

## Saving the Dust Bowl: "Big Hugh" Bennett's Triumph over Tragedy

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*"It was dry everywhere... and there was entirely too much dust."*

- Hugh Hammond Bennett, visit to the Dust Bowl, 1936<sup>1</sup>

MERCILESS WINDS TORE UP THE SOIL that once gave the Southern Great Plains life and hurled it in roaring black clouds across the nation. Hopelessly indebted farmers fed tumbleweed to their cattle, and, in the case of one Oklahoma town, to their children. By the 1930s, years of injudicious cultivation had devastated 100 million acres of Kansas, Oklahoma, Texas, Colorado, and New Mexico.<sup>2</sup> This was the Dust Bowl, and it exposed a problem that had silently plagued American agriculture for centuries—soil erosion. Farmers, scientists, and the government alike considered it trivial until Hugh Hammond Bennett spearheaded a national program of soil conservation. "The end in view," he proclaimed, "is that people everywhere will understand... the obligation of respecting the earth and protecting it in order that they may enjoy its fullness."<sup>3</sup> Because of his leadership, enthusiasm, and intuitive understanding of the American farmer, Bennett triumphed over the tragedy of the Dust Bowl and the ignorance that caused it. Through the Soil Conservation Service, Bennett reclaimed the Southern Plains, reformed agriculture's philosophy, and instituted a national policy of soil conservation that continues today.

The Dust Bowl tragedy developed from the carelessness of plenty. In the 1800s, government and commercial promotions encouraged negligent settlement of the Plains, lauding the untold fortunes in planting wheat, supposedly a drought-resistant crop.<sup>4</sup> "These early settlers as they marched across the continent looked upon the land as being limitless and inexhaustible," Bennett explained.<sup>5</sup> Oblivious to the consequences, settlers incautiously farmed their land for a few years, moving on when erosion by wind or water prevented further growth. Then, beginning during World War I, a new surge of eager entrepreneurs plowed the prairie sod to excess, encouraged by new, efficient machinery, abnormally high

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rainfall, inflated prices, and the government cry: "Plant more wheat! Wheat will win the war!"<sup>6</sup>

Even during this relative prosperity, agriculture wavered on the brink of economic collapse.<sup>7</sup> Farmers took out loans in order to capitalize on high wheat prices, but as world production increased and the nation's economy floundered in the late twenties, they struggled to make a profit. This necessitated increased production, which flooded the market, lowered prices, and entangled agriculture in America's downward spiral into the Great Depression. Without proper education or assistance, American agriculture invited tragedy.

Simultaneously, the Plains entered their worst drought in recollection. As crops failed, they exposed thousands of acres of topsoil to erosion. High winds occasionally carried soil during the twenties, but the major dust storms of 1933 signaled the onset of the Dust Bowl, bringing years of starvation and poverty. On May 11, 1934, a storm carried 300 million tons of soil "for 2,000 miles across to the Atlantic Ocean and onward for hundreds of miles out to sea,"<sup>8</sup> shocking the nation. "Fine powdered dust was in evidence everywhere, in drifts several feet high," the Weather Bureau observed. "From sunrise to sunset... winds, attaining gale force... fill[ed] the air and sky with clouds of dirt and dirt so dense... the light of an otherwise clear day was reduced to a twilight condition."<sup>9</sup>

Dust Bowl farmers could barely sustain themselves, let alone profit during the Depression. "Poor land makes poor people," Bennett explained. "There are thousands of them who are so poor now that they could scarcely be poorer."<sup>10</sup> Many hopeless families left the region entirely, and "deserted farm houses seemed to be the rule rather than the exception." Those who remained faced "farm work at a standstill" and "agriculture demoralized."<sup>11</sup> In the 1930s and in history's perspective, the Dust Bowl was an economic, environmental, and human tragedy.

For Hugh Hammond Bennett, affectionately nicknamed "Big Hugh," the Dust Bowl was only the most dramatic manifestation of the catastrophe of soil erosion. Born on April 15, 1881 on a South Carolina plantation, Bennett learned early the rigors of farm management, developing a love of the outdoors. After working through college, he became a surveyor for the USDA Bureau of Soils, choosing the job so he could work near the land. He traveled extensively throughout North and South America, conducting surveys on the chemistry and condition of soil. In time, he knew intimately the soils of nearly every county in the nation. His biographer stated that he "had a name not only for being scientifically sound but also for being widely adaptable and a gargantuan worker."<sup>12</sup>

Bennett also developed a keen understanding of the American farmer. While surveying rural areas, he often stayed in farmhouses overnight, praising local cooking and relating his exploits in Alaska or the Amazon.<sup>13</sup> Farmers trusted his casual manner and practical nature, and this mutual appreciation would prove essential in years to come.

In 1905, Bennett noticed a peculiar phenomenon while surveying in Virginia. Cultivation had exposed one section of land to severe erosion, while an adjacent, forested section retained its fertile soil.<sup>14</sup> Bennett was fascinated. Soil science at the time dealt primarily with chemistry; although a few wrote of erosion as early as the eighteenth century, current experts belittled its consequence.<sup>15</sup> Yet

Bennett discovered that erosion—by wind or water—was rampant and destructive throughout America. “Year after year, for generations,” he warned, “man has been steadily engaged in ruining millions and millions of acres of this basic resource.”<sup>16</sup> By 1935 he estimated that erosion had ruined 325 million acres of once-fertile farmland, costing \$3,844,000,000 annually in damage.<sup>17</sup>

Thereafter, Bennett dedicated himself to the eradication of soil erosion. He published a profusion of reports, yet was largely ignored. His ideas contradicted popular belief. In 1909 the Bureau of Soils published a bulletin stating that “the soil... is the one resource that cannot be exhausted; that cannot be used up.” Bennett countered, “I didn’t know so much costly misinformation could be put into a single brief sentence.”<sup>18</sup>

Bennett zealously proclaimed “the evil effects of this scourge of the land” throughout the 1920s.<sup>19</sup> In 1928, his USDA bulletin, *Soil Erosion: A National Menace*, finally gained the attention of scientists, but to farmers, raised profits seemed more present than the tragedy of soil erosion.<sup>20</sup> Even as the dust began to blow, the notion that drought alone caused the dust storms prevailed. For all Bennett’s efforts, the *New York Times* benightedly stated, “The explanation of the storms is quite simple.... The soil from the West is much drier than usual.”<sup>21</sup> Bennett admitted astonishment that his reports “didn’t even ripple the surface of our national complacency.”<sup>22</sup> He needed government assistance if he was to effectively convey his message to the nation.

On March 4, 1933, Franklin D. Roosevelt’s inauguration created a vital opportunity for Bennett’s soil conservation work. An enthusiast for conservation, Roosevelt recognized the value of preserving natural resources.<sup>23</sup> Moreover, the Dust Bowl had finally forced Congress “to regard the rapid depletion of... soil as a menace to national welfare.”<sup>24</sup> The government commenced investigation for an emergency program under its radical New Deal farm policy, which relied heavily on federal intervention for individual farmers. Recognizing this opportunity, Bennett submitted a proposal in July of 1933 for a national soil program that would move beyond research, beginning with farmer education and progressing to practical conservation assistance.<sup>25</sup>

Bennett’s reputation aided his cause. Several influential officials recommended that Bennett direct the soil program, insisting that he “was able to put a program into practice instead of just on paper.”<sup>26</sup> He testified numerous times before Congress, proving himself an effective speaker. A large, rumpled figure, “Big Hugh” spoke casually, employing exhaustive statistics, anecdotes, and, on occasion, a plow. During one hearing, he knew of a major dust storm approaching Washington and lengthened his speech until dust visibly darkened the windows. “This, gentlemen,” he told the committee, “is exactly what I am talking about.”<sup>27</sup>

Bennett made his message to Congress clear:

With determined and understanding leadership, adequate funds, and a national consciousness of the importance of overcoming the evil the battle can be won. Without these things it cannot be won, and we, accordingly, will consciously, unpatriotically, and foolishly permit the nation to drift straight in the direction of tragic land disaster.<sup>28</sup>

On August 25, 1933, the Secretary of the Interior granted Bennett leadership of the new Soil Erosion Service. In 1935, Congress transferred it to the Department of Agriculture, establishing it permanently as the Soil Conservation Service (SCS). Through the Service, Bennett could now conduct research and education, establish demonstration projects, and aid farmers through technical advice, contracts, and monetary assistance.<sup>29</sup> The SCS became the gateway to Bennett's triumph over soil erosion's tragedy.

Drawing on his experience as a surveyor, Bennett recognized that, although grateful for government aid, farmers were wary of any obligation that might further lower their already inadequate profits. Therefore, he insisted that the SCS work on personal terms to convince farmers that soil conservation was, in the words of a promotional radio program, "PERMANENT, PRACTICAL, AND EFFICIENT."<sup>30</sup> Bennett assured his highly-trained specialists the authority to adjust the program to local needs. They worked in fields or at the kitchen table "in a friendly, cooperative manner," setting the SCS apart from any other government aid farmers had yet received.<sup>31</sup> As a result, the program enjoyed "nearly universal cooperation." "They say it is practical and they take to it immediately," a committee reported.<sup>32</sup>

The only significant political resistance to the SCS originated within the Department of Agriculture itself. Bennett's new, comprehensive authority alarmed leaders of existing agricultural programs, who complained of losing projects to the SCS, and decades would pass before the Department effectively consolidated erosion work to prevent duplication.<sup>33</sup> Additionally, Bennett's propensity toward exaggeration occasionally caused unnecessary skepticism among his peers.<sup>34</sup> However, these issues proved insufficient to retard the national movement of soil conservation.

Despite the SCS's success, Bennett understood that direct assistance on all agricultural land would be financially and administratively impossible. Within weeks of the SCS's establishment, he wrote a letter soliciting democratic, community-based organizations "to carry on projects for erosion control, and to enact into law land-use regulations."<sup>35</sup> Congress responded with the Soil Conservation and Domestic Allotment Act of 1936, allowing states to create county-sized soil conservation districts through which the SCS could operate.<sup>36</sup>

The concept was revolutionary. Although political obstacles initially kept some states from enabling districts, by mid-1937, soil conservation districts began in eighteen states, including most of the Dust Bowl.<sup>37</sup> "The farmers in soil conservation districts... are working together, planning together, helping one another as they never did before," Bennett reported. By 1950, districts would cover 80% of American farmland and carry out the majority of SCS work.<sup>38</sup> Conservator A. E. McClymonds asserted that "the district program is the most important movement by land owners and occupiers in the history of this country."<sup>39</sup>

In the Dust Bowl, the SCS enacted emergency measures to minimize erosion while waiting for rain to return, simultaneously educating farmers through conservation districts to prevent recurrences during future droughts.<sup>40</sup> Then, in 1938, the dust storms began to abate. Although parts of the Dust Bowl had been permanently damaged, Bennett's triumph allowed the Plains to return to even

greater production, yet not at the expense of the soil. Because of the SCS, Bennett could finally state, "At last we are making real progress with our national program of soil conservation... a great many farmers, and others too, understand what the problem is and the need for solving it now."<sup>41</sup>

As World War II neared, rain returned to the plains, enabling full utilization of newly implemented conservation practices. The SCS commenced a wartime production campaign. Because of their efforts, awareness of soil conservation allowed wheat production during World War II to double that of the previous war while minimizing erosion.<sup>42</sup> "We propose to use these resources so wisely that Hitler and his evil associates will damn the day they launched their treacherous and despicable attack on a too-trusting world,"<sup>43</sup> Bennett announced. Agriculture flourished, and "the record crops came from the land which some scientists had pronounced 'permanently destroyed by wind erosion' only a decade earlier." Farmers looked with pride upon the products of their once barren fields.<sup>44</sup>

Soil conservation burgeoned as a national policy, the subject of countless new organizations and publications. Bennett advertised soil conservation as ardently as before, traveling across the country to promote and personally inspect the SCS's work. "I like to see soil conservation work going on," he explained.<sup>45</sup> He also lectured extensively, from Princeton University to a one-room elementary school. Wrote one young student: "I would like to hear more about the conservation of soil if it would help us any to make our country better than it is."<sup>46</sup> Through his tireless efforts, Bennett succeeded in raising soil conservation to the forefront of public awareness.

After World War II, Bennett turned his attention in part to worldwide conservation efforts, assisting 80 nations from every continent with erosion programs.<sup>47</sup> He advertised erosion control as a solution to world hunger, proposing that "if modern soil and water conservation could be pushed ahead on worldwide basis... hunger and famine would be reduced by more than half."<sup>48</sup> Today, conservationists work internationally with impoverished farmers, presenting soil conservation as a practical method of increasing food production.<sup>49</sup>

The SCS's success in healing the Great Plains came with a cost. As agriculture flourished, some farmers again fell to speculation, disregarding the lessons of the 1930s. Consequently, when the Plains experienced another severe drought in the 1950s, wind erosion returned.<sup>50</sup> However, "not all [had] been forgotten," and farmers, recognizing a repetition of the 1930s, endeavored "to stop the dust storms before the dust storms [got] started again."<sup>51</sup> Soil conservation has since restored most of the Dust Bowl to productivity, and Dust Bowl states, now "the Bread Basket of America," contribute roughly 25% of the nation's agricultural production and are virtually free from dust storms.<sup>52</sup>

The Soil Conservation Service, Bennett's legacy, endures today as the Natural Resources Conservation Service (NRCS), the only New Deal grassroots operation still in existence. Modern soil conservation unites the world's scientists in continuing innovation and education. As a result, soil erosion decreased by 43% nationwide between 1982 and 2003.<sup>53</sup> "[The NRCS's] work is not complete yet," stated one prominent soil scientist, "but we should praise them. We need to salute them for doing what they have done."<sup>54</sup>

Hugh Hammond Bennett retired in 1951 and died in 1960. Buried in Arlington National Cemetery, he is recipient of innumerable awards and recognitions, including nomination for the Nobel Peace Prize.<sup>55</sup>

Looking back on his work, “Big Hugh” boldly called the SCS’s establishment the “greatest forward step of all time toward world security and peace among men,” but it was merely the expedient for his efforts.<sup>56</sup> He witnessed a tragedy unfolding and applied himself entirely to its elimination. From years of unheeded exhortation through his brilliant leadership of the SCS, Bennett was indisputably the central cause of soil conservation’s continued success. His devotion and the future prosperity it ensured constitute his triumph over tragedy for American farmland and the American people.

## Notes

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Appendix

Section 1. Causes and Effects of the Dust Bowl Tragedy



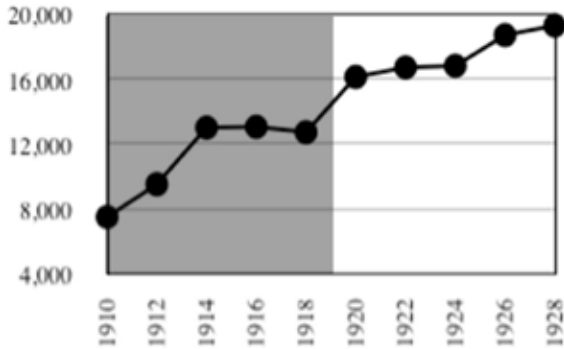
ABOVE LEFT: *A Wall of Dust Approaching a Kansas Town*, 4 Oct. 1935, NOAA's National Weather Service Collection.

ABOVE: Arthur Rothstein, *Dust Is Too Much for this Farmer's Son in Cimarron County, Oklahoma*, Apr. 1936, Library of Congress.

LEFT: Dorothea Lange, *Dust Bowl Farm*, June 1938, Library of Congress.

BELOW: adapted from map of Dust Bowl in Timothy Egan, *The Worst Hard Time*.

Exploitation of the Soil: Wheat Acres Harvested (thousands)  
CO, KS, NM, OK, TX combined. (USDA, NASS, *Quick Stats*)



**Section 2. Hugh Hammond Bennett and the Soil Conservation Service**



ABOVE LEFT: *Hugh Bennett Portrait*, n.d., NRCS: A Story of Land and People.

ABOVE: *Hugh Hammond Bennett (right), First Chief of the Soil Conservation Service*, n.d., NRCS Photo Gallery.

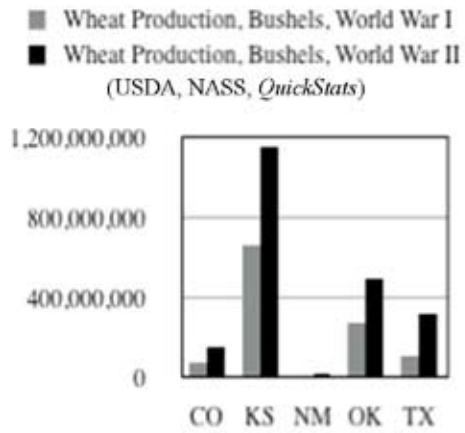


LEFT: *Arthur Rothstein, Conservation Agent Discusses Soil Problems with Farmer*, Nov. 1939, Library of Congress.



LEFT: *Russell Lee, Group of Farmers at Soil Conservation Meeting*, Jan. 1937, Library of Congress.

**Section 3. Triumph of Soil Conservation**



ABOVE LEFT: Strip-Cropping to Prevent Soil Erosion, ca. 1935, Library of Congress.

LEFT: SCS, *Beautiful Kansas Farm Land*, n.d., in *A History of Natural Resources Conservation in Kansas*.

BELOW LEFT: *Cross Wind Strip Cropping*, n.d., Wind Erosion Multimedia Archive, Wind Erosion Research Unit.

BELOW: Christian Hoffmann, *Author on Soil Survey*, personal photograph, 24 April 2007.



## Section 4. Works Cited

### Primary Sources

#### AUTHOR'S CORRESPONDENCE

Berg, Norman. Email to Author. 15 Feb. 2007. Email.

In this email, Berg answered a question I had about Bennett's propensity toward exaggeration from the standpoint of one who had worked under Bennett in the 1940s. I included this information in my paper. He also agreed to a later interview (see citation).

#### BOOKS

Brink, Wellington. *Big Hugh: the Father of Soil Conservation*. New York: The Macmillian Company, 1951.

Brink worked under Bennett in the SCS for some time and authored Bennett's only biography. He provides a rich and fairly comprehensive introduction to Bennett, though he is obviously biased in Bennett's favor. Prejudice aside, *Big Hugh* provided the base of knowledge for my research.

Daniels, Jonathan. *Tar Heels: A Portrait of North Carolina*. New York: Dadd, Mead & Company, 1941.

After interviewing Bennett, Daniels wrote a chapter for this book focusing on Bennett's life experiences. He mentions Bennett's incident with the dust storm during a congressional hearing, verifying an event that would otherwise seem to be mere legend.

#### CORRESPONDENCE

Bennett, Hugh Hammond to Guido Cesar Rando. 6 May 1954. Hugh H. Bennett Papers, Special Collections, Iowa State University Library. Box 22/3.

In this letter, Bennett reminisces about a trip he took with Rando in Brazil. He recalls his especial enjoyment of *corumbatá*, a local dish. This served as an example of Bennett's unique love of local cooking, one of his personable qualities that allowed him to connect with local farmers.

Carmen, Elizabeth to Hugh Hammond Bennett. 25 Oct. 1954. Hugh H. Bennett Papers, Special Collections, Iowa State University Library. Box 22/2.

This letter is one of many written by students of Chesterbrook school in Falls Church, VA to Bennett after he gave a talk about soil erosion to their class. Carmen mentions Bennett's demonstration using jars of soil and water, which served as evidence of his use of props in public speaking.

Cooke, Mike to Hugh Hammond Bennett. MSS. 25 Oct. 1954. Hugh H. Bennett Papers, Special Collections, Iowa State University Library. Box 22/2.

This letter is one of many written by students of Chesterbrook school in Falls Church, VA to Bennett after he gave a talk about soil erosion to their class. Cooke's letter specifically mentioned Bennett telling a story about an encounter with a lion on one of his surveying trips. This attested to Bennett's frequent use of anecdote, which I mentioned in my paper to develop his character.

[Greene] to W. A. Rockie. TDS. 30 June 1936. Folder 5.44a, Tours. Central Correspondence Files of the Former Regional Office, Pullman, WA. Correspondence Files, 1935-1942.



Records of the Natural Resources Conservation Service, RG 114. NARA–Pacific-Alaska Region, Seattle, WA.

Greene attests to widespread farmer interest in a conservation tour. This supported my conclusion that farmers were generally in favor of the SCS.

Hill, C. E. to W. A. Rockie. 17 Nov. 1934. TDS. Folder 18.34, Hill, C. E.: Weekly Report Wild Horse Soil Erosion Project. Central Correspondence Files of the Former Regional Office, Spokane, WA. Correspondence Files, 1935-1942. Records of the Natural Resources Conservation Service, RG 114. NARA–Pacific-Alaska Region, Seattle, WA.

This report explains the general reluctance of farmers to implement soil conservation practices without financial assurance. This was an important idea for my paper because Bennett had to prove the financial benefits of soil conservation.

\_\_\_\_\_. 27 Oct. 1934. TDS. Folder Folder 18.34, Hill, C. E.: Weekly Report Wild Horse Soil Erosion Project. Central Correspondence Files of the Former Regional Office, Spokane, WA. Correspondence Files, 1935-1942. Records of the Natural Resources Conservation Service, RG 114. NARA–Pacific-Alaska Region, Seattle, WA.

Hill gives several examples of farmers' enthusiasm for new soil conservation practices. This was a triumph for Bennett's program, which I argued in my paper.

Mark, Sharron to Hugh Hammond Bennett. 25 Oct. 1954. MSs. Hugh H. Bennett Papers, Special Collections, Iowa State University Library. Box 22/2.

This letter is one of many written by students of Chesterbrook school in Falls Church, VA to Bennett after he gave a talk about soil erosion to their class. This letter was particularly notable, so I quoted it in my paper as evidence of Bennett's commitment to ongoing conservation education.

Rockie, W. A. to Hugh Hammond Bennett. *Project Report*. TDS. 29 Sept. 1934. Weekly Report. Central Correspondence Files of the Former Regional Office, Pullman, WA. Correspondence Files, 1935-1942. Records of the Natural Resources Conservation Service, RG 114. NARA–Pacific-Alaska Region, Seattle, WA.

Rockie states that his branch of the SCS has received almost complete cooperation from farmers. I quoted this report in my paper to show the SCS's success.

\_\_\_\_\_. *Project Report*. TDS. 3 Nov. 1934. Weekly Report. Central Correspondence Files of the Former Regional Office, Pullman, WA. Correspondence Files, 1935-1942. Records of the Natural Resources Conservation Service, RG 114. NARA–Pacific-Alaska Region, Seattle, WA.

Rockie reports that even previously skeptical farmers are accepting soil conservation. This was strong evidence that Bennett's leadership was effective in spreading his ideas, and I mentioned farmers' initial doubt in my paper for balance.

#### DIARIES

Dyck, Mary Knackstedt. *Waiting on the Bounty: The Dust Bowl Diary of Mary Knackstedt Dyck*, ed. Pamela Riney-Kehrberg. Iowa City: University of Iowa Press, 1999.

Dyck's diary vividly expresses the fortitude with which Dust Bowl families struggled through famine and drought. Her writings influenced my understanding of the human conditions during the Dust Bowl.

#### GOVERNMENT DOCUMENTS AND PUBLICATIONS

U.S. Congress. House. *An Act to Provide for the Protection of Land Resources against*



*Soil Erosion*. 74th Cong., 1st. sess., P.L. 46. *LexisNexis* (King County Library System, Bothell, WA). 5 Jan. 2007 <<http://www.lexisnexis.com>>.

This is the act establishing the Soil Conservation Service permanently under the USDA. The act was essential for discussion of government soil conservation programs in my paper.

\_\_\_\_\_. Commission of Agriculture. *Report on Forestry*, by Franklin B. Hugh. 47th Cong., 1st sess. Misc. doc. 38. Washington, D.C.: GPO, 1882. Serial Set vol. 2046, no. 12.

This is a 19th century report including a brief mention of erosion. This demonstrated that while erosion was recognized as an issue, it was not seen as one meriting much attention.

\_\_\_\_\_. Committee on Agriculture. *Report to Accompany H.R.10835*. 74th Cong., 2d sess. 6 Feb. 1936.

In the introduction to this report, the committee explains the importance of soil conservation. I quoted this report in my paper to show how the Dust Bowl increased Congress' awareness of the need for soil erosion control.

\_\_\_\_\_. "Grasses as Sand and Soil Binders," by Scribner B. Flamson. In *Yearbook of the United States Department of Agriculture*. 53rd Cong., 3d sess. Exec. doc. 355. Washington, D.C.: GPO, 1895. Serial Set vol. 3326, no. 35.

This report recommends planting grass to prevent erosion, and shows an elementary awareness of erosion in the government before Bennett's time, but also ignorance toward soil conservation's relevance to the situation on the Plains. This aided in my development of context.

\_\_\_\_\_. Great Plains Committee. *The Future of the Great Plains*. 75th Cong., 1st sess. Washington, D.C.: GPO, 1936.

This report shows that the government had by 1936 come to a full awareness of the soil erosion problem. It includes a description of a visionary future Plains agriculture, using conservation techniques, information on progress of conservation, and economic analysis such as the effects of low farm income, all of which I used in my paper.

\_\_\_\_\_. *Proposed Provision Pertaining to an Existing Appropriation*. Communication from the President of the United States. 75th Cong. 1st sess. H. Doc. 189. Washington, D.C.: GPO, 2 Apr. 1937.

This report clearly demonstrates that Congress and President Roosevelt viewed the problem of soil erosion and the Dust Bowl as a national emergency and were willing to provide funds for it. This was important for me to understand as a turning point in starting a national soil conservation program.

\_\_\_\_\_. *Soil Conservation and Domestic Allotment Act*. 74th Cong., 2d. sess., P.L. 461. *LexisNexis* (King County Library System, Bothell, WA). 7 Feb. 2007 <<http://www.lexisnexis.com>>.

This is the act that provided for the creation of soil conservation districts by states. It was revolutionary to agriculture and essential for my paper.

\_\_\_\_\_. Subcommittee of the Committee on Labor. *Overproduction and Underconsumption in the United States: Hearings Before a Subcommittee of the Committee on Labor*, by Oscar Ameringer. 72nd Cong., 1st sess, 1932. In *The Annals of America: The Great Depression, 1929-1939*, ed. William Benton. Chicago: Encyclopædia Britannica, Inc., 1968.

These hearings highlight the tragedy of agricultural overproduction during the Dust Bowl. They contributed to the discussion in my paper of overproduction as a cause of soil erosion.

\_\_\_\_\_. Subcommittee of the Committee on Public Lands. *Soil-Erosion Program: Hearings before a Subcommittee of the Committee on Public Lands*. 74th Cong., 1st sess. 20-22, 25 Mar. 1935. Washington, D.C.: GPO, 1935.

These published hearings, in which Bennett spoke extensively, testify about the success of the Soil Erosion Service and includes letters from farmers and agricultural experts. I quoted one of these testimonies in my paper.

\_\_\_\_\_. U.S. Department of Agriculture. *Field Operations of the Division of Soils, 1899*, by Milton Whitney. 56th Cong., 1st sess. USDA Rept. 64. Washington, D.C.: GPO, 1900. Serial Set vol. 3985, no. 88.

This is a telling report. There is not one mention of accelerated soil erosion, but only chemical analysis, which gave important evidence for my assertion that it was Bennett who first introduced the importance of erosion prevention to the government.

\_\_\_\_\_. Senate. *McNary-Haugen Veto Message*. Message by U.S. Pres. Calvin Coolidge. 23 May 1928. 70th Cong., 1st sess. *Congressional Record*. 69, 9524-9526. Reprinted in *Presidents from Theodore Roosevelt through Coolidge: Debating the Issues in Pro and Con Primary Documents*, ed. Francine Sanders Romeo. Westport, CT: Greenwood Press, 2000.

In this address, the President explains how overproduction economically crippled American agriculture in the 1920s. This was important to my analysis because overproduction was one of the major causes of the Dust Bowl, and I mentioned its economic consequences in my paper.

\_\_\_\_\_. Subcommittee of the Committee on Agriculture and Forestry. *Protection of Land Resources Against Soil Erosion: Hearings before a Subcommittee of the Committee on Agriculture and Forestry*. 74th Cong., 1st sess., 2, 3 Apr. 1935.

In these hearings, Bennett discussed the work of the SES and need for additional funding. They provided excellent quotes, statistics, and evidence of the SES's success and Congressional support.

\_\_\_\_\_. Special Committee on Survey of Land and Water Policies of the United States. *Hearings before a Special Committee on Survey of Land and Water Policies of the United States*. 74th Cong., 1st sess., 21 Aug. 1935.

In these hearings, committee members discussed the condition of eroded lands and the work of the Soil Erosion Service. I quoted these hearings in my paper.

U.S. Department of Agriculture. Agricultural Research Service. *Land Use and Its Patterns in the United States*. By F. J. Marschner. Agriculture Handbook no. 153. Washington, D.C.: USDA, 1959.

Among varied topics pertaining to land use, this handbook describes how early settlers on the plains exploited the land, harming the soil. This was very important to my paper, as it shows the most prominent cause of the Dust Bowl.

\_\_\_\_\_. Bureau of Soils. *Soil Erosion: A National Menace*, by Hugh Hammond Bennett and W. R. Chapline. Circular 33. Washington, D.C.: GPO, 1928.

This is the famous circular that finally caught the attention of soil scientists regarding erosion. I cited it as the major turning point in Bennett's soil conservation efforts.

\_\_\_\_\_. \_\_\_\_\_. *Soils of the United States*, by Milton Whitney. Bulletin no. 55. Washington, D.C.: GPO, 1909.

This bulletin shows a shocking lack of understanding about soil usage and agricultural impacts. It includes the famous quote stating that soils are an inexhaustible asset, which I quoted in my paper.

\_\_\_\_\_. "Efficiency of U.S. Agriculture is Increasing," by H. R. Tolley. In *Yearbook of the United States Department of Agriculture*. 1926 ed. (Washington, D.C.: USDA, 1927). National Agricultural Library Digital Repository. 17 Mar. 2007 <<http://www.naldr.nal.usda.gov>>.

This article focuses on the economic impacts of the increased agricultural production of the 1920s, but also details evidence that farm income at the time was clearly below the national average, and that the agricultural economy was unstable. This was important because it contributed to the economic tragedy of the Dust Bowl, and I quoted it indirectly in my paper.

\_\_\_\_\_. "Great Plains Agricultural Development." By E. C. Chilcott. In *Yearbook of the United States Department of Agriculture*. 1926 ed. (Washington, D.C.: USDA, 1927). National Agricultural Library Digital Repository. 16 Mar. 2007 <<http://www.naldr.nal.usda.gov>>.

Chilcott discusses unscrupulous exploitation of the Great Plains after the turn of the century, which explained the central cause of the Dust Bowl and contributed to my discussion of speculation.

\_\_\_\_\_. Soil Conservation Service. Pacific Coast Region. *Help the Land, Help the War: the Soil Conservation Service War Program*. n.d.

This propaganda pamphlet of the SCS served as evidence of Bennett's program of increased agricultural production for World War II benefit and demonstrated methods of convincing farmers to implement conservation practices.

\_\_\_\_\_. \_\_\_\_\_. *Report of the Chief of the Soil Conservation Service, 1937*. By Hugh Hammond Bennett. 14 Oct. 1937.

In this report, Bennett cites the early growth of soil conservation districts. I used facts from his report in my paper to show the success of the districts.

## INTERVIEWS

Berg, Norman. Interview by Author. 31 Mar. 2007. Telephone.

Berg served as a field-level conservation under Bennett in the 1940s, and then continued in the Soil Conservation Service, becoming chief from 1979 to 1982. He also spoke with Bennett on several occasions. He shared with me his first-hand knowledge of Bennett's personality and what it was like to work under him in the early days of the SCS. Additionally, Berg possesses a uniquely wide view of the SCS/NRCS's development. I used several of these ideas in my paper and quoted him indirectly.

## JOURNALS

Bennett, Hugh Hammond. "Soil Erosion--A National Menace." *Journal of Forestry* 26 (1 Apr. 1928): 520-527.

In this early article (not to be confused with the better-known USDA circular), Bennett states that wind and water erosion silently plague America's farmland. This demonstrated that Bennett realized, as dust storms began on the Plains, that erosion was a serious problem.

Chase, Stuart. "The Depletion of our Natural Resources." *Rich Land, Poor Land* (1936). In *The Annals of America: The Great Depression, 1929-1939*, ed. William Benton. Chicago: Encyclopædia Britannica, Inc., 1968.

This article presents a message about soil erosion similar to Bennett's. Its date shows that Bennett's efforts had succeeded in winning widespread public notice of soil erosion.

Choun, H. F. "Duststorms in the Southwestern Plains Area." *Monthly Weather Review* 64 (15 Sep. 1936): 195-199.

This article includes imposing photographs of the Dust Bowl, an annual precipitation chart, and descriptions of the worst dust storms the Southern Great Plains experienced. It provided a detailed first-hand account of the tragedy of the Dust Bowl.

Chambers, Marshall J. "The Drought of 1933-34 in New Mexico." *Monthly Weather Review* 63 (Jan. 1935): 14-15.

Chambers analyzes rainfall patterns in New Mexico and nearby states and concludes that the drought of 1933-34 was the worst on record. This was important information for my paper.

Day, P. C. "The Weather Elements." *Monthly Weather Review* 52 (Mar. 1924): 175.

This is the earliest mention of a dust storm in the *Review*, which dates back to 1892. This contributed to my conclusion that notable dust storms began on the Plains in the twenties.

Mattice, W. A. "Dust Storms." *Monthly Weather Review* 63 (Mar. 1935): 113.

This article explains the development of dust storms in the Great Plains. It cites 1933 as the first year of severe dust storms, which I noted in my paper.

\_\_\_\_\_. "Dust Storms, November 1933 to May 1934." *Monthly Weather Review* 63 (Feb. 1935): 53-55.

Mattice powerfully describes the effect of wind erosion on agriculture in the plains. I quoted this article in my paper.

Martin, Robert J. "Duststorms of 1938 in the United States." *Monthly Weather Review* 67 (Jan. 1939): 12.

Martin analyses the extent and frequency of dust storms in 1938 as compared to previous years. This article showed that dust storms began to abate in 1938, which I stated in my paper.

\_\_\_\_\_. "Duststorms of January-April 1937 in the United States." *Monthly Weather Review* 65 (Apr. 1937): 151.

Martin's article includes a vivid description of a trip through the Dust Bowl, which I quoted in my paper.

"Severe Local Hail and Wind Storms, August, 1926." *Monthly Weather Review* 54 (Aug. 1926): 355.

This is another very early article mentioning "dust whirls" in Kansas. It contributed to the development of my argument that intense cultivation in the twenties began the pattern of frequent dust storms on the Plains.

"Severe Local Storms." *Monthly Weather Review* 56 (Oct. 1928): 92; 59 (Apr. 1931): 164; 61 (Nov. 1933): 344.

A monthly summary chart in the *Review*, "Severe Local Storms" shows increas-

ing frequency and intensity of dust storms as the 1930s began. The November 1933 installation in particular includes detailed descriptions of dust storms.

## MISCELLANEOUS

Bennett, Hugh Hammond. *The Dust Bowl Again*. TD, 3 drafts. ca. 1954. Hugh H. Bennett Papers, Special Collections, Iowa State University Library. Box 15/18.

Bennett discusses the severity of the 1950s drought in relation to the 1930s. This showed me the extending impacts of the Soil Conservation Service and contributed to my analysis of agriculture's relapse during that time.

\_\_\_\_\_. *Dust Bowls*. TD. 6 Sept. 1950. Hugh H. Bennett Papers, Special Collections, Iowa State University Library. Box 4/5.

In this draft of an article, Bennett describes the terrible conditions of the Dust Bowl and their causes with regards to erosion. I quoted this document in my paper.

\_\_\_\_\_. *Ed Ogg*. TD. 10 Oct. 1942. Hugh H. Bennett Papers, Special Collections, Iowa State University Library. Box 10/43.

Bennett here recounts the story of several farmers in Oklahoma who came to the SCS for help with their eroded lands. This served as evidence that farmers were grateful for the SCS's assistance.

\_\_\_\_\_. *Introductory Observations*. TD/MS. Hugh H. Bennett Papers, Special Collections, Iowa State University Library. Box 16/5.

In this draft of a speech, probably for a lecture series, Bennett describes his own casual speaking style. This was essential information for my development of his character, and I quoted it indirectly in my paper.

"Instructions to Field Men." 1934. TD. Folder 13.45, Memoranda to Project Managers and Camp Superintendents. Central Correspondence Files of the Former Regional Office, Pullman, WA. Correspondence Files, 1935-1942. Records of the Natural Resources Conservation Service, RG 114. NARA-Pacific-Alaska Region, Seattle, WA.

This document gives instructions to SCS workers to make sure that a farmer understands and agrees with the proposed conservation practices. This added to my evidence of Bennett's personal approach to farmer assistance, which I stated in my paper.

McDole, G. R. Weekly Report. 20 Oct. 1934. TD. Central Correspondence Files of the Former Regional Office, Pullman, WA. Correspondence Files, 1935-1942. Records of the Natural Resources Conservation Service, RG 114. NARA-Pacific-Alaska Region, Seattle, WA.

McDole relates the story of one farmer who, after seeing conservation practices demonstrated, agreed heartily to practice them. This gave support to my arguments about the SCS's effectiveness.

Rockie, W. A. Memorandum. 2 Mar. 1934. Pullman, WA. TD. Folder 13.44, Memoranda to Staff. Central Correspondence Files of the Former Regional Office, Pullman, WA. Correspondence Files, 1935-1942. Records of the Natural Resources Conservation Service, RG 114. NARA-Pacific-Alaska Region, Seattle, WA.

Rockie specifically instructs his employees to discuss maps and plans into a farmer's fields for discussion. I used this information indirectly as I discussed the SCS's strategy of personalized assistance.

Vogt, William. *Grass-Roots Statesman*. TD. Hugh H. Bennett Papers, Special Collections,

Iowa State University Library. Box 22/14.

In this draft, apparently written regarding Bennett's nomination for the Nobel Peace Prize, Vogt personifies Bennett vividly. His statements on Bennett's stubbornness and even annoyance of his superiors as he pushed for soil conservation influenced my ideas about Bennett's character.

Winder, Rosa. *My Journey*. Wapato, WA: privately printed, 2001.

Rosa recounts her life story, which began on the Plains during the Dust Bowl. She recalls the hopeless state of agriculture in Oklahoma, which contributed to the description in my paper.

#### NEWSPAPER ARTICLES

Bennett, Hugh Hammond. "Reclaiming the Dust Bowl." Letter to the Editor. *Washington Post and Times Herald* 9 Jan. 1957: A10. *ProQuest* (King County Library System, Bothell, WA). 26 Feb. 2007 <<http://www.umi.com/proquest>>.

Bennett describes the increased production of the 1940s and the drought of the 1950s, as well as the ongoing conservation efforts on the Plains. I quoted this in my paper.

"D.C. Invaded by Dust Storm from Midwest." *Washington Post* 22 Mar. 1935: 1. *ProQuest* (King County Library System, Bothell, WA). 8 Apr. 2007 <<http://www.umi.com/proquest>>.

This article describes the dust storm that darkened the windows of Congress during Bennett's speech. It provided evidence for and elaboration on the popular legend of this incident, which I indirectly quoted in my paper.

"Dust Storms Add New Crop Menace." *New York Times* 11 May 1934: 38. *ProQuest* (King County Library System, Bothell, WA). 19 Jan. 2007 <<http://www.umi.com/proquest>>.

This article demonstrates general ignorance of the true cause of the Dust Bowl. I quoted it in my paper to this end.

Spalding, Jack. "Lover of Soil, Hugh Bennett, Retiring after Life of Service." *Atlanta Journal* 4 Nov. 1951. Hugh H. Bennett Papers, Special Collections, Iowa State University Library. Box 22/8.

Spalding announces that Bennett's retiring from his position as Chief of the SCS. I indirectly quoted this as basic biographical information for my paper.

#### PAMPHLETS

Martin, Santford. *And History Is Already Shining on Him: Some Impressions of Hugh H. Bennett, Father of Soil Conservation*. Washington, D.C.: American Potash Institute, n.d. Hugh H. Bennett Papers, Special Collections, Iowa State University Library. Box 22/14b.

A nearly hagiographic biographical summary, this pamphlet included Bennett's reaction to the statement by the Bureau of Soils that soil is an unlimited resource. This was key to explaining Bennett's passion for erosion control, and I mentioned it in my paper.

#### PHOTOGRAPHS

*Hugh Bennett Portrait*. n.d. NRCS: A Story of Land and People. 28 Mar. 2007 <<http://www.nedc.nrcs.usda.gov/intro2nrcs/history.html>>.



This is likely the most well-known portrait of Bennett. I used it in my appendix so that the reader would have a visual image of him.

*Hugh Hammond Bennett (right), First Chief of the Soil Conservation Service.* n.d. NRCS Photo Gallery. 7 Feb. 2007 <<http://www.photogallery.nrcs.usda.gov>>.

This photograph shows Bennett kneeling in a field with a farmer, talking and digging in the ground. It is an excellent demonstration of Bennett's understanding and respect for farmers, and I included it in my appendix.

Lange, Dorothea. *Dust Bowl Farm.* June 1938. Library of Congress.

This photograph depicts a farm house surrounded by sand dunes. I placed it in my appendix to illustrate the severity of the Dust Bowl.

Lee, Russell. *Group of Farmers at Soil Conservation Meeting.* Jan. 1937. Library of Congress.

Lee's photograph captures a soil conservation meeting, with hard-looking farmers attending. I included it in my appendix to emphasize the importance of group cooperation and soil conservation districts.

Rothstein, Arthur. *Conservation Agent Discusses Soil Problems with Farmer.* Nov. 1939. Library of Congress.

In this photograph, a conservation agent is in a farmer's home discussing plans for his farm. It suggests the personal trust that was so vital to Bennett's program, so I included it in my appendix.

\_\_\_\_\_. *Dust Is Too Much for This Farmer's Son in Cimarron County, Oklahoma.* Apr. 1936. Library of Congress.

I placed this stirring image of a boy coughing in the heart of the Dust Bowl in my appendix to communicate the terrible tragedy that occurred there.

*Strip-Cropping to Prevent Soil Erosion.* Ca. 1935. Library of Congress.

I included this photograph of strip cropping in my appendix to illustrate one method of soil conservation being put into practice soon after the SCS's establishment.

*A Wall of Dust Approaching a Kansas Town.* 4 Oct. 1935. NOAA's National Weather Service Collection. 28 Mar. 2007 <<http://www.photolib.noaa.gov/htmls/wea01414.htm>>.

This striking image of a dust storm demonstrates the severity of the wind erosion problem in the 1930s. I used it in my appendix to this end.

#### RADIO PROGRAMS

Bennett, Hugh Hammond. *This Is Your Land.* TD of radio address for National Broadcasting Company, 14 Aug. 1939. Hugh H. Bennett Papers, Special Collections, Iowa State University Library. Box 10/27.

In this nation-wide address, Bennett overviews the impacts of soil erosion on society as a whole (particularly urban society), as well as its economic impacts. I quoted this address in my paper.

Rockie, W. A. *Land Planning in Relation to Soil Erosion Control in the Northwestern States.* TD of radio address for Farm and Home Hour, 7 Nov. 1935. Folder 5.41a, Extension-Radio. Central Correspondence Files of the Former Regional Office, Pullman, WA. Correspondence Files, 1935-1942. Records of the Natural Resources Conservation Service, RG 114. NARA-Pacific-Alaska Region, Seattle, WA.

This program explains the reluctance of the average farmer to implement conservation practices if he doubts their economy. This was an important argument in my paper because it was a primary obstacle for the SCS.

\_\_\_\_\_. TD of radio address for Farm and Home Hour, 28 July 1935. Folder 5.41a, Extension—Radio. Central Correspondence Files of the Former Regional Office, Pullman, WA. Correspondence Files, 1935-1942. Records of the Natural Resources Conservation Service, RG 114. NARA—Pacific-Alaska Region, Seattle, WA.

This particular edition of the Farm and Home Hour lauded the benefits of soil conservation. I quoted it in my paper to show the promotional goals of the SCS.

#### SPEECHES

Bennett, Hugh Hammond. *Can the World Feed Itself?* TD of address before the Commonwealth Club of California, San Francisco, CA. 26 Mar. 1948.

This speech gives figures demonstrating the value of soil conservation. This was important to my paper because my research has shown that farmers generally only implement soil conservation practices if they will make a greater profit, thus validating Bennett's program.

\_\_\_\_\_. *Conservation for War or Peace--Drought Years or Wet.* TD of address for 1st Annual KFBI Field Day, Wichita, KS. 12 Sept. 1950.

In this speech Bennett addresses predictions of recurring "Dust Bowls" for 1951. His explanation of how Dust Bowl farmers implemented conservation practices to combat a dry 1950 season was important in showing his lasting triumph.

\_\_\_\_\_. *The Continuing Challenge to Soil Conservation Districts.* TD of address for Tennessee Association of Soil Conservation District Supervisors Annual Meeting, Nashville, TN. 8 Dec. 1949.

A lengthy, comprehensive discussion of operations of soil conservation districts, this speech includes Roosevelt's letter to states explaining his belief in the necessity of soil conservation. This and the explanation of the goals and strengths of soil conservation districts were important information for my paper.

\_\_\_\_\_. *The Democratic Approach to Soil Conservation Is Succeeding.* TD of address for Goodyear Soil Conservation Awards Meeting, Columbus, OH. 13 Sep. 1949.

This speech highlights the democratic, cooperative, community-based aspect of soil conservation districts. This was essential to the development of my argument of the importance of the soil conservation district idea.

\_\_\_\_\_. *The Economy of Soil Conservation.* TD of address for Banker-Farmer Meeting, Pulaski, VA. 25 Mar. 1949.

In this speech Bennett focuses on the monetary profits of soil conservation. His statements on the profit of the federal government through increased tax revenue due to soil conservation verified the practicality of his soil conservation program.

\_\_\_\_\_. *The Land We Defend.* TD of address for 78th Annual Meeting of the National Education Association, Milwaukee, WI. 2 July 1940.

In this speech, Bennett highlighted the development of public awareness of soil erosion, including the poor reception of his early erosion reports and the role of the May 11 dust storm in awakening the public. This was important information for my paper.

\_\_\_\_\_. *Relationship of the Extension Service to the Soil Conservation Service.* TD of

address for Forty-ninth Annual Convention of the Association of Land-Grant Colleges and Universities, Washington, 18 Nov. 1935. Hugh H. Bennett Papers, Special Collections, Iowa State University Library. Box 10/10.

Bennett politely discusses the friction between the Service and extension services, as well as improvements therein. This was very important to my paper because it was a political obstacle for the SCS in its early years, which I discussed in my paper.

\_\_\_\_\_. *A Significant Decade in Soil Conservation*. TD of address for Farmers' Day Meeting, Smithfield, NC. 13 Aug. 1947.

In this speech, Bennett recounts the history of his interest in soil conservation and states that he had been away from his office for over a month, observing conservation work in person. This speech gave a strong impression of Bennett's character and love of the outdoors.

\_\_\_\_\_. *Soil Conservation Districts' Important Responsibilities*. TD of address for Meeting of the North East Area Soil Conservation District Supervisors and Directors, Philadelphia, PA. 5 Oct. 1950.

Bennett gives figures about the overwhelming growth of soil conservation districts, one of which I used in my paper.

\_\_\_\_\_. *Soil Conservation in the Plains Country*. TD of address for Greater North Dakota Association and Fargo Chamber of Commerce Banquet, Fargo, ND. 26 Jan. 1949.

In the introduction to this speech Bennett recalls his observations while touring the Great Plains during the Dust Bowl. I quoted one of his understated descriptions at the beginning of my paper.

\_\_\_\_\_. *Soil Conservation Is a Profitable Investment*. TD of address for Washington State Association of Soil Conservation District Supervisors Annual Meeting, Wenatchee, WA. 21-22 Jan. 1949.

Bennett explains, among other ideas, how his surveying experiences convinced him of the benefits of soil conservation and increased his effectiveness in gaining a national conservation program. This showed me why Bennett was able to convince Congress to establish the SES.

\_\_\_\_\_. *True Conservation Can Only Be Achieved by an Informed Citizenry*. TD of address for Conservation Workshop for Teachers, Murray College, Murray, KY. 11 July 1949.

In this speech Bennett expounds upon the importance of conservation education. This underlies the argument in my paper that education was a key component of Bennett's work.

\_\_\_\_\_. United States Department of Agriculture. Soil Conservation Service. *Development of Natural Resources: The Coming Technological Revolution on the Land*. Address for Bicentennial Conference, Princeton University, Princeton, NJ. 2 Oct. 1946. Washington, D.C.: Soil Conservation Service, 1951.

In this famous speech, Bennett lamented continued abuse of American farmland. I quoted it in my paper.

\_\_\_\_\_. \_\_\_\_\_, \_\_\_\_\_. *Excerpts from "The Challenge of Soil Conservation."* Address for Great Issues Seminar, University of Denver. 2 Feb. 1949. Washington, D.C.: Soil Conservation Service, 1949.

This is a speech in which Bennett recaps with great enthusiasm the history of his triumph over soil erosion, from the first government funding to World War II produc-

tion. It provided several key quotes.

\_\_\_\_\_. \_\_\_\_\_. *Progress in Soil Conservation*. Address for Distinguished Lecture Series, University of Arkansas, Fayetteville, AR. 26 Apr. 1950. Washington, D.C.: GPO, 1951.

This is a speech in which Bennett highlights the benefits of soil conservation and his future plans for the soil conservation program, and laments the causes of America's former ignorance toward erosion. An important insight into Bennett's ideology, this speech also provided primary contextual material.

\_\_\_\_\_. \_\_\_\_\_. *Soil Conservation Goes to War*. Summary of address before the Royal Canadian Institute, Toronto, Canada. 7 Nov. 1942. Washington, D.C.: Soil Conservation Service, 1943.

Bennett explains his plans for increased agricultural production for World War II support. I quoted this speech in my paper.

\_\_\_\_\_. \_\_\_\_\_. *Up-to-Date Farmers Practice Soil Conservation*. TD of address for National Soil Conservation Field Day and Plowing Matches, Bethany, MD. 17 Aug. 1951.

Bennett gave this address for a plowing competition and explained, among other things, the receptiveness of most farmers to early SCS work. This was important information for my paper.

\_\_\_\_\_. \_\_\_\_\_. *Worldwide Influence of American Soil Conservation Program*. TD of address for 5th Annual Meeting of the Soil Science Society of America, Detroit, MI. 27 Oct. 1950.

This speech included statements on the progress of soil conservation in America and its influence on other countries. I included information from this speech in my paper.

McClymonds, A. E. *County Land use Planning and Soil Conservation Districts*. TD of address for State Erosion Meetings, Bozeman, MT. Dec. 1940.

McClymonds discusses the importance of soil conservation districts to agriculture. I quoted his speech in my paper.

#### VIDEO RECORDINGS

U.S. Department of Agriculture. Resettlement Administration. *The Plow That Broke the Plains*. Dir. Pare Lorenz. Eastern Service Studios, 1936.

This famous government documentary explains the true cause of the Dust Bowl and gives insight Bennett's success in helping the government understand its mistake and explains the Dust Bowl in context of World War I.

#### Secondary Sources

##### BOOKS

Egan, Timothy. *The Worst Hard Time: the Untold Story of Those Who Survived the Great American Dust Bowl*. Boston: Houghton Mifflin Co., 2006

Egan's compelling and intensely human account introduced me to the Dust Bowl and Bennett's triumph therein. It also included moving details on life during the Dust Bowl.

Farrell, Jacqueline. *The Great Depression*. San Diego: Lucent Books, 1996.

Farrell's simple, concise overview of the Great Depression in context provided a

wide base of knowledge before further research.

Hartenmink, Alfred E., ed. *The Future of Soil Science*. Wageningen: International Union of Soil Sciences, 2006.

This is a compilation of papers by 55 soil scientists from 28 different nations. All deal with some aspect of the future of soil science. These papers and their diverse viewpoints shaped my understanding of the present goals, struggles, and achievements of modern soil science.

Hurt, Douglas. *The Dust Bowl: An Agricultural and Social History*. Chicago: Nelson-Hall, 1981.

Hurt gives the most balanced, comprehensive account of the Dust Bowl I have yet found. His book provided the necessary context from which to create my own opinions.

Lacy, Leslie Alexander. *The Soil Soldiers: the Civilian Conservation Corps in the Great Depression*. Radner, Pennsylvania: Chilton Book Company, 1976.

Lacy explains the significance of the CCC in relation to the SCS. Understanding this was essential to further research and analysis.

Larson, William E. "Introduction." *Advances in Soil and Water Conservation*, eds. Francis J. Pierce and Wilbur W. Frye. New York: Sleeping Bear Press, Inc., 1998.

This introductory article to *Advances* gives a short history of soil conservation in America, which was important contextual information for my paper, and explains the lasting impact of soil conservation upon world hunger, which was an essential development in my analysis of Bennett's significance.

Larson, William E. and others. "Policy and Government Programs in Soil and Water Conservation." *Advances in Soil and Water Conservation*, eds. Francis J. Pierce and Wilbur W. Frye. New York: Sleeping Bear Press, Inc., 1998.

This article explains, among other concepts, the importance of Bennett's publication, *Soil Erosion: A National Menace* (see citation), to agricultural science. This was important information for my paper because it demonstrates the triumph of Bennett's countless erosion reports.

Johnson, Paul W. "The Role of the NRCS in the Development and Implementation of Soil and Water Conservation Policies." *Soil and Water Conservation Policies and Programs*, eds. Ted L. Napier, Silvana M. Napier and Jiri Tvrdon. New York: CRC Press, 2000.

This article praises the work of the NRCS, explaining that the voluntary, farmer-based conservation approach has contributed substantially to the organization's long-term success. This supported my analysis of Bennett's belief in working individually with farmers.

Morgan, Robert J. *Governing Soil Conservation: Thirty Years of the New Decentralization*. Baltimore: John Hopkins Press, 1965.

The preliminary chapters of this book narrate in detail the technicalities of establishing the government soil conservation program, acting as a starting point for my primary research in government documents and providing details from unavailable sources.

Napier, Ted L. and Silvana M. Napier. "Soil and Water Conservation Policy Within the United States." *Soil and Water Conservation Policies and Programs*, eds. Ted L. Napier, Silvana M. Napier and Jiri Tvrdon. New York: CRC Press, 2000.

This article gives reasons for changes in public awareness of soil erosion. I gained

an understanding of the various causes of soil erosion awareness, namely the Dust Bowl.

Nowak, Pete and Peter E. Korsching. "The Human Dimension of Soil and Water Conservation: A Historical and Methodological Perspective." *Advances in Soil and Water Conservation*, eds. Pierce, Francis J and Wilbur W. Frye. New York: Sleeping Bear Press, Inc., 1998.

Nowak and Korsching explain the necessity of soil erosion education. This was an important concept for me because Bennett placed a huge priority in his speeches and programs for farmer education.

Owen, A. L. Riesch. *Conservation Under F.D.R.* New York: Praeger Publishers, 1983.

An excellent, scholarly work, Owen's book proved invaluable to my project, as it provided context into which to fit the inclusion of a soil conservation program in the New Deal.

Paarlberg, Dan. "Tarnished Gold: 50 Years of New Deal Farm Programs." *The New Deal and Its Legacy: Critique and Reappraisal*, ed. Robert Eden. New York: Greenwood Press, 1989.

In this article, Paarlberg compares former government agricultural policies to that of the New Deal. I indirectly quoted it in my paper when I discussed how the New Deal allowed Bennett's program to succeed.

Racine, Phillip. *Seeing Spartanburg: A History in Images*. Spartanburg, SC: Hub City Writers Project, 1999.

This history of Spartanburg, South Carolina includes a stirring account of the devastation of soil erosion upon the city during the Great Depression and its recovery through SCS programs, which convinced me of the necessity for and merit of Bennett's work.

Ronda, James and Carlos Schwantes. *The West the Railroad Made*. 7 Aug. 2006. Forthcoming.

This yet-unpublished book includes a section explaining how railroads and others promoted settlement of the west. I mentioned this in my paper as an explanation for the eventual abuse of the Southern Great Plains.

Simms, D. Harper. *The Soil Conservation Service*. New York: Praeger Publishers, 1979.

Simms' book gives specific information on reasons for the establishment of the Soil Conservation Service and political motivations behind its establishment, and referred me to several important primary sources.

Toy, Terrence J, George R. Foster and Kenneth G. Renard. *Soil Erosion: Processes, Prediction, Measurement, and Control*. New York: John Wiley and Sons, Inc., 2002.

This textbook explains the impacts of soil erosion upon world hunger, which verified Bennett's propositions and added to my argument for present-day significance.

Watkins, T.H. *The Great Depression: America in the 1930s*. New York: Blackside, Inc., 1993.

Watkins provides a comprehensive account of America from the 1920s through 1939, focusing on political motives and economic relationships. This was an essential base of knowledge from which to interpret the impact of soil erosion in the Dust Bowl.

Weber, Thomas A. and Gary A. Marghem. "Conservation Policy in the United States: Is



There a Better Way?" *Soil and Water Conservation Policies and Programs*, eds. Ted L. Napier, Silvana M. Napier and Jiri Tvrdon. New York: CRC Press, 2000.

Weber analyzes strengths of soil conservation districts and their importance for the future. This developed my analysis of the districts as a revolutionary conservation device.

Worster, Donald. *Dust Bowl: The Southern Plains in the 1930s*. New York: Oxford University Press, 1979.

Worster's book is a definitive general work on the Dust Bowl. He provides stinging analysis of the Dust Bowl's causes and effectiveness of government programs. This book provided a base of knowledge from which to argue my own opinions about the Dust Bowl.

\_\_\_\_\_. *Nature's Economy: A History of Ecological Ideas*. 2d ed. Cambridge: Cambridge University Press, 1994.

Worster argues, from the immediate and long-term impacts of the Dust Bowl, that it was both a tragedy of ecological indifference. This was important for theme development in my paper.

#### AUTHOR'S CORRESPONDENCE

Buswell, Carol. "RG 114 Correspondence." Email from Carol Buswell. 23 Jan. 2007.

Buswell, the Education Specialist at the Seattle branch of the National Archives, mailed me several finding aids for the correspondence files of the Soil Conservation Service and aided me in my research at the Archives.

Gottwald, Melissa. "Hugh Hammond Bennett Papers." Email from Melissa Gottwald. 28 Feb. 2007.

Gottwald, a Collections Archivist at Iowa State University, assisted me in selecting the most useful documents in their Bennett Papers for a copy order and in the ordering process.

Helms, Douglas. "RE: Further Questions." Email from Douglas Helms. 28 Feb. 2007.

Some time after interviewing Helms, I emailed him with several follow-up questions. He answered them and also referred me to Douglas Hurt, Norman Burg, and Richard Duestarhaus for further interviews. Additionally, he mailed me a copy of *Tar Heels* (see citation).

Reeves, Kimberly. "ILL Request: Bennett Papers." Email from Kimberly Reeves. 29 Jan. 2007.

Reeves connected me with the special collections department at Iowa State University and assisted me in selecting and ordering copies of the Bennett Papers there (see citation).

#### ELECTRONIC

*Dust Bowl Region*. Digital map. Wind Erosion Research Unit, Kansas State University. 20 Jan. 2007 <<http://www.weru.ksu.edu/>>.

This is a map showing the geographical extent of the Dust Bowl. It was important that I understand the Dust Bowl's location for my research.

U.S. Department of Agriculture. Natural Resources Conservation Service. *About the Natural Resources Conservation Service*. n.d. 30 Aug. 2006 <<http://www.nrcs.usda>>.

gov/about>.

This site article gives a summary of the functions and programs of the NRCS, the modern continuation of Bennett's SCS, demonstrating the lasting impact of Bennett's work.

\_\_\_\_\_. *Biography of Hugh Hammond Bennett*. By Douglas Helms. n.d. 30 Aug. 2006 <<http://www.nrcs.usda.gov/about/history/bennett.html>>.

This is a basic biography including dates of birth and death and a list of Bennett's awards. In early stages of my research it served as a reference point for essential facts.

\_\_\_\_\_. National Agricultural Statistics Service. *Quick Stats: Agricultural Statistics Data Base*. n.d. 30 Dec. 2006 <<http://www.nass.usda.gov/quickstats>>.

This site generates agricultural statistics, such as price and production, by country, state, or county from 1866 to present. I used wheat statistics to analyze growth in crop production and price changes, which I included in my paper.

U.S. Department of Commerce. National Oceanic and Atmospheric Administration. Earth System Research Laboratory. *U.S. Climate Division Dataset Mapping Page*. n.d. 13 May 2007 <<http://www.cdc.noaa.gov/usclimate/usclimdivs.html>>.

I used the historical precipitation statistics on this online database to find the approximate date range and severity of the 1950s drought. I cited this drought in my paper as an example of a challenge for the SCS.

#### ENCYCLOPEDIAS

Spiro, Jonathan P. "Conservation." *Dictionary of American History*, ed. Stanley I. Kutler, 3d ed., vol. 2. New York: Charles Scribner's Sons, 2003. *Gale Virtual Reference Library* (Bothell, WA: Bothell High School Library). 15 Nov. 2006 <<http://www.galegroup.com>>.

Spiro provides documentation of the development of the idea of conservation through American history. This was essential information for my understanding of the context of conservation and the role of Franklin D. Roosevelt's New Deal in Bennett's triumph.

#### GOVERNMENT PUBLICATIONS

U.S. Department of Agriculture. National Agricultural Statistics Service. *Agricultural Statistics 2006*. Washington, D.C.: GPO, 2006.

My basic analysis of this comprehensive report on American agriculture revealed the importance of formerly Dust Bowl areas to our daily lives. I noted this in my paper.

\_\_\_\_\_. Natural Resources Conservation Service. *Human Capital Strategic Plan, 2006-2010: Conservation First, People Always*. 2006.

In this publication, the NRCS outlines its dependence on a highly skilled, motivated staff today as in history. I stated the importance of skilled specialists to the success of Bennett's program in my paper.

\_\_\_\_\_. \_\_\_\_\_. *Natural Resources Inventory: 2003 Annual Land Use NRI*. May 2006.

This is the most recent report of the NRCS analyzing land use in America. It explains the widely recognized importance of land use today, thus demonstrating the success of Bennett's work.

\_\_\_\_\_. \_\_\_\_\_. *Natural Resources Inventory: 2003 Annual Soil Erosion NRI*. May

2006.

This is the most recent report of the NRCS analyzing soil erosion in America. It provided telling statistics on recent progress in soil conservation, which are cited in my paper.

#### INTERVIEWS

Azimzadeh, Hamid. Interview by author. 4 Feb. 2007. Email.

Azimzadeh is a staff member and PhD student at the Tehran University in Yazd, Iran. He provided me with a unique view on soil conservation as a practical way of dealing with maintaining an adequate food supply, which I included in my paper.

Churchman, Karen. Interview by author. 26 Jan. 2007. Email.

An employee of the NRCS in Kansas, Churchman answered questions specifically about the Dust Bowl region. The information she provided about Kansas' recovery from the Dust Bowl was very significant to my paper.

Duesterhaus, Rich. Interview by author. 16 Feb. 2007. Email.

Duesterhaus is the senior advisor of the National Association of Conservation Districts. He told me of the modern-day progress of soil conservation districts and of their expansion over all privately-owned land in America. This supported my conclusion that the soil conservation district was a revolutionary advancement.

Egan, Timothy. Interview by author. 29 Jan. 2007. Email.

Egan, author of *The Worst Hard Time* (see citation) and National Book Award recipient, told me about the views of Dust Bowl farmers toward government soil conservation programs, as well as some of the tragic conditions in the Dust Bowl, which I used in my paper.

Helms, Douglas. Interview by author. 26 Jan. 2007. Telephone.

Helms is the senior historian of the NRCS. He explained the development of the NRCS and conservation ideas over time, which was essential to understanding the lasting significance and development over time of Bennett's work.

Holle, Merle. Interview by author. 27 Jan. 2007. Telephone.

Holle is a progressive farmer in Kansas. He gave me excellent information on soil conservation techniques and the views of modern farmers, which helped me understand the current benefits of soil conservation.

Hurt, Douglas. Interview by author. 19 Mar. 2007. Email.

Hurt is the author of *The Dust Bowl: An Agricultural and Social History* (see citation). He explained the reactions of farmers to the Soil Conservation Service, particularly in comparison to other New Deal programs, which aided me in developing the historical significance of my topic.

Kimble, John. Interview by author. 27 Jan. 2007. Email.

Kimble is an accomplished soil scientist and recipient of the International Soil Science Award who worked for the SCS/NRCS for 30 years. He informed me of the challenges facing current soil conservation, which expanded my analysis of Bennett's long-term legacy. Kimble also recommended me to Merle Holle (see citation).

Kramer, Andrew. Interview by author. 16 Jan. 2007. Email.

Kramer works in conservation education for third world countries and was recently

in Ecuador for the same. He explained to me the relationship between conservation, income, and food production for many farmers in poverty. This was a very important investigation into Bennett's ideal of conservation to reduce world hunger.

Lal, Dr. Rattan. Interview by author. 22 Jan. 2007. Telephone.

Lal is a widely accomplished professor of soil science and President of the Soil Science Society of America. He elaborated upon the accomplishments of soil conservation, obstacles to conservation, and the role of the NRCS. I quoted him directly and indirectly in my paper. Lal also referred me to John Kimble (see citation).

Van Pelt, Scott. Interview by author. 23 Jan. 2007. Email.

Van Pelt is an NRCS soil scientist from Texas. He described the accomplishments and future goals of soil conservation to me, which allowed me to understand soil conservation's importance today.

#### JOURNALS

Berton, Valerie. "Earth Man." *American Farmland: the Magazine of American Farmland Trust* vol. 19, no. 3 (Fall 1998): 9.

This article celebrates Norman Berg's lifetime of service with the SCS/NRCS. It describes his early work in the SCS, including his preference toward discussing with farmers at their kitchen tables. I mentioned this in my paper to illustrate the personal feel of the SCS programs.

Borchert, John R. "The Dust Bowl in the 1970s." *Annals of the Association of American Geographers* 61 (Mar. 1971): 1-22 (University of Washington Libraries, Seattle). 19 Nov. 2006 <<http://www.jstor.org>>.

Borchert's article explains the importance of formerly Dust Bowl land in World War II production and how soil conservation prevented Dust Bowl recurrences, even in subsequent severe droughts. This was essential evidence for my arguments of Bennett's triumph, and I quoted this article in my paper.

Claasen, Roger. "Have Conservation Compliance Incentives Reduced Soil Erosion?" *Amber Waves: The Economics of Food, Farming, Natural Resources, and Rural America* (June 2004). 21 Nov. 2006 <<http://www.ers.usda.gov/amberwaves>>.

This is a critical article on the effectiveness of the NRCS's current soil conservation district policy, from a respected online journal. The article affirmed that the recent decline in soil erosion is due to the NRCS's work, which was essential to the development of my analysis.

Hansen, Zeynep K. and Gary D. Libecap. "Small Farms, Externalities, and the Dust Bowl of the 1930s." *Journal of Political Economy* 112 (June 2004): 665-694.

This is a highly informative article explaining soil conservation techniques and concepts and the procedures and effects of soil conservation districts. The article explains today's soil conservation and explained how it prevented Dust Bowl recurrences, which is important to Bennett's long-term significance in my paper.

#### MISCELLANEOUS

Hoffman, Christian and Ryan Bartelheimer. Field Day and Interview by author. 24 Apr. 2007. Personal Interview.

Hoffman and Bartelheimer work at the Snohomish Conservation District. They took me along on a survey trip to a local dairy farm to measure sediment in a drainage

ditch that had been damaged by flooding. The trip afforded the opportunity to ask many questions about the operation and significance of conservation districts, as well as to experience the nature of field work.

#### OTHER PERIODICALS

Steury, Tim. "Full Circle." *Washington State Magazine* 3 (Summer 2004): Iss. 3, 33-37.  
This article in Washington State University's quarterly explains recent research on perennial wheat as a means of controlling erosion. This demonstrated that wind erosion is still an issue that many are working toward solving all over the nation.

#### PHOTOGRAPHS

*Cross Wind Strip Cropping*. n.d. Wind Erosion Multimedia Archive, Wind Erosion Research Unit. 28 Mar. 2007 <[http://www.weru.ksu.edu/new\\_weru/multimedia/multimedia.html](http://www.weru.ksu.edu/new_weru/multimedia/multimedia.html)>.

This is a beautiful photograph of modern strip cropping. It visually illustrates soil conservation's triumph, so I put it in my appendix.

Hoffman, Christian. *Author on Soil Survey*. Personal Photograph. 24 Apr. 2007.

Hoffman kindly photographed me with some survey equipment during my observation of the survey (see citation). I included this photograph in my appendix as a personal example of modern soil conservation, illustrating Bennett's continuing triumph.

Soil Conservation Service. *Beautiful Kansas Farm Land with Various Conservation Measures Applied to Control Erosion*. n.d. In *A History of Natural Resources Conservation in Kansas*, by John Spurling. Fort Scott, KS: Sekan Printing Co., 1990.

This photograph shows several conservation techniques spread over a section of Kansas farm land. I included it in my appendix to illustrate Bennett's reclamation of Dust Bowl land through soil conservation.

#### SPEECHES

Skidmore, Edward L. *Research and Programs that Lessen Likelihood of Dust Bowl Recurrence*. TD of abstract of address, Beijing, China. 2006.

Mr. Skidmore emailed me this abstract of his oral presentation explaining how soil conservation programs discouraged further Dust Bowls. This was an important argument in my paper.

#### VIDEO RECORDINGS

U.S. Department of Agriculture. Natural Resources Conservation Service. *NRCS: A Partner in Soil Conservation Since 1935*. USDA Broadcast Media and Technology Center, 2005.

This video commemorates the 70th anniversary of the NRCS and includes footage of Bennett speaking on soil conservation, which illuminated his character and speaking style.

\_\_\_\_\_. Agricultural Research Service. *Soil Erosion by Wind and Its Control*. Produced by John Tatarko. Wind Erosion Research Unit: 2003.

This highly informative video on the science behind wind erosion and its control provided the necessary base of knowledge from which to speak with erosion experts.



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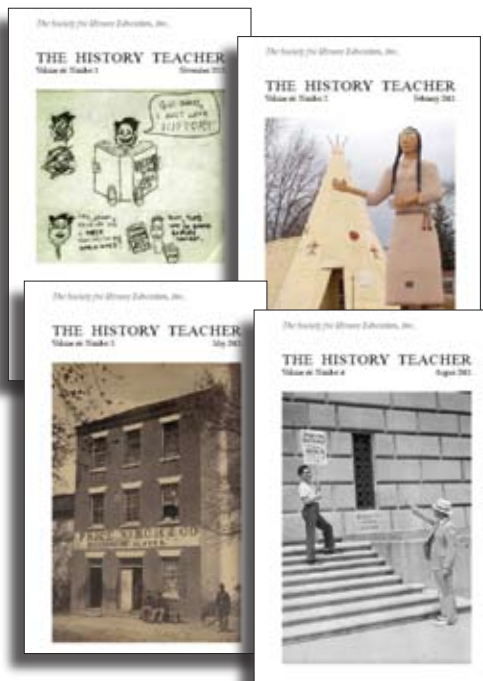
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