

## Where's the best home?

The best part of doing science is learning new things, especially, unexpected things. How refreshing to be able to say more than “this makes sense, it must be right,” but also “we did experiments, and the data are clear, regardless of what we thought before”. So what did we learn?



We tried some experiments to investigate the effects of aspect on the internal temperatures of nestboxes (Chart 1). As expected, nest boxes on the west side of a building were substantially hotter than those facing east, north, or south. On sunny days the west facing boxes topped out about 22 percent hotter, some even hitting 130°F. The interesting things were that the east-facing boxes warmed up most quickly and maintained a long plateau through the day but had top temps almost identical to the north- and south-facing boxes. On cloudy days like 25 July, all boxes were equal.

So we followed this up by looking at the effects of shade and shade type (Chart 2). Here we got some real surprises! From hottest to coolest most people would expect the results to go: full sun, light dappled mesquite shade, heavy dappled mesquite shade, full shade. However, as you can see, full shade was the second warmest. Apparently being mounted in a mesquite tree, even in an area with only partial shade is cooler, and in a dense section of canopy is coolest of all. We're thinking it must be due to the tree's natural cooling effect as it breathes and releases water vapor and oxygen into the air – a natural swamp cooler effect.



We conduct these experiments to expand our knowledge and capacity for conservation efforts by safely providing nest boxes in a desert environment. For more information or to support these and ongoing nest box projects, contact Jonathan Horst ([jhorst@tucsonaudubon.org](mailto:jhorst@tucsonaudubon.org)).

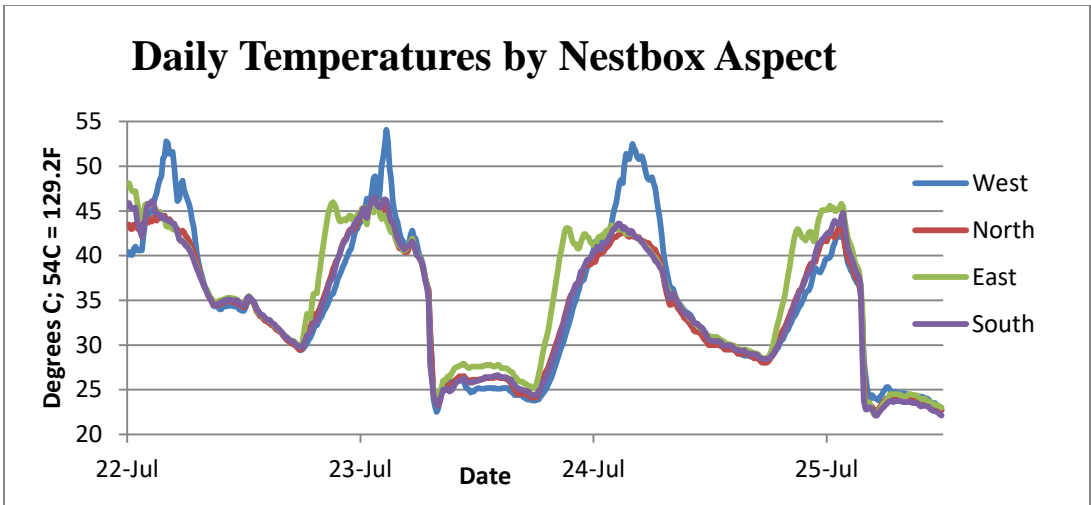


Chart 1

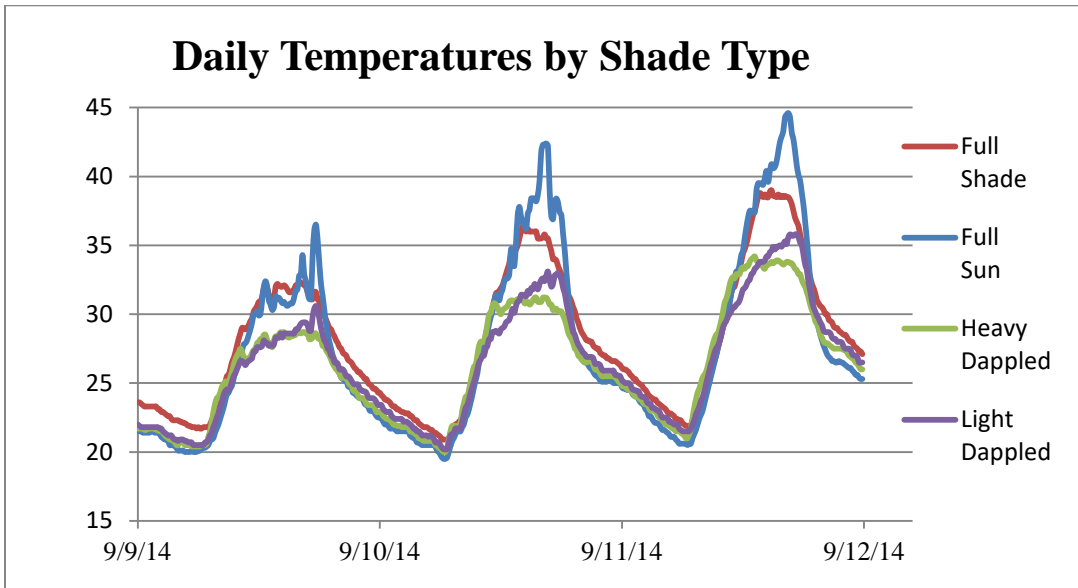


Chart 2