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Ivanpah Solar Plant May Be Attracting Migrating Birds

by [Chris Clarke](#)

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Yellow-rumped warbler | Photo: [Mike Baird/Flickr/Creative Commons License](#)

The builders of a large solar power tower plant under construction in the Mojave Desert have released their latest monthly report to the state agency overseeing the project, and the bad news for wildlife seems to be mounting.

Not only is the Ivanpah Solar Electric Generating System (ISEGS) racking up a higher toll of wildlife mortalities each month, but many of the birds reportedly found dead on the site in October may well have flown there from many miles away, raising the possibility that solar power tower projects in the California desert may well affect wildlife populations across the western half of North America.

According to a monthly compliance report furnished by BrightSource Energy and posted Tuesday on the website of the California Energy Commission (CEC), 52 birds were found dead on the nearly 4,000 acre ISEGS site in October, as were six bats. Of the 52 birds at least 13 were yellow-rumped warblers, a migratory species that had not been previously counted among the casualties at ISEGS.

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Most of the dead yellow-rumped warblers showed signs of exposure to the project's concentrated "solar flux," the intense heat from which can cause feathers to singe, melt, or catch fire. One showed injuries consistent with collision with one of the project's thousands of billboard-sized mirrored heliostats.

Also among the dead were local desert birds such as house finches, mourning doves, great-tailed grackles, and verdins. The toll also included migratory birds not usually found in the Mojave: blue-winged teal, black-and-white warbler, Lincoln's sparrow, spotted sandpiper, and Townsend's and Wilson's warblers. Additionally, there were two white-crowned sparrows, which are desert winter residents just arriving from their summer haunts in the Arctic. The project's biologists could not identify 10 of the dead birds found.

Of the six bats found by biologists, only one was identified as to species: an unfortunate California myotis.

The prevalence of yellow-rumped warblers among the death toll is sobering, but not particularly surprising. The birds are familiarly known to West Coast birders as Audubon's warblers, but were combined with the eastern myrtle warbler a few years back into a new species. The yellow-rump's migration patterns are complex. Most of the Audubons' population summers in the Northwest U.S. and the Canadian Arctic, then flies to the area between southern Arizona and Central America for the winter. Small year-round populations occupy coastal California and the Mogollon Rim area in Arizona.

In general in the Mojave Desert, it can be hard to tell whether yellow-rumps are migrating or resident: even the ones that are just passing through tend to take their time. But in the Ivanpah Valley, it's quite rare to see yellow-rumped warblers in summer: the citizen science site [eBird](#) displays no records of yellow-rumps in the Ivanpah Valley between late May and late September for the past 10 years.

October is generally the local peak of the yellow-rumped migration season, and so it makes sense that last month would not only provide the first recorded yellow-rumped casualties at Ivanpah, but that they would be the species most amply represented in the list of victims.

The fact that most of the yellow-rumped warbler bodies recovered showed signs of solar flux injury is serious cause for concern. Though the species tends to hunt for its insect

food from perches in trees, usually foraging in among the branches in typical warbler style, it's more flexible in its habits than many of its cousins. Not only do yellow-rumps often leave the trees' canopies to grab a likely insect, but they also take detours on long flights to grab an invertebrate snack on the wing.

Those long migration flights often take place in the company of large groups of other yellow-rumped warblers, meaning that a tempting source of insects along a flight path may divert a large number of birds.

The U.S. Fish and Wildlife Service [reports that its staff have seen large numbers of insects apparently attracted to the Ivanpah site](#) while that site has been producing solar flux. It doesn't seem too far-fetched that a crowd of bugs would in turn attract hungry migrating warblers.

About half the dead yellow-rumps were noted during surveys of the inner portions of the solar fields, with the remainder found "incidentally" -- by workers engaged in unrelated pursuits. (In its compliance report BrightSource maintains that birds injured by solar flux would fall within the first few tiers of heliostats.) This means that the vast majority of the project site is not being surveyed for dead and injured birds, so that the actual numbers may well be considerably higher.

The other species of small migratory birds found on the site in October, though fewer in number, serve to amplify concerns about the technology's impact on wildlife. The black-and-white warbler mortality is especially unusual: the species is not usually present in California as either a resident or a migrant. Townsend's warblers' annual migration can take them as far as between the Yukon and Panama. Wilson's warblers go as far north as northern Alaska in summer, and head for places like Nicaragua when the snows start to fly.

Losing one each of those species at ISEGS is no huge deal in a broad ecological sense, though each individual mortality is a violation of the Migratory Bird Treaty Act (MBTA) punishable by \$500 in fines and six months in jail. Migration is a dangerous pastime for birds, and many die from its rigors.

But ISEGS is a new kind of technology that its proponents, and proponents of similar projects such as the Crescent Dunes project being built near Tonopah, NV seek to increase across the desert. If the USFWS's [suspicions are correct](#) that solar power tower plants may pose what's called an "environmental trap" (and which USFWS is [not calling a "funnel effect"](#)), in which the projects attract insects that attract birds and other animals, then building such plants across the desert, with designs larger, taller, and hotter than Ivanpah's, could well pose a serious long-term threat to migratory bird populations.

Which means that solar plants in the California desert could well depress bird populations from the Arctic to the Panama Canal.

Of the 52 birds reported dead at ISEGS in October, 32 are now in the hands of USFWS's Law Enforcement division. They aren't the first dead birds USFWS Law Enforcement has taken from Ivanpah: between the commencement of construction and September 19 of this year, the federal wildlife cops took about 47 dead birds off BrightSource's hands for investigation.

And October's haul will likely not be the last, as ISEGS gears up to go online by the end of the year. Currently, solar flux is only generated during periodic testing. When that flux is hot throughout the daylight hours, the risk to wildlife -- whether local, or just passing by from 4,000 miles away -- will only increase.