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Authors: Koenig, Walter D., and Marra, Peter P.

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IN MEMORIAM

Russell S. Greenberg, 1953–2013

Walter D. Koenig¹ and Peter P. Marra²

¹ Lab of Ornithology, Cornell University, Ithaca, New York, USA

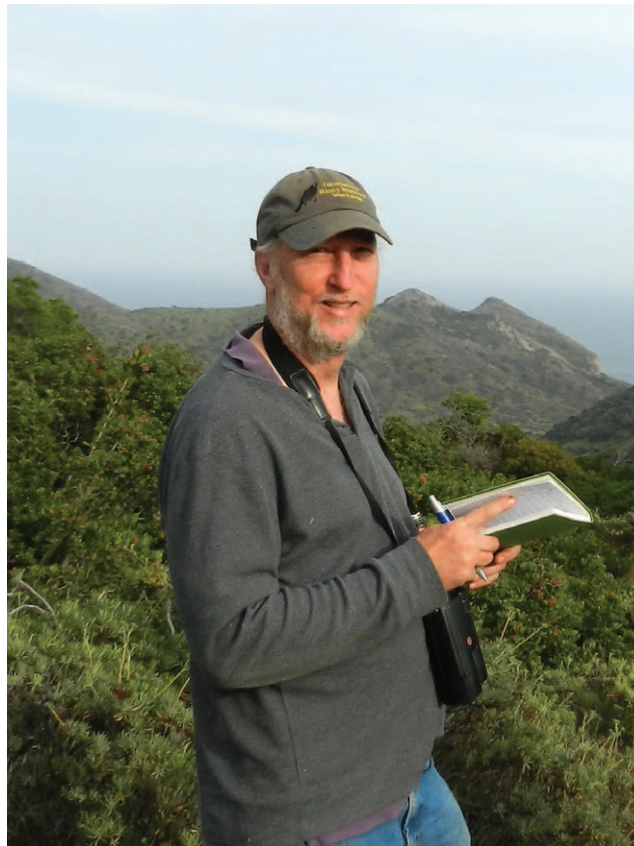
² Migratory Bird Center, Smithsonian Conservation Biology Institute, National Zoological Park, Washington, DC, USA

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Russ Greenberg (see photo), an Elective Member of the AOU since 1985 and a Fellow since 1991, died on October 24, 2013, at the age of 60 after a year-long battle with pancreatic cancer. Born in Washington, D.C., Russ moved across the country several times during his early years, as his father, Joseph Greenberg, pursued a career in microbiology. In 1958, the family finally settled in Palo Alto, California, where Russ spent most of his adolescent years.

Although a laboratory scientist by profession, Russ's father's true love was birding. When Russ became interested in birds at the ripe old age of 8, Joe was only too happy to indulge Russ's enthusiasm by engaging in weekend birding trips to the far reaches of California, as well as longer vacations during which finding new birds was a major goal. The 1960s and early 1970s was a golden age of California birding, and Russ, his father Joe, and his brother Doug were among the many hardcore birders of that era who scoured desert oases and small patches of trees along the California coast looking for vagrant warblers and other rarities.

Russ began his transition to professional ornithology in 1971 when he started college, first at University of California Santa Cruz and then at University of California Berkeley, where he graduated in 1976. He proceeded to



Russ in the field on Santa Cruz Island, California, March 2013.
Photo credit: Maybellene Gamboa

stay on at Berkeley for his Ph.D., which he received in 1981 under the direction of Frank Pitelka. He then accepted a postdoctoral position with Eugene Morton at the Smithsonian, where he remained for the duration of his career.

Russ pioneered research on an astonishing number of important ornithological questions. His Ph.D. work on the evolutionary ecology and behavior of migratory and resident birds in tropical ecosystems laid the groundwork for his lifelong interest in how migratory species adapt to novel ecosystems and coexist with the resident avifauna. His interest in the interplay between morphological adaptations and foraging plasticity led Russ to begin a series of studies on the phenomenon of neophobia in 1983, well over a decade before animal personalities

or behavioral syndromes became topics of wide interest in behavioral ecology.

Russ's deep interest in basic science never kept him from contributing significantly to the conservation of the species and habitats he loved. Russ was one of the key scientists in the nascent field of conservation biology who became alarmed by tropical deforestation. More profoundly, he recognized that certain crops could be grown in ways that minimized their negative impact on native ecosystems. Expanding on this simple concept, Russ

invented the idea of promoting shade-grown coffee as a bird-friendly product and applied it to the marketplace, changing the entire coffee industry in the process. Although most of his efforts remained focused on tropical agroforestry ecosystems, he also facilitated research on cacao and on California wine-grape production, always with the goal of mitigating the effects of these crops on the native fauna.

Nowhere was Russ's pioneering work more evident than in his study of Neotropical migrants, which culminated in 1989 with a landmark paper with Chandler Robbins, John Sauer, and Sam Droege in the *Proceedings of the National Academy of Sciences* that indicated precipitous decreases in migratory species. After forming the basis of international alarm about declines in Neotropical migrants, their work had the striking effect of motivating the U.S. Congress to appropriate funds and establish the Smithsonian Migratory Bird Center (SMBC), with Russ appointed as director. Now more than 20 years old, the SMBC has served as a magnet for basic research on migratory species and has played a leading role in providing information about the science of migration to policymakers and the lay public. The SMBC has also initiated several important public initiatives, including the Bridging the Americas program to teach about migratory birds among gradeschool children in the Western Hemisphere and a popular public festival started in 1993 to celebrate the arrival of migratory songbirds. This festival blossomed into International Migratory Bird Day, celebrated at hundreds of venues each year throughout the Western Hemisphere.

While many of us are mesmerized by bright, showy birds, Russ was consistently attracted to drab, relatively neglected species that live in fringe habitats such as tidal marshes and boreal wetlands. Russ was central to the development of an international collaborative effort to study the Rusty Blackbird, a formerly common species that had mysteriously declined by 90% since the 1960s. His interests in marsh-breeding birds led to the discovery of novel adaptations in sparrow bill morphology as well as, once again, work drawing attention to the critical need for conservation of tidal marsh habitats. Most recently, his interests in bill morphology prompted Russ to delve into research focused on the role of bird bills as heat radiators, work he undertook both at home with House and Song sparrows and, more exotically, among "Darwin's finches" on the Galápagos Islands during the last year of his life.

Russ's scientific works were published in more than 150 peer-reviewed publications, along with several books and edited volumes. Equally impressive was Russ's mentoring, which involved more than 70 postdoctoral scholars, graduate students, and research interns, many from developing countries. Russ's contributions to ecology, evolution, and conservation were uniquely creative and are matched by few, if any, other ornithologists of his generation. His seminal work was recognized by the American Ornithologists' Union with the awarding of the Elliott Coues Award at the AOU annual meeting in Chicago in August 2013. A celebration of his remarkable career, organized by his colleagues and students at the SMBC and named "The Greenberg Innovation Symposium," was held in September 2013 and attended by more than 80 of Russ's friends, colleagues, and collaborators from around the world.

The pleasure of knowing Russ went far beyond his professional accomplishments, however. Russ had a uniquely dry sense of deadpan humor that many of us remember encapsulated by a slide of his tropical forest field site from the air, consisting, barely recognizably, of several heads of broccoli squashed together, photographed from above. Russ came up with the idea of a repository for data long before the Internet, suggesting that it might be called the *Journal of Useless Data*. He pointed out very quickly that because so much data fell into this category, competition for space in the journal would soon be stiff, forcing the editors to reject many submissions because the data were not useless enough.

In addition to his remarkably prolific professional career, Russ was never short of outside interests. He may be the first and only figure-skating, trapeze-flying scientist ever to play a major role in the American ornithological scene. Russ was a wonderfully enjoyable human being who will be sorely missed by all who knew him.

Russ is survived by his wife, Judy Gradwohl, currently the MacMillan Associate Director for Education and Public Engagement at the National Museum of American History, whom he met in graduate school at UC Berkeley and was married to for 32 years; his two children, Jeremy and Natalie Gradwohl; his mother, Lu Charlotte of Berkeley, California; and three older siblings, David Greenberg of Prince George, B.C., Marti Keller of Decatur, Georgia, and Doug Greenberg of Berkeley, California. We thank Judy Gradwohl and Doug Greenberg for help preparing this memorial.