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ELMORE COUNTY LAND USE AND BUILDING DEPARTMENT

Cat Creek Energy Wildlife Management Plan Review

PROJECT NUMBER:
123934

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POWER ENGINEERS

Cat Creek Energy Wildlife Management Plan Review

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INTRODUCTION

As requested by Elmore County Planning & Zoning Department, POWER Engineers (POWER) conducted an independent review of the proposed Cat Creek Energy Generation Facility Wildlife Mitigation Plan (CCEGF-WMP), dated December 5, 2015 (hereafter "WMP" or "Plan"). As described in the WMP the proposed CCEGF project is comprised of five major components associated with five separate county use permit applications, including:

1) Approximately eight miles of new dual circuit 230 kV transmission lines;
2) Pumped-storage hydroelectric facility, which would use the existing Anderson Ranch Reservoir, a Bureau of Reclamation (BOR) impoundment on the South Fork of the Boise River, where there would be a "powerhouse" containing two 200 MW turbines, which would connect to a new constructed "upper" reservoir of 914 surface acres by four 16-ft diameter penstocks. Approximately 3.5 miles of new road would also be needed for this component.
3) 480 acre photovoltaic solar array along the path of the transmission lines;
4) 39 wind turbines on 3,160 acres (p. 13) or 2,700 acres (p. 52) in three development areas, located southeast of the Upper Reservoir area. Each turbine would produce 2.85 MW and be 380 feet tall; and
5) New transmission substation on approximately 20 acres.

A variety of ancillary project elements are associated with these main components. The proposed CCEGF project is predominantly on private ranch lands in Elmore County. According to the WMP, the powerhouse, 800 feet of transmission line, 800 feet of penstocks, and 1,500 feet of new road would be located on lands managed by BOR and the U.S. Forest Service (USFS).

POWER's review consisted of evaluating the WMP's habitat assessments, description of wildlife species that may occur in and around the project area, impact assessment, and proposed mitigation measures.

TECHNICAL COMMENTS ON THE WMP

Overall Comments

The WMP follows the outline provided in the County ordinance, but needs additional depth and detail in all areas to fully assess the potential impacts to wildlife and evaluate proposed mitigation measures. A logical sequence running from the project description, to the existing wildlife and habitat conditions within the area potentially affected by the site (both directly and indirectly), to substantiated arguments for or against all reasonable potential wildlife impacts, and finally to measures to address impacts and conserve wildlife resources at the site needs to be presented to the reader. A wildlife mitigation plan such as this should first present a clear and consolidated description of the project that is not necessarily comprehensive, but focuses on all aspects of the project's construction and operations that may be potential sources of direct and indirect impacts to wildlife and wildlife habitats. Where project activities would occur is as important as what activities would occur. Next a thorough presentation of existing conditions for wildlife and vegetation communities within the area potentially affected both directly and indirectly by the project should be provided so the reader can begin to see the logical connections between what is on the ground, the project activities, and the resulting impacts to wildlife. Elmore County understands that developing a complex project such as this is a long process and a suite of biological resources studies would occur going forward; nevertheless initial efforts to fill essential gaps in knowledge and due diligence in gathering the most up-to-date available information should be demonstrated. Third, the document should review the range of potential direct and indirect, as well as, cumulative impacts caused by the

project. These should be grounded in our current understanding of the types of impacts associated with the project components (e.g. transmission and sub-transmission lines, pipelines, photovoltaic solar generation facilities, wind farms) and their potential to affect wildlife within the project area. For impacts that the applicant feels are not significant, these can be discussed and dismissed. Supporting discussion with relevant literature would help the County evaluate the Applicant's conclusions. Discussion should detail specific avoidance and minimization measures, institutional controls, BMPs and the like applied to remove or diminish impacts to the extent possible. Once these measures are applied, remaining direct and indirect impacts (sometimes called residual impacts) can be more precisely framed and effective mitigation measures developed. When presented, mitigation measures should be specific, tied to a defined goal or outcome, measureable and have means of accountability.

Some general concerns with the WMP include:

- Rather than a single concise narrative, details of the project description are scattered throughout the document
- Mitigation goals and objectives are not presented. Without these there is no means to assess the effectiveness of mitigation measures
- The WMP describes some of the wildlife resources which may be affected by the project, but does not adequately describe vegetation communities or present sufficient information on all wildlife and plant species including sensitive plants.
- No methods are presented
- Information on the existing conditions is limited, sometimes outdated, and not referenced to data sources
- Direct impacts to wildlife resource resulting from actions associated with all project components are inadequately presented
- Indirect impacts are not presented
- Cumulative impacts are not addressed
- Mitigation measures are not specific, measurable and do not address all potential impacts. Without an appropriate analysis of affected resources and impacts, the WMP is incapable of substantiating how the mitigation measures will adequately avoid, reduce, or minimize the various impacts, and how the measures will be enforced or monitored for success
- An adaptive management strategy is not presented
- Only five wildlife-related references are provided and four of these are related to sage grouse.
- The Applicant's degree of coordination with IDFG is not clear.

Specific Comments

1. **Comments relevant to the entire Plan**

    - The project description is incomplete. Important details of the project are scattered throughout the entire plan and some project elements are only lightly addressed. The project does not appear to be sufficiently developed to prepare this WMP.
    - Language used for mitigation measures should reflect the Applicant's commitment to conserving and protecting wildlife resources in the project area. Avoid equivocation. Phrases such as "may include/would/if warranted/will consider" are frequently used in conjunction with mitigation discussions.
    - It would be helpful to have a clear list of county, state, and federal requirements, including documentation of personal communication with these agencies, and how this WMP addresses each of these.

- The maps provided are difficult to interpret and incompletely labeled in some cases. Some maps and tables appeared to have been prepared for other documents as is reflected in inconsistent numbering. All the maps need to be redone so that they are created at the appropriate extent, with legible text and a legend, and consistent symbology throughout the WMP. This applies to Figure1 (p. 22), Figure 2 (p. 24), Figure 4 (p. 26), Figure 5 (p. 27), Figure 6 (p. 30), Figure 7 (p. 31), and others. It appears that Figure 3 in the text refers to Figure 1.
- The Idaho Conservation Wildlife Strategy (2005) is cited frequently in the WMP, but is out-of-date. This document is being supplanted by the 2016 Idaho State Wildlife Action Plan. In late 2015, a draft version of this plan was provided to wildlife biologists throughout the state for review and comment. The WMP should at least recognize that information in the 2016 Idaho State Wildlife Action Plan (which will be completed soon) will be updated in the document upon its completion.
- Some tables and figures are missing (as numbered) and need to be organized clearly.
- The WMP appears heavily weighted towards describing and assessing impacts from the pumped-storage hydroelectric facility, but does not adequately describe and assess impacts from the other four major project components, which would likely present the most significant impacts to wildlife species, wildlife habitats, and plants.
- There is a good deal of well-prepared fisheries information and analysis that is beyond the scope of this WMP and might be best captured in a discrete fisheries management/ mitigation plan. This could be tiered to this plan.
- There is a large amount of material related to resources in the human environment. This material should be removed unless relevant to wildlife.

2. Table of Contents

- This is more of an outline. Some of the headings don't match the County headings; indents are misplaced for 3.1, 3.2, 5.1, and 5.2; references section is missing; list of tables and figures are missing. No page numbers are provided.

3. Chapter 1 – Introduction

- General description needs a table summarizing acres disturbed for each project component, a clearly presented and current project overview map, and diagram of project components. Information on acres of disturbance are scattered over 53 pages of the document. Some project details are not presented until very late in the document (e.g. fencing p. 72) or are incorporated into non-wildlife relevant sections (e.g. 230 kV transmission structure types in visual impacts section p. 68). Acres are not compiled in a single table or even a single section. This makes it difficult for a reader to gain an understanding of how the project's construction will affect the environment.
- (p. 6) Turbine height of 380 feet is provided. Other values are presented elsewhere. This is possible a simple typographical error but should be corrected. If a range of turbine sizes is possible (depending on technology, prices, schedule, and availability at the time of construction) a reasonable range should be presented and analyzed.
- Table 1 (pp. 6-8), Land Ownership Summary, doesn't provide any information on land ownership; just raw data for township range section are provided. Need a clearly organized table so reader can discern acres for each component by land ownership.

- (p. 9) Information on Upper Reservoir dam height, acres, and construction should be presented here.
- (p. 10) Additional power/ pump house details would be helpful here. How would the structure be sited accounting for seasonally fluctuating water levels in the reservoir?
- (p. 10) Very limited information on the electrical line from the powerhouse to the substation is presented. Voltage and construction information are absent. We surmise this line (34kV?) would run from the southern shoreline of Anderson Ranch Reservoir, ascend to the canyon rim through open forest habitat and then cross mixed grass land and shrub steppe to the substation. The line has the potential to cause a number of impacts to wildlife which would need to be addressed.
- (p. 13) For the wind energy generation plant, 16-foot wide access roads do not seem realistic. To support large equipment access for construction and maintenance, these roads are often twice as wide. On hilly terrain (like this project) greater widths and more turns are often estimated. Information on staging and storage areas is not presented or accounted in acres of ground disturbance.
- "Mitigation measures" section seems misplaced (p. 16)
- Construction disturbance buffers and other temporary disturbance areas are not clearly presented and quantified.
- The Plan states that "all applicant-owned private lands will be preserved as open for wildlife use and facilities located and constructed to maintain the function of this land as a migration corridor"(p. 17), but there are no specific details such as a conservation easement that would demonstrate that the Applicant would follow through on this measure.
- Under 1.1 Mitigation Goals and Objectives (pp. 19-20) presents few goals or objects. A goal is a conservation endpoint or outcome. Mitigation performance can be evaluated against these. A number of mitigation "features" are listed.
- The Plan states that "all areas disturbed by construction (would be re-vegetated) using plant species beneficial to wildlife" (p. 19). Agencies typically have local, habitat-specific seed/planting lists that are preferably native and from local sources, intended to stabilize soils, prevent erosion and weed invasions, maintain visual integrity with surrounding vegetation, and are beneficial to pollinators and native species. It would not be beneficial to rehabilitating temporary disturbance areas with plant species beneficial to wildlife alone, particularly if the list was tailored to a single wildlife species such as the greater sage-grouse. BOR and/or USFS may have specific seed/planting lists that are required for development projects on lands managed by these agencies.
- The Plan states that "the shoreline of the Upper Reservoir (would be planted) with wetland/riparian plant species to develop new wetland habitat and create and/or augment wetland habitat elsewhere to assure no net loss of habitat" (p. 19). However, obligate wetland plant species as defined by the U.S. Army Corps of Engineers (ACOE 2015) are unlikely to persist with the weekly and daily hydrologic fluctuations occurring at the Upper Reservoir under the described water cycling scheme (p. 19). An argument to the contrary would need to be substantiated to support a "no net loss of habitat" determination.
- For 1.3 Qualifications of WMP Authors (p. 22-23), the Plan lists the preparers as Nicholas Josten, a geophysicist, and Ted Sorenson, a hydrological engineer. As their qualifications are presented, neither would meet the County ordinance requirements of a Qualified Wildlife Biologist (QWB):

  An individual or professional firm where the individual or principal(s) of the professional firm have a minimum of five years experience in the development of wildlife and habitat mitigation

plans or the monitoring of such plans or have supervised or performed other wildlife and habitat monitoring or mitigation implementing actions, and hold a graduate level degree in a biology field.

According to this definition, the WMP was not prepared by a QWB as defined. In general a wildlife biologist sufficiently trained and experienced to prepare a plan such as this one would have an academic background which would include extensive coursework in zoology, ecology, and wildlife management, and additionally have several years of experience planning and conducting field research on wildlife, analyzing data, and making management recommendations for wildlife. For a large and complex project such as this, additional experience analyzing impacts to wildlife from renewable energy projects, pipelines, and transmission lines would be extremely useful. Under 1.1.1 (p. 23), the Plan lists Dr. Roger Rosentreter, a retired BLM Idaho State Office Botanist, and Dr. Bradley Shepard, a senior aquatic scientist, as biological consultants who reviewed the plan, even though on p. 83 of the Plan, Dr. Rosentreter and Dr. Shepard are listed as the individuals who prepared and reviewed the WMP (along with their signatures). This should be clarified.

Dr. Rosentreter is a highly respected botanist and plant ecologist. His work is well known and well regarded by both wildlife and plant ecologists throughout the state of Idaho. However, these credentials do not make him a QWB according to the County ordinance definition. In addition, Dr. Shepard's experience as an aquatic scientist and fisheries biologist also does not make him a QWB according to the County ordinance definition. Both of these individuals are experienced ecologists and are certainly sufficiently experienced to provide review and comment on a well-prepared plan. It appears that no one qualified to prepare the wildlife portions of this wildlife management plan was involved in its preparation.

4. Chapter 2 – Methods

No methods are presented. The WMP only states that "the methods used in the preparation of this WMP are standard in hydrological engineering and environmental impact assessment." This is inadequate for a wildlife mitigation plan. The methods section should describe the methods employed to:

- Establish a sufficient understanding of existing wildlife and wildlife habitat conditions within the area potentially affect by the project,
- Evaluate potential impacts from the project on these resources, and
- Develop actionable mitigation measures to address impacts.

Information in the methods section should include documentation of methods used to map and classify vegetative communities and condition; description of how presence/absence was determined for wildlife and sensitive plant species; agency correspondence and data provided; and documentation of site visit(s) conducted by CCE's wildlife expert. A site visit by an Elmore County biologist and IDFG is expected by Elmore County and should be documented in the methods section.

This WMP needs to follow methods typically used in wildlife mitigation planning and not hydrological engineering. There needs to be a list of surveys/site visits conducted specifically for this project, including dates, types of surveys conducted and survey methods, qualifications of surveyors, and how each survey ties into mitigation planning as well as any

agency requirements and species lists (i.e. IDFG, BOR and USFS). Several special status species can be difficult to detect and may require species-specific surveys by qualified individuals at the appropriate time of year.

5. Chapter 3 – General Site Description

- A description of the regional landscape setting and the relationship of the project area to surrounding features would be useful here.
- There is a description of historic land use for Elmore County, but it needs to also describe historic land use at the project site.
- A map of neighboring land use and ownership is not included in the WMP.
- The photograph of the Upper Reservoir (p. 28) appears to be excellent wildlife habitat which would be lost to the reservoir; habitat and impact assessment as described in the text do not match this photograph.
- There is a paragraph on Elmore County's population growth from 1960-2010, but this does not seem to be relevant to the Plan and should be removed.

6. Chapter 4 – Site Resources

- This section is incomplete and needs to reference the Elmore County Soil Survey and USDA, Soil Conservation Service. There needs to be a table listing all vegetation types, their condition/quality, acreage of vegetation types by condition, and their patchiness/functionality in the project area. Currently there is a single insufficient paragraph with outdated, generalized information for the Owyhee Uplands ecological section (p. 29). A broad narrative of the vegetation and habitat setting of the project area and it relationship to the surrounding landscape and tied to specific discussion of the habitats detailed in the subsections following would seem appropriate here. See associated comments in bullets below.
- There is a description in the first paragraph (p. 29) of "...the project footprint is evergreen forest." Evergreen is not a term typically used by botanists or plant ecologists in this region, and is more commonly used for descriptions in the eastern United States. A more appropriate description is needed.
- 4.0.1 Wetlands as Defined by ACOE (p. 30): Need to incorporate wetland data as presented by USFWS in iPAC (USFWS 2016).
- 4.0.1 Wetlands as Defined by ACOE (p. 30): Recommend a table and text listing and describing all wetlands, including non-jurisdictional wetlands that provide wildlife habitat. This wetlands section is incomplete and insufficient for meeting Elmore County requirements.
- 4.0.1 Wetlands as Defined by ACOE (p. 30): Need to add information on whether a preliminary wetlands determination or legal jurisdictional determination was mapped and submitted to ACOE.
- 4.0.2 All the Others (p. 32): The two habitats listed here (mountain big sagebrush/bluebunch wheatgrass and low sagebrush/bluebunch wheatgrass) do use the Elmore County Soil Survey data. However, there should be more vegetation types than this, including mixed conifer forest, riparian/wetlands and anything else supported by site visits, iPAC/National Wetland Inventory data, LANDFIRE data, and vegetation data that the USFWS or BOR may have. Figure 6, which appears to be a map based on outdated

GAP data, indicates there may be introduced grassland, forest types (symbology is unclear which types), shrub/scrub, and possibly other vegetation types.

- 4.0.3 Noxious Weeds (p. 32): Need more than the "top 8 weed species" for Elmore County. There are at least six other noxious weed species known to Elmore County that have equal priority.
- 4.0.3 Noxious Weeds (p. 32): Elmore County requires noxious weed locations/extent being described, but this was not done. It may be sufficient to have a complete list of noxious weeds with the potential of occurring in the project area, and to say pre-construction noxious weed surveys would be conducted as described in the Noxious Weed Management Plan.
- 4.0.3 Noxious Weeds (p. 33): "Threatened and Endangered Plants" and "Critical Plant Habitat" headings seem associated with noxious weeds and may be better moved to Section 4.1.6.
- 4.1 Wildlife (p. 33): This section should provide more information and substantiate with references to site visits or surveys, agency correspondences, agency reports, literature etc. The information is insufficiently developed for this WMP. Any available spatial data should be presented. This section is where all information on existing conditions for wildlife resources is presented. It forms the basis for assessing the significance of potential impacts to wildlife.
- 4.1 Wildlife, under "Wildlife Inventory" (p. 33): This section is probably one of the most important sections for describing wildlife communities and their ecology at the project are; yet, the entire discussion (except for one sentence) is copied directly from page 99 of the Boise National Forest Land and Resource Management Plan, save some punctuation changes and dropping the term "Region 4" and replacing "management area" with "project area". The text in the Forest Plan is intended to characterize the entire Lower South Fork Boise River Management Area, not the project area. The text in the WMP is not sufficient to characterize the project area.
- 4.1 Wildlife (p. 33): "Wildlife Habitat" and "Critical Wildlife Habitat" do not belong here, move to Section 4.0 Vegetation/Habitat Types and Section 4.1.6, respectively. The "Wildlife Habitat" section describes "narrow strips of riparian shrub and woodland" which was not mentioned or assessed in Section 4.0 Vegetation/Habitat Types.
- 4.1.1 to 4.1.3 (pp. 33-34): The Plan inserts information from an IDFG proposal, but this proposal cannot substitute for analysis. The WMP states that the Applicant is working with IDFG; however, IDFG reports that they are not working with the Applicant (IDFG 2016b).
- 4.1.1 Game and Travel Corridors (p. 33): Need a big game winter range map, and any other pertinent maps. IDFG houses these data.
- 4.1.1 Game and Travel Corridors (p. 33): This section is insufficient for describing and locating the major migration corridor the project would be cited on.
- The section of 4.1.2 Raptors (as listed in the Table of Contents) is missing from the text (p.34), as it appears to have been lumped with 4.1.3 Migratory Birds. There are some major issues with each of these topics which are not sufficiently described in the text. These need to be separate sections, appropriately described, and with better citation support. There is a USFWS iPAC list of migratory birds and raptors that should have been included in these sections, with about 20 species.
- 4.1.3.1 Bats (p.34): Bats should not be categorized under the migratory bird sub section. Should have heading name of "4.1.3.1 Other Terrestrial Wildlife".
- 4.1.3.1 Bats (p. 34): It is insufficient to say that "little information is available…due to a lack of survey effort." Need to research the available information better and state what information is required or recommended for meeting Plan objectives and goals. Idaho has

an active community of bat researchers and experts who may be able to provide expertise. Idaho, through a multi-agency collaborative effort, is participating in the North American Bat Monitoring Initiative (NABat).

- 4.1.4 Other Terrestrial Wildlife (p. 35): Text refers to Table 7 as SGCN known or predicted to occur in the project area. This should be Table 8. Table 7 is a list of federally listed aquatic species not. No information is presented on wildlife communities or common species characteristic of habitats within the project area.
- 4.1.5 Aquatic Wildlife (p.35): Under the "Critical Fish Habitat" header, there needs to be detailed elaboration on the project's proximity to bull trout critical habitat, and how bull trout critical habitat could be affected by the project.
- 4.1.5 Fish Populations (p.35): None of the scientific names are formatted correctly. Other than fish no other aquatic animal species are discussed.
- 4.1.6 Threatened, Endangered, and Candidate Species (Plant and Animal) (p. 36): Need to update sage-grouse information so it's current with the October 2, 2015 USFWS Not Warranted decision. Based on this decision, all information on sage-grouse should be moved to Section 4.1.7 Special Status Species. Do this for Chapters 5.0, 6.0, and 7.0 also.
- 4.1.6 Threatened, Endangered, and Candidate Species (Plant and Animal) (p. 37, 2nd paragraph): Text here on the "area proposed for the new Upper Reservoir have been altered by past agricultural practices and contain only fragments areas of sagebrush cover" does not correspond with the photograph shown on p.28 of this area.
- 4.1.6 Threatened, Endangered, and Candidate Species (Plant and Animal) (p. 37): Table 7 probably does not need to include the Bliss Rapids snail as iPAC does not include this species for the project area—verify boundary.
- 4.1.6 Threatened, Endangered, and Candidate Species (Plant and Animal) (p. 37): Lengthy text on fisheries/snails does not belong in the section, and is better suited for Section 4.1.5 and/or a Fisheries Mitigation Plan.
- 4.1.7 Special Status Species (p. 39): Text mentions "a full list of SGCN species…in Appendix A." This seems unnecessary, but there is no Appendix A —please correct this.
- 4.1.7 Special Status Species (pp. 39-40): Tables 8 and 9should cross list all wildlife/aquatic species that are Forest Sensitive and/or are protected by BOR and have potential to occur in project area, and/or are on USFWS's iPAC list; and not just SGCNs. T&E species (i.e. bull trout) should not be included here since they should already be included Section 4.1.6.
- Table 8 (p. 39-40): Table is outdated. Many species habitat preferences seem odd; for example Canada lynx preferring open water.
- 4.1.7 Special Status Species: Need a section and table describing and listing sensitive plant species, which at a minimum should include all plant species that are Forest Sensitive and/or are protected by BOR and have potential to occur in project area; and all rare plants associated with wetlands/riparian areas on the Idaho Native Plant Society (INPS) Rare Plant List (INPS 2015) and have potential to occur in any areas requiring a wetland permit (CWA 401/404). The INPS Rare Plant List becomes the list of plants tracked by the State Heritage Program (IDFG's Idaho Fish and Wildlife Information System (IDFG 2016a), the primary database for spatial information and population and habitat conditions for rare plants.
- 4.2 Water Resources (p. 41-44): Having a water resources section is not relevant to this Plan and needs to be removed.
- 4.3 Historic and Cultural Resources (p. 45): A Historic and Cultural Resources section is not relevant to this Plan and needs to be removed.
- 4.4 Recreational Resources (p. 46-47): A Recreational Resources section is not relevant to this Plan and needs to be removed. However, some of this information, particularly the

map (Figure 11) may be relevant to Section 3.2 Neighboring Land Use, and could be incorporated there.

- 4.5 Scenic and Aesthetic Resources (p. 48): A Scenic and Aesthetic Resources section is not relevant to this Plan and needs to be removed. However, some of this information may be relevant to Section 3.2 Neighboring Land Use and/or 4.0 Vegetation/Habitat Types, and could be incorporated there.
- 4.6 Socio-Economic Conditions (p. 48-49): Having a section on Socio-Economic Conditions is not relevant to this Plan and needs to be removed.

7. Chapter 5 – Impacts

- This section is not adequate for wildlife. Research on development impacts on wildlife has been published. This literature should be referenced. See Theobald et al. (1997) and Odell et al. (2003) for an overview of development impacts on wildlife. Information of the types of impacts expected from specifc project components are readily available for APLIC, the American Wind Wildlife Institute, USFWS, BLM and other organizations. Potential impacts from all project components are not full elaborated. A number of widely recognized impacts are not mentioned.
- 5.0: Recommend defining what direct, indirect, temporary, permanent, and cumulative impacts are.
- 5.0.1 Water Quantity and 5.0.2 Water Quality (p. 49-51): this section provides a good deal of information; however, its relationship to wildlife is not explained. As written it needs to be removed. This is a good example of the plan's emphasis on the hydro components of the project and under emphasis on other project components.
- .0.1 Water Quantity and 5.0.2 Water Quality (p. 49-51): Impacts from erosion beyond water quality are not presented in the impacts chapter.
- 5.0 Impacts: Recommend following the same headings as 4.0 Site Resources, so that the site resources present match up with the impacts assessed. An impact assessment for a WMP would typically also calculate acreage of habitat lost or otherwise impacted, by vegetation type and condition. Need to refine vegetation types present in the project area so they are accurate and current, and match them between 4.0 and 5.0. Missing analysis of Game and Travel Corridors, Raptors, Migratory Birds, Other Terrestrial Wildlife, Special Status Species, and noxious weeds.
- 5.0.3 (p. 51): Vegetation Resources: Recommend using LANDFIRE or other agency recommended imagery for vegetation mapping, rather than NLCD.
- 5.0.3 (p. 51): There is no Table 17 and it is supposed to have "species recommended by (Applicant's) biological consultants for upland planting and around the Upper Reservoir". This list should incorporate requirements for USFS and BOR, which may have their own lists for that area. I don't think any native, obligate wetland species could survive the hydrological fluctuations at the Upper Reservoir, so this needs to be addressed further.
- 5.0.3 (p. 52): Table 16 needs to have more specific vegetation types calculated which should match with 4.0 Site Resources. The total disturbance acres presented in Table 16 is 1,486 acres, but it does not seem to include a comprehensive list of project elements. Is this calculation just for permanent impacts? This table needs to clearly list acreage for all permanent and temporary impacts and explicitly state all impacts with all project components.
- 5.0.5 Wildlife Resources. The Applicant asserts that project impacts to wildlife would be a function of habitat loss caused by the development of project facilities. This is not

supportable or consistent with analysis for similar types of projects. Agencies may provide some key insight in developing a list of direct impacts.

- 5.0.5 Wildlife Resources. Referenced Table 9 does not refer to SGCN. Writing off impacts to SGCN because habitat types in the project area are abundant throughout the lands immediately surrounding the project footprint areas is not a good approach for mitigation planning. No broader habitat assessment or other information is provided to substantiate this analysis approach. Early project documents identified the total project area as approximately 28 square miles. The project would likely have a substantial effect on wildlife occurring between Bennett Mountain and the South Fork of the Boise River, as well as wildlife moving between the Camas Prairie and the western arm of the Snake River Plain.
- 5.0 (pp. 61-68): Everything here is irrelevant to the Plan and should be removed.
- 5.1 Indirect (p. 68-69): The short paragraph on indirect impacts is incoherent and needs to be re-written. It seem pasted from a socio-economic analysis, possibly. No indirect impacts to wildlife are discussed.
- 5.2 Cumulative (p.69): These are not cumulative impacts, see outline requirements and revise. Cumulative effects should discuss proposed development projects in the vicinity of the proposed CCEGF project at scales relevant to types of impacts. (For example, if the Applicant, through their analysis, has identified impacts to big game migration resulting from the project, then the WMP should discuss the cumulative effects of other past, present and reasonably foreseeable projects that will also impact populations of big game migrating in the area.)

8. Chapter 6 – Management Actions to Avoid, Minimize, or Mitigate Adverse Impacts

- 6.0 (pp. 69-71): WMP needs to describe which impacts can be avoided and/or minimized, how, and for which species/species groups.
- 6.0.1 Avoided (p. 69): Impacts regarding "air and water quality" are not relevant here and needs to be updated to be relevant for wildlife.
- 6.0.2 Minimized (p. 69-70): Need specifics here, too vague and insufficient. Also, migrating wildlife is unlikely to move through solar arrays, even if it is not fenced; provide research citation which would support this claim. It would seem operationally undesirable to have large antlered ungulates such as elk encouraged to move among solar panel structures within the array, especially if equipment is mounted close to the ground, as described on page 12.
- 6.1.1 How Open Space Plan Correlates to WMP (p. 70): This statement does not seem to apply because the project is likely going to inhibit wildlife movement, and it seems unlikely unless there is a Conservation Easement in place. The project's potential impacts associated with reduced connectivity, increased fragmentation, habitat, avoidance, increased human disturbance and wildlife community changes are not discussed.
- 6.1.2 How Wildlife Might Benefit from Proposed Open Space (p. 70): Remove benefits and use by livestock, this is supposed to be for wildlife. Section does not address the question. Some mitigation is suggested, but this is better described and discussed elsewhere.
- 6.1.3 Funding Source for Management of Open Space (p. 70): Text does not answer this question, needs to be re-done.
- 6.1.4 Connectivity Opportunities with Abutting Properties, Trails, etc. (p.71): This is the first time substantive details regarding big game movement corridors through the project area are presented. The County assumes this information was provided by IDFG, but no

citations are provided. Some of this information should be presented in Chapter 4. The project would appear to present a nearly continuous barrier to big game movement extending from the south shore of Anderson Ranch Reservoir to Little Camas Reservoir. A few pinch points for wildlife would remain. This needs to be discussed and analyzed in this WMP.

9. **Chapter 7 – Mitigation Activities and Implementation**

- 7.0 (p. 71): First paragraph states "highly experienced plant, animal, and aquatic biologists, working in close cooperation with the IDFG are gathering the data and formulating the detailed mitigation policies that will be implemented." This does not seem accurate, as there is no demonstrable close relationship with IDFG as of yet, and these mitigation policies should be listed in this Plan, not referred to.
- 7.0 (p. 71): There is a lot of emphasis on protection of sage-grouse habitat, but not on other wildlife habitats (i.e. winter range, riparian/wetland). Rehabilitation measures need to mitigate for all wildlife species to the extent practicable. This section also does not address actions/measures for mitigating for migratory species and other special status species.
- 7.0 (p. 71): Need a list of specific, measureable mitigation measures and how they meet compliance with federal, state, and county requirements (including BOR, USFWS, USFS, IDFG, ACOE).
- 7.0 (p. 72): Need to check with the USFS and BOR and incorporate their approved seed lists, which will include species beneficial to erosion control and noxious weed prevention, and habitat-specific seeding requirements.
- 7.0 (p. 72): Need to incorporate federal, state, and county requirements for rehabilitation, seeding, and weed control; and none of these are included in this Plan. May be helpful to tier to a Noxious Weed Management Plan and Rehabilitation and Revegetation Plan.
- 7.0 (p. 73): Table 22 (Sage-grouse/Pollinator Species List) should not be used for rehabilitation purposes related to this project, as this list is intended to be used more for assessing sage-grouse habitat and includes a noxious weed species, which is illegal to plant according to Idaho State Code. There are no native perennial grass species listed here and seed mixes for rehabilitation have large proportions of locally appropriate native perennial grass species, since they are critical for erosion control and noxious weed prevention.
- 7.0.1.1 Bull Trout (p. 75): This would be better tiered to and addressed in a separate Fisheries Mitigation or Management Plan.
- 7.0.1.2 Sage Grouse (p. 76-77): CCE needs to verify these measures comply with current USFWS, BOR, USFS, IDFG, and APLIC requirements and guidance, including June 2015 APLIC Sage-Grouse Guidance (APLIC 2015).
- 7.0.1.3 Raptors (p. 77): Need to make sure to incorporate current USFWS, BOR, USFS, IDFG, and APLIC requirements and guidance, including Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012) and Developing Power Pole Modification Agreements for Compensatory Eagle Mitigation for Wind Energy Projects, June 2014 (APLIC 2014).
- 7.0.1.4 Bats (p. 78): Rename "Other Terrestrial Wildlife" to match Table of Contents and outline requirements. Need to add specifics on mitigation requirements from USFS, BOR, IDFG, including citations. Aviation warning lights are not recognized as the cause of increased bat mortality at wind energy generation plants. The Applicant needs to provide references to substantiate this discussion. See Bennett and Hale 2014.

- 7.0.1.5 Wildlife Corridors (p. 78): Rename "Game and Travel Corridors" to match Table of Contents and outline requirements. Mitigation measure listed is not measureable. Need to add specifics on mitigation requirements from USFS, BOR, IDFG, including citations, and tangible measures.
- 7.0.2 Timeline and Cost (p. 78): This needs to be re-written to be specific and measureable using the best information available to the project proponents.
- 7.0.3 Management and Monitoring Plans (p. 78): Need more specifics, recommend multiple plans to tier to for compliance with federal, state, and county requirements, as listed above (Comments relevant to the entire plan).
- 7.0.4 Financing Plan with Funding Source (p. 78): This section is insufficient for describing financing and the funding source of the project, need specifics and enough information to demonstrate there is sufficient financing for the project.
- 7.0.5 Alt. Mitigation Strategy (p. 78): This doesn't make sense as written.
- 7.1 Wetlands (p. 78-79): The Plan states that "the shoreline of the Upper Reservoir (would be planted) with wetland/riparian plant species to develop key wildlife habitat". However, obligate wetland plant species as defined by ACOE (2015) are unlikely able to survive the hydrologic fluctuations occurring at the Upper Reservoir; thus there would not be "no net loss of habitat". Need to properly assess vegetation/wildlife impacts to the area where Upper Reservoir would be constructed, and also to Anderson Reservoir. The rest of this section is insufficient, as it tiers to 7.0.2 and 7.0.3, which were also insufficient.
- 7.2 Noxious Weeds (p. 79-80): This section does not sufficiently describe mitigation measures that would keep the project proponent in compliance with federal, state, and county noxious weed laws (including APHIS, BOR, USFS, and State of Idaho). Also, the "erosion control measures" mentioned will need to be documented in a SWPPP, which the Plan should tier to. Recommend a Noxious Weed Plan to keep in compliance with noxious weed regulations. The rest of this section is insufficient, as it tiers to 7.0.2 and 7.0.3, which were also insufficient.
- 7.3 Visual Impact (p. 80): This section has no relevance to the Plan and needs to be deleted.

10. Chapter 8 – Federal Permitting

- (p. 80): Use "Incidental Take Permit" instead of "Incidental Taking Permit (if warranted)".
- (p. 80): Use "CWA 401/404" instead of "Potential Clean Water Act permission".
- (p. 80): Need documentation of contact and requirements from USFWS, USFS, BLM, BOR, and IDFG.
- (p. 80): If BLM permits are required, the Plan needs to be updated to reflect this, including management and mitigation for wildlife, habitat, and BLM Sensitive plant and animal species.

11. Chapter 9 – Overall Actions and Methods to Meet Goals

- (p. 81): Sections 9.1, 9.2, and 9.3 are missing from text.

12. Chapter 10 – Adaptive Management Strategies

- (p. 81): No content in this section describes the Adaptive Management approach that would be employed for the project.
- (p. 81) The section titled "Alternative Means of Obtaining Power" is not relevant to wildlife, this section, or the WMP itself, so it needs to be deleted. It seems more appropriate for a "Purpose and Need" section of some other type of document.

  The US Geological Survey provides a concise definition of Adaptive Management: "*Adaptive Management is a structured approach to resource management. Through this iterative process, managers and scientists team together to improve resource management over time by learning from management outcomes. Adaptive Management entails a multi-step process:*
  1. Considering various actions to meet management objectives;
  2. Predicting the outcomes of these management actions based on what is currently known;
  3. Implementing management actions;
  4. Monitoring to observe the results of those actions; and
  5. Using the results to update knowledge and adjust future management actions accordingly.
  By repeating this cycle and increasing to the body of knowledge about the system in question, managers are able to refine their prescriptions to more closely meet the original objectives."
  http://www.usgs.gov/ecosystems/wildlife/adaptive_management.html
- (p. 81-82): The section titled "Continuing Studies" seems out of place here and the material may should be reworked and incorporated into Chapter 2 and Chapter 7.
- (p. 81) The WMP states here that "it is based on information available for open sources including many studies conducted by the federal, state, and local agencies that manage public land and resources at and around Anderson Ranch Dam and the South Fork of the Boise River, along with observations and studies being performed onsite." For wildlife, none of this is substantiated with references or even the presentation of specific wildlife data. Of 27 citations in the reference section of this wildlife management plan, only five address wildlife and four of these are related to sage-grouse.
- (p. 81): This section mentions "applicant is supplementing this analysis by conducting additional studies where necessary to adequately assess project impacts." Where is this list and how was it determined that studies were "necessary"?
- (p. 82): For the bullet "Vegetation and Wildlife", need to document when field verification was conducted, who did it and what were their qualifications, and what methods were used. The results of any field verification or other studies should be incorporated into 4.0 and 4.1. The studies and their methods should be incorporated in to Chapter 2.
- (p. 82): For the bullet "Cultural Resources", this has no relevance to the Plan and needs to be deleted.
- (p. 82): "Inclusive Mitigation Stewardship" belongs in 7.0, not here.
- (p. 81-82): There are no adaptive management strategies listed in this section. Need to also document a process for periodic WMP review and revision by an oversight committee that includes Elmore County and IDFG.

13. **Shepard Fish Lit Review Cat Creek**

- (p. 84-94): This section does not belong here and seems irrelevant, so it either needs to be deleted (if irrelevant) or added as an appendix.

POWER'S RECOMMENDATIONS

The CCEGF is a complex and interesting project. It is includes a number of discrete project components each of which have unique potential impacts to wildlife species. Few projects would combine a hydro, solar and wind plant into one integrated effort. This is innovative and commendable; however, it presents the Applicant with a number of unavoidable challenges to address issues concerning wildlife resources at the project area.

This WMP generally follows the Elmore County WMP outline with some omissions, but the content is insufficiently developed in most areas. More information is needed; more agency coordination is needed; a greater understanding of direct and indirect project impacts is needed. As presented the WMP is inadequate to address impacts to wildlife that may result for the CCEGF.

REFERENCES

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