

5-2013

Geotechnics and regionalism: the lineage of thought from John Wesley Powell to Benton Mackaye

Nikkilee Cataldo
University of Southern Maine

Follow this and additional works at: http://digitalcommons.usm.maine.edu/muskie_capstones



Part of the [Environmental Policy Commons](#), [Natural Resources Management and Policy Commons](#), and the [Urban Studies and Planning Commons](#)

Recommended Citation

Cataldo, Nikkilee, "Geotechnics and regionalism: the lineage of thought from John Wesley Powell to Benton Mackaye" (2013). *Muskie School Capstones*. 67.
http://digitalcommons.usm.maine.edu/muskie_capstones/67

This Capstone is brought to you for free and open access by the Student Scholarship at USM Digital Commons. It has been accepted for inclusion in Muskie School Capstones by an authorized administrator of USM Digital Commons. For more information, please contact jessica.c.hovey@maine.edu.

**GEOTECHNICS AND REGIONALISM:
THE LINEAGE OF THOUGHT FROM JOHN WESLEY POWELL TO BENTON MACKAYE**

by
Nikkilee Cataldo
Muskie School of Public Service

Respectfully Submitted to Professor Mark Lapping
for Completion of the Capstone Requirement
May 2013

John Wesley Powell was a reformer, Jeffersonian democrat, and forward-thinking conservationist in the later-nineteenth century, when the idea of ecology was first coalescing. He was a regionalist who delineated his plans by watershed boundaries, and determined land-use plans based on physiography before the terms “regional,” or “land-use plan” were known as they are today. In an era when planning was focused on congested urban conditions, and society was invested in fierce individualism, Powell was setting a precedent for rural and wilderness planning, and cooperative stewardship. These ideas would be fundamental to the development of ideas behind the Regional Planning Association of America (RPAA) (Maher, 2008) and Powell’s influence on the RPAA is most clearly recognizable though an examination of the work and theory of Benton MacKaye.

MacKaye was one of the leading figures in the origin of the RPAA, and, along with Louis Mumford, its most significant founding theorist on broad regional issues. As American industry and urban populations grew rapidly through the two World Wars, MacKaye was a Jeffersonian voice in the capital-industrial clamor, insisting that the production from (and the communities producing in) the rural and wilderness areas were equally as valuable to the war efforts and an effective modern society as any metropolitan or industrial center. He advocated the protection of natural resources for their sustained use by rural and forest communities. He was both a strong voice as well as a key thinker behind the early regional planning movement, most especially for the rural and wilderness lands.

The two men, John Wesley Powell and Benton MacKaye, each developed exceptionally comprehensive and innovative regional planning visions that had a great deal in common. They both were Jeffersonian idealists, who considered those who tilled the soil and worked the land

for primary production a class of men above all the rest. In his *From Geography to Geotechnics*, MacKaye would describe Jefferson as a “geotechnist” among the founding fathers (though, he notes, Jefferson’s ideas possessed some of the astigmatism of the period’s culture). MacKaye quotes Jefferson at length, starting with “Those who labour [sic] in the earth are the chosen people of God,” (as quoted in MacKaye, 1968, 51).¹

MacKaye and Powell were unlike so many of the preservationists of their respective eras inspired by the likes of John Muir and Henry David Thoreau— who, as MacKaye explained, “somewhat overlooked...the steady supply of the earth’s material as the basis” of human society (MacKaye, 1969c, 4). Indeed, Powell was a contemporary of Muir and MacKaye of the great preservationist Aldo Leopold. Powell met Muir a number of times, and had great respect for his work. Likewise, MacKaye had a familiar relationship with Leopold and would ultimately come to deeply espouse the ideas first presented by Leopold in *Wilderness as a Form of Land Use* (1925), and worked along side him to co-found The Wilderness Society in 1935. Though MacKaye revered Thoreau’s writings and thoughts on modern man’s ability and need to find joy and satisfaction in producing his own livelihood, MacKaye believed in “utilitarian conservation” or “sustained yield” as outlined by Gifford Pinchot for forestry. Powell and MacKaye realized that natural resources were fundamental to human subsistence and that the environments that supplied them must be conserved to ensure the well being of rural human society. As MacKaye put it he was planning for the “the enduring use of the sources of life,” (MacKaye, 1965b, 23).

¹ The term “new exploration” is used throughout MacKaye’s writings, and is used as the title of his 1928 book *The New Exploration* (Harcourt, Brace and Co.). MacKaye describes the new exploration as the examination of “the wilderness of civilization” (as compared with the “wilderness of nature” that was explored in the days of the settlers) in order to understand the process that could fulfill the “three needs of cultured man”: “The conservation of *physical* natural resources. The control of commodity-flow. [And] the development of environment, or *psychologic* natural resources” (*The New Exploration: A Philosophy of Regional Planning* (United States: Haracourt, Brace, and Company, 1962), p 51.)

MacKaye and Powell “thought about how those natural resources might best contribute to the welfare of small communities made up of ordinary farmers,” (Worster, 2001, 124). Powell and MacKaye recognized that if the resources and limitations of the land were not respected as people developed their communities there would neither be maintenance of the environment and its resources, nor satisfaction or sustainability in rural living.

Both Powell and MacKaye found that the best way to understand the limitations and resources of the landscape was through scientific, in-the-field exploration. Indeed it was in no small part a result of reading and hearing about Powell’s explorations of the west that MacKaye came to believe in such experiential learning. The two men also agreed on the role government was to play in establishing communities: Government should ensure there was funding, information, and other resources for any needed significant initial infrastructure. Government should also see that business interests were not speculating and profiting at the expense of the people. Beyond this, government had no role: communities should be left to control their own resources and production. As MacKaye would write of Powell’s work, “The gist of his plan was for Uncle Sam to supply the capital, give his nephew some good useful scientific advice, and then leave him alone” (MacKaye, 1965b, 67) And perhaps the most significant congruence in the thinking of these two men was that they both vehemently believed social regions should be divided by socio-geographic feature (most often the watershed), rather than the so-often arbitrary political boundaries.

John Wesley Powell’s influence was significant in the development of the arid west and its water policy. But perhaps his most lasting impact was the influence of his ideas on the young Benton MacKaye as he developed the theory that would become fundamental to regional planning and the formation of the RPAA. MacKaye worked a generation after Powell, and drew

great inspiration from his predecessor. He read the writing of the famed Colorado explorer avidly, and came to so strongly believe in the value of exploration of the landscape before creating a plan for social development that he called his own approach to planning a “new exploration,” (MacKaye, 1962, 51) and his final treatise a “Powell brand of evolution,” (as quoted in Anderson, 2002, 344).

In a roughly written note from 1969, MacKaye outlines the major conservation events of the century from 1869-1969. This timeline begins with Powell’s expedition down the Colorado in 1869, followed by the publication of Powell’s *Arid Lands Report*. MacKaye also lists when he saw Powell’s lecture at the Smithsonian museum in 1891 –the single event when Powell and MacKaye’s paths would cross in person. MacKaye cites Powell again in 1916 when he lists “the Crosser Bill” (a bill MacKaye himself authored, also known as the National Colonization Bill) which he footnotes with “Powell’s ‘Dryland Democracy,’” (MacKaye, 1969a). Aside from MacKaye’s own work and that of Gifford Pinchot, Powell is the only conservationist who is listed more than once. Undoubtedly, MacKaye held great stock in the ideas and accomplishments of Powell. His listing of Powell’s lecture in 1869 as a major event in conservation history – apparently only because MacKaye himself observed the event – clearly shows how important he felt the explorer was to the development of his own ideas.

This paper will explore some of the fundamental theory behind the work of both Powell and MacKaye, as well as examples of the plans that they developed. It will become clear that the two men were working from very similar theoretical vantage points, though in relatively different socio-political eras. It will also be clear that the two men developed innovative and comprehensive plans that were eventually implemented – though in ways that likely would have (or did) disappointed them from the vantage point of a century later. But because the work of

these two great American proto-planners has had such a great impact on modern American

ML-5
182753

June 28/69

CONSERVATION
FROM POWELL
Evolution of a Century
1869 = 1969

1869, May 24, Green R. Powell puts in for Gal. Canyon
1878. Arid Lands Report, by J.W.P.
1891, Act of March 3, Sec. 24, to reserve forest, land
Powell lecture, N.S.S. G.G. Hubbard, Ch. ^{Public}
Pinchot's first trip west.
~~1897, March 4, Cleveland~~
1897, Feb. 22, Pres. Cleveland creates 13 Reserves
March 4, Pres. C. vetoes Sundry Civil Bill
Act of June 4, Reserves under Int. Dept.
1898. Pinchot heads Div. of Fsty. Circular 21.
1901, Dec. 2. T.R.'s Message re "forest & water."
1905 Transfer Act, Feb. 1, creating Forest Service.
1906, "Alcala Act" of June 11.
1907, Oct. 13. "Conservation of Natural Resources"
GP and TR on the Mississippi.
1908, May, Governors' Conf. G.P. and Garfield, A
1909 G.P. vs. Ballinger re Coal Lands, et al
1910 Cong'l invest'g; Coal Lands saved
1911 BPPM talks with G.P. re "locking up" resources
OVER

June 29/69

Mar. 3 Weeks Law

1911, Mar. 3 Weeks Law
1912 BPPM Wh. Mtn Report - Marshall O. Leighton
1913 Ohio R. Flood. G.P. thereon
1913 Newlands Bill
1913 Poin dexter Bill Yard Stick
1916 Nat'l Park Service
1916 Crosser Bill (Powell's Dryland Democracy)
1918 Kelly Bill
1919 Employ. & Nat. Resources
1925 Gt. Smoky and Shen. Parks A.T. Cony.
1933 TVA
1933 CCC
1935 Wil Soc
1936 Flood Control Law
1939 Gontocook Survey
1945 Wil Soc, Zahniser
1964 Wil. Act
~~1968 Forests Act~~
1966 Gmtrol of River Pollution - Udall
1968 Trails Act

Figure 1: "Conservation from Powell to Pinchot," Benton MackKaye Family Papers (MackKaye, 1969a)

planning, and because the issues they were attempting to address are still troubling us today it seems warranted to re-examine their ideas and approaches.

The paper begins with a discussion of the work of Major John Wesley Powell as he endeavored to scientifically and regionally plan the development of the American arid-west. The sunset of the explorer's academic work met briefly with the dawn of the young MacKaye's education, and this chance encounter shifts the focus of the paper onto the work of MacKaye and his development of the theory and projects of the RPAA. The paper concludes with a review of some of the tangible impacts the RPAA has had on American planning over the past century, and how the work and ideas of both Powell and MacKaye are as applicable – if not more so – today as they ever have been.

POWELL'S VISION FOR THE WEST

John Wesley Powell served as the second head of the US Geographic and Geological Survey – a bureau he advocated for the creation of. Before his exploration of the Colorado River and Grand Canyon in the 1860s and 1870s, the area was unexplored territory – literally a blank on the map – with many people believing the region was impassable, (US House of Representatives, 1874, 47). In his work studying and mapping the west, Powell gained an intimate understanding of an arid landscape that was, in so many ways, unfathomable to the politicians of the humid east. Powell returned to the population centers of the east and endeavored to make Congress understand that the west – in its extremes of climate and topography – simply could not effectively be arbitrarily divided and settled en masse.

Ceding the Public Domain

Many leaders of the period had been marketing the idea that rain would “follow the plow” out onto the arid plains, and simply homesteading and planting trees would make the west into an agrarian oasis, (General Land Office, 1867, 135; Jacobs, 1978, 13; Norgaard, 2003, 278). Powell recognized that only appropriate planning and effective irrigation schemes would bring the needed conditions for agriculture. In 1862 the Homestead Act was passed with an aim to aid poor farmers acquire a piece of the public domain, thereby both “improving” the land of the nation as well as the lot of the common man through the opportunity to till the soil. But by 1875 what had once been 1.5 billion acres of federal domain had dwindled by more than a third, (Worster, 2009). Half of all the land disposed of by the federal government went through the hands of professional land dealers before it was ever occupied (Holtgrieve, 1976). Of more than six hundred million acres sold or given away, less than one hundred million were given to common farmers. Instead the vast majority had been given over to corporations and speculators. Money went west as fast as the rails and steamers could carry it, a Boston paper protested, but little had been seen in terms of the improvement of agriculture from this investment. “The land is not transferred to those who cultivate, but to those who speculate,” (*Boston Daily Courier*, as quoted in Gates, 1968, 216).

The General Land Office (GLO), in charge of conveying public lands into private ownership, was doing such an outrageously bad job that all numbers regarding land in public or private ownership at that time are mere estimates (Dunham, 1937; Worster, 2009). “Many of the surveys were done carelessly, some indeed fraudulently,” (Dunham, 1937, 421) lines did not meet, sometimes by more than a mile, though the surveyors were paid well for their work, (Dunham, 1937; Peffer, 1951; Worster, 2009). The clerks of the GLO often decided cases covering more than a million dollars in value, while their salaries were about \$1,600 (Dunham,

1937). It was no surprise, then, that they often accepted bribes from those with a stake in the decisions, and “railroad employment was frequently given for favors received in land decisions,”(Dunham, 1937, 122). To many observers, the GLO was “practically throwing away the public domain to dishonest entrymen for transfer to corporations,” (Dunham, 1937, 139). MacKaye would write that the inept GLO had “wrought the long and lingering history of public land scandal,” (Dunham, 1937, 81). It was upon this morass that Powell and his allies stood to espouse the idea that the entire land system needed to be reworked.

A Scientific Survey, and Communal Control

Powell wanted science and rational thinking (at a time when science, a relatively new paradigm for social thinking, was often scoffed at and condemned by the public and politicians alike (Gates, 1968, 423)) to ensure that the public domain was developed in a way that would efficiently use and maintain the long-term viability of available natural resources, while also safeguarding agrarian peoples’ opportunity for land access. In 1879 there was a swing in favor of the land reform movement, and several of Powell’s objectives were provided for by Congress: unifying all land surveys under the Geological Survey (rather than the Land Office), and a broad gauge investigation by experts on what was wrong with the western land system (which Powell would lead), (Dunham, 1937). This saw the start of a decade in which Powell’s schemes for surveying the lands of the west, and ensuring that agrarian people were settled on the best agricultural lands saw relatively wide support.

In his noted biography of Powell, Wallace Stegner, describes Senator Edward T. Taylor of Colorado as a convert to Powell’s arguments for land reform. Popper and Popper explain that ultimately it was Taylor’s 1934 Grazing Act that would finally end the give away of public

lands, (Popper and Popper, 2010). Later in life Taylor would explain that he supported Powell's approach,

...because the citizens were unable to cope with the situation under existing trends and circumstances. The job was too big and interwoven for even the states to handle with satisfactory co-ordination. On the western slope of the Colorado and in nearby states I saw waste, competition, overuse, and abuse of valuable range lands and watersheds eating into the very heart of western economy. Farms and ranches everywhere in the range country were suffering. The basic economy of entire communities was threatened...Valuable irrigation projects stood in danger of ultimate deterioration (as quoted in Peffer, 1951, 217).

Foremost in Powell's scheme for land settlement reform was a uniquely democratic and place-based approach to control of water in the west. He proposed that water rights should be intrinsically tied to the land, and should not be sold except along with deeds to the land. As MacKaye explained, "Powell insisted that land and water rights were two halves of the same thing," (MacKaye, 1965b, 96). He called into question the indiscriminant division of land into square 160-acre tracts (quarter sections), as was the policy at the time – a policy MacKaye described as "naïve and primeval," (MacKaye, 1965b, 81). Suggesting instead that the land should be divided by hydrological systems (watersheds), into sections sized based on the highest and best land use for the physiography (as determined by scientific survey), and that the landowners who lived within these divisions should cooperatively manage the water, timber, pasture, and other resources of their watershed (Powell, 1879). In his *Institutions for the Arid Lands*, Powell wrote,

The farming of the arid region cannot be carried on [as in the east]. Individual farmers with small holdings cannot sustain themselves as individual men; for the little farm is, perchance, dependent on the waters of some great river that can be turned out and controlled from year to year only by the combined labor of many men...The plan is to establish local self-government by hydrographic basins...that the entire arid region be organized into natural hydrographic districts, each one to be a commonwealth within itself for the purpose of controlling and using the great values [of the land]...and I say to the Government: Hands off! (Powell, 1890).

While endorsing the need for damming and irrigation projects in the arid west, Powell tempered his efforts with the promotion of his scientific assessment that much of the western lands could never sustain tillage agriculture. Based on water availability, topography, soils and other physiography, along with his detailed study of the indigenous and Mormon irrigation systems of the Utah area, he estimated that only three percent of the land could ever be effectively irrigated (US House, 1874, 10). Later in life he increased these estimates to something closer to 20 percent. But the implication was clear: most of the western lands would neither support large-scale nor subsistence agriculture. The land that could be put to tillage through one of several irrigation schemes, he claimed with Jeffersonian insistence, *must* be preserved for the most valuable land use: agriculture. The remainder of the land would need to be classified through professional survey as either best suited to pasture, timber, coal extraction, or mining. With these classifications in place settlement could then be planned to suit the best and most sustainable uses of the land.

Powell's vision for settlement of the region was decidedly cooperative. He was a Jeffersonian visionary with one significant distinction between his own ideas, and those of the founding father: "Jefferson had sought an America that was secular, rational, friendly to farmers, and individualistic. Powell agreed with all of that except the last term. In place of 'individualistic' he put 'cooperative,'" (Worster, 2001, 347).

After detailed ethnographic research of the indigenous and Mormon communal irrigation systems of the south west (Jackson, 1975; Jackson, 1994), Powell designed a development plan where a group of settlers would organize themselves into an irrigation district on land that had been certified by surveyors as irrigable. The water would be owned and managed cooperatively. Powell believed that the task of developing the west was so substantial that it would require these

“extensive and comprehensive plans” and that “individual farmers, being poor men, cannot undertake the task,”(Powell, 2004, 8). Powell, however, tempered his trust in cooperative enterprise with the recognition that “a cooperative spirit avails nothing if a people do not understand or acknowledge the limitations of the land,” (Worster, 2001, 354).

Powell grudgingly acknowledged that the federal government would have a role to play in planning and building some of the infrastructure for the irrigation and settlement projects of the west (indeed this was ultimately Powell’s role), but he thought federal oversight should end there, (Gates, 1968, 420). He understood that some of the very large projects could “only be managed by cooperative organizations, great capitalists, or by the General or State governments,” (US House, 1874, 349). For Powell, it would be best if the cooperative organizations could manage the land and resources, but he foresaw the great difficulty in organizing the capital and engineering of very large projects by a small group of average men. He felt that under no conditions should the projects be managed, nor the water controlled by private enterprise. Short of these two options, the remaining choice would have to be that government would play a role to assure effective implementation (Worster, 2001). He felt that the role of the federal government was in the initial, comprehensive planning of western development, and in the funding of the largest projects.

Powell felt that no matter who funded or initiated the development, damming and irrigation should be undertaken through intra-watershed schemes (rather than as a massive inter-watershed system that was eventually implemented), managed cooperatively by the invested community. With great foresight, Powell wrote that if socio-political boundaries and control crossed hydrographic regions there would be considerable disagreement between water users about how to divide the precious resource (Stegner, 1954).

The Irrigation Survey, Policy and Politics

In 1889, senators Stewart (Nevada) and Teller (Colorado) presented a Joint Resolution for a comprehensive study of potentially irrigable lands of the west. As head of the Geological Survey, Powell was put in charge of the Irrigation Survey. Though (amazingly) passed without anyone realizing the sweeping impact the amendment would have, the bill that funded the Irrigation Survey also contained an amendment to withdraw from settlement all lands that were (or would be) designated as irrigable until such designation could be made. Because no one yet knew where the irrigable lands were, the whole of the public domain was closed (Stegner, 1954; Wilkinson, 1992). The General Land Office issued “the most sweeping withdrawal in public-lands history,” (Wilkinson, 1992, 245). and all ceding of the public domain was halted. Powell - leading the Irrigation Survey, delineating the irrigable lands, and determining the placement and routing of all reservoirs, canals, and ditches - had absolute control over the settlement of the west.

The response by the nation’s politicians was swift. Even Teller and Stewart realized that in their effort to have the federal government support their states in the irrigation process, they had inadvertently “instituted federal planning on an enormous scale,” (Wilkinson, 1992, 245). The idea of federal control and power wielding on any scale was yet to be generally accepted in any region of the nation, so such heavy handed federal power grasp was acceptable to almost no one. Corporate and other private interests were outraged, and the entitled, average citizen was offended.

In a determined effort to build public support and prove the importance of the work he was doing, Powell explained his plan at a series of meetings with the House Committee on Irrigation. He gave speeches, wrote magazine articles, and published reports. He asserted again and again

the importance of understanding the land and resources before settlement; ensuring that settlers would be kept from the hardship of living on land that could not support them. This kind of comprehensive, regional planning would keep the nation from becoming a welfare state handing out remittances to citizens made destitute by living on uninhabitable land – as was already happening all over the drought stricken west. While also keeping private interests from profiteering the public lands away from the people. He published an article titled *The Lesson of Conemaugh*², using the disaster as an example of how important careful engineering and understanding the hydrogeography of a system was when building dams and irrigation projects (Powell, 1889). But all to no avail. Within a year congress had rescinded the resolution, and a Senate amendment eliminated all clauses dealing with reservation of irrigable lands. The nation's leaders threw open the doors to western settlement “to the utter confounding of Powell's hopes for reasonable planning,” (Stegner, 1954, 337).

In his survey and planning of the western irrigable lands, Powell had been attempting to stop the “waste...and random, ill-advised,” (Stegner, 1954, 338) settlement he saw occurring in the west, and instead – through scientific study and region-based planning – steer the development of western lands toward the creation of a democracy of colonists and communities. MacKaye called the legislation that was introduced toward this end “one of the kingpin legislative documents of American geotechnic history. It is a text-book demonstration of the process of extracting order out of chaos,” (MacKaye, 1965b, 90). Powell's noted biographer Wallace Stegner would write:

But they hadn't given him time. They had beaten him when he was within a year of introducing an utterly revolutionary – or evolutionary – set of institutions into

² Conemaugh was a reservoir in Johnstown, Pennsylvania that burst its dam in 1889 and killed over two thousand people.

the arid West, and when he was within a few months of saving that west from another half-century of exploitation and waste, (Stegner, 1954, 338).

While the rescinding of the resolution for the Irrigation Survey would be the beginning of the end of Powell's career, (Wilkinson, 1992) it was also the beginning of a period of broad political embracing of the Reclamation movement of which many would deem Powell the father. This movement to irrigate the west was actively initiated by Congress with the signing of the Reclamation Act in June 1902, just three months before Powell's death. In most every practicable way the Act, as written, embodied Powell's vision, but – as Powell had feared in his later years – forces far removed from his ideals would control the actual implementation of the Reclamation program. In these latter years, when he received an inquiry from Russia asking for advice on the establishment of irrigation systems, he replied that the water systems of the west “have not been laid out to give the greatest economy of water, or the widest benefits to the country as a whole...Our system, or rather lack of a system, while suited to the demands of a progressive, energetic people, is by no means the best. Advantage can be taken of our mistakes, rather than of our achievements,” (Powell, as cited in Worster, 2001, 508).

Even by the early 1890s Powell was embroiled in confrontations with leaders of the Irrigation Congress who were developing a system that suited their efforts at land speculation far better than they suited the true nature of the western lands and common people. But, “Powell's proposals broke too sharply with past traditions and thus were regarded unfavorably. The plans were not acceptable to the lawmakers...[and] the use of pastures [and water] in common savored of communism” (Peffer, 1951, 25). In 1894 Powell had lost footing in these highly political disputes, and grown tired of the battle. He resigned his position as head of the US Geologic Survey and retreated to his ethnographic, and academic work in the halls of the Smithsonian.

POWELL'S IMPACT ON MACKAYE

In 1891 an advantageous moment in the perpetuation of Powell's evocative ideas would occur, of which Powell was likely never aware. That spring the young Benton MacKaye was staying in Washington DC and extensively exploring the Smithsonian Institution, where Powell was head of the Bureau of Ethnology. In April, as MacKaye would later recall, he "heard [Powell] recount the story of his noted voyage," down the Colorado in the hall of the National Museum. MacKaye would later recall, "As a boy, I listened to the man himself as, with smiling face, vigorous voice, and whirling left arm, he held in rapture an audience of the then young National Geographic Society, and took us down through those wonderous marbles," (MacKaye, 1965b, 71). The boy was utterly fascinated.

The tale that Powell told – of unlocking the geological history and ethnology of the region as he explored uncharted rapids – was alluring for more than its adventure. Three-quarters of a century later MacKaye vividly recalled the lecture inspiring in him an appreciation for learning not confined to the laboratory and library, (Anderson, 2002). He would write that each new rapid that Powell had described "savored of experiment," (MacKaye, 1967, 37). MacKaye and Mumford were also well read in John Dewey's pragmatic philosophy, which argued that experience is a key component of knowledge, and that "involving a basic transaction between people and their environment [is] the foundation of human inquiry," (Friedmann and Weaver, 1979, 26). This ideal would later be prominently espoused in theories of MacKaye's and those of other founding regionalists (Lucarelli, 1995). Lewis Mumford wrote that through sailing, fishing, hunting, mining every person "should have a firsthand acquaintance with the primitive substratum of economic life: the geography and geology of the textbook should be annotations to these experiences, not substitutes," as quoted in Friedmann, 1987, 99).

More immediately, Powell's story inspired the young MacKaye to begin an exploration of his own landscape – an effort that brought him for the first time to acutely investigate the wilderness areas of New England that he would eventually endeavor to conserve as the “Appalachian Skyline Trail” or Appalachian Trail (AT) as we have come to know it today. He worked to collect information on everything from topography, to botany, to hydrological features, and drew detailed maps of his home regions, (MacKaye, 1893) invest himself in learning about the New England landscape through oral history inquiry, as well as write emotive assessment's of man's impact on the land. In a journal entry written just over a year after hearing Powell lecture, MacKaye describes the view “Sitting atop Hunting Hill, near Shirley Center,” Massachusetts. He says, “How much more beautiful the surrounding country would be in every way, if men were not such fools... never contented until he has spoiled all the beauty of Nature,” (MacKaye, 1893).

MacKaye's Early Career

As MacKaye moved into his early professional life as a Harvard-trained forester, he would develop a plan for reclamation of America's wild lands and the “development of entire communities supported by farming, grazing, mining and lumbering on the public lands,” that was “as ambitious, utopian, radical – and, it turned out, as politically unachievable – as any public lands program offered since Powell's 1878 *Arid Regions* report,” (Anderson, 2002, 91).

Working as a forester in the “cutover” districts of Minnesota and Wisconsin MacKaye saw firsthand the failings of the same public land policies that Powell had tried to transform. These allowed great tracts of the public domain to be given over to corporations that removed the timber, then sold the land to homesteaders who had no forest resource left in their land on only

the great work of removing stumps and gaining a foothold in agriculture. The corruption of the prairie land offices in Powell's time, was becoming common practice in the pinery land offices of the Great Lakes district in MacKaye's time: Clerks managing land acquisitions were bribed by timber speculators to hold land from private sale until the speculator could examine the timber holdings and determine if he wanted it for himself (Gates, 1968, 450). Lumber barons like Fredrick Weyerhaeuser stripped the land of trees and left behind an economically and environmentally devastated landscape upon which the rural people struggled to subsist (Anderson, 2002). "The foundations of not a few American fortunes were laid in this reprehensible fashion," (Isaac Stephenson, as quoted in Gates, 1968, 451).

MacKaye was strongly influenced by his observations of the corruption in government and land grabs by corporations, and the collusion between the two. He would begin to doubt the policies of the US Forest Service – which he saw as increasingly oriented toward the economic priorities of the lumber industry at the expense of the needs of rural communities. He also began to consider the relationship between human labor and natural resources, and came to believe that the relationship had broken down on the American landscape.

Natural Resources, Labor, and Habitability

Around this time MacKaye read a report by the Department of Labor that suggested the best way to increase the number of jobs available was to create a cross-department federal program that would bring pioneers onto the unsettled public lands, and train and equip them to be farmers and lumbermen. In this, MacKaye recognized an imperative issue that was being addressed neither by conservationists, foresters, nor labor officials: "The kingpin question... was this one of land and labor. How to make them meet?" (MacKaye, 1968, 34). In attempting to

create a plan for the nation to answer this question, MacKaye would speak of concerns and ideals deeply inline with those of Powell: Both men wanted to ensure that the landscape – especially the public domain – was not degraded (or “eroded” in Powell’s terms) through private profiteering. They knew a stable resource base would enable rural communities to not just subsist but prosper. MacKaye saw the steady – or we might say sustainable – supply of the earth’s resources as the basis of profitable employment and successful community in non-urban settings, which were inextricably linked to the well being of urban places and the region as a whole. MacKaye would iterate again and again that the work of the planner, the forester, the politician was to endeavor toward the improvement of habitability, or making places more effective to live in, and that “more than anything else it is the *quality* [of interaction between land and community] that counts,” (MacKaye, 1968, 24).

This was in stark contrast to what he saw happening on the landscape, where vast tracts were clear-cut to the benefit of corporations, leaving few resources left in place for the establishment or maintenance of prosperous rural communities forsaking woodsmen and their families to live a transient life. Often, especially in New England mountain forests that he loved so deeply, traditional forest product-based cottage industries were starved-out by the profiteers, and wildfires burned over great tracts – denuding the landscape right down to sub-soils, flooding valley farms and disrupting the river flows far downstream (Ayers, 1908; Dodds, 1969)

National Colonization Bill: Powell’s Dryland Democracy

From his fundamental view that the landscape must be understood and communities planned in accordance, MacKaye developed and had introduced to Congress the “National Colonization Bill” in 1916.

He proposed to end the American tradition of dispersing and selling the public domain by offering each individual or family the opportunity to develop an independent farm or ranch. As an alternative, MacKaye outlined a sweeping program for federal development of entire communities supported by farming, grazing, mining, and lumbering on public lands...[He] called for the creation of a National Colonization Board...[that] would have broad powers to identify, classify, and withdraw sites on public lands suitable for development of “colonizing communities” or “farm-colony reserves.” The bill also allowed for the development of irrigation works, mines, and water-power sites to support the new settlements...but only with “a reasonable presumption that the soil and other physical conditions”...would “permit immediate, continuous, permanent employment of the settlers,” (as cited in Anderson, 2002, 92).

It seems that MacKaye’s biographer Larry Anderson’s description of the bill, could have, almost word for word, been written about Powell’s plan for settlement of the west: And indeed, MacKaye considered it to be just that, describing it himself as “Powell’s Dryland Democracy,” (MacKaye, 1969a) and noting that the work of Powell “applied to more than ‘dry’ land; it was basic to land-use generally,” (MacKaye, 1965b, 86).

In many ways, MacKaye’s bill really was Powell all over again. So much of what Powell had advocated for was never effectively implemented in the development of the public domain, and because of this, Powell’s prediction of the trouble the settlers would face had come true. MacKaye’s bill was addressing these same troubles.

In committee hearings of MacKaye’s proposal, Elwood Mead, a leading figure in the settlement and development of the irrigable lands and head of the Bureau of Reclamation, spoke at length about the challenges facing potential agricultural settlers – the high costs of fertile lands (often due to speculation), irrigation projects, and credit, and very little access to range and timber, many of the same issues Senator Taylor described in his explanation of why he supported Powell – and concluded that “the individual working alone is not efficient...The great merit of this bill is that it provides organization, practical experience and the use of adequate capital in

carrying out preliminary work necessary to successful settlement,” (as cited in Anderson, 2002, 93).

Powell had suggested the same efforts as those that MacKaye outlined in the Colonization Bill, though they were never implemented through the Reclamation Act, which was supposedly his conception. MacKaye’s plan would never come to fruition either. Due to improving economic and employment conditions seen in response to wartime demand, enthusiasm for public programs was diminished, and the bill never even came up for a vote.

Throughout the years of World War I, MacKaye would continue to write various versions of bills that addressed the issues of public works, development of the unsettled lands, and employment and settlement of returning soldiers by establishing agrarian and lumbering communities in the unsettled public domain, (MacKaye papers, ND). All of these efforts were either ignored or did not pass (mostly the former) as the economy and employment surged, and – even MacKaye eventually recognized – few returning soldiers were interested in becoming farmers and lumbermen.

MacKaye considered his efforts a rekindling of the still needed plans of Powell, while recognizing how far past due the implementation of the plans was. MacKaye would admit many years later,

It was somewhat late for this kind of legislation because Congress has [sic] waited for nigh forty years before even considering the Powell doctrine. Had Congress acted on this doctrine at the time of its proposal in the *Arid Lands Report* the saga of public land settlement since that date would have had happier endings (MacKaye, 1969c, 4).

This did not slow MacKaye in his effort to restate ideas in-line with Powell’s proposals. In MacKaye’s 144-page Department of Labor report *Employment and Natural Resources* (1919),

he describes initiatives that Powell had also written about. He proposed that individual farm areas should not be limited to the fixed sizes set by federal law without regard for the land's physical character or the farmer's access to market. "What seems to be needed is not a farm unit of rigid and arbitrary area, but one of flexible area... There is in any particular case some acreage, determinable in greater or less degree, which will fully utilize labor power and secure maximum return for normal effort. Such an acreage would make the most efficient farm unit for a family," (MacKaye, 1919, 74). He included maps that depicted physiography-based alternatives to social, political, and legal borders. Like Powell's maps, these had river drainage basins as the basic unit of settlement and use; classified land-use zones based on various biogeographic conditions such as altitude, slope, and vegetation cover (specifically stumpage and pasturage); and included small, autonomous communities tied into a wider development and marketing infrastructure. All of this was to be founded on a rational scientific plan developed by trained experts who would research the sites and unique community needs, then create a design based on their findings.

Here we again find the reiteration of Powell's most fundamental principles for development in the west. Powell recognized the need for detailed survey of the various aspects of each landscape. Powell saw the physical environment as an unforgiving powerful force that would relentlessly shape society whether used sustainably or put to waste. He insisted that people should understand the land as best they could in order to preserve its resources and then share these benefits equitably, (deBuys, 2001). MacKaye emulated his predecessor consistently; both men recognizing the consequences of communities not living integrated within the resources and limitations of the landscape. MacKaye would later write a regional plan was one where an array of experts (silviculturist, agriculturalist, mining engineer, town planner) (MacKaye, 1928) examined a region's landscape. "The various plans and visualizations of these

specialists [are] then integrated in a plan for the whole valley, or region, whereby the highest use is secured from its natural resources as a whole,” (MacKaye, 1962, 35).

The RPAA and Appalachian Trail

In 1921, as MacKaye recuperated from the sudden death of his wife at his friend Charles Harris Whitaker’s home, his writing and ideas inspired Whitaker to introduce Benton to the urbane, progressive architect, Clarence S. Stein. Stein was the head of the Committee on Community Planning at the American Institute of Architects (AIA), and would come to sit at the center of the RPAA – demonstrating “the rare, unteachable talent of nurturing the conditions that enable others to do their best work,” (Anderson, 2002, 172). Stein and MacKaye first met at the Hudson Guild farm – a key moment in MacKaye’s life, both because Stein agreed to promote through the AIA what would become MacKaye’s most famous work – the Appalachian Trail, and because Stein would become one of MacKaye’s closest friends and professional (and financial) supporters for the rest of his life. As author McCullough would note, Stein and MacKaye had a “shared commitment to community, regional, and conservation planning that sustained their enduring friendship,” (McCullough, 2012, 5).

Shortly thereafter Stein conspired to bring together the great minds that would become the core group of the Regional Planning Association of America. At the first gathering the group included: Stein and MacKay, along with Whitaker who was editor of the Journal of the American Institute of Architects; Lewis Mumford, a young author who at that time had a reputation as a stylish social critic of the architecture and housing scenes, and who would become both a leading voice in American planning, and one of Benton’s dearest friends and ardent advocates; Henry Wright, a businessman and adept analyst; Alexander Bing, a philanthropist, developer and

builder; and Stuart Chase an economist, writer, and labor-union sympathizer. As all the others were true urbanites, MacKaye was the most knowledgeable and experienced in the issues of the rural- and hinterlands, and played a key role in translating “the regional ideal into working programs,” (Lubove, 1967, 42). It was the friendship and close alliance of ethic and ideal between Mumford, Stein, and MacKaye that would propel the intellectual progress of the RPAA in its short existence between 1923 and 1933. As Friedmann and Weaver wrote in *Territory and Function*, the RPAA’s “planning strategies were based on decentralization and resource conservation through technological improvements: highway construction, rural electrification and new towns,” (Friedmann and Weaver, 1979, 34). The group was Progressive, and “spoke as proponents of ‘a utopian order’ encompassing garden cities, industrial decentralization, and the control of population growth,” (Anderson, 2001, 181). They were critics of speculative land and real estate policies, doubted the efficacy of the housing reform movement of the day, and believed that the democratic distribution of modern technology (electricity, automobiles/roads) would bolster rural society and thus society as a whole.

The group came together shortly after MacKaye published his regional plan for the Appalachian Skyline, and the RPAA’s first project was the promotion and implementation of the trail project. This first comprehensive, regional plan “was actually a radical effort to use the undeveloped Appalachian region as a strategic battle line against encroaching civilization and capitalism,” (McCullough, 2012, 5). It was to include a footpath, shelter camps for those walking food and forest camps in the adjoining valleys that would provide work to rural people and provide the supplies for the camps – a community development plan he had been writing about for a US Forest Service program for over a decade. He saw these camps as an avenue to more fulfilling lives for all people, an antidote to the industrial drudgery and growth of the metropolis,

an effective means of managing the natural resources of public lands, and believed “the cooperative principle will replace the competitive one,” (Anderson, 2002, 144). The idea received accolades from contemporaries as wide ranging as Gifford Pinchot and Patrick Geddes.

Through the efforts of the RPAA, the associated institutions of its members, and many others, the Appalachian Trail saw completion within two decades. Little progress was made, however, on MacKaye’s wider conception of the regional plan for the Appalachian mountain region. MacKaye would continue to play a leading role in developing the fundamental thinking behind, and region wide plans for the RPAA throughout the US, but none were as wholly embraced as the AT.

The Watershed Democracy

Perhaps the most prominent similarities between the work of Powell and MacKaye is their concern that the public lands not be usurped by private speculation and profiteering, and their focus on the watershed as the most rational spatial division of a society. In his book *Geography to Geotechnics* he reflected:

Suppose they had laid out state bounds on nature’s lines instead of the cartographers’ – on lines which separated one river valley from another instead of separating up-stream from down. Such common sense cooperation with the law of gravitation, aside from its other benefits, would have saved a host of headaches for the federal courts, howls in the halls of Congress and barrels of ink in editorial offices. Every state would then have been just naturally...in harmony with the inexorable rights of Ol’ Man River, and not be ever at outs with him, (MacKaye, 1968, 60).

While working for the Forest Service during World War Two, and asked to create plans that were in support of the war effort, MacKaye generated a steady stream of reports, memoranda, and articles that adapted his ideas for conservation districts and “watershed government,” (MacKaye, 1940b, 2) into a national system for developing local wartime

production. In an article published in the *Planners' Journal* (now the *Journal of the American Planning Association*) MacKaye further developed this concept into a plea for decentralization so that Americans might rely upon their “grassroots democratic traditions,” (MacKaye, 1940b, 2).

MacKaye recognized that the concentration of people and industry along the seaboard of the nation were vulnerable to attack by the enemy (as well as an exhaustive burden on the landscape and communities' well-being). He proposed a national program of “defense by ‘scattering’...of industry, of folks, of government,” where the watershed could become “a sphere or unit of government,” (MacKaye, 1940b, 3). Mumford, reflecting on these ideas, would write to Benton:

The more we scatter, the greater our prospects of survival: for only thus can we achieve the necessary simplifications in living, and lay down the necessary foundations, in our personal life no less than in our economic system, for a fresh start. Your notion of collective control at the grass roots is a fundamental one, (letter to MacKaye, MacKaye Papers, 1940).

MacKaye felt that this dispersal would not only physically prevent easy attack by the enemy, but it would also prevent the metropolis from overtaking the landscape. Underlying all of this planning he insists that without conservation of the landscape the nation cannot sustain itself on any front, writing, “The flag cannot defend the land if the land cannot support the flag,” (MacKaye, 1940b, 5). Powell's biographer Donald Worster, would reinforce that this was an important tenet of Powell's work too, stating, “The point of conservation, he believed, was to promote national economic growth...[and] contribute to the welfare of small communities,” (Worster, 2009, 124).

Control of the Public Lands

Much of what MacKaye was writing in this period seems as though Powell himself could have written. MacKaye's statement:

The retention of collective control at the grass roots makes a healthful antidote for the danger of unwarranted dictatorship at the center. In this way we hold and strengthen our basic democracy and prevent a total lapse, even temporarily, of the American tradition, (MacKaye, 1940b, 3).

could as easily have been from Powell's *Institutions for the Arid Lands*, where Powell too insisted that while federal leadership might have an initial role, local, communal control of the land and water resources was the true imperative, (Powell, 1890). MacKaye believed that the land that new communities were developed on should be kept in federal ownership, but only because he saw this as the only way to prevent the rampant land speculation that often made it too expensive for rural people to stay on their land. In all other rights, he felt, the communities would be autonomous of federal control.

MacKaye expressed his concern with centralized and privatized control of a public resource as he came across two new hydroelectric dams on a hike that he knew well in Vermont. MacKaye was not disturbed by the presence of the dams, like so many of his contemporary conservationists might have been. He – like Powell – saw the dams as logical, potentially beneficial components of utilitarian conservation that could ensure the development of a needed resource in a rural community (electrification). What did worry MacKaye, however, was that it was private corporations rather than a public power authority that owned the dams, (Anderson, 2002, 162). Later in MacKaye's career he would have the opportunity to explore these concerns of ownership of a resource in planning for the Tennessee Valley Authority. But for both MacKaye and Powell, the only control that was worse than that of the corrupt government, was that of profiteering private business.

Geotechnics

MacKaye's greatest homage to the eminent explorer, perhaps, was in his description of Powell as an exemplary American "geotechnic." The term, as MacKaye would later explain, came from the great Scottish planner and biologist, Patrick Geddes. "He supplied me, incidentally, with the title of my own life's work, in one swift sentence: 'your subject,' quoth he, 'is geotechnics,'" (MacKaye, 1965c, 6). Patrick Geddes, "the authentic Father of regional planning," (Mumford, as quoted in Anderson, 2002, 174) or as MacKaye described him "a kindred spirit of an older generation," (MacKaye, 1969b, 3) and MacKaye first met at a weekend long gathering of the RPAA. Geddes and MacKaye spent long hours walking together, wherein Benton felt quizzed by the older regionalist concerning his work in forestry and regional planning. As MacKaye recalled, after much description of the young planner's work and ideas, the great mentor of regional planning bestowed upon his vocation the title of geotechnics. MacKaye would come to explain the word in this way: "Geography is descriptive science (*geo* earth, *graphy* describe); it tells what *is*. Geotechnics is applied science (*geo* earth, *technics* use); it shows what *ought to be*," (MacKaye, 1968, 22) it is, "the applied science of making the earth more habitable," (Dumplemann, 2007, 180). Habitability was the central premise to all the work he endeavored to do, and that work was Geotechnics.

It seems not insignificant that while one of the preeminent early regional planners in the world bestowed on MacKaye a unique term for a discipline that would forever be linked with MacKaye's name, MacKaye then went on to confer on Powell title of the original American geotechnic. He pronounced the *Report on the Lands of the Arid Region* to be "the first great American classic on geotechnic treatment of a particular species of latent human habitat."¹ Similarly, MacKaye's reverence for the explorer was portrayed when, in a speech introducing

Clarence Stein, one of his dearest friends and colleagues, he compared him to Powell. As Robert McCullough would write, “paying him a complement that, for MacKaye, represented enormous sentiment, Benton compared Clarence to the famous explorer and scientist John Wesley Powell, whom Benton regarded as America’s premiere student of geotechnics...MacKaye considered Stein to be the ‘Powell of present-day regional development in this country.’ In explanation, he added: ‘What Powell was to the physical desert of aridity Stein is to the commercial desert of urbanization,’” (McCullough, 2012, 88).

As MacKaye grew older the focus of his work would shift slightly from the broad tenets of regional development, ecosystem-determined land use, and Jeffersonian democracy that were so in line with the work of Powell. Instead, especially after WWII and the dramatic rise of American suburbia, a great deal of his interest would fall on the modern concern of protecting the rural and wild lands from incursion by metropolitan-industrial pressures. This was an issue that Powell seems less (if at all) concerned with, perhaps only because there was no sprawl pressure on rural lands in the mid-to-late nineteenth century (particularly in the western region where Powell’s work was focused). As Tom Daniels would explain, the end of the nineteenth century was the end of the expansionist settlement on the American continent (Daniels, 1999), or, as Leopold wrote in 1925, “Pioneering is ended in America,” (as cited in MacKaye, 1928, 203). In its place began the of sprawl out from developed centers. As such, it makes sense that those who were planning for the wild- and rural lands would shift their focus from issues of settlement to those of sprawl. But, as his biographer, Larry Anderson would write, throughout his life’s work, MacKaye would “invoke the figure and ideas of John Wesley Powell, whose example had inspired him since boyhood,” (Anderson, 2002, 344). And when working on his final “opus” (Mumford, 1970, 5) – *Geotechnics of North America* – MacKaye described the

work as a “Powell brand of evolution,” (MacKaye, as quoted in Anderson, 2002). offering homage to Powell even as he worked on his own seminal manuscript.

POWELL, MACKAYE & THE RPAA IN THE LINEAGE OF AMERICAN PLANNING

Powell’s work in land-use planning in the American west had a clear and significant impact on Benton MacKaye, and MacKaye’s work through the RPAA has since had a significant influence on American planning. The ideas of the RPAA resonated through the New Deal era, fell out of practice in the post war period of incrementalism, Urban Renewal and subsequent social upheaval, and have since seen a growing renaissance through efforts such as Smart Growth, New Urbanism, and environmental planning and sustainable development in the late twentieth- and early twenty-first century.

The writing and speeches of Franklin Roosevelt himself make clear his belief in the regional planning approach – particularly that of the RPAA – which he implemented through New Deal policies.³ The Civilian Conservation Corps (CCC) and Tennessee Valley Authority (TVA) perhaps best portray RPAA ideals –particularly those of MacKaye – embodied in New Deal policies. The goal of the CCC was to provide work to unemployed young men in order to revitalize local economies, improve public infrastructure, and undertake natural resource conservation. The CCC, though relatively short lived, embodied MacKaye’s vision of forest communities, undertaking forestry work, on public land and for the public good.

The Tennessee River Valley had long been on the mind of MacKaye, and president Roosevelt saw the TVA project as “national laboratory of regional planning,” (Anderson, 2002,

³ Roosevelt also directly addressed (in part) the General Land Office’s policy inequities that Powell had attempted to remediate by transferring the management of the forest reserves on public land from the GLO to the newly created US Forest Service, under Chief Forrester Gifford Pinchot.

250). RPAA leaders did not hesitate to speak for and attempt to play a role in the effort when it came up for consideration in the early days of the administration. Clarence Stein, the man who brought together the minds behind the RPAA and often financially supported the work of his dear friend Benton was invited to Washington by Roosevelt to discuss various regional planning efforts. The TVA program embodied the “utilitarian” conservation ethic espoused by Powell and MacKaye, for multi-purpose resource development, and especially with Stein’s endorsement, MacKaye was a sought after consultant. MacKaye would work for the federal government on the TVA project for over two years as the regional planning visionary, (Anderson, 2002) and was perhaps the first person ever to possess the official title “Regional Planner.” In the long run, the TVA would come to less-than MacKaye’s lofty vision, because many within the program felt social planning on a regional scale was impractical and inappropriate (Friedmann and Weaver, 1979, 77) – many working on the project dismissed MacKaye as simply *too* visionary, (Anderson, 2002). However, the dam building (and related flood mitigation and irrigation) and rural electrification programs of the TVA would become a model for rural regional development around the world in the subsequent decades, (Lapping, 2006).

World War II and the subsequent rapid growth and development, resulted in a period of disregard for the visionary planning of the RPAA. Though possessing kernels of RPAA concepts (such as Mackaye’s highwayless town concept of the cul-de-sac), post-war suburban developments and Urban Renewal, were far removed from MacKaye’s vision, instead embodying the metropolitan engulfing of rural lands and community and amalgamation of once distinct urban centers that MacKaye worked so hard to speak out against. By the 1970s planning was characterized by a rational, incremental model that brought about extensive regulation – including environmental regulation such as the Clean Air and Water Acts – as well as the start of

requirements that local comprehensive plans include state goals for environmental protections (Daniels, 2009). This kind of federal environmental legislation – while invaluable to public and environmental health – fell short of emphasizing effective place-making, a fundamental concern of the planning in the RPAA doctrine, (Daniels, 2009). In addition, wrote Philip Berke, “planners were advised to perform ‘incremental’ or ‘middle range’ tasks rather than pursue long-range, large-scale visions,” (Berke, 2002, 21).

The post-war era through the 1970s, while epitomized by generally non-RPAA planning policies, did include some milestones that were representative of RPAA thinking. The transportation planning of the Eisenhower and Johnson administrations, particularly the federal interstate highway system was an embodiment both of the “townless highway” and the “defense by scattering” conceived by MacKaye and Mumford, though, as MacKaye would write in the late 1960’s, “The townless highway has bungled into being,” (MacKaye, 1965c, 45). Limited access highways MacKaye had seen as a way to stem the flow of the metropolitan onslaught of smaller cities, towns, and rural or wild areas, as well as an end to the “motor slum,” (Anderson, 2002). However, the incomplete formation of MacKaye’s concept was demonstrated by the dramatic social upheaval of the mid-century that was seen in urban centers that had been bisected by limited access freeways. MacKaye’s idea of the townless highway was balanced by the need for highwayless towns, which would protect communities from the “destructive” motor highway. The highwayless town concept, however, was all but disregarded – the repercussions of which we are still trying to mitigate today as we attempt to deal with urban and semi-urban areas that are all but impossible to negotiate on foot.

The RPAA thinkers also believed that decentralization of population and manufacturing via the highway system was a way to extend the advantages of modern life to people beyond the

urban centers, (Friedmann and Weaver, 1979). The appropriate use and democratic distribution of roads, rural electrification, and the telephone were seen as a way to create, in Mumford's words, a "stable, well-balanced, settled, cultivated life" for the American people, (Anderson, 2002, 183). The rapid growth of the interstate highway system in the mid century was an embodiment of this effort, though the result remains debatable for our rural areas.

In addition to the transportation policy of the mid-century, the period saw the publishing of the critical planning work *Design with Nature*, by Ian McHarg – a protégé of Mumford's. *Design with Nature* outlines a methodology for physically applying the more visionary ideas of the RPAA, and would support the implementation of RPAA-style programs for generations of planners. Above all, McHarg's work reinforced the Powell-MacKaye doctrine of using science to undertake detailed environmental assessments as the first step in any planning effort. McHarg explained how to incorporate landscape features into planning and emphasized the importance of doing so, (Berke, 2002). McHarg's suitability analysis linked ecology to planning and was a significant advance in the field of regional and ecological planning (Ndubisi, 2002). deeply in line with Powell and MacKaye's vision for planning practice. Finally, *Design with Nature* brought the concepts of effective regional planning into more general use in a wide array of fields including, "environmental impact assessment, new community development, coastal zone management, brownfields restoration, zoo design, river corridor planning, and ideas about sustainability and regenerative design," as described by Fredric Steiner, (2004, 141).

By the late twentieth- and early twenty-first century the traditions of the RPAA were seeing a renaissance as environmental planning came to the fore. As Berke wrote, "The growing debate about sustainability has revived a forgotten or discredited idea that planning could be visionary and done on a large scale," (Berke, 2002, 22) as had not been undertaken since the

days of the RPAA. A number of modern planning efforts have attempted to implement ideals in-line with those of the RPAA: Smart Growth seeks to allow economic and population growth while protecting environmental resources, (Daniels, 2009); New Urbanism has the goals of enhancing a sense of community, reducing auto dependency, protecting open space and natural resources, and providing equity in affordable housing, (Berke, 2002); and open space zoning seeks to protect rural character through clustering of development and conservation of open space, (Arendt, 1989). All of these goals were primary to the ideology of the RPAA.

In addition, the ideals of the RPAA, and particularly Benton MacKaye, are deeply enmeshed in the modern field of environmental planning. Thomas Daniels includes the RPAA in his description of the early phases of American environmental planning (Daniels, 2009), and Roy Lubove points to MacKaye as unrivaled for his conservation and community-building ideas, though, Lubove notes, MacKaye's contribution to conservation planning is too rarely acknowledged, (Lubove, 1963). In *The Environmental Planning Handbook*, Daniels and Daniels point out that "most land use and environmental problems are regional," (Daniels and Daniels, 2003, 14) a concept that both Powell and MacKaye foresaw. When Powell and MacKaye wrote the word 'region' they meant an entire socio-ecologic landscape that was bounded both by human use and natural features, and not something that simply encompassed the 'service-area' of some metropolis, (Friedmann and Weaver, 1979, 31). Forster Ndubisi wrote in *Ecological Planning* that following the tradition of MacKaye (and others), "emerging leaders in the area of ecological planning and ecology continued to explore how ecological principles could serve as the basis for guiding human actions on the landscape," (Ndubisi, 2002, 19) This idea of applied human ecology, is, in the deepest sense, MacKaye's geotechnics. Indeed, MacKaye himself

wrote there are “two complementary [sic] approaches – conservation and regional planning – to the embrasive [sic] field of geotechnics,” (MacKaye, 1965a, 5)

Finally, recent decades have brought about a greater recognition of the value of an emic or insiders perspective in planning, which both Powell and MacKaye suggested in their extensive ethnographic and oral history inquiries into the communities they were planning for. Ndubisi describes this understanding as a “deep” awareness of the “accumulated experiences of people in a particular landscape, the meanings they attach to it, and how both change over time,” (Ndubisi, 2002, 32). Explained as “a highly complex fact,” by Mumford, the region is “a real place, created by a particular group of people in interaction with their environment,” (as quoted in Friedmann and Weaver, 1979, 31). And as MacKaye would explain, “an indigenous type [of community] should be developed rather than merely to devise some improved type upon the landscape based upon no particular regional tradition,” (MacKaye, 1935, 7). The success⁴ of regional ecological planning efforts such as the New Jersey Pinelands Commission, Adirondack Park Agency in upstate New York, and early years of the Land Use Regulation Commission of the Unorganized Territories of Maine “is an example of how to develop a plan that responds not only to place, but to people as well,” (Ndubisi, 2002, 32) a quote that could have as easily been written about MacKaye’s plan for the Appalachians, or Powell’s for the arid west.

CONCLUSION

It is beyond the scope of this short paper to provide an in-depth examination of the work and theory of John Wesley Powell, Benton MacKaye or the RPAA, nor the socio-political conditions in which they were influenced and endeavored to be heard. There were also important

⁴ According to Thomas L. Daniels, *A Trail Across Time*. Journal of the American Planning Association, 2009 Volume: 75 Issue Number: 2 p 178-192.

regional planning efforts contemporary to the RPAA – notably Thomas Adam’s extensive research for the Russell Sage Foundation embodied in the *Regional Plan of New York and Its Environs*, as well as the southern regionalists, best represented by the works of Howard Odum – that are not touched on here. Powell and MacKaye were both of the Progressive tradition, with primary underlying concerns to protect natural resources, and favor the people over business. Likewise beyond the scope of this work is a review of the wider Progressive movement at the turn of the century. However, this paper does begin to demonstrate that these two eminent American proto-planners had a great deal in common, both in the issues they attempted to address, the forces working against them, and the approaches they tried to apply. Most primarily, they sought a watershed scale, egalitarian and controlled use of the public domain that would support a regional community structure based on sustainable use of resources. The research described here begins to explain how Powell and MacKaye influenced the RPAA, and begins to outline how their work has had wide repercussions in modern American planning and continues to shape and inform our practices.

Because the issues Powell and MacKaye sought to address are still troubling us, and because these issues are now being more widely acknowledged and addressed in planning with approaches that reflect the ideals of these two great American proto-planners, we may be able to find a great deal of insight from their work which is valuable to contemporary planners. From the modern land trust movement, to efforts to increase non-automobile transportation corridors, and the growth of regional councils of government, to the Buffalo Commons we are seeing a clear demand for plans that, in many cases, MacKaye and Powell already developed for the American landscape and communities. As Daniel Worster wrote for the *Journal of Cultural Geography*, the planning of J.W. Powell (and as such, the work of MacKaye) might be applicable today because

“perhaps we are moving toward an America that is less interested in acquiring a “substratum of empire” and more in protecting, through local action, the places where we live,” (Worster, 2009, 125). A more in-depth examination of the approaches and theory of these two men – especially that which they hold in common – seems a worthwhile consideration for the modern regional planner.

Bibliography

Larry Anderson, *Benton MacKaye: Conservationist, Planner, and Creator of the Appalachian Trail*. (Baltimore, MD: Johns Hopkins University Press, 2002).

--- *Peculiar Work: Writing About Benton MacKaye, Conservation, Community*. (Little Compton, RI: Quicksand Chronicles, 2012).

Randall Arendt, *Open Space Zoning: A Land Use Alternative*. *Maine Townsman*, April 1989.

Philip Ayers, “Is New England’s Wealth in Danger? Our Natural Resources in the White Mountains,” *The New England Magazine*, 38 (June 1908): 435-449.

Philip R. Berke, *Does Sustainable Development Offer a New Direction for Planning? Challenges for the Twenty-First Century*. *Journal of Planning Literature*, August 2002 vol. 17 no. 1 21-36.

Jedidiah Brewer, Robert Glennon, Alan Ker, and Gary Libecap, “2006 Presidential Address, Water Markets in the West: Prices Trading, and Contractual Forms,” *Economic Inquiry* 46, no. 2 (2008): 91-112.

Thomas L. Daniels, “A Trail Across Time,” *Journal of the American Planning Association*, 75, no. 2 (2009): 178-192

--- *When City and Country Collide*. (Washington DC: Island Press, 1999).

Thomas L. Daniels and Katherine Daniels, *The Environmental Planning Handbook*. (Chicago: Planners Press, 2003).

William deBuys, (Ed), *Seeing Things Whole: The Essential John Wesley Powell*. (Washington DC: Island Press, 2001).

Gordon B. Dodds, "The Stream Flow Controversy: A Conservation Turning Point," *The Journal of American History* 56, no. 1 (June 1969): 59-69.

"Domestic Wells and Rural Water," Douglas County, Colorado, accessed 4 October 2010, www.douglass.co.us/water

Sonja Dümpelmann, "Review Essay: Three Men in Search of a Modern Arcadia: Landscape Architecture, Planning, and Conservation Between Tradition and Modernism," *Journal of Planning History* 6 (May 2007): 166-186.

Harold H. Dunham, "Some Crucial Years of the General Land Office, 1875-1890," *Agricultural Historical Society* 11, no. 2 (April, 1937): 117-141.

John Friedmann, *Planning in the Public Domain* (Princeton, New Jersey: Princeton University Press, 1987).

John Friedmann and Clyde Weaver, *Territory and Function: The Evolution of Regional Planning* (Berkeley, CA: University of California Press, 1979).

Paul W. Gates, *History of Public Land Law Development* (Washington, DC: Public Land Law Review Commission, 1968).

The General Land Office of the United States, "Forest and Fruit Trees," *Report of the Commissioner of General Land Office, for the year 1867*, 135-136

Karl Hess, Jr., "John Wesley Powell and the Unmaking of the West," in *Public Lands, Community, and Economy in the American West*, ed. Donald Snow and John A. Baden, 151-80 (Washington DC: Island Press, 1997).

Donald G. Holtgrieve, "Land Speculation and Other Processes in American Historical Geography," *The Journal of Geography*, 75, no.1 (January 1976): 53-64.

Benjamin Horace Hibbard, *History of the Public Land Policies* (Madison and Milwaukee: University of Wisconsin Press, 1965).

Norris Hundley, Jr., "Water and the West in Historical Imagination: Part Two—A Decade Later," *Historian*, 66, no. 3 (September 2004): 455-490.

J. Innes, and D. Booher, *Planning With Complexity: An Introduction to Collaborative Rationality for Public Policy* (New York, NY: Routledge, 2010).

Richard H. Jackson, "Geography and Settlement in the Intermountain West: Creating an American Mecca," *Journal of the West* 33, no. 3 (July 1994): 22-34.

--- "Righteousness and Environmental Change: The Mormons and the Environment," in *Charles Redd Monographs in Western History, No. 5, Essays on the American West, 1973-1974*, ed. Thomas G. Alexander, 21-42 (Provo, Utah: Brigham and Young University Press, 1975).

Wilbur R. Jacobs, "The Great Despoliation: Environmental Themes in American Frontier History," *Pacific Historical Review* 47, no. 1 (February 1978): 1-26.

Mark Lapping, *Rural policy and planning*, Approaches to rural studies. (2006). In P. Cloke, T. Marsden, & P. Mooney (Eds.), *The handbook of rural studies*. (pp. 1-3). London: SAGE Publications Ltd. Retrieved from http://knowledge.sagepub.com/view/hdbk_rural/SAGE.xml

Aldo Leopold, "Wilderness as a Form of Land Use," *The Journal of Land & Public Utility Economics* 1, no. 4 (October 1925): 398-404.

Roy Lubove, *Community Planning in the 1920s*, (University of Pittsburgh Press, 1963).

---*The Urban Community: Housing and Planning in the Progressive Era*, (Englewood Cliffs, New Jersey: Prentice-Hall, 1967).

Mark Lucarelli, *Lewis Mumford and The Ecological Region: the Politics of Planning*, (New York, NY: Guilford Press, 1995).

List of Bills written by Benton MacKaye. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 176, Folder 40.

Benton MacKaye, "Expeditions 1-9," in his journal, circa 1893. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 173, Folder 64.

--- *Employment and Natural Resources*, US Department of Labor, (Washington, D.C.: Government Printing Office, 1919).

--- "The Struggle Between the Nation and Private Interests for Alaska's Riches," *Reconstruction* [volume and number unknown], (January 1920): 27-29. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 176, Folder 41.

--- "Cultural Aspects of Regionalism," June 19, 1931. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 178, Folder 43.

--- Tennessee Valley Authority: "Habitability Study of the Morris Sub-Region," 1935. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 160, Folder 36.

- “States Rights and Conservation Districts,” *US Forest Service Bulletin*, (18 September 1939): 2-4.
- “Defense Time Conservation,” written July 1-15, 1940. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 179, Folder 29. Later Published in *The Planners Journal* 6 (July – September 1940): 71-76.
- “Regional Planning and Ecology,” *Ecological Monographs* 10, no. 3 (July, 1940): 349-353.
- *The New Exploration: A Philosophy of Regional Planning* (United States: Haracourt, Brace, and Company, 1962).
- *Geotechnics of North America*, unpublished manuscript, 1965. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 160,
--- Folder 10: Chapter 1
--- Folder 14: Chapter 5
--- Folder 15: Chapter 6
--- Folder 17: Chapter 8
- “Letter to the Editor,” *Cosmo Club Bulletin*, (December 1967): 10. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 182, Folder 37.
- *From Geography to Geotechnics* (Urbana, Illinois: University of Illinois Press, 1968).
- “Conservation from Powell & Pinchot: Evolution of a Century 1869-1969,” June 28, 1969. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 182, Folder 53.
- “Geotechnics and Conservation,” unpublished manuscript, September 16, 1969. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 182, Folder 55.
- “Powell as Unsung Lawgiver,” *Cosmos Club Bulletin* 22 (November 1969): 2-4.
- Neil M. Maher, *Nature’s New Deal: The Civilian Conservation Corps and the Roots of the Environmental Movement* (New York, NY: Oxford University Press, 2008).
- Lynn A. Mandarano, Jefferey P. Featherstone, and Kurt Paulsen, “Institutions for Interstate Water Resources Management,” *Journal of American Water Resources Association* 44 no. 1 (February 2008): 136-147.
- Robert McCullough, *A Path for Kindred Spirits* (Chicago, IL: Center for American Places, 2012).

Matthew McKinney, John Parr, and Ethan Seltzer, "Working Across Boundaries: A Framework for Regional Collaboration," *Land Lines* 16 no. 3 (July 2004), accessed 1 November 2010, www.lincolnst.edu/pubs

Louis Mumford, Letter to Benton MacKaye, 25 July 1940. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 187, Folder 18.

--- Letter to Benton MacKaye "Regarding the Memorandum on the Geotechnics of North America," February 1970. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 186, Folder 51, p5.

Forester Ndubisi, *Ecological Planning* (Baltimore: Johns Hopkins Press, 2002). 19.

Susan Rhoades Neel, "A Place of Extremes: Nature, History, and the American West," *Western Historical Quarterly*, 25 (1994): 488-505.

Richard B Norgaard, "Which We, Whose Wisdom, Whither the Mountain West?" *BioScience* 53, no. 3, (March 2003): 278-281.

E. Louise Peffer, *The Closing of the Public Domain: Disposal and Reservation Policies 1900-50*, (Stanford, California: Stanford University Press, 1951).

Donald J. Pisani, *Water and American Government: The Reclamation Bureau, National Water Policy and the West, 1902-1935* (Berkeley and Los Angeles, California: University of California Press, 2002).

John Wesley Powell, *The Arid Lands*, ed. Wallace Stegner (Lincoln: University of Nebraska Press, 2004).

--- "Institutions for the Arid Lands," *The Century Illustrated Monthly Magazine* 40 (May 1890): 111-116.

--- "The Irrigable Lands of the Arid Region," *The Century Illustrated Monthly Magazine* 39 (March 1890): 766-776.

--- "The Lesson of Conemaugh," *North American Review*, 149 (August 1889): 150-156.

--- "The Non-Irrigable Lands of the Arid Region," *The Century Illustrated Monthly Magazine* 39 (April 1890): 915-922.

--- *Report on the Lands of the Arid Region of the United States* (Washington, D.C.: Washington Government Print Office, 1879).

--- "Technology, or the Science of Industries," *American Anthropologist* 1, no. 2 (April 1899): 319-349.

Deborah E. Popper, and Frank J. Popper, "Regional Planning on the Frontier," *Regional Planning in America: Practice and Prospect*, ed. Ethan Seltzer and Armando Carbonell, 114-139 (Cambridge, Massachusetts: Lincoln Institute of Land Policy, 2011).

Marc Reisner, *Cadillac Desert: The American West and Its Disappearing Water*. (New York, New York: Penguin Books, 1993).

Steiner, Frederick. "Healing the earth: the relevance of Ian McHarg's work for the future." *Philosophy & Geography* Feb. 2004: 141+. Academic Search Complete

"Water Assessments, Plans and Water Right Decisions," State of Washington, Department of Ecology, N.D, accessed 4 October 2010, www.ecy.wa.gov/watershed.

Wallace Steeneger, *Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West* (Boston: Houghton Mifflin Company, 1954).

United States Congress, 64th Congress, 1st session, *H.R. 11329* (The National Colonization or Crosser Bill), February 11, 1916. MacKaye Family Papers, Dartmouth College Library Special Collections, Hanover, NH, Box 161, Folder 40.

United States House of Representatives, 43rd Congress, 1st session, Report no. 612, *Geographical and Geological Surveys West of the Mississippi*, May 6, 1874.

Charles F. Wilkinson, *Crossing the Next Meridian: Land, Water, and the Future of the West*. Washington, D.C.: Island Press, 1992).

Donald Worster, *A River Running West: The Life of John Wesley Powell*. (New York, New York: Oxford University Press, 2001).

--- "A River Running West: Reflections on John Wesley Powell," *Journal of Cultural Geography* 26 no. 2 (June 2009): 113–126.
