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## EFFECT OF VENTILATION HOLES ON THE INTERNAL TEMPERATURE OF BIRD NEST BOXES

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Many directions for construction of nest boxes state that ventilation holes should be made near the top of the boxes' sides. For example, the University of Florida IFAS Extension Service website (<http://edis.ifas.ufl.edu/UW058>; accessed 17 January 2008) advises that "Ventilation holes or slits should be located at the top of both sides just beneath the roof." The Cornell Laboratory of Ornithology Birdhouse Network web page (<http://www.birds.cornell.edu/birdhouse/resources/features>; accessed 17 January 2008) also recommends ventilation holes.

We asked authorities at the University of Florida (UF) and Cornell University (CU) for the difference in temperature of ventilated boxes and unventilated boxes. Mark Hostetler, UF, and a docent at CU replied that they knew of no such data, so we conducted an experiment to test the effect of ventilation holes on the internal temperature of several boxes.

We constructed six boxes with an inside base of 11.5 × 12.5 cm, inside height 24 cm, and a hole diameter of 4 cm with the bottom of the hole 17 cm above the floor. In three of the boxes, four 0.6-cm holes were drilled in each side 1 cm below the top. The bottom of the entrance hole was 1.5 m above the ground. Boxes were exposed to the sun from about 0900 to 1600 hours in Longwood, FL. Boxes were not occupied.

Temperature in the bottom of the boxes was recorded six times, one day in February, two in March and three in July during clear sunny weather. Temperatures outside the boxes averaged 39.2°C. The ventilated boxes averaged an inside temperature of 34.0°C degrees; the unventilated boxes a temperature 34.9°C. We suspect that a difference of less than one degree is not enough to threaten the life of young birds in nest boxes.

For ten years the authors have checked nest boxes without ventilation holes. The only fatalities were due to predators. On the other hand, all of these boxes except bluebird boxes were shaded completely or for the majority of the time, so the need for ventilation holes may not have been critical. Some boxes for bluebirds without ventilation holes did receive sun for most of the day.