# Thermal video provides valuable insights into bat behavior and activity

An innovative look at bat behavior and risk through a large-scale thermal camera



## deployment



### Introduction

In 2023, Pattern deployed thermal cameras at 11 wind facilities across North America with the objective of collecting and analyzing bat activity data to better understand bat behavior and risk.



Quantifying bat activity across time. The color scale indicates the amount of activity recorded (total bat seconds per 10-min bin).

**Black indicates time** periods where bat activity was not recorded, while the purple to yellow scale indicates relatively increasing levels of activity.



Fifty-five cameras were deployed and data was collected through the bat active season (e.g. May- October). Data collection was repeated in 2024.

Initial data analysis has ranged from mapping bat activity over time to evaluating potential variations in bat activity and observed behaviors.

### What have we learned?

Based on an initial review of the data, we see both differences and some similarities in bat activity and behavior patterns within and across sites.

- Bat activity is not present consistently across a season or a night. When present, activity is not equal across a night or a season.
- There are differences in activity patterns at different sites
- We see differences in the type of flight behaviors and the duration of time bats spend around a turbine
- The magnitude of total bat activity is variable by site
- At many (but not all) projects there is a definable temporal window of activity, but the magnitude and exact timing may vary year to year





Thermal video provides valuable data from which we can learn more about bat behavior and activity patterns at wind turbines and can be useful in assessing risk and informing

#### mitigation approaches

## PERMITING



Nicole Kopysh Senior Manager, Environmental Compliance and Conservation nicole.kopysh@patternenergy.com

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WEST, Inc.