantive
57	Wildlife Science International	The significance of this finding to the PWP EA is that the results of the collision risk model used to develop the ECP and used in the EA to obtain a FONSI are erroneous and underestimate eagle mortality. This puts bald and golden eagles at greater risk, because it is too late to modify the project, short of removing turbines or requiring additional compensatory mitigation and additional on-site carcass surveys.	This comment is noted. See response to Record #18. One eagle fatality report for the Project during the two-year monitoring period is consistent with, and currently lower than, our anticipated level of take discussed in Chapter 4 of the Draft EA.	Substantive
58	Wildlife Science International	The larger significance of this finding is that other collision risk model outputs, calculated for other wind projects using similar flight speed assumptions and methods, will also underestimate collision risks to bald and golden eagles.	This comment is noted. The modeling outputs for other projects are not within the scope of the Service's decision to approve or deny the application for an eagle incidental take permit for the current project. Additionally, it is likely that the majority of other projects that are now conducting pre-construction monitoring are using the recommended methods in the ECPG, which were not available at the time the surveys for this project commenced.	Non-Substantive
59	Wildlife Science International	2. The Eagle Conservation Plan (ECP) failed to acknowledge that the original SWCA wildlife surveys only documented the flight paths of eagles below 122 m (the maximum height of the smaller diameter turbines in the original turbine layout), and not the final turbine layout, which included five larger turbines.	See response to Record #19	Substantive
60	Wildlife Science International	The data on eagle and other raptor flight path surveys conducted by SWCA Environmental Consultants assumed that the project would utilize 82.5m-diameter rotors mounted on 80m-tall towers, and mapped flight paths were only recorded at heights between 38 m to 122 m AGL (the likely rotor-swept zone; RSZ). Flight paths above 122m were omitted (see below).	See response to Records #18 and #19.	Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
61	Wildlife Science International	The central problem here is that when surveys are based on smaller turbines, and then newer larger turbines are substituted, the surveys, calculations, and permitting must be done over again to account for increases in rotor diameter and height. Each increase in turbine diameter results in a dramatic increase in the area of the rotor-swept zone. For example, the 87m-diameter rotors result in an 11% increase in rotor-swept area for each turbine (or, an extra 600 square meters in each rotor-swept zone) and the 100m- diameter turbines result in a 47% increase in rotor swept area compared to the original turbines (with each being ~1.5 times the area of a football field). These larger turbines pose an even greater hazard to eagles (Loss et al. 2013), which was not taken into account in the ECP. That is because the original SWCA eagle flight observation data and the ECP calculations on estimated mortality were based on eagle flight patterns from the SWCA surveys that assumed smaller turbines of lower height. The installation of larger diameter and taller turbines would inevitably result in greater eagle mortality than currently estimated for the project (Loss et al. 2013). Page 17 of the SWCA Report describes the assumptions used in their surveys: "To establish occurrence of raptors flying within the rotor-swept zone (RSZ), SWCA assumed a single type of turbine would be used throughout the entire Study Area. Turbine dimensions used in the flight analysis are for a GE 1.6-MW xle wind turbine generator (WTG). This WTG has a nacelle height of 80.0 m and rotor diameter of 82.5 m, giving a RSZ of 38.75 to 121.25 m HAGL. SWCA extended the RSZ to 38 to 122 m for analysis purposes." Thus, the flight path data converted for use in the collision risk model were truncated at observations less than 122m, when the final project constructed 5 additional turbines with a hub plus blade heights of up to 145 meters to accommodate the larger, 100m-diameter rotors.	See response to Records #18 and #19.	Substantive
62	Wildlife Science International	3) The FWS previously pointed out that the preconstruction eagle surveys were very limited in winter, and that the FWS should subsequently require more intensive sampling in winter to account for this discrepancy. However, there is no mention of this increased sampling requirement in the EA. A February 4, 2014 email from Patricia Sweanor of the FWS to Kevin Kritz and Emily Bjerre of the FWS with the subject: Wasatch Pioneer Wind Park: WYFO analyses and model runs for use in evaluating ECP pointed out that the preconstruction eagle surveys were very limited in winter, and that the FWS should subsequently require more intensive sampling in winter to account for this discrepancy. However, there is no mention of this increased sampling requirement in the EA.	See response to Record #20.	Substantive
63	Wildlife Science International	4) Despite the demonstrated threat of larger turbines to eagles and other birds and bats, there is no mention of any cap on future turbine diameter or height in the ECP or EA, either from the standpoint of another project redesign, retrofit of existing turbines, or placement of additional turbines near the project area in the future. This is a serious shortcoming with the EA that could be appropriately resolved through development of a regional-scale programmatic EIS that analyzes current and projected cumulative take of eagles and other species.	See response to Record #21.	Substantive
64	Wildlife Science International	The industry trend towards the installation of larger turbines with more flexible blades, as seen in the evolving project plans, technical papers, and turbine manufacturer websites, underscores the need for capping rotor diameter and height on the proposed project to minimize risks to eagles and other species (Eveleth 2013; Loss et al. 2013). The increased risk to all species from increasing turbine hub height and increasing rotor size is summarized in a recent article published in the prestigious scientific journal, Annual Reviews in Ecology, Evolution, and Systematics (Loss et al. 2015): "The latter study showed that, as for communication towers, mortality rates at monopole turbines increase with height. However, Loss et al. (2013) and others have been unable to disentangle turbine height from other strongly correlated metrics of turbine size (e.g. rotor diameter). Nonetheless, increased mortality likely occurs because large turbines both reach into altitudes through which large numbers of birds fly and have rotors that affect a larger volume of airspace."	This comment is noted. The Service's decision for this Project is limited to the applicant's current project and turbine specifications which remain consistent with information provided in the EA. Please refer to previous responses regarding the Service's approach to addressing uncertainty in modeling results and the rationale for selecting the 99th credible interval (a more conservative estimate of eagle fatalities).	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
65	Wildlife Science International	The reason for caps on turbine height on all projects is that recent technological breakthroughs are leading to design of wind turbines that far exceed the scale of current designs, which are limited by the length of rotor blades that can be trucked to a site.	This comment is noted.	Non-Substantive
66	Wildlife Science International	More specifically, an alliance of six research institutions are designing the world's largest wind turbine, standing 500 meters tall (1,640 feet), and equipped with extreme- scale, segmented blades that are 200 meters long and known as the "Segmented Ultralight Morphing Rotor" ( <a href="https://sumrwind.com">https://sumrwind.com</a> ). Because of their segmented blades and tower-climbing cranes, such turbines are designed to be constructed on-site, and because of their down-wind design, can withstand higher, near-hurricane wind speeds. Rated at 50-megawatts, such wind turbines will be 10 times more powerful than current designs. The downside is that because they reach higher into the sky, they will be more lethal to eagles, as well as other migrating birds and bats.	This comment is noted.	Non-Substantive
67	Wildlife Science International	Current collision risk model is based upon the largest onshore wind turbine available at the time of model development, the Enercon E-126. This turbine has a hub height of 135 m, rotor diameter of 126 m and a total height of 198 m, generating up to 7.58- megawatts of power. However, the problem facing the FWS (and the Nation) is that the advent of extreme-scale turbines will render obsolete all previous collision risk models and any cumulative effects analyses on take of eagles, other birds, or bats developed from them. Therefore, in order to anticipate the cumulative effects of projected wind turbine development, a comprehensive programmatic EIS is needed.	This comment is noted. The Service fully acknowledges that its estimates of its model-based estimates of fatality rates include substantial uncertainty. The Service has adopted two key principles for addressing this uncertainty: (1) use of formal adaptive management; and (2) being risk-averse with respect to estimating impacts on eagles. Adaptive management is discussed in other comment responses. With regard to managing risk, the population size, sustainable take rate, and model-based eagle fatality estimates at wind projects are all based on scientifically peer-reviewed models that are designed to allow for the quantification of uncertainty, primarily by providing estimates in the form of probability distributions. This allows the Service to explicitly describe its risk tolerance (e.g., being protective of eagles or protective of interests that might take eagles) for each aspect of the permitting process. The Service has decided to manage the uncertainty at every level using values for decision-making that shift the risk in an 80:20 ratio towards being protective of eagles. Thus, the actual eagle population size in each EMU and the true sustainable take rate are both highly likely to be larger than the values used by the Service, so that when they are multiplied together to get the take limit, that value is even less likely to exceed the actual sustainable take limit for the EMU. Similarly, the eagle fatality estimates for individual wind projects are unlikely to underestimate the actual take rates, and as a result, authorized take over all wind projects is unlikely to exceed the EMU take limits. Improvements in the precision of all of these estimates through adaptive management should decrease uncertainty and thus shrink the magnitude of the difference between the median fatality rate and the permitted take limit over time.	Non-substantive
68	Wildlife Science International	5) Neither the ECP nor EA acknowledge that wind turbines represent an unnatural risk to eagles, because they have not evolved with them. Instead, the ECP places blame on eagles for their risky behavior. For example, the ECP states (underlined for emphasis), "In addition to abundance, the two main risk factors identified in the USFWS ECP guidance are 1) the interaction of topographic features, season, and wind currents that create conditions for high-risk flight behavior near turbines; and 2) behavior that distracts eagles and presumably makes them less vigilant (e.g., active foraging or inter- and intra-specific interactions such as territorial defense)."	This comment is noted. See response to Record #22	Non-Substantive
69	Wildlife Science International	The ECP's analysis is disingenuous and equivalent to the ideology and practice of victim-blaming. Rather than acknowledging vulnerabilities of eagles to turbines, the ECP focuses on placing blame on eagles for "high-risk flight behavior" and distractions that make them "less vigilant."	This comment is noted. The high risk factors discussed in the ECP are originally discussed in the Service's ECPG document. The intent is not to blame eagles for their natural instinctive behaviors of using updrafts created by topography and normal foraging and inter- or intra-specific interaction behaviors, but rather to identify that eagles normal behavior can put individuals at increased risk of take when located in the rotor swept zone of a wind energy facility.	Opinion

Record #	Commenter	Comment	Response/Resolution	Coding
70	Wildlife Science International	As pointed out in an interview with biologist Granger Hunt, who conducted extensive research on eagle and raptor mortalities at Altamont Pass, eagles have not evolved with wind turbines and are therefore highly vulnerable to them (Lallanilla 2013): "Though it can appear as though they're turning at a slow, almost relaxed pace, wind-turbine blades actually move very rapidly: The outer tips of some turbines' blades can reach speeds of 179 mph (288 kilometers per hour) and can easily slice off an eagle's wing.	This comment is noted. The Service's decision for this Project is limited to the applicant's current project and turbine specifications which remain consistent with information provided in the EA.	Non-Substantive
71	Wildlife Science International	And when hawks, falcons and eagles are flying, they're usually looking down at the ground for prey, not glancing up to watch for a knifelike blade whipping down on them from above. "There is nothing in the evolution of eagles that would come near to describing a wind turbine," Granger Hunt, a raptor specialist with the Peregrine Fund, told the AP. "There has never been an opportunity to adapt to that sort of threat."	This comment is noted.	Non-Substantive
72	Wildlife Science International	Similar conclusions were reached by Dahl et al. (2013) who utilized an experimental approach and quantified flight activity for white-tailed eagles (directional flight, social activity, and soaring), flight altitude (below, within, and above the rotor-swept zone), both within a wind turbine facility and in undeveloped control areas. They reported that white-tailed eagles did not show any clear avoidance responses to wind turbines and found no significant differences in flight activity within or outside the wind turbine area. Those results are consistent with the documented vulnerability of golden eagles to wind turbines (Loss et al. 2015). In short, wind turbines are recent human inventions, and eagles and other birds have not adapted to this new threat.	This comment is noted.	Non-Substantive
73	Wildlife Science International	6) The ECP fails to acknowledge how close is "too close" when it comes to the golden eagle's prey. The ECP notes that prairie dog colonies exist in the project area and are as close as 175m from the nearest turbine. Also, there is an active sage grouse lek (1 of 3) that is ¼- mile" (~400m) away (See Figure 13 for sage grouse leks and prairie dog colonies). However, the ECP assumes that eagles will avoid turbines, despite the fact that the turbines form a border-line on one side of the leks or colonies. Moreover, the ECP attempts to explain away the hazard to foraging eagles by claiming on page 36 (Section 4.1.1) that, "these turbines do not bisect direct flight paths from the nest site to areas of known concentrated prey within approximately 3 miles of nests." That is not what it looks like in Figure 14 of the ECP. There are flight paths in all directions and all over the project area, and there is no guarantee, as suggested in the ECP, that eagles are taking the same route every time from the nest to the "concentrated prey" in such a way that they will avoid the turbines. Additionally, there were 55 bald eagle observations (62 individuals) recorded during surveys, although golden eagles were the most commonly recorded species over the two years of baseline surveys (623 observations with 713 individuals; 26% of all raptors detected). In other words, there was an average of 5 golden eagles observed per person, per 12-hour day in the field. The documented uptick in golden eagles observed passing through the area during the fall months (Table 4a; Figure 9a) is likely the result of juvenile eagles and migrants passing through the area, thus the risk of turbines is not just to resident eagles but to migrants as well.	This comment is noted. The ECP is a required component of permit application and while the Service coordinated and advised during this process, the document is the applicant's document and the Service may agree or disagree with any statements and conclusions therein. The EA contains the relevant analysis for the Service's action and the permit will have specific permit conditions according to Service standards. The Service discussed various potential avoidance, minimization, and mitigation measures that are currently available (e.g., removing or relocating turbines, curtailment, etc.). At this time, the Service believes that the appropriate avoidance and minimization measures are implemented at this project, but will be reevaluated throughout the permit period and in consideration of any future permit applications. Also see response to Record #39.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
74	Wildlife Science International	The ECP admits that, "There is the potential for eagles to forage within the Project." However, the risk of eagles foraging among turbines is explained away by the ECP using unsupported assumptions regarding setback distances from sage grouse leks and prairie dog colonies, and the ECP's conclusions about deer use outside of winter are unsupported by data. The relevant excerpt from the ECP is provided below: "However, turbines have not been sited in close proximity to mapped prairie dog colonies (the closest turbine location to a mapped prairie dog colony is approx. 175m and the next closest colony is approx. 334m from the nearest turbine), nor have they been sited within 1/4 mile of identified sage grouse leks, and they have been sited greater than 1.97 miles from the nearest known eagle nest. This should help to reduce risk to foraging eagles. Sixteen of the originally proposed turbine locations were within an area designated as crucial mule deer winter range. However, given the snow conditions that are typically present within the Project during the winter, as well as the relatively low abundance of eagles observed within the Project area during the winter, it seems unlikely that this area will receive increased use by eagles due to the presence of mule deer carcasses. Removal of carcasses within the site (see Section 6.2 below) will further reduce risk to foraging eagles within the Project."	This comment is noted. Please see response to Record #41 and #73.	Non-Substantive
75	Wildlife Science International	7) The ECP relies on outdated and inadequate golden and bald eagle nesting surveys, and only minimal mortality data from the post-construction surveys conducted by SWCA (2017) are included in the EA. Furthermore, the SWCA post-construction survey report and data are not public, preventing an independent, third party analysis of its data and conclusions. The FWS, which must comply with the Information Quality Act, cannot rely on data or conclusions that are not public and therefore not reproducible. The ECP notes that golden eagle nests are located just 2 miles from the nearest turbine and were not surveyed for nesting activity because they were on private land. Additionally, helicopter surveys performed at a distance (such as the one-day survey by SWCA in May, 2011) are ineffective at detecting nesting activity unless nests are approached closely, because eagles do not flush from nests when approached by helicopters (Grubb et al. 2010). Apparently, no nesting surveys have been conducted since 2011, making both golden eagle and bald eagle nesting information in the ECP outdated.	This comment is noted. Section 7.3 of the ECP addresses post construction monitoring of existing nests and any new eagle nests documented within the vicinity of the Project. A permit condition will require post-construction monitoring, which includes that nest surveys be conducted to current standards. The post-construction data is also reviewed and considered annually by the Service and other Technical Advisory Committee (TAC) members as outlined in the Project Conservation Plan. Annual permit reports may be available to the public.	Non-Substantive
76	Wildlife Science International	8) How close is too close for wind turbines and nesting eagles? The 2-mile setback distance in the ECP is but a few wing flaps for an eagle. Similarly, a bald eagle nest was located just 6 miles from the nearest turbine. Again, this is a very close siting of a wind farm to nesting eagles, especially when the eagles make use of updrafts from ridges that have wind turbines, irrespective of project boundaries. In contrast, recent peer-reviewed research that compared data on movements of GPS tagged golden eagles within and outside of turbine areas (Watson et al. 2014), has reported that an 8-mile buffer between nests and turbines is more appropriate: "Managers seeking to define and protect comprehensive home ranges of golden eagles can apply 12.8-km (8-mile) nest buffers based on our estimate for 99% contours. Less-conservative strategies that attempt to either avoid or minimize impacts of habitat alterations within eagle ranges can apply 9.6-km (6-mile) nest buffers (e.g., 95% contours) and terrain modeling to identify key upper slopes, ridge tops, and areas of varied terrain 9.6–12.8 km (6–8 miles) from nests."	This comment is noted. Section 5.1.1 of the ECP discusses the calculation of eagle territories from eagle nesting data collected in the vicinity of the project and the resulting determination of the mean inter-nest distance (MIND) for both bald and golden eagles within the area. As noted in the EA, all turbines are located outside the 1/2 MIND buffer areas of 3.74 miles for golden eagles. The MIND for bald eagles was not able to be calculated due to the fact that only one bald eagle nest occurs within 10 miles of the project. The Service acknowledges there is risk to eagles, which is why we consider issuing a permit for eagle take (once avoidance and minimization measures have been applied to the degree practicable) D86 and require compensatory mitigation to offset the estimated take.	Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
77	Wildlife Science International	9) Fatally flawed fatality monitoring. Under Fatality Monitoring (page 67), the ECP states that, "The methods for estimating mortality at the Project will conform to peer reviewed standards in the U.S. As part of these mortality surveys, the searcher efficiency rate (i.e., the ability of a surveyor to locate a mortality) and removal rate (i.e., the average time that a carcass persists before a scavenger removes it) will be determined and used to adjust mortality estimates, as appropriate, for bats and small and large bird size classes." However, no details of methodology are offered or studies cited for "adjusting" mortality estimates, raising the question of how these surveys were conducted over the past 2 years and how they will be conducted in the future. It is unconscionable that the FWS would not require a detailed monitoring methodology for conducting carcass surveys at PWP, especially in light of one documented golden eagle mortality having occurred there in August, 2018.	See responses to Records #23 and 25.	Substantive
78	Wildlife Science International	10) There are four major problems with the proposed self-reporting of eagle mortalities under the ECP: 1) The protocol states that for the first year, "all of the turbines would be searched by project personnel" and that the number of turbines sampled may be subsequently reduced in the following year(s). However, reduced sampling effort beyond year one would only result in a further under-reporting of eagle mortalities because, according to the ECP, any eagles found outside of the designated sampling plots would not be reported as turbine-related mortalities. 2) There is no assurance that eagles electrocuted on power lines associated with the wind project will be counted toward the annual totals, as they occur outside of designated sampling plots. This is an oversight that needs to be corrected. 3) There is no assurance of an independent assessment of eagle mortalities (i.e. there is no provision for necropsies to be performed by qualified veterinarians and those records submitted with the annual mortality data). Instead, the project would self-report eagle mortality, apparently based on nothing more than a qualitative examination of carcasses by "permitted" staff. 4) The reliance on self-reporting of eagle mortalities by the project is an obvious conflict of interest, a situation equivalent to the "fox guarding the hen-house." Additionally, there is apparently no legal liability for staff members or project owners who fail to report or inaccurately report eagle mortalities within the project boundaries.	Third party monitoring is not a requirement under the 2009 regulations under which this permit will be issued. Sampling effort of the post-construction monitoring program was not reduced during the first 2 years of project operations. Eagle mortality resulting from electrocution by project related transmission lines is not anticipated as project infrastructure has been designed and constructed consistent with APLIC recommendations. All eagle remains are handled and processed according to current Service procedures and are included as a permit condition. Eagle remains may be necropsied or x-rayed on a case by case basis as determined by the Service.	Substantive
79	Wildlife Science International	11) Carcass search protocols that are not comprehensive will undercount the number of eagles and other species killed or injured by turbines. Carcass search protocols only search small plots around the turbine bases, measuring 160m x 160m (525' x 525'), thus the project does not report the carcasses of eagles (or their body parts) that fall, are flung, are wounded, or are carried off or consumed by scavengers outside of the designated plots. The method guarantees extremely low mortality statistics for the project by under-sampling for carcasses (ICF International 2012; Pagel et al. 2013; Wiegand 2013) and not correcting mortality estimates for carcasses found outside the search plots. If a broader area under, as well as downwind of, each turbine was sampled, and more frequently than once every two weeks, a more accurate and detailed assessment of injury and death to eagles and other species could be obtained.	See response to Record #23.	Substantive
80	Wildlife Science International	For example, a recent study by Pinger (2013) reported that the Altamont Pass Wind Resource Area included 134 wind turbine-related eagle fatalities between 1998 and 2011. However, an additional 82 eagle carcasses were excluded from that count because they included the golden eagles opportunistically found by maintenance staff, carcasses found outside of the 50m radius search area, carried off by scavengers between the monthly carcass surveys, or of crippled eagles that limped outside the search areas and died of their injuries later. Nowhere in the literature on golden eagle mortality are such high numbers of dead eagles found naturally in the wild.	This comment is noted. The applicant, in coordination with the Service has developed a detailed post construction monitoring protocol for assessing mortality from avian collisions during operation of the project. Sampling plots and frequency of monitoring efforts continue to be implemented according to accepted monitoring practices. See response to Records #23 and 25.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
81	Wildlife Science International	12) Additional self-reporting anomalies. On page 68, the ECP states that, "All monitoring reports, including all raw monitoring data upon which the reports are based, shall be made available to the appropriate agencies." However, public access to this data is never mentioned. Furthermore, the ECP states that, "All monitoring reports shall report annual fatalities for eagles on a per-turbine, per-megawatt, and per-megawatt hour basis." The latter two variables have no biological meaning, but their inclusion is a tacit admission of an economically motivated metric by which to justify the incidental killing of eagles.	This comment is noted. Monitoring data collected by the applicant has been made available to the appropriate agencies according to the commitments agreed to by the applicant through the project conservation plan formally adopted through the Wyoming Industrial Siting Division permitting process. Annual permit reports may be available to the public.	Non-Substantive
82	Wildlife Science International	Next, the ECP alludes to eagle nesting studies, however the nearby eagle nests could not be accessed during initial eagle surveys because they were on private land where access was "not available." Follow-up nesting surveys by helicopter or on foot were apparently not conducted. However, the ECP assumes that access will somehow become available even though it has not obtained access in the five years since the original surveys.	This comment is noted. See response to Record #75.	Non-Substantive
83	Wildlife Science International	13) The ECP does not plan to have eagle carcasses necropsied or x-rayed by an independent third party (i.e. a veterinarian). Instead, the ECP states that it will only provide the USFWS with its self-reported "field forms and photographs of all eagle fatalities...for their direction on collection and/or sending carcasses to the national eagle repository." It is a conflict of interest for the wind turbine operators to self-report the minimum data on eagle mortalities, with no checks of quality assurance and opportunity for independent, third-party review of the data.	This comment is noted. See response to Record #24. Third party monitoring is not a requirement under the 2009 regulations under which this permit will be issued.	Non-Substantive
84	Wildlife Science International	14) The ECP and EA are unclear as to how eagle mortality will be measured: by estimated eagle mortality or by actual eagle mortality? It is not stated in the ECP whether the permitted "take" of bald or golden eagles would be measured against the yardstick of estimated mortality or actual eagle deaths and injuries (number of carcasses or injured eagles found). We argue that "take" is more truthfully measured against whichever number is higher and include all eagle mortalities attributable to the project, including eagles found outside of the limited sampling plots and killed by electrocution or guy wires.	This comment is noted. See responses to Records #23 and #25.	Non-Substantive
85	Wildlife Science International	15) Any eagle mortality during the nesting season will result in the mortality of egg(s) or chick(s) and must be counted towards the total "take" of eagles. Any eagle mortality that occurs during the breeding season (Feb. 1 through July 31) must be at least doubled to account for the inevitable nest failure that will occur when one of a pair of adult eagles is killed. It takes two parents to breed, incubate eggs, brood, and feed eaglets. One parent cannot do it alone, and consequently, chicks are highly likely to die. Adult eagle mortality during breeding season equals failed reproduction for at least an entire year, if not longer, as golden and bald eagles mate for life and replacement of a mate may take a significant period of time.	This comment is noted. Section 3.2.2.1 and Section 3.3.2.1 of the Eagle Rule EIS discuss additional take of bald and golden eagles respectively from nest disturbance and loss of nesting territories. This EA is tiered to the Eagle Rule EIS and this information is incorporated by reference. Under the terms of an incidental take permit, all eagle mortality will be examined to understand potential causes of the take, aspects of the take that may result in loss of an active nest (through adult mortality), and to identify additional conservation measures or actions that can reduce the risk of further take occurring (e.g., the adaptive management plan). Permit conditions will require nest surveys be conducted according to Service standards.	Non-Substantive
86	Wildlife Science International	16) The methods and thresholds used to determine and mitigate the impact of the project on regional and local golden eagle population trends is not addressed. There is no discussion in the ECP about how golden eagle: 1) population trends will be determined in the Northern Rocky Mountains, 2) population trends will be determined locally, including quantification of demographic impacts, disturbance and displacement resulting from the proposed project (i.e. the extent to which the proposed project could be a "population sink"), and local nesting abandonment or mortality related to the project, 3) the cumulative effects of an increasing number of wind turbine projects on regional and local population trends over the long-term (Carrete et al. 2009; Katzner et al. 2016), and 4) the methods and thresholds by which permitted "take" of eagles will be adjusted up or down, depending upon results of the population estimates.	This comment is noted. The EA is explicit in referring the reader to the Service's 2016 Eagle Status Update, 2016 PEIS (to which the Final EA is tiered), and the final 2016 Eagle Rule as sources for this information. Those documents provide extensive detail on methods and approaches used to estimate bald eagle and golden eagle population size at the EMU and LAP scales, demographic rates, and sustainable take rates that are compatible with the preservation standard under the Eagle Act. Moreover, the final PEIS specifies that the Service will update and revise status and take-rate estimates (as warranted) for eagles every 6 years - the 2016 status update is used for analyses of effects of this permit, and so these data remain fresh and relevant under our regulations.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
87	Wildlife Science International	Without addressing the issues above, the impact of the proposed project to golden eagles cannot be accurately assessed, nor can it be assessed for other species that are long-lived and slow-reproducing and therefore, at high-risk for demographic decline from wind turbine mortalities (Beston et al. 2016).	This comment is noted. The Service respectfully disagrees with the conclusions in this comment. See responses herein, especially to Record #67 and # 86.	Non-Substantive
88	Wildlife Science International	While a population estimate for golden eagles was published in 2015 (WEST, Inc. 2015), the estimate for the Northern Rockies (Bird Conservation Region 10) had very broad confidence intervals, leading to uncertainty in actual trends. That estimate, based on aerial surveys, was 7,854 with a 90% confidence interval between 5,238 and 11,208 birds, a confidence interval nearly as large as the estimate itself. If a typical 95% confidence interval was applied to this same data, an even wider confidence interval would be found. This underscores the concern that a population decline can occur but may not be detectable until it is too late.	This comment is noted. See response to Record #85.	Substantive
89	Wildlife Science International	17) What happens if the permitted level of eagle "take" is exceeded? The ECP and EA makes no mention of what will happen in the event that eagle "take" is exceeded. Will the wind facility be shut down? If so, for how long? Or, will it continue to operate while the problem is studied and additional compensatory mitigation is negotiated and implemented? These are critical questions, especially if the facility turns out to be a population sink for golden eagles or other protected species. All that is offered are vague promises to study the problem and "consult" with the USFWS: "Conservation Measures (page 69) Assess eagle fatalities to determine if cause or contributing risk factors can be determined (e.g., nest proximity, weather, presence of prey/carrion) and if management response is warranted and feasible. Consult with USFWS about findings from assessment. Of primary concern is whether common elements between eagle fatalities exist that indicate a more concentrated assessment of the cause of mortality should be performed." "If observed take is less than mitigated take after a 5-year review period, the excess take will be credited to the Pioneer Wind Project. If take is higher, increased mitigation will be required. In either case, compensatory mitigation for the subsequent 5-year period would be re-evaluated based on actual results as compared with permitted levels of take."	This comment is noted. See response to Record #26.	Substantive
90	Wildlife Science International	18) Proposed mitigation measures to offset eagle mortality caused by wind turbines are paper offsets. The ECP does not describe the assumptions and uncertainty associated with the Resource Equivalency Analysis (REA). That analysis calculated that an equivalent of 13 power poles need to be retrofitted for every golden eagle killed by its wind turbines annually, or 65 poles for the first five years of operations. There is something obviously wrong with the project's REA because it implicitly assumes that one eagle dies per year from collision and electrocution for every 13 power poles that are not retrofitted with anti-perching devices, whereas its estimated wind turbine mortality is only one golden eagle per every 46 turbines annually. Given the number of power poles found in eagle habitat in the western USA (minimally, hundreds of thousands) versus the estimated number of golden eagles (23,835 + 7,179, WEST Inc. 2013), such a kill-ratio would have likely resulted in the extirpation of golden eagles long ago.	This comment is noted. See response to Record #27. The REA was conducted according to Appendix G of the ECPG.	Non-Substantive
91	Wildlife Science International	The problem here is that the ECP's authors erroneously refer to the mitigation as if it were applied to any power pole, when in fact the USFWS guidelines refer to this mitigation as being applied only to "lethal power poles." Such errors on basic aspects of required mitigation do not bode well for the successful implementation of the project's eagle conservation plan.	This comment is noted. Compensatory mitigation is discussed in Section 2.9 of the 2016 Eagle Rule PEIS. The compensatory mitigation plan will be implemented to offset the take of golden eagles in the EMU, consistent with the eagle preservation standard and additionality standards. Required retrofitting of power poles will be focused on poles that pose high-risk to eagles.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
92	Wildlife Science International	Similarly, the ECP states its potential to simply buy its way to the required mitigation for \$292,500, to be applied to utility company retrofit reimbursements, or to an unspecified "third-party mitigation account." This monetizes the value of golden eagles, at \$58,500 for each eagle that is predicted to die from the project's wind turbines (13 power pole retrofits at \$4,500 each).	This comment is noted. The Service has recently authorized the Bald Eagle And Golden Eagle Electrocutation Prevention In-lieu Fee (ILF) Program to offset eagle take with power pole retrofitting as mitigation specified in permits and other Service authorizations. The program provides technically advanced, standardized, and repeatable retrofitting measures for certain existing hazardous poles across USFWS Eagle Management Units and an effective and transparent accounting structure for collecting in-lieu fees, disbursing ILF Retrofitting Project funds, and reporting conservation outcomes. The applicant may choose to participate in the ILF program. See response to Record #91.	Non-Substantive
93	Wildlife Science International	The proposed power pole retrofits are essentially a questionable "feel-good" tactic that draws attention away from the simple fact that eagles will be killed by the project's turbines. It also raises the question of why the utility companies are not required to retrofit their own poles in the first place and are not penalized under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act for not doing so.	This comment is noted. See response to Record #91.	Non-Substantive
94	Wildlife Science International	The ECP does not explain how the ultimate effectiveness of power pole retrofits and other "compensatory mitigation" (see excerpt below) will be quantified. It does not provide any analysis on the number of eagles that have been killed locally, nor the location of power poles that have not been retrofitted. Without this basic data, the proposed compensatory mitigation is speculative, and likely, ineffective: "Other options for compensatory mitigation might include: a lead abatement program, a carcass removal program along highways, or funding mitigation banking efforts. However, a resource equivalency analysis would first need to be developed for any alternative compensatory mitigation options, to demonstrate that the amount of anticipated eagle 'take' from the Project would be fully offset by the alternative mitigation measures. USFWS would not accept any alternative compensatory mitigation options until a credible analysis was completed and accepted."	This comment is noted. The REA was conducted according to Appendix G of the ECPG. See response to Record #5 and #91.	Non-Substantive
95	Wildlife Science International	19) The effect of regional climatic fluctuations on prey species occurrence and its effects on eagle population abundance are not taken into account. Population cycles of many species (including Wyoming species) are known to be driven by regional climatic cycles (i.e. temperature and precipitation). Therefore, the results of the project's original species occurrence and population surveys will not represent the full range of variation in species occurrence or number (i.e. surveys or prey species conducted by SWCA represent a very limited "snapshot" in time). Clearly, more comprehensive, multi-year analyses are needed to estimate prey abundance and local eagle population trends to determine the degree to which these are influenced by natural cycles versus cumulative, project-level effects.	This comment is noted. Information relating to climate change, annual variation in eagle populations, and prey populations is discussed in the 2016 PEIS, which is incorporated by reference into the EA. Additionally, the Service's proposed monitoring program for eagles will provide data over time that should contribute to an understanding of the continuing effects of such variables on eagle populations, and that new information will be taken into account in future status reassessments schedule to occur every six years per the PEIS.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
96	Wildlife Science International	20) Additional "take" of eagles, beyond mortality, are not acknowledged by the ECP or the EA. The ECP describes the meaning of "take" under the Bald and Golden Eagle Protection Act (below), however, they fail to recognize and account for the fact that eagle mortality is not the only form of "take" that can occur due to the wind turbine project and that additional "take" is currently not proposed for permitting under the ECP. That includes: 1) wounding of eagles (i.e. from near-misses with turbine blades), 2) interfering with normal breeding (i.e. when one eagle of a mated pair dies, the nest will inevitably fail), and 3) feeding behavior (i.e. because of the close proximity of prairie dog colonies and sage grouse leks to turbines, roads, and human activity, natural feeding behavior will be disrupted). The specific language of the Bald and Golden Eagle Protection Act is provided below: "Under authority of the Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. 668-668d, bald eagles and golden eagles are afforded additional legal protection. BGEPA prohibits the take, sale, purchase, barter, offer of sale, purchase, or barter, transport, export or import, at any time or in any manner of any bald or golden eagle, alive or dead, or any part, nest, or egg thereof. 16 U.S.C. 668. BGEPA also defines take to include 'pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb,' 16U.S.C. 668c, and includes criminal and civil penalties for violating the statute. See 16 U.S.C. 668. The Service further defined the term 'disturb' as agitating or bothering an eagle to a degree that causes, or is likely to cause, injury, or either a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior."	This comment is noted. See response to Record #85. A permit condition requiring nest monitoring is intended to address disturbance take.	Non-Substantive
97	Wildlife Science International	21) Post-project turbine removal is not addressed in the ECP or the EA. The ECP states that "Project life is 30 years," yet there is no mention of whether the turbines and associated infrastructure will be: 1) idled and left standing (where they will pose an ongoing hazard to eagles and other species (i.e. either as a strike hazard or as a perch/nesting structure for predators on sage grouse), 2) allowed to continue operating, or 3) removed in whole or in part (i.e. turbine blades, turbine towers, and/or power lines.) As with other extractive industries, a bond or similar financial guarantee must be posed for the estimated cost of deconstruction, removal, and recycling/disposal of wind turbines so they do not continue to pose a hazard should the project economically fail or to ensure removal of turbines at the conclusion of its planned 30-year life span.	This comment is noted. Requirements regarding decommissioning of the project are not within the scope of the Service's federal decision to approve or deny the application for an eagle incidental take permit. The project has applied for and obtained the appropriate state and local permits to construct, operate, and decommission the project. Under the terms of the State of Wyoming Industrial Siting permit, the project operator has committed to provide an \$18,767,000 surety bond to ensure the proper decommissioning and reclamation of the project consistent with the recommendations made by the Wyoming Industrial Siting Division.	Non-Substantive
98	Michael Sarvey	I have been a resident of Wyoming for 70 years. I was born to parents who resided in Glenrock, Wyoming. I was raised there fishing and hunting in the Mormon and Boxelder Canyon country. I have a cabin @ 2500 Boxelder Rd. I am concerned that if an eagle take permit is issued for the 46 turbines and the second wind farm which is planned for 12-19, is crowded onto the ridgeline (stretching over twice as much territory) that a situation which eagles may presently be able to avoid (most of the time) will become 10x as bad because there will be too many unavoidable turbines on a ridge that eagles and other birds frequent for hunting and migration. I would recommend more study. I am against the current proposed programmatic eagle take permit.	This comment is noted. See response to Record #13.	Non-Substantive
99	Michael Sarvey	An agency or business that is independent from sPower should have been conducting the search for carcasses.	This comment is noted. Third party monitoring is not a requirement under the 2009 regulations under which this permit will be issued.	Non-Substantive
100	Michael Sarvey	The turbines and towers erected were (and are) taller and larger in diameter than those the eagle conservation plan was based upon. The plan is not based upon good science.	This comment is noted. See response to Record #19.	Non-Substantive

Record #	Commenter	Comment	Response/Resolution	Coding
101	Southern Ute Indian Tribe	I have reviewed your Consultation Request under section 106 of the National Historic Preservation Act regarding the Bald and Golden Eagle Protection Act project and off the following response as indicated by the box that is checked. Request for Additional Information: the Southern Ute Indian Tribe requests additional information on the planned site for its impact on properties of religious and cultural importance to the Tribe as follows: We would like to enter in NHPA Section 106. We would like to request info on any known impacts from wind farms to eagle and how that has impacted the population growth-migration patterns, species dwindling, etc.	The Service responded to this request for additional information in a letter dated November 15, 2018. We have not received any further requests for consultation from the Southern Ute Tribe. We understand and appreciate tribal concerns that permitted projects have the potential to directly and indirectly impact eagles and/or properties of religious and cultural importance. We continue to comply with federal and tribal laws, including the National Historic Preservation Act, through consultation with tribes to determine whether they have concerns about historic properties of religious and cultural significance in areas of federal undertakings, which may include eagle habitat of spiritual and cultural importance to a tribe. Information regarding eagle populations and the impacts of wind and other energy development is presented in Sections 3.2 and 3.3 of the 2016 Eagle Rule PEIS.	Substantive
102	Helen Wolff	Dear Mr. Smith, I'm 80 years old and do not use computers so I'm writing in response to Sally Sarvey's letter/Star-Trib-Casper. Who came up with this crazy idea to kill eagles?? I thought they were protected by LAW! The Bald Eagle is our national bird!! Only Indian people have a right to have an eagle feather. No way should eagles be killed. I must admit the Golden is a pain in the back for ranchers but to kill them for fun is awful. What nut came up with this idea? I'm a Wyoming native and raised on a ranch in Fremont County. My friends were also Indian, I'm Italian. This state of Wyo is a mess if people start killing eagles, for sure the Bald Eagle. I would like a response to my letter. I hope someone will put an end to this crazy idea. Thank you.	The comment is noted. Eagle incidental take permits under the Bald and Golden Eagle Protection Act and implementing regulations has undergone extensive public comment. This permit, if issued, would be issued under the 2009 Eagle Act regulations. See also response to Record #1.	Non-Substantive
103	Thomas Davis	My comments are based on nearly 30 years of nature photography, hiking, and fly fishing in Lower Deer Creek Canyon from the confluence of Duck Creek at Duck Creek Flats with Deer Creek and at the mouth of the canyon itself. Although not scientific, I have a deep love for the area and its flora and fauna. My many years of observation have given me the opportunity to comment on the Pioneer Park EA.	This comment is noted.	Non-Substantive
104	Thomas Davis	Further, from travels in and conversations with residents of the Boxelder Creek drainage, one can conclude that the Deer Creek and Boxelder drainages form a vast interconnected ecosystem. Both bald and golden eagles are an integral part of this system. Boxelder drainage residents have told me of numerous sightings of both species of eagles.	This comment is noted. The Service agrees that the Boxelder and Deer Creek drainages do exhibit various levels of eagle use.	Non-Substantive
105	Thomas Davis	From personal observations and those of my son, Brendan Springer-Davis, and two friends, Larry Jones and Gene Smith, I can attest to numerous sightings of golden eagles with fewer sightings of bald eagles in the Deer Creek drainage. From a slope above Deer Creek, I watched as two golden eagles locked talons and tumbled toward the ground, releasing to repeat the feat twice more.	This comment is noted. This information that golden eagle sightings are more frequent than bald eagle sightings in the vicinity of the project supports the information collected and reported by the applicant in the project Eagle Conservation Plan.	Non-Substantive
106	Thomas Davis	The whole point of the EA is that an eagle has already been killed. That is if the reporting was accurate. If a take permit is issued, one bald eagle and five golden eagles will be killed in a five-year period. These projections are based on modeling. What if the modeling is inaccurate?	This comment is noted. The EA analyzes the proposed action (issuance of an eagle take permit) under an established permitting mechanism. The incidental take of one golden eagle occurred while the Service was processing the application, therefore this process was not initiated by the fact that an eagle has been killed at the project. The Service's Collision Risk Model is based on scientifically peer-reviewed models that are designed to yield conservative estimates of predicted mortality. Please refer to previous responses regarding the Service's approach to addressing uncertainty in modeling results and the rationale for selecting the 99th credible interval (a more conservative estimate of eagle fatalities). Thus, the predicted take of eagles may be less than actual take. The fact that one golden eagle has been taken during more than two years of project operations supports our modeling and the conservative estimates we are using.	Non-Substantive

<b>Record #</b>	<b>Commenter</b>	<b>Comment</b>	<b>Response/Resolution</b>	<b>Coding</b>
107	Thomas Davis	Given eagles' slow reproduction rate, which was not mentioned in the EA, it appears the populations may be endangered, if a take permit is issued.	This comment is noted. Information regarding the life history of bald and golden eagles and the process of setting sustainable take rates of both species is presented in the Bald and Golden Eagles: Population demographics and estimation of sustainable take in the United States, 2016 update (referenced a USFWS 2016b in the EA) and the 2016 Eagle Rule Final Environmental Impact Statement to which this EA is tiered.	Non-Substantive
108	Thomas Davis	I am adamantly opposed to FWS' issuing an eagle take permit for the Pioneer Park Project.	This comment is noted.	Non-Substantive
109	WGFD	The Eagle Take Permit (ETP) analysis clearly indicates post-construction monitoring is key to assessing eagle take associated with this wind facility. The Department has recommended a minimum of three years of post-construction monitoring for avian and bat species. We will continue to work with the operator and the U.S. Fish and Wildlife Service on an annual basis to review wildlife data and discuss adaptive management or mitigation for this facility, as needed.	This comment is noted. The Service will also continue to work with the operator to assess eagle take at the site and apply adaptive management to ensure the conservation of eagle populations according to the standard set forth under the Bald and Golden Eagle Protection Act. Post-construction monitoring will be required for all years of the permit.	Substantive
110	WGFD	Additionally, the EA indicates the operator has committed for retrofitting 65 power poles as a mitigation measure for eagle take over the next five years. We recommend the power poles that are retrofitted are located within the Pioneer Wind Park eagle impact area, and that a timeline is established for this mitigation work to be completed.	This comment is noted. The compensatory mitigation plan will be implemented to offset the take of golden eagles in the EMU, consistent with the eagle preservation standard and additionality standards.	Substantive