Lake effect or data mirage?

Good news for birds and clean energy: the two can coexist just fine!

While sensationalized science has led regulators and the public to believe that solar photovoltaic ("PV") energy systems pose a threat to birds from the so-called “lake effect” (e.g., Fleming 2025, Conkling et al. 2022, Kagan et al. 2014), new research shows their work ignored important changes in technology, and it turns out it was a data mirage instead.

Ecologist Karl Kosciuch and statistician Danny Riser-Espinoza teamed up with solar developer and environmental scientist Marisa Mitchell to show in a recent journal article that, when evaluating impacts to birds, previous studies used data sets for older, outdated facilities, then propagated those results across all installed solar facilities. In most cases, these studies inappropriately lumped different technology types together, including concentrating thermal with PV, fixed-tilt PV with tracking PV, and PV with and without anti-reflective coating. Crying wolf, many of these scientific papers concluded that bird populations were at risk from the clean energy transition. But what they didn’t mention is that none of these dramatically different technology types were likely to be perceived similarly by birds, so their conclusion that the sky was falling was simply inaccurate. Perhaps Chicken Little missed the memo that solar technology had improved over time?

Bird mortality at solar PV facilities has been studied for more than a decade: solar companies have funded post-construction monitoring to understand whether and how some of the largest solar facilities installed in the United States might have affected migrating and other bird populations. While many feathers have been found by biologists during systematic surveys of solar PV facilities, there has never been a “smoking gun”. Never has a bird been seen colliding with a solar PV panel as was predicted by the sensationalized science. So, even when researchers incorrectly lumped different technology types together and showed “evidence” of bird mortality at older PV facility types, most of those so-called “mortalities” were just feathers. Ever found a feather on the ground? Yeah, me too.

In a new study, researchers are using AI computer vision cameras trained to identify and monitor bird behavior to understand how birds interact with PV facilities. Installing these cameras across numerous utility-scale solar PV systems throughout the United States since 2023, researchers Yuki Hamada and Lee Walston at Argonne National Labs have reviewed hundreds of hours of video footage from 7 facilities in 4 regions showing exactly zero bird collisions with solar PV panels. What are birds doing at solar PV facilities? Perching, breeding, catching prey, and generally living their happy little bird lives. Maybe those feathers were just feathers all along. And that's today's dose of very good news.