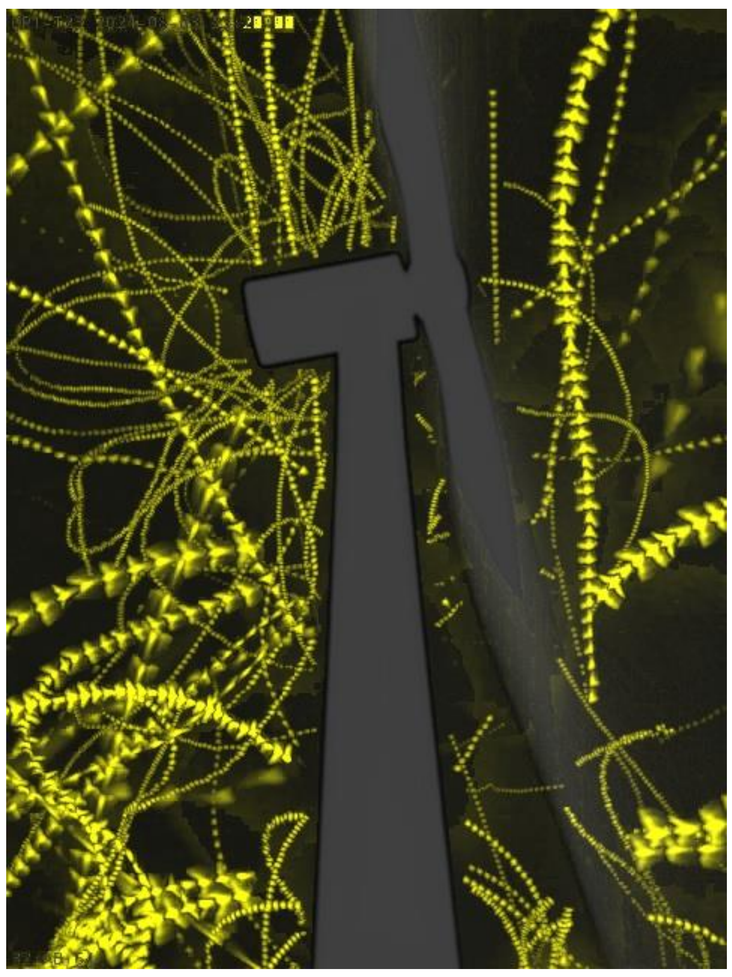
Optimized Smart Curtailment™ **lost 46% less energy** than **comparably effective** blanket curtailment

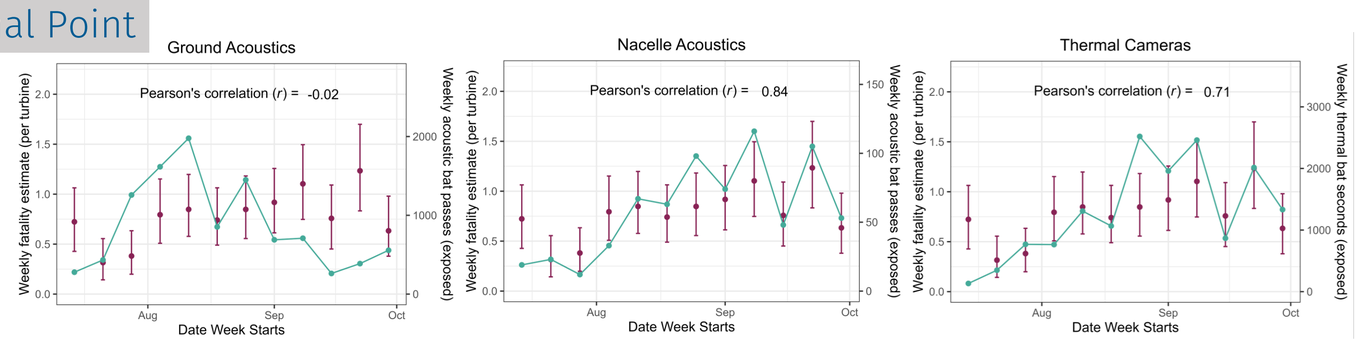
Smart Curtailment for Bats: Testing Efficacy with Multiple Data Streams at Three Wind Energy Facilities

WEST Optimized Smart Curtailment (OSC™) reduces bat fatalities while maximizing power by curtailing turbines during risky conditions and low energy production potential. It requires no long-term hardware commitment, resulting in much lower costs than acoustically activated solutions.

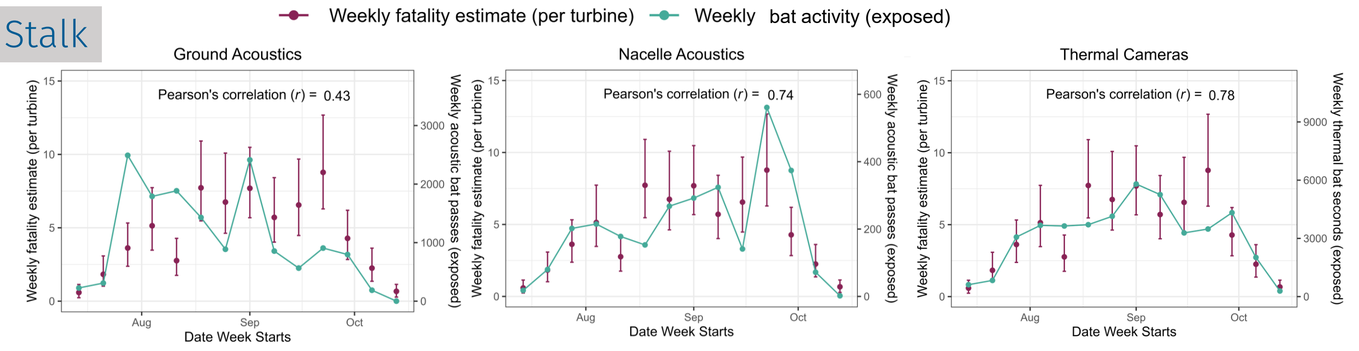


How Well Do Different Risk Metrics Track Fatality?

Cardinal Point



Bright Stalk



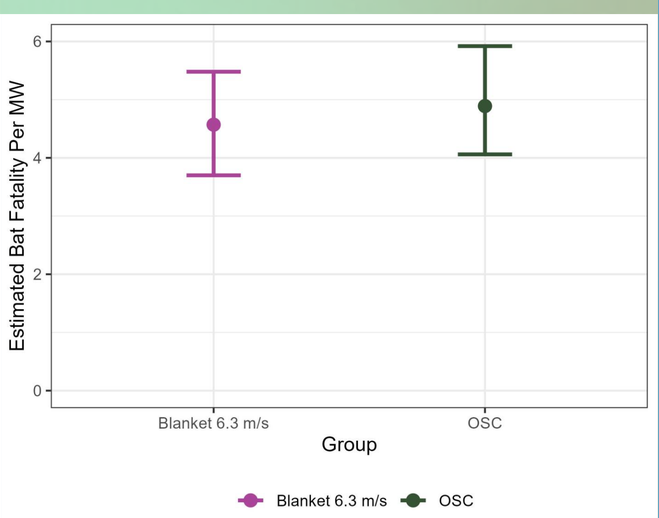
The correlation between exposed bat activity and fatality underpins Optimized Smart Curtailment. At these facilities, acoustic activity data from turbine nacelles and thermal cameras were better correlated with fatality estimates than acoustic activity data from the ground. This has important implications for how we collect data to fit OSC algorithms.

Project Timeline

2024: OSC validation at Cardinal Point

OSC was designed to match fatality reductions expected with 6.3 m/s blanket curtailment

- Fatality rates did not differ between blanket curtailment and OSC, but OSC lost 54% less power than blanket curtailment



Next Steps: 2025/2026 – Implement OSC for another year of testing (subject to change)

Cardinal Point 15 July – 30 Sept	OSC	6.4 m/s Blanket Curtailment
Predicted Acoustic Coverage (All bats)	69%	69%
Predicted Thermal Coverage (All bats)	71%	72%

Bright Stalk 15 July – 15 Oct	OSC	5.0 m/s Blanket Curtailment
Predicted Acoustic Coverage (All bats)	55%	52%
Predicted Thermal Coverage (All bats)	46%	47%

Wildhorse Mountain 01 July – 30 Sept	OSC	5.0 m/s Blanket Curtailment
Predicted Acoustic Coverage (Tricolored)	27%	24%
Predicted Thermal Coverage (Tricolored)	36%	30%

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