

## Reducing the Internal Temperature of Exposed Nest Boxes

The following two charts document the results of placing temperature probes inside two exposed bluebird nest boxes and a third probe capturing the ambient temperature. Exposed in this case means the nest box is exposed to direct sunlight the entire day. Exposure during part of the day will produce different results.

The charts display results from 7 AM and until 7 PM. The two nest boxes are of the same design and provide flow-through ventilation. One box is painted white and the other is an unpainted weathered box.

The first chart compares temperatures using the boxes as described above while the second chart compares temperatures with the weathered box having the addition of a sun shield. The sun shield is larger than the boxes roof and is attached to the box using screws which pass through the shield and 5/8" spacers into the roof. The shield provides shade for the box's roof and the spacers permit air flow between the shield and roof. Flow-through ventilation is most effective if there is a breeze.

Photos in each chart show the two nest boxes positioned to be isolated from nearby objects. As positioned the sun rose from the right side of the boxes, arced over the top and set on the left side of the boxes.

In both charts note that the inside temperature difference rose rapidly as the sun hit the side of the weathered box. The temperature inside the painted box was always lower than in the weathered box. Temperatures inside both boxes rose above ambient temperature and remained so as they cooled.

In the first chart the temperature inside the weathered box quickly rose above the ambient temperature and remained so while the temperature in the painted box didn't rise above ambient temperature until after 2 PM.

The second chart has similar results with a major notable difference—the sun shield made a significant difference in limiting the internal temperature of the weathered box when the sun was overhead.

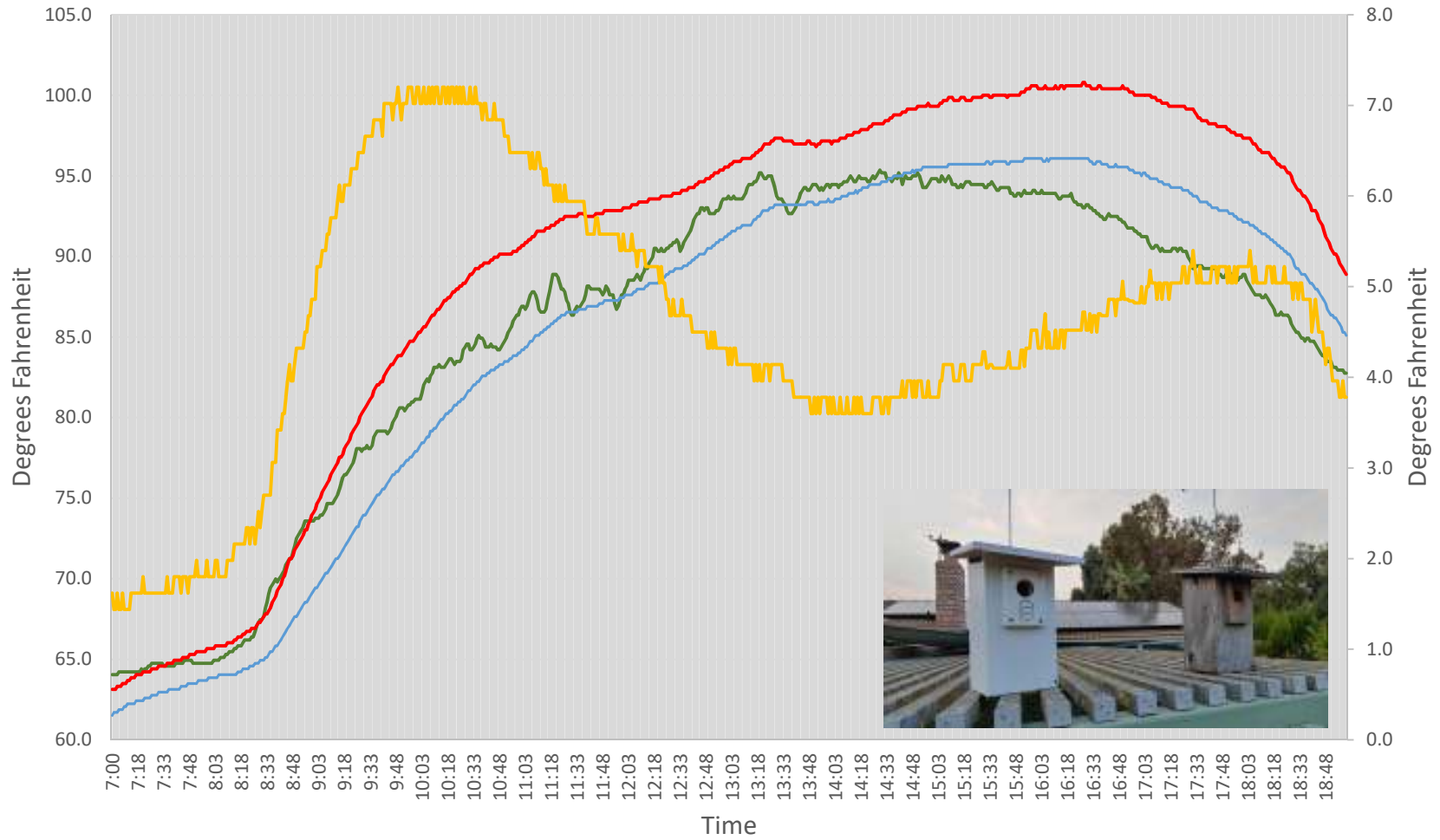
The conclusion is that a sun shield installed on nest boxes can make a difference in limiting the temperature inside nest boxes. Shields could be installed on the west side of the box to help during the hottest part of the day. Painting the boxes white or even a lighter earth tone is effective. Hanging nest boxes in the canopy of trees could negate the need for painting the boxes or installing a sun shield.

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# Compare temperatures inside a painted white and a weathered bluebird nest box

*Temperature Comparisons on July 28, 2021*



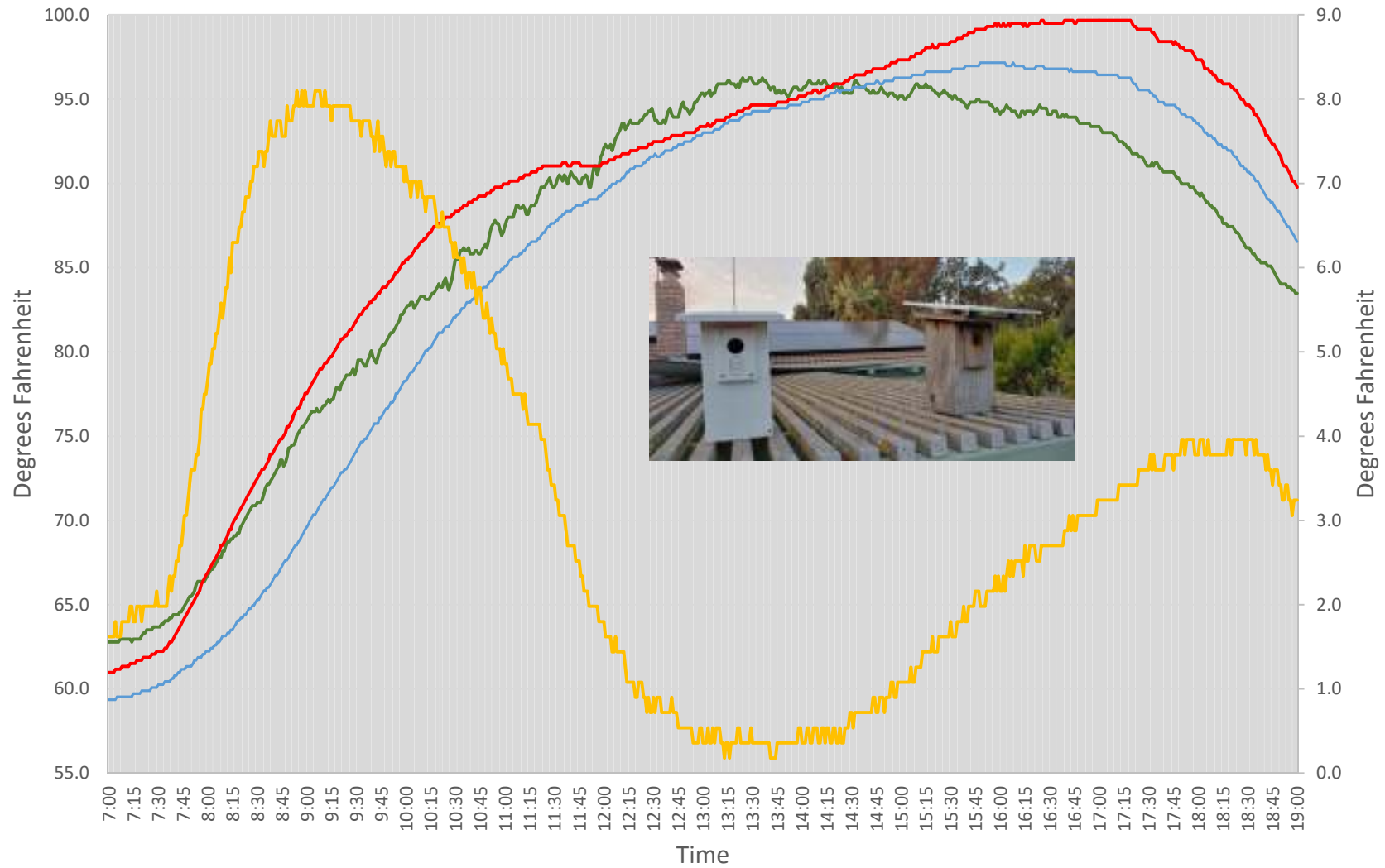
Prepared by Lee Pauser

— Ambient — Weathered Box — White Box — Difference

August 13, 2021

# Compare temperatures inside a painted white and a weathered bluebird nest box with sun shield

*Temperature Comparisons on July 30, 2021*



Prepared by Lee Pauser

— Ambient — Weathered Box — White Box — Difference

August 13, 2021