

NEW TOOL AVAILABLE TO ASSESS MIGRATORY BIRD SPECIES

The Impacts Of Energy Projects On Migratory Birds

When solar or wind projects are to be constructed on federal land the National Environmental Protection Act (NEPA) requires that the effects of the projects on migratory birds be analyzed. If the proposed project is on state lands, then the California Environmental Quality Act (CEQA) also comes into play. Sometimes both federal and state regulations apply. For instance, surface rights may be federal while the water rights remain with the county.

Migratory bird species using the Pacific Flyway in the California Desert have been inadequately assessed under NEPA and CEQA by the Bureau of Land Management (BLM) and industrial solar energy project applicants. A good example is Bechtel's 6.5 square mile Soda Mountain Solar project (Soda Mountain Solar LLC), which straddles Interstate 15 between the Mojave National Preserve and the Soda Mountain Wilderness Study Area. Public comments are currently being reviewed.

I submitted comments on this project.¹ During my review of the draft BLM environmental documents, I read that the project's "operations and maintenance-related interference with the movement of migratory birds through existing migratory corridors"ⁱⁱ was "less than significant" before mitigation and that "no mitigation measures are required."ⁱⁱⁱ

This evaluation was based on the project applicant's bird surveys^{iv} for the spring and fall of 2009. During the spring count, 629 birds comprising 22 species were detected, and 210 birds comprising 23 species were identified in the fall count. Ten Species of Special Concern^v were listed as "known to occur or with the potential to occur" in the study area, with three of these species—the Western burrowing owl, the Mojave horned lark, and the Loggerhead shrike—seen during the surveys.

The remaining seven species—including the long-eared owl, the brown pelican, and the yellow-headed blackbird—are expected to appear "only as migrants." *Only as migrants?* Migrants are what the Migratory Bird Treaty Act protects – birds flying to their breeding or wintering sites. "Only" references the critically important passage time in a bird's year, which if not successful, eliminates breeding and wintering.

I became curious as to how many migrating species we could be talking about? To find out I consulted eBird, a citizen scientist enterprise run jointly by Cornell Laboratory of Ornithology and the National Audubon Society. Below is the eBird website description.^{vi}

A real-time, online checklist program, eBird has revolutionized the way that the birding community reports and accesses information about birds. eBird provides rich data sources for basic information on bird abundance and distribution at a variety of spatial and temporal scales. By maximizing the utility and accessibility of bird observations made each year by recreational and professional bird watchers, eBird is amassing one of the largest and fastest growing biodiversity data resources in existence. The observations of each participant join those of others in an international network of eBird users. eBird then shares these observations with a global community of educators, land managers, ornithologists, and



Figure 1: Desert Hotspots

conservation biologists. eBird documents the presence or absence of species, as well as bird abundance through checklist data. A birder simply enters when, where, and how they went birding, then fills out a checklist of all the birds seen and heard during the outing. Local experts review unusual records that are flagged by the filters. eBird data are stored in a secure facility and archived daily, and are accessible to anyone via the eBird web site and other applications developed by the global biodiversity information community.

In 2014 a peer reviewed journal article on the eBird enterprise was published in Biological Conservation.^{vii}

I was surprised by the number of bird species and eBird hotspots (as reported locations are called) within the vicinity of Soda Mountain Solar. Across the street, so to speak, is Zzyzx, the Desert Study Center within the Mojave National Preserve (#8 in Figure 1), with 224 species. Six miles northeast of the project is Baker, the gas stop with the world's tallest thermometer, with three hotspots. The Water Treatment Plant (#9) has the highest count with 176 species. With my comment letter I presented an eBird map with 36 hotspots located, on average, within 80 miles from Baker with a table showing the number of birds and reporting checklists for each.

I made several assumptions when choosing the hotspots:

- birds migrate toward breeding or wintering locations;
- birds fly at an elevation allowing visibility over a wide area;
- birds utilize great amounts of energy when flying and look for areas to rest, drink, and eat;
- over millennia birds have seen the Pleistocene lakes and Holocene wetlands come and go – they know how to recognize and take advantage of a water source from even the briefest glint;
- birds will veer off their route to access the promise from the glint;
- birds ignore what has no immediate value

eBird is the most easily available comprehensive data tool to best understand the movement of migratory birds through the desert portion of the Pacific Flyway. Point-count bird surveys used by energy project applicants are limited in time (a couple of seasons, maybe two years), and furthermore these surveys are specific to the undeveloped project site, without taking into account the attractions to migrating birds that may be created by the project itself (see the Avian Mortality report below).

Point-count bird surveys are not sufficient in themselves to assess the actual or potential impacts of proposed energy projects on native birds.

With the 7,000 acre Silurian Valley Solar project north of Baker under review for project acceptance by BLM, and the Palen power towers on Interstate 10 still under review, I decided to use eBird to explore a larger area of the flyway over the California Desert. I was spurred on by the release of the US Fish and Wildlife Service forensic report on "Avian Mortality at Solar Energy Facilities in Southern California."^{viii} The report identifies specific hazards to birds, including: vertically-oriented mirrors or other smooth reflective panels; water-like reflective or polarizing panes; actively fluxing towers; open bodies of water; aggregations of insects that attract insectivorous birds; and resident predators.

I constructed a spreadsheet (the eBird list) comparing seven "cherry picked" eBird hotspots (from many), along 380 miles of the migratory corridor: from the Salton Sea (338 species) north to Death Valley National Park (315 species).^{ix} I added three hotspots along the 146 miles east from the Daggett Evaporation Ponds to Primm Valley Golf Club, all within the Pacific Flyway. I chose the Daggett Evaporation Ponds because they are immediately adjacent to the original Solar One Power Tower, which I had surveyed in

1983. The ponds provide cooling for the adjacent power plant to the west. Even though they are not currently full, they continue to attract shorebirds and birders. The 117 recorded species at the Daggett Evaporation Ponds represents avian use of an ephemeral pond over time.

Primm Valley Golf Club (121 species) was chosen because its lush greens, trees, and glistening ponds are tucked up to the Ivanpah solar facility's actively fluxing towers and vertically oriented mirrors. The Avian Mortality report lists 49 species identified by their remains at Ivanpah, of which 69% (34 species) are among the species recorded using the golf club amenities immediately adjacent to the Ivanpah solar facility.

I also incorporated into the eBird list the Partners in the Flight (PIF) Watch and Stewardship species,^x and the California Department of Fish and Wildlife (DFW) Species of Special concern.^{xi} PIF is a governmental and non-governmental partnership organized in 1990 to study and develop conservation strategies for migratory landbird species of continental importance for the U.S., Canada, and Mexico.

The Results: there are three spreadsheets on the eBird List. 1) Comparison of 10 hotspots; 2) Comparison of Salton Sea and Death Valley (the south to north locations) and Big Morongo Canyon Preserve (BMCP) and Zzyzx, two heavily birded hotspots with over 200 species. Zzyzx is approximately 155 miles north of BNCP; 3) Analysis of PIF species. Go to www.DRECR.org and look under migratory birds to see the complete eBird list.

SPREADSHEET 1

The eBird List: a comparison of the species in 10 California desert hotspots

- Comparison as of 3/27/2014 = 428 species^{xii}
- Watch list with 100 species – birds with some combination of concerns: population decline, small range, or distinct habitat threats – 41% are on the eBird List.

Continued on page 19



Black-throated sparrow on Mojave Yucca in Joshua Tree NP with Cascade Solar reflecting in the background

The Impacts of Energy Projects

Continued from page 17

- Stewardship list (with 92 species – species with a high percentage of global or Western Hemisphere population restricted to a single avifauna biome- 57.6% are on the eBird list)
- California DFW Species of Special Concern: 25 species are added by notation on the eBird list

SPREADSHEET 2

- Comparison of Salton Sea (338 species) with Death Valley National Park (315 species): 252 species overlap; 86 species Salton Sea only; 63 species Death Valley NP only
- Comparison of Zzyzx (224 species) and Big Morongo Canyon Preserve (228 species): 176 species overlap; 48 Zzyzx only; 52 Preserve only

SPREADSHEET 3

- Partners in Flight (color-coded by notation to species on the eBird List)
- PIF Species of Continental Importance in Avifaunal Biomes

SUMMARY

All migratory bird species are protected by federal treaty. Solar project developers are not currently required, either during planning or operations and maintenance, to adequately assess the individual and cumulative impacts of solar (or wind) projects on migratory species. Point-count bird surveys focus on undeveloped project sites, and provide scant understanding of the attractions to birds created by *vertically-oriented mirrors or other smooth reflective panels; water-like reflective or polarizing panes; actively fluxing towers; open bodies of water; aggregations of insects that attract insectivorous birds*ⁱⁱⁱ.

eBird is an existing tool that can provide a regional matrix of data for comprehensively evaluating the possible impacts of these projects on migratory bird species year around, year after year. We did not intend to booby-trap the Pacific Flyway, so let's be smart enough not to. Until we acknowledge and understand the depth of our challenge we are in no position to know which locations have the least amount of impact, or to develop effective mitigation strategies. ♦

Pat Flanagan is a consultant, writer, and activist living in Twentynine Palms.

References can be found in the Notes section of desertreport.org.

Migratory Bird Treaty Act of 1918

Migratory birds are protected under the Migratory Bird Treaty Act of 1918 (MBTA, last amended 2013), which includes Conventions with Mexico, Canada, Japan, and Russia, and the Calif. Fish and Wildlife Code Sections 3503, 3503.5, 3505, and 3513. Avian species protected under the MBTA are those listed in the four conventions and, in accordance with the Migratory Bird Treaty Reform Act of 2004, "all species native to the United States or its territories, which are those that occur as a result of natural biological or ecological processes."