UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

OF BIRDS, GUANO, AND MAN: WILLIAM VOGT'S *ROAD TO SURVIVAL*

A Dissertation

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

Degree of

Doctor of Philosophy

By

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Norman, Oklahoma

2005

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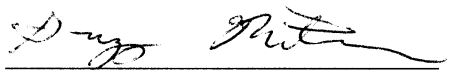
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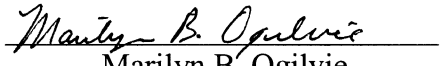
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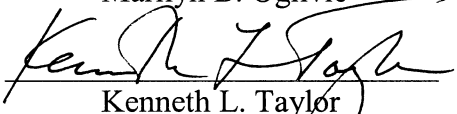
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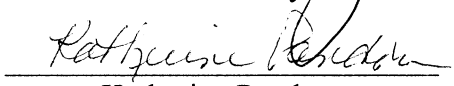
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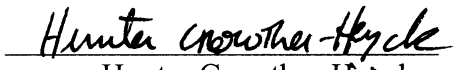
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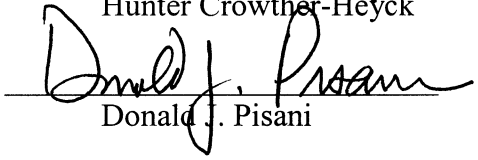

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ACKNOWLEDGEMENTS

Research for this dissertation was made possible through grants from the National Science Foundation (SBR-9729903), from the Rockefeller Archives Center, from the Graduate College of the University of Oklahoma, and from the Graduate Student Senate of the University of Oklahoma. Alasdair and Richard Fraser-Darling kindly spoke with me about their father and allowed me to review family papers. Population-Environment Balance permitted me to view the papers of William Vogt that it held. Librarians at Smith College, Rice University, the Denver Public Library, the Library of Congress, the National Library of Scotland, UNESCO Archives, Yale University, the University of Oklahoma, the University of Central Florida, and West Melbourne Public Library provided invaluable assistance and filled numerous requests for interlibrary loans; I especially note the gracious aid provided in this regard by Cécile Thiéry of the World Conservation Union and Tom Rosenbaum at the Rockefeller Archives Center. Brevard Community College provided me with congenial colleagues, a quiet place to work, and students who inspire me.

Graduate assistantships from the University of Oklahoma's International Programs Center and Department of the History of Science, as well as the DeGolyer Presidential Fellowship supported the author during this project. Participation in the National Science Foundation's Research and Training Grant entitled "Nature, History, and the Natural Historical Sciences" provided the intellectual and social milieu for examining population control within the context of wildlife conservation.

The Dibner-sponsored seminars in the history of biology at Woods Hole Marine Biological Laboratory, “Putting Humans into Ecology, Ecology and Conservation Biology,” and “Human Genetics in the Twentieth Century: The Science and Politics of Human Heredity” introduced me to interdisciplinary scholarship as scientists and historians examined historical and contemporary scientific ideas and introduced me to my colleagues in the history of science.

I wish to thank the faculty and staff of the Department of the History of Science at the University of Oklahoma for their unflagging support and kindness. Special thanks go to Gregg Mitman, who introduced me to William Vogt and Frank Fraser Darling, to Marilyn Ogilvie, who literally took me into her home, and to Hunter Crowther-Heyck, who was always willing to talk. To my family and friends I owe a debt of gratitude for accompanying me on this travail.

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ABSTRACT

William Vogt's best-selling and influential neo-Malthusian text *Road to Survival* articulated the conservation sensibility of his day and was literally read around the world. Vogt (1902-1968) came to his conclusions about land-use and population control through ecological research, confirming that conservation approach of natural resources would come by managing human behavior, rather than by directing the behavior of non-human organisms. Human behavior had indeed crossed into the realm of the natural sciences in so far as conservation was concerned. Specifically, Vogt urged humans to adopt population control to circumscribe land use.

Vogt was one of a group of ecologists who claimed that humans must adapt to their environment, albeit an environment they were capable of altering; Frank Fraser Darling, Julian Huxley, and Fairfield Osborn joined him. Vogt called for population control to become part of United States foreign policy, as would happen in the 1960s. He assigns ecologists to the role of expert policy advisor in a democratic society; he wants individuals to voluntarily choose to limit family size but is prepared to demand coercion. Vogt's work has long been seen as an early example of a land-use sensibility associated with the modern environmental movement; in reality it reflects an intermediate stage between Progressive Era conservation and the late twentieth-century environmental concerns for quality of life. Finally, Vogt's ideas have real life consequences. He was influential in the origins of what is now the World Conservation Union, which in its earliest stages as the International Union for the

Protection of Nature recommended *The Road to Survival* and he was national director of Planned Parenthood Federation of America, the leading voice for birth control in the United States.

INTRODUCTION

A favorable distribution of births is a
critically necessary step to the survival
of a civilization of high quality.

William Vogt[1]

Conservation implies restraint either
from without or from within.

William Vogt[2]

William Vogt (1902-1968), author of the influential neo-Malthusian text *Road to Survival* (1948), articulated the conservation sensibility of his day in this best-selling book that was literally read around the world. Among those influenced by this book was a young Paul Ehrlich who would go on to write the better-known and equally Malthusian *Population Bomb* (1968) that gave voice to the modern environmental movement's position on population.[3] It is as Ehrlich's forerunner that Vogt is most readily classified. Vogt's ideas, expressed in bold and even outrageous language, were in fact grounded in the wildlife ecology of the day, which led him to emphasize scientific management of natural resources that must at times accede to nature's prevailing forces. Vogt is a historical actor of interest to historians of ecology and environmentalism. He represents an under-appreciated period of environmental

[1] "A Population Policy for the United States Directed to Both Environmental and Genetic Improvement," Box 2:2 William Vogt Papers in the Conservation Collection of the Denver Public Library, hereafter cited as Vogt Papers, DPL.

[2] Hoyes Lloyd and William Vogt, "Pan-American Conservation," *Transactions of the Eleventh North American Wildlife Conference*, edited by Ethel M. Quee (Washington DC: American Wildlife Institute, 1946), 7.

[3] Allan Chase, *Legacy of Malthus: The Social Costs of the New Scientific Racism* (Urbana: University of Illinois Press, 1980), 382.

history that segues between Progressivism's emphasis upon rational use and the post-war's focus upon resources important to the quality of human life (e.g., air and water).

In the first chapter I introduce the reader to the young William Vogt, a man who survived a crippling bout of polio and recovered to the extent that he climbed the Olympic Whiteface Mountain. His bird watching avocation led to an ornithological education and an early conservation campaign in the 1930s against marshland drainage intended to eradicate mosquitoes. It was the unforeseen consequences to wildlife to changes that at first glance seemed solely beneficial that stimulated Vogt to investigate the ultimate penalty and catapulted him into national and international prominence in the 1940s.

In the second chapter I demonstrate the shift in Vogt's thinking from the need to conserve wildlife for aesthetic reasons to an understanding of wildlife as a natural resource and its role within human political economies. This shift can be seen while Vogt is the ornithologist for the *Compañia Administradora del Guano*, a semi-public body charged with managing Perú's critical natural resource. Vogt recognized that optimizing environmental conditions was the essence of conservation and that human behavior was a critical environmental factor because biological conditions could not be altered. Vogt was, in effect, starting to articulate an idea central to his book, *Road to Survival*. He recognized that although it was essential to understand animal ecology, encompassing physiology, territory, and behavior, an effective conservation program required modifying human behavior.

I discuss Vogt's work as an international civil servant in the third chapter. The Pan American Union hired Vogt to provide assistance to countries implementing the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere (effective 1942). This work will lead him to tour twenty-two Latin American nations and to publish reports on the population and natural resources of several nations. Vogt's ideas were informed by noted American conservationist Aldo Leopold's notion of a sick landscape as well as the specter of insecurity raised by the Great Depression and the Dust Bowl that together shook American exceptionalism. In the increasingly international world of the 1940s it appeared that the well-being of a single nation could be of global concern.

In the fourth chapter I explore Vogt's single most important contribution to environmental history, *Road to Survival*. Vogt, along with fellow conservationist, Fairfield Osborn, author of *Our Plundered Planet*, also published in 1948, believed that human beings were part of nature and capable of destroying the very matrix upon which life on earth depended. Their warnings to the world of the threat that humanity posed are presented along with the political, social, and economic context in which they were formulated.

In the final chapter, Vogt's ideas find a niche among birth control advocates in the United States who wanted to expand family planning overseas, the Planned Parenthood Federation of America, and among international wildlife conservationists, whose concern that decolonization along with global population growth would destroy critical wildlife habitat led to the formation of the International Union for the

Protection of Nature (IUPN), later renamed the International Union for Conservation of Nature and Natural Resources (IUCN). Vogt was involved with two organizations important to the public education campaigns necessary for the acceptance of the still disputed issues of population control and conservation; fifteen years after his death (1983), these two organizations publicly acknowledged their related objectives.

In this dissertation I present an intellectual biography of an acknowledged but inadequately studied historical figure in the history of ecology and environmentalism. Vogt's intellectual life encompasses many of the important issues of his time such as population issues, internationalism, and, of course, Cold War concerns of national security. Vogt's message about natural resources suggests that the United States needed to be proactive in securing its resources. More often than not when Vogt is included in an environmental history it is to note the neo-Malthusian message of *Road to Survival* or possibly the book's condemnation of free market capitalism.[4] A larger context in which to understand Vogt is starting to emerge with Gregory Todd Cushman's recent dissertation on the technocratic management of Perú's marine environment by the "Lords of Guano." This is an elaboration of the context for Vogt's scientific research in Peru from 1939 to 1941 and his influence in the formation of several Latin American conservation organizations.[5] Just as importantly,

[4] See for example, Donald Worster, *Nature's Economy: A History of Ecological Ideas* Second Edition (Cambridge: Cambridge University Press, 1994), 352. Robert Gottlieb*, Forcing the Spring: The Transformation of the American Environmental Movement* (Washington, DC: Island Press, 1993), 35-41. Allan Chase, in *The Legacy of Malthus: the Social Costs of the New Scientific Racism* (Urbana: University of Illinois, 1980), 376-387 briefly discusses *Road to Survival*; Stephen Fox, *John Muir and His Legacy: The American Conservation Movement*, (Boston: Little, Brown and Company, 1981), 306-313.

Cushman, along with Bjørn-Ola Linnér, places Vogt within an international context that links American conservation and environmentalism to global conservation and environmentalism.[6] Linnér's *Return of Malthus* neatly showcases the Swedish food scientist and neo-Malthusian, Georg Borgström, who was influenced by Vogt's work. Borgström would resign from his position as the head of the Swedish Institute of Food Preservation Research under pressure provoked by his "doomsday scenarios." However, Linnér, along with Eric Ross and Ronald Greene, showcases the international phenomena of neo-Malthusianism of which Vogt was decidedly a part. Green, influenced by Michel Foucault's theory that modern government authority is "grounded in the ability to promote the welfare of its subjects" emphasizes that Malthusianism was tied to the mid-twentieth century modernization theory. Ross implicates Malthus and his ideas in capitalist development over the past two centuries. The recent literature on neo-Malthusianism underscores that it defended capitalism and prevailing economic and social conditions. Indeed, in a reversal from earlier decades but consistent with Greene's and Ross's theses, large multi-national corporations recently began to promote genetically modified crops using neo-Malthusian arguments.[7]

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[5] Gregory Todd Cushman, "The Lords of Guano: Science and the Management of Peru's Marine Environment, 1800-1973," (Ph.D. University of Texas at Austin, 2003).

[6] In regards to the study of global environmentalism, Richard Groves' scholarship has been important in demonstrating a non-Western and early modern origin for environmentalism. Richard Groves, *Green Imperialism: Colonial Expansion, Tropical Island Edens, and the Origins of Environmentalism, 1600-1860* (New York: Cambridge University Press, 1995); Bjørn-Ola Linnér,*The Return of Malthus: Environmentalism and Post-war Population-Resources Crises* (Isle of Harris, UK, White Horse Press, 2003).

Road to Survival is not an isolated event in environmental history. Vogt was joined by Fairfield Osborn (1887-1969), son of paleontologist Henry Fairfield Osborn and author of *Our Plundered Planet* (1948), Frank Fraser Darling (1903-1979), Scottish ecologist and international conservationist, and Julian Huxley (1887-1975), biologist, first director-general of the United Nations Scientific, Educational, and Cultural Organization (UNESCO), and statesman of science. This cohort of men addressed conservation at an international level and accepted that humans were part of nature and therefore subject to biological laws and limitations. *Road to Survival* received favorable reviews from ecologists and scientists including Paul Sears, G.E. Hutchinson, and Aldo Leopold. In fact, Vogt was influenced by Leopold's land ethic and the idea that nature holds an intrinsic value. *Road to Survival* was adopted for use at American colleges and universities and it was, as noted above, incorporated into the reading list developed by IUPN in 1948. It was translated into multiple languages and published as a whole and as excerpts in *Reader's Digest* for a worldwide audience. Finally, Vogt's position was offered as the opposing view when Congressional Digest presented President Truman's proposed aid to Greece. *Road to Survival* was a text that brought its message to wide-ranging audiences. The fact that Vogt was part of a cohort of conservationists with similar sentiments and his ideas were widely broadcasted suggests he is part of a larger phenomenon worthy of study.

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[7] Linnér, 203. Ronald Walter Greene, *Malthusian Worlds: U.S. Leadership and the Governing of the Population Crisis* (Boulder, CO: Westview Press, 1999), 17, 68-72; Eric B. Ross, *The Malthus Factor: Poverty, Politics and Population in Capitalist Development* (London and New York: Zed Books, 1998), 216-221.

Vogt strongly emphasized the role of the expert. The expert had been touted by Progressives and influential during the Second World War but in this case the ecologist's understanding of nature is called upon to guide people to the "right" decision. Vogt encouraged people to rely upon ecological knowledge, noting that if people do so then a crisis may be averted. Otherwise, he warned, the inevitable crisis would cause a loss of freedom and people would be deprived of any choice in how they used natural resources. This was no empty threat as he argued that the United States should withhold foreign aid from Greece until population programs were implemented. Vogt asked Americans to restrain themselves for the greater good; to secure their own welfare and to better aid the world. They must, in essence, secure their victory in the Second World War, with its visible economic and military power, with natural resources conservation. His lifeboat approach to rescuing nations endangered by poor resource management led him to harsh criticisms of Britain's parasitical relationship with its colonies because it had allowed the island population to exceed its resources. Vogt essentially asked Americans to extend to ecologists the role of expert advisor already enjoyed by physicists during and after the Second World War.

Given Vogt's reliance upon the ecological expert and the potentially coercive nature of his recommendations, this dissertation speaks to the role of scientific expertise in a democratic society. Vogt wanted a democratic society for the United States but believed Americans must accept ecological advice to maintain that democratic society. This is a subject that the history of science has considered

primarily in the context of the physicists who enjoyed tremendous international and national prestige in the years following the creation of nuclear weaponry but whose knowledge was highly specialized and inaccessible to the average citizen. The problem is that basing policy decisions on highly specialized knowledge is essentially undemocratic, a point which scientists and philosophers recognized and tried to reconcile. Paul Feyerabend, for example, rejected Michael Polanyi's suggestion that democratic control of science is impossible and he rejected Imre Lakatos's suggestion that it could be done using reasonable standards separate from scientific practice. Instead Feyerabend proposed a democratic relativism that allows citizens to use the standards of their individual traditions.[8] At the moment, science policy in the United States is influenced by the criterion that taxpayer-funded Big Science be "pluralist, practical, and payoff rich."[9]

A more practical dimension of the problem of scientific knowledge in a democracy arises in the recent literature regarding post-war science and in particular its relationship to the public.[10] The politics of science at this point embraced both

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[8] Paul Feyerabend, "Democracy, Elitism, and Scientific Method," *Inquiry* 23 (1980), 3-18. David Guston, "The Essential Tension in Science and Democracy" *Social Epistemology* 7 (1993), 3-23. Theoretical physicist Geoffrey Chew rejected an "essential tension" when he formulated "nuclear democracy." David Kaiser, "Nuclear Democracy: Political Engagement, Pedagogical Reform, and Particle Physics in Postwar America," *Isis* 93 (2002), 229-268.

[9] Daniel Kevles, "Big Science and Big Politics in the United States: Reflections on the Death of the SSC and the Life of the Human Genome Project," *Historical Studies in the Physical and Biological Sciences* 27 (1997), 297.

[10] For the history of Cold War science see Stuart W. Leslie, The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford (New York: Columbia University Press, 1993); Jessica Wang, *American Science in an Age of Anxiety: Scientists, Anticommunism, and the Cold War (*Chapel Hill and London: University of North Carolina Press, 1999); Jessica Wang, "Scientists and the Problem of the Public in Cold War America, 1945-1960," in *Science and Civil Society*, *Osiris* 2nd Series, 17 (2002), 323-50.

permanent national sponsorship of scientific research through a National Science Foundation, once a separate Atomic Energy Commission had been created, and the political voice of scientists. According to Jessica Wang, the debate over the National Science Foundation was more than a contest between conservative and liberal-left scientists but rather it was part of the larger and more enduring question of the expert's role in American society. The "gospel of efficiency" that touted the role of the expert was malleable enough to encompass conservatives, liberals, and radicals. In the post-war years the National Science Foundation debate was resolved when, by the time it was created in 1950, the Cold War consensus overruled popular politics; liberal-left scientists were silenced.[11] Vogt's support for scientific expertise as well as his belief that there must be *some* planning for the use of natural resources resonates with a lingering New Deal ideology. The idea that there must be popular will to support a conservation perspective, a land ethic if you will, would soon be overridden by Cold War concerns that silenced "environmental dissent."[12]

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[11] Jessica Wang, "Liberals, the Progressive Left, and the Political Economy of Postwar American Science: The National Science Foundation Debate Revisited," *Historical Studies in the Physical and Biological Sciences* 26 (1995), 139-166, especially 155. For the history of the National Science Foundation see Daniel J. Kevles, "The National Science Foundation and the Debate over Postwar Research Policy, 1942-1945," *Isis* 68 (1977), 5-26; Robert Maddox, "The politics of World War II Science: Senator Harley M. Kilgore and the Legislative Origins of the National Science Foundation," *West Virginia History* 40 (Fall 1979), 20-39; J. Merton England, *A Patron for Pure Science: The National Science Foundation's Formative Years, 1945-1957* (Washington, DC: National Science Foundation, 1983); Nathan Reingold, "Vannevar Bush's New Deal for Research; or, The Triumph of the Old Order," in *Science, American Style*, ed. Nathan Reingold (New Brunswick: Rutgers University Press, 1991), 284-333. Wang appropriately credits Hays for the term "gospel of efficiency," which has come to define the role of the expert in the Progressive Era although the argument is built on the conservation of natural resources. Samuel P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920* (Cambridge: Harvard University Press, 1959).

[12] Jeffrey Charles Ellis, "When Green Was Pink: Environmental Dissent in Cold War America" (Ph.D. diss., University of California, Davis, 1995).

This dissertation addresses environmental history and in particular that period between the Progressive Era and the emergence of the modern environmental movement that is generally marked by Rachel Carson's publication of *Silent Spring* (1962). Vogt's significance to the history of conservation and environmentalism points to a Progressive Era emphasis on rational management and ecological expertise but also postwar concerns with quality of life issues, specifically maintaining the American standard of living. Vogt's role in environmental history has too frequently been cast as the harbinger of the modern environmental movement. Noted environmental historian Samuel P. Hays argues that the prosperity and abundance of the post-war years fostered the beginnings of environmentalism based upon a desire to secure personal health and welfare from nuclear fall-out and pesticides.[13] The United States as a nation and Americans as individuals were wealthy compared with other nations of the world following the Second World War. Americans wanted to maintain (or raise) their standard of living and ensure their quality of life. Vogt, however, wanted to secure the *nation's* health and welfare and in the process he was willing to sacrifice the welfare of non-American individuals. The objective was to meet the continued needs of society by avoiding a scarcity of resources. Securing the nation's well-being suggests that lingering notions of Progressive Era and New Deal conservation infuse the ideas of Vogt and contemporaries such as Fairfield Osborn who believed that individuals must understand the productive capacity of natural resources, including wildlife. It can also

[13] Samuel P. Hays, *Beauty, Health and Permanence: Environmental Politics in the United States, 1955-1985* (New York: Cambridge University Press, 1987).

be seen in Vogt's conviction that scientists were uniquely able to discern the availability of natural resources and they acted for the greater good. Since Vogt's ideas gained currency by the late 1960s, historians need to turn their attention to this era if they truly wish to understand the roots of modern environmentalism.[14] In addition one must remember that Vogt supported what Aldo Leopold called a "land ethic," the belief that land and natural resources had intrinsic value that must be nurtured, as much as he supported the role of a scientific elite.[15] It may be that, as historian Jeffrey Ellis suggests, the Cold War consensus overruled challenges to land use practices.[16]

Vogt's life work is an example of neo-Malthusianism and a conservation-oriented argument for population control and as such it addresses a critical aspect of women's history and the question of reproduction choice, namely the intersection of birth control and population control. Reproductive choices tied a woman's body to corporate interests, through the biological arguments of eugenicists and then through the arguments of neo-Malthusian conservationists.[17] Vogt's interest in population

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[14] Neil Maher, "A New Deal Body Politic: Landscape, Labor, and the Civilian Conservation Corps," *Environmental History* 7 (2002), 435-461.

[15] Aldo Leopold, *Sand County Almanac and Sketches Here and There* with an introduction by Robert Finch (Oxford: Oxford University Press, 1987), 201-226.

[16] Ellis, chap. 2 passim.

[17] For the history of eugenics see Mark Haller, *Eugenics: Hereditarian Attitudes in American Thought* (New Brunswick: Rutgers University Press, 1963); Daniel J. Kevles, *In the Name of Eugenics: Genetics and the Uses of Human Heredity* (New York: Alfred A. Knopf, 1985). Eugenics emphasized the qualities of an individual, often relying upon measurements. Therefore it is instructive to read Stephen Jay Gould, *The Mismeasure of Man*. Revised and expanded (New York: Norton, 1996). Efforts to manage human evolution through reproductive decisions could be found across the political spectrum according to Diane Paul in "Eugenics and the Left," *Journal of the History of Ideas* 45 (1984), 567-590. For a specific example of a woman's reproductive choices tied to the interest of the

control obscures women and treats reproduction as a state, or at least a social, function. It should be remembered that there are strong, and often racist, links between birth control, population control, and eugenics. Garland Allen suggests that biologist Raymond Pearl's population studies contained the same racism as his earlier eugenics and was in fact "old wine in new bottles." By the 1940s biologists began to replace race and its negative associations with population as the key object of knowledge, according to Donna Haraway, while still defining humanity on a less than inclusive basis.[18] Vogt's argument for population control is racist in that the nations that he believes most need to undertake population control programs are generally located in the South. His concern for the health of the land supplanted the health of the body politic that had so distressed eugenicists in the 1910s and 1920s.

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state see J. David Smith and K. Ray Nelson, *The Sterilization of Carrie Buck* (Far Hills, NJ: New Horizon Press, 1989).

[18] Linda Gordon, *Woman's Body, Woman's Right: Birth Control in America*, revised edition. (New York: Penguin, 1990); Carole R. McCann, *Birth Control Politics in the United States, 1916-1945* (Ithaca: Cornell University Press, 1994); Garland Allen, "Old Wine in New Bottles: From Eugenics to Population Control in the Work of Raymond Pearl," *The Expansion of American Biology*, Keith Benson, et.al., eds. (New Brunswick, NJ: Rutgers University Press, 1991), 231-261; Donna J. Haraway, "Universal Donors in a Vampire Culture: It's All in the Family: Biological Kinship Categories in the Twentieth-Century United States," *Uncommon Ground: Toward Reinventing Nature*, ed. William J. Cronon (New York: W.W. Norton, 1995), 342-348.

CHAPTER ONE

A RURAL CITY BOY BECOMES AN ECOLOGIST

This chapter introduces the reader to William Vogt, ornithologist, ecologist, and conservationist. Vogt was a member of a New York ornithological community that included Ernst Mayr, Robert Cushman Murphy, and Roger Tory Peterson. His interest in birds and their behavior made him aware of the conservation needs of wildlife and prompted his first conservation campaign against marshland drainage to combat mosquitoes. In turn, concerns about wildlife and conservation would shape the views of land use that brought Vogt to national and international prominence in the late 1940s.

William Vogt was born and raised in New York, in communities that today are quite urban but which, in the early twentieth century, were dotted with open fields. As a young man, he witnessed the loss of farmland and the drainage of marshland, both of which reduced wildlife habitat and increased the human presence. Vogt grew up in a time of enormous social change in American life. He felt most keenly changes in land use that threatened his passion for birding and aroused his sense that human beings were ultimately unable to control nature. From Vogt's perspective, human beings could use their knowledge of nature to bring their social needs into compliance with biological realities, but they redirected natural forces at their own peril.

For the young Vogt, a deep appreciation for wilderness sparked an enthusiasm for bird watching. That passion brought him to the American Museum of Natural History in the early 1930s just as museum curator and ornithologist Ernst Mayr sought to initiate new criteria for the study of birds. American ornithology was among the last of the natural history disciplines to retain an inclusive approach to contributions to a scientific discipline.[1] Vogt earned his ornithological credentials the old-fashioned way, through fieldwork rather than through formal post-graduate education. His ornithological research illustrates the way in which ecologists during the interwar years moved readily between the animal and human realms.[2] In particular, Vogt understood human affairs in terms of natural processes and interpreted non-human behavior using the language of human society. Ever mindful that his experience of studying animal life outside the laboratory was opportunistic, dependent on uncontrolled conditions, Vogt could only have his notions reinforced that variables important to the non-human world were beyond his immediate control.

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[1]Paul L. Farber, *Discovering Birds: The Emergence of Ornithology as a Scientific Discipline, 1760-1850* (Baltimore: Johns Hopkins Press, 1997), discusses the identification of European ornithology as a distinct scientific discipline by the 1830s. In the United States scientific ornithology in the 1920s and 1930s continued to encourage the bird watching enthusiasts, believing they could make a significant contribution to science. Mark V. Barrow *A Passion for the Birds: American Ornithology after Audubon* (Princeton: Princeton University Press, 1998), 179, 193-194. Historians of science are refining their understanding of the traditional professional-amateur divide used to characterize participants in the scientific process. This can be seen in discussions of science popularization such as Roger Cooter and Stephen Pumfrey, "Separate Spheres and Public Places: Reflections on the History of Science Popularization and Science in Popular Culture," *History of Science* 32 (1994), 237-267. Historians consider professionalization part of the redefinition of social roles that began as a late nineteenth century response to industrialization, urbanization, and the changes they wrought. Robert Wiebe, *The Search for Order 1877-1920* (New York: Hill and Wang, 1967); Thomas L. Haskell, *The Emergence of Professional Social Science: The American Social Science Association and the Nineteenth--century Crisis of Authority* (Urbana: University of Illinois Press, 1977); Dorothy Ross *The Origins of American Social Science* (Cambridge: Cambridge University Press, 1991).

[2] Gregg Mitman *The State of Nature: Ecology, Community, and American Social Thought, 1900-1950* (Chicago: University of Chicago Press, 1992), 4, 146.

For instance, the very habitat that attracted the Northern Yellowthroat to Jones Beach Bird Sanctuary was but one point in the migratory pathway of this bird. A disturbance a thousand miles away could ripple through and affect its migration and the sanctuary's population. The diversity of bird life that sheltered in Vogt's Long Island backyard was the result of fragile and complex conditions that human actions all too easily disturbed.

Vogt's appreciation and awareness of the constellation of phenomena that made Jones Beach a sanctuary for migratory birds shaped his view of humanity's place in nature and his conservation perspective. The same could be said of his contemporary and colleague, ecologist Frank Fraser Darling, at work in the Scottish West Highlands. Darling was equally conscious of the historical and biological events that shaped the wildlife habitat he was studying. The study of wildlife ecology for both these men would refine their aesthetic objectives for conservation in the same way, even though an ocean separated them. Ultimately, each would use his understanding of the natural world to shape social environments in the years following the Second World War. Darling's story is included in this narrative to show that Vogt, while exceptional, was not unique. British biologist Julian Huxley (1887-1975), a colleague of both Darling and Vogt, frequently addressed the place of human beings in nature and did so based on his contributions to ethology and ecology.[3] Fairfield Osborn, also a colleague of these men, drew upon his understanding of the

[3] Julian S. Huxley, *New Bottles for New Wine* (London, Chatto & Windus, 1957); *The Uniqueness of Man* (London: Chatto & Windus, 1941), published in the United States under the title *Man Stands Alone* (New York: Harper & Brothers, 1941). For further information on Huxley, see his autobiography, *Memories* 2 volumes (New York: Harper & Row, 1970-1973).

natural world to issue a warning in *Our Plundered Planet* (1948) and organized human action by establishing the Conservation Foundation in 1948.[4] A number of influential writers on human ecology followed the same pattern as Vogt, moving from wildlife ecology and resource management to human ecology and social planning.

In Vogt's case, drainage projects on Long Island and along the Eastern seaboard in the early 1930s would induce him to take up his first conservation campaign, a protest against mosquito eradication programs that would destroy bird habitat for local and migratory birds. Vogt's opposition to eradication arose from an aesthetic appreciation for wildlife, but he quickly framed it in terms of functional land use and productivity. Conservation based on the aesthetic value of wildlife in which, for example, deer in the woods created an uplifting pastoral scene, gave way to a rational approach to managing nature during the Progressive Era.[5] Conservationists no doubt retained their appreciation for nature's beauty but offered new reasons and methods for wildlife protection. The transition from the aesthetic to the scientific is characteristic of Vogt's career path in that he started from awareness that the vistas and landscapes that nurtured the wildlife he loved were threatened; however, as he went on, he defended his views on rational, cosmopolitan, and scientific grounds.

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[4] Fairfield Osborn, *Our Plundered Planet* (Boston: Little, Brown, 1948).

[5] The classic examples of protecting the aesthetic value are the creation of Yellowstone National Park and John Muir's bid to save Hetch-Hetchy from damming. Samuel P. Hays, *Conservation and the Gospel of Efficiency, 1890-1920* (Cambridge: Harvard University Press, 1959); Stephen Fox, *John Muir and His Legacy: The American Conservation Movement* (Boston: Little, Brown, 1981).

A Rural City Boy

Vogt retained his childhood memory of rural Long Island. He was born in Mineola, New York on Long Island in 1902 to a family whose ancestors had settled in the seventeenth-century colony of New York.[6] As a youngster, he lived on the edge of Hempstead Plains where he imagined his ancestors at one time kept cattle. Young William moved with his mother to Brooklyn after the death of his father, settling in the bucolic neighborhood of Bay Ridge before age twelve. Long summers at Saranac Lake, in upstate New York, with elderly relatives and no other children, deepened his acquaintance with nature, as did reading Ernest Thompson Seton's nature books and joining the Boy Scouts of America. An enthusiastic scout, Vogt quickly became an assistant patrol leader and then the *de facto* troop leader. Vogt's experience of growing up and later living in New York City spanned much of the twentieth-century, and he witnessed profound changes in the city and the region. The boy from Mineola and Brooklyn knew a far more rural life than these locations suggest to most of us at the turn of the twenty-first century.[7]

Vogt's New York childhood was hardly the urban experience of the late twentieth century but he was affected by industrialization and urbanization. American society was ambivalent about these changes as can be seen in changing ideals of manhood and civilization. On the one hand, American society was the pinnacle of

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[6] "Background Information about Dr. William Voght [sic]" Box 5:1, William Vogt Papers in the Conservation Collection of the Denver Public Library, hereafter cited as Vogt Papers, DPL.

[7] William Vogt, "Some Notes on WV for Mr. Best to Use as he Chooses in Connection with a Possible Article," undated, Box 5:1, Biographical File, DPL. Vogt also claimed that his family had owned the present site of the World's Fair. Vogt to Robert Cushman Murphy 6 February 1964, Vogt Papers, DPL.

civilization and this was especially true for white American men. On the other hand, American manhood was threatened by this success and American men needed to experience "the strenuous life" endorsed by President Theodore Roosevelt or, as young boys, give full rein to their inner savage to allow a recapitulation of the civilizing process in each male.[8] The latter view, endorsed by Clark University founder and president, psychologist G. Stanley Hall (1844-1924), shares an interesting correspondence with turn-of-the-century nature writings directed at young boys. In 1904, Ernest Thompson Seton (1860-1946), one of the best known authors of this genre, published *Two Little Savages*. It was at once a lesson in natural history and instructions for how its young readers could know nature in the same way as the two Native American protagonists. Seton provides directions to build a tee pee, to use a bow and arrow, to arrange a council fire, and to effectively create an Indian tribe of one's own.[9] Seton was at the time creating his own tribe, the Woodcraft Indians, at his home in Connecticut; Seton's tribe was replicated around the country.[10] He hoped to draw upon the instinctual desires of young boys to know themselves and guide them to a manhood (ala Rousseau's state of nature) that embodied a love of nature and democratic traditions.[11] The Woodcraft Indians movement attracted the attention of Robert S.S. Baden-Powell, a British hero of the Boer War, who used it as the basis

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[8] Gail Bederman, Gail Bederman *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: University of Chicago Press, 1995), 77-120, 170-215.

[9] John Henry Wadland, *Ernest Thompson Seton: Man in Nature and the Progressive Era, 1880-1915* (New York: Arno Press, 1978), 337-338.

[10] Wadland, 340-344.

[11] Wadland, 345.

for *Scouting for Boys: A Handbook for Instructions in Good Citizenship* (1908). The scouting movement, in turn, attracted attention in the United States and in 1910 the Boy Scouts of America (BSA) was incorporated.[12] Seton was the moving force behind the BSA, although he would be kicked out of the organization in 1916 when he resisted attempts to follow Baden-Powell's militaristic model.[13]

Vogt was exactly the little boy for whom Ernest Thompson Seton wrote.[14] Vogt quite probably learned that manliness came from a vigorous encounter with nature; he learned that civilization could be found in nature – either among "savages" at their fire councils or among wildlife whose lives possessed rules. As a lonely little boy these rules may have been more apparent to Vogt than the social rules of his peers at home in Brooklyn and may ultimately have influenced his later decision to study animal behavior and social organization. Since Vogt read Seton, there is a good chance he read another nature writer of the day named William J. Long, who became embroiled in the Nature Faker Controversy (1903-1907).[15] Long was lambasted by fellow nature writer John Burroughs and by President Theodore Roosevelt, with the support of leading scientists, for the accounts of wildlife that appeared in his stories.

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[12] Wadland, 403-404.

[13] Wadlands, 419, 445.

[14] Roger Tory Peterson also read *Two Little Savages* as a boy. The book included duck drawings that Peterson acknowledged as the basis for the simple and patternistic drawings that characterize his *Field Guide of the Birds.* Roger Tory Peterson, "William Vogt: A Man Ahead of His Time," *American Birds* 43 (Winter 1989), 1254.

[15] Four of Long's books appeared on a list of books for school children in Brooklyn in the late 1900s. Ralph H. Lutts, *The Nature Fakers: Wildlife, Science, and Sentiment* (Golden, CO: Fulcrum, 1990), 112.

He recounted behavior that scientists could not corroborate and his critics were concerned lest the young people who read his stories acquire a distorted view of nature. Long persisted in seeing nature and wildlife in peaceful terms, ascribing cooperative and beneficial motives to even predatory wolves while Burroughs and Roosevelt believed wildlife acted solely from instinct.[16] He, no less than Burroughs and Seton, wished his young readers to enjoy nature but Long and Seton added a belief that nature could impart moral wisdom. Seton, however, affirmed a Darwinian view of nature in which violent death was part of the natural order while Long rejected the notion of a struggle for existence and even the perception of pain among animals. [17]

A Boy Scout camping trip late in the summer of 1916 changed Vogt's life. The boys camped at Interstate Park, hiking over seventy miles through the Ramapo Mountains one weekend. The following weekend Vogt suffered an attack of poliomyelitis (polio), possibly contracted from a friend who had left camp earlier but who also came down with polio the same day. The local health official in the nearby town of Tuxedo, eager to remove the patient from his town, contacted Vogt's parents and promised to send him to New York by ambulance. Instead, Vogt was driven the fifty miles to New York City over bad roads, held in the lap of the camp doctor with his head painfully bobbing up and down on the back seat of the car. Vogt recalled that upon arriving at the Willard Parker Hospital, "I was in such bad shape that a wire was

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[16] The beneficial view of wolves is intriguing since it will play an important role in American ecology in the 1910s and 1920s. Lutts, 72.

[17] Lutts, 162-163.

sent to my mother saying that I might not live until morning." As it was, he barely survived the experience and the disease weakened every part of his body, leaving him with a limp.[18]

The summer of 1916 witnessed one of the worst polio epidemics in United States history. Young Vogt became one of thousands crippled by a highly contagious illness whose exact method of transmission remained shrouded in mystery and fear. Known to be contagious, the virus seemed to sweep through neighborhoods, yet left some individuals within a household curiously unaffected. The poliomyelitis virus, otherwise known as infantile paralysis, in its epidemic manifestation is not a disease of dirt, poverty, or ignorance. While public health officials embraced the germ theory of disease, rigidly enforcing it in the infamous case of Mary Mallon, better known as "Typhoid Mary," the poliovirus remained elusive to researchers, since it did not follow the usual patterns of transmission. Historically the virus was endemic in areas of poor hygiene, found and transmitted among babies who experienced it in a milder form. Yet even with improved hygiene in early twentieth-century United States, polio epidemics struck down middle-class American youths and adults with a horrifying, crippling, and life-threatening paralysis.[19]

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[18] For anyone questioning the fifty-mile distance between Tuxedo and New York City, please recall that there were few bridges (and no tunnels) connecting New Jersey with Manhattan. According to Peterson, Vogt "survived, but came so close to the edge that his own mother, scanning the hospital bulletin in the morning, read that her son had succumbed during the night." Peterson, 1254; William Vogt, "Some Notes on WV for Mr. Best to Use as he Chooses in Connection with a Possible Article," nd, Box 5:1, Biographical File, DPL. This appears to be a draft document for which there is not a final version either at the Denver Public Library or among the papers of Planned Parenthood Federation of America at Smith College.

The experience with polio left an indelible mark upon Vogt. Standard treatment of polio called for isolating the patient during the contagious and most frighteningly painful period, about two weeks, followed by prolonged bed-rest. There was no cure; death was possible, and lifetime paralysis a common result. Vogt spent a year in bed recuperating. He passed the time with members of his Scout troop who attended almost daily meetings at his house, playing chess, and voraciously reading eight to ten books per week. After two years he was able to return actively to the Boy Scouts, this time as a Counselor, and resume hiking in the Adirondack Mountains, although with difficulty. The extent of permanent physical damage from polio suffered by Vogt is uncertain. He remained prone to falling but committed to enjoying the physical outdoor life that meant so much to him.[20] In fact, it became a point of pride for Vogt that by the end of 1918 he climbed Whiteface Mountain, at times on all fours or "flopping about."[21] But despite the difficult climb, he opposed the idea of building a road to the ascent.

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[19] The story of Mary Mallon can be found in Judith Walzer Leavitt, *Typhoid Mary: Captive to the Public's Health* (Boston: Beacon Press, 1996). For the history of polio, especially the 1916 epidemic in New York City, see Naomi Rogers, *Dirt and Disease: Polio before FDR* (New Brunswick, NJ: Rutgers University Press, 1992).

[20] Vogt himself notes that he remained prone to falling. William Vogt, "Some Notes on WV for Mr. Best to Use as he Chooses in Connection with a Possible Article," nd, Box 5:1, Biographical File, DPL. "Because of his infirmity, Bill would sometimes stumble and fall but would refuse a helping hand," Petersen noted in his biographical account of Vogt, *American Birds*, 1254. There are a few full-length photographs of Vogt in Peru at the Denver Public Library.

[21] "Although I was still flopping about rather badly because of the polio, at the end of the summer went back to the Adirondacks and climbed Whiteface Mountain, in part on all fours, long before there was any thought of building an automobile road up it." Many now know Whiteface Mountain as Olympic Mountain, after it served as the site of the 1932 and 1980 Olympics. William Vogt, "Some Notes on WV for Mr. Best to Use as he Chooses in Connection with a Possible Article," nd, Box 5:1, Biographical File, DPL.

> When this [road] was projected, no one could have opposed it more seriously than I because I knew that practically anyone who wanted to climb Whiteface would be able to do so. Of course, we lost the battle against the road and one of the most beautiful spots in New York state was turned into something like the adjunct of a filling station.[22]

Nevertheless, Vogt's experience with polio allowed him to step back from the life he had known. Away from the structure of school, he pursued intellectual and social interests that were of true interest, for instance in the Boy Scouts. However, it is also possible that this future ecologist later understood his endurance in its most elemental terms, a struggle with nature that he, unlike so many, had the personal fortitude and good luck to withstand; he was a survivor. While Vogt could not have known it, he had won the fight against a scourge let loose by changes in human social conditions. He would later warn of the danger posed by human society's ability to negate the "death-controls" of disease and pestilence that limit population growth, an ability that depends on the very public health and sanitary conditions that had, ironically, made polio epidemic rather than endemic in American life. When he warned in 1948 that famine, starvation and disease were nature's way of curtailing population, he spoke from experience. At the very least, young Vogt followed in the footsteps of another sickly New York boy who embraced manly pursuits and conservation, Theodore Roosevelt.

After his full recovery, Vogt returned to school and completed Manual Training High School (Brooklyn, NY) and received a scholarship to St. Stephen's

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[22] Vaccinations are discovered in the 1950s and introduced for use in the US in early 1960s. William Vogt, "Some Notes on WV for Mr. Best to Use as he Chooses in Connection with a Possible Article," nd, Box 5:1, Biographical File, DPL.

College, in Dutchess County, New York through the assistance of a local rector who appreciated the young man's scouting leadership.[23] His first choice of college, ruled out because of his physical limitations, had been the School of Forestry at Syracuse. At St. Stephen's, later renamed Bard College, Vogt took honors in French literature, won a poetry prize, and edited the college literary magazine. Many of St. Stephen's students were the sons of Episcopalian priests and, like Vogt, had little spending money. The area where St. Stephen's was located had little commercial activity or illegal alcohol to interest the students; studies, friendships, and outdoor life took on great importance. Vogt then began bird watching at Kensico Dam surrounded by 2500 acres of trees and meadows.[24]

From Bird-Watching to Ornithology

While a young man during the 1920s, Vogt briefly held a desk job with an insurance company, until the company doctor decided he was a poor insurance risk. He then served as editor and Executive Secretary for the New York Drama League, an eclectic and short-lived organization.[25] In 1928, he married Juana Allraum, an actress from Berkeley, California. He held a series of writing jobs, including drama

[23] It was later than the 1910s that high school graduation became the norm in the US, and Vogt's graduation, along with a college scholarship, is therefore suggestive of the family's socio-economic status.

[24] The Volstead Act, prohibiting the sale of alcohol, was ratified in 1919 and repealed in 1933. Robert Moses later made Kensico a park in reaction to Westchester policy restricting county park admissions to residents. Robert Caro, *The Power Broker: Robert Moses and the Fall of New York* (New York: Knopf, 1974), 144.

[25] A wealthy patroness, who kept it as an amusement, founded the Drama League, but Vogt seemed to think it could be more effective if changes were made; this difference of opinion led to his departure. It is not the same as the Drama League of New York that exists today. William Vogt, "Some Notes on WV for Mr. Best to Use as he Chooses in Connection with a Possible Article," nd, Vogt, Papers, DPL.

critic, editor of what he described as the first book of comics published in the United States, and nature column writer for five Westchester County newspapers. Increasingly, though, his avocation of bird watching began to shape the course of his life.[26]

In the early twentieth century bird watching was a middle-class pursuit that inspired adherents to study birds and their habitat in detail in order to add to their personal list of species identified while they competed to sight rare species.[27] The field experience still united birdwatchers with those who engaged in scientific ornithology, a discipline defined by the questions it asked and the methodology of its answers. The American Ornithological Union extended membership to both groups and ornithologists at the American Museum of Natural History, such as Ludlow Griscom and Ernst Mayr, thought that birdwatchers could contribute to a scientific understanding of birds.[28]

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[26] Vogt worked as an editor for Dell Publishing Company, New York Academy of Sciences, and Columbia University Alumni News 1928-1931, according to a resume in his papers at the Denver Public Library. In 1929 published an experimental tabloid-sized weekly comics magazine called *The Funnies*, that published original comic strips. Its short-lived success inspired other publishers to adopt the format, although James Coville suggest there were earlier newsstand-distributed publications of original comic strips. The early comic books emerged from a pulp magazine industry that catered to off-beat interests. William Vogt, "Some Notes on WV for Mr. Best to Use as he Chooses in Connection with a Possible Article," nd, Box 5:1, Biographical File, DPL; Bradford W. Wright, *Comic Book Nation: The Transformation of Youth Culture in America* (Baltimore: Johns Hopkins University Press, 2001), xiv, 1-3; James Coville, "The Platinum Age, 1897-1938," *The ComicBooks.com – The History of Comic Books* (15 August 1996) cited 17 March 2005, <http://www.collectortimes.com/~comichistory/Platinum.html>; idem, "The Newstand Period, 1922-1955," *The History of Comic Books* (nd, in revision) cited 17 March 2005, <http://www.thecomicbooks.com/newsstandp1.html>.

[27] John C. Devlin and Grace Naismith, *The World of Roger Tory Peterson; An Authorized Biography* (New York: New York Times Books, 1977), 44.

[28] Barrow, 178-179.

In 1930 Vogt became assistant editor for the New York Academy of Sciences and for the next two years bird watching ceased to be a hobby for him and became instead, along with conservation, his profession. Vogt had joined the Linnaean Society of New York in 1928, serving in the capacity of President, Secretary, and Chair of its Conservation Committee. Vogt met Roger Tory Peterson (1908-1996) in the late 1920s at the American Museum of Natural History (AMNH), where the Society held its meetings twice a month. Peterson was a member of a group of young men known as the Bronx County Bird Club (BCBC). These men regularly birded together in the fresh water marshes of Van Cortland Park in the Bronx, and in due course became prominent ornithologists and conservationists.[29] The work of Ludlow Griscom (1890-1959), assistant curator at the American Museum of Natural History and author of *Birds of the New York City Region* and an authority on field identification, dominated the Linnaean Society.[30] Griscom, dean of "American bird watchers," led the transition from a "bird in hand" or "shotgun ornithology" that collected specimens to study at leisure to a "bird in the bush" or field identification.[31] The young men learned from him, further developing the expanding relationship

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[29] For example: nature photographer Allan D. Cruickshank and Joseph J. Hickey, who became professor of wildlife management at the University of Wisconsin. See Frank Graham, Jr., *Audubon Ark: The History of the National Audubon Society* (New York: Alfred A. Knopf, 1990), 129-130. Mark V. Barrow, Jr., *A Passion for Birds* (Princeton University Press, 1998) and Vogt, "Birding Down Long Island," *Bird-Lore* 40 (October 1938), 340.

[30] Ludlow Griscom's *Birds of the New York City Region* was published with the Cooperation of the Linnaean Society of New York (New York: American Museum of Natural History, 1923) and drew upon the observations noted by its members. Descriptions of the birds note their location, season, and frequency with, at most, the briefest reference to their color and shape. This book will tell you what birds you might find in New York but not how to identify them.

[31] Devlin and Naismith, 27, 42-43.

between bird watching and ornithology. According to Peterson, "We learned all about field marks from the master and we in turn became the avant-garde of the birding elite, refining field techniques and setting new standards."[32] However, Griscom's guide required a thorough knowledge of the birds one hoped to identify in the field; the BCBC members learned to identify birds in the field through extensive observation followed by discussions among themselves and with authorities at the AMNH.[33] Vogt became a fringe member of the BCBC, frequently birding with them, although he was a little older than the other men and prone to stumbling because of his polio; they appreciated his considerable knowledge about birds.[34] Peterson credits Vogt with botanical knowledge and for the suggestion that his artist friend write an illustrated field guide for amateur bird watchers.[35] The standard phylogenetic guides required extensive knowledge of birds and recourse to a dead specimen for confirmation. Peterson's visual guide used diagnostic field marks, such as shape or patterns, to identify birds at a glance and an individual could quickly develop proficiency. Vogt brought the idea to several New York publishing houses and convinced the editors of *Field and Stream* and *Nature Magazine* to publish Peterson's articles but Peterson eventually sold the idea to Houghton Mifflin in Boston.[36]

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[32] Peterson, 1254.

[33] Devlin and Naismith, 43.

[34] Devlin and Naismith, 43.

[35] Peterson's identification system is now used around the world and for other species. It remains a significant contribution to the science of ornithology and to the pursuit of bird watching. Devlin and Naismith, xvi; Peterson, 1254-1255.

[36] Peterson, 1255.

Peterson's *Field Guide to the Birds*, dedicated to William Vogt, became the most popular and enduring book Houghton Mifflin published.[37] In the early 1930s, after Robert Moses hired Vogt as the director of the Jones Beach Bird Sanctuary, the young men from the BCBC expanded their territory to include Long Island's South Shore.[38]

Robert Moses (1888-1981), New York City's Parks Commissioner, introduced a new form of land use by opening up Long Island for the recreational use of city dwellers. Jones Beach, the product of Robert Moses' vision of Long Island playgrounds for New York City, opened as a public park in 1930. It exceeded the minimalist approach of a few lifeguard stations posted along the barrier beach south of Long Island. Moses constructed bathhouses and a concession stand for the bathers, extensive parking lots and, most importantly, parkways to convey bathers directly from the city. He planned a scenic "Ocean Parkway" extending along the South Shore of Long Island to Montauk Point. Jones Beach garnered great popularity immediately upon its opening, and attendance doubled in two years, rising from 1.5 million in 1930 to 3.2 million in 1932. Moses' development schemes for city-owned properties on Long Island altered the landscape and enabled a massive influx of visitors, changing land use that had been dominated by the local farmers and baymen and the

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[37] The dedication to Vogt remains in the fourth edition of *A Field Guide to the* Birds, which includes an introductory note explaining Vogt's role; the publishers produced a subsequent edition following Peterson's death. Peterson, *A Field Guide to the Birds* Fourth Edition (Boston: Houghton Mifflin, 1980), 5, 10; Peterson, 1255; Devlin and Naismith, 64-67.

[38] Duffy, 1256. For more on Moses' role in the development of New York State Parks, and the Long Island State Parks Commission in particular, see Robert Caro *The Power Broker: Robert Moses and the Fall of New York* (New York, Knopf, 1974) especially 172-177.

wealthy captains of industry who purchased land and built private estates.[39] Just a few miles east of Jones Beach's signature water tower (modeled on Venice's Campanile) was the Jones Beach Bird Sanctuary, formerly a five hundred-acre duck hunting preserve leased to a group of wealthy sportsmen.[40]

The Long Island State Park Commission established the sanctuary in early 1932 on leased land. It comprised 400 acres extending north from the beach to the bay, including a duck pond, sand dunes, and marsh – a home or resting place for over 270 species and subspecies of birds.[41] "For many years the area has been selected by the birds themselves as a resting, nesting and feeding place," proving Jones Beach State Park to be "an outstanding example of what intelligent and non-political State administration can accomplish."[42] The fresh water pond of the sanctuary was famous in the annals of New York ornithology for the number of species represented. For example, tern colonies alongside the beach highway were "protected from any considerable human disturbance by the no-parking regulations enforced by strict but courteous state troopers."[43] There were, Vogt reported, plans to develop the sanctuary with a nature trail, museum, and aviary after the state acquired permanent rights to the

[39] Robert Caro's biography of Moses wonderfully captures the politics and intrigues of Moses' dealings with both groups. Caro, 145-156, 182-225.

[40] Caro, 233 and 310.

[41] William Vogt, "A Preliminary List of the Birds of Jones Beach, Long Island, N.Y.," publication information unknown, Vogt Papers, DPL.

[42] Vogt, "Birding Down Long Island," 334.

[43] Vogt, "Birding Down Long Island," 334-335.

land.[44] In the meantime, living in a former hunting shack on the grounds brought Vogt into contact with local bird watchers and provided him an opportunity to contribute to public education, to study conservation issues, and for his own ornithological education. Visitors included artist Francis Lee Jacques, ornithologists Austin Rand and John J. Elliot, and, of course, members of the Bronx County Bird Club.[45]

Vogt began editing the bi-monthly magazine of the National Association of Audubon Societies (NAAS), *Bird-Lore,* with the masthead logo of "a bird in the bush is worth two in the hand," by 1935.[46] John H. Baker (1894-1973), past president of the Linnaean Society, succeeded T. Gilbert Pearson (1873-1943) to the presidency of the NAAS in 1934. Baker and Vogt knew each other from the Linnaean Society, of which Baker was past president, and from birding together on Long Island. Vogt already edited a section of the magazine entitled "The Season" that tracked bird movement through the region.[47] Vogt's duties at the NAAS extended to service as field naturalist and lecturer. In addition, Vogt compiled 500 illustrations by J.J. Audubon with a descriptive text for each and published it in 1937 as a large coffee-

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[44] William Vogt, "R.S.V.P.", *Bulletin to the Schools; University of the State of New York* 19, no. 13 (March 15, 1933), 162-164.

[45] William Cameron Duffy, "William Vogt: A Pilgrim on the Road to Survival," *American Birds* 43 (Winter 1989), 1256-57. Jacques was a museum artist for the American Museum of Natural History.

[46] Devlin and Naismith, 71-72. Frank Chapman, ornithologist at the American Museum of Natural History, founded Bird-Lore in 1899 and it was the official publication of the Audubon movement, although privately owned until the early 1930s.

[47] Graham, 142 and Felton Gibbons and Deborah Strom, *Neighbors to the Birds: A History of Birdwatching in America* (New York: W.W. Norton, 1988), 124.

table book, *Audubon's Birds*. According to Peterson's recollections of those early years in New York, "Bill Vogt as editor of *Audubon Magazine*, gave new life to the Society."[48] Vogt began *Bird-Lore*'s breeding surveys at the suggestion of Ernst Mayr; these surveys constituted an important record of avian population trends and reinforced Mayr's efforts to strengthen ornithological research in the United States.[49] Vogt served as Audubon's unofficial observer of the 1935 International Wild Duck Census, traveling from Winnipeg to Canada's Reindeer River, north of the fifty-third parallel, and the northernmost reaches of the Western Hemisphere.[50]

By the early 1930s Vogt was also active in the New York Linnaean Society, an organization that focused on ornithology's technical aspects and assembled local bird records.[51] The meetings of the Linnaean Society, previously an association of bird-watching enthusiasts, became a forum for Ernst Mayr's professionalization efforts. Mark Barrow characterizes the early 1930s as "golden years" for ornithology

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[48] Peterson, 1255.

[49] Duffy, "William Vogt: A Pilgrim on the Road to Survival," 1257. In 1933 few members of the AOU possessed any college level training in ornithology and only 30 doctoral dissertations on ornithology had been completed. Barrow, 185-195.

[50] William Vogt, "Flying Ducks," *Bird-Lore* 37 (September 1935), 312-316. According to an undated resume (c. 1941-1942) Vogt conducted field investigations along the Atlantic Coast from Canada to Florida, in Manitoba and Saskatchewan and in Georgia, Tennessee, Wisconsin, North Dakota and South Dakota while working for the National Association of Audubon Societies. Vogt's resume is in his papers at the DPL. "Background Information about Dr. William Voght [sic] who has been recommend as a field biologist to be associated with the Pan American Union for the Enabling of the International Nature Convention," Box 5:1, Vogt Papers, DPL.

[51] The Linnaean Society was established in 1878 and concentrated on birds. Barrow 193-195. Vogt joined the society in 1928 and was an active member, serving as Secretary in 1931-1933, President in 1935-1937 and then on the Council from 1937 until his 1939 departure for Peru. He also served on the Field Work Committee and the Editorial Committee in 1938-1939. William Vogt, "The Ornithological Year 1931 in the New York City Region*," Abstract of the Proceedings of the Linnaean Society of New York*, publication information unknown, Box 2:1, DPL.

at the American Museum of Natural History, due to its unprecedented productivity and prominence.[52] Mayr led monthly seminars reviewing the current avian literature, and encouraged participants to undertake research projects. Vogt engaged in several collaborative efforts with members of the American Museum of Natural History (AMNH) before pursuing his own award-winning research on the behavior of Willets. These collaborations with leading ornithologists marked the transformation of Vogt's avocation into a scientific pursuit.

His first collaboration, in 1932 with Robert Cushman Murphy, the AMNH authority on marine birds, analyzed an unprecedented inland influx of an offshore sea bird. The Dovekie, known as the Little Auk (*Alle alle*), is an offshore sea bird found in North Polar and temperate regions that migrates in winter to the Virginia Capes. While it was normal for some birds to become stranded along the Atlantic Coast during the winter, it was unusual for so many birds to be stranded. Birdwatchers sent information regarding the Dovekies to the museum at the request of editor of *The Auk*, the American Ornithological Union's journal. The number of Dovekies along the Northeast coast thinned out over time, as was usual. However, birdwatchers reported Dovekies much further south than normal, as far as Florida and Cuba. The unusual behavior seemed to some observers comparable to the 'mass emigration' of lemmings caused by overpopulation because the Dovekie migration continued after the initial storm. Murphy and Vogt found such a conclusion speculative, although

[52] The Field Work Committee of the Linnaean Society, formed in the mid-1930s encouraged members to undertake population studies, life history studies, such as those by Vogt on Willets and by RP Allen and FP Mangels on Black-Crowned Night Heron, to produce a more uniform and useful picture of bird life in the area. Barrow, 182-195; J.J. Hickey, "Report of the Field Work Committee, 1936-37," *Proceedings of the Linnaean Society of New York* 1936-1937 (October 1938), 73-83.

they did suspect that in this case bird behavior and population size might be correlated with climate conditions and weather. In their report, they also speculated, suggesting that the search for plankton (food) might have motivated the continued migration south.[53]

Vogt combined his access to wildlife, access to the resources of the AMNH, and interest in bird behavior when collaborating in the early 1930s with G.K. Noble (1894-1940), one of the leading animal behavior researchers in the United States. One study by Vogt and Noble involved the role of sex recognition. They used the Red-wing Blackbird (*Agelaius p. phoeniceus*) and the Northern Yellowthroat (*Geothlypis trichas brachidactyla*) to establish that the male of the species uses only visual cues to identify females.[54] Both are strongly dimorphic species, distinctive visual markings differentiated the male from the female. When males encountered stuffed mounts of their own species, which Vogt borrowed from the AMNH, in the breeding territories at the Jones Beach Bird Sanctuary, the male chose the female mount. Vogt drove away the male Northern Yellowthroat, distinguished from the female by a black mask, after it attempted copulation with a female mount. He then placed a black mask on the mount and when the male returned and again attempted to copulate with the same mount, the male suddenly "jumped into the air and dashed away. Apparently he

[53] Robert Cushman Murphy and William Vogt, "The Dovekie Influx of 1932," *Auk* 50 (July 1933), 325-349.

[54] Peterson, 1255

had seen the mask."[55] Vogt and Noble showed that the Yellowthroat recognized sex visually, rather than by the trial and error process used by other birds.[56]

Vogt's own research program, conducted in the spring months of 1936 and 1937, suggests his budding ideas regarding land tenure. He studied the Eastern Willet (*Catoptrophorus s. semipalmatus*) in the salt marshes of Fortescue, New Jersey. Vogt was already familiar with the Willet, a dun-colored, nondescript shorebird that during flight became "one of the most vivid creatures of the marshes and shores on which it dwells. Its long wings wear bands of broad black and white, more striking than the stripes of any zebra, and when the wings are open they flash a biological signal that has come down the ages."[57] Vogt's research problem was to explain the significance of the signal. He thought the signal likely was territorial, although the lack of an adequate capture technique hindered him; he left the question unresolved. However, he received the first Linnaean Prize for Ornithological Research in 1938 and published his findings in the *Proceedings of the Linnaean Society of New York* and in a non-scientific journal.[58]

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[55] G.K. Noble and William Vogt, "An Experimental Study of Sex Recognition in Birds," *Auk* 52 (July 1935), 281.

[56] Peterson, 1255.

[57] Vogt, "Will and Kate, *Yale Review* 27 (June 1938), 735;. William Vogt, "Preliminary Notes on the Behavior and Ecology of the Eastern Willet," *Proceedings of the Linnaean Society of New York* 49 (October 1938), 8-42.

[58] The society created the award to encourage research by those not professionally engaged as ornithologists. The announcement appeared in the *Proceedings* 1935 (March 1936) no. 47, p. 142. The Linnaean Society's Council, assisted by Margaret Morse Nice, Dr. Herbert Friedmann, and Dr. Ernst Mayr, judged the research. "Report of the Secretary of the Linnaean Society of New York for the Year 1938-1939," *Proceedings* Year ending 1938 (October 1940), no. 50, 51, pp. 79-82, 80.

Vogt's enthusiasm for bird-study, subdued by the restrained tone of his scientific articles, emerged in other venues. He published "Will and Kate" in the *Yale Review* and gave voice to his speculations and anthropomorphisms regarding avian life[59] Aldo Leopold praised Vogt's publication in a literary magazine as "an event" because it was "so 'good' a paper – good meaning provocative of cerebration. Another is the remarkable parallelism with our upland Plover observations at Favelle Grove, - including wingbeat displays and hovering, over the territory."[60] His writings reveal his perceptions about human society and his tendency to see an affinity between the social behavior of human and non-human organisms. Vogt was by no means unique in this regard. Human beings have long attributed characteristics to animals that are then held up as models for human behavior: the hard-working ant, the industrious bee, or the sly fox. The naturalization of ethics in the nineteenth century is another example of human beings seeking a rational basis on which to model, or justify, their own behavior. In Vogt's lifetime, the idea of community as a superorganism arose in ecology to explain the formation and succession of plant communities; ecosystem ecology would perpetuate the concept of community, seeing it as a useful heuristic though not as a literal truth. The superorganism concept was readily transferred to human society and Vogt's perception and descriptions of non-human nature is in keeping with prevailing notions of ecology.

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[59] Lorraine Daston reminds us that anthropomorphism is rejected in the late twentieth century as an expression of anthropocentrism. "How Nature Became the Other: Anthropomorphism and Anthropocentrism in Early Modern Natural Philosophy," *Biology as Society, Society as Biology: Metaphors* (Dordrecht: Kluwer, 1995), 38.

[60] Aldo Leopold to Vogt, 16 June no year, Vogt Correspondence, DPL.

In "Will and Kate," an essay that Aldo Leopold praised, Vogt offered colorful descriptions of the Eastern Willet that analyzed territory in relation to private land ownership and presented it as promoting aggressive and even irrational behavior.[61] In an allusion to the eighteenth-century, ill-fated French royal family, Vogt remarked when discussing the Willets that "Many birds, like other lower animals, possess a Bourbon attitude towards private property; it is inflexible and unintelligent."[62] Rather than cede the least political power or property, the absolute monarchy of the Bourbons was destroyed in a bloody revolution in the late eighteenth century; the Bourbons lost their lives and their country. This historical example of an inflexible approach to power and territory stood in distinct contrast to the beginnings of a constitutional monarchy in Britain. A bloodless, and therefore glorious, revolution in the late seventeenth century confirmed Parliamentary supremacy, to the point that Parliament determined succession to the crown. In these counter-posed examples the British monarchy retained privileges, property, and life while the French monarchy lost all. It is noteworthy that Voltaire, spokesperson for the Enlightenment and reasoned knowledge, admired not only Britain's scientific community but its government as well. With hindsight and when contrasted with the British, the Bourbons were irrational. They chose to hold all power and land, and thereby lose all, rather than to choose what Vogt must have considered the rational course of action, give up a portion in order to retain the greater share. Vogt's reference to the Bourbons

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[61] Aldo Leopold to Vogt, 16 June no year, Vogt Correspondence, DPL.

[62] William Vogt, "Will and Kate," 736.

suggests the family's political shortsightedness in resisting what would seem to Vogt to be the inevitable progress of democracy as well as the celebration of age of reason that preceded the French Revolution. The message for land use and political economy is that sometimes individuals must sacrifice a little for the greater good and for posterity.

Vogt alluded to contemporary world events in using the expression of "Japanese warlords" to describe a pair of Willets that seized the territory of other birds in order secure their own place, as the Japanese incursions in East Asia to secure imperial access to raw materials and markets erupted in full-scale war with China in 1937.[63] The Japanese to Vogt were the quintessential example of a nation taking by force the resources it lacked. Initially the major causes of the Second World War were ascribed to territorial expansion and to *lebensraum*, or the German need for living room.[64] Vogt's description of the "flickering black and white tongues of flame" of the Willets' wings used in territorial display invoked the violent image of fire and the destructive capacity of fire no less than aggressive territoriality destroyed without reason.[65] Through literary allusions and references to the latest international news, Vogt condemned the irrationality of unreasonable possession of the land that leads to war.

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[63] The expansionist island nation of Japan invaded the northern Chinese province of Manchuria in 1931 and by 1937 fought the Kuomintang outside of Beijing.

[64] Hitler claimed Germany was overpopulated and needed European territory as living room. PMH Bell, *The Origins of the Second World War in Europe* (London and New York: Longman, 1986), 79-81.

[65] Vogt, "Will and Kate," 736.

Vogt's anthropomorphic descriptions of the Willets' territorial behavior signify his views of the political economy of land ownership that suggest private landownership must still answer to a higher authority on how it is used. A reasoned view of private property is correlated with a democratic political order, in a manner keeping with the notion that societies are evolving toward democracy. Vogt, watching the Willets along the Jersey shore during his summer vacation while hidden by a blind, could consider territoriality from the perspective of American history. Americans had already demonstrated a reasoned and civilized approach to land ownership. Forest reserves, first established in 1817, and national parks, first established in 1872 (Yellowstone), exemplified holding property in common for the greater good. The Progressive Era's "gospel of efficiency" called for the rational management of forests to replace single-use clear-cutting practiced by a resource-rich nation.[66] National forests were administered on a scientific basis as of the 1905 creation of the United States Forest Service, headed by Gifford Pinchot (1865-1946). This established a fundamental shift in land use, a shift that acknowledged natural limits. This shift also coincided with the closing of the frontier, which historian Frederick Jackson Turner (1861-1932) had identified as the expansive landscape that fostered American democracy. Americans began to conceive of limits to their natural resources and therefore the need to use them differently. Conservation rather than preservation characterized this shift in the case of the Hetch-Hetchy dam. For conservationists it was more important to serve the greater good by establishing a

[66] Samuel P. Hays, *Conservation and the Gospel of Efficiency, 1890-1920* (Cambridge: Harvard University Press, 1959).

dam at the remarkably beautiful Hetch-Hetchy area of Yosemite Park; this principle preceded the creation of the National Park Service in 1916. Americans also permitted the public welfare to direct individual use of privately-owned resources in the notable case of the Tennessee Valley Authority (TVA). This experiment in land use planning directed both public and private resources for the well being of the region's residents, relocating farms and towns to control water flow.[67] With the encouragement of the Soil Conservation Service, counties formed soil conservation districts to organize voluntary actions by farmers to prevent further erosion. As changes took place at the local level that reoriented land use practices, they influenced and were influenced in turn by a shift from local to national politics, and in turn contributed to the rise of the modern welfare state.[68] In choosing a cooperative approach to securing needed resources, one based upon scientific and rational use, Americans presumably demonstrated a reasonable approach to private property in keeping with its evolving democratic political economy. Without discounting private property or territories for the breeding Willets, Vogt already favored a scientific as opposed to traditional approach to land use, an idea central to his conservation perspective on which he elaborates in *Road to Survival*.

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[67] For the history of TVA see David E. Lilienthal, *Democracy on the March* (New York: Harper, 1953); *TVA: Fifty Years of Grass-Roots Bureaucracy,* ed. Erwin C. Hargrove and Paul K. Conkin (Urbana: University of Illinois Press, 1983).

[68] Neil Maher, "'Crazy Quilt Farming on Round Land': The Great Depression, the Soil Conservation Service, and the Politics of Landscape Change on the Great Plains During the New Deal Era," *The Western Historical Quarterly* 31 (Autumn 2000), 319-339.

A Scottish Case in Point: From Animal Behavior to Human Behavior

Frank Fraser Darling

Vogt's willingness to anthropomorphize the birds he studied and to consider avian social behavior in terms applied to human society was shared by other ecologists of the day. Vogt battled mosquito drainage and lectured on the importance of the Jones Beach bird sanctuary while studying the social aspects of animal life; in the Scottish West Highlands, Frank Fraser Darling (1903-1979) studied the social life of a herd of red deer and colonial bird flocks before he too applied nature's lessons to human society.[69] The significant element of Darling's story is that it demonstrates a broader intellectual context for Vogt's movement between the human and animal worlds. Vogt's work with Audubon and the Jones Beach Bird Sanctuary made him acutely aware, even before he began his life history of the Willets, of the presence of human beings in nature and the danger they posed to wildlife; later field studies would reinforce this impression. Darling worked steadily for a number of years in Scotland studying different species before transferring his understanding of the natural world to human society. Yet both men drew from their experiences, and the broader field of ecology, the conviction that the natural world could inform humans about how to structure their society. For Vogt the defense of private property that jeopardized oneself and one's progeny suggested that humans should identify a

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[69] Frank Fraser Darling's name poses a dilemma. "Darling" is used rather than "Fraser Darling." He was born Frank Darling and took his wife's name of Fraser; after their divorce he was unsuccessful in dropping the "Fraser." His children, from his marriage to Bobbie Fraser and to Averil Morley, use the last name of Fraser Darling and his biographer refers to him as Fraser Darling. He is, however, generally indexed under Darling.

rational and universal basis for the use of natural resources. Darling, on the other hand, was struck by the importance of selflessness and cooperation for group survival. These qualities can be identified in his studies of the red deer and crofting communities of Scotland's West Highlands; they can also be found in Darling's family life. This seeming diversion from the subject of Vogt demonstrates that two men working with different organisms in different countries but grounded in the same ecology drew similar conclusions about the relationship of humans to the natural world.

The most salient features of Darling's ecological studies are that they are inextricably entwined with the history of the land and its people, as well as with his own personal life. Darling's studies of non-human life in the West Highlands led him to conclude that the human social organization of his adopted home could be best understood, and thereby improved, by considering it as the product of its environment. His first major study, *A Herd of Red Deer* (1937), was the product of research conducted in the mid-1930s. In it Darling suggests that environmental factors such as climate and social organization influenced the reproductive success of red deer herds. This finding suggested that sociality, the ability of aggregations of organisms to form cooperative associations, enhanced group survival.[70] As noted evolutionary biologist and statesman of science Julian Huxley remarked, Darling's "contribution had not been merely to show that social life must be considered as part of the environmental complex, but that the red deer was not something which could

[70] Mitman examines Warder Clyde Allee's theory of sociality in *The State of* Nature, 65-67, 74-80.

be considered whole apart from its social group."[71] Neither Darling nor Huxley was slow to extend this finding to that most social of animals, humans.

Darling's second study, of the herring gulls living on the Summer Isles off the west coast of Scotland, *Bird Flocks and the Breeding Cycle* (1938), concluded that successful breeding conditions for colonies of gulls required a minimum population greater than one male and one female; in other words, the environment included the social behavior of the given species.[72] Darling later described the people of the West Highlands in terms of social cooperation and integration with the non-human environment as well.[73] In the 1930s it was a short step from wildlife ecology to human ecology.

Darling and the Red Deer Example

Darling's study of the red deer resonates with the story of Darling's own life. An exemplary case of parallelism is the organization and social cooperation that Darling observed in the red deer. Unlike the North American mule deer that organized hinds, or female deer, into harems during the annual rut and are typically characterized by brutish male leadership, Darling found that the red deer were led by a matriarchal and selfless leadership that took excellent care of the herd. The males

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[71] Frank Fraser Darling's diary entry of 21 July 1950, File 4: Manuscript of USA and Mexico Diary, 23 June-22 December 1950, Acc.111523 Sir Frank Fraser Darling, National Library of Scotland.

[72] Frank Fraser Darling, *A Herd of Red Deer: A Study in Animal Behavior* (London: Geoffrey Cumberlege, 1956, corrected edition, first published 1937) and Frank Fraser Darling, *Bird Flocks and the Breeding Cycle: A Contribution to the Study of Avian Sociality* (Cambridge: at the University Press, 1938).

[73] Frank Fraser Darling, *West Highland Survey: An Essay in Human Ecology* (London: Oxford University Press, 1955).

stayed with the herd until their third year when they separated and joined a small loose group of males, while the hinds and fawns remained together. The males gathered hinds together during the rut, but never demonstrated leadership or dominance over them; instead Darling saw the male display selfish behavior. At the first sign of danger, the lead deer, always an older hind with a fawn at hoof, gave a bark and then led the group out of danger while another hind followed behind the group. The male fled at the first sign of danger, ignoring the hinds and calves, which dispelled for Darling any claim it might have to the title "Monarch of the Glen."[74] Constantly stretching out her neck and alert to the first danger signs, the lead hind was called "her of the longneck" by the game keepers, out of respect for her keen attention that frustrated their observations of the herd.[75]

The matriarch's selflessness was fundamental to the interaction of the herd's social organization and its environment, and also to Darling's own life which was itself served by matriarchal wisdom and love. The same selflessness on the part of matriarchs in Darling's family contributed to the overall success of the red deer study as well as to his work as an ecologist. Darling's life story, as he related it to his colleague and later biographer, the Scottish ecologist and conservationist J. Morton Boyd, began when his unmarried mother stubbornly refused her parents' urging to give him up for adoption. Darling respected this difficult decision by his mother to do what she thought best for her child despite the social pressures of Edwardian England.

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[74] Darling's discussion of matriarchy in terms of sociality was novel. *Red Deer*, 82-83.

[75] Darling, *Red Deer*, 70.

Young Frank recalled how his mother introduced him to nature's wonders, waking him to find the nests of birds in the dawn light. To the best of his recollection, his mother kept him close and kept him safe and she gave him a wonderful gift that he carried with him for the remainder of his life.[76]

Like his mother, Darling's wife Bobbie Fraser Darling was equally important in shaping his study of nature, a point he noted in autobiographical essays about their life in the West Highlands. She economized during his lean student years in Edinburgh, making certain that their young son Alasdair did not disturb Darling's work, leaving him free to pursue weekend rambles with colleagues and long walks along the city's waterfront. He was, in his own words, selfish during these student years while his every reference to and description of Bobbie depicted a capable and selfless mate looking out for the welfare of their small family. Bobbie's selflessness extended to the eccentricities of the family's domestic arrangements. Darling brought home a young raven from Shetland of which he wrote, it "led her a pretty dance, pecking Alasdair's year-old toes, winding wool intricately through the rose bushes, and croaking, for ever croaking."[77] Likewise, when the family left Edinburgh after finally achieving financial stability following the years of student deprivation, they relocated to Brae House in Dundonnell. To Darling it was the perfect home despite the lack of electricity and running water. His wife, he noted,

> would tell you another side of the picture. The burn is forty yards away and dries out sometimes in summer. Not only must water be carried into the house

[76] J. Morton Boyd, *Fraser Darling's Islands* (Edinburgh: Edinburgh University Press, 1986), 18-19.

[77] Frank Fraser Darling, *Island Years* (London: G. Bell and Sons, 1940), 86.

> but it has to be thrown out as well! … The floor-boards are warped and lie open, and when we first went there it took us nearly two years to get top-side of the fleas. The boarded ceiling flakes whitewash into your soup if someone should tread incautiously overhead.[78]

Remote and isolated, Brae House was the family home from 1934 until 1939, when they moved to the island of Tanera Mor. Bobbie and young Alasdair lived there while Frank observed the red deer, gone all day and sometimes sleeping overnight on the mountains. The family returned to Brae House in between sojourns to various islands to study herring gulls and later the grey seal. During these extended sojourns to unoccupied islands more remote than their home, Bobbie always acted as quartermaster, organizing sufficient provisions to last up to six months. She arranged, for example, enough flour and yeast to satisfy her husband's large appetite and appreciation of freshly baked bread and hearty meals, upon which he so often commented in his writings. When the Second World War precluded further study of the grey seals, the family took up farming on an island without electricity, running water, a regular income, or schools, yet Bobbie gamely pitched in. When her husband broke his leg, Bobbie stood in for him to continue his pet project of rebuilding the island's stone quay.[79] Alasdair was sent to live off-island to attend school part of the year. Although this was not unusual for a British child, it was indicative of the sacrifices that Bobbie was willing to make. The work that Frank chose demanded much of the family, but of Bobbie in particular. The matriarch of this little group

[78] Darling, *Island Years*, 5.

[79] Frank Fraser Darling, *Island Farm* (London: G. Bell, 1943), 119.

selflessly gave of herself for their overall well being, just like the hinds in the herd of red deer.[80]

The selfishness of the stag and its ultimate unsuitability for leadership was a sharp counterpoint to the hind's selfless leadership. In other writings, Darling equates the stag's style of leadership with the historical male-oriented, warrior-based clan system of the Highlands. However, he interpreted the land-tenure system of the Highlands, known as crofting, in terms of cooperation rather than competition. In this way, Darling's study of red deer resonates with the larger human population of the West Highlands and he at once condemned its political structure for abandoning the crofters and contributing to the denudation of the countryside in terms of human and non-human resources, while at the same time emphasizing that crofting was the basis for a viable modern rural society.

Mutuality among the People of the West Highlands: Crofting Agriculture

Crofting agriculture is based on small farms of proportions inadequate to provide a living on their own and generally found on marginal or less desirable land, and which resulted from both environmental and human factors in the history of the Scottish highlands. Crofts were the product of historical conditions, including social cooperation (shared peasant labor) and social cohesion (the clan system), the

[80] Examples of Bobbie's selflessness and hard work abound in Darling's books, *Island Years* and *Island Farm*. Bobbie's voice is not heard in Darling's books. The general feeling is that she was willing to undertake this strenuous lifestyle. Their marriage ends over the issue of more children because Frank wanted more children but Bobbie had thought he understood that their lifestyle precluded a growing family. A second factor was the 1944 arrival of Averil Morley, land girl and assistant for Frank, who had fallen in love with her the year before. After their divorce, Bobbie Fraser Darling continued to work among Scotland's crafting families, while Frank ultimately departed for his second wife's home in England where they raised three children. Frank Fraser Darling would never again engage in the type of field research he had pursued in Scotland with Bobbie's assistance. Boyd, 187-189.

breakdown of the prevailing social system in the wake of Scotland's eighteenth-century defeat by the English, the introduction of a land-use system that produced inequitable benefits to clan members, and the limitations of the environment. Traditional Highland land-use emphasized mutual defense and the equitable access to resources for clan members. The Highland defeat at the Battle of Culloden (1746) marked the end of effective efforts to resist British rule. It also marked the end of the clan system due to the privatization of land ownership and the introduction of an industrial economy. Wearing of the tartan was banned and land ownership, formerly communal, passed solely to the clan laird who directed land use to prioritize his personal income. With little capital, landowners turned to marketable forms of land-use such as sheep and cattle. People were pushed off the best grazing land and given 'crofts' or small holdings set on marginal lands that could provide for the family, but generally small enough to require them to provide seasonal labor to the clan laird. They labored at fishing, agriculture, and harvesting seaweed for kelp for fertilizer. Crofts were the remnants of pre-industrial land-use, retaining an emphasis on social cooperation and cohesion, and Darling found this aspect of Highland life appealing. However, events in the nineteenth century worked to crush crofting and render it ineffectual.[81]

The inequity of this system of land tenure contained the seeds for its destruction. As happened throughout Europe the crofters turned to the potato for a

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[81] James Hunter, *The Making of the Crofting Community* (Edinburgh: J. Donald Publishing, 1976), chap. 1 and 2 passim.

staple crop. The failure of part-time crofting industries coincided with the potato blight, exacerbating the plight of the crofters. Landowners, after previously discouraging emigration and encouraging high birth rates, actively worked to decrease the population by facilitating crofter migrations to North America and Australia. Too poor to leave by ship, crofters could escape only by walking to a southern city. By financing migration out of the country, landowners cleared the land of countless crofters who would be unable to return should their circumstances improve; their claim to the land as clan members was therefore broken. British law recognizes the claim of crofting and safeguards the traditional right of crofters and their descendants to occupy and use the land in perpetuity, although landowners ultimately hold title.[82]

Darling's ecological perspective was one that embraced humans as much as it did plants and animals, and one that suggested a penchant for Clementsian climax communities celebrating romantic images of a wild landscape and proper land-use.[83]

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[82] For the history of crofting in the twentieth century see James Hunter, *The Claim of Crofting: The Scottish Highlands and Islands, 1930-1990* (Edinburgh: Mainstream Publishing, 1991).

[83] Darling began his study of work in North America with the idea that human ecology was a perspective more than an actual discipline, a view unchanged after his first year. Frank Fraser Darling to George Harrar, 12 June 1964, Box 478, Series 200, RG2, Rockefeller Foundation (RF), Rockefeller Archives Center (RAC). A few years later he placed humans more firmly within the discipline, defining human ecology "as that part of the science which deals with the reciprocal interrelations of man with his animate habitat, of the influence of the habitat as a whole on social structure and behaviour, and of the social system on the animate habitat." "Some Thoughts of an Ecologist on Industrialization," *The Duke of Edinburgh's Study Conference on the Human Problems of Industrial Communities within the Commonwealth and Empire, 9-27 July 1956*, Vol. II (London: Oxford University Press, 1957), pp. 197-202. Ten years later, he clearly affirmed that there was only one science of ecology and it included humans. This was his 1963 Presidential Address delivered to Section D (Zoology) of the British Association for the Advancement of Science. "The Unity of Ecology," Advancement of Science (November 1963), p. 306; Eugene Cittadino, "The Failed Promise of Human Ecology," *Science and Nature: Essays in the History of Environmental Sciences* edited by Michael Shortland (Oxford: British Society for the History of Science, 1993), 251-283. The

Darling thought crofting was a proper form of land-use in the West Highlands, no doubt because it underscored the importance of social cooperation with the non-human environment. He set out in 1939 to demonstrate that it could be a viable form of land-use for the West Highlands and Islands by reclaiming an abandoned croft on the island of Tanera Mor. Darling's interpretation of Highland clans evoked the writings of Scottish sociologist and urban planner Patrick Geddes (1854-1932) and American urban planner Lewis Mumford (1895-1990). Geddes developed an evolutionary approach to the study of the social sciences that resituated the city from an isolated alien entity, to an element of the larger region, an approach embraced by his American disciple, Mumford. Darling, in turn, suggested that the social cohesion and cooperation characterizing crofting communities was a more evolved form of society based upon mutual care rather than the traditionally ascribed mutual defense; the difference lay in the comprehensive and integrative approach of the former as opposed to the exclusionary nature of the latter. The importance of cooperation, rather than competition, in evolution and in human social organization linked human and non-human nature in Darling's work.[84]

Clementsian view of ecology invoked a superorganismic view of plant communities that reached a climax or final, stable community by going through a succession of stages. Ronald C. Tobey, *Saving the Prairies: The Life Cycle of the Founding School of American Plant Ecology, 1895-1955* (Berkeley/Los Angeles: University of California Press, 1981).

[84] *Island Years*, 8. *Bird Flocks*, vii. Darling received financial support from Sir Alexander Gibbs, F.R.S., one of the landowners who permitted Darling access to his land for the deer study. He gave money to cover the cost of instruments to measure weather conditions. The Institute for the Study of Animal Behavior granted funds for general expenses and the Carnegie Trust for the Universities of Scotland provided a fellowship.

What Then is the Value of Land and of Wildlife?

Darling's work in Scotland was geographically distant from Vogt's life on Long Island and yet the two men shared the intellectual influences of wildlife ecology and they appreciated the role of human ecology in managing wildlife. For his part Vogt confronted the problem of how to meet the needs of various community members, human and non-human, during his tenure as director of the Jones Beach Bird Sanctuary (1932-1935). Vogt witnessed the impact of marsh drainage, used to eliminate mosquito breeding grounds and to provide arable land, for the sake of "progress" in several locations in New York and on the East Coast. Not far from Vogt's *alma mater* in Westchester County, the cat-tail marsh at Croton Point on the Hudson River was scheduled for drainage in 1931 and an airport proposed for the site. Vogt reported, "here in America a progress that is often blind has sacrificed one marsh after another until millions of us are deprived of the exciting pleasures they offer. This is especially true near our large cities."[85]

Mosquito eradication became the target of controversy for wildlife enthusiasts during the Depression as government-sponsored efforts to drain marshy areas accelerated. Federally financed ditches through the Works Projects Administration (WPA) put men to work, combated mosquitoes, provided drainage, and extended the amount of "productive" land available for agriculture or housing. On Long Island, wealthy landowners understood that mosquitoes prevented development and preserved the area's exclusivity. Moses' activities as New York City's Parks

[85] William Vogt, "The Birds of a Cat-Tail Swamp," *Bulletin to the Schools*. *University of the State of New York*. 17 (16 March 1931), 162.

Commissioner opened Long Island to city dwellers. While this was limited to the car-owning population that could traverse the new parkways to reach the parks and beaches, it still constituted a broader use. Members of Long Island's more exclusive communities, reluctant to open the area to more residents and less exclusive housing development, tried to resist Moses' plans. They were willing to endure Long Island mosquitoes swarming over their faces, as Moses' biographer Robert Caro pointed out, to preserve exclusive golf clubs. Long Island's wealthy could afford this eccentric preference, but to tolerate mosquitoes was still a public health hazard. People today often associate malaria with the tropics, but it is actually a mosquito-borne disease that can extend north into more temperate areas. Long Island -- low-lying, marshy, and damp -- provided ideal breeding grounds for mosquitoes. Those same conditions provided habitat for local and migratory birds and that created an opposition between the needs of wildlife and those of humans motivated by other reasons than Long Island social sensibilities.

Vogt chronicled the danger of wetland destruction to wildlife in "Thirst on the Land," a thirty-two-page pamphlet produced by the National Association of Audubon Societies (NAAS) and illustrated by naturalist Jay N. 'Ding' Darling, who was no relation to Frank Fraser Darling. Vogt opened the pamphlet with a lucid indication of his view of land use and natural resources: marshes and swamps are "a source of national wealth of the first magnitude."[86] This was hardly an obvious conclusion for readers given that American public health campaigns encouraged citizens to view

[86] William Vogt, *Thirst on the Land: A Plea for Water Conservation for the Benefit of Man and Wild Life* (New York: National Association of Audubon Societies, 1937), 3.

marshes and swamps as breeding grounds of mosquitoes and a public health hazard. At the same time agriculturalists promoted drainage for flood control to protect crops and farmers wanted to extend their arable acreage by draining swampy land.[87]

If marshes and swamps were to be regarded by the public as valuable land, then the measure of land use needed to be changed. Aldo Leopold (1886-1948) set out to redefine land use when he began the process of restoring sick land in Wisconsin. He reversed the process of extracting productive land from wilderness by reclaiming wilderness from abandoned farmland.[88] By all other standards, land was considered productive when straight furrows were plowed in fields to produce agricultural commodities; alternatively, it was unproductive when humans were unable to claim an individual dividend from an agricultural crop or perhaps a herd of cattle. In this context, to consider marshes to be "a source of national wealth" would seem preposterous. However, Vogt valued wildlife, and the marshes were home to local and migratory birds whose populations would be reduced by drainage. The intrinsic value of wildlife is at the heart of Vogt's arguments against drainage, although his persuasion relies on the economic benefits that marsh land offered.[89]

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[87] Extending arable acreage by bringing marginal land under cultivation had been done during the First World War to meet wartime demand for wheat and agricultural commodities. In the 1940s Vogt argued vociferously against agricultural production on marginal land in Latin America and, of course, marginal land, for historical reasons, was the basis for much crofting agricultural.

[88] Leopold recounts his family's experiences at "The Shack" in Sand County, Wisconsin, in the first part of the posthumously published *Sand County Almanac*. He writes, for example of the insignificant and obscure Draba that flowers in the sandy soil while scarcely any organism notices. Aldo Leopold, *Sand County Almanac*, viii. 26.

[89] Vogt, *Thirst on the Land*, 3.

There were two reasons to drain marshy land: to control flooding for the benefit of agriculture and to abate mosquitoes for the public's health. Drainage meant the loss of ponds and creeks, putting greater pressure on groundwater storage and making agricultural irrigation necessary during the dry season. In Kankakee County, Illinois, the ditches were an effective means of draining marshland and preventing floods. But the area's sandy soil regularly washed into the ditches and needed required intensive management for crops to survive.[90] The failure of communities to meet their financial obligations for drainage maintenance demonstrated, at least for Vogt, that drainage was an acknowledged failure since the public would continue a successful program. Abandoned land that met neither the standard definition of productivity nor Vogt's revised criteria replaced what had once considered rich farmland.[91] Ding Darling drew a two-panel illustration entitled "How Man Does Improve On Nature!" This shows first a vibrant farm edged with marshy land; cows drinking from the water, haystacks sitting tall in the fields and birds flying overhead. The second panel, with the marshy land drained by a ditch, shows the same land with dilapidated farm buildings, the once-tidy fields now fallow, and an ominous black bird hovering over the bones of cows and fish that lay in the dry ditch.[92] The message was that the "thirst on the land" was crippling.

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[90] Vogt, *Thirst on the Land*, 9.

[91] Of course, Vogt also noted the inconsistency of government payments to farmers not to cultivate acreage while drainage increased the land available for cultivation. Vogt, *Thirst on the Land*, 23.

[92] Jay "Ding" Darling, "How Man Does Improve on Nature!" in *Thirst on the Land*, 4.

Vogt appealed to the taxpayers to call for accountability in government spending to control mosquitoes, providing the taxpayer with examples that suggested ditch drainage to counteract the public health threat of malaria was a boondoggle. He and the National Association of Audubon Societies believed the public would adopt "wise policies based on a knowledge of biological and geological facts."[93] Mosquito officials, Vogt claimed, lacked sufficient evidence to support sweeping claims such as the need to drain salt marshes within forty miles of human habitation. This conclusion was based on the ability of the salt marsh mosquito to fly forty miles, which could justify draining an area over 2,500 square miles. However, there were no studies to support how often the salt marsh mosquito used this ability to travel great distances that could justify drainage policies.[94] The mosquito, as vector of malaria, was the premise behind these extensive public works projects, which Vogt labeled the "mosquito racket."[95] He noted that the United States Public Health Service requested eleven million dollars for drainage projects in Maine, a state that had zero cases of malaria, for the purpose of malaria control. The WPA had granted ten million dollars for malaria control in upstate counties of New York where 37 cases of malaria were reported in 1934, although some cases were contracted elsewhere. That project had been "laughed out of existence," confirming for the taxpayer Vogt's claims that ditch

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[93] Kermit Roosevelt, "Introduction," *Thirst on the Land*, 2.

[94] Vogt, *Thirst on the Land*, 20.

[95] Vogt, *Thirst on the Land*, 20.

digging in the name of malaria control was reckless.[96] The public had only to accept Vogt's claim that scientific expertise on the subject should inform bureaucratic authority.

Vogt assembled the wisdom of many voices - including head of the US Biological Survey Ding Darling and chief of the Rural Electrification Administration Morris L. Cooke – to present evidence of the destruction caused by drainage. It is, however, the fourth section of *Thirst on the Land,* "Mosquito and 'Malaria' Control through Drainage," that is an early articulation of the core of his later book, portentously called *Road to Survival*: government-financed solutions that are engineered without regard to their biological implications and values cannot be allowed. "Much of this work [drainage] is under the direction of engineers who have little knowledge of the biological problems and values involved," he writes, and "one may suspect many of those engaged in promoting and executing mosquito control of far greater interest in spending government funds, than in advancing human wellbeing."[97] Vogt and his colleagues showed that the situation required biological expertise and he seriously believed that the public could be relied upon to demand it when they understood the real consequence of drainage.

Vogt marshaled evidence to indicate the biological problem of mosquito abatement lacked sufficient scientific knowledge to warrant the scope of drainage undertaken in the United States. Marshland drainage did not, as Vogt observed in a

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[96] Vogt, *Thirst on the Land*, 21.

[97] Vogt, *Thirst on the Land,* 15.

survey of Delaware's drainage project, effectively remove the breeding grounds for mosquitoes. On the contrary, it nearly destroyed as much as eighty-five percent of the wildlife due to loss of habitat, according to a report by the US Biological Survey, because it was done, Vogt reasoned, without sufficient biological knowledge to warrant its drainage.[98] In another survey of fifty-nine contiguous salt ponds on the south shore of Long Island, Vogt found only fourteen with mosquito larvae. This, he said, demonstrated the need to understand the exact conditions under which mosquitoes breed in order to manipulate the mosquito population. In particular, his hope was that some shallow water would escape indictment as a breeding ground since mosquitoes did not breed in cypress swamps.[99] Vogt's outrage that such basic information was lacking before re-engineering the landscape was permitted was palpable. The quick-fix solution of drainage undertaken without sufficient biological knowledge of its implications is underscored for Vogt by the failure to consider alternative means of controlling water levels. For example, impounding could enlarge water areas, rendering them unsuitable for mosquito breeding. Or, perhaps, natural enemies of the mosquito could be introduced into the area. These methods, he notes, had been proven feasible in a 1930 report issued in the USDA's *Farmers' Bulletin*.[100] His solution calls to mind Rachel Carson's 1962 proposal for biological control to replace harmful pesticides such as the post-war commercial use of DDT, because she

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[98] Vogt, *Thirst on the Land*, 16, 18-19.

[99] Vogt, *Thirst on the Land*, 18-19.

[100] Vogt, *Thirst on the Land*, 19.

too noted that biological control was possible.[101] Today, although thousands of acres of marshes had been lost to drainage, one can find water impoundments to flood marshes in the United States during the breeding season, but American entomologists remain covetous of the rapid results of DDT used outside the United States.[102]

Vogt introduced into the debate on mosquito abatement the concept that wildlife possesses an economic value in order to preserve its intrinsic value. Seemingly unproductive natural resources such as wildlife and swampy land were valuable, Vogt argued. "The land would have been worth considerably more to the commonwealths in which it is found if it had been left to produce crops of furs and other wild life, and to contribute to the water-table."[103] Wildlife had value for the many non-sporting Americans who enjoy outdoor recreation, and they were more numerous than the sportsmen who lamented the shortage of waterfowl and contributed $650 million to the economy. This loss of game birds meant a loss of revenue that, Vogt warned, rippled through the economy to affect all citizens since "every one of us pays taxes, whether direct or indirect."[104] However, the economics of the situation received a great deal of attention but there is little doubt that the intrinsic value of wildlife and an aesthetic appreciation of nature's beauty were of

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[101] Rachel Carson, *Silent Spring*, (Boston: Houghton Mifflin, 1962), 277-297.

[102] Andrew Spielman and Michael D'Antonio, *Mosquito: A Natural History of Our Most Persistent and Deadly Foe* (New York: Hyperion, 2001), 166. For an additional perspective on human interaction with mosquitoes, see Gordon Harrison, *Mosquitoes, Malaria and Man: A History of the Hostilities Since 1880* (New York: E.P. Dutton, 1978).

[103] Vogt, *Thirst on the Land*, 23.

[104] Vogt, *Thirst on the Land*, 27.

greater importance. Vogt's argument against drainage included the peril for ducklings posed by the ditches: the ditches were duckling death traps! Ducklings that fell into ditches were isolated from their brood and died.[105]

The importance of wetlands linked the recently organized Ducks Unlimited with the NAAS opposition to the drainage of wetlands in the central part of the United States – the flyover of countless migratory birds each year. Ducks Unlimited was a private organization of sportsmen who wanted to maintain the supply of wild birds available to be hunted. Robert Cushman Murphy (1887-1973), the ornithologist, criticized their wildlife conservation program because, he argued, there cannot be an 'unlimited' supply of ducks for hunters and Ducks Unlimited was "encouraging false hopes by promising its supporters the impossible."[106] Nevertheless, Ducks Unlimited embraced a revised valuation of land productivity, if only to provide habitat for the birds its members could continue hunting, and it organized a strong lobby to achieve its goal.

The welfare of wildlife, farmers, the interest of sportsmen, and the prudent expenditure of taxpayer money all form the core of Vogt's argument against drainage.[107] Although he claimed that his purpose was not to maintain Long Island's exclusivity as an end unto itself, evidence suggests Vogt resisted most changes in land use and favored the status quo. However, he did in fact want to add a new form

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[105] Vogt, *Thirst on the Land*, 17.

[106] Robert Cushman Murphy, "Conservation VI," *Bulletin of the Garden Club*, May 1941, 49.

[107] Duffy, "William Vogt: A Pilgrim on the Road to Survival," 1257.

of land use and found scientific grounds to support his ideas. He wanted people to visit wildlife sanctuaries such as the one at Jones Beach to enjoy and appreciate wildlife. As director of the Bird Sanctuary, he not only hosted bird lover groups, such as the Bronx County Bird Club and a contingent from the American Ornithological Union, and conducted his own ornithological research on the grounds, but also invited local school groups to visit. These visitors were an opportunity for public education. I suggest that his motive for sponsoring public education was not altruistic, but based on a deeper sense concerning human survival. But he seemed to understand and to realize that unless people understood the pleasure wildlife held, the remaining wildlife habitats would succumb to the "progress" of drainage and land-use changes meeting the needs of increased human settlement. Vogt advocated methods that coincided with elite interests and were against significant change. His basic argument that drainage destroyed the food supply of marsh birds was biologically based; there is no doubt that he sometimes carried the issue to specific venues (e.g. sportsmen and scientists) and perhaps limited the numbers of people capable of a response.[108] However, he also aroused public interest of citizens and taxpayers by pointing out wasted government money and ineffective public policy.[109]

In late 1938, at the headquarters of the National Association of Audubon Societies, a rift developed between the then newly appointed director, John Baker, and several staff members, reputedly led by Vogt, who then attempted to oust him.

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[108] William Vogt, "Mosquito Control and Wild Life," *American Game*, May-June 1935, 35, 42-43. Read before the 22nd Annual Meeting of the New Jersey Mosquito Extermination Association and deleted from the printed report of the meeting.

[109] Duffy, "William Vogt: A Pilgrim on the Road to Survival," 1256-1257.

The issue was Baker's arrogance and not ornithology or conservation. As a consequence of the failed *coup d'etat,* Vogt and several others lost their jobs.[110] Robert Cushman Murphy, a board member, helped Vogt to secure a position in Peru. As the author of *Oceanic Birds of South America* (1936), Murphy was the leading ornithological expert on South American birds and had been contacted by the *Compañía Administradora del Guano* (CAG), but Murphy suggested Vogt for the position of consulting ornithologist. Arriving in Callao, Peru in January 1939, Vogt undertook a three-year term to study how to "augment the increment of excrement" on Peru's guano islands.[111]

Vogt's excitement at going to Peru must have been great. He was following in the footsteps, literally, of his mentor, R.C. Murphy. Vogt had lavished praise on Murphy's successful *Oceanic Birds of South America* (1936), describing it not only as a first-rate ornithological work, "but one of the most absorbing and exciting publications in the field of natural history."[112] By going to Peru to study the guano-producing birds, Vogt too would have the opportunity to experience a geographical and temporal expanse of land. Vogt made extensive use of Murphy's book during his own research in Peru when he was able to do what he had at one time imagined

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[110] Devlin and Naismith, 71-72; Peterson, 1255.

[111] Vogt claims that the job "had been thrown open to entire A.O.U." before he was selected. "Background Information about Dr. William Voght [sic] who has been recommended as a field biologist to be associated with the Pan American Union for the Enabling of the International Nature Convention." Vogt Papers, DPL.

[112] William Vogt, "Wings Over Waves," *Natural History* (April 1936), 319-322; illustrations with selected text from *Oceanic Birds of South America* (1936) follow the review. Robert Cushman Murphy, *Oceanic Birds of South America* (New York: Macmillan Company and the American Museum of Natural History, 1936).

doing. Vogt employed his knowledge of human interaction with the land in his ecological studies of Peruvian guano birds "to look forward and backward along the corridors of time." [113] He would use this same approach again while studying the natural resources of Latin American nations, always concerned not only for past and present use, but also for future conditions.

Conclusion

Vogt's conservation was grounded in the aesthetic value of wildlife; his views of land use were shaped by the aesthetic value of conservation and the scientific study of wildlife ecology. He came to study wildlife first through the nature study movement's influence in the writings of Ernest Thompson Seton (1860-1946) and the Boy Scouts of America. Avid birdwatchers in New York City's region in the 1920s and 1930s who joined the Linnaean Society of New York met regularly at the American Museum of Natural History and learned from the nation's leading ornithologists who believed that non-professionals could contribute to scientific ornithology remained. Vogt's scientific education regarding the life histories of birds taught him about wildlife ecology at the same time that his work for the National Association of Audubon Societies and the Jones Beach Bird Sanctuary introduced him to his first conservation campaign. His writings reveal that early in his career Vogt, like so many other ecologists of the day, carried his ideas between the human and non-human world. He, along with Frank Fraser Darling, began to see land use in

[113] Vogt, "Wings Over Waves," 319.

terms of the greater good, both present and future. This conservation sensibility urged limited sacrifices by individuals to maintain the greater good and it encouraged Darling's criticism of the political economy of Scotland while Vogt lambasted North American drainage and Axis aggression. Both men were beginning to perceive that the political economy of humans was inseparable from the economy of nature.

CHAPTER TWO

MANAGING GUANO MEANS MANAGING HUMANS

This chapter demonstrates the shift in Vogt's thinking from the need to conserve wildlife for its aesthetic value to an understanding of wildlife as a natural resource and its role within human political economies. Vogt began this transformation in New York when engaged in the campaign to stop the drainage of marshlands. However, it was in Perú that he witnessed and took part in the successful conservation of wildlife for its economic value. In late 1938 the *Compañía Administradora del Guano*, on the recommendation of Robert Cushman Murphy, hired Vogt to study the guano-producing birds of Perú. The *Compañía* recognized the importance of guano to the national economy early in the twentieth century and acknowledged that conservation required a scientific basis. Vogt's position as ornithologist required careful study of the guano birds and their environment because the *Compañía* wanted to maximize the excrement produced by undomesticated animals. It would be important to optimize environmental conditions, which often meant eliminating predators, because the guano birds were unalterable; the amount of excrement produced depended on a sufficient number of birds. Vogt studied the ecology of the islands, the biotic and abiotic environmental conditions affecting the birds.

Vogt's earliest writings on the islands reveal something of the intellectual ideas that he brought with him. He arrived committed to protecting wildlife, as seen by his active opposition to marshland drainage while working at the Jones Beach Bird

Sanctuary and the National Association of Audubon Societies. Further, Vogt was already a vocal, literate, and very public advocate of wildlife who spoke out at national meetings and in the newspapers.[1] Vogt's association with the professional staff of the American Museum of Natural History, through which he received his ornithological education, suggests his awareness of key ecological concepts. Vogt understood that the behavior of the birds played a role in the environment in which birds lived, an idea underscored in both his first and his final reports to the *Compañía*.[2] Since bird behavior was adapted to the environment, Vogt stated that he did not intend to control animal behavior. Instead he wanted to adapt management efforts and human actions to suit bird behavior and thereby optimize conditions.[3] However, the birds themselves were not alone in constituting the biotic environment.

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[1] Vogt wrote letters to the editor of the *New York Times*, protesting that misuse of natural resources should be added to a recent list of un-American activities and arguing against the drainage of marshland carried out by the WPA to control mosquito populations. William Vogt, "Seeking a Definition," 22 May 1936, *New York Times* 22:C7; William Vogt, "WPA Mosquito Control: Work in Various Sections is Called Useless," *New York Times* 5 December 1937, IV, 8:C7. Vogt also presented his position regarding mosquito control work before the 22nd Annual Meeting of the New Jersey Mosquito Extermination Association in 1935 and participated in one of the "hottest debates," if he did say so himself, at the Third North American Wildlife Conference held in Baltimore, February 14-17, 1938. William Vogt, "Mosquito Control and Wild Life," *American Game* (May-June 1935), 35 and 42-43; William Vogt, "What's Wrong with Mosquito Control?" *Transactions of the Third North American Wildlife Conference* (Washington DC, 1938), 94-98. In addition, Vogt used his position as editor of *Bird-Lore* to publish hard-hitting editorials stating, in one example that refers to President Franklin D. Roosevelt's notorious effort to pack the Supreme Court, that nature's laws are immutable by humans; "from biological laws there is no appeal; Nature's court cannot be packed." "Editorial," *Bird-Lore* 39 (December 1937), 434.

[2] In setting out his plan of work, Vogt noted that avian behavior could not controlled but that management must take behavior into consideration. William Vogt, "Islas Guaneras: Enumeración preliminar de algunos problemas relacionados con la producción del guano en el Perú," *Boletín de la Compañia Administradora del Guano* (Lima) 15 (July 1939), 299; William Vogt, "Aves guaneras: informe sobre las aves guaneras," *Boletín de la Compañia Administradora del Guano* (Lima) 18 (March 1942), 3-4, 36.

[3] Vogt, "Islas Guaneras," *Boletín* 15 (July 1939), 286-288.

Humans were a limited presence on the islands since they were banned except for the workers that arrived seasonally to extract the guano. However, predators, competitors, and even cooperator species required study to see if their populations could be manipulated to benefit the birds. Vogt quickly seized upon the idea that the island lizards might be useful to the welfare of the birds.[4] While committed to protecting the birds from human disturbances, he implicitly acknowledged the islands were not pristine wilderness and he was quick to suggest the possibility of enhancing some topographical features of the landscape.[5] Scientifically managed human manipulation of the biotic environment to promote a greater good was acceptable to Vogt.

Vogt arrived in Perú with the idea that he needed to identify the "limiting factors" that might impede the avian population's growth.[6] Limiting factors were those factors most critical to the organism's survival and which constrained population growth.[7] This idea engaged the principle that nature acts to limit population growth through what Charles Darwin referred to as the "destruction" of nature. Vogt thought that periodic changes in climatic conditions, now known as *El*

[4] William Vogt, "Islas Guaneras: las lagartijas y las aves guaneras," *Boletín de la Compañia Administradora del Guano* (Lima) 15 (September 1939), 346-348.

[5] For example, Vogt thought erecting structures might help young *guanay*es that had a tendency to fall off cliffs as they sought water. Vogt, "Islas Guaneras," *Boletín* 15 (July 1939), 285-286.

[6] Vogt, "Islas Guaneras," *Boletín* 15 (July 1939), 286-287, 289-293.

[7] This is from Mitman's discussion of Victor E. Shelford's dissertation research showing that of various factors the reproductive behavior of the tiger beetle was the least amenable to change and therefore was a critical element of survival. Mitman, *The State of Nature*, 38. Aldo Leopold organized *Game Management* (1933) according to "factors" affecting species in their relationship to their habitat and includes among them "limiting factors." The limiting factor would be the one factor that most diminishes the species population growth (39). Aldo Leopold, *Game Management; With a New Foreword by Laurence R. Jahn* (Madison: The University of Wisconsin Press, 1986), xxxii, 38-41.

Niño, might be such a limiting factor.[8] Vogt reassured the *Compañía* that the death of a large number of birds was not necessarily a bad thing because nature needed to neutralize increases in population with a corresponding mortality.[9] Vogt, by invoking the notion of limiting factors, already embraced the basic tenets of Malthusianism that population may not exceed resources, and was acutely aware of the fragility of wildlife populations.

Vogt published his research in the *Compañía's* Spanish-language monthly bulletin, distributed in Perú but with few academic outlets in the United States. His work has thus gained scant historical attention. Gregory Todd Cushman's recent dissertation examines Vogt's guano research work within the larger context of the *Compañía's* role in managing Perú's marine environment and the technocratic success of developing what became the world's largest industrial fishery.[10] Vogt was

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[8] Robert Cushman Murphy discusses "El Niño" at length in articles and books. Murphy, "The Oceanography of the Peruvian Littoral with Reference to the Abundance and Distribution of Marine Line," *Geographical Review* 13 (January 1923), 64-85; Murphy, "Oceanic and Climatic Phenomena along the West Coast of South America during 1925," *Geographical Review* 16 (January 1926), 26-54; Murphy, *Oceanic Birds of South America* (New York: The MacMillan Company, 1936), 101. Vogt refers only briefly to abnormal conditions in his May 1940 report to the Compañia but at a conference held that summer in Washington DC Vogt discussed the implications of the upwelling in the Humboldt Current that caused what he termed "an ecological depression" and he noted it is part of the "Niño" phenomenon. William Vogt, "Islas Guaneras: Informe annual del ornitólogo Dr. W. Vogt," *Boletín de la Compañía Administradora del Guano* 16 (May 1940), 151; "An Ecological Depression on the Peruvian Coast," *Proceedings of the Eighth American Scientific Congress*, Volume III: Biological Sciences (Washington, DC: Department of State, 1942), pp. 515;William Vogt, "Conferencias: Una depresión ecológica en la costa peruana," *Boletín de la Compañía Administradora del Guano* 16 (October 1940), 317.

[9] Reassuring readers that might be concerned by unusually high mortality rates among the birds, Vogt wrote "It needs to be remembered that each year there is an increase of great number of the birds, that nature has to strongly neutralize it by a more or less corresponding mortality. In other words, the bird population will soon exhaust its food and the useable nesting areas." William Vogt, "Islas Guaneras: informe annual del ornitólogo Dr. W. Vogt," *Boletín* 16 (May 1940), 151.

[10] The knowledge necessary to build the Peruvian fisheries, starting in the 1940s, originated with the Compañía's study of the guano industry, including Vogt's research. The anchoveta was the basis for

not only one of the Lords of Guano credited with expanded guano production, thereby vindicating the role of the expert in managing Perú's marine resources, but his work inspired the next generation of managers and "helped propel Peru's guano industry to new levels of success during the 1950s." Ornithologist and ecologist David Cameron Duffy reviewed Vogt's final report to the *Compañía* and used it for his work on colonial water birds in Latin America and Africa and believes that it "would still be considered an excellent [study] today."[11] He goes on to praise Vogt's accomplishment noting that Vogt wrote it in relative isolation and without recourse to a library and it is therefore "even more of a monument to an outstanding field ecologist and is certainly one of the finest examples of the ecological state of the art in the 1940s."[12] My own examination of this period of Vogt's life suggests that these reports are important in firmly establishing Vogt's ideas regarding wildlife conservation and the role of humans in destroying wildlife habitat. Most important is Vogt's premise that humans are dependent upon natural resources, including wildlife. The practical value of wildlife for human life rather than aesthetic visions of wilderness impelled Vogt's

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both industries and the decision to build the fisheries was premised on the maximum utility of a natural resource to meet expanded agricultural production needs. The irony is that the fishmeal fed Northern meat industries, while the guano industry had fertilized coastal cotton and sugar plantations that exported its crops. Cushman's recent study connects Vogt's research, which inspired a generation of managers, with the expansion of the fishmeal industry and through Vogt connects the Peruvian technocratic management of natural resources with postwar environmentalism throughout the Americas. He considers Vogt to be "one of the main architects of modern environmentalism." Gregory Todd Cushman, "The Lords of Guano: Science and the Management of Perú's Marine Environment, 1800-1973," (Ph.D.: University of Texas at Austin, 2003), 271, 234, 287.

[11] David Cameron Duffy, "William Vogt: A Pilgrim on the Road to Survival," *American Birds* 43 (Winter 1989), 1256-57. Duffy draws upon Vogt's report in "Why is the Double-crested Cormorant a Problem? Insights from Cormorant Ecology and Human Sociology," *Colonial Waterbirds* 18 (1995) 25-32; Duffy and Susan Jackson, "Diet Studies of Seabirds: a Review of Methods," *Colonial Waterbirds* 9 (1986), 1-17.

[12] Duffy, "William Vogt: A Pilgrim on the Road to Survival," *American Birds* 43 (Winter 1989), 1257.

conservation crusade. Ultimately, Vogt's Peruvian research solidified his approach to land use conservation and management as a part of human ecology.

This chapter begins by exploring the importance of guano for the Peruvian economy and the place of conservation in Peru in protecting this valuable natural resource. Vogt went to Perú excited to follow in the footsteps of his mentor, Robert Cushman Murphy, and conducted a careful research program to learn as much as possible about the birds and the island ecology. He reported his work to the *Compañía* in annual reports published in its *Boletín*; he intended to prepare a more detailed analysis of his work with the aid of a Guggenheim Fellowship but ultimately moved on to other pressing aspects of conservation.[13]

The Importance of Guano

The nesting season for guano birds was underway when Vogt arrived in Perú in January 1939. His mission consisted of providing technical advice on two management problems confronting the *Compañía*. The *Compañía* wanted to know how it could increase the bird population and thereby increase guano production and whether better management methods could be employed. Vogt understood the conservation of guano birds to be a management problem from the beginning.[14] As

[13] William Vogt to G. Evelyn Hutchinson, 29 May 1946, Folder 853, Box 51, G.E. Hutchinson Papers, Yale University Library. Hutchinson drew upon Vogt's research in "Survey of Existing Knowledge of Biogeochemistry: 3. The Biogeochemistry of Vertebrate Excretion." *Bulletin of the American Museum of Natural History* 96 (195), 1-554.

[14] In May 1940 Vogt wrote that "improved management of these birds is the primary object of the research." Vogt, "An Ecological Depression," 507.

such, the locus for action would reside with human actions rather than with changes to the bird population. This idea is significant because I will later note that Vogt's advocacy of wildlife conservation rested on the management of human populations.

The guano, or excrement, came from the Peruvian Cormorant or *guanay* (*Phalacrocorax bouganvillii*), the Perúvian Booby or *piquero* (*Sula variegata*), and the Brown Pelican or *alcatraz* (*Pelecanus occidentalis*). It was high in nitrogen and a valuable fertilizer. Guano's importance as a fertilizer led to a nineteenth-century search of the Pacific and Caribbean by United States ships for locations where guano could be harvested.[15] Peruvian guano, considered especially desirable, was shipped around the world and commanded the highest prices. Perú granted contracts to extract guano from the islands to European companies who brought Chinese workers to dig the guano and load it aboard ships under inhumane conditions. While Perú prospered from the profits from guano extractions, most of the monetary benefits derived from guano accrued to the foreign companies. However, by the late nineteenth century, the companies had harvested most of the guano that had accumulated over the centuries while the profitability of guano fertilizer declined with the use of chemical fertilizers. Perú's profits from the international demand for guano disappeared, along with the substance itself. However, Perúvian agriculture still needed guano and the country was unable to produce enough to satisfy domestic demand.[16]

[15] The United States government enacted legislation allowing Americans to claim for the United States otherwise unclaimed territory with guano deposits. This led to a search of the Caribbean and the Pacific and the acquisition of a few territories that Jimmy M. Skaggs studies in *The Great Guano Rush: Entrepreneurs and American Overseas Expansion* (New York: St. Martin's Press, 1994).

The disarray of the guano industry in the early twentieth-century led the government of Perú to contract with Robert E. Coker (1876-1967) of the U.S. Bureau of Fisheries for a study of the industry itself. His 1908 report noted the decline in bird populations and called for the implementation of measures to protect the birds by minimizing disturbance. He suggested that the islands become bird sanctuaries and that they be closed to humans and guano extraction for a period of years to allow the bird populations to recover. Thereafter the islands were to be closed on a permanent basis during the nesting season, with individual islands closed for thirty months following the extraction of guano. In addition, he recommended that a single organization oversee guano extraction. The government implemented these measures and established the *Compañía* in 1909 to oversee the extraction of guano, and within ten years guano production tripled.[17]

The efforts to protect the birds yielded positive results with an enlarged bird population and increased yields of extracted guano. However, conditions in Perú and the world had changed by the late 1930s. Increased human population in Perú meant greater domestic need for guano. The worldwide economic depression and the

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[16] Coker points out that in 1908 the country needed 40,000 tons per year but produced 20,000 tons of high-grade guano. Robert E. Coker, "The Protection of Birds Made Profitable," *Science* 82 (5 July 1935), 10-12.

[17] Coker, "Regarding the Future of the Guano Industry and the Guano-Producing Birds of Peru," *Science* 28 (July 10, 1908), 58-64; Coker, "An Illustration of Practical Results from the Protection of Natural Resources, *Science* 53 (1 April 1921), 295-298. An unsigned article in *Conservation in the Americas*, published by the Conservation Section of the Pan American Union following Vogt's tenure as its director, calls the CIA's work restoring and protecting the guano "the greatest industry in the world based upon the conservation of wildlife." There is a good chance that Vogt wrote this piece. This unsigned article lists in its bibliography private correspondence with Enrique Avila, Vogt's assistant when in Perú and with Robert Cushman Murphy and William H. Phelps, Jr. "Seabirds versus Fisheries," *Conservation in the Americas* April- July 1952, 30.

beginnings of the Second World War deprived Latin American nations of overseas markets for raw products as well as sources for manufactured goods. Many Latin American nations turned to industrialization to substitute for this loss. Perú, however, sought to strengthen the sale of raw products with fish exports, principally the Peruvian anchovy, anchoveta, from the Bay of Pisca, used as fishmeal.[18] Anchoveta, however, were the known food of the guano birds and this created competition between the fishing industry and the guano industry for access to the same resource. Over a hundred thousand pounds a year of nitrate-rich guano was extracted from the islands between 1929 and 1934 and used primarily for Peruvian agriculture, with the excess sold abroad.[19] This was the context under which the *Compañía* contracted Vogt in 1939. Since the need for guano necessitated wildlife conservation, it would be critical for Vogt to establish the life histories of the guano birds and their relationship to the biotic and abiotic environment.

Vogt's investigations would be the first in-depth study of the so-called guano birds, although Robert Cushman Murphy's research remained an important resource that he drew upon extensively in his publications. He relied upon Murphy's big book on South American birds.[20] Vogt also arranged to meet with a number of specialists

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[18] G.E. Hutchinson advised against replacing the guano industry with the fishmeal industry that was desired for its constant rate of production. He argued against the notion that the birds reduced the supply of fish available for commercial uses and suggested the birds, through biogeochemical concentration, increased the water's fertility, thereby aiding the commercial fish industry. This is quoted in "Seabirds versus Fisheries," 30.

[19] Robert Coker, "The Protection of Birds Made Profitable," *Science* 82 (5 July 1935), 11.

[20] In preparing his reports Vogt lacked access to a major research library. Murphy visited Peru in 1919-1920 and published *Bird Islands of Peru* (New York: G.P. Putnam's Sons, 1925) and after subsequent

who could provide advice and criticism on his methods and plans during a six-week trip to the United States. He met with parasitologists, ecologists, ichthyologists, ornithologists, and herpetologists in New York, Washington, Chicago, and at the University of Wisconsin, University of Michigan, and Harvard University. In addition he met with relevant specialists at conferences in Washington, New York, Madison and Ann Arbor.[21] In his final report to the *Compañía*, Vogt acknowledged the collaboration of several scientists and a number of American scientific organizations, notably Dr. Mary Sears (1905-1997) of Wellesley College and the Woods Hole Oceanographic Institute (WHOI), Dr. G.K. Noble (1894-1940) of the American Museum of Natural History, WHOI, the United States Bureau of Plant Industries, and the United States Fish and Wildlife Service.[22]

Vogt understood that his objective - an increased bird population and increased guano production – meant determining the limiting factors for the birds and whether human management could control them.[23] However, Vogt concluded during the course of his study that the most seriously limiting factors could not be controlled. Climatic changes that affected fluctuations in the food supply placed serious

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visits published *Oceanic Birds of South America,* 2 volumes (New York: The MacMillan Company, 1936).

[21] William Vogt, "Aves Guaneras: informe correspondiente al año 1940," *Boletín de la Compañia Administradora del Guano* (Lima) 17 (April 1941), 164-165.

[22] Vogt, "Aves guaneras," *Boletín* 18 (March 1942), 4-5. Sears worked for Henry Bryant Bigelow, founder of the Woods Hole Oceanographic Institute in Woods Hole. Sears also helped to start *Deep-Sea Research* and *Progress in Oceanography* and worked for the Navy's Hydrographic Office during the Second World War. She spent five months working with Vogt for five months in Perú. John D. Milliman, "Mary Sears – An Appreciation," *Deep-Sea Research* 32 (1985), 749-751.

[23] Vogt, "Islas Guaneras," *Boletín* 15 (July 1939), 286-287, 289-293.

limitations on the avian population but these were factors beyond the *Compañía's* control. As a consequence, the *Compania's* objective was to reduce the magnitude with which bird populations periodically declined and otherwise maintained a rate of constant increase in the average size of the bird population.[24] Its only recourse, Vogt said, was to reduce the magnitude of its impact on population levels while otherwise maintaining a rate of constant increase in the average size of the bird population.[25] Vogt concluded that the *Compañía* needed to understand nature's actions and plan accordingly. While fellow scientists sought to unleash enormous power through nuclear fission, Vogt considered the control of nature unfeasible; knowing how nature worked did not, in this case, lead to the control of nature. This view of nature, science, and conservation would, however, lead Vogt to advocate the control of humans.

Mindful of the importance of guano for Perú as well as for his own career as a scientist, Vogt employed a variety of methods to gather information.[26] He first

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[24] Vogt, "Aves guaneras," *Boletín* 18 (March 1942), 29.

[25] Vogt, "Aves guaneras," *Boletín* 18 (March 1942), 29.

[26] Vogt esteemed the careful and methodical data gathering techniques he employed. This is evident in the aspersions he cast upon his colleague, oceanographer Erwin H. Schweigger. Vogt to G. Evelyn Hutchinson, 30 January 1947, Folder 853, Box 51, Hutchinson Papers, Yale University Library. Schweigger would not immediately undertake a study of the anchoveta, as Vogt suggested to him, nor would he take plankton samples for evaluation at Woods Hole Oceanographic Institute. He was careless and hasty with his conclusions according to Vogt: Schweigger took short trips to collect information and built his hypothesis that larger fish ate the anchovetas upon two or three records of anchoveta in their stomachs. The implication is that Vogt himself was a careful, methodical researcher who would observe the data before forming a hypothesis. Cushman places the relationship between Vogt and Schweigger in the context of Vogt's disdain for his colleagues and Vogt's holistic approach to the environment, from which he derived the necessity to study the anchoveta, and Schweigger's focused approach to studying fish. The development of the fishmeal industry emphasized. Cushman, chapter 6 but especially 391 and 397.

conducted a census of the bird populations, for which he used aerial photographs and banding, a practice he instituted on the islands. He made daily observations of bird behavior, mostly of the *guanay*, from his base on the Chincha islands where he lived with his wife.[27] He arranged to receive a regular series of temperature readings for the air, soil surface, and various sea depths, as well as the measure of plankton.[28] Vogt studied other species on the islands and in the nearby waters – lizards, seagulls, parasites, bonitos (a fish), and sea lions – as part of the guano birds' environment. In his studies Vogt questioned whether each of these species competed with the guano birds for resources, whether it preyed upon the guano birds, or whether in some sense it contributed to the welfare of the guano birds, i.e. a cooperating species. In addition, he determined how much food the birds actually ate and estimated the amount of food required per ton of guano produced.[29] To do so, Vogt called upon American specialists who visited Perú, such as Dr. Mary Sears, an oceanographer at the Woods Hole Oceanographic Institute, and wrote to others who agreed to provide laboratory analysis of the stomach contents. Finally he worked from the *Compañía's* archive records of guardian reports, production records, and meteorological conditions.

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[27] Juana Allraum Vogt describes her life on the islands in two articles published that drew upon her diary entries from those years. Juana Allraum Vogt, "The White Island," *The Atlantic Monthly* 166 (September 1940), 265-273; Juana Allraum Vogt, "To Sea Lions!" *The Atlantic Monthly* 168 (July 1941), 18-25. Her diaries may be found with Vogt's papers at the Denver Public Library.

[28] This research on microclimates received funding from the American Philosophical Society. William Vogt, "Report of Committee on Research," *Yearbook – American Philosophical Society* (1941), 143-144.

[29] Vogt, "Islas Guaneras: Las lagartijas y las aves guaneras," *Boletín* 15 (September 1939), 346-348; William Vogt, "Aves Guaneras: Los lobos y las aves guaneras," *Boletín de la Compañia Administradora del Guano* (October 1939), 397-399; Vogt, "Aves guaneras," *Boletín* 18 (March 1942), 63.

Bird Life

The guanay, considered by Murphy to be "the most valuable bird in the world," was "a source of national wealth of the first degree" that produced a valuable renewable natural resource for Perú.[30] Of the three guano birds - the *guanay*, *piquero*, and *alcatraz* - the *guanay* produced the most valuable guano, the guano with the highest concentrations of nitrate, and most of the guano harvested by the *Compañía*. By 1942 the *guanay* was the most populous of the guano birds although both the *piquero* and *alcatraz* had been more numerous in the past. The *guanay* were not disturbed by the biennial campaigns to extract guano, even when large machinery was used. The others birds suffered from the campaigns and as a result of the diminution of the other birds the *guanay* gradually extended their nesting territory. Originally an arctic bird, the *guanay* preferred a nesting location that was cooled by the southern winds and in years of climatic disturbances its nesting sites were chosen accordingly. The wind lowered surface temperatures and helped keep ecto-parasites from the birds. As an advocate of the rational management of reserves, Vogt therefore suggested that land features that blocked this wind might be removed by dynamite to provide more potential nesting sites for the birds. Likewise, he suggested that cement might be

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[30] Vogt emphasized this point. Robert Cushman Murphy, "The Most Valuable Bird in the World," *National Geographic Magazine* 46 (September 1924), 278-302; Vogt, "Aves guaneras," *Boletín* 18 (March 1942), [42.]

poured over areas with dark sand that tended to have higher surface temperatures and were less desirable for nesting.[31]

The g*uanay* whose nests were found at the center of the colony were most successful. The nesting colony formed a large circle with the earliest arrivals at the center, providing them with the greatest protection from predators as well as with plenty of neighbors to chase errant fledglings back to the safety of the nest. As a consequence, nests on the perimeter were more likely to have been established later in the breeding season, were more vulnerable to predators, and more likely to lose fledglings should they wander from the nest. They were also more likely to lose nesting materials to *guanay* with well-established nests at the center of the colony; competition for resources favored the well-established birds within the breeding colony. Each nesting pair had to maintain a constant presence on the nest to protect the eggs and fledglings from extreme temperatures and predators. Nesting birds shared responsibility for feeding and protecting offspring and continued to demonstrate manifestations of copulation throughout the nesting period. Borrowing from the work of British biologist Julian S. Huxley, Vogt thought this behavior served to maintain the "unity" of the nesting pair. These non-reproductive sexual encounters seemed more prevalent at the center of the colony, suggesting the "unity"

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[31] Vogt later reported to an American audience that the guano birds were threatened with extinction. "The radius of their feeding flights is limited by their flying speed and the number of daylight hours. Every seventh year long-period changes in the prevailing winds cause the Humboldt Current and its fish to shift farther out to sea." Vogt, "Guano," *New York Times* 22 September 1946, IV, 13:5.

of these nesting pairs was more assured, which was then another element in securing the well-being of the next generation of *guanay*.[32]

Vogt described the sight of *guanay* hovering over the water as a "living net on a bank of fish," emphasizing their tendency to hunt in large groups and to only eat anchoveta, which are found in large schools.[33] The imperative of protecting the offspring meant the nesting pair divided the twelve hours of daylight in the search for food. With twelve hours of daylight food had to be within a six-hour radius if both birds were to eat. This time factor, as well as the need to find large schools of anchoveta, limited the conditions under which the *guanay* could thrive. The *piquero* and the *alcatraz* also ate the anchoveta but not exclusively, and not necessarily in large schools.[34] For the *guanay*, large schools of anchoveta in close proximity to the nesting islands were an important environmental condition for survival. Conversely, starvation, a limiting factor for the avian population, was an ordinary part of the environment beyond the *Compañía's* control.

Vogt witnessed starvation's impact on the guano birds during the 1939-1940 nesting season in which tens of thousands of eggs were abandoned. Most of the

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[32] Vogt, "Aves guaneras," *Boletín* 18 (March 1942), 50, 53-54. Vogt is drawing upon Julian S. Huxley's conclusions regarding the Great Crested Grebe. Vogt expressed little doubt about what he saw although he does suggest that at times it is only part but not the entire act. He may have misinterpreted the avian behavior but the nature of the report does not call for him to provide his observations, just his analysis and he expresses no misgivings. This interpretation of avian behavior makes Vogt's analysis especially significant since he will later, in espousing birth control, advocate non-reproductive copulation for humans.

[33] Vogt reported his conclusions in a lecture sponsored by the *Sociedad Agronómica de Chile*, "Influencia de la corriente de Humboldt en la formación de depósitos guaníferos," *Simiente* (Santiago) 12 (October 1942), 3-14; William Vogt, *Mas Guano Blanco: possibles recursos de la costa desértica Chilena* (Santiago de Chile: *Sociedad Chilena de Fertilizantes Ltda*., 1945), 7.

[34] Vogt, "Aves guaneras," *Boletín* 18 (March 1942), 96 and 99.

harvested guano was deposited during the nesting season when the birds were resident on the islands. The production levels of harvestable guano plummeted in 1939-1940 while the reproductive failure of the *guanay* population meant the next year's harvest would be smaller than usual. The nest abandonment was one link in a chain of events that Vogt witnessed shortly after his arrival in Perú – the absence of sufficient quantities of anchoveta close by the islands, starving birds, nest abandonment that consigned the fledglings to death, guano deposited off-site, and diminished guano harvest – in which each link experienced a decline in productivity. Vogt called this an ecological depression, using economic language to underscore that the interdependency of nature mirrored that of the world's economy in which declining economic activity rippled through the nations and became a global phenomena. The ecological depression began with the biotic and abiotic environmental conditions of the anchoveta that impacted the survival of the *guanay* and in turn the *guanay's* environment affected humans. Due to the avian tragedy, the Peruvian people lost valuable fertilizer and an important source of foreign currency. By using the term ecological depression Vogt showed that economic and ecological factors were interrelated, that humans were very much part of nature, and therefore that humanity was dependent on natural phenomena beyond its control.[35]

Although Vogt spent comparably less time studying the *piquero* and the *alcatraz*, he reported similar conclusions regarding these birds.[36] The *piqueros* were

[35] Vogt, "An Ecological Depression," 507-527; Vogt, "Conferencias: Una depresión ecológica en la costa peruana," *Boletín* 16 (October 1940), 307-329.

[36] Vogt, "Aves guaneras: informe," *Boletín* 18 (March 1942), 89-106.

found nesting on the pampa and on precarious shelves from which it was easy for an egg or fledgling that escaped the nest to fall into the sea. Given the lack of ground under their nests, the *piqueros* produced little guano for the *Compañía* to harvest. The *alcatraz's* guano had the least nitrogen and was therefore the least valuable; there were fewer birds, and their excrement was mixed with nesting materials. The *piquero* and *alcatraz* competed with the *guanay* for anchoveta and yet produced less valuable and less abundant guano. Yet, Vogt maintained that the diverse population was desirable, even if it restricted the nesting area available for the *guanay*. He reasoned that the *piquero* did not feed solely upon the anchoveta nor did it depend on large schools and therefore suffered less when this food source was scarce. To rectify the loss of young *piqueros* and of guano, Vogt suggested that the *Compañía* construct shelves from which the guano could be harvested. The *alcatraz*, unlike the *guanay*, fished alone and at greater distances from the Perúvian coast. Originally from the tropics, the *alcatraz* possessed a higher heat tolerance and stayed within Perú's borders even when it dispersed from the guano islands due to a lack of food. Of the three species, the *alcatraz* was easily disturbed by humans, the most preyed upon, and the least known by Vogt, who could not visually distinguish males from females even after three years in the field. However, these birds occupied their own ecological niche and did deposit guano. Therefore, Vogt thought they should remain part of the island environment.[37]

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[37] Vogt, "Aves guaneras: informe," *Boletín* 18 (March 1942), 96-97 and 99-100.

Managing the Guano Islands

Vogt made two principal suggestions to improve conditions for the guano birds. First, physical conditions on the island could be altered and, second, the other species on the islands needed to be classified as either a) those to be eradicated or b) those that cooperated with the guano birds. As noted above, Vogt suggested that cement be used on sand to provide areas with lower surface temperatures. Cement could also be used to fill large crevices that without extraction would be filled with accumulated guano. Following a similar line of reasoning, the *piqueros* needed access to the sea from their nesting colony, which the *Compañía* might construct since fledglings unable to reach the sea could die by falling off a cliff. In addition, since the *guanay* nested along a bridge built on one island, Vogt suggested covering the bridge in order to double the surface area for nesting. Vogt also thought the *Compañía* should consider dynamiting obstructions to the southern winds; if this proved successful on a small scale then more dynamiting could re-landscape the islands.[38]

Vogt thought the islands possessed microclimates and that the birds chose the microclimates best suited to their needs; from his observation Macabi and Santa Rosa possessed the most favorable microclimates. Therefore he suggested dynamiting formations that obstructed the southern winds and thought with time the *Compañía* might alter other islands to enhance conditions. In addition, Vogt suggested that during the extraction of guano the workers leave behind, rather than toss into the sea, feathers and stones gathered up with the guano. The birds needed these materials for

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[38] Vogt, "Aves Guaneras," *Boletín* (April 1941), 159.

nesting and the bigger the nest the more secure the eggs and fledglings. He pointed out that before extraction began the birds had used accumulated guano to form solid cup-shaped nests from which an egg or fledgling could not easily escape. Because the materials might be infected with parasites Vogt recommended they be chemically treated to kill parasites.

Parasites, cats, and rats were the only organisms whose eradication Vogt urged. He thought that if lizards were left alone, then the *Compañía* only needed to treat the nesting material after the extraction of guano. The reptiles fed on the parasites and were an important cooperator species that the *Compañía* should aid. In fact, Vogt suggested that on islands without lizards the *Compañía* might import some from other islands. If lizards were protected, meaning the men who guarded the islands refrained from killing them under the erroneous impression they were poisonous, then they would help curb parasites. Vogt thought more studies were needed on the parasites and urged the *Compañía* to hire a parasitologist, but was convinced from his own studies that parasites were only a secondary cause of death for birds already weakened by hunger.[39] Along these same lines, Vogt wanted the sea lions recognized as a cooperator species. He noted that unlike known predators, such as the hawk, the guano birds did not react to the presence of sea lions in their midst. He speculated the sea lions' objective in attacking guano birds might not be the birds themselves but their stomach contents, i.e., anchoveta. If this were true, then the sea

[39] Vogt, "Islas Guaneras: las lagartijas y las aves guaneras," *Boletín* 15 (September 1939), 346-348; William Vogt, "Islas Guaneras: informe annual del ornitólogo Dr. W. Vogt*," Boletín* 16 (May 1940), 145-162. Vogt began to study the lizards almost immediately. Wrote up his capture, mark, release method for publication. William Vogt, "A Practical Lizard Trap," *Copeia* 17 (8 July 1941), 115.

lion would be a competitor species. However, the birds did not react to the sea lions with fear and the sea lions killed few birds. Therefore, the deaths that occurred might be due to isolated individual behavior. Since he was not disturbed by the loss of *guanay* to sea lions, Vogt thought any deaths might be considered a well-spent "tribute" to an otherwise beneficial species. As far as predator species were concerned Vogt considered them part of the environment to which the guano birds were adapted. In fact, he suggested seagulls and buzzards no longer be hunted and condors, the only true destroyer of *guanay*, hunted only a limited basis. Alterations made by humans in the population levels of cooperator or even predator species risked disturbing the total ecological structure.[40]

The decision to keep predators and not manipulate population size seems to be distinguished from the decision that modifications in the physical environment would help the birds. Presumably this is because the bird population would cease to increase after attaining an optimum level while human interventions could distort conditions by allowing population to exceed adaptive conditions. Vogt knew of the deer on the Kaibab Plateau in the American southwest that had been protected by the eradication of predatory wolves. These deer had recently experienced a population explosion that devastated the plant browse and was followed by a population crash.[41] On the guano islands, modifications to the abiotic environment would permit the guano birds to flourish and to enlarge their populations to their natural limits. The birds would be

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[40] Vogt, "Aves guaneras: informe," *Boletín* 18 (March 1942), 81-82.

[41] Vogt was familiar with this example from his friendship with Aldo Leopold and visit to the Kaibab in 1943.

able to attain their optimal population, a concept pioneered by Alexander Carr-Saunders in *The Population* Problem (1922) in regard to people but adopted by W.C. Allee and Frank Fraser Darling.[42]

Vogt's recommendations for the management of the guano islands extended to the guards employed to safeguard the birds. They needed to learn the importance of the birds they protected and of guano ecology. He claimed a moderate education program would invigorate their sense of responsibility. Just as importantly, with some training and understanding of guano islands' ecology, the guards would be able to produce more reliable field reports each month that could in turn enhance scientific understanding of the guano situation.

Vogt devoted attention to the guano birds' food supply as a way to secure and increase their population. The significance of the anchoveta for the guano birds, the lack of information regarding this fish, and, no doubt, efforts to develop an industry based upon it, encouraged him to analyze the role of the anchoveta in the environment. Vogt identified a link between the food resources of the guano birds, the anchoveta, and climatic conditions encountered in Perú's littoral waters. The upwelling of cold water from the ocean depths in the Humboldt Current brought nutrients – plankton – to the surface for anchoveta to feed upon and the availability of plankton was connected to both the solar energy processing-phytoplankton as well as

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[42] Vogt believed that only with technology was the human-wildlife relationship skewed. Vogt, "Aves guaneras: informe," *Boletín* 18 (March 1942), 82; Mitman, 94-96.

the upwelling.[43] According to Vogt, this upwelling did not occur during the 1939-1940 nesting season, thereby affecting not only the supply of anchoveta but diminishing the populations that fed upon it. A number of theories were proposed to explain the scarcity of anchoveta: they had gone to deeper waters, they were only available at night, they were migratory, or the population had failed due to a lack of food.[44] Vogt agreed with the latter theory and suggested that the anchoveta left Perú's littoral waters because of the absence of food.[45] Vogt connected the events of 1939-40 and previous years in which guano production fell with reports of a change in climatic conditions. This supposition led him to the conclusion that the correlation between climate and food supply was a limiting factor the *Compañía* must accept. Other organisms also experienced fluctuations in the population cycle and therefore periodic fluctuations in the population cycle of the guano birds were normal and to be expected. Vogt's analysis was similar to Keynesian ideas about business cycles; because they were inevitable the objective was to limit their impact. Thus the problem confronting the *Compañía* was how to limit the impact of these fluctuations and recover population size as quickly as possible at ever-higher levels.

Abundance and scarcity

Periodic fluctuations in the population of guano birds, caused by climatic conditions had on impact on the availability of resources within the guano industry, the fisheries, and agriculture. Life along the Perúvian coast depended upon natural

[43] Vogt, "Aves guaneras: informe," *Boletín* 18 (March 1942), 69.

[44] Vogt, "Aves guaneras: informe," *Boletín* 18 (March 1942), 72.

[45] Vogt, "Aves guaneras: informe," *Boletín* 18 (March 1942), 74.

resources susceptible to fluctuations. In the case of the guano birds, an apparently good-sized population of birds at the start of the 1939-breeding season was unable to adequately replenish its population or to produce the guano needed for Peruvian agriculture. The idea that a natural resource might be diminished to the point it could no longer benefit people would become a theme of Vogt's work. He stressed the need for specialists to study and advise a course of action because conditions could be deceptive. He knew from his fieldwork in Perú that a fine line separated abundance from scarcity, and it required an expert to analyze all the information.

The importance of death appears in Vogt's earliest writings from the guano islands when he warned that the periodic fluctuations in population size might be something that the *Compañía* would have to accept. Death itself was part of nature and served to limit population size. In Vogt's words, "a population without limits is of course a biological impossibility,"[46] referring to the immutability of natural laws. For example, the guano birds depended on the wealth of the sea's resources and therefore laws that could not be contravened dominated their existence. Vogt reminded his readers that exploiting natural resources beyond their limits could destroy them, depriving the country of great wealth.[47] An abundance of a resource could, in fact, mask scarcity, or at the very least mask the fragility of a resource that could easily become scarce.

[46] Vogt, "Influencia de la corriente," *Simiente* 12 (October 1942), 11.

[47] Vogt, "Influencia de la corriente," *Simiente* 12 (October 1942), 12.

Vogt's discussion of conditions for guano birds employed a number of terms that might also be used to discuss commercial businesses, for example, *depression*, *abundance*, and *scarcity*. The difference between abundance and scarcity was difficult to discern, leading casual observers to mistaken conclusions. Vogt noted that the untrained guards who lived on the islands and had the most contact with the birds mistakenly concluded the abundance of food available to the birds was due to *some* of the birds returning early to their nests. He adamantly maintained that there was only abundant food when *all* the birds returned before their allotted six hours of feeding time had expired.[48] He also noted discrepancies in reports, with one guardian citing scarce food while the warden on a nearby island cited abundant food.[49] The misperceptions of untrained observers could lead to the erroneous conclusion that a large breeding population at the beginning of the season would necessarily produce a large guano harvest. After all, tens of thousands of eggs were laid in nests at the beginning of the 1939-1940 nesting season only to be abandoned later in the season due to lack of food for the parents. In this case, the promised abundance of an already increasing bird population preceded a decline in guano production. The complexities of the situation meant there were too many variables to draw simplistic conclusions. On the other hand, the appearance of scarcity could also be misleading since the desolate guano islands were home to such a wealth of natural resources for Perú. From the evidence presented by Vogt, he might well conclude that the concept of

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[48] Vogt, "Aves Guaneras," *Boletín* 17 (April 1941), 70-71.

[49] Vogt, "Aves Guaneras," *Boletín* 17 (April 1941), 134.

abundance failed to distinguish between the existence of sufficient anchoveta and the ability of the birds to locate it.[50]

History provides examples of the sometimes thin line between abundance and scarcity that could have prompted Vogt to warn Perú against repeating past mistakes. Perú's guano islands were once known for their mountains of guano but in the early twentieth-century they required stringent protection to satisfy the needs of Perúvian agriculture. Likewise the great wealth of guano that Perú once possessed did not provide lasting financial wealth to the country. In addition, Vogt's study of the habitat of the guano birds had brought him to a deeper understanding of the Humboldt Current. The current, it was believed, held mythological wealth. Yet Vogt took pains in his report to the *Compañía* to point out that the failure of the anchoveta resource in the current explained the abandonment of nests and decline in guano production.[51] That mythological wealth could not produce unlimited resources on demand, which is why Vogt cautioned the *Compañía* regarding the fish industry.[52] After all, as he saw it, national welfare depended on the welfare of the nation's wildlife. Therefore, natural resources constituted a form of wealth. Not surprisingly, Vogt would later invoke the language of finance to discuss the conservation of resources, in which the objective was to live off the interest without touching the principle. Short-term profits, such as Perú had received in the nineteenth century, did not yield lasting financial wealth and would actually deplete the natural resource. If nineteenth-century

[50] Vogt, "Aves Guaneras," *Boletín* 17 (April 1941), 135.

[51] William Vogt, "Aves guaneras: informe sobre las aves guaneras," *Boletín* 18 (March 1942), 64.

[52] William Vogt, "Aves guaneras: informe sobre las aves guaneras," *Boletín* 18 (March 1942), 19.

guano extraction had destroyed the population of guano birds Perú would have been left truly poor, with neither financial wealth nor the resources upon which people depended.[53]

Vogt's most basic conclusion was that the guano birds warranted protection.[54] Perú had witnessed an uninterrupted thirty-year increase in their population from 1909-1939, which Vogt believed was largely due to the *Compañia's* basic protection measures. He believed it possible that the bird population would continue to increase.[55] He rejected arguments that the birds were hardy because they had withstood the exploitation of guano dating back to the Incas. He thought any extraction by the Incas or by Spanish colonists had to have been minimal, and that Perú still lived with the dire consequences of the nineteenth-century exploitation. Conditions prior to the nineteenth century would have been more conducive to the birds' survival, he thought, and the birds most likely reached the limits of their numerical population. While recent history had altered the relative population size of different species on the islands, with fewer seagulls and more bonita, there still existed a precarious equilibrium that required protection. Because the birds survived due to instinct rather than intelligence, Vogt thought it best to avoid changing bird

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[53] The idea that wealth of natural resources exists as a reality and in a symbolic form is found in Count Korzybyski's discussion of general semantics in *Science and Sanity* (1941). Vogt will encourage the readers of *Road to Survival* to read *Science and Sanity* after first introducing them to general semantics in the third chapter. Vogt, *Road to Survival*, 301.

[54] Vogt, "Aves guaneras: informe," *Boletín* 18 (March 1942), 25.

[55] Vogt, "Aves guaneras," *Boletín* 18 (March 1942), 41-42; *Mas guano blanco*, 20.

behavior. The *Compañía* had to learn bird behavior, as Vogt had begun to do, and use that knowledge to ensure optimal environmental conditions.[56]

In order for bird behavior to remain intact human behavior needed to change, specifically, people needed to embrace the importance of wildlife for their lives. As initial steps, Vogt identified education, the practice of bird banding, and national recognition of the birds' importance in an international treaty. The *Compañía's* employees needed to learn that bird banding did not cause the death of fledglings.[57] The larger populace needed to learn about the bands and how individuals might help to gather data. To this end a public information campaign, including newspaper articles and radio addresses, needed to solicit the help of Peruvians living along Perú's littoral shores. Banding, after all, was a cooperative activity that called upon the good will of those who encountered banded birds.[58] It allowed a large number of people to provide information that previously had depended upon "men of science."[59] Participation could instill a deeper appreciation for Perú's wildlife. For this reason, Vogt also urged that the island wardens be taught how to provide more useful data.[60] Banding, however, had demonstrated that the guano birds migrated beyond Perú's borders. Therefore, Vogt urged a treaty between Perú and Chile assuring international cooperation for the protection of the birds. Such a treaty, written along the lines of the

[56] Vogt, "Aves guaneras," *Boletín* 18 (March 1942), 36-41.

[57] Vogt was fighting the prejudice that banding may have caused the recent episode of depopulation. Vogt, "Aves guaneras," *Boletín* 18 (March 1942), 76.

[58] Vogt, "Aves guaneras: informe," *Boletín* 18 (March 1942), 86.

[59] Vogt, "Aves guaneras: informe," *Boletín* 18 (March 1942), 104-105.

[60] Vogt, "Aves guaneras: informe," *Boletín* 18 (March 1942), 127.

recently adopted Western Hemisphere Convention, to which Perú was already a signatory, would require additional public education. It would also be a strong statement on the value the country placed on the guano birds. The populace of both countries would need to understand the value of non-resident wildlife and refrain from harming the birds. In this manner, Vogt's prescription for wildlife conservation could affect human values and human behavior and, at the same time, Vogt had begun to think in terms of international conservation.

Conclusion

Vogt's Peruvian experience captures a change in his thinking about conservation. The importance of wildlife as a natural resource that occupied a critical role within human political economies replaced the aesthetic value of wildlife that seemed to motivate his early bird watching which in turn inspired his first conservation campaign against wetland drainage. Vogt's study of the guano birds and their environment led him to conclude that environmental optimization would be the best way to augment the increment of excrement. This would require modifying the landscape but most importantly it meant that change was required of humans, who must adapt to the requirements of avian behavior. Vogt already embraced the basic tenets of Malthusianism, that population may not exceed resources and that their stability was fragile. Vogt's conclusions from his ornithological research in Perú would be central to the prescription for human survival he publishes in the late 1940s,

when he once again situates humans with nature and states that humans must adapt to the consequent limitations.

Vogt wrote in 1940 that in Perú the relation between "agriculture and the conservation of wild animals" was "as clear as an Euclidean axiom."[61] Indeed the importance of wildlife conservation was well understood in Perú where technocrats argued which wildlife resources to prioritize for the production of fertilizer, anchoveta or guano, not whether wildlife held economic importance. Vogt drew upon his Peruvian experience when he joined first the wartime Office of Coordinator of Inter-American Affairs and then the Pan American Union. Latin America's food supply and quality of life, Vogt would argue, depended on the conservation of natural resources.

[61] William Vogt, "La importancia de la conservación de los animales silvestres para la agricultura demostrada por la industria del guano," *Proceedings of the Eighth American Scientific Congress*, vol. v Agriculture and Conservation (Washington: Department of State, 1942), 260.

CHAPTER THREE:

INTERNATIONAL CIVIL SERVANT

The creation of a United Nations in the aftermath of the Second World War brought with it a profusion of international organizations, including those dedicated to wildlife conservation. While international conservation was not new, in the late 1940s the post-war years brought new organizational tactics and issues to the field. Vogt's experience as what he called an "international civil servant" working for the Pan American Union in the mid-1940s captures this transition. His experience dealing with conservation in the Americas as a whole made him keenly aware of the education needed at the most basic levels of society as well as the importance of transcending geo-political boundaries. When working to develop a conservation perspective in Latin American nations, Vogt's ideas were informed by noted American conservationist Aldo Leopold's notion of a sick landscape as well as the specter of insecurity raised by the Great Depression and the Dust Bowl that together shook American exceptionalism.[1] The global extent of the depression demonstrated the interconnectedness of the United States' powerful industrial economy with the rest of the world. At the same time, this resource-rich nation's degradation of the American plains suggested that no nation stood above nature's laws; any nation could be brought to its knees by misusing the land. In a global economy if one nation was

[1] Dust Bowl, according to Donald Worster, was part of the capitalist crisis of the Great Depression and became an example of failure. Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (New York: Oxford University Press, 1979), 5, 100. Aldo Leopold defined land health as the "capacity for self-renewal in the biota," ending his essay and he ends the essay by noting that overpopulation threatened the land. Aldo Leopold, *For the Health of the Land: Previously Unpublished Essays and Other Writings* ed. J. Baird Callicott, et. al. (Washington DC: Island Press, 1999), 224, 226.

thus crippled then other nations would feel the repercussions. National sovereignty over the land notwithstanding, the conservation of national resources was of international concern.

Vogt's contract with the *Compañía* ended in early 1942 just as the Second World War began, and he experienced first-hand the idea that an ecologist could contribute to the international administration of natural resources. He studied the Humboldt Current in Chile under the auspices of the Committee for Inter-American Artistic and Cultural Relations.[2] The information he gathered was considered important for United States' national defense because the Humboldt Current influenced technical aspects of military and naval aviation, as well as the detection of submarines.[3] The larger context for Vogt's research was the Office of Inter-American Affairs (OIAA) that had been established in 1940 under the direction of Nelson Rockefeller. The office was intended to secure the interests of the United States against any Nazi encroachments in Latin America by disseminating information and promoting economic well-being.[4]

Vogt resigned from the OIAA the following year to become "an international civil servant" for the Pan American Union, working to implement the provisions of the 1942 Western Hemisphere Convention; this project was made possible by funds

[2] Vogt, "Influencia de la corriente," 10.

[3] Vogt, "Influencia de la corriente," 14.

[4] By the time the United States entered the war, the OIAA concentrated on public health, food, and communications, although a major portion of the Office's initial appropriation was for broadcasts, moviemaking, academic exchange programs, and traveling art exhibitions. Paul Kramer, "Nelson Rockefeller and British Security Coordination," *Journal of Contemporary History* 16 (January 1981): 82; Cary Reich, *The Life of Nelson A. Rockefeller: Worlds to Conquer 1908-1958* (New York: Doubleday, 1996), 199-200, 214-215, 238-239, 243.

the OIAA gave to the Pan American Union to establish a committee of experts to study the flora, fauna, and scenic beauty of the Americas.[5] The conclusions drawn from Vogt's Peruvian fieldwork were reinforced by his surveys of Latin American natural resources and solidified his view that wildlife and other natural resources could be conserved only through changes in human behavior.

This chapter opens with an overview of the history of international conservation prior to the Second World War in order to place Vogt's contributions to the Pan American Union in a larger context. In Latin America, Vogt's mandate was to address wildlife conservation, but he quickly realized that wildlife was imperiled in national parks. Therefore, he directed his attention to the primary issue of land use. Next, Vogt's work in Mexico, culminating in the publication of *El Hombre y la Tierra (Man and the Earth)*, laid the basis for his approach to Latin American resources. As he learned in Perú, conservation to protect the community's welfare began when humans changed their behavior towards the land. More often than not, however, individuals would do so only when compelled. The influence of this

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[5] The Eighth International Conference on American States met in Lima, Perú in 1938 and recommended that the Pan American Union (PAU) establish a committee of experts to study the flora, fauna, and scenic beauty of the Americas. The plan was approved by the PAU and in 1940 this committee met at the Eighth American Scientific Congress in Washington DC and drafted the convention, effective May 1942. The term "international civil servant" was Vogt's. For the history of the Conservation Section, Division of Agriculture at the PAU, see Memorandum to Mr. [José L.] Colom, 6/27/47, William Vogt Papers, DPL; Harold J. Coolidge, "New Horizons in International Conservation," *Transactions of the Thirteenth North American Wildlife Conference*, edited by Ethel M. Quee (Washington DC: Wildlife Management Institute, 1948), 142-159; William Vogt memo to Dr. Taylor, 26 May 1949, William Vogt Papers owned by Population-Environment Balance, Washington DC (hereafter cited as Vogt Papers, PEB).

perspective can be seen in Vogt's reports on the population and resources of Venezuela, Costa Rica, and El Salvador discussed in the chapter's third section.

International Conservation Prior to the Second World War

Vogt's assignment for the Pan American Union was part of a shift in international conservation efforts from treaties and conventions to standing organizations that provided scientific expertise to address the transnational scope of conservation. Treaties and conventions of behavior to which signatory nations agreed to abide characterized international conservation prior to the Second World War. Historian Kurkpatrick Dorsey details the process by which the United States and Canada, early in the twentieth century, negotiated treaties to regulate inland fisheries and seal hunting and to protect migratory birds. Successful treaties depended on a role for science and conservation, the economic value of the species, and public sentiment. An international agreement to regulate pelagic seal hunting in international waters came only after a drastic reduction in the seal population. Yet five years later the initiative and character of the 1916 Migratory Bird Treaty came from conservationists who accepted a moral obligation to preserve interesting species from extinction.[6]

The dissonance between non-human and human notions of territoriality inhibited national measures and led activists to an international arena. This was especially true for bird enthusiasts since neither geopolitical boundaries nor the geomorphic boundaries of oceans and mountains that could impede the movement of

[6] Kurkpatrick Dorsey, *The Dawn of Conservation Diplomacy: U.S.-Canadian Wildlife Protection Treaties in the Progressive Era* (Seattle: University of Washington Press, 1998), 165.

fauna deterred the migration of bird flocks. Not surprisingly, bird enthusiasts were often at the forefront of wildlife conservation as in the case of the National Association of Audubon Societies (NAAS), which generated popular support for bird conservation in the early twentieth century and affiliated itself with international efforts. The NAAS hired wardens to protect Florida's birds from plume hunters as early as 1902 and NAAS executive director Gilbert Pearson was a founder of the International Council for Bird Preservation.[7] The signatories to the 1916 Migratory Bird Convention, the United States and Great Britain acting for Canada, prohibited the exploitation, importation, and exportation of migratory birds.[8] Twenty years later the United States and Mexico signed a treaty with similar measures to protect migratory birds and wild mammals.[9] These conventions acknowledged that all the countries that hosted particular species of migratory birds must offer protection if any one nation's efforts was to be effective; the efficacy of American actions required the participation of Canada and Mexico.

There was a second trajectory for the formation of international organizations that provided expert conservation knowledge, namely European colonial interests in Africa. The 1933 London Convention for the Preservation of the Fauna and Flora of Africa assembled diplomats, scientists, and naturalists from nations with sovereign

[7] Pearson would also be influential in the formation of conservation organization in several South American nations in the early 1940s. Graham, *Audubon Ark*, 50-52; Cushman, 294, 297.

[8] The United States became a signatory to this convention with the Migratory Bird Treaty Act of 1918, Graham, *Audubon Ark*, 97.

[9] Gregg Mitman analyzes two films that were produced shortly after the Convention was signed: *High Over the Borders* and *Birds on the Wing*. The theme of migratory birds accented the communal ownership of nature. Mitman, *Reel Nature: America's Romance with Wildlife on Film* (Cambridge: Harvard University Press, 1999), 182-185.

claims to African territory.[10] The Convention embraced the notion that "extinction or permanent damage" threatened the world's natural fauna and flora and considered it especially likely to occur in Africa. They met with the intention of preserving the African landscape, primarily through the formation of national parks and nature reserves in which "the hunting, killing or capturing of fauna, and the collection or destruction of flora shall be limited or prohibited" and to set aside areas for scientific study.[11] Outside of these delineated areas, preservation would come through the regulation of hunting and the traffic in trophies. Signatories were asked to take action within a two-year period.[12] The Convention drew up two lists, one of species that required complete protection with hunting limited to scientific or administrative purposes and the second of species that required protection but that could still be hunted by special license.[13] Since colonial European powers administered most of the African continent in 1933, this international agreement was intended to preserve a

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[10] Victor van Straelen, was a delegate, attending as Director of the Royal Natural History Museum, Brussels; Professor Bourdelle, Professor at the National Museum of Natural History, represented that Museum and the French Ministry of National Education and was an assistant delegate. Advisors included: Captain Keith F.T. Caldwell, Honorary Game Warden for Kenya Colony and Dr. G.F. Herbert Smith, Secretary British Museum (Natural History); Observers included: Dr. John C. Phillips, Associate Curator of Birds, Museum of Comparative Zoology, Harvard Dr. P.G. Van Tienhoven, President of the Administrative Council of the International Office for the Protection of Nature at Brussels, representing the Ministry of the Colonies [Netherlands]. *Agreements Concluded at the International Conference for the Protection of the Fauna and Flora of Africa, London, November 8, 1933* (London: HMSO, 1933). An earlier London Conference of 1900 had constructed a convention for nature protection that was never ratified; it became the basis for the 1933 conference in London. Roderick Nash, *Wilderness and the American Mind*, 4th ed. (New Haven: Yale University Press, 2001), 354-355.

[11] *Agreements … for the Protection of the Fauna and Flora of Africa*, 20, 28.

[12] *Agreements … for the Protection of the Fauna and Flora of Africa,* 26.

[13] *Agreements … for the Protection of the Fauna and Flora of Africa,* 30.

shared western vision of wildlife in a foreign land. The convention, therefore, called for greater measures than existed, for example, in the signatory nation of Great Britain, which did not yet embraced the notion of national parks or nature reserves.[14] Yet this legalistic approach to wildlife conservation was criticized for a greater emphasis upon meeting the letter of the law than on putting in place effective conservation measures.[15] When this group convened for the third time in 1953, decolonization loomed and it was clear that the convention's approach to African wildlife would not work, if only because the signatories would soon be relinquishing control over the resources. The challenge would then become to persuade sovereign nations beset with demands for economic development that they *wanted* to conserve wildlife.

The London Convention shared with other pre-war efforts a self-consciously rational approach to the protection of nature. They were defining a rational policy that promoted the maximum sustained yield of a natural resource. In 1931 the Convention for the Regulation of Whaling regulated whaling, an industry in which multiple nations participated but which occurred in international waters, in order to protect the

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[14] For the history of conservation in Britain, see John Sheail, *Nature in Trust: The History of Nature Conservation in Britain* (Glasgow: Blackie, 1976)**;** Stephen Bocking, "Conserving Nature and Building a Science: British Ecologists and he Origins of the Nature Conservancy," *Science and Nature: Essays in the History of the Environmental Sciences* ed. Michael Shortland (Oxford: British Society for the History of Science, 1993), 89-114.

[15] The Convention signatories reassembled in 1938 to report on their progress but their third meeting, eventually held in 1953, was delayed until well after the Second World War ended. *Second International Conference for the Protection of the Fauna and Flora of Africa, London, May, 1938* (London: His Majesty's Stationery Office, 1938). *Proceedings of the Third International Conference for the Protection of the Fauna and Flora of Africa, Bukavu, 26-31 October 1953* (Bruxelles: Direction Agriculture, Forêts et Èlevage due Ministère des Colonies en collaboration avec l'Union pour la Protection de la Nature, nd),

whale populations and the interests of various nations. The Western Hemisphere Convention of 1940, signed by most nations in the hemisphere, established a basic model for parks and reserves. It called for the enforcement of laws that protected the threatened species, and for "the rational and controlled utilisation of protected species for the purposes of sport, industry and science."[16] Although the Western Hemisphere Convention that Vogt enforced favored a "rational" approach, it was not the first to do so.

Another means of protecting wildlife on an international scale emerged from assemblies of concerned citizens who began promoting wildlife protection at home. These people were often ornithologists or naturalists who were kept apprised of wildlife situations at home and abroad through travel and correspondence with colleagues. These individuals and organizations were the origin of the International Committee for Bird Preservation (ICBP) founded in 1922, now known as BirdLife International, and the American Committee for Wildlife Protection, founded in 1930. ICBP was the only active and effective organization before the Second World War, according to Martin Holdgate, naturalist and former chief of the World Conservation Union, that transcended national boundaries in terms of membership and the issues addressed.[17] The American Committee for Wildlife Protection, organized by the Boone and Crockett Club, concentrated on the Western Hemisphere but sponsored

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[16] *Conférence internationale pour la protection de la nature: Brunnen, 28 juin au 3 juillet 1947: process-verbaux, resolutions et rapports*, ed. Johann Büttikofer (Basle : Ligue suisse pur la protection de la nature, 1947), 139.

[17] Martin Holdgate, *The Green Web: A Union for World Conservation* (London: Earthscan Publications, 1999), 9.

publication of the Harper and Allen volumes detailing extinct or partially extinct species to draw attention to the problems confronting wildlife.[18] The Committee was instrumental in forming the Conservation Section within the Pan American Union.[19] Couched in terms that could seem esoteric, the concerns of these committees possessed limited appeal and limited scope for effecting change on an international level.

Wildlife enthusiasts also formed the third example of an international organization established prior to the Second World War, the International Office for the Protection of Nature (IOPN). IOPN was a clearinghouse of information about wildlife protection around the world. It sought to support legislative activities by providing the information necessary for making informed decisions. IOPN supported the prevailing legislative approach to wildlife protection; on the other hand the organization's major premise was that any protective legislative required knowledge gathered by scientists and naturalists in the field.[20] Unlike the London Convention or the ICBP it was limited by neither species nor location. It was intended to be a clearinghouse of information regarding preservation activities and legislation around

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[18] Francis Harper, *Extinct and Vanishing Mammals of the World* (New York, American Committee for Wildlife Protection, 1945); Glover M. Allen, *Extinct and Vanishing Mammals of the Western Hemisphere* (Cambridge: American Committee for International Wild Life Protection, 1942); *Conférence internationale pour la protection de la nature: Brunnen*, 135.

[19] *Conférence internationale pour la protection de la nature: Brunnen*, 135.

[20] Holdgate, 12. E. Pelzers, "Historical Background on the Netherlands Commission for International Nature Protection, the Foundation for International nature Protection and the Office International pour la Protection de la Nature," *Mededelingen* No. 29, 1994 of the Netherlands Commission for International Nature Protection, Translated by J.A.A. Boddens Hosang. Made available to me by Cécile Thiéry, Librarian for the World Conservation Union, without pagination.

the world, upon which individuals and organizations might draw for assistance in crafting a new legislation. A second distinction was that IOPN languished during the Second World War and attempts to revive it encapsulated post-war efforts to resume international protection of wildlife and even to reinvigorate it with a strongly conservation-oriented perspective.

As a repository, rather than an instigator of particular programs, IOPN was an authoritative source of information, as suggested by the lasting legacy of the Library. However, after the Second World War scientists increasingly embraced the utilization of natural resources rather than the exclusion of resources from the human economy. However, proponents of both perspectives could embrace the expertise available to all nations that the IOPN represented.

The legalistic and intellectual character of the 1933 Convention and even IOPN's approach to wildlife protection presented certain difficulties. Fulfilling the letter of the law by creating national parks left unresolved the question of regulating land-use and restricting hunting. Jean-Paul Harroy, working in the Belgian Congo, witnessed the lack of enforcement in the national parks created in compliance with the 1933 London Convention. Likewise, in his travels through Mexico in the early 1940s William Vogt witnessed national parks being used for agriculture, timber, and hunting for the pot. However, at that time Vogt was in a position to do something about encroachment upon Mexico's national parks. The Pan American Union hired

Vogt to implement the measures of the 1940 Western Hemisphere Convention.[21] His survey of Mexican conditions convinced him that it would be pointless to implement national park legislation unless people understood the importance of conserving natural resources. Therefore he directed his attention to educating the public regarding natural resources.

In 1943 the Office of Inter-American Affairs gave the Pan American Union, an international organization of nation-states founded in 1890 to promote intra-hemispheric cooperation, $45,000 to implement the Western Hemisphere Convention. The Eighth International Conference on American States, meeting in Lima, Peru in 1938, recommended that the Pan American Union (PAU) establish a committee of experts to study the flora, fauna, and scenic beauty of the Americas. The plan was approved by the PAU and in 1940 this committee met at the Eighth American Scientific Congress (Washington DC) and drafted the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere; it was signed in 1940 and became effective 1 May 1943. Vogt joined the staff of the PAU in August 1943 as a biologist and head of the newly created Conservation Section.

Mexican Natural Resources

Vogt immediately began a program of fieldwork to evaluate the conservation problems considered under the treaty established by the 1940 Western Hemisphere

[21] The signatory states agreed to establish national parks, strict nature reserves, and national reserves with integrated land-use. William J. Hart, *A Systems Approach to Park Planning* (Morges, IUCN, 1966) IUCN publication NS #4; Nash, 361.

Convention.[22] He visited twenty-two Latin American republics, conducting field surveys of natural resources in several nations that were published by the Pan American Union. Governmental and non-governmental organizations requested information and assistance from his office. Vogt spent ten months on a survey of natural resources at the request of the Mexican Ministry of Agriculture, longer than subsequent studies. His publications on Mexico transcended national boundaries within Latin America and were, he claimed, applicable throughout the region.[23] For the survey of Mexican natural resources, Vogt concentrated on Mexico's national parks; he visited half of the parks and made a film for the PAU.[24] His work in Mexico established a pattern of operation for subsequent surveys in that he focused on land use in general, rather than wildlife. In doing so he was influenced by the conditions he encountered but also by the ecological perspective of Aldo Leopold, who earlier noted that fundamental resources such as the soil require protection.[25]

It was clear to Vogt that wildlife in national parks could not be isolated from the larger issue of land-use in Mexico. The Mexican Revolution of 1910 pledged land redistribution to a country with little arable, level land. In its absence people moved into parks and their domestic activities threatened a "forest famine." Such behavior

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[22] *Report on Activities of the Conservation Section, Division of Agricultural Cooperation Pan American Union, 1943-1946* (Washington DC: Pan American Union, 1946), 1-2.

[23] *Report on Activities of the Conservation Section*, 3, 16.

[24] "Palabras Preliminares de Manual Alcala" to the Mexican edition of *El Hombre y La Tierra* (Mexico: Secretaria de Education Publica, 1944), vii-viii.

[25] Aldo Leopold, "A Plea for Recognition of Artificial Works in Forest Erosion Control Policy," *Journal of Forestry* 19 (March 1921), 267-273; Curt Meine, *Aldo Leopold: His Life and Work.* (Madison: University of Wisconsin, 1988), 185-190.

constituted a failure to protect any wildlife, let alone game. In 1945 Mexico boasted forty-three national parks, including wild lands and monuments. The national parks, however, often lacked administrative policies and personnel to enforce boundaries and restrictions on land use. Mexican citizens encroached upon the seemingly available park lands, bringing with them their goats to graze. They took up agriculture, cut down wood, and hunted "for the pot."[26] Pressure to extract resources for commercial profit was a second problem for the national parks. In 1944 the Mexican Congress excluded forested areas from Colima National Park that protected the city's watershed; the timber was to be used in the manufacture of celanese in a plant partly financed by North Americans.[27] Vogt acknowledged that North Americans were responsible for the destruction of other Latin American national parks but warned an audience of North American conservationists and wildlife technicians that park integrity must be maintained or else "most of Mexico will be virtually desert within a hundred years."[28] Finally, national parks in Mexico confronted the notion that parks were an unproductive use of land that might profitably be ranched or timbered and that park policy should adhere to the guidelines of the United States National Park Service. This can be seen in the case of the proposed *Parque de la Paz de Mexico*, or Peace Park, intended to abut the newly created Big Bend National Park and conform to United States administrative

[26] *Report on Activities of the Conservation Section,* 3-5.

[27] Celanese is a trademark name for cellulose acetate. William Vogt, "Unsolved Problems Concerning Wildlife in Mexican National Parks," *Transactions of the Tenth North American Wildlife Conference* (Washington DC: American Wildlife Institute, 1945), 355-358.

[28] Vogt, "Unsolved Problems," 355-358.

policies.[29] Discussion about an international peace park began when the U.S. Congress authorized Big Bend in 1935 and a year after it opened in 1944 a commission was established to consider the proposal. Vogt, aware of the ongoing negotiations, sent Dr. Newton Drury of the United States National Park Service translations of confidential Mexican reports on the situation, noting that there was "a complete lack of understanding of the Big Bend situation [in Mexico] and considerable opposition to going ahead with the park."[30] The opposition stemmed from concern that Mexico would sacrifice the most and gain the least from the international park initiative. The Mexicans would contribute valuable land for the creation of the park while the United States formed Big Bend from waste land, so Americans would likely patronize the Mexican park, but not their own, while Mexicans were unlikely to visit either.[31]

Upon the request of the Mexican Minister of Agriculture, Marte R. Gómez, Vogt submitted his recommendations on the situation. He argued strongly for a national park adjacent to Big Bend National Park, which he saw as a "show window on Mexico" drawing Americans into Mexico beyond the park boundaries. The

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[29] In 1994 Mexico established two protected areas adjacent to Big Bend National Park, *Maderas del Carmen* in the state of Coahuila and *Cañon de Santa Elena* in the state of Chihuahua. The United States and Mexico propose to administer the three areas as sister parks. National Park Service, *Partners in Protection of the Chihuahuan Desert,*" nd, accessed 1 October 2004 <http://www.nps.gov/bibe/mexareas.htm>; Comisión Nacional de Áreas Naturales Protegidas, *Maderas Del Carmen Área De Protección De Flora y Fauna*, 3 December 2003, accessed 1 October 2004 <http://conanp.gob.mx/anp/maderas/maderas.php>.

[30] William Vogt to Dr. Newton Drury, 6 November 1945, Vogt Papers, DPL.

[31] "Report on the Study Made in La Sierra Del Carmen, Coahuila, For the Creation of an Inter-National Park Between the United States and Mexico," nd, Vogt, Papers, DPL.

Mexican side of the park held the "greater magnificence" of scenery that would attract the 400,000 expected Americans across the border each year. The developed area of the park could then highlight Mexican art, culture, and history, encouraging people to further explore Mexico. In fact, "this area could be one of the most effective possible promotion schemes for Mexican turismo."[32] Of course, Vogt cautioned that park management must be comparable to that of Big Bend, but he thought that the United States Park Service would be only too happy to help. This park needed, as would any Mexican park, to provide visitor facilities, evict people living in the parks along with any cattle and domestic animals, and to stop timber use. The creation of this park and its management along the lines of American national parks would provide a means for establishing the land-use that Vogt believed so necessary for Mexico. After all, Vogt reminded the reader, the parks were established not just for beauty but to protect watersheds and to protect wildlife. To protect wildlife the park must become a sanctuary that Vogt claimed would increase the wildlife available in the surrounding areas for hunting. Vogt's suggestions would have provided an American entry into Mexican land-use, if only through one park that could then serve as a model for other Mexican national parks as well as parks throughout Latin America.[33]

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[32] Memorandum from William Vogt to His Excellency the Minister of Agriculture [Mexico] 21 July 1944, Vogt Papers, DPL.

[33] In the United States, national parks evolved from a method of preventing private development to the protection of a wilderness that excluded humans. Yosemite Indians who lived within the park were increasingly excluded from the public gaze in the early twentieth century until the National Park Service implemented a removal policy in the 1930s. Mark David Spence, *Dispossessing the*

Vogt detailed "a program of research on the renewable resources of Mexico" in a confidential report for the use of Mexican officials that he wrote at the suggestion of the *Comisión Impulsora y Coordinadora de la Investigación Científica*, an organization comparable to the United States' National Research Council.[34] As in the case of national parks, the economic value of wildlife resources was once again linked with the larger issues of human land-use and human populations. "While the study is primarily an economic survey of the wildlife resources of Mexico, it cannot, of course, be dissociated from human land-use, population pressures, soil erosion and the entire human complex."[35] The sound administration of wildlife on a "sustained-yield basis" demanded that it be linked with the larger issues of land-use and human population.[36] In fulfillment of Vogt's proposal, Aldo Leopold's son, Starker Leopold, began a two-year wildlife survey in 1944 funded by the Mexican government and several North American groups.[37] This study was intended "to get enough of a picture

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Wilderness: Indian Removal and the Making of the National Parks (New York: Oxford University Press, 1999), 55, 125; Memorandum from William Vogt to His Excellency the Minister of Agriculture [Mexico] 21 July 1944, Vogt, Papers, DPL.

[34] *Report on Activities of the Conservation Section*, 17.

[35] *Report on Activities of the Conservation Section,* 17.

[36] *Report on Activities of the Conservation Section*, 6.

[37] The International Committee for Bird Preservation, The American Wildlife Institute, The American Game Protective Association, The American Committee for International Wildlife Protection, The New York Zoological Society, and the Boone and Crockett Club. At a North American convention Vogt identified the North American funding organizations as the Pan American Section ($4,000) along with the American Committee for International Wildlife Protection, New York Zoological Society, American Wildlife Institute, Boone and Crockett Club, and the Camp Fire Club of America. *Report on the Activities of Conservation Section,* 6; Hoyes Lloyd and William Vogt, "Pan-American Conservation," *Transactions of the Eleventh North American Wildlife Conference*, edited by Ethel M. Quee (Washington DC: American Wildlife Institute, 1946), 9. For more on Starker Leopold see Carol

of Mexican wildlife so that we can sell to the Mexicans themselves the value of that resource and also to get the basic facts that can be used to set up an administrative program."[38] Beyond administrative questions of land use, Vogt needed to address the larger problem of public perception of wildlife and natural resources.

At the request of Mexico's Ministry of Education, Jaime Torres, Vogt prepared *El Hombre y la Tierra* (*Man and the Earth*), a 100-page booklet to educate rural schoolchildren about conservation; 75,000 copies were distributed to Mexican teachers.[39] "It is being used," Vogt wrote, "as sort of an orientation text in the development of the conservation program which is to be included in the national curricula."[40] He wanted "the masses of the people [to] come to realize fully and completely their inescapable dependence on the land and the resources associated with it."[41] Once people understood the necessity for conservation, the goal was to have rational, or scientifically mediated, policies support man's relationship with the environment. Vogt was clearly skeptical of the ability of indigenous knowledge to manage the land on a sustainable basis.[42] To convey his message Vogt equated the

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Henrietta Leigh Rydell, "Aldo Starker Leopold: Wildlife Biologist and Public Policy Maker," (Master's thesis, Montana State University, History, 1993).

[38] Lloyd and Vogt, 9.

[39] *Report on Activities of the Conservation Section*, 19.

[40] William Vogt to Dr. Hugh S. Bennett [Soil Conservation Service, USDA] 21 April 1945, Vogt Papers, DPL.

[41] *Report on Activities of the Conservation Section,* 18.

[42] "When Agricultural School graduates [in Guatemala], such as manage many of the fincas, are unable to cope with the problem [of soil erosion], one must look forward many years before there can be any confidence that indigenous populations, with a high percentage of illiteracy, will be able to improve, to any extent, management of the land." *Report on Activities of the Conservation Section,* 8. Vogt also

importance of land to the importance of national defense, and said no less than the popular support that would be given to the army during an invasion was necessary to defend the land from the insidious threat of erosion.[43] To attract popular support, Vogt used inspirational phrases such as "we may not fight it alone but together we can conquer it" to refer to erosion and "the land army is the first defense of the nation."[44] Highly evocative chapter titles sought the public's attention: "Land: Man's Landlord," "Mexico is Thirsty," "Soil: the Source of Life," "The Web of Life," "Only God Can Make a Tree," and "The Land Belongs to All People!"

El Hombre y la Tierra articulated concepts already seen in Vogt's writings. Vogt discussed the theme of abundance that led to scarcity in Perú and extinction in Mexico. He used the North American example of the passenger pigeons that dramatically darkened nineteenth-century skies and were killed with abandon.[45] The passenger pigeon flew over the United States and Mexico before Martha, the last of her species, died in the Cincinnati Zoo in 1914.[46] From his work in Perú Vogt restated his respect for the adaptations of animal behavior to the environment and the need to discern limiting factors. He reminded his Mexican readers that even with science and

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notes that the Maya were not intelligent enough to conserve the soil. He argued that Mayan civilization fell because of the milpa system, the system of hillside farming that continued into the twentieth century. He credits Bennett for this idea. Vogt, *El Hombre y la Tierra*, 41; *Mexican Natural Resources*, 46.

[43] *Report on Activities of the Conservation Section,* 19.

[44] Vogt, *El Hombre y La Tierra*, 11,51.

[45] Vogt, *El Hombre y La Tierra*, 28.

[46] Frank Graham, Jr. *Man's Dominion: The Story of Conservation in America* (New York: M .Evans and Company, 1971), 25- 28.

technology humans could not subjugate nature. In fact, Vogt thought that technology was potentially dangerous since it drastically altered human relationships with the land. "Scientific developments and, even more, technological advances based on them, while they have increased man's control over nature, have often exploded in his face."[47] To support his position he cited the use of the mold-board plow on slopes and modern lumbering methods. Both practices yielded profitable short-term results based upon a narrowly defined view of natural resources at the expense of long-term use and a broader view of natural resources such as watersheds.[48] There were laws of nature that must take precedence over any other form of law that governed land use. In fact, Vogt claimed that law-abiding citizens were the key to Mexican survival, possibly intending to deliberately conflate civil and natural law.[49]Vogt's argument that good citizens obey the laws of nature resembles Aldo Leopold's land ethic in which responsible members of a community care for the soil as well as the trees.[50]

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[47] *Report on Activities of the Conservation Section,* 18.

[48] *Report on Activities of the Conservation Section,* 18. The mold-board plow had molded sides that reduces friction by removing the soil that was cut; this cleans the field, accesses the nutrient rich soil to the surface but exposes the soil to erosion. It is difficult to maneuver, thereby encouraging long rows. When used on slopes, the plow's earth-turning abilities could render it difficult for water to penetrate the soil thereby causing or exacerbating erosion.

[49] Vogt, *El Hombre y La Tierra*, 19, 53. Jay "Ding" Darling, the noted American naturalist and illustrator wanted Vogt to prepare a version of his "Mexican book" for the American classroom. Vogt found it "unexpectedly tough going" to do so and so far as I know he did not complete this project, unless one considers *Road to Survival* to be the American version. Vogt wrote to Darling in 1945, "Conditions are so much more varied here [in the United States] as to geographic and cultural patterns, that the simplicity of treatment used for Mexico is not really pertinent." William Vogt to Dr. Hugh S. Bennett [Soil Conservation Service, USDA] 21 April 1945, Vogt Papers, DPL.

[50] Leopold. *Sand County Almanac*, 204.

The ideas in *El Hombre* were later extrapolated to a broader audience in Vogt's 1948 book that enjoyed an international readership, *Road to Survival.*

The Mexican-American Commission for Economic Cooperation asked Vogt to perform a quick survey of Mexico's guano resources to aid in determining the feasibility of developing this resource. The United States Embassy placed an airplane at Vogt's disposal so that he might conduct an aerial survey of the region of the Gulf of California and the Pacific Coast of Baja California. Vogt was able to correct "exaggerated claims as to the current guano potential" but nevertheless thought the proper conditions existed in Mexico for the harvesting of guano. There were eight species of guano birds in the area, including cormorants, boobies, and pelicans, of which Vogt thought Brandt's Cormorant was the most promising given that there seemed to be suitable food supplies, climate, and nesting areas.[51] He estimated the amount of accumulated guano to be 20,000 tons and predicted 5,000 tons could reasonably be expected each year, far less than Perú produced. However, Mexico possessed no more than a twentieth of Peru's peak bird population and would only be able to reach this amount provided stringent management measures were enacted. Policies would be needed to establish and preserve the sanctity of the bird preserve. To this end, Vogt suggested higher salaries for fishermen would remove the incentive

[51] Farallon cormorant (*Phalacrocorax auritus albociliatus*), Mexican cormorant (*P. vigua mexicanus*), Brandt's cormorant (*P. penicillatus*), the blue-faced booby (*Sula dactylatra*), the blue-footed booby (*Sula nebouxii*), Brewster's booby (*Sula Brewsteri*), the red-footed booby (*Sula piscator*), and the brown pelican *(Pelecanus occidentalus*).

to accept bribes from hunters seeking game.[52] Once again, wildlife management was an issue of controlling human economic relationships.

Vogt conducted a similar survey of Chile's guano resources. His previous coastal observations in 1942 led him to believe that Chile would most likely be able to increase guano production to a high degree although not on the same scale as Peru. Of course, he thought Chile would need to learn from the Peruvian example of wildlife management, which in his opinion constituted the "most notable accomplishment in the management of natural resources in history."[53] It would be necessary to employ wardens, make certain the birds were undisturbed, extract guano no more than every other year, end the legal hunting of guano birds, and begin public education about the guano birds. All of these techniques would need to be implemented on a sustained basis or they would not yield the desired results. His recommendations would be implemented by newly constituted *Sociedad Chilena de Fertilizantes*.[54]

Vogt's work in other Latin American countries focused on land use rather than national parks, although he continued to draw upon his experience in Perú. To recap his perspective on Perú, Vogt thought this country faced a "dangerous future." It was threatened by erosion that he compared to a cancer, silently destroying the whole organism. Despite popular perception to the contrary, Vogt said there was not

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[52] *Report on Activities of the Conservation Section,* 16; Cushman, 310-315.

[53] Vogt, *Más guano blanco,* 21; "Influencia de la corriente *Simiente* 12 (October 1942), 3-14.

[54] Cushman, 315-316.

enough land in Perú, or for that matter in the United States, to satisfy agricultural needs without conservation measures. The seeming abundance of land in both countries must be considered on the basis of whether or not it was arable land. Vogt suggested that Perú learn from the American experience with erosion during the 1930s when the crisis of the Dust Bowl prompted federal intervention. There was little difficulty in resolving erosion, Vogt claimed, when human behavior could be changed. Vogt's message to Perú and to other Latin American countries was that the problem of erosion concerned people and the solution required changing their land systems and land use.[55]

Population and Resources of Venezuela, Costa Rica and El Salvador

Based upon several months' study in Venezuela, Costa Rica and El Salvador Vogt prepared reports, published by the Pan American Union in 1946, on the population and resources of each of the countries. These reports demonstrate his views on the place of humans in nature. He published his lengthier report on Mexico's resources the year before, and these three reports reflect the maturation of his thinking regarding natural resources and their intimate connection with the question of land use. They were concerned with human behavior rather than with a particular species of wildlife. Vogt was attempting to manage human as well as non-human populations because humans were an integral part of the landscape.

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[55]William Vogt, "Un Peligro Futuro para el Perú," *Boletín del comité nacional de protección a la naturaleza* (Lima) 1 (May 1944), pp. 3- 7.

To reinforce his arguments, three related themes appear in his Pan American reports on Venezuela, Costa Rica and El Salvador. First, he equates erosion with bodily illness requiring specialized medical attention. The second theme pertained to natural laws that required state intervention in social affairs to ensure compliance. Finally, Vogt wanted the interests of the community take precedence over those of the individual.[56]

Vogt used his knowledge of ecological processes to read from the landscapes an environmental history that included what he considered to be the misuse of natural resources leading to erosion gullies, deforestation, and the loss of soil fertility. The land, he claimed, was sick. In the case of Venezuela, humans were engaged in a "parasitic relationship with the land." He warned, "any host that is excessively parasitized, whether by the plasmodium protozoan that causes malaria, by amoebas, by blood-sucking leeches, or by the purely extractive agriculturalists, is certain to die."[57] He provided historical examples of the bygone civilizations of China, Mesopotamia, North Africa, and the Mayans of Central America to confirm this prognosis. Serious illnesses such as cancer required not merely a physician but the attention of a specialist, an analogy applied to El Salvador's excessive population growth and the increasing loss of natural resources. Specialists were needed for the

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[56] William Vogt, *The Population of Costa Rica and its Natural Resources* (Washington DC: Pan American Union, 1946); William Vogt, *The Population of El Salvador and its Natural Resources* (Washington DC: Pan American Union, 1946); William Vogt, *The Population Venezuela and its Natural Resources* (Washington DC: Pan American Union, 1946). The texts were simultaneously published in Spanish. Vogt participated in the Third Inter-American Conference on Agriculture, held in Venezuela in July 1945 and he was invited by the government to return in June 1946. H.H. Bennett (USDA) had already visited Venezuela and published a report (1942) to which Vogt refers.

[57] Vogt, *The Population of Venezuela and its Natural Resources*, 1-2.

use and conservation of natural resources, and they were lacking in many Latin American nations.

Vogt's call for specialists implied that traditional ways of using the land were no longer viable. Vogt went even further in refuting traditional methods of land use. He suggested that the indigenous peoples of Venezuela were inferior farmers who needed "contact," presumably with western civilization and recent agricultural developments.[58] "The Indian populations of Central and South America, often not even knowing the Spanish language, were prevented by cultural barriers from securing from their lands as high a yield as could, for example, such excellent farmers as some of the Chinese."[59] In the case of Guatemala, Vogt noted that the Agricultural School graduates who "manage many of the *fincas*, are unable to cope with the problem" of soil erosion. This meant that "one must look forward many years before there can be any confidence that indigenous populations, with a high percentage of illiteracy, will be able to improve, to any extent, management of the land."[60] Vogt reported that, "as in most other Latin American countries, the same unsatisfactory land-use practices are wasting [Venezuela's] resources." Even with their "excellent soil conservation technicians" the program was inadequate and lacked a rational land-use system. Oil created an illusion of wealth in Venezuela, which would eventually run out, and "meanwhile by ignoring the land, the nation is using up the capital on

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[58] Vogt, *The Population of Venezuela and its Natural Resources*, 13.

[59] Vogt, *The Population of Costa Rica and its Natural Resources*, 3.

[60] *Report on Activities of the Conservation Section,* 8.

which the country subsists permanently."[61] Better land use and a healthy future for both land and people would come from the application of scientific knowledge provided by specialists.

For Vogt, the underlying reason for the necessary changes to agriculture and land-use were inflexible biological and physical laws. Traditional knowledge sufficed for a small population with plenty of land because there were allowances for erosion and waste. However, with a growing population, Latin American nations faced changing circumstances, and as a result needed to accommodate themselves to the "rule of law." This term usually refers to a society that lives by the civil laws set for it, as opposed to possessing laws that are not necessarily followed or enforced (*legalismo*). In addition, he wanted new civil laws regarding land-use and wild life conservation.

Given the long-term perspective required by conservation practices, Vogt believed that in many cases conservation could only be initiated by the state -- of which law enforcement was just one example. This was true for Costa Rica's forests, which would require large-scale planning; it was also true for the resettlement of people on lands better suited for agricultural purposes in Venezuela and El Salvador. Large-scale planning and resettlement would be determined by the land classification that Edward H. Graham of the United States Department of Agriculture developed in 1944. Classification would determine whether land was suitable for agriculture or

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[61] *Report on Activities of the Conservation Section,* 15 -16.

best used for wildlife.[62] Resettlement on such scientific grounds would bear little resemblance to the Mexican land redistribution, which Vogt considered to be "little short of a national calamity" and which followed in the tradition of Emiliano Zapata's revolutionary cry "*La tierra pertenece a quien la trabaja* – The land belongs to those who work it."[63]

In refuting the Zapatista cry of the Mexican revolution in favor of resettlement, Vogt did more than disavow a proletarian view of the land that had gained currency during the Cardenas presidency.[64] He argued that Latin American land tenure *was* a problem that needed to be rectified, although the cause of the problem was not socio-economic but biological and physical. His policy of resettlement was not a radical proposal of land-distribution to rectify social and economic inequities. Vogt underscored that the needs of the community overruled the needs of the individual, even, occasionally when those individuals were wealthy landowners. In fact, one goal of a state-initiated conservation program would be to protect the nation from the actions of individuals. For example, in the case of Venezuela, Vogt noted that the state already possessed the authority to expropriate subsoil wealth. This power in conjunction with existing state authority to restrain people who pose a threat to public welfare could be a basis for the state to confiscate

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[62] Vogt adopts the classification scheme for land use laid out by Edward H. Graham of the U.S. Soil Conservation Service in *Natural Principles of Land Use*. (London: Oxford University Press, 1944. Vogt, *Road to Survival,* 105-107.

[63] Vogt, *The Population of Venezuela and Its Natural Resources*, 19.

[64] Thomas E. Skidmore and Peter H. Smith, *Modern Latin America*, second edition (New York: Oxford University Press, 1989), 53-56; 193

land, in return for a fair price.[65] In his 1946 Pan American Union reports regarding non-domestic environments, Vogt's ideas on liberalism and statism are more clearly articulated than they are later, in *Road to Survival*, when his own civil liberties were at issue. These texts, therefore, help to clarify ambiguities in *Road to Survival*, especially those that have confused readers into believing that Vogt was anti-capitalist. He is capitalistic, although one who is willing to allow the state a role; indeed he insists the state must act to coordinate individuals for the benefit of the nation and ultimately the benefit of future citizens. The difference in the degree of state involvement seems to depend on the population's educational level and its ability to act voluntarily to avoid state intervention. Undereducated and short-sighted Latin American nations required state intervention directed by experts, a fate he wished the United States to avoid.

The Pan American Union reports are an example of the Progressive ideals in Vogt's conservation work. The Progressive agenda at one time offered a moral and material framework to proactively manage material abundance and social disorder. Vogt, and other conservationists, concurred with the Progressive approach because market forces would not correct the situation. The pain of scarcity wrought by erosion and poor land use would come too late for effective corrective action. To that end, a clearly defined set of responsibilities was needed to ensure the "road to survival" as Vogt would entitle his next book.

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[65] Vogt, *The Population of Venezuela and Its Natural Resources*, 33.

Conclusion

Vogt, in his capacity as an "international civil servant" or Conservation Chief for the Pan American Union, regularly considered the international implications of conservation, or its failure, and was predisposed to understand the hemispheric concerns of the Americas in global terms. He organized the First Inter-American Conference on Conservation of Renewable Natural Resources held in Denver in September 1948. In this capacity he assembled representatives from throughout the Western Hemisphere to report on the state of conservation initiatives. The conference was also one of several regional meetings that coalesced behind the notion that a truly international perspective on conservation was needed and could be attained through affiliation with the emerging family of United Nations organizations. The Denver conference along with Vogt's 1948 book, *Road to Survival,* would bring him to the attention of European conservationists.

Vogt's survey of natural resources carried him to over twenty-two Latin American nations. Quite likely the specter of poverty and poor land use when combined with Vogt's awareness that even a nation as wealthy as the United States could be, and as the Dust Bowl demonstrated, was severely crippled by an inattention to natural resources. Traditional ways of tilling the earth were acceptable for small populations but not for the burgeoning populations expected for Latin America and, indeed, expected for the world at large. The wherewithal to recognize that the South America continent was "sliding to ruin" came from ecology, a field that equipped scientists such as Vogt to direct land use policy. Ecologists could recognize the signs

of a sick landscape, such as erosion gullies on hillsides farmed by peasants, and understood that policies focused on short-term objectives, such as meeting the needs of an increased population, could ultimately undermine everyone's well being. A larger vision was required and ecology could provide it. Vogt, at this point, was no longer merely mapping the natural onto the social; he placed humans within nature and claimed that they must conform to natural law interpreted by scientists. Human actions, Vogt believed, fell within the sphere of ecology.

CHAPTER FOUR

WILLIAM VOGT'S ROAD TO SURVIVAL

In 1948 William Vogt and Fairfield Osborn each published a book designed for popular consumption that included ideas about nature and humanity's position in it. Although both men considered humans a part of nature each recognized the peculiar talent of humankind to destroy the very matrix upon which life on earth depended. In this chapter I will discuss these two books, *Road to Survival* and *Our Plundered Planet,* and explore the political, social, and economic context of their ideas regarding nature and conservation.

The August 1948 Book of the Month Club selection, William Vogt's *Road to Survival*, warned its readers that inappropriate land-use threatened American and global prosperity. It was a gloomy prognosis for the human condition at a moment when American successes in the Second World War convinced many that it would be an American Century. However, Vogt's purpose was to set Americans and the rest of the world on a path to avoiding the catastrophe that threatened that pinnacle of human existence known as the middle-class American life style. Widely read in the United States and abroad, *Road to Survival* warned that inappropriate land use, which included high population densities, would diminish natural resources that could neither be restored nor replaced. The solution was to balance population and natural resources. Vogt was certain that with time and education people would readily accept the scientific management of human population as a rational, scientific measure that served the greater good of human society. In certain regions of the world coercive

action might be necessary to curb the reproductive rate; again, he was confident that the larger good warranted this extreme step.

Vogt's confidence in his solution to the neo-Malthusian prognostication was in fact a conviction that the application of scientific knowledge could manage human affairs, at least in regards to land use and reproduction. Ecology in the 1930s and 1940s addressed the regulation of wildlife populations but Vogt gave such ideas new meaning when he spoke of human populations. Vogt's prescription for the future of humanity could appeal to its readers as an endorsement of the Progressive Era's scientific approach to the management of human economic and social problems, a legacy limited not only to United States but one embraced by other western nations.[1] It could also appeal to readers in a world undergoing enormous upheaval due to war torn European and Asian nations, the expansion of the Soviet Union's sphere of influence, and African decolonization. Such readers might find it reassuring that there would be a venue for continued western influence in the emerging nations and that democratic nations could demonstrate their superiority as Cold War tensions flared. Vogt offered his readers a way in which to secure the American victory through a careful cost analysis of nature's economy. *Road to Survival* was not only widely read, but it was influential in domestic and international circles; its ideas entered domestic debates regarding technical aid to underdeveloped nations and international efforts to establish wildlife conservation on a scientific basis.

[1] See Daniel T. Rodgers for more on the international nature of progressivism. *Atlantic Crossings: Social Politics in a Progressive Age* (Cambridge, MA: The Belknap Press of Harvard University Press, 1998).

Road to Survival's Success

Several themes appear in *Road to Survival* that emerge from Vogt's work during the preceding decades. His approach to land-use was grounded in wildlife ecology and conservation. As was mentioned previously, American ecologist Aldo Leopold, whose famous textbook *Game Management* (1933) embodies his experience and approach towards conservation, influenced Vogt. Leopold connected the management of wildlife, or game as it was then labeled, to the land and habitat that sustained it. As in the case of Vogt's Latin American reports, the danger that poor land use posed to people was a central argument for the conservation of natural resources (chapter 3). Eroded hillsides no less than guano-producing birds contributed to the sustenance of Latin Americans, he observed. Vogt mapped out a strategy whereby human beings, as a part of nature, could enjoy an improved quality of life without risk to future generations. All humankind needed to do, he claimed, was to apply principles of conservation determined by adherence to the biological laws of nature. As in the case of his Latin American reports, Vogt provided a means by which saving natural resources was intimately connected with the reader's immediate welfare. In doing so, he gave the reader a direct reason to be concerned with neighborhood conservation, national conservation, and international conservation in the place of the abstract love of nature, a concept associated with those who could afford to be nature lovers. Americans who witnessed the Dust Bowl had already seen that a nation with a wealth of natural resources could be blighted by poor land use. He translated concepts of land use into the immediate practical concerns of his readers:

the economy, politics, and society. The ultimate message of *Road to Survival* was that human survival depended upon viewing natural resources as part of human political economies and accordingly curtailing access to resources through population control.

The text opens with a series of vignettes entitled "The Earth Answers Back" in which individuals confront the reality, often brutal, of poor land use. Maria, a woman from the Mexican State of Michoacán walks ten miles each day for water. A British Member of Parliament represented a population that grew beyond a tiny islands' ability to sustain its industrial base but which still wished to share in the American worker's prosperity. Jewish refugees, rendered "nameless" displaced persons in the aftermath of the Second World War, wanted to slip into "a worn-out desert that once had been a rich landscape" on the eastern edge of the Mediterranean Sea. On a Chinese roadside, Wong's dying moments brought him the realization "that nowhere in the world could there be enough food to feed so many hungry mouths."[2] The reader is then provided an easily understood explanation of the ecological principle of carrying capacity. The land's productivity depends on a relationship between its biotic potential and environmental resistance, or factors preventing it from reaching its potential. In some cases those factors can be eliminated, as when irrigation is used in arid regions. However, there are biotic limits that can be transgressed for only so long before the consequences are irreparable, as when nitrogen is depleted from the soil. Vogt warns "man's destructive methods of

[2] Vogt, *Road to Survival*, 4-6, 9-12.

exploitation mushroom like the atomic cloud over Hiroshima."[3] He condemns industrialization's role in this process before suggesting a scientifically determined basis for land use. There can be "no wealth without limits" and all land use must fit the land's capabilities and limitations.[4] The remainder of *Road to Survival* consists of examples of misuse starting with the American "Long Knives" or "The Spoilers" who transformed North America. No region escapes the scathing edge of his pen, not Latin America, the land in danger of sliding off an eroded hillside, Europe's "Man-Spawn and War-Spawn," Asia's brutal contest between population growth and arid land nor the "Dying Land" of Africa.[5]

Road to Survival attempted to influence the domestic and foreign policy of the United States. The wide distribution of the book amplified its influence. It exceeded anticipated sales. Not only were middle-class households that subscribed to the Book-of-the-Month Club exposed to Vogt ideas and concerns, but the book also reached another group targeted by Vogt. He wanted to reach an audience of policy leaders in the State Department, in the Department of Agriculture, and at the United Nations. As he explained in the provocatively titled *Masthead* article, "Getting Sex Appeal Into Editorials on Conservation," he selected as his audience "intelligent reasonably literate people with little or no knowledge of ecology or conservation." He then "graded them" in his own mind, "somewhere between the readers of articles in the

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[3] Vogt, *Road to Survival*, 31.

[4] Vogt, *Road to Survival,* 110-111.

[5] The title and text of the African chapter comes from Jean-Paul Harroy's *Afrique Terre qui meurt*. (Bruxelles: Marcel Hayez, 1944).

Atlantic Monthly and the *Saturday Evening Post*."[6] Recognizing that his ideas were universal he contracted for translations into nine languages (Spanish, French, German, Chinese, Japanese, Swedish, Dutch, Italian, and Portuguese) and portions appeared in *Reader's Digest* in the United States and in several foreign language versions.[7] In addition, Vogt published his chapter on Latin America in *Harper's Magazine* under the title, "A Continent Slides to Ruin."[8] Reviews appeared in leading periodicals, including one in *Time* magazine that sparked a debate on Neo-Malthusianism.[9] Vogt's ideas were highlighted as a counterpoint to President Truman's Point IV program proposal to provide foreign aid to Greece and Turkey. Finally, when the newly created International Union for the Protection of Nature was formed in late 1948, its recommended reading list included *Road to Survival* for anyone interested in protecting wildlife. Further validation came from the Cranbrook Institute of Science, which awarded Vogt the Mary Soper Pope medal, and the Izaak Walton League, which presented him with its first National Conservation Award. In all, Vogt estimated his publications reached an audience of twenty to thirty million

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[6] William Vogt, "Getting Sex Appeal into Editorials on Conservation," *The Masthead* 2 (Spring 1950), 42.

[7] Vogt, "Getting Sex Appeal," 42. Editions of *Reader's Digest* that included selections from *Road to Survival* appeared in Finnish, Swedish, Norwegian, Danish, German, French (Paris), Spanish (Cuba), and Japanese.

[8] William Vogt, "A Continent Slides to Ruin," *Harper's Magazine* 196 (June 1948), 481-489.

[9] Eat Hearty," *Time* (8 November 1948), 27-31; "Let's Eat," *Time* (29 November 1948), 10-11.

readers, not only in the United States but also around the world, and his ideas became part of national and international debates regarding foreign aid and conservation.[10]

Ecological Roots

Several of Vogt's earlier publications, most notable a May 1945 article published in the *Saturday Evening Post* entitled "Hunger at the Peace Table." Illustrated with the sad faces of two Latin American children, he wrote that peace depended upon political comprehension of biological knowledge regarding soil erosion, population growth, and the conservation of natural resources.[11] The threat of erosion and population growth posed a danger as great as a military invasion. Having just witnessed the defeat of Germany and with war continuing in the Pacific, his readers were well acquainted with the threat of military invasion that Vogt equated with population growth. "As a potential cause of wars, it is far more dangerous than could be even an unchastened Germany. Unless something is done to limit the size of this New Atlantis," referring to the technical quandary posed by increased demands upon natural resources, "its invasion of the land of other nations – even of the Big Four – is inevitable. To control it will require statesmanship of a higher order. Unless it is controlled, there can be no peace." [12] Unable to bask in the Allied victory over

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[10] Vogt, "Getting Sex Appeal," 42.The Point IV debate actually borrowed upon Vogt's article "Let's Examine our Santa Claus Complex" *Saturday Evening Post* 222 (23 July 1949), 17-19, 76-78; "Congress Takes a Look at The President's Point 4 Program," *Congressional Digest* 29 (May 1950), 133-160.

[11] William Vogt, "Hunger at the Peace Table," *Saturday Evening Post* 217 (12 May 1945), 109.

totalitarianism in Europe, Vogt wished to secure the American victory by eradicating the preconditions for war. The perceived causes of the Second World War included German *Lebensraum* and Japan's aggressive tactics to secure vital natural resources.[13] His experience with Latin America land use practices and the region's nationalistic, and therefore parochial, politics may explain Vogt's uneasiness while most Americans exulted in their triumph.

Road to Survival retained the basic element of "Hunger at the Peace Table." Vogt placed great faith in scientific expertise to generate a comprehensive picture of land and resources in the United States and to coordinate sound land management on a democratic basis.[14] The book, however, makes a bigger argument that brings human behavior within the scope of scientific expertise and natural resources through the concept of population control. Vogt emphasized the need for other countries to adopt population control measures, not only for their national welfare but for that of the world.[15] In doing so he presented the notion that American welfare depended upon population control abroad. Despite its global scope in addressing erosion and conservation in Europe, Africa, Asia, Australia, and the Western Hemisphere, *Road to Survival* might well be called the "Road to American Survival." There is a

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[12] Vogt, "Hunger at the Peace Table," 110.

[13] Vogt, *Road to Survival*, 73 and 217.

[14] Vogt lamented Congress' abolition of the National Resources Board and lauded the Tennessee Valley Authority's land management, although he believed its record was blotted when it flooded productive land and ignored the watershed. He argued strenuously against viewing valley authorities as a quick solution to flood control; without adequate studies he was convinced it would replicate the devastation of Oklahoma Dust Bowl created from "ignorance and abuse of nature's laws and resources." Vogt, "Hunger at the Peace Table,"110; *Road to Survival*, 126-127.

[15] Vogt, *Road to Survival*, 110-111.

messianic tone to both the initial article and the book, because in the aftermath of the war Vogt believed there were few countries besides the United States that possessed the experienced personnel and educated, literate public to demand government action. "We, more than any other people on earth," he wrote, "are aware of this problem, and intellectually (if not emotionally) prepared to cope with it."[16] It was up to Americans to heed his warning and take action.

One crucial difference between the two texts is the urgency and threat posed by conservation needs. The Second World War was over by 1948 when *Road to Survival* was published. The world understood the devastating power of the cataclysmic atomic bomb that brought the war to an end to the menace posed by Nazi totalitarianism and Japanese militarism. The United States, however, faced yet another totalitarian threat as a cold war emerged with the Soviet Union. Nationalism compounded the danger. "For a large and rich nation like the United States this nationalism is an effective, if temporary, defense against poverty. How long it can be maintained in the age of atomic and bacterial warfare is dubious. India has already begun to enunciate a Realpolitik that demands expansion."[17] Compounding peril the Vogt appealed to the powerful emotions attached to the threats of nuclear war and communist aggression.

Road to Survival presents a statement on the need to conserve natural resources and is critical of science and technology for allowing humans to destroy the

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[16] Vogt, "Hunger at the Peace Table," 110; Vogt, *Road to Survival*, 56 and 285 but especially 151.

[17] Vogt, *Road to Survival*, 48.

balance of nature and irreparably destroy natural resources. At first blush it would seem to be an early manifestation of the anti-science and anti-technology apocalyptic writings of 1970s environmentalists, such as Paul Ehrlich, who predicted global doom. As one writer notes, Vogt was an ecological apocalyptic who rejected faith in progress and in human reason's ability to control the natural world.[18] And it is certainly true that *Road to Survival* partakes of the 'dismal science' of economics. It adopts the perspective of the 'gloomy parson,' the Reverend Thomas Malthus (1766-1834), and is pessimistic about the prospect of humans living in harmony with nature because of the prevailing view that nature was to be exploited. Yet Vogt was not a romantic seeking to return to a pre-industrial past. Nature's bounty was conditioned on low population, Vogt reasoned, and therefore increased population required abandoning traditional knowledge that "may be idiotic in an overpeopled, atomic age" for scientific husbandry.[19] *Road to Survival*, therefore, expresses technocratic optimism, proposing that a scientific elite may guide people on the road to survival.[20] In keeping with the book's title, Vogt actually suggests to his readers a script or plan for how humans may live in harmony with nature and thereby avoid the apocalyptic crisis wrought by human failings. His plan relied heavily upon the scientific expertise of ecologists and conservationists.

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[18] Christopher Lewis, "Progress and Apocalypse: Science and the End of the Modern World," Ph.D. diss. (University of Minnesota, 1991), 4.

[19] Vogt, *Road to Survival*, 56, 110-111.

[20] Peter J. Taylor, "Technocratic Optimism, H.T. Odum, and the Partial Transformation of Ecological Metaphor after World War II," *Journal of the History of Biology* 21 (1988), 213-244.

As noted above, Vogt's criticism of the unrestrained manner in which the Industrial Revolution and accompanying Agricultural Revolution used science and technology to destroy natural resources may appear hostile to science and technology. He refers to nineteenth-century American farming practices as "mining the soil" because so much topsoil was lost to satisfy consumer needs.[21] Yet, it was actually humans' misuse of science and technology that he found objectionable and possibly with good reason. Technological advances were blamed for the Depression because they led to an increased production of goods that people could not afford to purchase. In this situation, a lack of food was a market function rather than one of actual scarcity. Likewise, the Second World War seemed to pull the country out of the Depression but it produced its own evidence of the destructive role of science and technology with the atomic bomb. Vogt, after informing his reader in the first chapter that a problem existed, then explained the ecological concept of carrying capacity in the second chapter. The "books must balance," Vogt reminded his readers, and with "sound ecological development" that uses resources "on a sustained-yield basis" to feed an appropriately-sized population.[22] Such scientific knowledge is at the heart of Vogt's plan for the world.

Vogt expresses anti-capitalist sentiments regarding the role of science and technology in a free market economy.[23] Rather than disparaging capitalism, Vogt

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[21] Vogt, *Road to Survival*, 66.

[22] Vogt, *Road to Survival*, 43, 110-111.

placed a higher value upon the proper use of scientific reasoning to govern social, political, and economic life than he did on political and economic theories.[24] After reminding his readers that free enterprise in the United States flourished due to the abundance of natural resources, he asked if free enterprise could "remain even partially free if we continue to waste our birthright like a sailor on a bender?"[25] In the early postwar years American society embraced the premises of Keynesian economic theory even though the driving need to alleviate scarcity and regulate corporate power had waned.[26] Vogt clearly opted to retain capitalism and in this regard he echoed Fairfield Osborn who couched his appeal in terms of saving democracy. Osborn depicted the careful conservation schemes devised by the Russians who occupied a territory with a roughly proportionate amount of arable land as the United States. He then cautioned his reminded his readers that they faced a choice as to whether they would accept limitations on land use. "If America permits the continuing exhaustion of the elements that are the source of her life and strength, any other social or political

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[23] Robert Gottlieb, *Forcing the Spring: The Transformation of the American Environmental Movement* (Washington DC: Island Press, 1993), 36-37; Cushman, 293.

[24] Vogt, *Road to Survival,* 80.

[25] Vogt, *Road to Survival*, 133.

[26] Further argument for Vogt's anti-capitalist sentiment points to his ideas regarding Britain's "parasitic" relationship with other countries; parasitic is Vogt's term. Britain, exemplifying European industrialization, used its industrial abilities to gather natural resources to support a population that exceeded the country's carrying capacity. Vogt predicted the United States' resources reduced the likelihood it would face the same deprivations Britain did in 1948 – "unless we are willing to place fifty million British feet beneath our dining-room table we may well see famine once more stalking the streets of London." Vogt makes a similar case for Venezuela, which lived comfortably on oil profits while subsistence agriculture eroded the landscape. Vogt, *Road to Survival,* 59, 72, 165.

creed might serve her as well."[27] Without voluntary compliance, in time land use would be coerced by a totalitarian state. Vogt blamed a free enterprise system that was "divorced from biophysical understanding and social responsibility" for "devastated forests, vanishing wildlife, crippled ranges, a gullied continent, and roaring flood crests."[28] The price of democracy was high but Vogt rejects not capitalism but unregulated capitalism that was allowed to destroy the nation's resources. He cautioned his readers to accept some limitations on the use of natural resources, rather than accept a police state with neither free enterprise nor democracy.[29] This could be accomplished either through state-managed projects such as the Forest Service or through the voluntary measures employed by the members of Soil Conservation Districts who "deliberately place limitations upon themselves; thus, they maintain an enterprise of free choice by democratic means."[30]

The emphasis that Vogt places upon the vast complex of information upon which decisions must be made regarding natural resources suggests that his book's title was meant to invoke more than the popular metaphor of a journey. It may be significant that he chose a "road" metaphor for the title of his book. During the 1940s through the early 1960s, "road" metaphors were used as titles for popular movies starring Bing Crosby, Bob Hope, and Dorothy Lamour.[31] Whereas, however, the title

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[27] Osborn, *Our Plundered Planet, 128, 140, 142.*

[28] Vogt, *Road to Survival*, 133.

[29] Vogt, *Road to Survival,* 134.

[30] Vogt, *Road to Survival*, 136.

of Vogt's book had little to do with movies, he may have absorbed the popular "road" metaphor to refer to Friedrich von Hayek's classic warning against dangers to freedom inherent in socialism in *The Road to Serfdom* (1944).[32] Vogt agreed with Hayek that without preserving the fundamentals of American life the public would eventually be coerced by a totalitarian state; for Vogt these fundamentals were the abundant natural resources that made possible American democracy, the American standard of living, and even the flourishing free enterprise system while for Hayek they were democracy and free enterprise.[33] More importantly, Vogt agreed that the decisions necessary to control the economy were far too complex for one person to know.

Vogt and Hayek would both agree that an individual's knowledge was insufficient to direct the market economy or nature's economy and that independent action was required. Vogt, drawing upon the general semantics of Polish émigré Count Alfred Korzybyski in *Science and Sanity* (1941), embraced nature's wholeness, variability, and constant flux. The complexity of nature's economy and the multiplicity of unique situations precluded an individual from knowing enough to

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[31] The "road movies" were *The Road to Singapore* (1940), *The Road to Zanzibar* (1941), *the Road to Morocco* (1942), and *the Road to Utopia* (1946), followed by *The Road to Bali* (1953) and *The Road to Hong Kong* (1962).

[32] Friedrich von Hayek's classic warning against dangers to freedom inherent in socialism in *The Road to Serfdom* (Chicago: University of Chicago Press, 1944).

[33] Vogt counters the statement that 'free enterprise has made our country what it is!" by first implying that it in flourishing it was aided by abundant resources that it consequently wasted and second that free enterprise cannot be maintained "if we continue to waste our birthright like a sailor on a bender." As to democracy, it required "an adult, educated electorate" that in turn needed security threatened by the loss of natural resources. *Road to Survival*, 133 and 151.

make an informed decision; everyone required scientific expertise.[34] Local decisions required access to scientific and especially ecological knowledge and therefore an international clearinghouse of knowledge and scientific advisors was needed to help local decision-making.[35] His use of general semantics demonstrates once again his opposition to unrestrained scientific and technological solutions that did not engage the interdisciplinary perspective of ecology.

Vogt's use of a concept of carrying capacity suggests the important role ecology played in resolving problems that Vogt believed affected both the political economy and nature's economy. The bio-equation of carrying capacity that Vogt illustrated for his readers was derived from the research of entomologist Royal N. Chapman (1889-1939) on the flour beetle *Tribolium confusum*.[36] As an entomologist at the University of Minnesota and then director of the Experimental Station of the Pineapple Producers Cooperative Association in Hawaii, Chapman conducted research on insect depredations of stored food. He determined that there is a theoretical limit or optimum to how many organisms might be sustained by the available food supply. These limits are represented in the equation, C=B/E, with C

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[34] Vogt refers to Korzybyski several times and includes *Science and Sanity* (New York: Science Press, 1941) in his recommended reading list because "it is profound in its interpretation of our relationship to the world in which we live, and of the impact on that relationship of what we "think" and "feel" and "say." Vogt, *Road to Survival,* 48-55, 301.

[35] Vogt, *Road to Survival*, 269-270.

[36] Chapman, an entomologist at the University of Minnesota before directing the Experimental Station of the Pineapple Producers Cooperative Association in Hawaii, published his formula in "The Quantitative Analysis of Environmental Factors," *Ecology* IX (April 1928), 111-122. Vogt illustrated carrying capacity on page 29 but devoted an entire chapter to the concept, "Energy from Earth to Man." Vogt, *Road to Survival,* 18-45.

standing for the carrying capacity or how many living organisms can actually survive, B for biotic potential or the potential number of living organisms that can come into existence, and E for environmental resistance in which the biotic potential must contend with the organic and inorganic environment. With little environmental resistance, a higher proportion of the biotic potential is realized as the carrying capacity. Chapman reached this formula based upon laboratory studies although noted conservationist Aldo Leopold (1887-1948) incorporated the idea of carrying capacity in his textbook, *Game Management* as a measure of game productivity.[37] The most important feature of carrying capacity is that it constitutes an ideal or optimum number that cannot be definitively determined for a particular environment outside of laboratory conditions.

For Vogt, carrying capacity is essential to the argument for the conservation of natural resources that he lays out in *Road to Survival*. Every piece of land, Vogt wrote, has its own carrying capacity that by definition is restricted and which human history could further diminish through poor land use.[38] As a theoretical limit that cannot be surpassed, carrying capacity required that excess population decline once that limit was reached; presumably an ecologist would be make this determination. Therefore, Vogt's conservation of natural resources would be guided by a scientific elite that would address the social world of humans as well as the natural world. Carrying capacity gave ecologists the authority to speak to the behavior of humans.

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[37] Aldo Leopold, *Game Management,* with a new foreword by Laurence R. Jahn (Madison: The University of Wisconsin Press, 1986), 172

[38] Vogt, *Road to Survival,* 45.

Our Plundered Planet

The publication of *Our Plundered Planet* by Fairfield Osborn four months before *Road to Survival* multiplied the wide dissemination of Vogt's thesis. Osborn's concerns were similar to those of Vogt. He wrote to announce the urgent need for conservation because human population growth accelerated the rate at which natural resources were despoiled and lost their regenerative capacity. *Our Plundered Planet* presented the philosophy of the Conservation Foundation, the organization Osborn had recently established. It was intended to promote conservation in the United States and abroad by promoting scientific research on subjects relevant to conservation and channeling that information to the public. *Our Plundered Planet* enjoyed a large international and domestic audience. It was translated into eight languages and by mid-1949 was in its seventh printing in the United States where it had been adopted as required reading at several universities and colleges.[39] Osborn sent complimentary copies to members of Congress and to the 1948 presidential candidates.

Osborn presented two basic messages in *Our Plundered Planet*. He intended to persuade the reader that "man, despite the extraordinary mental accomplishments that have brought about his complex present-day civilization, has been, is now and will continue to be a part of nature's general scheme."[40] George Perkins Marsh in

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[39] *Our Plundered Planet* was translated and printed in Danish, Icelandic, French, Italian, German, Swedish, Japanese and Korean.

[40] Fairfield Osborn, *Our Plundered Planet* (Boston: Little, Brown, 1948), viii.

Man and Nature: or, Physical Geography as Modified by Human Action (1864) had earlier introduced this notion and his ideas appealed to preservationists intent to maintain pristine wilderness. For Osborn, as well as Vogt, however, human impact upon the landscape and natural processes underscored the need to *use* natural resources appropriately. For that reason, Osborn also said that man was destroying his life resources in a silent world war. "Its eventual results, if present ways remain uncorrected, point to widespread misery such as humans have not yet experienced and threaten, at the end, even man's very survival."[41] Humans were put on notice that they were not exempt from the natural processes resulting in extinction and were headed in that direction unless the proclivity to plunder natural resources was curtailed.[42]

Given the similar subject matter and timing of their publication, *Our Plundered Planet* and *Road to Survival* were frequently reviewed together. Reviewers most often treated them as a whole but in one case, their differences were aptly noted.

> "Of the two books, Osborn's is the smoother, more balanced, and less likely to arouse violent, emotional reactions for or against. Vogt's book is uneven, written at white heat, and full of fight. It contains sweeping scientific, cultural, ethical, and economic generalizations and predictions, sometimes without satisfactory backing….Vogt has lunged into his subject matter with both arms swinging."[43]

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[41] Osborn, *Our Plundered Planet,* ix.

[42] Osborn, *Our Plundered Planet*, 17, 191.

[43] Joseph L. Fisher, "Review of *Our Plundered Planet* and *Road to Survival," The American Economic Review* 39 (June 1949), 822-823.

An unidentified reviewer in *The Times Literary Supplement* aptly discerned that, "Mr. Osborn appeals [to the reader for action], but Mr. Vogt is more specific" in what he wants done.[44] The significant difference between the two books thus was manner rather than substance, with Osborn choosing a detached, unemotional style.

The two books received approval from ecologists and adverse criticism from soil scientists. Before his death later that year, Aldo Leopold contributed a glowing endorsement for the *Road to Survival*'s 1948 dust jacket: "This book is the most lucid analysis of human ecology and land use that I have yet encountered." Paul B. Sears, on the front page of the *New York Herald Tribune*'s weekly book review section, wrote approvingly of Osborn's sentiments on the relationship between democracy and conservation. "What we accomplish under democracy and free enterprise must be done ultimately with the support of the public. If we do not undertake prompt and effective action neither democracy nor free enterprise is likely to survive very long."[45] G.E. Hutchinson concurred "that the dangers described in these books are real enough, more real and more dangerous perhaps than the threat of an atomic

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[44] "Searching Questions," *The Times Literary Supplement*, 5 March 1949, 158.

[45] Paul B. Sears, "We Survive or Perish as a Part of the Earth," *The New York Herald Tribune* 28 March 1948, VII:1. Further praise for *Road to Survival* came from Russell Lord, "The Ground from Under Your Feet," *Saturday Review of Literature* 31 (7 August 1948), 13, 33-35; Vance Johnson "Frightening Look at the Planet's Future," *San Francisco Chronicle* 8 August 1948, 10-11; Bernard DeVoto, "Crisis of Man in Relation to his Environment, Warning to Prodigal Son of Earth to Husband its Resources," *New York Herald Tribune Weekly Book Review* 8 August 1948, 1-2; and Robert C. Cook, "Two Billion People Versus Time, A Conservationist Issues a Warning and Offers a Program to Save the Day," *The New York Times Book Review* 8 August 1948, 1,16. Cook was the editor of the *Journal of Heredity* and later president of the Population Reference Bureau. The book review dates suggests a well-time publicity campaign.

world war" but favored a means other than fear to inspire people to action.[46] According to a review in *The Nation,* every Congressperson needed to read *Our Plundered Planet*, a request the Conservation Foundation tried to honor. Although it supplied all members of Congress with the book, the Foundation could not be assured that they had read it.[47] Finally, Robert C. Cook, editor of the *Journal of Heredity* and later president of the Population Reference Bureau, praised *Road to Survival* in *The New York Times Book Review* at the same time that Book-of-the-Month Club members were offered the book.[48]

Not all reviewers accepted Vogt's and Osborn's premises. Sidney Hook, the Marxist philosopher who came to reject Soviet Communism, wrote a review for the *New York Times* that rejected the neo-Malthusian premise of both books as well as the idea that population levels were a biological concern. He insisted that "overpopulation is a social category, not a biological one, and that as distinct from plants and animals, there is no abstract law of population for human societies."[49] In *Time* magazine an unsigned article criticized both *Road to Survival* and *Our Plundered Planet,* adopting instead the position of soil scientist Dr. Robert M. Salter, chief of the U.S. Agricultural Research Administration, who believed that science

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[46] G.E. Hutchinson, "On Living in the Biosphere," *Scientific Monthly*, December 1948, 396.

[47] Review of *Our Plundered Planet*, *The Nation*, 14 August 1948 (v.192), p. 192; Conservation Foundation *A Report of Progress,* 1 November 1948 found in "Conservation Foundation, 1947-48" Folder #1666, Box 180, Record Group 1.2, Series 200D, Rockefeller Foundation, The Rockefeller Foundation Archives.

[48] Cook, 1,16.

[49] Sidney Hook, "Mother Earth – and How We Rob Her," *New York Times*, 28 March 1948, 5.

would facilitate expanded agricultural productivity to feed a growing population.[50] Salter would later succeed H.H. Bennett as Chief of the U.S. Soil Conservation Service in 1951.

Eschewing the dramatic language that Vogt employed, Osborn added the looming threat of the Soviet Union's economic, political, and military challenge to capitalism and democracy in the United States. Natural resources were an essential part of the arsenal of weapons wielded by the United States against the Soviet Union amid the emerging Cold War tensions. Osborn noted that each country possessed about three and a half acres of arable land per person. "Both countries are facing the future on approximately equal terms as far as the basic assets for existence are concerned. The future holds the answer as to which nation will be the more successful in using and conserving them!"[51] The American system, however, relied upon voluntary cooperation once people had been aroused to action while the Soviets would be able to compel compliance with conservation policies, there was the danger that Americans would not respond to this crisis as quickly as they had to previous emergencies. "The issue facing America in regard to the preservation of its living resources is as critical, if not as immediate, as the threat of any war. Our democracy

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[50] Geographers, land economists, zoologists (A. Starker Leopold), and Upton Sinclair weighed in with their response in letters to the editor. "Eat Hearty," *Time* (8 November 1948), 27-31; "Let's Eat," *Time* (29 November 1948), 10-11. Starker Leopold published a rebuttal "Of Time and Survival," *Pacific Discovery* 1 (November-December 1948), 28-29. The previous year Vogt had criticized Salter's article in *Science*. Robert M. Salter, "World Soil and Fertilizer Resources in Relation to Food Needs," Science 23 May 1947, 533-538; William Vogt, "Robert M. Salter's Paper," *Science* 106 (25 July 1947), 83-84.

[51] Osborn, *Our Plundered Planet*, 141.

has heretofore met with no equivalent test."[52] Conservation in democratic countries must be pro-active, vigilant, and quick to educate the public for the need to act immediately and to allow government agencies to act for the greater good.[53]

Osborn shared Vogt's concern with the position of the United States in the global economy of resources and he pointed an accusatory finger at Britain.[54] This world power had suffered food shortages during and after the Second World War because, Osborn suggests, it depended upon the natural resources of far-flung colonies. Reorganization increased the amount of land under agricultural production in England and increased productivity. In the meantime, Osborn believed that the large British population had depleted the natural resources of New Zealand and Australia, threatening their welfare.[55] The moral of the lesson was clear to Osborn. Britain was overpopulated, it had a population greater than its resources could support, and it depleted the resources of other countries. Resource deficient countries should not be supported by the resource rich countries that could be found in the Southern Hemisphere.

Osborn echoed the modern value of interdependence in which the welfare of other nations could impact the United States. As nations depended on each other for necessary products and materials there was no longer a place, he seemed to suggest,

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[52] Osborn, *Our Plundered Planet*, 142.

[53] Osborn, *Our Plundered Planet*, chap. 8 passim and 199-201.

[54] Osborn, *Our Plundered Planet,* 108, 200-201

[55] Osborn, *Our Plundered Planet*, 54.

for the exclusivity of colonial access to resources. Using American parlance one might say that he declared an end to the frontier of overseas territories. "But *now*, with isolated and inconsequential exceptions, there are no fresh lands anywhere," Osborn wrote. "Never before in man's history has this been the case."[56] Without new territories to exploit, humans must live with the territory and resources available to them. To make the best use of those resources, Osborn suggested coordinated land for Americans and for the world. He, too, endorsed the use of foreign aid to compel the use of natural resources and land use practices in other countries, notably Greece.[57] Osborn joined Vogt in proposing coordinated land use for the United States. "There is nothing revolutionary in the concept that renewable resources are the property of all the people and, therefore, that land use must be co-ordinated into an overall plan. This principle has been recognized in other democracies."[58] The changes in land use that Osborn proposed could only be implemented, he noted, with the cooperation of government and industry and at "the public's insistence."[59] The implication is that Osborn, like Vogt, thought the American public should acquiesce to the scientific expert's greater knowledge of land use.

[56] Osborn, *Our Plundered Planet*, 35.

[57] Osborn, Our Plundered Planet, 102-108; Vogt, 209-211.

[58] Osborn, *Our Plundered Planet*, 192; 38, 108.

[59] Osborn, *Our Plundered Planet*, 200.

The Political Economy of Population Management

Vogt, like Osborn, was a neo-Malthusian but his ideas of political economy merged with the ecological concept of carrying concept. The idea of carrying capacity shares certain similarities to the "dismal theorem" of the Reverend T.R. Malthus, developed in response to the emerging belief in progress espoused by French Enlightenment philosophers and the English philosopher William Godwin. Malthus, writing at the end of the eighteenth century, noted that because food supply increases arithmetically while human population increases geometrically, population will inevitably exceed food supplies and misery will ensue. In his theory of evolution by natural selection, Charles Darwin argues by analogy from Malthus' human population to animal and plant species, that there is a certain "destruction" of nature which curtails the exponential growth of a species and in this destruction those individuals best adapted will survive.[60] Vogt invokes a Malthusian skepticism regarding progress as well as its influence on Charles Darwin's theory of natural selection. Both of these concepts are part of the ecological idea of carrying capacity, which is Vogt's principal argument. Without checks upon the exponential growth of the human species, humans would exceed not just the current food supply but also the potential carrying capacity of the earth's natural resources. Checks, such as disease, famine, and wars, had at one time been in place acting as the environmental resistance that prevented the human population from reaching its biotic potential. The introduction of public

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[60] Charles Darwin, *The Origin of Species by Means of Natural Selection, or, The Preservation of Favored Races in the Struggle for Life, and The Descent of Man and Selection in Relation to Sex* (New York: Modern Library, nd), 53-55.

health measures curbing infant mortality, reducing illness, and prolonging life in the United States and abroad removed those checks. Vogt, as well as others, feared that world population, insulated from environmental resistance, was reaching its biotic potential as "man the lawbreaker" operated outside of nature's laws.[61] Vogt unwittingly experienced first hand the disruption that could happen when technological changes such as public health measures altered basic environmental conditions. He contracted epidemic polio as a youth rather than an infant, suffering the debilitating consequences of such late exposure to the endemic virus.

Malthus' dispute with Godwin was one of human political economy. Godwin believed in human progress while Malthus argued that the human condition could not be improved. Humanity was constrained by sexuality that led population to increase geometrically while the natural resources to sustain human life increased arithmetically. Malthus believed this was the *natural* condition of humans; social intervention would not change the natural order. The starting and ending point of Malthus' argument was the constancy of nature and therefore of the social order; sexual urges, social proscriptions against birth control, and the regenerative rate of natural resources were all constants.

Kaibab Man

Vogt, Osborn, and other neo-Malthusians accepted the premise that human population reproduced faster than the natural resources. They too embraced the constancy of nature and therefore of the social order but due to their support for birth

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[61] Vogt, *Road to Survival*, 32.

control they rejected the constancy of nature that Malthus posited. They added, however, that efforts to scratch sustenance from the overtaxed land would in fact destroy its regenerative capacity, thereby accelerating the pace at which humans moved toward the point at which there would be insufficient natural resources to sustain life. This was a point that Osborn, in particular, emphasized when he warned that the earth was a "plundered planet" that had experienced a net loss of natural resources. He elaborated upon Marsh's thesis that humans were geological forces capable of changing the face of the earth, doing so to demonstrate that the accretion of unwitting human action over the millennia scarred the earth. Osborn's point was to warn humans to use their power to transform the face of the earth wisely because humanity was capable of ever greater irreparable damage.[62]

Vogt, in a similar plea for the use of scientific knowledge to manage natural resources, dramatically referenced the disastrous consequences of game management on the Kaibab Plateau in northern Arizona. The deer were protected from wolves and other predators and in the mid-1920s experienced population growth that exceeded the available food resources. The herds ate far more than usual of the available browse and in the process destroyed some of its regenerative capacity. Consequently there was even less food available in subsequent years and the herd size crashed. For wildlife ecologist, Aldo Leopold, this demonstrated that management must be based on scientific principles rather than aesthetic notions of nature that prioritized deer and

[62] Osborn, *Our Plundered Planet*, 30.

excluded its natural predators.[63] This is a position that he came to over time, rejecting the once prevalent view that predator eradication simply meant more of a desirable species.[64]

Vogt extended the principle derived from the Kaibab Plateau to the management of humans in the wake of the Second World War; science not sentiment must govern their management. He used the term "Kaibab Man" to refer to Greece's desperate situation and United States foreign aid to resist Communist influence. Vogt thought it unwise to provide foreign aid without a commitment to curtail population growth.[65] He applied the lessons of wildlife ecology to human society and said that without the natural forces curbing population levels, predators or famine, population will exceed available resources. The promise of financial aid from the United States to ensure the immediate well-being of a people impeded by poor land-use practices could well lead to an *increase* in population, as witnessed on the Kaibab plateau, which would further strain already inadequate resources. On this point Vogt and Osborn agreed. Humans were capable of destroying the very reproductive resources that sustain them. Just as the Kaibab deer destroyed their browse and were ultimately reduced to a smaller population level due to improper management, so too, the Greek

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[63] The Kaibab deer lived on a publicly managed land and were not an isolated case of an overstocked range. It would lead Leopold to embrace the landowner as the pillar of conservation. Leopold, *Game Management,* 54. 230. Curt Meine, "Aldo Leopold's Early Years," *Companion to 'A Sand County Almanac': Interpretive & Critical Essays*, edited by J. Baird Callicott (Madison: University of Wisconsin Press, 1987), 34. For the history of the Kaibab deer in wildlife management see Christian C. Young, *In the Absence of Predators: Conservation and Community in the Kaibab Plateau* (Lincoln: University of Nebraska Press, 2002).

[64] Aldo Leopold, "Thinking Like a Mountain," *Sand County Almanac*., 129-133

[65] Vogt, *Road to Survival*, 209-211.

people could become "Kaibab Man."[66] Humans, however, possessed the technology to control their birthrates and population levels. Vogt provided a rational basis for the use of birth control that transcended individual choice. The ability of humans to contravene natural limitations and impose their own self-correcting mechanism distinguished neo-Malthusians from Malthus, who rejected birth control and disallowed that humans might break the bonds of disease and famine that contained population growth.

Osborn too wanted scientific knowledge to manage natural resources and therefore questioned if United States foreign aid included provisions for ecologists and conservationists and whether arrangements had been made for a long-term program that would build up the soil and land on which the country depended. He explained, "The time has come when international questions cannot be dealt with intelligently unless governments are prepared to recognize that the usage and condition of the land are essential elements in the world problem."[67] Land use needed to be a critical element of international diplomacy, especially if the United States wanted to promote democratic government. Democracy required that the basic subsistence needs of a people were met and the best protection for democracy is protection of natural resources; it is from this perspective that United States foreign policy towards Greece and similar nations needed to be shaped. "*Is it not time to recognize that there can be no political stability if the basic subsistence needs of a*

[66] Vogt, *Road to Survival,* 195-201.

[67] Osborn, *Our Plundered Planet*, 103.

people are not satisfied?"[68] Osborn joined Vogt in a willingness to suspend democratic processes overseas. This double standard suggests a progressive view of government in which it is acceptable to use non-democratic means in pre-democratic countries but coercive tactics in other countries was like the Sword of Damocles hanging over the United States in that it was a reminder of what would happen if it failed to adopt conservation measures. In the meantime, Osborn concluded that "nature holds the trump card" as to whether the investment for democracy in Greece would succeed.[69]

Huxley's Grebes

The naturalness of birth control, disputed by Malthus, was supported by ecologists who identified it with the natural regulation of animal numbers. The evidence came from biologist Julian Huxley's study of the courtship habits of the Great Crested Grebe (*Podiceps cristatus*). Huxley observed that the great crested grebe mates for life and engages in mating rituals that could not lead to reproduction. Such behavior, Huxley thought, contributed to the harmony of the pair and suggested a function for non-reproductive sexual intercourse that Vogt drew upon when studying the Peruvian Cormorant. The Grebe presented an intriguing problem because during courtship both sexes manifest similar secondary sexual characteristics of behavior and plumage. Secondary sexual characters in dimorphic species are sex-linked but Huxley, based on a brief period of observation, concluded that the

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[68] Osborn, *Our Plundered Planet*, 102.

[69] Osborn, *Our Plundered Planet*, 108.

transference of secondary sexual characters could be explained by natural selection. In the case of the grebes he hypothesized that the characteristic neck ruff of feathers and tufts of erect feathers emerging from the ears were sexually selected in the male of the species and that natural selection explained their transference to the female.[70]

An equally intriguing aspect of Grebe behavior was that both sexes performed identical courtship actions. The pair of birds dove into the water, retrieved weeds from the bottom, emerged from the water, swam towards each other, and rose up out of the water as they approached. "Carrying on with the impetus of their motion, the two birds came actually to touch each other with their breasts. From the common fulcrum thus formed bodies and necks alike sloped slightly back – the birds would have fallen forwards had each not thus supported the other."[71] At this moment the birds' vision would take in the white face of its mate encircled with the chestnut and black-colored ruff and tufts. The birds remained in this position only briefly but while connected they rocked "gently from side to side upon the point of their breast."[72] It was, Huxley said, "an ecstatic motion, as if they were swaying to the music of a dance."[73] Gradually, they subsided into the water and the so-called "Penguin-dance"

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[70] Huxley draws heavily upon E. Selous' observations to support and amplify his own. Julian Huxley, "The Courtship-habits of the Great Crested Grebe (*Podiceps cristatus*); with an Addition to the Theory of Sexual Selection" *Proceedings of the Zoological Society* 35 (1914), 491-562. Huxley represented an intermediary style of birding enthusiast from Selous' amateur expert (Burkhardt's term) before scientific ornithology emerged in Britain. Richard Burkhardt, "Huxley and the Rise of Ethology," *Julian Huxley: Biologist and Statesman of Science* edited by C. Kenneth Waters and Albert Van Helden (Houston: Rice University Press, 1992), 147.

[71] Huxley, "The Courtship-habits of the Great Crested Grebe (*Podiceps cristatus*), with an Addition to the Theory of Sexual Selection" *Proceedings of the Zoological Society* (1914), 500.

[72] Huxley, *Proceedings,* 500.

ended. The courtship actions of the pair were emotional and self-exhausting, a means unto themselves rather than an excitatory process leading to coition. The action served not to stimulate copulation but to promote the unity of the pair.[74] Sexual relations had evolved to the point it was no longer confined to a reproductive function. It also served psychological and social functions that Vogt thought secured the well being of *guanay* offspring.

The grebes displayed behavior that Huxley concluded had once served a useful purpose but had become *ritualized*.[75] For example, during the actual process of pairing (coition) the role the two sexes played seemed interchangeable with either sex adopting the active role during copulation.[76] Sketchy data precluded a definitive conclusion but Huxley inferred that at the very least the grebes seemed to be undergoing a "process of sex-equalization which in this species has already run a considerable course."[77] The grebes provided Huxley with evidence of evolutionary change in action, change that in his view was progressive. The transference of female characters from the female grebe to the male grebe and vice versa was a good thing. The passive attitude of the female before ascending to the nesting platform and coition became symbolic of the intent to pair and over time became ritualized,

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[73] Huxley, *Proceedings,* 500.

[74] Huxley, *Proceedings*, 508-509, 516.

[75] Ritualization is "the evolutionary transformation of nondisplay behavior into display." *A Dictionary of Ethology*, edited by Klaus Immelmann and Colin Beer (Cambridge: Harvard University Press, 1989) 255-256. Huxley gives himself more credit in the origins of ethology than do historians of science.

[76] Huxley, *Proceedings*, 504.

[77] Huxley, *Proceedings*, 505.

associated with the *idea* of pairing rather than the act itself. Thus, on the open water the pair might engage in what would appear to be pre-coital behavior with first one and then the other adopting the passive behavior before resuming their prior activities.[78] Behavior that first evolved to stimulate coition, Huxley concluded, now served a different role, that of pleasure, in the lives of the grebes.

Huxley's discussion of the grebes' ritualized behavior seems to suggest that the behavior itself is akin to a vestigial organ that over time takes on a different function. Huxley's point is that *inherited behavior* could also become vestigial or take on a new function. In the case of the grebes Huxley witnessed coupling behavior that maintained the unity of the pair without necessarily leading to coition; behavior once solely associated with reproduction had become non-reproductive. This shift in the function of courtship behavior is noteworthy due to Huxley's advocacy of birth control and his later support for population control. Just as physical intimacy between mated grebes that at one time maintained the union of the nesting birds could evolve from behavior that once had a different purpose, so too could physical intimacy satisfy the psychosocial needs of humans evolve from behavior that had once been strictly reproductive in purpose.[79] A reproductive function, assigned by nature or by social customs, could take on a new function in continuing the species and evolutionary progress. Huxley's understanding of the historical and evolutionary

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[78] Huxley, *Proceedings*, 505-506.

[79] Interestingly, Julian Huxley persuaded his wife to join him in abandoning the marital concept of physical fidelity. See Juliette Huxley's, *Leaves of the Tulip Tree* (Topsfield, MA: Salem House Publishers, 1986), 145, 163.

changes grebe courtship behavior is analogous to the changes that he and Vogt wanted humans to adopt regarding sexual relations and reproduction.[80]

Birth Control and Population Control

Vogt was secure in making the transition from wildlife ecology to political economy for the reasons listed above: ecology accepted the idea of an optimum population level, ecologists proposed that social behavior would link ecology and sociology, and ecologists found evidence that social factors in non-human species influenced reproductive success and demonstrated that non-reproductive sexual relations were natural. Birth control was available in the early nineteenth-century but was unacceptable to Malthus and indeed to prevailing social norms, although evidence suggests that middle-class families, at least in the United States, practiced birth control by the end of the century.[81] However, American society in the early twentieth century retained strong prohibitions against birth control. Margaret Sanger's publication of *Woman Rebel* in 1914 began her campaign for what she originally labeled biological liberation of women through their ability to prevent conception. With the tools of scientific knowledge of the procreative process and public education

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[80] Another example of how behavior might acquire new function pertained to religion. Huxley favored religion but wished to replace deity and revealed knowledge with reasoned knowledge. He put forward these ideas in *Religion without Revelation* (New York: Harper & Brothers, 1927). Huxley's contemporary and acquaintance, the astronomer and "prophet of science" Harlow Shapley also spoke about "rational religion." For more on Shapley's ideas on "the religion of rationality" see JoAnn Palmeri, "An Astronomer beyond the Observatory: Harlow Shapley as Prophet of Science," Ph.D. dissertation (University of Oklahoma, 2000), 165.

[81] The birthrate among white American women fell over the course of the nineteenth century in both rural and urban areas that appear correlated to education rather than to industrialization or urbanization. Aside from abstinence, couples might practice a range of options from *coitus interruptus* to abortion or condoms. James Reed, *From Private Vice to Public Virtue: The Birth Control Movement and American Society since 1830* (New York: Basic Books, Inc., 1978), 4-5, 19-33.

she aspired to transform the fundamental proposition that sexual intercourse leads to pregnancy. Sanger's initiative was typical of various Progressive era reforms in that it encapsulated a belief that humans, rather than complacently accepting the restrictions of nature, could transcend them and in doing so resolve the social problems generated by rapid industrialization and urbanization. She led this crusade through the 1930s, successfully challenging federal statutes against the interstate and postal distribution of contraceptive literature and devices.[82] Changing social conditions that allowed for the distribution of birth control information undermined Malthus' premise that sexual urges would remain constant. Indeed, historian James Reed describes the history of birth control in the United States as one in which a nineteenth-century private vice would become a public virtue by the end of the twentieth century. The reliability and acceptability of birth control measures by the mid-twentieth century meant that sexual activity could be separated from reproduction.

For Vogt, humans possessed the capacity to control population growth, but the will to actually use birth control measures was lacking.[83] Conservation provided an imperative for human behavior to change when population growth confronted

[82] By 1945 there is official public acceptance of birth control in the United States and the birth control movement re-organized itself accordingly. The 1936 decision in *United States v. One Package of Japanese Pessaries* removed federal obstacles to contraceptive information and supplies and led to the transformation of Sanger's lobbying organization, National Committee for Birth Control, to rename itself the Birth Control Council of America. The several birth control organizations, Birth Control Council of America, the American Birth Control League, and Sanger's Clinical Research Bureau would merge to become the Planned Parenthood Federation of America. David M. Kennedy, *Birth Control in America: The Career of Margaret Sanger* (New Haven: Yale University Press, 1970), 255-257. See also Reed (note 86); Ellen Chesler, *Woman of Valor: Margaret Sanger and the Birth Control Movement* (New York: Simon & Schuster, 1992).

[83] Vogt does not use the term birth control in his writings. According to a later letter he was unable to use the term on American radio in the 1940s. William Vogt to Jack Gibbs, 24 February 1966, Box 1:3, Vogt Papers, PEB.

carrying capacity. The only question that remained was whether the people would voluntarily choose to adopt birth control measures or whether government intervention would be necessary to manage population in the wake of a crisis. Vogt tried to persuade his audience of readers by pointing to the valuable information that ecology could provide.

> Fortunately, we are armed with such knowledge as man has never before possessed; if we are intelligent and courageous enough to use that knowledge we may yet escape the crash of our civilization. But we shall not do it by 'political' and 'economic' means alone. We must look at the whole man, and at his whole environment.[84]

The impetus for accepting population control would come from a change in human values. With new values, based upon an understanding of the human relationship with the earth, Vogt thought people would voluntarily choose to limit their procreativity for the greater good, reminding his readers, "the good of the individual, and even of groups, must often be sacrificed for the general good."[85] Until that time, however, it might be necessary for the United States government to coerce other governments to establish population control programs as a condition for receiving foreign aid.[86]

Not relying upon people to behave altruistically in curtailing population growth, Vogt provided several reasons why a change in values would be in the

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[84] Vogt, *Road to Survival*, 80

[85] Vogt, *Road to Survival,* 144.

[86] The importance of death for the guano birds was translated to the importance of death for humans. "Twenty-five years ago I expressed the opinion that one of Chile's greatest assets was infant mortality. It still seems to me better to have children die in the first year than to survive to reproduce themselves in societies that cannot take care of them and thus compound misery." William Vogt to Jack Gibbs, 24 February 1966, Box 1:3, Vogt Papers, PEB.

interest of individuals: the threat to democracy, the magnitude of destruction, death to most of the human race, and ultimately the loss of human progress attained to date.[87] Democracy was imperiled no less than it had been during the recent war. Only this time, it was threatened not by armies or fascist leaders but by an uneducated electorate. In turn education was threatened by the decline in natural resources and the means to produce wealth. In a world without abundant resources, Vogt believed the United States would ultimately be threatened by aggression from other countries unless population growth was controlled.[88]

There was, however, an internal threat that loomed for the United States. Vogt employed eugenic language that implied Americans would face biological degradation without scientific management of natural resources and population. Vogt referred to stockmen and shepherds as the Kallikaks of the land, borrowing from the classic eugenic tale of the Kallikak family that demonstrated the importance of good breeding and the danger of poor reproductive decisions. The name Kallikak became associated with the dysgenic branch of the family that exhibited all the traits (e.g. alcoholism and criminality) of people poorly adapted to the United States' modern industrial workforce of the early twentieth century. Eugenic studies of their deficiencies reveal social anxiety about modernity and the industrial age that permeated American culture. Vogt's concern was knowledge of the land rather than hereditary qualities but adaptation to changing conditions concerned the eugenicists

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[87] Vogt, *Road to Survival,* 17.

[88] Vogt, *Road to Survival*¸151.

and Vogt. When Vogt used the term Kallikak he clearly wished to invoke this dysgenic picture of reproductive choices that harmed the nation. He considered the "Kallikaks of the land" to be ecologically incompetent and a threat to society because they were out of step with the needs of the modern world.[89] Agriculture and land use demanded a scientific basis if it was to feed the growing number of people today and tomorrow.

Vogt was in fact aware of eugenics, believing, after all that he wrote in the tradition of E.M. East's statement on the subject, *Mankind at the Crossroads* (1923).[90] East wrote that mankind stood a crossroads in which it must choose between two competing instincts, survival and reproduction.[91] "The world confronts the fulfillment of the Malthusian prediction here and now. Man stands today-at the parting of the ways, with the choice of controlling his own destiny or being tossed about until the end of time by the blind forces of the environment in which he finds himself."[92] East reassured his readers that the "white race" would survive because other races lacked territory in which to expand but that it should set its population level below "full population saturation."[93] He saw population control as a way not

[89] Vogt, *Road to Survival*, 145.

[90] Vogt, "Getting Sex Appeal," 43.

[91] Edward M. East, *Mankind at the Crossroads* (New York: Charles Scribner's Sons, 1923), 40; Kathy Cooke, The Limits of Heredity: Nature and Nurture in American Eugenics Before 1915," *Journal of the History of Biology* 31 (1998), 263-278.

[92] East, *Mankind at the Crossroads,* vii.

[93] East, *Mankind at the Crossroads*, 13.

only to ensure survival but also to strengthen the hereditary basis of the race.[94] The judicious application of birth control by society was warranted since children were not of equal value to society[95] What Vogt shared with East was the belief that humans could, with the application of biological knowledge, be better adapted to their environment and that population levels must be limited through the use of birth control. He also shared a racism that can be seen in his readiness to demand population control for non-Western peoples and the message that burgeoning populations in Africa, Asia, and Latin America demonstrated those peoples were disproportionately maladapted to their environment.

Conclusion

William Vogt recognized the peculiar talent of humankind to destroy the earth that sustained life in general and both the American standard of living and democracy. Vogt's neo-Malthusian message received a wide audience in the United States and abroad. At the very moment that populations were burgeoning and political systems were unstable due to Cold War tensions and impending decolonization, Vogt suggested the world could not sustain high population densities. Prospects, by Vogt's account, were grim at the very moment that the United States enjoyed unprecedented power in the international arena and the American standard of living was the envy of nations. Yet, he offered Americans a means by which to secure the Second World

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[94] East, *Mankind at the Crossroads*, 211, 229

[95] East, *Mankind at the Crossroads*, 232.

War's victory over totalitarianism: rational management of human and natural resources.

Vogt offered the scientific community, specifically ecologists, a place in the political economy. His scientific contributions through research were respectable but not outstanding. His real contribution was a conviction that the application of scientific knowledge could manage human affairs. This was an idea that dates back to Francis Bacon's *New Atlantis* (1626) and had been invoked by an earlier generation of ecologists. Vogt's unique contribution was to suggest that ecologists enter the political economy through the juncture of two highly significant factors, land use and reproduction; directing either could yield enormous power. Vogt gave new meaning to current ideas in ecology for the regulation of a wildlife population when he spoke of human populations. The next chapter will show the influence that Vogt, *Road to Survival,* and arguments for the rational management of land use and reproduction had in domestic and international circles.

CHAPTER FIVE

CONSERVATION AND POPULATION CONTROL

In writing *Road to Survival* William Vogt broadcast the idea that population control was a critical element of wildlife conservation. Vogt's attention had shifted to the nexus of conservation and population control as an international issue and the book captures this new direction. He identified humans as the crucial variable in resource management upon which any other conservation work would be predicated and consequently the first order of business to be addressed. Vogt had the opportunity to put his ideas into practice when he became the national director of Planned Parenthood Federation of America in 1951, the leading proponent of birth control in the United States. Due to his background in conservation and his emphasis upon a rational approach to human population, Vogt understood birth control as a part of the species survival issue of population control and not as a woman's issue. Reproductive decisions were part of the rational development of any state resource. In this regard, Vogt's population control perspective is eugenic, wanting to direct reproductive capacity in the interest of the state. Vogt put his vision to work as director of Planned Parenthood and through his early association with the International Union for the Preservation of Nature, later renamed the International Union for the Conservation of Nature and Natural Resources (IUCN). Julian Huxley, Director General of the United Nations Educational, Scientific and Cultural Organization and a leading force behind the formation of the IUCN, shared Vogt's outlook on science, population, and

society. In this chapter I will explore Vogt's embrace of population control in the postwar and assess its significance for conservation.

In Vogt's own work, population loomed as the major factor in the conservation of wildlife. He had gained an international audience for his ideas through his Pan American Union work and publication of *Road to Survival.* He also came to the attention of a new international organization dedicated to the proposition that ecologists and conservationists needed to provide governments with the knowledge necessary to protect wildlife around the world. This organization, the International Union for the Protection of Nature (IUPN), arose from an increasing awareness of the need to coordinate international conservation efforts earlier in the twentieth century (see Chapter 3) and from the flurry of international organizational activity that anticipated the end of the Second World War with the prospect of a new world order under the United Nations. IUPN did not openly endorse population control but the premise that certain countries cannot support large populations was integral to the African Special Project organized in the early 1960s to demonstrate the organization's utility for the emerging nations of Africa. IUPN shed the trappings of its colonial past when it moved from Belgium to Switzerland in 1961 after first changing its name in 1956 to the International Union for Conservation of Nature and Natural Resources.[1] Vogt's position at Planned Parenthood and the European bias of

[1] Switzerland was a country without African possessions or territories; members hoped would enhance IUCN's standing with the emerging African nations and attract African members. *Seventh General Assembly Warsaw June 1960 Proceedings* (Bruxelles: IUCN, 1960), 35-36, 48. Nicholson privately confirms this reason. Max Nicholson to Huxley 27 July 1960, Huxley Papers, Rice University, hereafter referred to as the Huxley Papers. However, in making a fresh start in a neutral country, IUCN discarded the part of its past that would have constituted its archival records. Holdgate, 77.

IUPN in the 1950s precluded deep participation in the latter organization yet he was part of a community that promoted the concept of a population problem and that would, by the mid- to late-1960s, provide the operational means to develop population policies and implement population programs.

The Population Question: From Wildlife to Foreign Diplomacy

Road to Survival drew praise from a variety of readers. Aldo Leopold thought Vogt's article in the *Saturday Evening Post* was "the best job of expounding land ecology so far," and he provided an advance review, written shortly before his death, which appeared on the book's dust jacket.[2] Vogt's former birding friend Roger Peterson expressed relief that Vogt's seeming-departure from ornithology actually held design and benefit for wildlife. "Although I thought for a while you were drifting away from ornithology and would become a sad loss to the science, I now realize that you have related birds intelligently to the world and have used them as a key to reality rather than as an escape from it."[3] Peterson's remark suggests the importance of *Road to Survival.* It was both the culmination of Vogt's work over the preceding decades and the application of that knowledge of the natural world to the social world. Specifically, Vogt wanted conservation to begin with the rational management of natural resources from soils to humans. His work in Mexico and other Latin American nations demonstrated the need to tackle fundamental land use issues such

[2] Aldo Leopold to Vogt 2, May [no year], Vogt Papers, DPL.

[3] Peterson equated Vogt's significance in changing patterns of human patterns to the work of noted sexologist Alfred Kinsey. Roger T. Peterson to Vogt 30 July 1948, Vogt Papers, DPL.

as carrying capacity. The timing of *Road to Survival* allowed Vogt to address a pressing international issue, population, and the book's success secured an audience willing to take note. *Road to Survival*, along with Osborn's *Our Plundered Planet* received special mention when the Gutenberg Award committee named the book that "most progressively influenced American thought during 1948."[4] In addition, *Road to Survival* was quickly adopted as a text at a number of universities – from elite schools such as Princeton, Dartmouth, and Stanford, to public universities, land-grant institutions, and state teachers colleges (see Appendix A). Among those students who read *Road to Survival* was future entomologist Paul Ehrlich, who would become a household name for his book, *The Population Bomb* (1968).

Vogt's view of population issues confronting the United States and the world and his proposed solutions were formed by his field studies and knowledge of ecological ideas from the 1930s, such as carrying capacity and his belief in the uniqueness of humanity's ability to create and resolve problems through technology and science. They were also formed by his worldview regarding science and public policy. Population sized affected the natural resources upon which states depended and influenced both internal politics and external politics, as suggested by the territorial aggression of Germany and Japan in the 1930s. Population was, therefore, a fundamental and international concern. Further, population issues such as overpopulation and depleted resources had the potential to limit individual freedoms.

[4] The actual award went to Robert E. Sherwood's *Roosevelt and Hopkins*. The selection committee included Irita Van Doren, the literary critic of *The New York Herald Tribune*, and Norman Cousins, editor of the *Saturday Review of Literature*; both periodicals favorably reviewed *Road to Survival* and *Our Plundered Planet*. "Peace Opportunity Missed in '45: Senator Morse Cites Efforts to Reconcile Differences Noted in Sherwood Book" *New York Times* 13 April 1949, 27:C3.

Vogt borrowed and amended the old adage that an army travels on its stomach when he noted that "freedom seems far less important when one's belly is rubbing one's backbone - and the Man on Horseback, or the man on the red-starred tank, takes on plausibility as a leader out of the wilderness," and he continued, "it is no accident that authoritarian groups of all stripes consistently oppose freedom of education and advocate unchecked reproduction."[5]

Studies of "the population problem" began during the interwar years when the field of demography emerged as an intellectual discipline. In the mid-1940s the theory of demographic transition emerged as an explanatory scheme useful to planners operating on a global scale because it suggested that population levels were connected to levels of modernization, industrialization, and political liberalization. This theory, first articulated by sociologist Warren Thompson, identifies three stages to population growth. In the first stage, the population's natural increase is held in check by a balance between the birth rate and the death rate. Thompson identified these populations with non-Western, non-industrial countries. The second stage, identified with countries that had begun the process of modernization and industrialization, revealed a natural increase in population due to a decline in the death rate with a slower decline in the birth rate. The final stage, found in Western Europe (north of Italy and Spain), had a stationary or decreasing population with low death rates and rapidly declining birth rates.[6]

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[5] Vogt, *Road to Survival*, 207.

[6] Warren Thompson, "Population," *The American Journal of Sociology* 34, no. 6 (May 1929), 959-975.

Demographers, who initially thought that levels of natural increase would stabilize only after economic development, claimed high fertility impeded economic development and advocated family planning.[7] The demographic theory of transition was not limited to academic scholarship; it also proved a useful tool for policy makers.

Demography as a twentieth-century social science is unique in part because it emerged institutionally outside of the university context. Demography was studied at the Office of Population Research (Princeton), the Scripps Foundation, and at the Population Reference Bureau. The field had close associations with earlier eugenic reform movements.[8] Along with other social scientists, demographers became policy advisors after the Second World War. However, unlike sociologists and political scientists, the demographers were curiously dependent upon their advisory status, which may have skewed their approach to demographic theory. It certainly oriented

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[7] The expected demographic shift is premised on the ideas that farmers were rational, use of contraceptives was the rational choice, and if contraceptives were available then farmers would use them. Susan Greenhalgh, "The Social Construction of Population Science: An Intellectual, Institutional, and Political History of Twentieth-Century Demography," *Comparative Studies of Society and History* 38 (January 1996), 26-66; Dennis Hodgson, "Demography as Social Science and Policy Science," *Population and Development Review* 9 (March 1983), 1-34.

[8] For the history of demography, Susan Greenhalgh (previous note) and Simon Szreter provide a useful understanding of larger issues. Simon Szreter, "The Idea of Demographic Transition and the Study of Fertility Change: A Critical Intellectual History," *Population and Development Review* 19, No. 4 (December 1993), 659-701. In addition, several articles by Dennis Hodgson provide insight to historical developments within the field. Dennis Hodgson, "The Ideological Origins of the Population Association of America," *Population and Development Review* 17 (March 1991), 1-34; idem, "Orthodoxy and Revisionism in American Demography," *Population and Development Review* 14 (December 1988), 541-569. Caldwell and Caldwell provide an insider's perspective of the population field's emergence based on experience with the Ford Foundation while Frank W. Notestein worked for the Office of Population Research. John Caldwell and Pat Caldwell. *Limiting Population Growth and the Ford Foundation Contribution* (London and Dover, NH: Frances Pinter Publishers, 1986); Notestein, "Demography in the United States: A Partial Account of the Development of the Field," *Population and Development Review* 8 (December 1982), 651-687.

their studies to practical policy questions – the availability of current and future resources as determined by population size, level of industrialization, and ideology in various countries. Despite the growing demographic literature on population growth there was no mechanism within the United Nations to recognize population growth as a problem let alone to take action.[9] This difficulty of the population question for the United Nations renders the American decision to provide aid to foreign nations especially critical.

Road to Survival found a niche not only in college classrooms but also Washington policymakers debating United States foreign aid. Vogt's 1949 *Saturday Evening Post* article, "Let's Examine Our Santa Claus Complex," critiqued President Truman's Point IV Program.[10] The Truman administration proposed to make foreign aid to underdeveloped countries a continuing part of United States foreign policy, unlike the one-time assistance to Greece and Turkey through the Truman Doctrine (1947) or the broader package of economic aid to Western Europe through the Marshall Plan announced in mid-1947. Vogt's arguments represented the opposing

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[9] By 1961 Sweden was already providing population assistance to other nations. However, the prominence of the United States in postwar international relations renders the US role of great importance. According to Huxley, there were seven countries with a population policy, if colonial territories are counted: India, Pakistan, Japan, Singapore, the Fiji Islands, Barbados, and Puerto Rico. For the history of how the United States became involved in funding overseas population programs, see Donald T. Critchlow, I*ntended Consequences: Birth Control, Abortion, and the Federal Government in Modern America* (New York: Oxford University Press, 1999). For the history of the United Nation's interest in population problems, see Richard Symonds and Michael Carder, *The United Nations and the Population Question, 1945-1970* (New York: McGraw-Hill, 1973) and Stanley P. Johnson, *World Population and the United Nations: Challenge and Response* (New York: Cambridge University Press, 1987) pp. 7-18.

[10] William Vogt, "Let's Examine our Santa Claus Complex," *Saturday Evening Post* 222 (23 July 1949), 17-19, 76-78.

perspective in the *Congressional Digest's* presentation of the debate."[11] Both positions for and against Point IV claimed their reasoning was based on a desire to protect democracy from Communism and to ensure the welfare of the world but they proposed different strategies to achieve this end. The Point IV Program aimed to raise the standard of living in underdeveloped countries. It would extend aid to fend off communist encroachment. Vogt's response, the counterargument to Point IV, was a blunt and forceful articulation of the arguments he presented in *Road to Survival*: ameliorating the conditions of life such that it may lengthen the lifespan and thereby increase the population is wrong unless those measures, "death control," were balanced by others, "birth control," to curtail population growth.[12] Vogt suggested that the United States use its powerful position in the postwar world to shape the domestic policies of war-torn states. "Any aid we give should be made contingent on national programs leading toward population stabilization through *voluntary* action of the people."[13]

Vogt's assault on Point IV and foreign aid said that the underdeveloped countries of the world were poor for a reason. Latin America, Africa, and Asia had longer histories of human civilization than the United States, he noted, and yet had failed to develop socially, politically, and economically in the pattern set by Western Europe and North America. From this he inferred that these regions lacked the means

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[11] William Vogt, "Congress Takes a Look at The President's Point 4 Program," *Congressional Digest* 29 (May 1950), 133.

[12] Vogt, "Let's Examine our Santa Claus Complex," 17-19, 76-78.

[13] Vogt, *Road to Survival*, 211.

to do so and science should not be used to alter these environments in order to force "development." Attempts to use the land in these regions for industrial agriculture would, he argued, be tantamount to "a rape of foreign resources." Such land use would increase population growth beyond the carrying capacity of the resources and thereby exacerbate already poor conditions.[14] The United States' desire to distribute gifts around the world, its' Santa Claus complex, was misguided according to Vogt's perception of resources, social organization, and ecology.

International Conservation

Road to Survival defined Vogt's stance within international conservation but he came to the attention of international leaders in conservation before its publication in August 1948. In his role as Conservation Chief of the Pan American Union, Vogt organized the first Inter-American Conference on Conservation of Renewable Natural Resources held in Denver in September 1948. This regional conference emerged from the interests of the Pan American Union's conservation section in implementing the Western Hemisphere Treaty but it also coincided with emerging attempts to organize international conservation on a global scale that will be elaborated below. The Denver conference was one of three regional conferences considered preparatory to the creation of a single international union to represent conservation interests, the International Union for the Protection of Nature (IUPN). Vogt and certainly the ideas he expressed were part of the early history of IUPN, the locus for international

[14] Vogt, "Let's Examine Our Santa Claus Complex," 19,

conservation action. Because of Vogt's connection with the origins of IUPN, I shall first situate this body in relation to the United Nations family of organizations formed after the Second World War starting with UNESCO, before returning to Vogt's connections with IUPN.

UNESCO's Founding and Mission

Evolutionary biologist Julian Huxley (1887-1975) was the first director-general of the United Nations Educational Scientific and Cultural Organization (UNESCO). His position as director of the London Zoo became a half-time position during the war freeing him to pursue his interests in conservation and planning. He actively contributed to the National Park Committee's work endorsing enabling legislation for national parks in England and Wales and he served as the chair of the Wild Life Conservation Special Committee, which sponsored the formation of the Nature Conservancy.[15] He was also in the habit of attending, as an observer, the London meetings of the Conference of Allied Ministers of Education (CAME); the conference discussed postwar needs for education and was the origin of the UNESCO. Huxley replaced the British delegate to CAME, Alfred Zimmern, and became the British delegate to the UNESCO Preparatory Commission that operated on an interim basis between the foundation of UNESCO and the ratification of its constitution.[16] When UNESCO became an official organization headquartered in

[15] For the history of nature conservation in Britain, see John Sheail, "War and the Development of Nature Conservation in Britain," *Journal of Environmental Management* 44 (1995), 279-280; idem, *Nature in Trust: The History of Nature Conservation in Britain* (Glasgow and London: Blackie, 1976); Julian Huxley, *Memories* vol. I (New York: Harper & Row, Publishers 1970), 288-289.

Paris, Huxley was elected first Director-General and wielded enormous influence over the educational and cultural organization that included science within its purview.[17]

Huxley influenced UNESCO in two ways significant to international conservation of wildlife. First, Huxley's unauthorized statement of UNESCO's philosophy did become its *de facto* philosophy.[18] Before taking up his official duties, Huxley decided that a humanistic approach to education, culture, and international relations embodied in the concept of planning would best implement UNESCO's basic principles.[19] UNESCO was founded on the idea that "since wars begin in the minds of men, it is in the minds of men that the defences of peace must be construed." Peace would be secured through education that ended the ignorance of other cultures and through practice of the basic democratic principles of dignity,

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[16] The British delegate to CAME, Alfred Zimmern temporarily stepped aside due to surgery. Delegates to the United Nations Conference in April 1945 proposed an educational and scientific organization that would replace CAME and the International Institute of Intellectual Co-operation formed in 1925 under the League of Nations. Julian Huxley, *Memories* vol. II (New York: Harper & Row, Publishers, 1973), 13-16.

[17] For the history of UNESCO, see Fernandez Valderrama Martínez,. *A History of UNESCO* (Paris: UNESCO, 1995); Walter H.C. Laves and Charles A. Thomson, *UNESCO: Purpose, Progress, Prospects* (Bloomington: Indiana University Press, 1957); James P. Sewall, *UNESCO and World Politics: Engaging in International Relations* (Princeton: Princeton University Press, 1975); George N. Schuster, *UNESCO: Assessment and Promise* (New York: Harper & Row, Publishes for the Council on Foreign Relations, 1963); Richard Hoggart, *An Idea and Its Servants: UNESCO from Within* (New York: Oxford University Press, 1978). "Science" was added to the title of the new organization by late 1945 with credit separately assigned to Huxley, Harlow Shapley and Bart Bok although Shapley himself recognized that adding the "s" to UNESCO would be a concerted effort. Palmeri, note 129 on page 135.

[18] UNESCO adopted much of this philosophy *de facto* with the second Director-General endorsing humanism as the answer to international cooperation. Jaime Torres Bodet, Huxley's successor at UNESCO, said, "Modern humanism must know no limit or frontiers. It is UNESCO's supreme task to help to bring this new type of humanism to birth." Julian Huxley and Jaime Torres Bodet, *This is Our Power* (Paris: UNESCO, 1948), 14.

[19] Julian Huxley, *UNESCO: Its Purpose and Philosophy* (New York: Public Affairs Press, 1947), 6.

equality, and mutual respect.[20] He firmly believed that a shared scientific view of the world would replace superstition and in this way education would let "light on the world's dark areas."[21] Second, Huxley claimed wildlife conservation to be a part of UNESCO's purview, because it was an aspect of science not yet consigned to other UN organizations and because nature, he believed, was part of culture.[22]

When Huxley came into office in 1946 he was in a position to fundamentally aid the formation of an international body for nature protection. This he did by providing political and material assistance. Delegates reassembled at Brunnen, Switzerland in 1947 and they discussed a draft constitution prepared in conjunction with UNESCO's Division of Natural Sciences. They agreed to create a hybrid organization, which UNESCO favored, comprised of nation states as well as national and international organizations; it would advise UNESCO on matters of wildlife and conservation. Affiliation with UNESCO gave the fledgling IUPN stature, substance, and access to financial support. IUPN also acquired immediate stature by becoming, through the intervention of UNESCO, a partner organization with the well-established and respected ICBP.[23] Huxley, as UNESCO's director-general, then

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[20] Huxley, *UNESCO: Its Purpose and Philosophy*, 5.

[21] Huxley, *UNESCO: Its Purpose and Philosophy*, 17. Huxley returned to this idea a few years later when he lamented "the absence of any unifying set of concepts and principles" for the world. Julian Huxley, "New Bottles for New Wine: Ideology and Scientific Knowledge," *New Bottles for New Wine* (New York: Harper & Row, 1957), 96-97.

[22] In the United Nations family of organizations, the World Health Organization addressed medicine and the Food and Agricultural Organization and Fisheries and Forests included the conservation of fish and forests.

pressed the French government, in accordance with protocol, to invite states to attend the Fontainebleau conference in 1948 while the provisional IUPN invited organizations.[24] Although Huxley had secured the field of wildlife conservation for UNESCO, delegates at Brunnen questioned whether their proposed organization's objectives would be better attached to FAO. IUPN affiliated comfortably with UNESCO by defining nature protection as broadly as possible to include conservation. However, the meaning of nature protection for Huxley and IUPN organizers warrants examination.

What Kind of Issue is Nature Protection?

Nature protection, Huxley claimed, entailed more than the sentimental attitude toward wildlife that characterized wildlife preservation because it depended upon scientific study. The protection of nature referred to national parks, game laws, natural amenities and geological monuments. Huxley included *prehistoric* archeological sites but specifically excluded *historic* sites, implying that prehistoric humans were natural while human activities and artifacts were unnatural.[25] Conservation entailed a wider perspective than protection because it encompassed

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[23] Joseph Needham to Phyllis Barclay-Smith, 15 February 1947 in reply to 10 Feb 1947, File: ICBP International Committee on Bird Preservation, UNESCO Archives.

[24] Holdgate notes that official state delegates were noticeably absent from the conference. With so many national embassies in nearby Paris the absence indicates the matter was considered of little diplomatic importance. Danish delegates at Brunnen in 1947 insinuated that imperialism motivated UNESCO's interest in nature protection but their efforts to subvert a role for UNESCO were aborted by the quick efforts of Eleen Sam from UNESCO and Bernard of the Swiss League. Holdgate, 43; Eleen Sam to Julian Huxley, 15 Jul 1947 sub: Report on the Brunnen Conference for the International Protection of Nature, File: International Union for Conservation of Nature and Natural Resources Part I, UNESCO Archives.

[25] Julian Huxley to Johann Büttikofer, 28 March 1947, File: International Union for Conservation of Nature and Natural Resource Part I, UNESCO Archives.

natural resources such as soil, watersheds, forests, and mineral deposits and was not limited to scenic landscapes or favored fauna. It required surveys of such resources with regulated access to prevent "undue exploitation."[26] George Brewer, representing the Conservation Foundation, the New York Zoological Society, and several other American organizations, shared Huxley's views regarding conservation, but because he wanted a broad scope for protection activities he suggested wildlife conservation should be part of the conservation of forests and fisheries that the Food and Agricultural Organization (FAO) oversaw.[27] FAO dealt with food and agriculture and by extension with the conservation of forests, soils, and fresh water.[28] Nature protection must extend beyond wildlife and scenic landscapes to nature itself, Brewer argued, because human exploitation of resources exceeded nature's "power of replenishment." This dissipation, he thought, would lead to "physical and moral deterioration" since "peace among animals as well as human communities depends upon adequate nutrition and harmony with natural environment."[29] The concept of protecting nature rather than conserving it failed to encompass the entwined fate of

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[26] Julian Huxley to Johann Büttikofer, 28 March 1947, File; International Union for Conservation of Nature and Natural Resource Part I, UNESCO Archives.

[27] FAO was created in 1945 and headquartered in Rome. Gove Hambidge, *The Story of FAO* (Princeton, NJ: D. Van Nostrand Company, Inc., 1955); Ralph Wesley Phillips, *FAO, its origins, formation, and evolution, 1945-1981* (Rome: Food and Agriculture Organization of the United Nations, 1981).

[28] Brewer was asked to report on the meeting to Sir John Orr, who was then the Director General of FAO, to the chair of the United States Forestry Service, to the chair of the Fish and Wild Life Service, and to the chair of the Soil Conservation Service. *Conférence internationale pour la protection de la nature: Brunnen, 28 juin au 3 juillet 1947: process-verbaux, resolutions et rapports*, ed. Johann Büttikofer (Basle: Ligue suisse pur la protection de la nature, 1947), 165.

[29] *Conférence internationale… Brunnen,* 166.

humans with nature. Conservation required an ecological perspective entailed in surveying natural resources and implementing regulations and an approach to nature protection that was ecological, recognizing the interdependence of the various components of a habitat. He was concerned that UNESCO's scientific aspect would be pure science rather than the applied science of conservation and of FAO. He might also have thought that a cultural view of nature would isolate the subject of nature protection from a discussion of the economic consequences of management. Brewer pressed for this view at Brunnen but it was at Fontainebleau that a broad discussion of the subject took place. Meanwhile, UNESCO remained IUPN"s sponsor within the UN family.

The general tenor of discussion at Fontainebleau regarding nature protection by IUPN's organizers suggests that they shared this scientific and economic view of nature protection and in fact added that education, an area of expertise for UNESCO, would be a critical component of their work.[30] Huxley assured conference participants that nature protection "was steadily changing over from the aesthetic and sentimental to the social and economic plane."[31] However, the question remained how to protect nature. It is significant that at Fontainebleau delegates expressed strong support for the notion that humans were part of nature. They also favored limitations upon human action and supported the need to generate popular support for nature protection. The

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[30] Eleen Sam to Julian Huxley 15 July 1947, File: International Union for Conservation of Nature and Natural Resources, UNESCO Archives.

[31] *Preparatory Documents to the International Technical Conference on the Protection of Nature August* 1949 (Paris: UNESCO, 1949), 16.

conference's extensive discussion of the subject suggested that ideas about protection were in transition and that some participants needed to be persuaded.[32]

The meaning of nature protection in 1948 warrants attention because the term suggests an earlier view of nature. Protection connotes human activity to isolate something called "nature" from human interference and calls to mind undisturbed nature reserves. This approach, associated with charismatic megafauna and scenic vistas, sought to preserve remnants of climax communities that would be transformed or lost through human contact. The changes normally ensuing from economic development of natural resources would destroy climax communities. Preservationist perspectives favored retaining artifacts of past biological communities that excluded human interference, or at least extensive interference. Some conference delegates wanted preservation, in the form of nature reserves, for scientific research. Other delegates, notably Huxley, Vogt, Darling, and Osborn, were moving towards an economic valuation of wildlife resources and favored a conservation perspective. IUPN's use of the term "nature protection" allowed it to encompass both viewpoints.

IUPN

IUPN's foundation in the aftermath of the Second World War emerged from an effort to join European organizations for nature protection in an international

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[32] Holdgate notes that Darling favored the term nature protection over conservation. Since Darling elsewhere supported conservation, it may be that the older term was preferred with a newer meaning attached to it. In either event, there was a lack of consensus for the term conservation. Sheail also notes that without articulating a distinction, British ecologists distinguished between preservation and conservation with the latter connoting a forward-looking and vigorous approach for the post-war era that would replace the older, backward-looking connotation of preservation. Holdgate, 34; Sheail, "War and the Development of Nature Conservation in Britain," 276.

union. Such a body might address pre-war issues, such as the need for information or international treaties pertaining to wildlife and conservation. Several years passed before the resolution of procedural and organizational matters led to an agreement to establish the International Union at a conference held at the French palace of Fontainebleau. The Swiss League for Nature Protection receives credit for initiating the discussion when it invited delegates from several analogous organizations in Western Europe to a meeting at Bâle in 1946. When the proposal for an international approach, specifically a revival of the pre-war International Office for the Protection of Nature (IOPN) arose, delegates were not prepared to commit their organizations but agreed to reconvene the following year.[33] Julian Huxley attended this meeting on behalf of Britain's national parks commission but was simultaneously engaged in international matters that allowed him to exercise significant influence on the subject of international nature protection. He joined others in Europe and the United States rethinking international conservation and brought UNESCO into the dialogue.

J.G. Baer, who would become IUPN's first president, thought nature's equilibrium required no human intervention. Nature protection, therefore, was either idealistic or economic. Idealism referred to the preservationist approach in which nature was protected from human actions but he conceded that areas maintained in such conditions should be made available for scientific research. He considered this an altruistic form of protection since it was done for the welfare of nature and did not necessarily serve the immediate best interests of humans. Economic protection, on the

[33] *Conférence internationale ... Brunnen*, 12; Holdgate, 18-21; Nash, 361-362.

other hand, was motivated by the desire to utilize the results of nature's productive capacity without impeding further production. Baer used the financial analogy prevalent in the conservation literature of spending the "interest" of nature's bounty while "leaving the capital intact."[34] This new approach demanded biological knowledge to properly advise governments on utilization before effective nature protection would occur, as Victor Van Straelen noted; sentiment and legislation alone were insufficient.[35]

Jean-Paul Harroy, elected Secretary General of IUPN, noted that conservation stemmed from the need to efficiently *protect* natural cycles and that such efficient protection depended upon the study of natural cycles in their "*pure state* and cleared of distortions by man" (emphasis mine).[36] Yet Harroy embraced the notion that nature protection could no longer be an elitist endeavor. It required broad-based support if only because humans needed to voluntarily circumscribe their behavior and to garner this support it must be based on utilitarian motives. The common sense experiences of primitive peoples were no longer a sufficient basis for nature protection; the modern economy demanded a scientific basis for protection, Harroy noted.[37]

Efforts to define nature protection revealed that wildlife management required managing human behavior. Wildlife management was less about directing the

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[34] *Preparatory Documents ... August 1949*, 47.

[35] *Preparatory Documents ... August 1949,* 20.

[36] *Preparatory Documents ... August 1949,* 4.

[37] *Preparatory Documents ... August 1949,* 11-12.

movement and lives of wildlife than about managing what people did that could impact the wildlife. Dr. Ira N. Gabrielson, former director of the U.S. Fish and Wildlife Service and President of Wildlife Management Institute, thought that wildlife management in the United States, which significantly differed from European and African countries in that hunting licenses were readily obtainable, could be broken down into five percent management of wildlife and ninety-five percent management of "wild people." Gabrielson noted that wildlife management activities could be categorized into those that directly affect the wildlife populations and those that affect them only indirectly by managing their environment.[38]

Vogt, attending Fontainbleau as on observer for the Pan American Union, agreed with Gabrielson and reiterated arguments from *Road to Survival*. Nature protection, he reminded the conference participants, required harnessing the actions of humans, which in the case of the United States depended upon the synergy of "scientific research; private and governmental action; education of political leaders, journalists and the mass of the people."[39] The desired objective was to build awareness that the wealth of nature was illusory when, as in the United States, it was not properly managed. The more immediate crises stemmed from those countries with less soil capacity than the United States but a desire for an American standard living. The pressure upon the natural resources could not be sustained and Vogt argued that IUPN's first and greatest responsibility "would be to promote knowledge of human

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[38] *Preparatory Documents … August 1949,* 26.

[39] *Preparatory Documents … August 1949*, 68.

ecology and to see that it was applied on a scientific basis."[40] Regardless of how they phrased their position, public education was the first line of defense that biologists proposed in curtailing demands upon wildlife and natural resources.

The conservation perspective, which the Americans at Fontainebleau (Gabrielson, Vogt, Brewer) were committed to defend and which IUPN ultimately adopted, endorsed the utility of natural resources.[41] This meant that natural resources were not necessarily removed from human contact. However, the conservation perspective also endorsed the balance of nature concept, with humans a prime cause of disequilibria. Protecting, preserving, or conserving the balance of nature demanded the removal of humans from nature, at least in certain situations. It also demanded *human management* of nature in other situations. National parks, nature reserves, and other protected areas were to isolate specific areas from human impact that would then be available for scientific study. The scientific management of wildlife and strict nature reserves were not an either-or situation because IUPN embraced both with the latter serving as important places for scientific research.

Vogt and IUPN: Science, Conservation, and Population

In 1948 the men organizing the establishment of an International Union for the Protection of Nature (IUPN) knew of Vogt's work and arranged for his attendance

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[40] *Preparatory Documents ... August 1949,* 28.

[41] The current term for this approach would be "sustainable" introduced in IUCN's *World Conservation Strategy* (1980) and broadcast by Mrs. Gro Harlem Brundtlandt in the Brundtland Report (1987). Donald Worster, *The Wealth of Nature: Environmental History and the Ecological Imagination* (New York and Oxford: Oxford University Press, 1993), 143.

at Fontainebleau while considering him a candidate for IUPN's first president.[42] Vogt was also sought after for membership the UNESCO Preparatory Commission, which was organized in the United States in advance of the United Nation's Scientific Conference on the Conservation and Use of Resources (UNSCCUR) held at Lake Success, New York in 1949.[43]

Vogt's conservation perspective was known in Europe prior to the publication of *Road to Survival* in 1948, presumably through his work for the Pan American Union, his articles, and a network of acquaintances. His fellow bird watcher, Julian Huxley, thought Vogt could be a candidate for IUPN's first president and therefore wanted him to attend the its inaugural meeting at Fontainebleau. Vogt had stature but it is possible that an American was desired to secure grants from American philanthropies that would be necessary for IUPN's survival. If nothing else, an American choice could relieve the tensions among the European conservationists regarding the role of the Swiss League in organizing IUPN and potentially attempting to direct it. For this reason, UNESCO did not support the idea of Charles Bernard, the Swiss League's president becoming the first president of IUPN.

Huxley favored an American president but few Americans would attend the European conference. He asked Fairfield Osborn, who already sent his regrets, to

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[42] During a visit to the United States in late 1947, Huxley organized a meeting that discussed impending conferences, e.g. Inter-American Conference, Pacific Science Conference, Fontainebleau, and UNSCCUR. Vogt, therefore, attended this meeting. "Informal Summary of Minutes of Meeting held at the Request of Dr. Julian Huxley in the Board Room of the National Academy of Sciences," 23 December 1947, File: International Union for the Conservation of Nature and Natural Resources, UNESCO Archives.

[43] John McCormick, *Reclaiming Paradise: The Global Environmental Movement* (Bloomington: Indiana University Press, 1989), 35-38; Holdgate, 29-38.

sound out Harold J. Coolidge for the presidency and if necessary to ask William Vogt.[44] Presumably Vogt agreed, because shortly thereafter Huxley wrote to the director of Cultural Affairs at the Organization of American States, Dr. Jorge Basadre, and asked him to reconsider sending Vogt as an official observer to Fontainebleau. This was a new category of participation not mentioned in the original invitation but it was important for Vogt to attend, Huxley wrote. "We know that Vogt is one of the great experts on the question and we would very much welcome any advice and assistance he could give us."[45] At the same time he sent an appeal to Lleras who interceded with Basadre and arranged for Vogt's attendance.[46] Meanwhile, Huxley was able to meet with Vogt in person to discuss the position of IUPN president. Vogt thought that the Swiss League's role in bringing together IUPN ought to be recognized by the nomination of Charles Bernard for president. However, his term should be abbreviated to one year with new elections held at the 1949 conference scheduled to take place in the United States. Vogt hoped to persuade Pan American Union officials to allow him to stand for office at that time, which Huxley still wanted to happen. "Everyone with whom I have talked on the subject," Huxley wrote, "feels that Vogt would be outstanding in this position, both personally and as

[44] Huxley to Fairfield Osborn, 12 August 1948, File: International Union for the Conservation of Nature and Natural Resources, UNESCO Archives.

[45] Huxley to Dr. Jorge Basadre (Director, Pan American Union), 24 August 1948, File: International Union for the Conservation of Nature and Natural Resources, UNESCO Archives.

[46] Huxley to Albert Lleras (Secretary-General of the Pan American Union), 1 September 1948 and Basadre to Huxley, 21 September 1948, File: International Union for the Conservation of Nature and Natural Resources, UNESCO Archives.

representing the whole Pan-American Union."[47] If nothing else, Vogt appeared to agree with Huxley's bureaucratic vision for extricating the IUPN from the Swiss League, and he occupied the unique position of international civil servant for the cause of conservation.

At Fontainebleau, Vogt contributed to several discussions, particularly that of providing a scientific basis for nature protection. Vogt told his colleagues that IUPN's first and greatest responsibility "would be to promote knowledge of human ecology and to see that it was applied on a scientific basis."[48] The need to act was acute given that the United States was living off the capital basis of natural resources, rather than the interest dividends derived from land, and faced an increasing population while tropical countries with less soil capacity than the United States wanted the United States' standard of living and these desires "rendered the problem insoluble."[49] Fraser Darling concurred, "that Dr. Vogt had gone to the root of the matter."[50] Vogt rejected the idea of a World Convention as premature until there was firm agreement on the principles and philosophy of nature protection and it included human ecology.[51]

Finally, Jean-Paul Harroy, Secretary-General of the Institut pour la Recherche Scientifique en Afrique Centrale and the newly elected secretary-general of IUPN, cast the conferences' spotlight on Vogt. The National Park of Cape Horn in Chile,

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[47] Huxley to Henry Morris [Maurice] 4 October 1948, File: International Union for the Conservation of Nature and Natural Resources, UNESCO Archives.

[48] *Preparatory Documents ... August 1949,* 28.

[49] *Preparatory Documents ... August 1949,* 28.

[50] *Preparatory Documents ... August 1949,* 31.

[51] *Preparatory Documents ... August 1949,* 68.

recommended by Vogt in his capacity of Conservation Chief for the Pan American Union, exemplified the efficacy of a cooperative approach to international conservation. Vogt's position with the Pan American Union involved helping member nations implement the Western Hemisphere Treaty. This approach to implementing conservation was in sharp distinction to the London Convention of 1933 at which signatories agreed to protect African wildlife with little tangible alteration in practices.[52] According to Harroy, "the results achieved by Mr. Vogt's section [at the Pan American Union] were already conclusive, in spite of its recent establishment and relatively small extent."[53]

IUPN's official report of the Fontainebleau conference lists *Road to Survival*, along with Osborn's *Our Plundered Planet* as one of several books the newly formed International Union for the Protection of Nature (IUPN) recommended for reading. Vogt's ideas were part of the prevailing view of wildlife ecology expressed by IUPN. His ideas on population control were not explicitly discussed, or at least not recorded in conference reports except in reference to human ecology, but they are too prominent a part of *Road to Survival* to be considered incidental. Yet, population control depended on birth control and that was a controversial subject. Vogt and Enrique Beltran (1930-1994) first raised it at the 1952 General Assembly held in Caracas, Venezuela. There were several discussions on the subject that included

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[52] *Preparatory Documents… August 1949*, 59-61.

[53] The term our "plundered planet," is in quotation marks, suggesting familiarity with the title of Osborn's book or that the title was an idea that was 'in the air. *Preparatory Documents … August 1949*, 61.

Vogt, Osborn, Harold J. Coolidge, Ira Gabrielson, Harroy, Roger Heim (National Museum of Natural History), Phyllis Barclay-Smith (ICBP), Wolfgang Burhenne, and others.[54] They drafted a resolution on the subject that reviewed various reports asserting the deleterious "effects of large concentrations of human beings on ecosystems and natural resources," reminding the audience of the evidence that population growth was a fundamental world problem. The resolution asked IUPN to formally request the United Nations' Secretary General to assign the problem of population to one of the UN's specialized agencies. In keeping with international debates on "the population problem," Catholics and Marxists together attacked the proposal and the discussion became "uncontrollably virulent." The need to conclude the session before the President of Venezuela arrived at the conference led IUPN officials to persuade Beltran to withdraw the resolution. Beltan agreed on the "condition that the proposal would be first item on the Agenda of the next Assembly."[55] Max Nicholson proposed the issue in Beltran's absence at the next general assembly held in Copenhagen in 1954 and it passed; this was shortly before the 1954 World Population Conference in Rome. IUPN's message to the Conference reminded attendees of the Malthusian conviction that "world food production hardly matches, if indeed it can continue to match" the world's population growth. Scientific expertise can increase food production but this often occurs "at the cost of an impoverishment of soil and water resources and a destruction of forests or of animal

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[54] Enrique Beltran, "A Forgotten Chapter in IUCN's History" IUCN *Bulletin* vol. 14 (1983), 109.

[55] Beltran, "A Forgotten Chapter in IUCN's History," 109.

and plant communities and lastly of erosion affecting large regions of the earth."[56] When Beltran was elected vice-president of IUCN in 1956 he formed a small committee comprised of himself, Osborn, and IUCN president Roger Heim that brought demographic arguments into acceptability, although IUCN did not formally support population control work until the early 1980s.[57]

Planned Parenthood Federation of America

Vogt's life following the publication of *Road to Survival* suggests that he and his convictions fit poorly within the Pan American Union from which he would shortly resign. Vogt's success as the author of *Road to Survival* and of several articles in mainstream magazines with international distribution presented a problem for his work as a conservationist with the Pan American Union. A chapter from *Road to Survival* regarding the misuse of natural resources in Latin America appeared in the June 1948 issue of *Harper's Magazine* under the title of "A Continent Slides to Ruin."[58] The dramatic title and the explosive contention that South American nations mismanaged their resources and faced disintegration as soil ran down hillsides elicited disapproval among Pan American Union members. Chile's Ambassador Felix Nieto del Rio brought the matter to the Pan American Union's governing board where he objected to the political content of an article written by an employee. The Pan

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[56] *Seventh General Assembly Warsaw June 1960 Proceedings*, 152.

[57] Beltran, "A Forgotten Chapter in IUCN's History," 108-109.

[58] Vogt, "A Continent Slides to Ruin," *Harper's Magazine* 196 (June 1948), 481-489.

American Union was, after all, intended to bring the nations of the Western Hemisphere together. Pan American Union officials issued a formal objection to a functionary publishing opinions that might negatively impact the reputation of certain governments and countries. However, Albert Lleras as Secretary-General of the Pan American Union thought it impractical to overtly censor Vogt by asking him to submit manuscripts for internal review and the matter rested for the time being.[59] However, Lleras believed Vogt agreed to moderate his publications to avoid impugning its member states. Publication of "Let's Examine Our Santa Claus Complex" in 1949 made clear that Vogt did not intend to safeguard the sensitivity of any nation or region nor, in his determination to influence policy, would he wait for the Pan American Union to take a position on the Point IV Program. Officials concluded that Vogt's expression of his views constituted a conflict of interest that could not persist. Lleras diplomatically told Vogt "there is an incompatibility, prone to all types of conflicts, between the active career of a published writer and the post of a chief of a section of the Pan American Union."[60] If Vogt wished to air his views publicly then he would need to abandon his role as an international civil servant. Vogt resigned that year with his international reputation established by his work for the Pan American Union and by his publications.

The existence of an international audience of conservationists that appreciated his ideas on the connection between conservation and population did not translate into

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[59] Albert Lleras (Secretary-General of the Pan American Union) to William Vogt, 21 July 1949, Vogt Papers, DPL.

[60] Albert Lleras to William Vogt, 21 July 1949, Vogt Papers, DPL.

employment. Vogt's departure from the Pan American Union in 1949 initially left him without an organizational basis through which to contribute to what would become an ongoing discussion of the relationship between wildlife and population. He became a lecturer and secured a Guggenheim Fellowship to study Scandinavian approaches to demographic issues of population. He continued to attend IUPN meetings into the early 1950s to press his point and in 1951 he became the national director of Planned Parenthood Federation of America; he pressed his perspective in both arenas.

In the early 1950s birth control became the focus of Vogt's professional activities when he became the national director of the Planned Parenthood Federation of America (1951). This would be his first professional position since shortly after college that lacked a nature component. His ten-year stint as director of the organization chiefly responsible for disseminating birth control information in the United States confirms that his interest in wildlife embodied larger values. In chapter one I raised the possibility that the study of animal behavior and social organization helped Vogt to make sense of the very human world in which he lived. However, there can be little doubt that Vogt now had the opportunity to make his vision a reality because Planned Parenthood actively promoted limitations on family size.

Vogt tendered his resignation to the Pan American Union, effective 15 November 1949, and embarked upon a brief career as a lecturer speaking at

engagements around the country.[61] Vogt also struck out in new directions by applying for a Guggenheim Fellowship to study population and policy in Scandinavia, a region he admired for its ability to maintain its human population within carrying capacity; he wanted to know how this was accomplished. He traveled to Denmark, Norway, and Sweden with his second wife to conduct research. Upon his return to the United States a new avenue to directly pursue his interests emerged, namely birth control. Vogt served as national director of Planned Parenthood Federation of American for ten years (1951-1961).

Vogt's connections with Planned Parenthood pre-date his appointment as national director. In 1950 Planned Parenthood of Massachusetts arranged for Vogt to speak at the annual meeting held at, of all places, the Hotel Puritan in Boston. The event followed the political defeat of an initiative sponsored by Planned Parenthood to allow physicians to prescribe contraceptives for married women for health reasons. The Catholic Church was blamed for this defeat.[62] Vogt's speech characterizes his antipathy to dogma, in this case in the form of Catholicism, and his conviction that the individual's actions must consider the greater welfare. He criticized a political economy that permitted a minority, Catholics, to prevent the legalization of birth control.[63] His ultimate message was for his audience to persevere because the

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[61] "Vogt's Stand Costs Job," *Science News Letter* 56 (31 December 1949), 424; William Vogt to Dr. Albert Lleras, 17 October 1949, Vogt Papers, DPL.

[62] Mrs. Walter E. [Lorraine] Campbell, President of Planned Parenthood League of Massachusetts, to Vogt, 26 February 1949, Vogt Papers, DPL.

[63] Planned Parenthood League of Massachusetts had just lost an election referendum to allow physicians to give contraceptives to married women for health reasons. Vogt spoke before Planned

interests of a minority group must not impede the welfare of society. "I am not sure that in this modern, overcrowded world the irresponsible individual has any longer the right by his own profligacy – though it be legalized – to cast his burden upon the rest of us."[64] The greater interest of society was, of course, an important rationale for his view of conservation presented in *Road to Survival*.

A Brief Overview of Planned Parenthood Federation of America

Planned Parenthood encapsulated Vogt's interest in regulating population levels by asking individuals to individually choose to restrict births. Given its importance in Vogt's life a brief overview of its history is appropriate. Margaret Sanger (1879-1966), seeking "biological liberation" from unwanted pregnancy for all women, led the movement for the dissemination of birth control information in the United States in the early years of the twentieth century. She worked with and founded several birth control organizations and clinics over the years. However, the 1939 merger of the American Birth Control League and the Birth Control Clinical Research Bureau to form the Birth Control Federation of America removed Sanger from the center of the American birth control movement. It was renamed the Planned

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Parenthood Leagues around the country at cost. William Vogt, "Massachusetts – There She Lies" Address read before the Annual Meeting of the Planned Parenthood League of Massachusetts, 3 April 1950, Vogt Papers, DPL. Mrs. Walter E. [Loraine] Campbell, President of Planned Parenthood League of Massachusetts, to William Vogt, 26 February 1949, Vogt Papers, DPL.

[64] William Vogt, "Massachusetts – There She Lies" Address read before the Annual Meeting of the Planned Parenthood League of Massachusetts, 3 April 1950, Vogt Papers, DPL.

Parenthood Federation of America in 1942, despite Sanger's commitment to the term she coined, "birth control."[65]

The centralization of the birth control movement in an organization that Sanger did not oversee coincides with the movement's shifting emphasis. The birth control movement had demonstrated an uneven commitment to the empowerment of women; birth control could be a double-edged sword used to empower or to constrain women. The birth control movement's early association with the radical cause of resisting capitalist oppression increased in the 1920s when it became a fashionable cause for married women, whose own mothers had unquestionably practiced birth control. These women brought with them the techniques of organization and propaganda they used in other reform movements, e.g., suffrage. Organizational changes proceeded as birth control's objective shifted to controlling the potential for a large birth rate to cause social disruption. Eugenics, fitness, and fear of immigrant fertility entered the language of the birth control movement as Sanger and her supporters sought a rational basis for birth control in American society.[66] Historian Linda Gordon is critical of the birth control movement's failure to embrace the opportunities for women's rights presented by wartime conditions during the 1940s; the movement instead focused on family stability fostered by women acting within their traditional spheres. In Gordon's history of twentieth-century birth control, it was

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[65] David M. Kennedy provides an overview of Sanger and her interactions with the various birth control organizations she founded or worked with in the 1910s, 20s, and 30s in his book, *Birth Control in America: The Career of Margaret Sanger* (New Haven: Yale University Press, 1970) while Ellen Chesler's *Woman of Valor* offers a comprehensive biography.

[66] Kennedy, 105-106, 112-113, 121.

during the 1950s and 1960s, coincident with Vogt's tenure (1951-1961) as national director of the principal proponent of birth control, that birth control was subordinated to the larger issue of population control.[67]

The move from birth control to population control paralleled an earlier transition in reproductive politics, from eugenics to population control.[68] Raymond Pearl and other scientists who wanted to see a rational method for controlling human evolution but rejected the overt racism and methodology of the eugenics movement turned their attention in the 1920s from an analysis of individual breeding patterns to that of the population. This coincided with developments in the field of demography such as the logistic curve modeling population growth. The shift from eugenics and birth control to population control began early in the birth control movement. However the strongest manifestations were visible only later in the century.

International Planned Parenthood Federation (IPPF)

Sanger, relieved of the birth control movement's management in the late 1930s turned her attention to the international arena. She fostered international birth control since the 1920s. She developed overseas contacts in Europe and Asia early in her career. In 1925 she organized the Sixth International Birth Control and Neo-

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[67] Indicative of this shift in the birth control movement, the terms "birth control," "family planning," and population control" became interchangeable. Gordon, 286, 352-353.

[68] Garland Allen, "Old Wine in New Bottles: From Eugenics to Population Control in the Work of Raymond Pearl," *The Expansion of American Biology*, ed. Keith Benson, et. al. (New Brunswick, NJ: Rutgers University Press, 1991), 231-261; Gordon, 269-286, 388-389.

Malthusian Conference, to which she added her term "birth control."[69] Two years later she organized, and her husband largely financed, the World Population Conference in Geneva. Sanger received no official recognition for this conference and the agenda excluded discussion of contraceptives, suggesting the notoriety of her name and controversies over birth control practices. Held in the home city of the League of Nations, it attempted to attract world government to consider the question of population growth.[70] It attracted scientists interested in population and its' relation to geopolitics, such as Henry Fairfield Osborn, Frederick Osborn, Julian Huxley, and Edward M. East.[71]

The League of Nations embraced neither birth control nor population control but during the Second World War its' Economic, Financial and Transit Section relocated to Princeton. In cooperation with the Office of Population Research, established in 1936 with funding from the Milbank Memorial Fund, at Princeton University, it produced several volumes on the demography and expected population of Europe and the Soviet Union.[72] This work influenced the 1946 decision to attach a Population Office to the United Nation's Economic and Social Council; it encouraged nations to gather demographic information for the UN *Demographic Yearbook* and

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[69] Kennedy, 101.

[70] The next world conference discussing population would be held in Rome in 1954. Kennedy, 103.

[71] Caldwell and Caldwell, 7-9.

[72] Among the texts produced were *The Future Population of Europe and the Soviet Union*, by Notestein, et.al. (1944); *The Population of Europe in the Interwar Years* by Kirk (1945); *The Economic Demography of Eastern and Southern Europe* by Wilburt E. Moore (1945); and *The Population of the Soviet Union: History and Prospects*, by Lorimer (1946). Notestein, "Demography in the United States," 664.

destigmatized the revision of previous mistakes.[73] The United Nations limited itself to assembling demographic information, no doubt recognizing its geopolitical significance. To do more would require acknowledging a population problem; this drew heated denials from both Catholics and Marxists. The Catholic Church rejected the notion of contraception or birth control in the papal encyclical *Casti Connubii* (1930), affirming that sexual intimacy within marriage must be procreative.[74] Marxists rejected the Malthusian notion that population can exceed resources, claiming the distribution of resources was at fault. On separate ideological grounds these adversaries found common cause in resisting the notion of a population problem. They provided fodder for Vogt's contention that entrenched thinking stood in the way of resolving the conservation crisis.

Sanger helped reintroduce the subject of international population immediately after the Second World War. She organized the International Congress on Population and World Resources in Relation to the Family held at Cheltenham (UK) in August 1949. Participants attended from seventeen countries and several UN organizations, including Joseph Needham, the first head of UNESCO's Natural Sciences division. Sir John Boyd-Orr, the first director-general of FAO opened the Congress with words vindicating humanity's ability to expand food production in the world to meet the needs of a growing world population, but the subject otherwise was birth control to

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[73] Notestein, 668.

[74] The Catholic Church would again reject contraceptives in *Humanae Vitae* (1968). John T. Noonan, *Contraception: A History of Its Treatment by the Catholic Theologians and Canonists* (Cambridge: Belknap Press of Harvard University Press, 1965), 426-427 and chap. 15 passim.

regulate population levels.[75] Needham told the conference that the hope of "conscious world control of population in relation to natural resources is not an impossible dream, but a certain development having all the authority of social and biological evolution behind it." He reminded the audience that it was "only upon the efforts of men depends the time taken to realise this ideal, and hence the amount of suffering mankind must endure in the intervening period."[76] Huxley concurred with Needham's sentiments and during his tenure as Director-General of UNESCO pressed the United Nations to convene an international conference on population; this finally happened in 1954.[77]

One result of the Cheltenham Conference was the formation of the International Commission for Planned Parenthood that was formally established as the International Federation for Planned Parenthood (IPPF) at the Third International Planned Parenthood Conference (Bombay 1952). It is credited with helping "to create a climate of public opinion that enabled political leaders to accept external assistance," although it consisted of little more than Sanger's persona, a newsletter,

[75] Memo [report] from S. Chandrasekhar to Dr. A. Brodersen, 31 August 1948, File; International Congress on Population and World Resources in Relation to the Family - Cheltenham (U.K.) 1949, UNESCO.

[76] Memo from Honorary Scientific Advisor [Joseph Needham] to Julian Huxley 31 August 1948, File; International Congress on Population and World Resources in Relation to the Family - Cheltenham (U.K.) 1949, UNESCO.

[77] Julian Huxley to Dr. C.P. "Pip" Blacker, File: International Congress on Population and World Resources in Relation to the Family - Cheltenham (U.K.) 1949, UNESCO. The Ecological Society of America asked Vogt to represent it at this meeting. Mrs. Philip W. Pillsbury, "Report of the International Committee to the Membership," delivered at the May 1954 Annual Meeting, Planned Parenthood Federation of America Papers I, Smith College (hereafter PPFA I).

policy statements, and sponsor of international conferences.[78] Sanger was the president of IPPF and this was her project in the 1950s, although she left the administrative work to others. The IPPF was headquartered in London while the Western Hemisphere Region of the IPPF shared office space with Vogt's Planned Parenthood Federation of America in New York. Territorial tensions ensued from this arrangement. Planned Parenthood's Executive Committee in 1953 tried to exact a fifteen percent charge on all contributions channeled through PPFA.[79] Planned Parenthood also interceded, to preserve its own interests, in the choice of Washington DC for an IPPF conference in 1956. When Vogt called a meeting of IPPF officials in New York, Sanger protested. On his part, Vogt thought the IPPF operated undemocratically and treated PPFA shabbily. He disagreed with IPPF's funding priorities, believing that it should allow the PPFA to do basic birth control work in the Caribbean. Birth control was IPPF's primary purpose, he said, and it was more important than clinical studies of diaphragms and spermicidal jellies or research on 'the pill.'[80] These squabbles indicate that IPPF and PPFA were distinct bodies whose exact boundaries remained unclear.

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[78] Reed, 288.

[79] Clarence Gamble to Margaret Sanger, 2 November 1953; Sanger to Gamble 4 November 1953; Sanger to Gamble 10 November 1953; Gamble to Sanger 14 November 1953, Sanger Papers, Library of Congress; Reed, 341.

[80] Vogt wanted the IPPF to disassociate from Clarence Gamble's personally financed field trials. William Vogt to Mrs. Robert M. Ferguson, 25 November 1955, Vogt Papers, DPL. For a biography of Gamble, see Doone Williams, Greer Williams and Emily Flint, *Every Child a Wanted Child: Clarence James Gamble, M.D. and His Work in the Birth Control Movement* (Boston: 1978).

When Vogt arrived at Planned Parenthood Sanger had already turned her attention to international population control. Vogt's tenure at PPFA allowed him to further the cause of birth control and population control. Planned Parenthood Federation of American (PPFA) was the preeminent source of birth control information in the 1950s. During Vogt's tenure the national office strengthened its ties with affiliate Planned Parenthood's around the country, expanded public education and improved medical and research work. However, willingness to cede PPFA's research role to others and a seeming lack of interest in the research the PPFA did sponsor received harsh criticism from an important benefactor, Katherine Dexter McCormick (1875-1967). McCormick funded endocrinological research for a contraceptive pill through the PPFA and accused Vogt of indifference, implying a sexist disregard for her patronage. Certainly he thought a pill was unlikely to happen for years and was proven wrong when the first successful use was announced in *Science* in 1956.[81]

During Vogt's tenure at PPFA the subject of population received increasing attention from various quarters. Vogt worked closely with the newly formed Population Council and acquiesced to its leading position in research. Planned Parenthood was considered controversial and therefore found it difficult to secure research funds from private foundations. The Population Council, created by John D. Rockefeller III in 1952 when the Rockefeller Foundation declined to embrace the

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[81] Armond Fields, *Katherine Dexter McCormick: Pioneer for Women's Rights* (Westport, CT: Praeger, 2003), 266-268, 281-282; Reed, 341-242; Chesler, 432-434.

subject, readily secured grants to study the physiology of human reproduction and for demographic research and training.[82] It had a half a million dollars a year budget for research and demonstrated that "per capita food production [was] actually declining, in part because of inadequate investment by Western nations in developing economies but mainly because of the acceleration of population growth."[83] The Population Council filled a need for research that Planned Parenthood could less readily address.

By the end of the 1950s the changing climate of opinion regarding a population problem entailed organizational changes. Various organizations were formed to promote the idea – the eponymous Hugh Moore Fund that was named for the founder of the Dixie Cup corporation and author of the pamphlet "The Population Bomb," the Milbank Memorial Fund, and the Pioneer Fund, to name a few. Organizationally they lacked the means to transform the wishes of a few individuals into a public mandate for action overseas. President Truman invited General William H. Draper, Jr., a former businessman who had overseen economic recovery programs in Europe, to chair a committee studying United States foreign relations and provided an opportunity to introduce the issue of population to national politics. Draper, a proponent of birth control, requested and received permission to include population in

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[82] Vogt and Frederick Osborn hosted a monthly luncheon for leading population control advocates to share information and to discuss problems. "National Director's Progress Report", presented by Dr. William Vogt at the Annual Membership Meeting of the Planned Parenthood Federation of America 5 May 1954, New York City, PPFA I; Frederick Osborn to Fairfield Osborn, April 14 1954 and Frederick Osborn to Robert Snider, January 7, 1954, Conservation Foundation, 1953-1956, File #79, Box 7, IV3B4.2, Population Council Papers, Rockefeller Archives.

[83] Reed, 287.

his study. Accordingly, his report, released in early 1960, recommended that the United States assist countries, at their request, in implementing population control measures. President Eisenhower accepted the report but said population control ought to be the responsibility of private organizations. Results of a Gallup report suggested the American public supported the Draper recommendations.[84]

In 1960 the Eisenhower administration refused to adopt a policy of foreign assistance for population control. While the American public ostensibly supported assisting other countries with population control there was no vehicle through which to organize that aid.[85] To rectify this, a group of population policy advocates banded together to launch the World Population Emergency Campaign (WPEC). The project began when Hugh Moore, William H. Draper, Jr., Harrison Brown, Will Clayton, Lammot DuPont Copeland, and Bruce Barton hired the public relations firm of Harold L. Oram. The WPEC was conceived as a two-year program to raise awareness about the importance of population control and to raise the necessary funds for the overseas program of recommended by the Draper Report: professional field workers, training programs for doctors and nurses, subsidies for the cost of contraceptive

[84] There was a great deal of talk about the population explosion in the United States since the mid-1950s. Numerous articles made it difficult for Huxley to place articles on the subject as they were preparing to submit the statement. On the other hand, Mentor books published, with Huxley's permission, his article "World Population" *Scientific American* (1956) in conjunction with Malthus' essay and a piece by Frederick Osborn (retired US general, official with the Population Council, president of the American Eugenics Society and cousin to Fairfield Osborn). T.R. Malthus, Frederick H. Osborn, and Julian Huxley, *On Population: Three Essays* (New York: New American Library, 1960).

[85] The situation in 1960 also included a Presidential election between Eisenhower's vice-president Richard M. Nixon and John F. Kennedy, who would become the United States' first Catholic president. Whether Kennedy would first be a Catholic or an American was an issue during the campaign and impacted the population question since the official position of the Catholic Church denied a population problem and thus the need for population control. Critchlow, 45-46.

materials ($100,000 annually), and educational material to use around the world. The WPEC first assembled a small number of potentially generous donors joined by academic and professional leaders for a one-day symposium held at the Princeton Inn in March 1960. Several foreign dignitaries attended the conference, notably representatives from Ceylon, Pakistan, the West Indies Federation, and the People's Republic of China. Conference participants agreed that population was humanity's greatest challenge and announced their intention to help suffering people – upon request – to meet their own population problems. The World Population Emergency Campaign, as a vehicle to initiate population control assistance from the United States on an unofficial basis, brought together wealthy citizens with prominent neo-Malthusians and successfully attracted the attention of a several potential clients.

The World Population Emergency Campaign's success brought a crashing end to Vogt's career with Planned Parenthood. In early 1961 Vogt learned that his services did not satisfy the board but that a final decision was pending.[86] Meanwhile, the World Population Emergency Campaign in conjunction with Planned Parenthood transformed the annual luncheon at the Waldorf Astoria in May 1961 into "The World Tribute to Margaret Sanger" with Julian Huxley serving as master of ceremonies. Huxley spoken at previous Planned Parenthood functions and received the 1959 Lasker Award for his many contributions to the birth control effort. The WPEC's success (it raised nearly $200,000) allowed it to send Dr. Alan Guttmacher

[86] Cass Canfield to William Vogt, 3 March 1961, Vogt Papers, PEB.

to training conferences in Asia and send advisors to Ceylon, Taiwan, and Pakistan.[87] This luncheon marked a new era in the history of Planned Parenthood, in which they broke any residual ties linking birth control with female empowerment, moved into the field of population control, and one month later asked Vogt for his resignation.[88] The board of directors wished for a new leader now that there was broader acceptance of birth control and population control; it also wished for a leader that would implement the very programs for which Vogt had campaigned for so long.[89]

Evidence that birth control and population control did indeed enjoy greater acceptance comes from a publicity campaign in which Julian Huxley participated to pressure the United Nations into discussing the problem of population. Organized by Cass Canfield, Huxley's New York publisher at Harper & Row and president of Planned Parenthood, the plan proposed to generate publicity through a "Statement of Conviction" signed by Nobel laureates and prominent individuals and presented to the Secretary-General of the United Nations in 1960. The statement requested the United Nations to discuss population, and thereby declare it *to be* a problem, and to begin a discussion of how it could be addressed. The final paragraph of the statement calls for the UN to "take the lead in establishing and implementing a policy designed to limit population growth the world over." Huxley and Cass hoped this statement by

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[87] Minutes of the Eighth Meeting of the Steering Committee – World Population Emergency Campaign 15 September 1961, Planned Parenthood Federation of America II, Smith College.

[88] PPFA represented the victory of the family planning perspective of birth control that emphasized medical and economic needs, rather than the view that birth control was a woman's right. McCann, 192-198.

[89] Vogt found the decision difficult but left on good terms, accepting a position on Planned Parenthood's national board of directors.

reasoned individuals, already respected in the court of world opinion would influence the United Nations to take up a subject that had been routinely stymied in the 1950s. They gathered 172 signatures of "scientists, writers and political leaders" from nineteen nations including thirty-nine Nobel Laureates among whom were such notable scientists as Arthur H. Compton, Otto Hahn, Hermann J. Muller, Bertrand Russell, and William Shockley. Also among the signers were former Secretary of State Dean Acheson, former First Lady Eleanor Roosevelt, ecologists (e.g., F. Fraser Darling, Paul B. Sears), astronomers and physicists (e.g., Harlow Shapley and Harrison Brown), paleontologist G.G. Simpson, theologians (e.g., Reinhold Niebuhr), writers (e.g., Aldous Huxley, Somerset Maugham), and intellectuals (e.g., Jacques Barzun, Arnold Toynbee, Arthur Schlesinger, Allan Nevins and Lewis Mumford). With these signatures, Huxley and Canfield possessed what must have seemed to them the necessary validation to publicly present their convictions regarding population. While the statement did not call for the United Nations to implement population control measures, the general assumption was that once the matter of population was discussed then the necessity for population control would become clear. Huxley flew to New York City in November 1960 and joined Cass Canfield for a press conference at UN headquarters where they hand delivered the statement to the office of the Director General, Dag Hammarskjold.[90] The following summer, as Vogt

[90] Two days after the press conference Huxley appeared on the NBC prime time television show *The Nation's Future* discussing "Is International Birth Control Needed to Head off World Disaster?" Later that month he taped a public affairs television show produced by WCAU-TV, a CBS owned station in Philadelphia. *The House We Live* In explored human impact on the physical environment and Huxley contributed with a discussion on "the predicament of western man and the case for scientific naturalism." It was picked up by National Educational TC and Radio Exchange for free distribution to

resigned from Planned Parenthood, the governments of Sweden and Norway asked that the Sixteenth Session of the UN General Assembly to consider the question of "population growth and economic development;" Ghana, Greece, Pakistan, and Tunisia supported the request.[91] After some debate the General Assembly agreed to discuss the population question and by 1969 the United Nations Fund for Population Activities (UNFPA) was operational. The year before the International Conference on Human Rights (1968) recognized family planning as a human right.[92] Vogt's work was seemingly over. The freedom from excessive births that he added to the Four Freedoms in 1948 had received the endorsement from the international community. The objective really had changed and no longer was his personal style appropriate.

Conclusion

Over the span of Vogt's lifetime the subjects of wildlife conservation and population control changed dramatically. By the end of the 1960s the ideas that Vogt presented in 1948 had become part of the popular discourse regarding conservation; it required a scientific basis and both population control and technical assistance should be available for countries wishing to curb population growth that threatened economic development. Vogt played a role in broadcasting these ideas and it should not be surprising that his book, *Road to Survival*, influenced Paul Ehrlich, author of

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their fifty member educational stations. George Dessart to Julian Huxley, 18 November 1960, 36:5; Dessart to Huxley, 12 January 1961, Huxley Papers.

[91] Johnson, 18.

[92] Johnson, xxvii-xxviii.

Population Bomb (1968), who took up the campaign for population control. Organizationally, Vogt was involved with two organizations critical to the public education campaigns necessary for the acceptance of the still disputed issues of population control and wildlife conservation, the International Union for the Protection of Nature (IUPN), later known as the International Union for Conservation of Nature and Natural Resources (IUCN) and Planned Parenthood Federation of America (PPFA). IUCN was initially reluctant to adopt a formal position on population control. It was a sensitive international issue in the 1950s when both Communist and Catholic countries lined up against Malthusianism. Implicitly, however, IUCN accepted that low population levels were required for wildlife conservation in regions such as east Africa. Leaders at Planned Parenthood Federation of America, which Vogt joined in 1951, wanted to instigate an international discussion of population control. Given Vogt's background in wildlife ecology, population control and birth control were for him a question of species survival, not of individual choice for a woman or of the biological liberation that divorced sexual intercourse from childbearing.

The underlying connection between wildlife conservation and population control was the premise of Vogt's human ecology. Humans were a force of nature and to control the changes happening to natural resources it would be necessary to control, at the very least, human population growth. The desire to protect nature shared by Vogt, Darling, Huxley, and Osborn was also a desire to direct its evolutionary future.

CONCLUSION

William Vogt issued a stridently neo-Malthusian statement in the wake of the Second World War. Vogt was part of a cohort of conservationists and ecologists (Darling, Osborn, Huxley), who embraced the idea that humans were part of nature. His training as an ornithologist and his ecological research shaped the way in which he understood human behavior, and the way he wanted to re-shape it to conserve natural resources. It is Vogt's strong beliefs regarding birth control and population control that governed his later years and it is important to recognize that this was consistent with his conservation ethic. Vogt's ideas regarding land use may be interpreted as radical and anti-capitalist but ultimately they served to rationalize, and promised to maintain, the status quo of American abundance and political stability. Underpinning this project were notions of the nation's health defined in terms of the land and land use rather than the body.

The connections between Malthus' theory and capitalism are long-standing. Malthus' theory and his personal efforts shaped Great Britain's response to the starvation of thousands in Ireland (1846-1849).[1] Social Darwinism, a theory embraced by leading nineteenth century industrialists, suggested that humans competed against each other and resonated with Charles Darwin's theory of evolution by natural selection that was influenced by Malthus's writings. In the twentieth century, modernization theory and the theory of demographic transition, both

[1] Not surprisingly, the Soviet Union seized upon the idea of "Darwin without Malthus" presented in the writings of Peter Kropotkin (1842-1921) that emphasized mutual aid. Ross, 31; Daniel Todes, *Darwin without Malthus: The Struggle for Existence in Russian Evolutionary Thought* (New York: Oxford University Press, 1989).

influenced by Malthus, provided the context that developed the international population apparatus. At the same time, the neo-Malthusian conservationists cautioned against allowing population growth to continue in underdeveloped countries. By the end of the century, the rhetoric of neo-Malthusianism and environmental sustainability would justify biotechnology's extractive expansion of international industrial agriculture. It is these connections of conservationists to a conservative enterprise, as well as the critiques of industry that foreshadow later environmentalism, that need to be explored for a deeper appreciation of the post-war period of environmental history.

Malthus originally invoked nature to justify social and political policies and his ideas have been invoked by environmentalists and industrial agriculturalists. This flexibility is reminiscent of the way in which early twentieth century eugenic concerns were endorsed across the political spectrum and transformed themselves from eugenics to population control. The connections between pre-war eugenics, conservation, and population control warrant elaboration. Eugenicists and population control advocates worried about the health of the nation in terms of the body politic. Eugenicists thought that immigrants and some backwoods Americans carried the seeds of degeneration; they threatened the nation's well-being should they be allowed to propagate in the United States. The eugenicists were, if you will, preservationists, seeking to preserve the supposedly superior stock of native-born Americans. Neo-Malthusian conservationists viewed the populations of Southern countries with apprehension, seeing in their growing size the seeds of their own destruction. Feeding

the growing populations would deplete the natural resources, denuding the landscape of resources, whether tropical fruits or wildlife vistas, that would no longer be available for potential American consumption. This would, from Vogt's perspective, be inherently unhealthy for the United States.

Three decades before *Road to Survival* (1948), paleontologist Henry Fairfield and lawyer Madison Grant, both noted eugenicists, formed the Save the Redwoods League (1918) to stop logging in the old growth forests.[2] Both of these wealthy men endorsed industrialization, from which they greatly profited but they were still inclined to preserve vestiges of the American landscapes. These vestiges were selective, as they did not include Americans who failed to adapt to the modern industrial economy and who became the subject of eugenic field reports and even sterilization campaigns. Their concern was to preserve their vision of who was American and what constituted the American landscape. They also wished to allay fears that urbanization and industrialization were potentially emasculating; these men earned membership in the Boone and Crockett Club by collecting the trophy heads of big game. The redwoods were possibly a remnant of primeval nature against which they tested their fitness in what they took to be the pre-industrial world. In the era of population control, conservationists retained their desire for contact with wildlife

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[2] Susan R. Schrepfer, *The Fight to Save the Redwoods: A History of Environmental Reform 1917-1978* (Madison: University of Wisconsin Press, 1983), 43-45. Donna J. Haraway, connects the individual's health with that of the nation in her discussion of "Teddy Bear Taxidermy" at the American Museum of Natural History in *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (New York: Routledge, 1989), 26-58.

against which they might pit themselves armed with a camera and ecological knowledge.

The post-war conservationists who advocated population control no less than the pre-war eugenicists wished to preserve their vision of white middle-class American life by maintaining the nation's health. Achieving that health took different forms, although both were optimistic that science could improve human life, either by improving the hereditary basis of Americans or through planning the use of natural resources based on ecological knowledge of the land and its denizens. They were both pessimistic about simply allowing nature to take its course; intervention was required. Both were ultimately racist, with eugenicists critical of the abilities of new immigrants and the American remnants of its pre-industrial society to engage in the United States' modern industrial society. Conservationists, on the other hand, proposed population control for the Southern hemisphere to protect their vision of nature from indigenous peoples who might wish to engage in the modern industrial economy. Eugenics and conservation both emphasized the potentially destructive nature of reproductive choices that could no longer be left to the individual; reproduction needed to serve the state's interests. Both eugenicists and conservationists wanted to preserve the nation's health, either by protecting its germ plasm from pollution or by protecting its natural resources from inappropriate exploitation; while the eugenicists wanted to keep out immigrants, the conservationists wanted to curtail population growth in foreign countries. Either way,

eugenicists and population control wanted to protect their vision of American life and the United States' place in the global economy.

The interest of conservationist who advocated population control diverged from the perspective of neoliberal globalization that emerged during the Cold War. While the neoliberals were interested in population control they were concerned with expanding the economy rather than conserving natural resources. Vogt's international conservation was an extension of the expertise and rational management that he employed in Perú and was indicative of the New Deal's lingering influence in the early Cold War period. Conservationists who joined the IUCN wanted access to other nations, to survey their resources and to plan their land use before the indigenous peoples could destroy it by industrializing to participate in the global economy. In the case of East Africa, they wished to preserve the western myth of wild Africa. Gregg Mitman explains that viewers in Western Europe and North America wished to experience wildlife through the mediums of national parks and wildlife films. Wildlife and western perceptions of authentic "wild Africa" were highly desirable commodities that competed with pastoral Africans for the use of the land.[3] Since Vogt and his cohort truly believed that Africa could support only a small population, they wanted to protect the land from any short-term gains that industrialization might bring. This would preserve wildlife for visual consumption by Americans while the low population levels that would follow from population control programs and the absence of industry would maintain an abundance of resources. American prosperity,

[3] Gregg Mitman, *Reel Nature*, 191-202.

defined by its standard of living, would, with knowledge gleaned by ecologists, be protected at the expense of people elsewhere. Vogt thought that ecology could be instrumental in maintaining the current economic and social status of nations around the globe.

Vogt strongly advocated a privileged place for ecologists in the post-war world. The idea that ecologists can offer unique and important knowledge was proposed in 1933 by Paul B. Sears as he watched the dust blow past his window at the University of Oklahoma. Sears, however, wanted local communities to employ the expertise of ecologists and adamantly believed policy must be determined on a voluntary basis.[4] As Congress began to implement legislation to bring relief to countless Americans dislocated by the economic and ecological disasters, Sears remained cautious about the scope of an expert's power to influence on policy without recourse to his or her constituents. Vogt's willingness to assign greater authority to ecologists may be a natural pessimism regarding human behavior. Or perhaps it was a conviction, stemming from his experiences in Perú and elsewhere in Latin America, that conservation of natural resources meant managing humans. He had twice witnessed the wartime spirit of patriotism and American acceptance that there were times when the nation-state needed to act for the greater good. Vogt assigned ecologists to the task of saving the nation, and indeed the world, from the impulse to destroy itself through the misuse of natural resources.

[4] Paul B. Sears, *Deserts on the March* (Norman, Oklahoma; University of Oklahoma Press, 1959), 162-163.

Vogt's faith that the ecologist's knowledge could enhance American life expresses his technocratic optimism, although he clearly thought there were limits to what science could do to increase agricultural yields without causing lasting damage. He was no different from many Americans who embraced the scientific expertise that had helped win the war, nor from the scientists who believed they were uniquely suited to provide advice.[5] Vogt believed that the ecologist, unlike the engineer, had a holistic view of nature's operation and could make better decisions. Yet, he appealed to the public to embrace Leopold's land ethic, asking them to change their behavior, momentarily dropping the elitism that had characterized conservation. His threat to impose land use regulations suggests he lacked faith in building a grassroots consensus. On the other hand, Vogt truly did wish for popular, broad-based support for his ideas if only as a way to influence policy-makers. The ambiguities in his attitude toward the American decision-maker suggest an incipient understanding that the changes he sought could not be imposed without popular support. Grassroots activism would become a defining feature of the modern environmental movement but did not play a role in Cold War conservation. Vogt's work resonated with a number of modern environmentalists who responded to his emphasis upon the limits imposed by nature and his advocacy of population control. For Vogt these ideas went

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[5] Physicists responsible for creating the atomic bomb engaged in the postwar debate on nuclear energy while receiving public praise and then criticism. Robert Jungk, *Brighter than a Thousand Suns: A Personal History of the Atomic Scientists* translated by James Cleugh (New York: Harcourt, Brace, 1958); Paul S. Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age* (New York: Pantheon, 1985).

together with his managerial approach to nature but for later environmentalists it meant that industrial exploitation must be curtailed.

Certain conclusions can be drawn from studying Vogt's life and work. Progressivism's emphasis upon rational use of natural resources endured into the post-war period even as quality of life issues emerged in environmental thinking. However, when combined with the idea that humans were part of nature, rather than separate from it, the management of natural resources extended then to the management of humans. Finally, ecological concern with patterns of human reproduction suggests that concurrent with the ready availability of birth control to allow women to make individual choices, reproduction became an international concern.

Vogt's work relies on the notion of scientific expertise. While sounding pessimistic, Vogt, in fact, wanted to secure the American victory by ensuring an adequate food supply through the conservation of natural resources. He wanted to maintain the vaunted American standard of living but thought that only with a sharply reduced population could other nations also enjoy it. Vogt ultimately called for a new way of looking at global resources just as Cold War tensions cut off American access to Soviet bloc countries and colonies planned for statehood. The expertise of ecological knowledge would tell people how to use their natural resources, replacing traditional knowledge. However, this rational management of natural resources extended knowledge of the natural world to the social world, thereby bringing people within the conservation strategy. He was by no means unique in his convictions. He

was part of a cohort of individuals that included Frank Fraser Darling, Julian Huxley, and Fairfield Osborn. Vogt, in writing *Road to Survival,* articulated the conservation sensibility of his day, which makes this study a valuable contribution to environmental history.

APPENDIX A

LIST OF COLLEGES AND UNIVERSITIES THAT ADOPTED *ROAD TO SURVIVAL* AS A TEXT

Dartmouth College
Emory and Henry College
Florida State University
George Peabody Teachers College
Goddard College
Hotchkiss School
Hunter College
Indiana University
New York University
Ohio State University
Princeton University
Stanford University
State College of Washington
State Teachers College, Gorham, ME
State Teachers College, Oneonta, NY
State Teachers College, Stevens Point, WI
University of Iowa
University of Missouri
University of North Dakota
University of Pittsburgh
University of Texas
University of Utah
University of Virginia
University of Wisconsin
University of Wichita
Western State College, Macomb, IL

Source: Memo from the College Division of William Sloane Associates, Inc., 18 November 1948, Box 2:2, Vogt Papers, DPL.

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George Evelyn Hutchinson Papers, Yale University Library

Sir Julian S. Huxley Papers, Rice University (Huxley Papers)

International Union for the Conservation of Nature Papers, UNESCO Archives

Planned Parenthood Federation of America Papers, Smith College (PPFA I and II)

Rockefeller Foundation Papers, Rockefeller Archives Center

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