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Date: 12/16/2011 2:11 PM
Subject: Rio Mesa SEGF - Bird/Bat Survey Recommendations
Attachments: 2011_12_16_Interagency_bird_and_bat_survey_request_Rio_Mesa_s_1.pdf

Andrea/Todd

As you know, the Energy Commission has been working closely with the BLM, CDFG, and USFWS staff regarding the need for bird and bat survey information in and around the Rio Mesa SEGF project site. Please find attached preliminary bird and bat survey recommendations. These recommendations should serve as the basis for additional discussion at a noticed workshop. It is our hope that surveys begin as soon as practicable. Because of the need to notice a workshop at least 10 days in advance, we are looking at scheduling a workshop that would include the above noted agencies, the applicant, and other interested parties on either **January 4, 5 or 6, 2012**. Please respond as soon as possible as to your team's availability to participate in the workshop. The workshop would be in Sacramento in the Energy Commission building and we can provide a call-in number for those wishing to participate by phone.

I am copying member agency representatives on this email so that they are aware that the Energy Commission has shared the survey recommendations with the applicant and to also request their availability to participate in the workshop. Because of the number of people requested to participate and the need to send out a formal notice, I ask that agency representatives provide me their availability as soon as possible too.

Regards,

Pierre

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**Interagency Recommendations: Migratory and Breeding Season Bird and Bat Baseline
Data, Rio Mesa Solar Project, Riverside County, California**

December 16, 2011

Biology staff of the California Energy Commission (CEC), U. S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), and Bureau of Land Management (BLM) have reviewed the Rio Mesa Solar Project Application for Certification (AFC), and have discussed the project's potential impacts to resident and migratory birds. The baseline data provided in the AFC will not support an adequate analysis of the project's potential impacts to bird species listed as threatened or endangered pursuant to the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act and/or fully protected under the Fish and Game Code ; other special-status birds and bats on the project site and in the surrounding habitat; migratory birds that may pass over the site, on the Colorado River migratory corridor; or the large populations of wintering shorebirds and waterfowl that make use of wetlands at the Cibola National Wildlife Refuge and other wildlife reserves in the area.

Special status species at risk include State-listed Gila woodpecker (occurs on site) and elf owl (suitable habitat is on the site); bald eagle and golden eagle (both protected by federal Bald and Golden Eagle Protection Act and fully protected under Fish and Game Code); burrowing owls, and several additional State-designated bird and bat Species of Special Concern and BLM designated Sensitive Species.

Energy Commission staff, our partner agencies USFWS, CDFG, and BLM, and other experts have worked together to prepare survey protocol recommendations to collect the needed information; it will include migration and breeding season data on bird and bat habitat use and flight patterns in the area. The four agencies agree that at least one full year of additional bird and bat data are needed for adequate review under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Additional data may also be necessary for CESA review or for risk analysis pursuant to the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act. The agency biologists will develop and communicate any further data needs during the NEPA and CEQA review process. Three separate recommendations are attached. They address (1) migratory birds, (2) breeding birds, and (3) bats. We invite the applicant to discuss details of these recommended survey guidelines at the earliest possible opportunity. We particularly recommend initiating the golden eagle surveys and winter 2011-12 migratory season surveys immediately, to ensure prompt completion of the survey recommendations and adequate baseline data availability. Energy Commission staff and biology staff at USFWS, CDFG, and BLM will work with the applicant to develop a reporting schedule for the three survey protocol recommendations, to ensure that adequate and up-to-date data are available to describe and analyze the project's expected impacts to birds and bats, at each milestone during our environmental review of the project.

I. Recommended Migratory Bird Monitoring Strategy to Determine Potential Direct, Indirect and Cumulative Impacts from Construction and Operation of the Proposed Rio Mesa Solar Project, Riverside County, California

**Interagency Recommendations
Revised December 16, 2011**

The proposed 5,750-acre BrightSource Energy Inc. Rio Mesa Solar project near Blythe, California, is located on open lands in the Lower Colorado River Valley within approximately 5 miles of the Colorado River, on the bluffs overlooking the floodplain, wetland, and agricultural habitats. Based on USFWS analysis, this area is an important migratory route for numerous species, as well as a breeding and wintering stopover destination. This area has been designated as a Globally Important Bird Area (see California Audubon <http://ca.audubon.org/iba/>). In addition, four National Wildlife Refuges (NWRs) have been established along the lower Colorado River valley. These NWRs (Havasu, Bill Williams, Cibola, and Imperial) were established to restore and protect historic habitat and wintering grounds for migratory birds and other wildlife.

Based on available information from Cibola NWR, approximately 4 miles south of the proposed Rio Mesa Solar project site, at least 288 bird species, including numerous species of migratory passerine species (songbirds), upland species (quail, roadrunners, mourning and white-winged doves, waders/shorebirds, and waterfowl (greater sandhill cranes, Canada and snow geese, ibis, egrets, herons, ducks), and raptors (buteos, accipiters, falcons, eagles, vulture) occur in the area (<http://www.npwrc.usgs.gov/resource/birds/chekbird/r2/cibola.htm>). The importance of this habitat for migratory birds is known, and is further highlighted by the use of the area by birds designated by the USFWS as Birds of Conservation Concern and by the California Department of Fish and Game as Species of Special Concern.

Given the area's importance for maintaining health and breeding fitness of migratory and resident birds, the USFWS and CDFG are concerned that avifauna protected by the Migratory Bird Treaty Act (MBTA), migrating Swainson's hawks (State listed as threatened under the California Endangered Species Act), and eagles protected by the MBTA, the Bald and Golden Eagle Protection Act and designated as fully protected under Section 3511 of the Fish and Game Code may be impacted by the construction and operation of the proposed project. Migratory birds may be injured or killed due to collision with the three 750-foot tall power towers and thousands of associated heliostats proposed for construction or may be burned as a result of flying through the heat beams transmitted from the heliostats or via attempted perching on the power towers. Therefore, the permitting and wildlife agencies strongly recommend that BrightSource conduct robust and scientifically rigorous surveys beginning as soon as possible and continuing through a complete annual cycle to determine the scope and scale of migratory bird use, and the potential direct, indirect, and cumulative impacts on migratory birds that may result from construction and long-term operation of the proposed project for CEQA and NEPA analysis. If the surveys are initiated as soon as January 2012, then the full year would extend into early January 2013. The agency biologists will develop and communicate any further data needs during the NEPA and CEQA review process. Also, given the proposed project's proximity to the Cibola NWR, we recommend that BrightSource coordinate the Rio Mesa Solar Project survey

effort (scope, scale and rigor) with Cibola NWR biologists to insure that broad coverage of data (*i.e.*, meta-analysis) are possible with any data collected on and near the refuge.

Methodology

The purpose of the surveys is to record observed avian migration and use patterns at and near the proposed project location for use in avian risk characterization associated with a Bird and Bat Conservation Strategy (formerly known as Avian and Bat Protection Plan) and Eagle Conservation Plan. Data on bird migration variables including at least static population, population pulses, range of daily behavior and movements, flight elevation through and near the project area, and duration of fall/winter/spring visitation of migratory birds, including raptors, should be collected. We particularly encourage BrightSource to focus on those species (and in some cases individuals) that are particularly sensitive to human impacts (direct, indirect, and cumulative) associated with the proposed project. At a minimum, migration surveys should provide robust data suitable for quantitative analysis and cover the period when most of the major pulses or waves of migration occur during spring and fall migration (Bibby *et al.* 2000) and additional surveys should cover the breeding and wintering seasons.

During fall migration, avian passage through this area commences in July, and peaks for some species may start in mid- to late August through early November; spring migration typically extends from about February through May for most species. Migratory peaks will vary by species; smaller-bodied raptors and shorebirds are early; larger-bodied raptors and waterfowl are later. Inter-species and inter-annual variation on timing is not currently known for most species along the Pacific Flyway, particularly within the Colorado River Valley area near the proposed project site. Migrants and winter visitors also use the Lower Colorado River Valley; those birds may show daily movements from roost to feeding areas, and travel between feeding areas.

Because of year-to-year variation caused by weather, habitat changes, prey fluctuations, and other vagaries, passerine/wader-waterfowl/upland bird and raptor migration surveys should be conducted for at least one full year for adequate CEQA and NEPA review.

For passerine, waterfowl, and upland bird species, we recommend qualified¹ biologists monitor migration trends during the fall/winter/spring migration period using the following methodology:

From late July to April, weekly surveys should be conducted within an area 4 air miles of the project footprint, emphasizing the area between the project site and the Colorado River. Qualified biologists should be stationed at 5 to 10 migration count locations throughout the site and scan the sky and record bird use and movement data (species, number, direction traveled, height traveled, etc.) for at least 8 hours per day (under good weather conditions (*i.e.*, no sustained precipitation or fog and incorporate both dawn and dusk hours), 3 consecutive days per week. On a fourth day of each week, qualified biologists should collect avian point count data using a Breeding Bird Survey route developed by the project proponent, line transect, or comparable technique (see Bibby *et al.* 2000) to provide data on waders, shorebirds, waterfowl, and raptors in the vicinity of the project. Spring and fall nocturnal migration pulses of avifauna (and bats) should be characterized for the project area in the Lower Colorado River Valley; data may be acquired via use of radar or comparable technique (Gauthreaux and Belser 2005).

For raptor species, we recommend qualified² biologists monitor migration trends during the fall/winter/spring migration using the following methodology based on Hawk Migration Association of North America standard field survey techniques which were modeled after Cape May Raptor observation methods, now standard for hawk migration counts (Bildstein 2007, Bildstein *et al.* 2007, HMANA 2010a, HMANA 2010b).

The raptor species that may occur in the area and potentially be impacted by the project include, but are not limited to, bald and golden eagles, ferruginous hawks, rough-legged hawks, prairie falcons, American kestrels, peregrine falcons, merlins, sharp-shinned hawks, Cooper's hawks, red-tailed hawks, Swainson's hawks, barn owl, great horned owl, western screech owl, elf owl, long eared owl, and turkey vultures, as well as uncommon raptors (*e.g.*, Harris' hawk, crested caracara, and black vulture).

From August to April, weekly surveys should be conducted using unlimited-distance bird migration survey methods. Qualified biologists should be stationed at a minimum of three observation points (OP), at least 2 miles apart, within an area 4 air miles of the project footprint. Once established, OPs should be used throughout the survey period. Observation point locations should (1) allow wide expanse of observation area from a single point, (2) be away from public view, and (3) afford a location where topographic and biological features are likely to be used by raptors during migration (see data sheet that synthesizes this approach at http://hmana.org/data_entry_paper.php). At least one qualified biologist should lead observations at *each* OP for at least four consecutive days per week. Observations should be conducted under good weather conditions (*i.e.*, no sustained precipitation or fog) for a period of at least 8 hours, encompassing midday hours (*i.e.*, at least dawn to late afternoon for passerine, waders, shorebirds, and waterfowl; at least 9 a.m. through at least 5 p.m. for raptors) when most species are likely to be migrating or conducting daily movements.

To address Bald and Golden Eagle Protection Act, additional techniques that should be considered to determine eagle presence outside of the breeding season may utilize multiple overlapping methods to produce robust data including but not limited to long-sit point counts and camera trapping.

References Cited

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Gauthreaux, S.A. and C.G. Belser. 2005. Radar ornithology and the conservation of migratory birds. *In* C. John Ralph and Terrell D. Rich (eds.). *Bird Conservation Implementation and Integration in the Americas: Proceedings of the Third International Partners in Flight Conference*. 2002 March 20-24; Pp.871-875.

¹ For surveys of passerines, waders, shorebirds, and waterfowl, qualified biologist = B.S. or higher degree in avian biology/ornithology, prior experience conducting surveys for migratory bird species (verifiable experience should be presented to the BLM and USFWS prior to commencing surveys), likely to occur in the project area. Ability to identify birds visually while in flight as well as by their call.

² For raptor surveys, qualified biologist = B.S. or higher degree in avian biology/ornithology/raptor ecology, prior experience with hawk migration counts (verifiable experience at known raptor migration location should be presented to the BLM and USFWS prior to commencing surveys), and prior experience with raptor species likely to occur in and near the project area. Observer should have demonstrated ability to identify raptors (eagles to age class) visually while in flight from distances of 200-1500 m.

**II. Recommended Breeding Season Avian Surveys for the Proposed Rio Mesa Solar Project
Riverside County, California
Interagency Recommendations
December 16, 2011**

During the breeding season (February to August), focused survey techniques to determine distribution and abundance of avifauna in the microphyll woodlands at and immediately adjacent to the project footprint (1.6 km) should be conducted. Gila woodpecker is known to occur on the project site, and other State-listed birds endemic to California in the Lower Colorado River basin, including the elf owl, may also occur on the site. Breeding bird data for the 2012 breeding season will be needed for adequate CEQA and NEPA review. Additional breeding season data may also be required for California Endangered Species Act review or for risk analysis pursuant to the MBTA or Bald and Golden Eagle Protection Act. We recommend you coordinate with USFWS, BLM and CDFG biologists prior to the breeding season to determine what additional surveys may be necessary.

For these species, and other passerine and raptors present at the proposed project location, absolute counts by qualified^{1,2} biologists using line-transect or comparable technique (Bibby *et al.* 2000) conducted weekly using robust quantitative techniques are necessary to determine presence during the breeding season. These avian surveys may also be used to gauge habitat use on-site during the non-breeding season. All data collected by diurnal survey efforts would be used to develop risk characterization necessary for development of a Bird and Bat Conservation Strategy (formerly titled Avian and Bat Protection Plan) regarding special status bird species.

Survey methods to determine nocturnal species presence and abundance (*e.g.*, owls) may include the use of play-back methods. Elf owl and other owl species have been documented in the Lower Colorado River Valley. Monitoring for burrowing owls should include focused ground surveys using accepted protocol and techniques (CDFG 1995, CBOC 1997).

Breeding season surveys for raptors may be accomplished concurrently with surveys for golden eagle using robust methods. Surveys for breeding and non-breeding bald and golden eagles using a 10-mile survey radius extending out from the project footprint are necessary to develop robust

¹ For surveys of passerines, waders, shorebirds, and waterfowl, a qualified biologist must have a B.S. or higher degree in avian biology/ornithology, prior experience conducting surveys for migratory bird species (verifiable experience should be presented to the BLM and USFWS prior to commencing surveys), likely to occur in the project area. Ability to identify birds visually while in flight as well as by their call.

² For raptor surveys, a qualified biologist must have a B.S. or higher degree in avian biology/ornithology/raptor ecology, prior experience with hawk migration counts (verifiable experience at known raptor migration location should be presented to the BLM and USFWS prior to commencing surveys), and prior experience with raptor species likely to occur in and near the project area. Observer should have demonstrated ability to identify raptors (eagles to age class) visually while in flight from distances of 200-1500 m. Raptor biologists must also meet recommended qualifications put forth by Pagel *et al.* (2010 *et seq.*), and have their qualifications and verifiable experience reviewed by BLM, CDFG, and USFWS prior to commencing ground and aerial surveys.

risk characterization for the proposed project (Pagel *et al.* 2010 *et seq.*). Occurrence of non-breeding golden eagles within at least 10 miles of the project boundary during the breeding season should be documented and be used to estimate potential for take of all age classes of golden eagles, including juveniles, subadults, adult floaters, and breeding adults. Observation of interactions among eagles during courtship displays or foraging flights obtained by qualified biologists from ground observation points during the nesting season are opportunities for assessing occurrence and abundance of non-breeding eagles.

References Cited

California Burrowing Owl Consortium (CBOC). 1997. Burrowing owl survey protocol and mitigation guidelines. *J. Raptor Res. Rept.* 9:171-177.

California Department of Fish and Game (CDFG). 1995. California Department of Fish and Game, Staff Report on Burrowing Owl Mitigation. 12 pp.

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**III. Recommended Bat Surveys for the Proposed Rio Mesa Solar Project
Riverside County, California
Interagency Recommendations
December 16, 2011**

The Rio Mesa Solar Project area's proximity to the lower Colorado River and associated floodplain, wetland, and agricultural habitats makes it a potentially important migratory route as well as foraging and roosting habitat for numerous bat species. Extensive research has been conducted by the Bureau of Reclamation, Arizona Department of Game and Fish, USFWS, and others on bat usage of the lower Colorado River. At least 13 bat species are known to occur along the lower Colorado River (including the Cibola NWR, 4 miles south of the project) and eight of these are special-status: California leaf-nosed bat (BLMS, CSC³), Yuma myotis (BLMS), Townsend's big-eared bat (BLMS, CSC), pallid bat (BLMS, CSC), western yellow bat (CSC), cave myotis (BLMS), big free-tailed bat (CSC), western red bat (CSC), California myotis, big brown bat, hoary bat, Mexican free-tailed bat, and canyon bat. The largest known wintering colonies of California leaf-nosed bat (CSC) are located in mines approximately 1.4 miles northwest of the project area.

Given the region's importance to resident and migratory bat species, USFWS, BLM, CDFG, and the Energy Commission (agencies) are concerned that special-status bats may be impacted by construction and operation of the proposed project. To establish an environmental baseline for determining the project's potential for impacts to special-status bats, the agencies are requesting additional survey data. It is understood that a wealth of information on bat species is available for the lower Colorado River region; however, the agencies request project site-specific information to ascertain impacts of the project at this location.

Survey data should provide adequate information to determine bat species present and habitat use in the proposed project area. This can be accomplished by deploying acoustical monitoring stations (e.g., Anabat, SonoBat), mist nests, or other detection mechanisms. Data should be collected continuously for no less than one year at no less than three separate stations within the proposed project area. Data gathering should be conducted within bat habitat at microphyll woodlands and close to agricultural areas and should be adequately spaced to provide maximum coverage of the project area. Specific detection mechanisms, locations, and heights should receive concurrence by appropriate agency personnel before deployment.

³ BLMS = BLM Sensitive; CSC = California Species of Special Concern