

Our Ocean Backyard — *Santa Cruz Sentinel* columns by Gary Griggs, Director, Institute of Marine Sciences, UC Santa Cruz.

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Bringing Back the Peregrines from the Edge of Extinction



A peregrine falcon, taken by Nick Dunlop.

In California and elsewhere, the peregrine falcon and the brown pelican both suffered serious reproductive failure because of the use of pesticides, particularly DDT, during the 1950s, 60s, and 70s. The biological magnification of the pesticides up the food chain and their accumulation in the birds' fat reduced the amount of calcium in their eggshells. With thinner, or in some cases virtually no shells, fewer eggs survived to hatch.

Rachel Carson's book, *Silent Spring*, was a best seller, and generated widespread public concern about the use of pesticides. President Kennedy requested his Science Advisory Committee to investigate the pesticide issues and, in essence, the group concluded that Carson's claims were valid. They recommended phasing out the use of persistent toxic pesticides. This did not happen right away, however.

The Environmental Defense Fund was established at this time by a group of scientists and attorneys whose primary goal was the elimination of DDT. A series of lawsuits were filed as research continued to reveal the connections between high

levels of DDE (the breakdown product of DDT) and thin eggshells, in peregrines, pelicans and also the California condor.

Several years of court battles ensued, which involved the Environmental Protection Agency, the DDT manufacturers, and the Environmental Defense Fund. In 1973 a court ruling led to the banning of use of DDT in the United States although with an exemption for public health purposes. Until 1985, the chemical was still being produced in the U.S. but exported to other countries.

Globally, nearly all use of DDT as an agricultural pesticide has now been eliminated, with the chemical largely replaced by less persistent insecticides. An agreement reached by over 170 countries in Stockholm, which took effect in 2004, outlawed use of some of the most persistent pesticides and restricted DDT for the control of malaria, where in many countries there are few affordable or effective alternatives.

The realization in the early 1970s that the peregrine falcon was nearly extinct in California led a local veterinarian, Jim Roush, to initiate an effort to try to help the population recover. A captive breeding program for peregrines undertaken by Dr. Tom Cade at Cornell University had been successful in the east and provided encouragement for an experimental program in California.

Jim got hold of Ken Norris, a Professor of Natural History at UC Santa Cruz (and one of the early leaders of the efforts to develop Long Marine Laboratory) and proposed a recovery plan. They had their share of challenges in obtaining funding and getting a program underway, but were able to find a dedicated young scientist and falconer in Brian Walton, who took charge. In 1975, the Santa Cruz Predatory Bird Research Group was formally established as part of the University of California Santa Cruz.

Much of their initial efforts were focused on locating the few remaining peregrine nests in California, not an easy task, in large part because the birds usually nest in high, remote, precarious locations, at least precarious for young birds and humans. Steep and nearly inaccessible coastal cliffs, bridges, offshore oil rigs and skyscrapers, are all recognized peregrine nesting sites. Flying around in helicopters and hiking through remote terrain was the approach used by Brian and his dedicated field crew.

As nests were located and cliffs and bridges were scaled, soft-shelled eggs were carefully removed and replaced with dummy eggs. Private funds were raised to pay

staff and construct a facility in the lower quarry at UC Santa Cruz where these soft-shelled eggs were incubated until the young peregrines hatched.

The baby birds were fed and cared for until they were large enough and then they were returned to their original nests, with the parents apparently completely accepting of having had eggs replaced with active teenagers almost ready to fly.

Through the efforts of the Predatory Bird Research Group (PBRG) and their supporters, the release of the peregrines hatched in captivity from the late 1970s through the mid-1990s was very successful. In fact it was so successful that the peregrine falcon was taken off the federal endangered species list. A statewide census by the PBRG in 2006 documented over 200 territories now occupied by healthy peregrines. This has been a remarkable success story thanks to a dedicated group of individuals and supporters.