BOOKS: CONSERVATION

Against Triage

Stuart L. Pimm

All meetings on how to stem the already high and still accelerating loss of species include people who proffer "triage." "Saving species is a battleground," goes their argument, "yet resources are finite, there are so many species and so little time. Write off the seriously wounded and concentrate on those we can save." Although nobody quibbles with the efficient allocation of resources, triage is seductive music to some managers' ears. It combines the semblance of a tough decision-making style with the substance of doing nothing. "It's really too bad about species *X*, but I can fund more research on species *Y*" and, sotto voce, "avoid politically difficult choices about *X*." Years later, the same argument will be repeated about species *Y*. Worse, triage inhibits science. Saving the very rarest pushes the technical frontier of conservation biology, for nothing concentrates the mind like impending extinction, nor so openly tests whether our knowledge of ecology, genetics, and behavior is up to the task.

Few have so relentlessly pursued this frontier as Noel and Helen Snyder. And no example has generated more controversy than their years with the California condor. Their beautifully illustrated book is an outstanding case study of whether we know enough science to save the rarest species—and whether decision makers will hear and understand that science.

The California Condor
A Saga of Natural History and Conservation
by Noel and Helen Snyder
AP Natural World (Academic Press), San Diego, 2000. 432 pp. $29.95. ISBN 0-12-654005-5.

Condors once scavenged across the southern and western United States. By the early 20th century, they were restricted to the mountains of southern California. It seems likely their demise was due to the widespread practice of setting out poisoned carcasses to kill livestock predators. Just how many condors survived to mid-century was, and is, disputed. The Snyders suggest 150, with an inexorable decline to 60 by 1970. Other posited constant numbers, despite contradictory counts. With no decline, there was no need for either explanation or intervention. The Friends of the Earth argued that the condors, though rare, should be left alone and the intrusions of scientists into sacred wilderness prohibited. To some, the plan to rear the species in captivity was less acceptable than "death with dignity."

Much of the book deals with the political squabbling as anecdotes and incidents grew into data and conclusions against the din of those who wanted no intervention and, therefore, no more data. Eventually, photographic surveys completed a comprehensive catalogue of individuals, which removed doubts about which birds were alive and which were dead, and why.

Population dynamics is mostly about sex and death. Hard-won permits to study nesting showed that condors that bred did so with reasonable success. Even more controversial permits to radio-collar birds demonstrated that they foraged far beyond the remote areas of their nesting sites. The pattern became clear. Birds died from lead and other poisons ingested from (and what had dispatched) their carrion food. (In vintage Snyder tradition, the authors devote 10 pages of the book to just one such death.)

In the mid-1980s, the decision on whether to bring the remaining individuals into protective custody unfolded into the by-then-expected litigation, this time with the National Audubon Society filing suit against such actions. But the condors were dying even on their recently protected reserve and even when they were supplied with lead-free carcasses. The birds foraged so widely that they could not be kept out of harm's way. Their death rate had reached the level typical of species that live fast and die young, not those that lay one egg every other year or so. The last six wild birds were rounded up in 1986 and early 1987.

From that point, genetics took over. The birds' dating was supervised more closely than debutantes during the Season. Careful DNA screening ensured that as much genetic heterozygosity was preserved as possible. These efforts have contributed to an impressive 12 to 20 fledglings produced each year since 1991. Early infertility seems to have been due more to the birds' inexperience than to inbreeding. The practical application of animal behavior was less successful. Many of the captive-reared birds that were released into the wild had to be recaptured because they showed excessive tendencies to approach humans. To minimize the chances of nestlings imprinting on people, condor puppets were used to feed hatchlings. These puppet-raised young, however, proved to be rather dim when released into the wild. Obviously, real birds teach their offspring many important things beyond what their genes encode. But birds could be conditioned to avoid landing on power poles and could be released into areas where the original causes of the decline were minimized, such as the Grand Canyon. Although the Snyders note a resurgence of lead poisoning [see also (*1*)], in time hunters may prefer ammunition made of less toxic materials. The thriving captive flock provides the chance to explore options and perfect plans.

To soar again. In April, this post-breeding female became the first wild-born California condor returned to the birds' habitat.

Captive propagation one species at a time is not the solution to the global loss of biodiversity. At worst, it contributes to the naïveté exemplified by Ryder *et al.* in their contemplation of a DNA bank under the assumption that "at least 5200 animal species are endangered" (*2*). With a rough estimate of 10 million species [of which more than 10% of those in taxonomically familiar groups are endangered, and it is likely that at least another 20% will be soon (*3*)], this number is off by almost three orders of magnitude. To save all species, we must save the ecosystems on which they depend. Nonetheless, not all species are equal in their ability to inspire us—the condor is among the most spectacular birds—nor in their ability to extend our applied scientific skills to the limits necessary to save them. Were I endangered, I'd want the Snyders and their colleagues there to ensure I wasn't written off.

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References
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