

# OSPREY CAMERA BLOG

*Osprey Activities @ Nest on MD Eastern Shore*

## EVERYTHING YOU WANTED TO KNOW ABOUT OSPREY EGGS, BUT WERE AFRAID TO ASK!

Posted on May 20, 2013 by ospreycam

**G**OOD AFTERNOON FROM THE CLOUDY, WARM AND HUMID EASTERN SHORE! EVERYTHING here is status quo. Tom continues to fish and hang out. He has been spending most nights on a piling at the end of our dock, which has been verified visually and by the many little "gifts" (if you know what I mean) he has left on the end of the dock beside the piling. This is physical evidence of Tom's night time residence, and definitely not circumstantial evidence! Tom had three hungry crow friends hanging around the piling yesterday while he was trying to enjoy a fish, but they appeared to go away hungry. He was also chased by a very brave (and some would say not too bright) mockingbird as he was flying around, and appeared to be annoyed with the bothersome intruder.

And now for the great news! Dr. Paul Spitzer has provided a wonderful treatise (maybe not quite a treatise, but almost), which I have named "Everything You Wanted to Know About Osprey Eggs But Were Afraid To Ask" (my name, not his!). It is a wonderful overview of, well, everything you ever wanted to know about osprey eggs with some additional osprey information included at no extra charge (a joke, Dr. Spitzer!). Please enjoy while we continue to wait and watch!

### PAUL SPITZER, REPORT #3: THE OSPREY'S MARVELOUS EGGS

*Birds lay eggs: That's how they make more birds. Many of us are greeted by those eggs each morning at breakfast.*

*Every spring, for a month or so, the osprey population's entire annual reproductive investment lies warm and protected in their big stick nests: "Nest Eggs" indeed!*

*Because osprey nests are prominent and fascinating to human beings, we have learned much about the ecology and aesthetics of their beautiful eggs. The "clutch size" ranges from 2 to 4, and roughly 80% of Chesapeake females lay 3 (the "modal clutch size"). It is known from banding studies that a 2-egg clutch reflects a young female, a first-time breeder. 4-egg clutches are associated with food-rich nesting areas: We shall learn why.*

*A three-egg clutch takes about 6-7 days to complete; a 4-egg clutch probably 8-10. The Eastern Bay Osprey Cam has allowed precise documentation of this timing; even in one case the time of day the egg was laid. Incubation begins with the first egg, so the eggs hatch in sequence. Marked eggs typically hatch in 37-38 days. This "incubation period" is even longer than that of the Bald Eagle, at 35 days.*

*Once the egg hatches, the nestling will take about 7-8 weeks to reach its first flight, and will remain dependent on parents to catch fish for a variable period thereafter. So this is a reproductive commitment of 4 months; well over 4 if we count the initial spring return from the tropics, courtship, and cooperative rebuilding of the nest. Although these traditional nest sites are markers for food-rich habitat, there is no way breeding ospreys can completely predict the food regime or the challenges of weather for 4 months. Thus they and many other species have evolved "Brood Size Reduction". If food is limiting, and weather turns very cold and rainy, the sequential hatch protects the older, more vigorous young from starvation. This process can occur well into the nestling period, up to week 3 or even 4. In places where the food regime has weak years, such as Gardiners Is., NY, many broods are reduced to zero. Chesapeake food is generally available: Particularly in the great tributary rivers and creeks sheltered from extreme weather, fledging broods of 2 and 3 young are common. That is the history of the Osprey Cam nest. Fledging 4 young requires a very rich food regime, and a very vigorous male supplier of fish. Sometimes it is seen in the early colonization of what will become a great osprey colony; such as Smith Is., MD, and Martha's Vineyard, MA, in the 1970's. So large broods are a predictor of potential population growth, given adequate predator-proof nest sites.*

*Now, let us turn to beauty and recent ecological history. Osprey eggs are typically the size of a "jumbo" chicken egg, ranging in weight from about 65 to 80+ grams. Words fail me as to how beautiful they are. Watching Osprey Cam, one sees the russet glow of the 4-egg clutch. This particular clutch is very cinnamon. Others are rich browns, and some have a white to cream-colored background covered with dots and swirls as dark as mahogany. There are also spots and flecks shaded delicate lavender. Clutch-mates tend to have some artistic consistency, but there is enough variation that one wants to admire each entire clutch as an avian work of art. Toward the end of the incubation period, gentle polishing and weathering have sometimes reduced the eggs' appearance to old scuffed shoes. But—aha!—the life within is about to make its appearance.*

*The stunning beauty of osprey clutches was not lost on the old naturalists. And there was the gamesmanship of climbing to nests, mostly in high trees in those days; or low but way out on isolated marshes and beaches (still true in portions of the Chesapeake). The 19<sup>th</sup> Century saw the hobby of egg-collecting, or "oology". There was even a little journal devoted to it, "The Oologist", although this appears preposterous from our modern conservation perspective. The 20<sup>th</sup> Century result was museum cases full of dusty old blown-out eggs. Osprey eggs were among the great prizes, so they are well represented in these curio, throwback collections.*

*Now we have two twists of fate that no one could see coming; the sort that make human life so interesting and humbling. The stable, bioaccumulating organochlorine pesticide DDT, rightly hailed as a wonder chemical for tropical in-house control of malaria, elimination of human body lice, etc., had unintended effects on certain predatory birds at the end of long food-chains: It thinned their eggshells and killed the developing embryos. Impacted species included the Osprey, Bald Eagle, Peregrine Falcon, and Brown Pelican. Ignorant, misguided broad-scale application of DDT for ecosystem mosquito control and agriculture devastated all of these species in the eastern US. When I began my Ph.D. osprey population studies in 1968, I found dented eggs collapsing under the weight of the incubating birds. Eggshell thinning was a "biomarker", the sort of thing prized by toxicologists: But such a clear, measurable signal is often impossible to find in nature. Thus the "great DDT experiment" became a paradigm in environmental toxicology, and those healthy but obscure old pre-DDT eggs languishing in museum storage became the "control" evidence. After DDT was banned by the Federal government in 1972, the subsequent recovery to abundance of the impacted "bioindicator" bird species completed this unintended but beautifully documented experiment.*

*As a result, the use of various chemicals in the environment has been subject to much more advance screening, scientific monitoring, and regulation.*

*Paul R. Spitzer, Ph. D. 1980 Cornell University, Ecology and Evolutionary Biology*

*Windy Hill on the Choptank River*

*May 18, 2013*

Thank you, thank you, Dr. Spitzer, for your enlightening information! Until next time, good bye from the beautiful Eastern Shore!

Crazy Osprey Man and Mrs. Crazy Osprey Man

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