

Inbreeding of Illinois Peregrine Falcons

By Mary Hennen

Inbreeding in raptor populations is not easily determined, but when a high percentage of individuals in a population are banded including many young each year, field observations of banded birds are possible to gather relevant data about such topics. The majority of the re-established Midwest Peregrine Falcon population is banded. The unique color band codes along with the U. S. Fish and Wildlife Service band that are placed on captured adults or fledging young allow for identification of individuals by scientists and other observers in subsequent years.

Tordoff and Redig (1999) documented only 4 percent of identified breeding pairs as being incestuous. Since the recovery of the species, the first recorded occurrence of inbreeding in Illinois Peregrine Falcons occurred in 2005 when the adult female (Magnolia – band code: blk22R) at the Hyde Park nest mated with her son (band code: b/g S/T) from 2000. Though the peregrines incubated their clutch of four eggs, the gutter nest failed as it ultimately washed out. Though never breeding successfully, this pair remained together in Hyde Park for the next four years.

In 2011, a second pairing of related peregrines occurred. At the Uptown Theater site, the adult female (Zoom b/r *4/H) nested with her son from 2005, Stan (b/g 98/K). Though Zoom was seen early in the breeding season



**Zoom, a female
Peregrine Falcon who
mated with her son,
sits on her nest
in 2011.**

Photo by Mary Hennen.

with her mate of the previous eight years, b/g G/G was last confirmed via bands on 18 March 2011.

The Uptown peregrines successfully fledged two young. Maximum efficiency in copulation (frequency

and success) occurs the week prior to egg laying (Radcliff 1980). Due to the length of time between the last sighting of b/g G/G and the first egg laid on 6 April 2011, odds are in favor of Stan being the biological parent of any fertilized eggs. This will be determined at a later date when the blood samples taken from this year's offspring are genetically mapped against last year's brood.

Isabel Caballero has developed microsatellite DNA primers as part of her recently completed dissertation research at the University of Illinois, Chicago and she has genotyped offspring for parentage studies of previous years' nests in the Chicago region. To ascertain if the eggs from the Uptown inbred pair of peregrines differed from unrelated mates, all eggs from accessible Illinois nests

were weighed and measured shortly after being laid. Peregrine eggs are considered unusually small if their size range number (length x width) is less than 1800 millimeters and unusually large if greater than 2400 millimeters (Radcliff 1980). All Uptown eggs fell within normal parameters. The weight for said eggs was at the upper range (average is 40-50 grams). Overall, the inbred eggs were not significantly different in size or shape from either the rest of the 2011 Illinois eggs or from measurements of peregrine eggs overall.