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I. Introduction

A persistent theme in the history of the American West is of the question of what limits, if any, the region's arid and semiarid climates and harsh landscapes impose on sustainable human settlement. As Carry McWilliams noted in his pioneering eco-history of the Los Angeles basin, "the region is a paradox: a desert that faces an ocean."[1] Many Westerners have long recognized the problems of putting people in generally warm, but not naturally well-watered areas with poor soils. But, for over a century and one-half, the West has resoundingly answered the limits question, no; there are no climatic or landscape limits on our growth!

To settle the West, its promoters harked back to the book of Genesis rather than the Hebrew prophets. They imagined a modern Garden of Eden in a region initially perceived as incapable of supporting a large permanent population because of its harsh, non-northern European environment.[2] To overcome the challenges that aridity and semi-aridity posed to the settlement of most of the West, settlers relied first on faith reflected in beliefs such as "rain follows the plough" and then on faith in science and technology, eventually supported with generous federal government subsidies. Two wars destroyed our unbounded faith in the idea of scientific and technological progress. Nonetheless, faith in human ingenuity to outwit nature still drives our natural resources and land use policies.

After the collapse of large-scale gold and silver mining, cattle ranching, and dry-land farming in California, the arid West turned to irrigated agriculture and raw commodity production to sustain itself[3] and the semiarid areas of the

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1. CAREY MCWILLIAMS, SOUTHERN CALIFORNIA COUNTRY: AN ISLAND ON THE LAND 6 (1946).

2. For a good history of the settlement of the inhospitable Imperial Valley, see EVAN R. WARD, BORDER OASIS: WATER AND THE POLITICAL ECOLOGY OF THE COLORADO RIVER DELTA, 1940-1975 (2003).

3. *See* PISANI, TO RECLAIM A DIVIDED WEST: WATER, LAW, AND PUBLIC POLICY (1992); DONALD PISANI, WATER, LAND AND LAW IN THE WEST: THE LIMITS OF PUBLIC POLICY, 1850-1920 (1996).

Great Plains turned to dry land farming. In the Twentieth Century, the constitutional formula of "one state = two senators" allowed the West to build on the tradition of public land disposal to capture a large share of federal monies. As Gerald Nash has argued, during World War II, "essentially, the federal government promoted the restructuring of the natural resource-based colonial economy into a technologically oriented and service economy stimulated by massive federal expenditures."[4] Federal spending and subsidies, along with technologies such as air conditioning,[5] helped the West to develop as a series of industrial, federal and military,[6] and distribution urban oases. These have now morphed into more widespread archipelagos, ironically increasingly less dependent on the traditional commodity production activities.[7]

The decline of German geographical determinism reinforced the idea that there are no limits to human settlement.[8] Historians have long speculated about the relationship between climate and social organization.[9] Geographical determinism allowed historians to explain the distinctive cultural and economic patterns that developed in particular regions. Environmental determinism paid particular attention to the role of climate on culture and society. However, this simplistic cause and effect relationship was rejected in the United States in the 1920s, and it died after World War II. Nazi Germany used earlier work by German scholars to support racial explanations for alleged superiority of northern European culture. As a result of this misuse of science, the emphasis on human adaptation to climate and the landscape gradually receded from the story of "civilization,"[10] although it has begun to reappear in a more humble, complex and non-deterministic form.[11]

Submerged as it is, the question of limits returns with events such as economic down turns and rapid economic booms or droughts. However,

4. GERALD NASH, THE FEDERAL LANDSCAPE: AN ECONOMIC HISTORY OF THE TWENTIETH CENTURY WEST 52 (1999).

5. The widespread adoption of air conditioning after World War II is another important component of the rapid urbanization of the southwest. *See, e.g.*, GAIL COOPER, AIR CONDITIONING AMERICA (1998); MARSHA ACKERMAN, COOL COMFORT: AMERICA'S ROMANCE WITH AIR-CONTINUING (2002).

6. GERALD D. NASH, THE AMERICAN WEST TRANSFORMED: THE IMPACT OF THE SECOND WORLD WAR 75-87 (1985).

7. *See Report of the Western Water Review Policy Advisory Commission*, WATER IN THE WEST: CHALLENGE FOR THE NEXT CENTURY, Chapter 2 (1998).

8. *See* Richard Peet, *The Social origins of Environmental Determinism*, 73 ANNALS OF THE AM. ASS'N OF GEOGRAPHERS 309 (1985).

9. E.g., NORMAN POUNDS, A HISTORICAL AND POLITICAL GEOGRAPHY OF EUROPE (George G. Harrap & Co. 1947)

10. I.G. SIMMONS, ENVIRONMENTAL HISTORY: A CONCISE INTRODUCTION 179 (1993).

11. E.g., W. GORDON EAST, THE GEOGRAPHY BEHIND HISTORY: HOW PHYSICAL ENVIRONMENT AFFECTS HISTORICAL EVENTS (1965).

western Jeremiahs have mainly been ignored, marginalized or demonized, as have other, more recent expounder of the severe limits on the planet's ability to sustain human life. Limits were an academic subject, but not a subject for serious policy. However, the limits question has now become the subject of serious, respectable debate as the role of government in promoting regional growth recedes at the same time that population growth in many water-short areas continues to surge.[12] Much of the debate is driven by the growing realization that the Reclamation Era has ended and that many areas will have to live within limited water budgets. In addition to drought fears, other problems such as air pollution and urban sprawl contribute to the revival of interest in the limits question. The prospect that global climate may cause a net decease in water availability during the peak irrigation season adds another layer to the limits debate.[13] In states such as California, New Mexico, and Nevada the projected gap between growing urban demands and available supplies is high on the political agenda.

The Department of the Interior's decision to limit California to its Colorado Compact Entitlement has had many repercussions. The most important long term repercussion is that the decision signals the end of the Reclamation Era, a time when the answer to water shortages was another dam and reservoir.

This essay provides a brief speculation about the modern relevance of the rejected ideas of those who envisioned more modest settlement patterns in the West. It examines the thinking of several dissenters from our unlimited faith in technology to outwit nature: John Wesley Powell, Morris Cook, Thomas Griffith Taylor, and the greater western writer, Wallace Stegner.

This essay argues that these former dissenters from the prevailing unbridled optimism and disregard for the fragile western landscape offer lessons that have relevance today. To extract these lessons, however, their thinking must be purged of any romantic notions of a colonial West and reinterpreted in light of both the urban West and the reemerging frontier West.

The first lesson that the dissenters teach us is that the West's climate and landscapes do not pose insurmountable barriers to large-scale urban settlement. As preeminent mid-20th century chronicler of the West, Wallace Stegner said toward the end of his life, "California . . . has the water and the climate and the soil to support a population like Japan, if it has to."[14] This lesson reflects the hard truth that thanks to technology, we can put a great many people in most of the West.

The second and deeper lesson is that limits pose real resource constraints on settlement. As population increases and urban conurbations spread ever outward, the resource use choices that face the West become tougher because

12. *Water Resources and Their Limits*, 2003 A.B.A. SEC. NAT. RESOURCES & ENV'T 18 (2003). In 2003, the ABA Section on Environment, Energy and Natural Resources publication, Natural Resources & Environment, was devoted to the limits issues.

13. Wilkinson, Climate

14. WALLACE STEGNER & RICHARD W. ETULAIN, CONVERSATIONS WITH WALLACE STEGNER ON WESTERN HISTORY AND LITERATURE (Revised ed. 1990).

their opportunity costs increase. Those who thought deeply about limits help us understand the continuing consequences of the resource use choices that we have made and the possibility of alternative choices, as well as how much western settlement has depended on federal subsidies that are hard to justify.

The late David Gaines, who led the fight to save Mono Lake, understood the effects of resource choices. His aim was to make people throughout California realize what would be lost if the lake continued to sink. If Californians, and particularly Angelenos, weighed those values, understood them deeply, and decided to sacrifice them for convenient and inexpensive water, Gaines would (so he said) accept the choice. But it had to be a knowing choice.[15]

The third lesson is that limits manifest themselves through subtle combinations of political choices, market forces, and climatic factors rather than in a more dramatic apocalyptic fashion some suggest. The early environmental movement was filled with gloomy predictions of an immediate apocalypse that have not come to pass. However, the re-emergence of the frontier in the northern High Plains and other areas of the West shows that both individuals and governments are unwilling to make the sacrifices and investments to sustain settlement in all harsh landscapes.

II. From Desert To Eden

To understand the limits debate, it is necessary to understand the changes in the perception of the West that occurred in the 19th Century and how these changes made it difficult to develop a climate-based settlement policy. The Trans-Mississippi West, acquired from France by the Louisiana Purchase, was originally thought of as uninhabitable and akin to the fearsome steppes of Central Asia. In the official report of his exploration of the Upper Mississippi River and the Rocky Mountains, Major Stephen Long characterized the treeless Great Plains as the Great American Desert[16], a view that largely prevailed until after the Civil War. For example, in 1855 Congress appropriated $30,000.00 for the War Department to import seventy-five camels from Tunis and Syrma for use in the southern Great Plains.[17]

The desert myth began to break down in the face of the subsequent scientific explorers who developed a more optimistic view of the West's potential. They revealed a much more complex picture of the area from the Missouri River to the Sierra Nevada and Cascade mountains. John C. Fremont's expeditions and reports played a large role in dispelling the desert myth. For

15. JOHN HART, STORM OVER MONO: THE MONO LAKE BATTLE AND THE CALIFORNIA WATER FUTURE 184 (1996).

16. *See* WILLIAM GOETZMANN, EXPLORATION AND EMPIRE: THE EXPLORER AND THE SCIENTIST IN THE WINNING OF THE AMERICAN WEST 60 - 64 (1994).

17. FREDERICK MERK, HISTORY OF THE WESTWARD MOVEMENT 246-247 (1978).

example, Brigham Young relied on Fremont's information when he moved the Mormons from Illinois to Utah in 1845-1847.[18]

However, science was overcome by science again as the desert myth was followed by an even more scientifically erroneous theory designed to spur large-scale emigration: "rain follows the plow."[19] The theory held that plowing the ground would make it more susceptible to rain. The emergence of the theory coincided with high rainfall years on the plains. It took the drought of the 1890s to dispel the myth.[20]

After the "rain follows the plough" theory was debunked, in part by John Wesley Powell's work, a broader theory emerged and established deep roots in the West. This new theory asserted that man could overcome any limits to settlement posed by arid or semi-arid climates through technological adaptation and growth. The Upper Midwest turned to dry farming but the Inner-Mountain West and California turned to irrigation made possible by large carry-over storage reservoirs. During the Reclamation Era (1902-1968)[21], the federal government transformed a program originally intended to benefit small farmers into a regional development program that supplied water and cheap power to urban interests, as well as to irrigators.

The Reclamation Era is over and we are now in the era of reallocation and management. However, the principle that water should not limit growth has survived the end of the Reclamation Era. The following sketches of the four dissenters illustrate the difficulties of raising the question of limits, but they also illustrate the costs of over-reliance on the idea that we can always outrun nature.

III. Four Dissenters From The Geography Of Hope

A. John Wesley Powell: Prophet of ?

If John Muir is the patron saint of modern environmentalism, John Wesley Powell is the patron saint of the idea that western settlement should be adapted to the region's climate and soil rather than visa versa. Today, Powell is best known as the

18. D.W. MEINIG, 3 THE SHAPING OF AMERICA: TRANSCONTINENTAL AMERICA 93 (1998).

19. The idea is traced to Josiah Gregg's book, COMMERCE ON THE PRAIRIES (1844). Gregg was one of the first to articulate the idea that extensive cultivation of the earth might contribute to the multiplication of showers. Ferdinand V. Hayden, Director of the Geological and Geographical Survey of the Territories, gave the theory scientific credibility in his first report to the Secretary of the Interior.

20. *Id.* at 23.

21. The idea that the Reclamation Era has ended remains heresy in much of the West, but the reality is that the defeat of the two cash register dams at either end of the Grand Canyon in 1968 and the passage of the Wild and Scenic Rivers Act in that same year marked the end of the Reclamation Era. The Era lingered for another twenty years in theory, but President Carter's 1977 hit list became reality in the domestically fiscal conservatism of the Reagan years. In 1986, the Bureau of Reclamation, in a move analogous to the fall of the Soviet Union in 1989, renounced state capitalism and took on the role of resource manager.

first person to navigate the Colorado River through the Grand Canyon[22]. He is also known for his unsuccessful efforts to design a rational land and water policy around aridity[23], or more accurately, highly variable water supplies. Almost alone among his contemporaries, he looked at the arid region and saw neither desert nor garden. What he saw was a single compelling component that the region possessed: except in local island areas, its rainfall was less than twenty inches a year. Powell took those twenty inches, with slight modifications for the particularly concentrated rainfall in the Dakotas, to be the minimum needed to support agriculture without irrigation.[24] His famous *Report on the Lands of the Arid Region* concluded that only a small percentage of the West could be irrigated, and thus settlements should be concentrated and organized by cooperative irrigation districts. He pressed this claim at the Second Irrigation Congress in 1893 to the disgust and boos of the faithful.

The federal government and the West rejected Powell's effort to promote a rational and ultimately modest settlement policy based on the division of the West into hydrologic basins and irrigation colonies. His efforts to use science to break down both tradition and the general feeling that it was unpatriotic for a Westerner to admit that the country was dry[25] were rebuffed by Congress. Nonetheless, Powell's proposals for western land and water policy present the first serious effort to propose a sustainable settlement policy, and thus they remain the models for sustainable alternatives to the historic encouragement of unlimited and unplanned growth. Walter Prescott Webb and Wallace Stegner carried forth Powell's legacy,[26] which remains at the core of modern environmental thought and rhetoric regarding resource limits.[27]

Powell remains very relevant because some of his predictions are slowly materializing. Irrigation is not the foundation of much of the West; it is becoming a

22. The most gripping account of the journey remains, WALLACE STEGNER, BEYOND THE HUNDREDTH MERIDIAN: THE EXPLORATION OF THE GRAND CANYON AND THE SECOND OPENING OF THE WEST (1953).

23. JOHN WESLEY POWELL, REPORT ON THE LANDS OF THE ARID REGION OF THE UNITED STATES (Wallace Stegner ed. 1962). DONALD WORSTER, A RIVER RUNNING WEST: THE LIFE OF JOHN WESLEY POWELL 337-380 (2001). Worster, Powell's latest biographer and a noted environmental historian, argues that Powell was impressed by the Mormon communitarian society that flourished in Utah in the 1870s.

24. STEGNER, *supra* note 23, at 223-224.

25. STEGNER, *supra* note 23, at 321.

26. WALTER PRESCOTT WEBB, THE GREAT PLAINS (1931). *See also* WALLACE STEGNER, THE AMERICAN WEST AS LIVING SPACE (1989).

27. J. DONALD HUGHES, AN ENVIRONMENTAL HISTORY: HUMANKIND'S EMERGING ROLE IN THE COMMUNITY OF LIFE 209-211 (2001). *See also* CHARLES SOKOL BEDNAR, TRANSFORMING THE DREAM: ECOLOGISM AND THE SHAPING OF THE ALTERNATIVE AMERICAN VISION (2003). This thinking can be traced in New Mexico water publications such as NEW MEXICO ENVIRONMENTAL LAW CENTER, LIVING WITHIN OUR MEANS: A WATER MANAGEMENT POLICY FOR NEW MEXICO IN THE 21ST CENTURY (1992); DESIGNWRIGHTS COLLABORATIVE, INC., WATER & PEOPLE IN NEW MEXICO (1984).

steady-state or niche culture. In 1991, only Montana and Washington State had more then 10% of their land in crop production. In 1993, only three states—California, Colorado, and Idaho—had more than a million hectares under irrigation.[28] The amount of land dedicated to irrigation is shrinking in almost all western irrigation areas including California, Colorado, Kansas, Oklahoma, and Texas. Irrigated agriculture will eventually have to make hard choices about its future survival in the face of powerful counter-domestic and international market trends. Irrigated agriculture will have to accept the prospect of occupying a more limited, concentrated space in the West- as Powell envisioned.

B. Morris L. Cooke: Proponent of a Sustainable Great Plains

The unsuccessful effort of New Deal planners to develop a scientific response to the Dust Bowl of the 1930's illustrates Powell's initial marginal influence. This is a classic case of the historic refusal to develop settlement policies based on inherent limits. However, the continuing tragedy of the Great Plains illustrates the need to pay more attention to Powell. In 1935, a high level committee was formed to propose remedies for the ecological and social disaster that we call the Dust Bowl.[29]

The Committee followed Powell's classification of the region, an area outside of rain islands in the mountains, and identified the lack of rainfall as the fundamental reason that "[t]he agricultural economy of the Great Plains will become increasingly unstable and unsafe . . . ."[30]. Its chair was Morris L. Cooke, one of a small group of New Dealers who tried to reorient United States agricultural policy in a way that we would now define as sustainable. Cooke was the protégé of Gifford Pinchot in Pennsylvania. Cooke was also the architect of a program of low electricity rates and rural electrification in Pennsylvania and was recruited by then Governor Roosevelt to become a member of the New York Power Authority. After Roosevelt became President, Cooke became the head of the Rural Electrification Administration. In 1936, Cooke was made the Chairman of the Great Plains Drought Area Committee. Its members included some of the New Deal's most influential thinkers and students of rural land and natural resources policy such as Hugh H. Bennett, Chief of the Soil Conservation Service, and Rexford Tugwell, who held various positions in the Department of Agriculture. Tugwell, a member of Roosevelt's Brain Trust, was the principal proponent of the theory that American agriculture was primitive compared to industrial production and that the nation suffered from efforts to farm too much marginal land.

The well-known *Report of the Great Plains Drought Area Committee* recommended a land use policy for the Great Plains based on the inherent limitations of the region

28. Dick A. Auld, *Development of New Crops in the Western United States* 95, *in* NEW CROPS, (J. Janick and J.E. Simon eds. 1993).

29. Studies include DONALD WORSTER, THE DUST BOWL (1979); R. DOUGLAS HURT, THE DUST BOWL (1981).

30. 1936 REPORT OF THE GREAT PLAINS DROUGHT AREA COMMITTEE, 8.

with respect to intensive agriculture and human settlement—what we would now call genuine environmentally sustainable development. Following Powell, the Committee stated directly that humans must adapt to the harsh, unforgiving climate of the Great Plains, not vice versa through withdrawal and concentration. The basic cause of the present Great Plains situation is the attempt to impose a system of agriculture upon a semi-arid and arid region using methods that, on the whole, are suitable only for a humid region.

The Report addressed the issue of carrying capacity with a level of frankness that would be hard to find in today's government reports.[31] Whether or not the region can adequately support the population now residing within its limits is a question that cannot be answered at present. In the long run, a transfer from cropping to grazing would undeniably reduce the population in some areas.[32] This bold diagnosis of the partial withdrawal of settlement was too far ahead of its time. Rather than address the root of the problem, we implemented incremental measures. President Franklin Roosevelt considered himself a forester and saw planting trees as the answer to almost all pressing problems of land degradation. In the end, more modest, incremental responses such as the widely praised shelter belts were implemented, creating the current dysfunctional rural welfare economy that is sustained only by the subsidies that our irrational federal system produces. New farming methods such as fallowing, greater crop diversity, contouring, and stubble retention were put in place along with the famous shelter belts.

Almost seventy years later, the bill for this timidity has come due. The genius of United States settlement policy, compared to similar countries such as Australia, Brazil, and Canada is that it settled all parts of the United States' land mass (with the except of Alaska). However, the idea that the same settlement pattern could be repeated endlessly must now be reevaluated. The depopulation of the region (and other rural areas) is now a major social issue.[33] But, unlike the

31. *See e.g.*, ALLEN TYRCHNIEWICZ & ART WILSON, SUSTAINABLE DEVELOPMENT FOR THE GREAT PLAINS: POLICY ANALYSIS (Int'l Institute for Sustainable Development. 1994). This Canadian study of the Prairie Provinces is a thoughtful analysis of the factors that should be taken into account in evaluating the sustainability of agricultural production in this region, but calls only for the development of a sustainability index.

32. REPORT, *supra* note 31, at 14.

33. The United States Bureau of the Census defines a frontier county as one with less than 7 persons per square mile. Montana has 47 such counties, South Dakota 39 and North Dakota 37. The respective populations of these states in frontier status are 35, 25 and 24. Kansas and Nebraska also have large numbers of frontier counties but much less of the population lives in these areas due to the urban areas in the semi-humid eastern areas of these states. The concept of frontier is being defined by professionals to try and better understand the diversity of rural areas. However, the continued rural to urban migration in the northern Great Plains, high drug use in rural areas, the inability to attract recreation-oriented in-migration in comparison to the Inner-Mountain West, and increasing poverty rates all point to the need to recapture the New Deal's focus on these areas.

New Deal, it is not a political one. In the 1980s, two geographers, Frank and Deborah Popper applied Fredrick Jackson Turner's frontier methodology and found that much of the Great Plains was reverting to frontier status. They proposed that the Great Plains accept depopulation and the withdrawal of settlement and become a "buffalo commons."[34] Although the idea was too radical for its time, much of the Great Plains continues to revert to frontier status. A combination of government policies, globalization (out-migration of manufacturing and crop production), and market forces are combining to make disbursed settlement unsustainable in one sixth of the United States land mass.[35]

The Poppers now describe the "buffalo commons" theory as a metaphor rather than a prescription and have become more nuanced in their articulation of it. Their fundamental argument that the Great Plains accept limits on human settlement is slowly progressing through the stages of most powerful, innovative ideas. It is passing through the rejection stage and is moving to acceptance and implementation. Many people in the Great Plains are still trying to devise policies to stem the population decline, but there is increasing acceptance of the hard reality that the Plains are not very well positioned to be economically sustainable.[36] The federal government will not be a major player in the development of a regional policy as it has in the past. The region is groping toward more bottom-up sustainability strategies based on population withdrawal, concentration of the remaining population largely in metropolitan areas and an increasing recognition of the economic value of ecosystem services.[37]

C. Griffith Taylor: A Detour to Australia to Understanding the Carrying Capacity Debate

Since the 1970s, any form of gross national population limitation has been off the table as a matter of national policy.[38] States cannot deflect the

34. The original article is Deborah E. Popper and Frank Popper, *The Great Plains: From Dust to Dust*, PLANNING 12 (1987). The Poppers restated and updated the thesis in *The Buffalo Commons, Then and Now*, THE AMERICAN GEOGRAPHICAL SOCIETY/FOCUS, 16 (Winter 1993). The idea has spawned an extensive literature. *See* CALLENBACH, BRING BACK THE BUFFALO! A SUSTAINABLE FUTURE FOR AMERICA'S GREAT PLAINS (1996); DANIEL LITCH, ECOLOGY AND THE ECONOMICS OF THE GREAT PLAINS (1997); RICHARD S. WHEELER, THE BUFFALO COMMONS (1998).

35. December 2 NYT

36. Thomas D. Rowley, *Sustaining the Great Plains*, 13 Rural Development Perspectives 2 (1997).

37. Florence Williams, *Frank and Déborah Popper's Buffalo Commons is Creeping Toward Reality*, THE HIGH COUNTY NEWS, January 15, 2001.

38. In his inaugural lecture for the Stanford Environmental initiative, Mr. Population Control, Paul Ehrlich, described population control as off the political radar screen." A summary of the lecture is available at http://news-service.stanford.edu/news/2003/december10/ehrlich-121-.html (last visited Apr. 14, 2004). For an effort to revive the population-environmental quality link in the context of sustainable development, see Tom Pierce, A *Constitutionally Valid Justification for the*

population of other states. The implied Constitutional right to travel prohibits states from refusing to accommodate growth by refusing entry to new residents. Just as states cannot hoard natural resources,[39] they cannot close their borders to interstate migration.[40] Since California tried to bar "Dust Bowl" migrants, no state has tried to directly halt migration. States used many indirect means, such as welfare denial, in an effort to deter migration of the poor. There are, however, some contours of the right to travel that support limited rather than unlimited growth accommodation. The right is one of entry not location; there is no right to locate in a particular community within the state.[41] Thus, communities retain considerable discretion to use their land use powers to decide where and under what conditions they will accommodate the growth[42], thus deflecting undesired growth to other jurisdictions.

Australia provides a different population debate model. Australia's debate can be traced to Thomas Griffith Taylor's[43] audacious criticism of the ten dominant, white only, population and settlement expansion policies. Taylor was the first professor of geography at Sydney University and a leading proponent or geographical or environmental determinism. His criticisms of the Australian government population policies were controversial.

Taylor's sin was to use scientific methods similar to those used by John Wesley Powell to undermine the Australian government's faith in white emigration to extend the area of settlement, especially in the tropics of Queensland. At the beginning of the twentieth century, births and immigration levels began to fall in Australia. Between 1907 and 1922, Great Britain developed a Dominion emigration policy. The Empire Settlement Act of 1922

Enactment of No-Growth Ordinances: Integrating Concepts of Population Stabilization and Sustainability, 19 HAWAII L. REV. 93 (1997).

39. *E.g.*, New England Power Co. v. New Hampshire, 455 U.S. 331 (1982).

40. Edwards v. California, 314 U.S. 160 (1941) (holding that a state cannot bar entry of "indigent" non-residents).

41. *Cf., e.g.*, Tobe v. Santa Ana, 892 P.2d 1145 (Cal. 1995) (holding that a city has no duty to provide camping space to facilitate the homeless' right to travel). *See* Robert Ellickson, *Controlling Chronic Misconduct in City Spaces: Of Panhandlers, Skid Rows, and Public-Space Zoning*, 105 YALE L. J. 1165, 1239-1242 (1996).

42. Construction Industry Association v. City of Petaluma, 522 F.2d 897 (9th Cir. 1975), *reh'g* and *reh'g en banc denied, cert. denied*, 424 U.S. 934 (1976) remains the leading case upholding phased growth but suggesting there are limits on the city's accommodation strategy. Courts have invalidated phased growth ordinances if the rate is substantially less than the actual rate of growth in the community. *See* Stoney-Brook Development Corp. v. Town of Fremont, 474 A.2d 561 (N.H. 1984).

43. The only available biography is a short lecture text, J.M. POWELL, GRIFFITH TAYLOR AND AUSTRALIA UNLIMITED" (1993). TIM FLANNERY, THE FUTURE EATERS: AN ECOLOGICAL HISTORY OF AUSTRALIAN LANDS AND PEOPLE (1994) contains a full account of the controversy and Taylor's decision to leave the place that he always regarded as home.

led to bilateral programs with Australia and New Zealand to encourage immigration from Great Britain. Proponents of a white, Anglo- British Empire, such as the feisty premier Billy Hughes, projected a population of 100 million for Australia by the end of the twentieth century.

Taylor emerged as the leading scientific critic of these estimates. He argued that the country had already occupied the territory best suited to human settlement. Using his training in geology and meteorology, he initially argued that Australia could only support 60 million people and would only have about 20 million people by the end of the twentieth century because of its limited water resources and fragile, old soils. He developed a series of hythergraphs that indicated the rainfall and temperature parameters for the major crops.[44] A decade later he dropped the maximum figure to 20 million based on maintaining a high average standard of living. The most controversial aspect of his theory was the suggestion that the areas marked for settlement expansion would be more suitable for non-white immigration.[45] Thus, if white-only settlement were desired, it would be modest, gradual, and should be based on scientific planning. In his major geographical study of Australia, he summed up his argument:

> For twenty years the present writer endeavored to inform the Australian public in regard to these important aspects of settlement. He stoutly maintained that it was useless to try and fill up the arid and more tropic lands as long as there was better land not fully utilized in the south and east. The argument holds good today.[46]

The reaction to this heresy was fierce. For example, the state of Western Australia banned his textbook because it contested the prevailing view that Australia's capacity to support people was unlimited. In 1928, he threw in the towel, resigned his position at Sydney University, and came to the University of Chicago before eventually settling in the more British environment of the University of Toronto. However, unlike some prophets, Taylor's legacy is very much alive in Australia. The question of the country's carrying capacity is the subject of a lively continuing debate, and the idea that people should adapt to a place rather than adapt the place to them is taken more seriously than it is in the United States.[47] Environmentalists have contributed to it by pointing out that a sustainable population level is both a function of climatic limitations that control available water supplies and of the opportunity costs of growth. Australia is a spectacular but often unforgiving landscape.

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44. Powell, *supra* note 45, at 21-22.

45. *Id.*, at 25.

46. GRIFFITH TAYLOR, AUSTRALIA: A STUDY OF WARM ENVIRONMENTS AND THEIR EFFECT ON BRITISH SETTLEMENTS 410 (5th ed. 1949).

47. *See* JONATHAN STONE, EMPTY OR FULL? THE DEBATE OVER THE POPULATION OF AUSTRALIA (1995); DOUG COCKS, POPULATION-IMMIGRATION POLICY IN AUSTRALIA (1998), *available at* http://www.lapshop.com.au/dougcocks/abernethyfinal.htm (last visited Apr. 14, 2004).

D. Wallace Stegner: A Tough Modern Critic of the Refusal to Heed the Lessons of Climate

Perhaps no Westerner has thought more deeply about what it means to live in an arid, non-northern European landscape than Wallace Stegner. Stegner's novels, histories, and polemics against public land decisions invoke the West from settlement to the present and stress the continuities between landscape and character. Stegner, more than any one, helped popularize John Wesley Powell's argument that resource management and land use policies should be based on the region's arid and variable climate rather than on subsidy and an uncritical notion of scientific and technological progress. He also sought to trace the connections between the myths of the West as a geography of hope and the reality of the West. However, it is difficult to draw lessons from Stegner's writing in part because, at heart, he was nostalgic for the hard scrabble, pre-SUV driving, non-latte drinking West, a time when irrigation had not yet grown beyond its legitimate bounds and the West provided for its thin population a hard living but wonderful life.[48]

In 1986, he summed up his experience in a series of lectures at the University of Michigan, published as *The American West as Living Space*.[49] His principal argument was that the West had used the benefits of western civilization and technology to create a society largely disconnected from the landscape and climate. This disconnect has come at clear, high fiscal, environmental, and social costs. Through generous federal subsidies, we created an irrigation society and later a universal urban society that eschewed any idea of adaptation to the landscape.

IV. Conclusion

There are few if any natural barriers to the endless growth of the West. However, the limits question is an important one. As much of the West continues to grow or be exploited for raw commodities, the opportunity costs of the choices we make increase. Thus, the constraints of climate and landscape manifest themselves through subtle combinations of political choices, market forces, and climatic factors rather than in a more dramatic apocalyptic fashion some suggest. This essay has not directly linked the limits question to existing legal doctrines and laws. However, the fact that the West's landscape and climate impose high opportunity costs on many resource choices suggests that political[50] and judicial decisions that include these costs should be accorded a presumption of validity.

48. *Id.* at 60.

49. Stegner, *supra* note 28.

50. *E.g.*, Garvin v. Ninth Judicial District, 59 P.3d 1180 (Nev. 2002) (Nevada Supreme Court reverses prior decision prohibiting initiatives and referenda, holding that citizens can propose dwelling unit caps to protect groundwater resources).