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## Osprey as a Sentinel of Human Health By Jane Morton Galetto

An osprey senses danger and beckons to its young in a piercing staccato of endless chirps, the alarm call to “crouch,” the human equivalent of “playing dead.”

But little did osprey know that the real danger was posed by an invisible threat—DDT (dichloro diphenyl trichloroethane),\* and no call that the bird could make would stop its disastrous effects.

DDT a synthetic compound was first produced in the late 1800s. Its insecticidal properties were discovered in 1939 in fact in 1948 a Nobel Prize in Physiology was awarded for it’s protective qualities in combating malaria and typhus by killing various disease carrying invertebrates. The effective killer was used on crops to fight insects and in coastal communities to combat mosquitoes.

In 1962 celebrated biologist Rachel Carson wrote *Silent Spring* warning of the harmful nature of this chemical cocktail. The osprey became the sentinel of our own demise. For both humans and birds of prey are at the top of the food pyramid. Through a process often times referred to as biomagnification each animal within a food web intensifies the contaminants. So a fish that consumes many invertebrates begins to store chemicals in greater concentrations to the point where the osprey, which eats exclusively fish, was retaining the greatest levels of contaminants in its reproductive system.

Eventually, the birds reproductive system was compromised to the point where its eggshells were thinner than normal and were crushed under the weight of incubation. The lack of viable eggs decimated the osprey population along the northeastern seaboard. In fact New Jersey’s osprey population was a shadow of its former abundance. Prior to the 50’s and 60’s there were an estimated 500 pair of osprey nesting in New Jersey; in the 70’s a mere 50 nesting couples remained.

It wasn’t till 1972 that Rachel Carson and environmentalists were successful in having DDT banned. Today, due to the Endangered Species Act, as well as recovery efforts by the Endangered and Nongame Species Program and volunteers, New Jersey’s osprey population is close to its historic numbers. But the threat of chemical compounds

remains with us even today. DDE, a metabolite or residual of sorts from DDT, persists in the Delaware Bayshore. Osprey are not the only raptors to have been impacted by DDT eagles and other animals have suffered the ill effects as well.

The silent alarm call, offered by the disappearing number of osprey was simply a precursor to our own demise. So the next time you see an osprey think of future generations of your family that were made possible by its call and consider “crouching” in reverence.