

**DECONSTRUCTING HYDROLOGIES:**  
REVIVING THE MEMORY OF WATER IN  
DUMBARTON OAKS PARK

BETSY ANDERSON



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University of Washington

**ABSTRACT**

**Deconstructing Hydrologies: Reviving the Memory of Water in Dumbarton Oaks Park**

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Chair of the Advisory Committee:  
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This thesis challenges prevailing guidelines for the treatment of cultural landscapes and their inability to fully engage changing human and ecological systems. These issues are powerfully illustrated by Dumbarton Oaks Park, a unit of the National Park Service in Washington, DC that has experienced extensive degradation due to acute levels of stormwater runoff, encroachment by invasive species, and heavy public use. Originally designed as a naturalistic garden by Beatrix Farrand in the 1920s, the park is a 27-acre stream valley that encompasses a tributary of Rock Creek, including a series of eighteen constructed dams and associated structures. Surrounding urbanization has dramatically altered the park's context and ecological performance, however, threatening the integrity of Farrand-era features and plantings. The National Park Service has struggled to mitigate the damage due to current treatment guidance that favors visual, object-oriented (i.e., static) metrics over dynamic, performance-based measures. This project suggests a new paradigm for cultural landscape preservation that privileges ecological resilience and community interaction, that views stormwater and park users as contributing resources rather than threats, and that advocates the active role of the designer in continually reimagining our best-loved places.



## ACKNOWLEDGMENTS

This project was enriched by the contributions of so many people that my gratitude alone could fill a volume. First thanks are due to my advisers, professors Thaisa Way, Ken Yocom, and John Findlay. I am deeply appreciative of their constant enthusiasm, insight, critique, and creativity as I grappled with this interdisciplinary exploration for the first time. Julie Parrett, Nancy Rottle, and Manish Chalana kindly shared their expertise with me as well, reflecting the exceptionally supportive faculty that I have come to sincerely value in this college.

The site-based research essential to this document could not have occurred without the generous assistance of the program in Garden and Landscape Studies at Dumbarton Oaks, which granted me a pre-doctoral residency in September 2013 to study the valley, once part of the fabled gardens above. John Beardsley, Gail Griffin, Jane Padelford, and Anatole Tchikine, along with fellows Kathleen John-Alder, Daniel Bluestone, and Rachel Koroloff ensured an intellectually rigorous and rewarding month of site analysis. Not many students have the opportunity to discuss their thesis with such an assemblage of scholars, in such a place, and my experience in Beatrix Farrand's garden counts among the best in my life.

In Washington, DC I received a warm welcome from NPS staff, including the wonderful team at Rock Creek Park. Ana Chuquin, Diana Bramble, Joe Kish, Simone Monteleone, and especially Bill Yeaman shared with me their depth of experience in Dumbarton Oaks and Rock Creek parks, despite pressing demands on their time and my seemingly unending list of questions. I am particularly indebted to Bill for everything he did to facilitate my research, including actually driving me from one site to another, which allowed me the memorable opportunity to learn from his decades of experience in a landscape that he seemingly knows better than the back of his hand.

Members of the Dumbarton Oaks Park Conservancy assured that I, too, had hands-on knowledge of the issues impacting the park. Thanks to Ann Aldrich, Rebecca Trafton, Lindsey Milstein, and others in this dedicated group, I was able to participate in a number of park activities including a volunteer work party and an important stormwater assessment meeting. The energy of this organization and its achievements in the park are moving, both literally and figuratively, and we are lucky to have its vigilance and momentum to guide the valley in the 21st century.

The work of Maureen Joseph, landscape architect in the NPS National Capital Region, informed this effort from the outset. Her authoritative cultural landscape report inspired my interest in the park in the first place, and her detailed knowledge of the site and its relationship to the NPS as a whole has been invaluable to me at all stages of this project. This document also builds on the foundational research of others who have studied the park, in particular Zoe Kulakowski's thorough hydrological report, completed in 2011, and David Wooden's thoughtful master's thesis completed the same year at the University of Virginia.

In Seattle I've had the astounding good fortune to consult with Susan Dolan, manager of the NPS Cultural Landscapes Program. Susan's extensive knowledge, design sensitivity, and careful stewardship have served as an inspiration throughout the life of this thesis. In the NPS Pacific West Region I'd like to thank Paul Kennard for showing me the engineered log jams along the Nisqually River at Mount Rainier (so massive, and yet so applicable to the Branch valley) and especially my colleagues in the planning office—Cheryl Teague, Anna Tamura, Amanda Kaplan, Amanda Schramm, and Ann Barstow—for their mentorship over the past two years.

I am ever grateful for the wisdom and support of my family and friends, in particular my talented classmates, whose equal measures of humor and intelligence kept me going in the wee hours.

Dumbarton Oaks Park is a much-loved place. It is in that spirit that I offer this work.

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## Introduction

Dumbarton Oaks Park is a 27-acre valley in the Georgetown neighborhood of Washington, DC. A small stream winds through the site that was the primary feature of a naturalistic garden designed between 1921 and 1940 by the landscape architect Beatrix Farrand (1872–1959) and her clients, Mildred and Robert Woods Bliss. The garden's sequence of narrow paths, waterfalls, wooded enclosures, and expansive meadows were an integral component of the celebrated Dumbarton Oaks estate, serving as a complement to the more formal gardens located uphill. In 1940 the Blisses donated these formal gardens to Harvard University, while the valley was given to the National Park Service, which has since administered the site as a unit of Rock Creek Park. Attending this transformation in management was a related shift in physical context, notably the development of a highly urbanized sewershed that directs stormwater runoff into the park with growing speed and intensity. The result is a collision between stormwater and the cultural landscape, an historically significant site facing the infrastructural challenges of a dense urban environment.

As a naturalistic landscape in the city, the park has proved difficult to maintain. Visitors to the valley experience a wonderful sense of escape from the city, yet the site's urban context directly shapes its topography, waterways, and vegetation. This relationship challenges long-held notions that nature and the



One of Beatrix Farrand's check dams during a late summer storm. All images by author unless otherwise noted.



city are somehow separate, and it defies prevailing management guidelines for national parks and cultural landscapes that have historically struggled to respond to changing systems.

The stormwater damage that has occurred in the park is a salient expression of these struggles. Located in a dramatic topographical bowl, the creek at the bottom of the valley collects runoff from a 160-acre watershed, with water flows varying from 0.087 cubic feet per second (cfs) in low-flow conditions to 659 cfs in a 100-year storm.<sup>1</sup> A series of eighteen small check dams, stitched by Farrand along the watercourse, serve to amplify the movement of water in the stream but have also limited its capacity to absorb high-flow storm events. The small structures inserted in the stream course also constrict the natural geomorphic patterns of the channel that once meandered back and forth across the valley floor, establishing floodplains in times of high water flow. Erosion and sedimentation caused by runoff have been visibly altering the dams for decades, emphasizing in an especially tangible manner the present incapacity of management standards to respond to environmental change in landscapes deemed historically significant. Public use of the park has likewise increased in recent years, challenging park stewards charged to protect its intimate pathways and fragile historical resources while facilitating public access.

This incapacity to respond effectively to the park's changing context is not due to a lack of effort on the part of the National Park Service—indeed, numerous initiatives to improve the situation have been proposed since the donation of the site in 1940. Yet no substantive mitigation has occurred, because the complex and highly variable relationships at play in the valley conflict with established methods of cultural landscape stewardship that privilege visual, static, and object-oriented metrics over the landscape's performance. An analysis of the valley's performance—rather than its appearance—over time

suggests a new vision for cultural landscape preservation that supports the landscape's capacity to change. This offers new opportunities for meaningful collaboration between preservationists, historians, landscape architects, and restoration ecologists—a reunion of fields that were once connected but drifted apart in the professionalization movement of the 20<sup>th</sup> century.

Like the landscape of the park itself, this project emerged as a series of layers, beginning with research and analysis and culminating in a design proposal that seeks both to preserve the dynamic strata of the site and to apply a multidisciplinary approach to the process of conceptual development. Prevailing assumptions about the park are that it is: 1) a significant Beatrix Farrand-designed landscape, 2) threatened by stormwater and people, and 3) that current cultural landscape guidelines leave managers powerless to adapt. This thesis contends that a more nuanced and careful reading of the situation could lead to an alternative approach and outcome. Specifically it suggests that we: 1) re-evaluate this landscape and Farrand's work as a whole in order to understand its intended performance capacity in a variety of ecological conditions, 2) understand that water and people have always filled this valley and always will, and that they are contributing resources, and 3) identify not only the limitations of current cultural landscape guidelines but also opportunities for synergy between disciplines and approaches.

The identification of synergies—of water, land, people, design, history, and cultural landscape treatment—led to a vision of how they might be expressed in the park to ensure the optimal environmental health of the site while protecting significant cultural resources. The chapters that follow present a deconstructed image of the valley, challenging the simple view that predominates today and proposing alternate readings—of the place, of history, and of the management frameworks that

shape our perceptions of both. Alternative perspectives suggest new ways to engage with historical sites, as the second portion of this document illustrates. Ultimately, Dumbarton Oaks Park could shift from a landscape in conflict with its surrounding systems to a living landscape that remains responsive to its changing cultural, social, and ecological contexts.

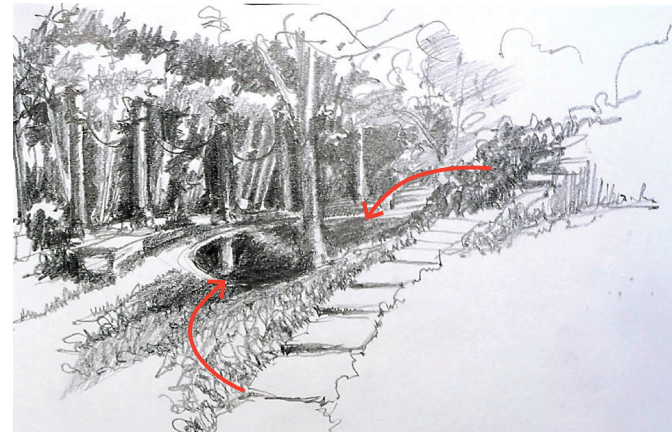
## NOTES

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1. For information about stream base flow rates, see Zoe Kulakowski, “Dumbarton Oaks Park Hydrologic Analysis Update, September–November 2011,” Geological Society of America Geoscientist-in-Park report (Washington, DC: Rock Creek Park, December 2011): 31. For information about storm discharges, see Greenhorne & O’Mara, Inc., *Dumbarton Oaks Phase I Hydrological Survey* (Greenbelt, MD: August 1999): 4–5.

## ONE: Deconstructing Farrand

Beatrix Farrand's design of the gardens at Dumbarton Oaks has long been considered a crowning achievement of American landscape architecture. Farrand's tenure as landscape architect for Mildred and Robert Woods Bliss in Georgetown, between 1921 and 1940, exemplifies the affluence of the Country Place Era, which stretched from the late 19<sup>th</sup> century until the Great Depression. Named for the large estates created by wealthy patrons, in architecture and landscape architecture the period is characterized by seemingly limitless resources, often groundbreaking creativity, and long-term collaborations between designers and their clients. Much credence was given to appearance, as the choice of whether to emulate European precedents or embrace more "American" styles carried significant political and cultural weight.<sup>1</sup> In addition to offering rich visual compositions, however, these landscapes engaged the full aesthetic range of smell, texture, sound, and even taste, all of which were subject to temporal variation. Yet this breadth of sensory engagement has often been overlooked by historians and designers, who have analyzed these projects primarily from a visual standpoint. This is true of Dumbarton Oaks, whose design has been described by scholars as a careful balancing act between European inspiration and a distinctly American idiom, expressed through scrupulous attention to spatial organization, planting design, and architectural details.<sup>2</sup> Dumbarton Oaks has therefore been evaluated on almost entirely visual terms rather



1.1 – 1.2 The Lovers' Lane Pool in the garden at Dumbarton Oaks was created on the site of a naturally occurring pond and is augmented by stormwater flowing down the hillside. Farrand formalized the depression with a stone coping, an amphitheater, and stone columns.



than through the lens of aesthetics as a multi-sensual experience, supported by dynamic human and non-human processes. While the visual is certainly crucial, it does not encompass the full range of systems that shape the aesthetic experience of the landscape over time.

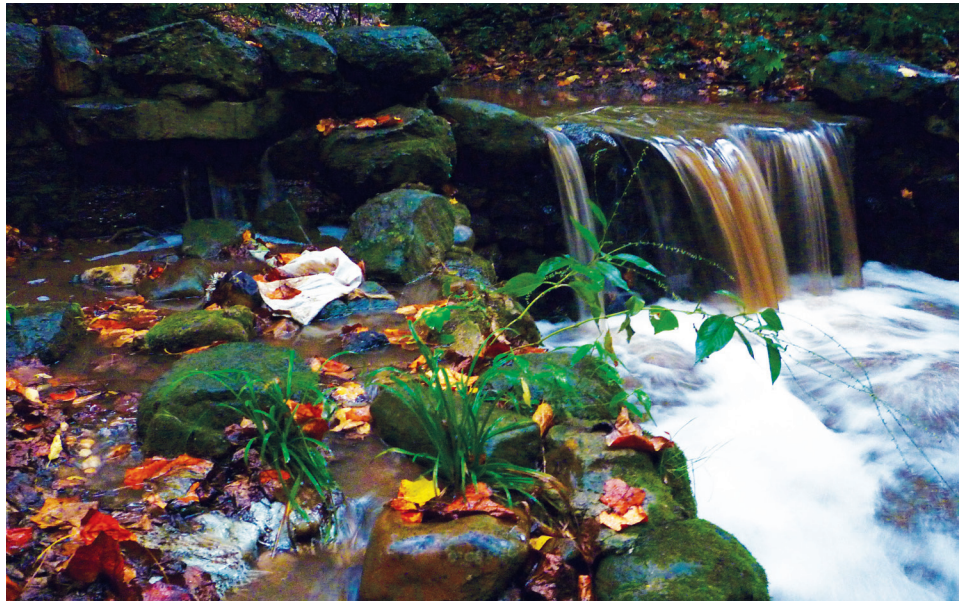
Farrand's work and that of many of her contemporaries has been interpreted within this limited framework, rarely measuring the landscape's full range of performance potential. This chapter expands our reading of Farrand as a designer and of the Dumbarton Oaks stream valley and suggests that a more comprehensive understanding of historical landscapes—and their interaction with ecological and social systems, both past and present—will lead to more resilient and responsive places in the future, ultimately ensuring their lasting contribution to our shared heritage. Rather than limiting our assessments to the strictly visual aspects of the design, we might situate such landscapes and their very real processes within their larger, changing context. How, for example, was water intended to move through the site? How did plants grow, die, escape cultivation, and alter their surrounding microclimates? Where did soil erode or accumulate? How was the aesthetic experience of the site layered into these other systems, and was human movement designed to take full advantage of these synergies? What was the role of time? In short, how did the landscape work? And how is it working now?

These questions have recently been directed toward Dumbarton Oaks Park because it is obvious that the landscape systems, as they exist today, are not working optimally. This is particularly well-illustrated by the Farrand-era structures that are currently

**1.3 – 1.7** [this page and opposite] Stormwater damage and incursion by invasive plants reflect the park's increasingly urbanized context.

being buried or dismantled by stormwater runoff and the invasive species that have altered the historical plant composition. In asking these questions, those who care for the valley are beginning to realize that the federal standards in place to guide park management—though conscientiously applied—are also heir to the visual primacy that has dominated its interpretation. This one-dimensional, inherently static reading is particularly detrimental when it governs stewardship because it provides little guidance for responding to the changing, non-visual aspects of the landscape.

Such elements and processes played an integral role in Farrand's design of the valley, however. To assure the health of ecological and cultural resources in Dumbarton Oaks Park, the systems of water, land, plants, and people influencing the site must be identified, along with Farrand's intentions for their interplay





and maturation. The regulatory systems now at work in the park might thereby expand to protect timeless dynamic relationships as well as historical artifacts.

### Another view of the Park

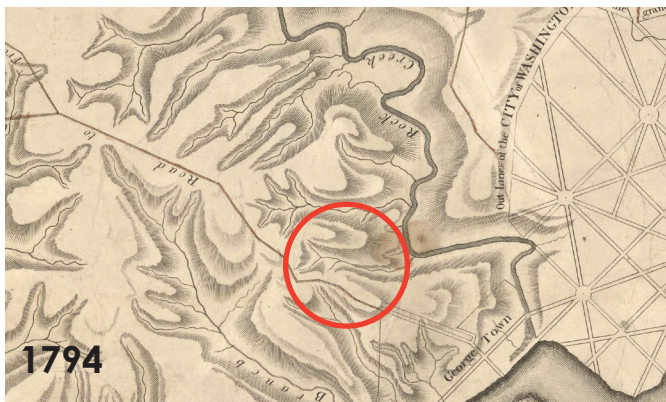
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Farrand received the commission to design the landscape at Dumbarton Oaks in 1921, shortly after Mildred and Robert Woods Bliss purchased the 53-acre site, which sloped dramatically to the north toward a tributary of Rock Creek called simply “the Branch.” Robert Woods Bliss (1875–1962) was a career diplomat who would serve the Foreign Service for over three decades, until his retirement in 1933. By 1920 he and his wife Mildred Barnes Bliss (1879–1969) were in search of a permanent residence in the capital that could house their expanding collection of books and Pre-Columbian and Byzantine art. The Georgetown hilltop they selected would become a seasonal home for the next 11 years, as the Blisses divided their time between diplomatic posts in Sweden and Argentina (where Robert Bliss served as ambassador). The design of the landscape—that began with the terraced gardens adjacent to the house and continued to the more informal areas beyond, including the valley—is fortunately extensively recorded in correspondence between Farrand and Mildred Bliss, who took an active role in the garden’s development. Farrand acknowledged this cooperation from the outset in her oft-quoted promise to Bliss to “simply be your gardening pair of hands, carrying out your ideas.”<sup>3</sup>

Like many well-to-do families in the early 20th century, the Blisses sought a house in the city that would nevertheless offer the illusion of bucolic surroundings. However, the parcel that Farrand discovered was more disturbed than pastoral: the northern valley when she first arrived has been described as a “discordance of thickets, farmyards, derelict buildings, and



**1.8** [opposite] Watercolor of Dumbarton Oaks by Ernest Clegg, 1935. The naturalistic valley is depicted at the bottom of the painting. Dumbarton Oaks Archives. **1.9** [above] Christmas card, 1938, showing the Blisses in their Georgetown garden. Dumbarton Oaks Archives. **1.10** [below] Beatrix Farrand, 1934. Beatrix Farrand Society Archives.



dumping grounds.”<sup>4</sup> The entire site— including a once-Federal-style house, muddled by later renovations—reflected a constant layering of human inscriptions on the land. These are echoed in written records for the property that reach back to 1703 when it was included in a 795-acre parcel acquired from the Crown by Ninian Beall, who named his tract the Rock of Dumbarton after an imposing formation of volcanic basalt in his native Scotland.

Of course the landscape itself held a much longer history. The valley and its woods, laced with a fine network of springs and streams, had afforded seasonal hunting and gathering opportunities to indigenous inhabitants for millennia. By 1000 BC native communities had begun to establish more sedentary agricultural settlements: a Piscataway village known as Tohoga was founded west of Rock Creek. The primary footpath leading from the settlement to high ground became popular with European colonists as well and was eventually consecrated to commerce: today Wisconsin Avenue, enrobed in asphalt, serves as Georgetown’s major arterial and contributes runoff to Dumbarton Oaks Park.<sup>5</sup>

Beall’s acquisition passed through a series of subsequent subdivisions and ambitious owners, the most notable of whom was Secretary of War (and future vice president) John C. Calhoun. Early owners valued the site for the clean air and views conferred by its elevation, as well as a grove of fine old oak trees growing around the house. This is evident in early names chosen for the property, which include “Acropholos,” meaning “Grove

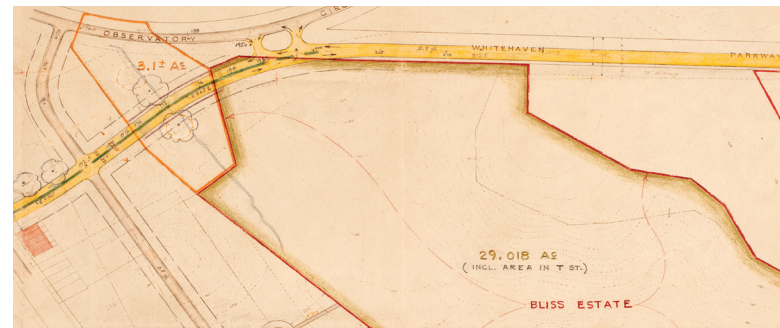
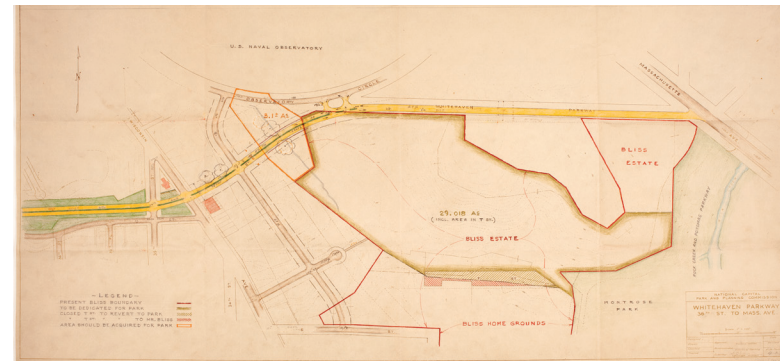
Historic maps of the Branch valley trace its development over time. **1.11** [above] Map of Washington and Vicinity, USGS, 1929. **1.12** [middle] Boschke Topographical Map of the District of Columbia, 1861. **1.13** [below] Plan of the City of Washington in the Territory of Columbia by Andrew Ellicott, 1794. All maps: Library of Congress.

on the Hill,” as well as “Oakly” and “The Oaks.”<sup>6</sup> The Blissesses preserved the homage to the persistent oaks while referring to the parcel’s lineage in their hybrid moniker, “Dumbarton Oaks.”

The hillside north of the Branch, that would become the park, had been farmed since 1855 and was added to the estate in the Bliss purchase of 1920. Called “Clifton,” the north slopes were cultivated by civil engineer Charles Ellet and later by James Elverson, owner of the *Philadelphia Enquirer*. Agricultural census records from 1860 indicate that Ellet owned a total 45 acres, of which 33 were “improved.” This acreage supported four horses, eleven “milch cows,” and five “other cattle,” and it produced 75 bushels of Indian corn, 250 bushels of oats, 50 bushels of “Irish potatoes,” 25 tons of hay, \$10 worth of “orchard products,” \$500 worth of market garden produce, and an astonishing 100 pounds of honey.<sup>7</sup> The dairy cows ensured consistent grazing along the north slopes, which preserved open meadows in the previously forested landscape. A road crossed the stream and swept uphill to the farmhouse: this old farm track was preserved by the Blissesses and would be featured by Farrand in her design. Prior to its agricultural use, the Branch had powered a sawmill—described as early as 1780<sup>8</sup>—suggesting that Farrand was not the first to exploit the watercourse.

In fact, the valley when Farrand first toured it was a highly manipulated hydrological system. A combined storm and sanitary sewer had been laid alongside the creek in 1909 as part of a citywide scheme initiated by the U.S. Army Corps of Engineers.<sup>9</sup> The ostensibly natural Branch was thereafter punctuated by manhole covers, located at intervals along its banks. Moreover, the municipal dump was located on the southwest border of the park, a site on Wisconsin Avenue that is now home to a Safeway supermarket and its ample parking garage. Like other ravines in the capital, the valley was also a receptacle for illegal dumping in the 19<sup>th</sup> and 20<sup>th</sup> centuries, contributing contaminated runoff and

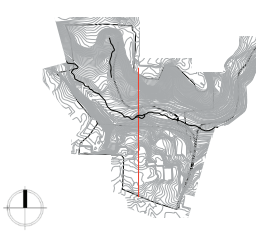
sediment to the stream.<sup>10</sup> The headwaters of the Branch, which historically emerged northwest of the park on the grounds of the present-day Naval Observatory, were channelized sometime between the 1860s and the 1920s,<sup>11</sup> and today enter the park via a 30-inch outlet at the western edge of its boundary. Throughout the early 20<sup>th</sup> century, the site was subject to a seemingly endless array of proposals to route new roads through its challenging topography (see figures 1.14–1.15).<sup>12</sup>



1.14–1.15 Plan for routing Whitehaven Parkway through the northwest corner of the park during the Bliss era. This was one of the more subtle proposals for connecting streets through the park. The most dramatic may have been a plan put forward by the National Capital Park Commission to align a parkway through the valley in 1925. Dumbarton Oaks Rare Book Collection.



LAND USE + VEGETATION COVER



pre-1790  
oak-chestnut  
woodland



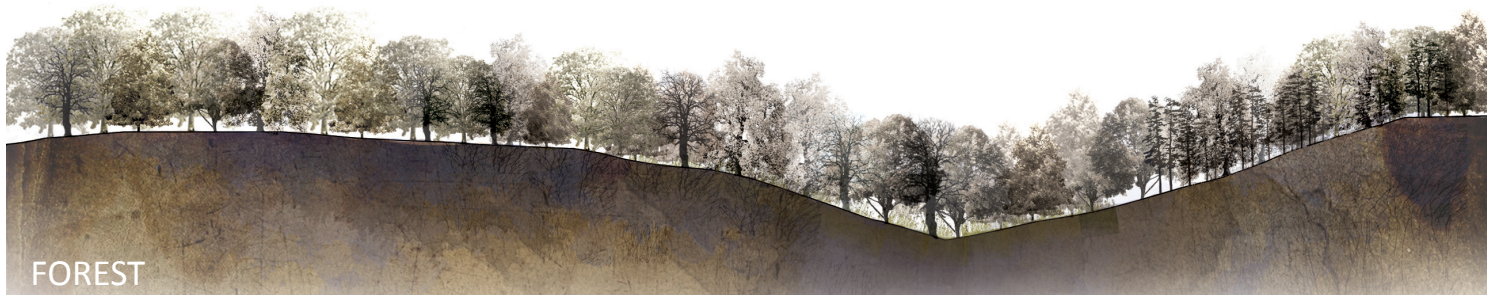
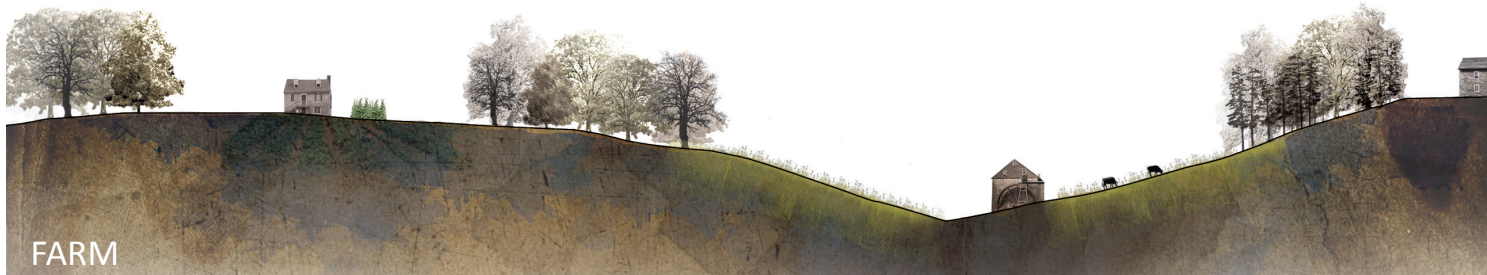
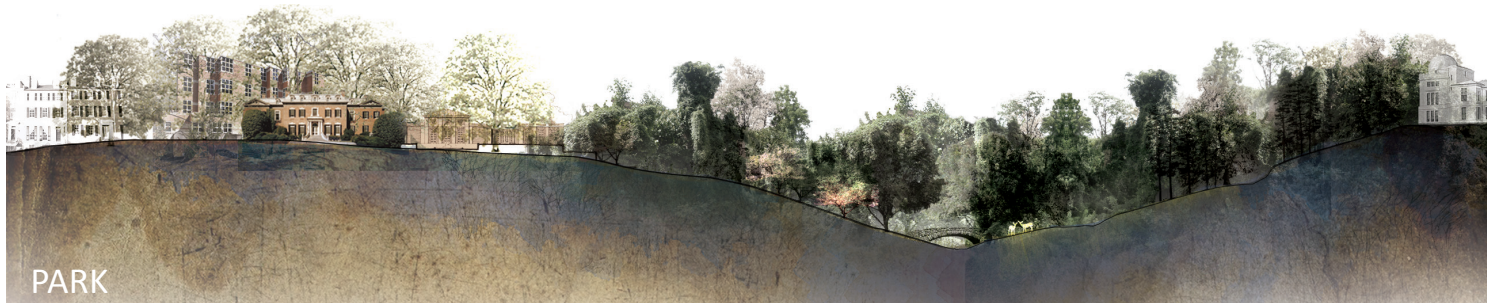
1790-1921  
farm + sawmill



1921-1940  
estate garden



1940-  
national park





1.16 View of the lower streamside path in the Bliss-Farrand era, n.d. Dumbarton Oaks Rare Book Collection.

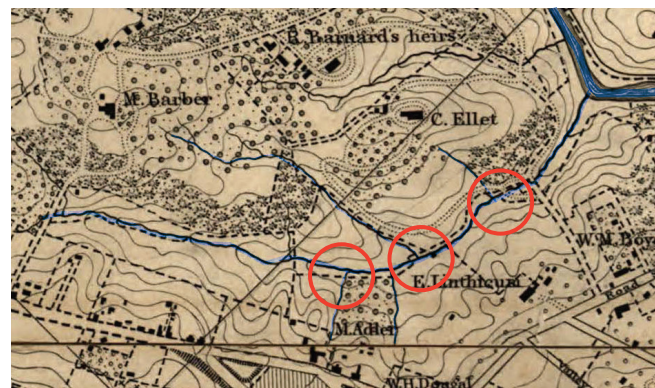
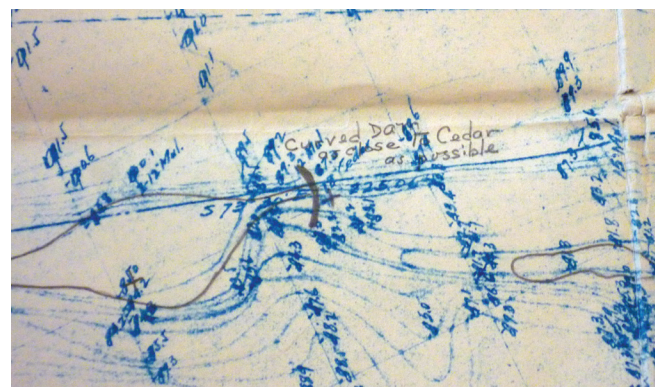
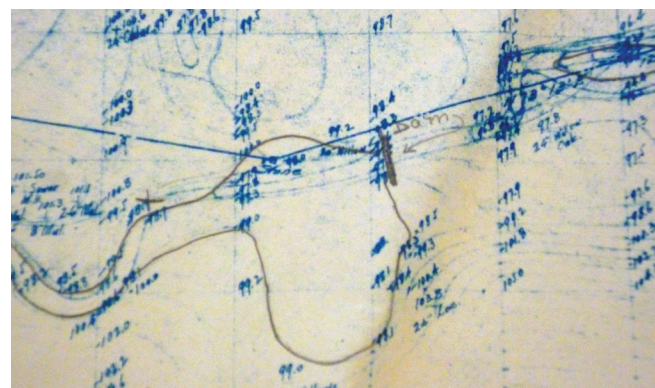
Despite this comparatively gritty urban context, Farrand was enthusiastic about the site's design potential and immediately began to imagine how she might respond to the Blisses' request for a country home in the city. In her earliest description of the valley, in a letter written to Mildred Bliss in June 1922, she underscored the possibilities suggested by the stream and its surrounding landform, including planting microclimates, seasonal variation, and potential pathways:

The whole scheme for the north slopes of the property should properly be studied from the ground itself rather than from any plan, as the contours and expressions of the ground will control the plantations more strongly than any other feature. The brook certainly could be widened and dammed up at various points and used as a mirror in which to reflect large plantations of azaleas and iris, or overhanging dark masses of hemlock, with water-loving plants growing on their still surface, and walks arranged on the different levels so that the plantations could be seen from above as well as from their own level . . . in general making the old fashioned "circular walk" which was so usually a part of every eighteenth century design. It is also hoped that a part of the grounds could be developed as a "wilderness" where hollies, yews, ivies and spring flowering Magnolias and winter flowering shrubs would make an attractive walk to be followed in winter . . . in the writer's mind the development of the north part of the place should be on the lines of a series of interesting plantations, each thought out for a certain season, and easily reached by a good walk and yet not conspicuously in view when it was not at its best.<sup>13</sup>

In her account she highlighted what would become the driving force in her design, namely unwavering adherence to the site's topography. The spatial composition of the naturalistic garden, as

her letter indicated, would be determined by the ground plane. Changes of elevation were accentuated by plantings and the placement of circulation routes and spaces for pausing. Pathways largely followed ravines, and Farrand encouraged revegetation of the native woodland on the steepest slopes on the north side of the property. This created a visual buffer for the house and gardens on the opposite slope, while reducing cultivation in an area that would be challenging to maintain, and effectively slowing the movement of water and sediment across a highly erosive hillside (see chapter 2 for a description of the site's geological history).

Surviving sketches indicate that Farrand worked out the location of dams and pools in the stream according to topographic plans as well as onsite analysis. The three pools included in her design were located in more or less level areas surrounding the creek: analysis of historical and topographical maps indicates that these locations correspond to the creek's floodplain, in particular to confluence points where sub-tributaries once joined the Branch, before they were channelized and buried underground (see figure 1.19). Not surprisingly, these are among the areas that receive significant flooding and sediment deposit from overland flows during storm events today. They would have similarly received water in Farrand's time, suggesting that her siting of pools in these regions reflected functional as well as aesthetic concerns, demonstrating that she understood both measures to be inextricably connected.



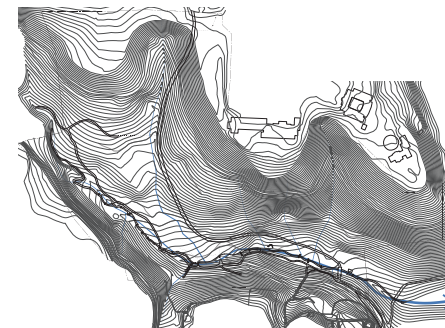
**1.17 – 1.18** [above and middle] Details of Farrand sketches exploring potential locations for dams and pools in the valley. Dumbarton Oaks Rare Book Collection. **1.19** [below] Farrand's siting of pools corresponded to historic floodplains, where sub-tributaries originally met the Branch, seen here in Boschke's 1861 map of the capital. Library of Congress.



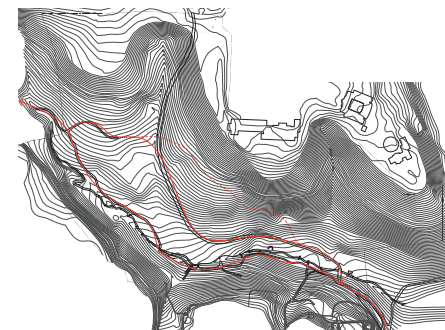
[Clockwise from upper left] **1.20 – 1.22** Views of the old farm road, September 2013. **1.23** The farm road in summer 1932. Dumbarton Oaks Rare Book Collection.

Farrand also sought to highlight human inscriptions on the site, both past and present. This was achieved by preserving remnants of the former Ellet farm and stitching them into the circulation route of the new garden.<sup>14</sup> The retention of previously built structures and pathways represented a pragmatic re-use of existing development while fulfilling overarching aesthetic goals. For example, she incorporated part of the farm roadway, as mentioned above, as well as two stone outbuildings that were featured as focal points in the landscape. A naturally occurring spring was routed through one of these structures, called the Old Pump House, where it ran over a repurposed waterwheel and thence into the creek. This sequence served as a legible narrative of the environmental history of the site, expressed through the language of a naturalistic garden. Its location adjacent to a decorative stormwater channel further emphasized the designer's intention to embed the ecological, cultural, and infrastructural context of the valley into the aesthetic experience of the garden. The above-ground stormwater channel captured overland runoff from the upper slopes of the estate, as well as portions of S Street beyond, creating a powerful experiential reference to the hydrological context of the stream—both in its surface-level permutation of topography and channels and the extensive network of underground pipes that serviced it as well.

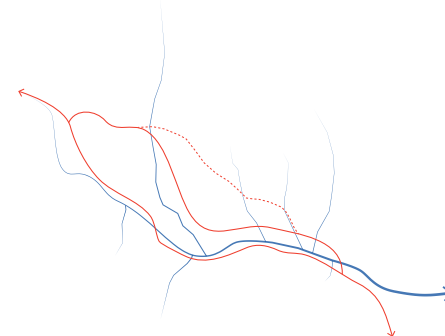
In addition to accentuating the movement of both clean and waste water, Farrand's design relied on a carefully curated route for human movement through the garden. Her system of trails created the circular journey through the valley that she had imagined in her 1922 letter. Four paths originally connected the upper and lower gardens, descending to a narrow streamside passage that followed the edges of the watercourse. This sinuous path continued upstream, in time passing each of the eighteen small check dams until it curved east, near the Branch headwaters, and moved uphill through a designed woodland and a series of meadows. The experience of the circuit became



water flow



human circulation route



interlaced systems of movement



**1.24** [this page] Photograph illustrating the richly layered streamside plantings in the valley, including hydrophilic plants such as iris, n.d. Dumbarton Oaks Rare Book Collection. **1.25** [opposite] View east from the fifth meadow, c. 1929, showing new as well as existing tree plantations. The stream course and associated structures are visible to the right. Dumbarton Oaks Rare Book Collection.

progressively wilder as one moved west, away from the upper gardens, and this is reflected by the appearance, sound, and even the names given to each of the low stone weirs: titles such as “Three Bridge Falls” and “Arbor Falls” eventually yield to the “Meadow Falls,” for example, and finally to the series of four “Jungle Falls” at the stream’s far western extent.<sup>15</sup> As it turned east again the route revealed increasingly bolder references to the site’s agricultural past, emerging first into a chain of five meadows—previously grazing lands for the farm—and then joining the old farm track that ran like a persistent spine across the site. An informal footpath skirted the brow of the hillside above, which was known as “Clifton Hill” in honor of the former farm. At its easternmost edge the path crossed the creek again, over a rustic stone bridge, completing the circle and signaling a return to more highly cultivated space.

Farrand employed plants to support her spatial and functional goals for the valley. To ensure that her designs sat comfortably in their American context, she was known to rely exclusively on native tree species for the primary scaffold of her compositions.<sup>16</sup> Dumbarton Oaks was no exception, where she retained the fine groves of oak (*Quercus* sp.), tulip poplar (*Liriodendron tulipifera*), and beech (*Fagus grandifolia*) already extant on the site. Subsequent additions of woody plants reflected the valley’s native plant associations, specifically oak-chestnut with white and black oak and tulip poplar on high ground, hemlock on northern slopes, and water-loving beech, linden (*Tilia americana*), and black walnut (*Juglans nigra*) in the lowest reaches.<sup>17</sup> Elm (*Ulmus americana*), mockernut hickory (*Carya tomentosa*), sweetgum (*Liquidambar styraciflua*), Osage orange (*Maclura pomifera*), red maple (*Acer rubrum*), sugar maple (*A. saccharum*), silver maple (*A. saccharinum*), box elder (*A. negundo*), hornbeam (*Carpinus caroliniana*), sycamore (*Platanus occidentalis*), and ash (*Fraxinus americana*) contributed to the rich mosaic of hardwood species. Understory specimens of sweetbay magnolia (*Magnolia*



*virginiana*) and Carolina silverbell (*Halesia carolina*) were introduced, and plantations of eastern hemlock (*Tsuga canadensis*) and eastern red cedar (*Juniperus virginiana*) were encouraged to create an evergreen backdrop for the meadows.<sup>18</sup>

The meadows themselves were delineated by river birch (*Betula nigra*), dogwoods (*Cornus* sp.), cherries (*Prunus* sp.), and tulip poplars. In an effort to create an expanded sense of distance, Farrand divided the original single expanse of pasture into five discreet meadows that decreased in size as one returned east along the northern branch of the circuit. This forced perspective conferred depth to the composition while creating a sequence of openings and enclosures that ordered the rhythmic experience of the garden. Lines of trees were sited at each meadow edge, which typically corresponded to a depression in the topography: in this way the plantings followed the path of overland water flows, inscribing and revealing the natural hydrological patterns of the site.

This is indicative of Farrand's approach to plant design in the valley in general, which, as she foretold from her first visit, would be "studied from the ground itself rather than from any plan."<sup>19</sup> No actual planting plans exist for the naturalistic garden, thus the design intentions are interpreted from Farrand's letters to Mildred Bliss. These letters suggest how the scheme was developed through onsite observation and planting according to topographical and microclimatic opportunities. An understory predominantly composed of rhododendron and mountain laurel rose from a carpet of spring-flowering bulbs and groundcovers; these gave way to moisture-tolerant drifts of primrose, iris, and liriopse near the verges of the watercourse.<sup>20</sup> Though she consistently emphasized the use of native plants throughout her career, Farrand's plant palette was not strictly indigenous and she was not hesitant to incorporate exotic species that she deemed helpful to the aesthetic composition. A careful student of plant

communities in nature, she firmly believed it was the role of design to frame nature in aesthetic terms, or, as she described it in notes to herself, "Nature to be interpreted not imitated because not possible."<sup>21</sup>

Though many of the nonnative plants introduced by Farrand are now considered invasive— including English ivy, Japanese and Tatarian honeysuckle, porcelain berry, and common periwinkle—the context in which she worked did not yet regard exotic invasive plants as an ecological concern. Indeed, it was common practice to naturalize hardy exotic plants alongside native plants in such informal, or "wild" gardens, and the approach had been popular in the United States and Britain since the publication of Irish gardener William Robinson's seminal volume, *The Wild Garden*, in 1870. Alien invasive plants were only beginning to be recognized as an ecological concern in the 1940s, though as early as 1930 the National Park Service had banned the practice of naturalizing exotic plants in parks, citing fears about competition and environmental disturbance.<sup>22</sup> Over time Farrand observed such imbalances in her own gardens, including in the Dumbarton Oaks valley, and vigilantly sought to keep aggressive plants in check. After the transfer of Dumbarton Oaks Park to the National Park Service in 1940, she wrote Harry Thompson, landscape architect for the NPS National Capital Parks Commission, offering guidance for maintaining the streamside plantations:

The main charm of the stream side is in the informally placed groups of herbaceous material . . . An occasional clump of the English wild iris might be set by the stream side, but as this increases very rapidly it must be watched or it will become too invasive. In other words, the planting along the stream side must be kept in

delicate balance of smallish groups, as masses of one sort of another of large materials . . . would destroy the whole illusion of a romantic and yet natural landscape.<sup>23</sup>

This description reveals Farrand's understanding that her design operated at multiple levels, engaging both aesthetics and dynamic ecological systems, and that she understood their interdependence. This challenges the traditional interpretation of the naturalistic garden at Dumbarton Oaks that has viewed the landscape as an American iteration of English precedents—whether 18<sup>th</sup>-century landscape gardens, Robinson's "wild garden," or Thomas Mawson's watercourse designs.<sup>24</sup> While the visual cues conveyed by these models were helpful in ensuring the landscape's legibility as an abstraction of nature (and not nature itself), the aesthetic qualities of the garden represent only one layer of its performance, a layer shaped by and shaping other systems at work. Later park managers and others interpreting the site would respond to the landscape's visual qualities only—divorced from the various factors that contributed to its appearance—ultimately resulting in an imbalanced system that lost the spatial, temporal, and ecological relationships it was intended to express.

#### Another view of Farrand

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This visually oriented reading has similarly characterized accounts of Farrand's career, which was in full swing during her term at Dumbarton Oaks. The chronological details are well-known: by the late 1920s, she had opened three offices<sup>25</sup> and was engaged in designing residential and campus landscapes all over the country. As Farrand described it, she "darted from Washington to Princeton, Yale, Bar Harbor, and Chicago, wherever her work lay."<sup>26</sup> Throughout her more than 60 years of practice, she would count Princeton and Yale universities, the University of Chicago, Oberlin and Vassar colleges, Mr. and

Mrs. John D. Rockefeller, Mrs. Woodrow Wilson, Mr. and Mrs. Theodore Roosevelt, and her aunt Edith Wharton among her clients.<sup>27</sup>

Though much-acclaimed during her lifetime, Farrand has incited even more interest in recent decades, developing a widespread and enthusiastic following.<sup>28</sup> Of historically important landscape architects, perhaps only Frederick Law Olmsted (1822–1903) is better known today. Both Olmsted and Farrand were pioneers in the field: both received their training in the absence of a professional program, Olmsted because none existed and Farrand because none were open to women. Indeed, Farrand's iconic status has come to represent the early leadership of women in the profession. In 1899, only three years after she opened her practice in her mother's New York City townhouse, Beatrix Cadwalader Jones (later Farrand) was the sole woman invited to join the founding group of the American Society of Landscape Architects.

Retrospective accounts of Farrand's work have focused on her ground-breaking professional success, portfolio of seminal design work, and dedication to education and the development of the field.<sup>29</sup> Volumes have been written, yet with few exceptions they convey the same portrait:<sup>30</sup> the gifted woman designer and uncompromising professional, sensitive to topography and masterful with plant material, brilliant and exacting with spatial composition and architectural detail, able to site European design precedents adroitly within an American context, and favored by the well-to-do circles into which she was born. In short, Farrand has become almost as emblematic of the Country Place Era as Dumbarton Oaks itself.

Any symbol requires abstraction, however, and the myth of Farrand's life and work has omitted nuances and details that are significant for those who continue to interpret and care for



THE WILD GARDEN  
WILLIAM ROBINSON, 1870



DUMBARTON OAKS  
PARK, 1930s

WOODED SLOPES SLOW

MEADOWS INFILTRATE

DAMS + POOLS STORE

HYDROPHILIC PLANTS  
FLOOD + CLEAN

## THE WILD GARDEN FROM THE POINT OF VIEW OF STORMWATER

1.26 An alternate appraisal of landscapes that are typically evaluated in only visual terms. Historic images reproduced by David Wooden, "DC Urban Watersheds."

her projects. Like many early practitioners, her designs have been subsequently measured against predominantly visual standards, despite evidence that she sought to integrate the functional performance of a site into its aesthetic experience. This simplified reading may in part be the result of the divisive climate of mid- to late-20th century landscape architecture, a period characterized by conflicted discourse over the purpose and practice of the profession, namely whether its highest aims align with art or with science, i.e., ecology. Ian McHarg's polarizing paean to ecological planning, *Design with Nature* (1969), is credited with driving the decisive wedge between the two camps by discrediting the role of aesthetics in landscape architecture.<sup>31</sup> As landscape architect Elizabeth Mossop suggests, "McHarg's methodology fails to account for the significance of design in the planning process, and his scientific rhetoric devalues the expression of art and culture."<sup>32</sup> Moreover, McHarg's publication was so influential that it continues to be conflated with the advent of science-based design, resulting in the almost wholesale disregard of ecological influences in early 20<sup>th</sup>-century landscape architecture,<sup>33</sup> including the designs of Beatrix Farrand.<sup>34</sup>

Yet an examination of the work of early practitioners reveals that the context in which Farrand and her contemporaries worked favored a cross-fertilization of art and science. Landscape architecture and ecology emerged as professional disciplines in tandem,<sup>35</sup> and both relied on meticulous, scientific observation of landscapes and natural systems. Moreover, the spatial and visual expression of such systems formed the common language of both fields.

Late 19<sup>th</sup>- and early 20<sup>th</sup>-century designers such as Charles Eliot (1859–97) and Olmsted were experimenting with what we might today call performance-based design principles at the metropolitan scale, in projects such as Boston's Back Bay Fens (1879) and its Metropolitan Parks Plan (1893). However

a similar synthesis of ecological, infrastructural, and human processes was also practiced at the site-specific scale of individual gardens. Women designers were particularly well-poised to explore nascent ecological ideas and express them in "ground level experience[s]," as described by landscape architect Louise Mozingo and historian Thäisa Way.<sup>36</sup> Botany and horticulture were considered appropriate disciplines for women, and early women landscape architects drew on an increasing American interest in native plants, as well as on the 19<sup>th</sup>-century craze for "wild gardens."<sup>37</sup> Designers such as Farrand pushed beyond this fashionable native aesthetic in their efforts to understand plant communities and riparian systems as part of a larger context, consider their evolution over time, and carefully curate the human experience therein.

Mozingo notes that "landscape history shows that broad changes in the landscape are pre-figured in the garden."<sup>38</sup> An explication of Farrand's design of the stream valley at Dumbarton Oaks, considered within the context of her training and body of work, illustrates that a systems-based design approach concerned with aesthetic performance is far from a new phenomenon in American landscape architecture. This has important implications both for the profession at large and for the intensely site-specific issues facing Dumbarton Oaks Park.

### **An integrated praxis**

Recent scholarship has suggested that Beatrix Farrand first embraced ecological principles in her design work in the 1920s, specifically through her collaboration with botanist George Elwood Nichols (1882–1939) at the Marsh Botanic Garden of Yale University. The garden was notable for its formal systematic beds—modeled on the 16<sup>th</sup>-century botanic garden of Padua but filled with American native plants—as well as for its naturalistic rock garden, which featured micro-climates of varying soil type and moisture level.<sup>39</sup> Catherine Phillips has portrayed the garden



as an amalgam of Farrand's and Nichols' distinct sensibilities and professions: Farrand is depicted first and foremost as an artist, drawing on European as well as American precedents, incorporating formal elements, and conceding, not without some tension, to Nichols' desire to incorporate ecological plant communities into appropriate physical environments. Illustrating the persistence of the art-science schism in landscape studies, Phillips presents their roles in dichotomous terms: "Both Farrand and Nichols worked hard [. . .] to build a working partnership and a garden that would marry their differences and allow the coexistence of both science and aesthetics, nature and art, wilderness and culture, order and change, collection and habitat, exotic and native . . ."40



Farrand would have been puzzled by the suggestion of a separation between science and aesthetics in landscape architecture. Rather than a new departure resulting from Nichols' influence, Farrand's work at Yale is reflective of decades of experimentation with ecological design principles. As early as 1901, Beatrix Jones was establishing native plant communities and managing a riparian system for her aunt, the novelist Edith Wharton, at Wharton's estate, The Mount, in western Massachusetts. There, previously deforested farmland was repopulated with native mid- to late-successional species such as white pine, red oak, and eastern hemlock. A stream winding through the property served a significant artistic role in the composition, while simultaneously channeling runoff. What we today describe as a high-performance landscape was established in phases and responded to the site's history as an intensively managed agricultural property. As Farrand's earliest extant

1.27 [above] Hemlock woodland at The Mount, reinitiated by Beatrix Farrand in 1901. 1.28 [below] The stream at The Mount follows the wooded entrance drive and emerges in a clearing full of native ostrich fern (*Matteuccia struthiopteris*) before it reaches the formal gardens. Edith Wharton Restoration.

project, the entrance drive at The Mount anticipates design concepts that she would explore twenty years later at Dumbarton Oaks. A comparison between the two projects illustrates the development of Farrand's design approach and demonstrates that she constantly applied an innate awareness of ecological principles to her work.

Such principles were a cornerstone of her early training. Unable to follow a standard program of study from a dedicated institution, Farrand's somewhat eclectic education was in many respects autodidactic: inspired by childhood experiences on Maine's rugged Mount Desert Island, she would throughout her life rely heavily on detailed observations of wild as well as humanized landscapes. Farrand's long-term connections with conservationist (and fellow Mount Desert denizen) George Bucknam Dorr (1855–1944) and her mentor, Charles Sprague Sargent (1841–1927), further fostered an empirical foundation to design that did not segregate art and science. Dorr and Sargent considered forestry, botany, horticulture, and landscape architecture to be integrated, mutually influential fields, distinguished more by scale than by a difference of approach.<sup>41</sup> Way notes that Sargent's work, in particular, serves as "a critically important link between the design practices and the emerging science of ecology."<sup>42</sup>

As director of Harvard's Arnold Arboretum, Sargent officially instructed Farrand in botany. Concern for the aesthetic arrangement of the plants on site was an equally significant component of her apprenticeship, however: it was during this period, between 1893 and 1894, that Sargent famously instructed his pupil to "make the plan fit the ground and not twist the ground to fit a plan."<sup>43</sup> Moreover, although histories of the arboretum typically portray Olmsted as its designer and Sargent as the botanist, Farrand's 1946 account of Sargent's work in *Arnoldia* conveys a more complex relationship:



1.29 Hemlock Hill in the Arnold Arboretum, 1920. Photographed by the Bartlett Sisters, Arnold Arboretum.

Mr. Olmsted's unrivalled skill and his perception of the possibilities latent in the varied topography of the acreage used the natural modeling of the land to full advantage. The first director [of the arboretum] was Charles Sprague Sargent. Perhaps his greatest contribution to the design was his appreciation of the value of the various plant groups considered as an integral part of a harmonious picture. Years of close observation and study of landscape composition convinced him that plant material could not only be displayed correctly from the botanist's point of view but also as part of a design. In placing each plantation, advantage was taken of pleasant incidents of topography, either an outcropping of rock, a steep hill slope or a quiet

stretch of open meadow-land. The setting of the groups was considered quite as important as the number of different specimens they contained.<sup>44</sup>

In the same article, Farrand connects the recently recognized field of ecology with Sargent's much earlier experiments: "Long before the so-called "habitat" groups of animals began to appear in Natural History Museums Professor Sargent anticipated them in the plant world as the living collection under his direction became more than an outdoor herbarium."<sup>45</sup>

Farrand followed Sargent's influential magazine *Garden and Forest*, whose pages, according to Sargent's colleague Alfred Rehder, were intended "to rouse public interest in the



preservation of the forests and in the inauguration of a definite forest policy . . . the creation of national parks and . . . a deeper interest in horticulture and landscape gardening and in plants in their different aspects.”<sup>46</sup> Significantly, the journal used the word ecology four times in its nine-year lifespan (1888–97), and these all occurred between 1896 and 1897,<sup>47</sup> when Farrand was launching her professional career.

### Application

Farrand received an early and important opportunity to engage these ideas in a site design in 1901, on a 113-acre tract in the Berkshire Hills recently purchased by Edith Wharton, her aunt on her father’s side. The future Mount, a former Lenox, Massachusetts farm, consisted of previously deforested pastureland dotted with knuckles of limestone outcroppings and a few pockets of remaining hemlock woods. A small stream emerged from a spring in the upper stretches of the estate, traversed the site, and drained into a necklace of small beaver ponds and wetlands that connected to Laurel Lake to the southeast. Through the lens of present-day ecological design theory, Farrand’s early work at The Mount and her ensuing design of the Dumbarton Oaks valley propose an alternative view of her praxis, one that privileges ecological systems in support of both aesthetic and experiential objectives. Tracing this trajectory of Farrand’s work therefore describes a distinctly different history of ecological design as a practice.

At The Mount Farrand designed both an entrance drive and a kitchen garden and may have advised Wharton on the general plan for the estate, including the location of the house.<sup>48</sup> The drive began formally and practically at the north end of the property, with an allée leading from a simple white wooden gateway past the superintendent’s lodge, a small greenhouse, and the kitchen garden. Farrand selected northeastern sugar maples to line the processional route, as a means of visually



**1.30** [opposite] View of The Mount when the Whartons first purchased the property. Photograph by Beatrix Jones (later Farrand), winter 1901. Beatrix Farrand Collection, Environmental Design Archives, UC Berkeley. **1.31** [above] The Mount seen from the beaver ponds below the house. Photo by James Gambaro.



Using carefully framed views and continuous drifts of plantings, Farrand established strong connections between the uphill gardens at Dumbarton Oaks and the valley below. **1.32** [above] Framed view across the Fountain Terrace toward the treetops of Dumbarton Oaks Park. *The Georgetown Metropolitan*. **1.33** [below] Once a seamless transition characterized by decreasing degrees of formality, the Forsythia Dell is now divided between Dumbarton Oaks Gardens and the park below, marked by a locked gate. Photo by Karl Gercens.

connecting the functional upper sections of the estate to the woodland beyond. The productive character of the north portion of the property was emphasized by efficient geometric forms and working buildings, including the stable, and made aesthetic reference to the site's history as an agricultural landscape. A winter 1901 photograph of the orchard reveals that Wharton and Farrand decided to preserve the farm's existing orchard and allow it to set the tone for its surroundings.

This juxtaposition of rectilinear, clearly designed elements with the “messy” woodland character of the rest of the drive is recommended by Mazingo as a valuable technique for visibly expressing ecological systems. Citing Joan Iverson Nassauer's “Messy Ecosystems, Orderly Frames” (1995), Mazingo notes that “in temporal terms what this means is that the orderly frame needs to be constant, and the messy ecosystem is allowed its dynamic.”<sup>49</sup> This technique can also be traced back to 19<sup>th</sup>-century landscape architecture, she adds, arguing that

The lessons of the designs of Olmsted and Vaux lie in their ability to mesh places of classical clarity with places of naturalistic complexity. The complex “hard read” of meadow, grove, and lake is introduced and framed by the clear “easy read” of the allée, oval, and esplanade. The continuing public resonance of the landscapes of Olmsted and Vaux lies in no small part in this ability to structure complexity with clarity.<sup>50</sup>

Farrand exhibits Mazingo's argument in a tangible manner, as she would apply this technique on a grand scale to her design of Dumbarton Oaks, where formal, structured spaces disintegrate spatially as the garden progresses downhill, away from the house. The seasonal, unruly matrix of plants and water in the Branch

valley was as necessary to understanding the landscape as the polished, less changeable garden rooms above. Mozingo describes this approach as follows:

The desire for constancy and the necessity of dynamism evolve into the more subtle sense of continuity—that some parts of the landscape will be the same year after year and are places appropriate for overt aesthetic statement, and that these introduce and present the fluctuating part of the landscape.<sup>51</sup>

The pairing of highly architectural elements with the vagaries of the stream and its plantings communicates ecological design values within what philosopher Marcia Muelder Eaton calls “an already existent language and cultural sign system.”<sup>52</sup> To emphasize the message, Farrand established strong visual connections between the upper and lower gardens, using carefully framed views, repetition of hardscape textures, a decorative stormwater channel, and repeated threads of plantings that drew the composition together.

At The Mount, Farrand similarly layered clear and complex landscapes. After a stately 2,000-foot procession, the drive changes dramatically as it passes the rise on which the stable was sited. Here the roadway begins to curve downhill and plunges into a dappled mixed woodland of hemlock, white pine, and red oak, clustered between rugged outcroppings. The existing stream was incorporated into the roadway design to create a rhythmic interweaving of human traffic and water. As the drive terminates in a final sweep across a gracious meadow-like lawn, the stream empties into a wide planted bog before it is diverted under the formal gardens. Reappearing in alignment with the central axis of Wharton’s terraces, the sound of the stream in the wet season resonates with the artificial patter of fountains on either side.



**1.34** The Mount entrance drive, c. 1904, with immature plantings introduced by Farrand and the stable in the background. The two larger maples in the foreground designate the location of an extant farm road that Farrand incorporated into her design. Beinecke Library, Yale University.



1.35 The Mount entrance drive with maturing woodland. Beinecke Library, Yale University.

Though some groups of hemlock were present on the property when it was acquired by the Whartons, Farrand's involvement in the landscape design initiated a period of reforestation phased over many years. In 1904, Wharton wrote her friend Sara Norton: "We are planting white pines in the rough ground between the house & stable, & it is already much improved."<sup>53</sup> Farrand would likewise deploy principles of ecological succession on the northern slopes of the Branch valley, returning the former Ellet farm to a native hardwood forest.

There are many reasons why The Mount serves as an appropriate framework for reinterpreting Farrand's design of the valley at Dumbarton Oaks. Both sites share an agricultural lineage, a pattern of land-use succession that is typical of the eastern United States. As historian Melanie Simo notes, early 20<sup>th</sup>-century America was in possession of two kinds of wilderness: the first type consisted of large, typically western territories considered uninhabited and pristine. The second wilderness was steadily reclaiming previously cultivated lands in the east, what Simo describes as "Nature's reconquest of lands that had been won through enormous, sometimes excruciating human effort":<sup>54</sup>

In the Northeast, where farmers had abandoned their glacier-scoured, boulder-strewn lands for richer, deeper soils farther west, wilderness was overtaking the more remote homesteads. In the South, wherever old plantations had not survived the period known as Reconstruction, avenues of live oaks might lead to ruined mansions—or perhaps to a few chimneys and columns rising up in the forests that had grown back. In Appalachia, settlements that had once advanced the frontier were slipping into a half-wild state.<sup>55</sup>

The Berkshires were replete with half-wild dilapidated farms and dwellings, a characteristic that made the region artistically appealing to Wharton, who described such conditions in her novels, notably *Summer* and *Ethan Frome*.<sup>56</sup> Similarly, in Washington, DC the once-extensive agricultural operations along Rock Creek and its tributaries had diminished with the promise of new land in the west: in particular, the tobacco farming that had comprised the majority of operations depleted the nutrient reserves in the soil relatively quickly, likely contributing to the desire to seek greener pastures elsewhere.<sup>57</sup> The return of “wilderness” to these places imbued them with intrigue and nostalgia for some, such as attorney Harvey Broome, one of the founders of the Wilderness Society: “Half-woods say things that whole woods cannot,” Broome observed. “They are the natural sherds of civilizations—the seeding grounds of wilderness. Half-woods are bilingual, speaking the language of man and shouting the call of the wilds.”<sup>58</sup>

Farrand sought to integrate the two languages of wilderness and cultivation into her designs, responding to the changing environmental context of each project (and indeed of the larger national landscape). At both Dumbarton Oaks and The Mount she engaged the circulation alignments, existing tree plantations, and constructed forms of the previous farms, using them to frame a re-wilding of the site that was likewise carefully managed.<sup>59</sup> These landscapes were not conceived to aesthetically emulate a primeval forest. Rather, reminders of the previous farms acknowledged that each site had experienced long-term manipulation, and subtle references to European design precedents ensured that they could be culturally understood as highly designed spaces.



1.36 [above] The stream at The Mount today, absorbing increased runoff from snow melt. Edith Wharton Restoration.  
1.37 [below] Clapper Bridge Falls in Dumbarton Oaks Park, seen here in 1946, provided one of several opportunities to pause and interact with the stream. Rock Creek Park Archives.

Not coincidentally, movement corridors were the primary organizing device of each garden. Farrand exploited the roadway at The Mount and the pathways in the Branch valley to aesthetically frame the ecological systems through which they passed, while articulating the role of people as shapers of the landscape. At Dumbarton Oaks, viewing platforms, benches, bridges, and even large boulders were sited to intensify the experience of the valley and its systems.

Movement—whether on foot or horseback, or in the case of The Mount, a motorcar—was essential to the experience, and the differing speeds at which the landscape might be viewed allowed for observation of the stream and its plant communities at multiple scales and speeds. As a traveler descended the entrance drive at The Mount, white pine growing in the high dry ground adjacent to the stable gave way to a wet landscape at the foot of the drive, marked by extant birch. Similar constructed transects exist in the Dumbarton Oaks valley and illustrate what Elizabeth Meyer calls “hypernature,” a designed landscape “that reveal[s] and regenerate[s] natural processes/structures through the amplification and exaggeration of experience, and that artistically exploit[s] the medium of nature.”<sup>60</sup> In this way, Farrand’s work presages present-day ecological design methods that seek to visually and functionally express resources, processes, and human participation.

#### Another view of cultural landscapes

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The National Park Service defines the period of significance for Dumbarton Oaks Park as congruent with Farrand’s involvement with the site—i.e., the years between 1921, when she was first retained by the Blisses, and 1951, when she resigned her professional association with both the formal estate and the park. Though Farrand patently conceived of her design as a multipart, dynamic system and managed it thus, the metrics employed by

the NPS to evaluate the landscape’s significance are reduced to visual measures. The site itself is parceled into “landscape features” that are either “contributing or non-contributing,” diminishing the importance of any relationships or processes that may impact those features.<sup>61</sup> A contributing feature is defined as “a physical attribute associated with a landscape characteristic that retains integrity and therefore contributes to the significance of the cultural landscape.”<sup>62</sup> Cultural geographer Julie Riesenweber and landscape architect Catherine Howett have observed that definitions that intensely privilege integrity necessarily imply the materiality of the resource, leaving little room to contemplate the significance of landscape features that are not tangible objects.<sup>63</sup> As Dumbarton Oaks Park illustrates, this approach excludes important opportunities for interpretation and may also result in harm to the site’s cultural resources and ecological systems.

The tendency to evaluate Dumbarton Oaks Park as an architectural work rather than a convergence of systems explains how Farrand’s small check dams and other structures have come to represent the full breadth and complexity of her design in the valley, and why their destruction due to stormwater damage seems such an insurmountable problem. If the integrity of her work were truly reduced to the condition of these objects, which are themselves contributing to the imbalance of the site’s hydrology, then managers are indeed grappling with a Catch-22. If, however, we expand our study of the landscape and Farrand’s design, we see that the site’s period of significance was characterized by constant revision, a deep understanding of the valley’s functional performance, and especially by the active engagement of water. The preservation not just of things but also of relationships opens new possibilities for park stewards, who might thereby respond to the dams as one of several important forces in a continually shifting system.

## NOTES

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1. For a comprehensive overview of Country Place Era design, see Mac Griswold and Eleanor Weller, *The Golden Age of American Gardens: Proud Owners, Private Estates 1890–1940* (New York: Harry N. Abrams, 1991).
2. See Diana Balmori, Diane Kostial McGuire, and Eleanor M. McPeck, *Beatrix Farrand's American Landscapes: Her Gardens and Campuses* (New York: Sagapress, 1985).
3. Beatrix Farrand to Mildred Bliss, July 5, 1922. Cited in Judith Tankard, *Beatrix Farrand: Private Gardens, Public Landscapes* (New York: The Monacelli Press, 2009): 146.
4. James O'Day, "Dancing into the Future: Dumbarton Oaks Parks," *View: The Magazine of the Library of American Landscape History* 12(Summer 2012): 29.
5. U.S. Department of the Interior, National Park Service, *Cultural Landscape Report : Dumbarton Oaks Park, Rock Creek Park; Part I: Site History, Existing Conditions, and Analysis and Evaluation* (Washington, DC: National Capital Region Cultural Landscape Program, 2000): 10–11.
6. *Ibid.*, 13–14.
7. Agricultural Schedule, 1860, for C. Ellet, Georgetown. Microfilm, National Archives, Washington, DC.
8. Walter Muir Whitehill, *Dumbarton Oaks: The History of a Georgetown House and Garden, 1800–1966* (Cambridge: The Belknap Press of Harvard University Press, 1967): 8.
9. National Park Service, *CLR: Dumbarton Oaks Park*, 36.
10. *Ibid.*, 50.
11. Historical maps of Washington, DC, held by the Library of Congress, illustrate the transformation of the creek over time. The channelization may likely have occurred during the sewer installation in 1909.
12. National Park Service, *CLR: Dumbarton Oaks Park*, 37.
13. Beatrix Farrand to Mildred Bliss, June 24, 1922. Rare Book Collection, Dumbarton Oaks Research Library and Collection (Washington, DC): 6.
14. National Park Service, *CLR: Dumbarton Oaks Park*, 21.
15. For a detailed description of Farrand's dams, see National Park Service, *CLR: Dumbarton Oaks Park*, 214–21.
16. Balmori, "Campus Work and Public Landscapes," in *Beatrix Farrand's American Landscapes*, 130.
17. Harvard University Planning Office, *A Comprehensive Physical Plan for Dumbarton Oaks Research Library and Collection*, draft (Cambridge: Harvard University, 1977): 91–92.
18. For a detailed description of park vegetation, see National Park Service, *CLR: Dumbarton Oaks Park*, 127–213.
19. Farrand to Bliss, June 24, 1922.
20. National Park Service, *CLR: Dumbarton Oaks Park*, 162.
21. National Park Service, *CLR: Dumbarton Oaks Park*, 280. Original typescript is in the Beatrix Farrand Collection, College of Environmental Design, University of California, Berkeley.
22. Darrel G. Morrison, foreword to 1996 edition, *American Plants for American Gardens* (1929) by Edith Roberts and Elsa Rehmann (Athens: University of Georgia Press, 1996): xviii.
23. National Park Service, *CLR: Dumbarton Oaks Park*, 288.
24. *Ibid.*, 81. It has been suggested that Farrand's design of the stream course in Dumbarton Oaks Park was inspired by Thomas Mawson's naturalistic garden, designed for the Mount Stuart Estate on Scotland's Isle of Bute.
25. In 1927 Farrand's husband, Max Farrand, became the director of the Henry E. Huntington Library in San Marino, California. Thereafter the couple divided their time between San Marino and Farrand's family summer home, Reef Point,

on Mount Desert Island in Maine. During this period Farrand maintained her New York City office, effectively establishing a bi-coastal practice in three locations.

26. Beatrix Farrand, *Reef Point Gardens Bulletin* I:17 (1959).

27. For a complete list of Farrand's commissions, see Judith Tankard, *Beatrix Farrand*, 230–33. See also Balmori, McGuire, and McPeck, *Beatrix Farrand's American Landscapes: Her Gardens and Campuses*.

28. Farrand's popularity is reflected by organizations such as the Beatrix Farrand Society, based on Mount Desert Island, Maine, and the Beatrix Farrand Garden Association in Hyde Park, New York.

29. Farrand's interest in furthering the profession through hands-on education is demonstrated by her creation of the Reef Point Gardens in Bar Harbor, Maine, conceived as a laboratory to train students of landscape architecture in "the ecological adaptation of plants to the environment." See Beatrix Farrand, *The Bulletins of Reef Point Gardens* (Bar Harbor, ME: The Island Foundation and Sagapress, 1997).

30. One exception is Marlene Salon's 1977 article for *Landscape Architecture*, in which she refers to Farrand as an ecological designer: "Beatrix Farrand is remembered by members of the profession principally as a planting designer. I would like to comment on the trademarks of her planting designs: her interests in native plant materials, the English influence in her work, and her ecological approach to landscape design." See Salon, "Beatrix Jones Farrand: Pioneer in Gilt-Edged Gardens," *Landscape Architecture*, January 1977: 76.

31. See Elizabeth Mossop, "Landscapes of Infrastructure," in *The Landscape Urbanism Reader*, ed. Charles Waldheim (New York: Princeton Architectural Press, 2006): 163–77. See also Nina-Marie Lister, "Insurgent Ecologies: Reclaiming Ground in Landscape and Urbanism," in *Ecological Urbanism*, ed. Mohsen Mostafavi (Zurich: Lars Müller, 2010): 524–35.

32. Mossop, "Landscapes of Infrastructure," 168.

33. This is described by Thaisa Way in "Ecological Design as a Landscape Practice in the Early 20th Century: A Shifting Paradigm," paper delivered at the Beatrix Farrand Colloquium, Dumbarton Oaks, March 8, 2013.

34. This is despite McHarg's acknowledgement that Charles Eliot (1859–97) was the true inventor of ecological planning. See Keith N. Morgan, "Introduction to the 1999 Edition," in *Charles Eliot: Landscape Architect* (Amherst: University of Massachusetts Press, Library of American Landscape History [reprint], 1999): xxxi.

35. Way, "Ecological Design."

36. Ibid., 4. See also Louise A. Mozingo, "The Aesthetics of Ecological Design: Seeing Science as Culture," *Landscape Journal* 16: 1 (1997): 51.

37. Way, "Ecological Design," 12.

38. Mozingo, "The Aesthetics of Ecological Design," 52.

39. Catherine Phillips, "'Connecticut Motive': Beatrix Farrand and the Marsh Botanic Garden of Yale University 1922–1939," *Studies in the History of Gardens and Designed Landscapes* 27 (2007): 22.

40. Phillips, "Connecticut Motive," 21.

41. Betsy Anderson, "Succession Accelerated: Beatrix Farrand's Entrance Drive at The Mount," paper delivered at the Beatrix Farrand Colloquium, Dumbarton Oaks, March 8, 2013.

42. Way, "Ecological Design," 7.

43. Beatrix Farrand, "Beatrix Farrand, 1872–1959," in *The Bulletins of Reef Point Gardens*: 112.

44. Beatrix Farrand, "Contemplated Landscape Changes at the Arnold Arboretum," originally published in *Arnoldia* 6:10 (November 1946), in *The Collected Writings of Beatrix Farrand: American Landscape Gardener (1872–1959)* (Lebanon, NH: University Press of New England, 2009): 158.

45. Farrand, "Contemplated Landscape Changes at the Arnold Arboretum," 159.

46. Alfred Rehder, "Charles Sprague Sargent," *Journal of the Arnold Arboretum* 8:2 (April 1927): 72.

47. Way, "Ecological Design," 9.

48. No correspondence is known to survive from this initial phase of the landscape design, although the Environmental Design Archives at UC Berkeley possess a number of Farrand's drawings for the earliest features constructed on the estate: a kitchen garden and an entrance drive. Photos of the property in January 1901, taken by Farrand, appear to be an analysis of possible locations for the house and suggest that Farrand consulted with her aunt regarding the general plan for the estate. Trees present on the site, including a distinctive black birch (*Betula nigra*) were retained.

49. Mozingo, "The Aesthetics of Ecological Design," 53.

50. *Ibid.*, 54.

51. *Ibid.*

52. *Ibid.*, 53.

53. Edith Wharton to Sara Norton, September 14, 1904. Edith Wharton Collection, Yale Collection of American Literature, Beinecke Rare Book and Manuscript Library (New Haven, CT).

54. Melanie Simo, *Forest and Garden: Traces of Wildness in a Modernizing Land, 1897–1949* (Charlottesville: University of Virginia Press, 2003): 159.

55. *Ibid.*

56. See Simo, *Forest and Garden*, 173. See also Betsy Anderson, "Edith Wharton's Literary Garden," in *Edith Wharton and the American Garden* (Lenox, MA: The Mount Press, 2009): 134–35.

57. U.S. Department of the Interior, National Park Service, Rock Creek Park, "History & Culture," <http://www.nps.gov/roci/historyculture/index.htm>, accessed 18 January 2014.

58. Quoted in Simo, *Forest and Garden*, 159.

59. For a detailed description of The Mount outbuildings and their landscape context, see Edith Wharton Restoration, Inc., *The Mount: Home of Edith Wharton* (Lenox, MA: Edith Wharton Restoration and Mount Ida Press, 1997).

60. *Ibid.*, 17.

61. National Park Service, *CLR: Dumbarton Oaks Park*, 89.

62. *Ibid.*

63. See Julie Riesenweber, "Landscape Preservation and Cultural Geography," in *Cultural Landscapes: Balancing Nature and Heritage in Preservation Practice*, ed. Richard Longstreth (Minneapolis: University of Minnesota Press, 2008): 29. See also Catherine Howett, "Integrity as a Value in Cultural Landscape Preservation," in *Preserving Cultural Landscapes in America*, ed. Arnold R. Alanen and Robert Z. Melnick (Baltimore: Johns Hopkins University Press, 2000): 188.



## TWO: Deconstructing the Valley

Perceptions of Dumbarton Oaks Park as a landscape and as a park have varied widely in the years since the valley was given to the National Park Service. Initially considered a designed woodland garden, the park was described in a 1941 NPS press release as “offering an unusual combination of native wildflowers and cultivated plants grown in a setting of miniature waterfalls, ponds, and shaded walks.”<sup>1</sup> By the early 1960s, however, limited maintenance had resulted in a landscape that most—including NPS managers—described as a “wilderness.”<sup>2</sup> The most striking example of this shift in viewpoint occurred in May 1962, when one hundred guests gathered in the park’s westernmost meadow to celebrate the centennial of the death of Henry David Thoreau.<sup>3</sup> On hand were Secretary of the Interior Stewart Udall, Chief Justice Earl Warren, Justice William O. Douglas, and the poets Louis Untermeyer and Robert Frost. The program featured an address by Frost, who observed that “Whenever I’m weary of considering, and I can stand things no longer, I always say: Give me the woods. I’ve always wanted to be . . . lost in the woods.”<sup>4</sup>

National Park Service landscape architect Maureen Joseph notes the significance of the 1962 ceremony and its location, observing that the park’s selection to host the Thoreau celebration “suggests that it was considered to be a wilderness within Washington, rather than a highly designed landscape.”<sup>5</sup> The assessment of the park as a natural, rather than cultural landscape persisted until



2.1 Secretary of the Interior Stewart L. Udall (right), walking with poet Robert Frost through Dumbarton Oaks Park, 1962. *The Washington Post*.

1983, when NPS landscape architect Darwina L. Neal called attention to the landscape's historic designed character and the serious degradation that had occurred in the years since Thoreau was celebrated therein.<sup>6</sup> In addition to emergency stabilization and maintenance measures, Neal called for "an Historic Landscape Restoration Plan," "to determine the original design, construction and *appearance* of the area as of 1940, an evaluation of the remaining aspects of that design and their present condition and the present use of the area and recommendations for restoration (emphasis mine)."<sup>7</sup>

Though erosion and sedimentation issues were described in Neal's memo, the evaluation was largely focused on the disintegration of the intended visual qualities of the garden. The impacts of the park's dense urban context—including runoff and use of the site for "vagrant residence[s]"<sup>8</sup>—were reported, and yet the recommendation was made to restore the garden to its 1940 condition regardless of its altered context. Much like the "wilderness" reading of the landscape, and similarly grounded in a predominantly visual assessment, the vision of the valley as an historical garden with a placid stream trickling through it leaves little room for urban stormwater conditions or heavy, possibly unorthodox public use. However, a deeper, wider look at the site and its place within the larger Rock Creek watershed reveals that these valleys have constantly been used as a conduit for water, waste, and people. This chapter dissects these intertwined systems, considering each as distinct, then weaves them together again by proposing how they might be united in a new model for future stewardship.

## Water

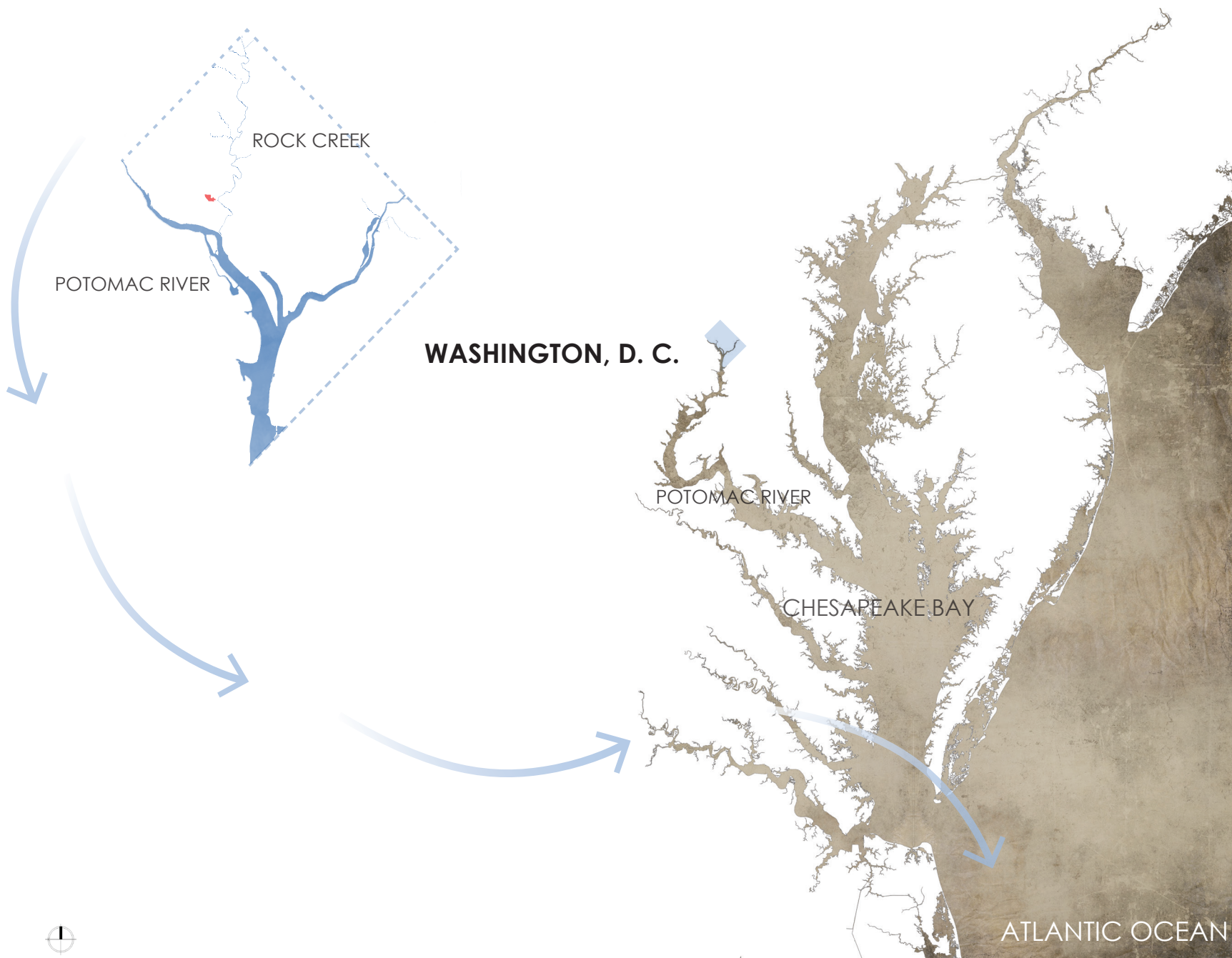
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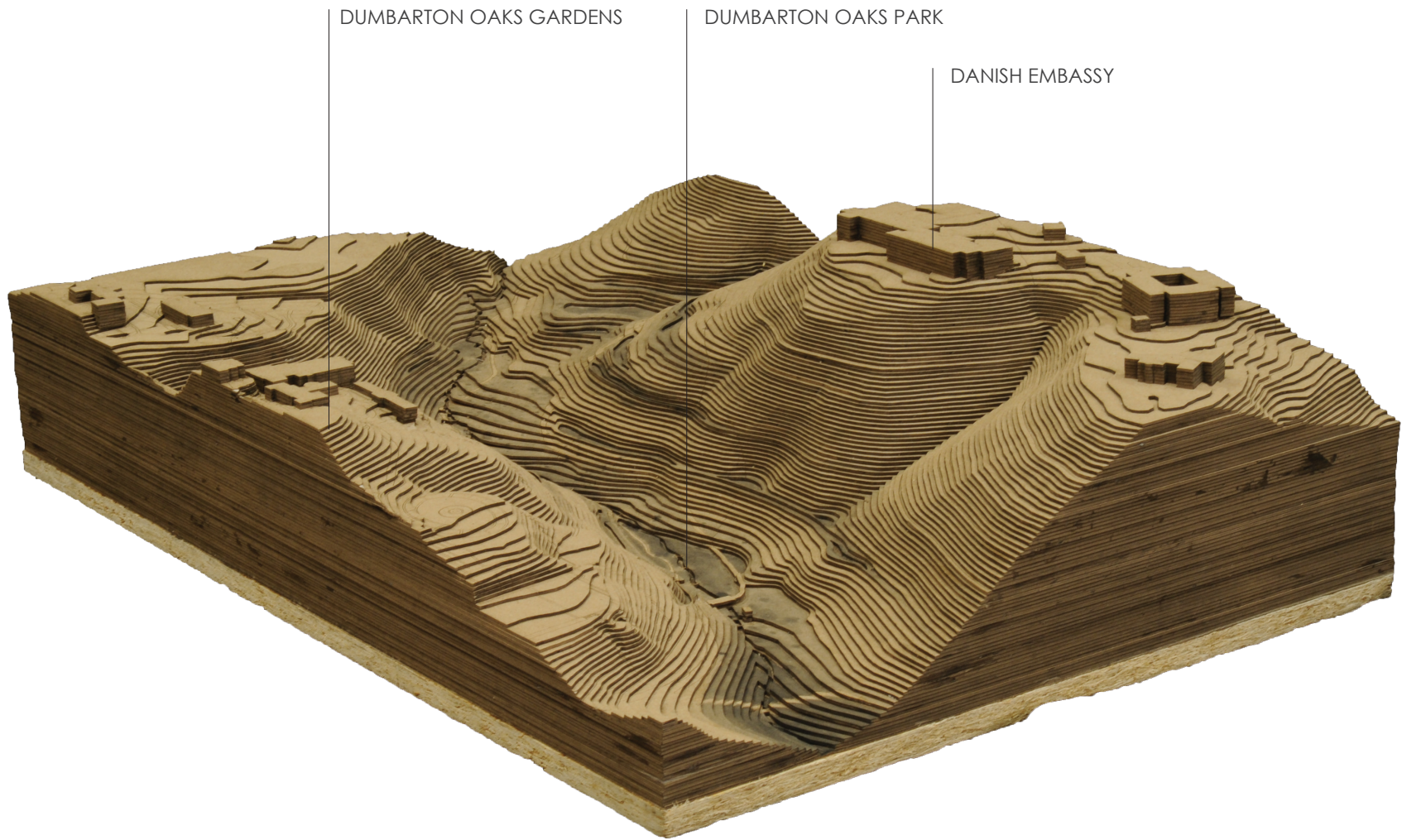
It is no surprise that the Branch valley is a wet, shifting place. Eighteenth-century maps trace multiple sub-tributaries feeding the stream course, whose headwaters once began on the grounds

of the present-day Naval Observatory. As a tributary of Rock Creek, which drains to the Potomac River, the Branch is part of the Chesapeake Bay watershed. The valley drops 200 feet in elevation from the headwaters to the stream's confluence with Rock Creek.<sup>9</sup> Ancient water patterns are inscribed by the topography, and fluvial terraces and floodplains formed by the movement of the creek over time are still convergence points for overland flows, corresponding to increased zones of erosion and sedimentation today (figure 1.19).

The Branch, as its name indicates, was one of many waterways in a finely veined landscape of rivers and creeks. Historic topographical maps of Washington, DC accentuate a striking juxtaposition between low-lying muddy plains and upland escarpments, illustrating the district's position on the Fall Line, or the boundary between two physiographic provinces: the rocky Piedmont and the newer, unconsolidated sediment of the Atlantic Coastal Plain. The Fall Line runs like a seam along the east coast and was significant to the early development of the nation, marking the inland extent of navigable waters as well as the end point of highly fertile, easily cultivated land (figure 2.3).<sup>10</sup> In Washington Rock Creek defines the border between the Piedmont, to the west, and the Coastal Plain to the east. Dumbarton Oaks Park is therefore located along a zone of transition, in which unyielding metamorphic rock meets gravel, silt, sand, and clay: the result is an unstable landscape characterized by streams, ridges, springs, rapids, and waterfalls.<sup>11</sup> Fall Line sites have historically proved propitious for industry because the energy of moving and falling water could be easily harnessed, powering the large number of cities that sprung up along its edge.

But Fall Line landscapes are also notoriously erosive. A 2009 geologic resources inventory report for Rock Creek Park cites erosion as a major resource management issue, noting that the





2.2 Model of Dumbarton Oaks Park illustrating its location in a topographical bowl.

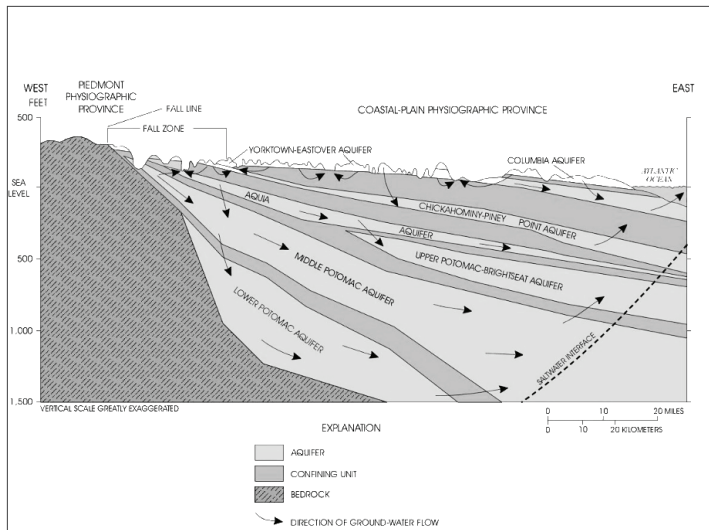
extreme erosion that created Rock Creek's dramatically carved valleys is still a force to be reckoned with, and that the current danger of severe landslides and rock falls is very real.<sup>12</sup> The gravelly sandy loam soils present on the ridges and steep slopes of Dumbarton Oaks Park are very easily eroded, while the valley floor is covered in soils formed by weathered bedrock, known as saprolite. Relatively impermeable, the saprolite encourages rapid runoff, further increasing the risk of erosion.<sup>13</sup> High rates of erosion lead to a greater sediment load in streams, which may produce changes in channel morphology or cause the stream to overflow its banks. Erosion and sediment load are cited as primary resource management concerns in both Rock Creek and Dumbarton Oaks parks, significantly affecting water storage capacity in the latter.<sup>14</sup>

### Farrand's response to stormwater

Accounts of flooding in the Branch valley reach back to the early 1940s, however the landscape's topographical and hydrological situation suggest that occasional floods have occurred on the site for millennia.<sup>15</sup> The most notable recorded flooding events occurred in spring and summer 1942, when Farrand was still serving in her capacity as adviser to the new national park unit. In the years following the Bliss donation to the NPS, Mildred Bliss and Farrand pressed unsuccessfully for the creation of an advisory committee for the park that would include themselves along with a representative from the park service and one from Harvard University, which had received the house, collections, and upper gardens from the Blisses in 1940. Though the advisory committee never materialized, to their great frustration,<sup>16</sup> a significant volume of correspondence has survived from the



2.3 [above] Map of the Fall Line, 1910. From Tarr and McMurry, *New Geographies* 2nd ed. 2.4 [below] In Washington, DC, the Fall Line runs along Rock Creek. Boschke Topographical Map of the District of Columbia, 1861. Library of Congress.



period that describes the garden’s transition from private to public management. As if to portend future challenges, the 1942 flooding events emerge from these records as particularly dramatic.

Hearing of the March 1942 storm from her California office, Farrand anxiously cabled John S. Thacher, director of Dumbarton Oaks for Harvard: “Please telephone urgently to [park superintendent Irving C.] Root regarding Branch conditions and press immediate action. I regard cleaning of Branch as essential part of park upkeep.”<sup>17</sup> Thacher replied the next day: “The Park Administration must have felt the vibrations of our telegrams regarding the Branch, in view of the fact that there is practically an entire army corp dredging the stream and pond.”<sup>18</sup> In August, another 11.62 inches of rain fell in Georgetown, resulting in further damage described by NPS landscape architect Harry Thompson as “an unholy mess.”<sup>19</sup> Although Farrand’s streamside plantings were hydrophilic and likely able to tolerate periodic inundation, and although her pool locations corresponded to areas of high runoff volume, the powerful 1942 storms damaged both the plants and pools, and swept nearby piles of unprotected fill into the stream.<sup>20</sup>

Because of the highly erosive nature of the valley’s slopes, Farrand’s watercourse depended on regular dredging behind the dams to assure that the stream remained within its route and did not back up and overflow the banks. Each waterfall/dam structure was equipped with a plug that could be removed to allow sediment to wash through the dams unaided by human dredging.<sup>21</sup> Apparently the plugs were not removed in the early years of NPS management, despite the availability and knowledge of the gardeners who had cared for the site under



2.5 [above] Section illustrating Fall Line geology. USGS: *Aquifer Susceptibility in Virginia, 1998–2000*. 2.6 [below] Piedmont escarpment, Rock Creek Park, 1912. Library of Congress.

the Blissés. Another problem was the size of the water features and the channel itself, which in hindsight have been deemed too small to handle large rainfall events, particularly in a more highly urbanized watershed where runoff moves much more quickly than it did when the falls were first designed.<sup>22</sup> The original sub-tributaries that once entered the Branch from the northwest and from two locations in the southwest were eventually replaced with storm sewers: rather than traveling over a densely wooded slope and infiltrating across large swathes of meadow, as it once did, runoff enters the park via a smooth conveyance network that delivers it as slug.<sup>23</sup>

As chapter 1 discusses, Farrand's design of the valley actively encouraged the presence of water and directed its movement in order to support her aesthetic vision for the landscape. However a marked change had occurred in the valley's hydrological context over her quarter-century of stewardship. Her response to these altered conditions reveals her understanding that changes in the original design would be required to meet the increased infrastructural demands placed on the site. For example, she was consulted about proposed infrastructural additions in the park in 1942, in the aftermath of the devastating floods. In early September of that year, the district suggested installing a new stormwater line through the valley, following the alignment of the old farm road. These plans are outlined in a letter written to Farrand by Irving C. Root, superintendent of National Capital Parks for the NPS:

I believe you are familiar with a proposal by the Engineering Department of the District of Columbia to construct a storm water sewer through Dumbarton Oaks Park for the purpose of taking care of excess run-off from Wisconsin Avenue and areas adjacent to park property . . . the problem of handling storm water in the general vicinity of Dumbarton Oaks has become

somewhat more urgent due to erosion problems and the widening of Wisconsin Avenue, with which I believe you are familiar.<sup>24</sup>

Root went on to observe that the stormwater line had in fact been under consideration since a meeting in early 1939 between Robert Woods Bliss and the district department of sanitary engineering.

After reviewing the proposed location for the new pipe, Farrand expressed concern that it might not adequately manage all of the water coming into the site, stating presciently in a letter to John Thacher that "it would appear to me a pity not to dispose of all further danger of flooding to the brook at one time. To me the graver danger of damage comes from Observatory Circle rather than Wisconsin Avenue."<sup>25</sup> To Root she cautioned, "to go to so heavy an expense and so considerable a destruction of Park planting without a reasonable certainty of preventing further flood[ing] would be a decided question in my mind," adding that the stormwater problems on the west and north sides of the valley should be considered in a comprehensive manner: "both dangers should if possible be eliminated and perhaps at one time."<sup>26</sup>

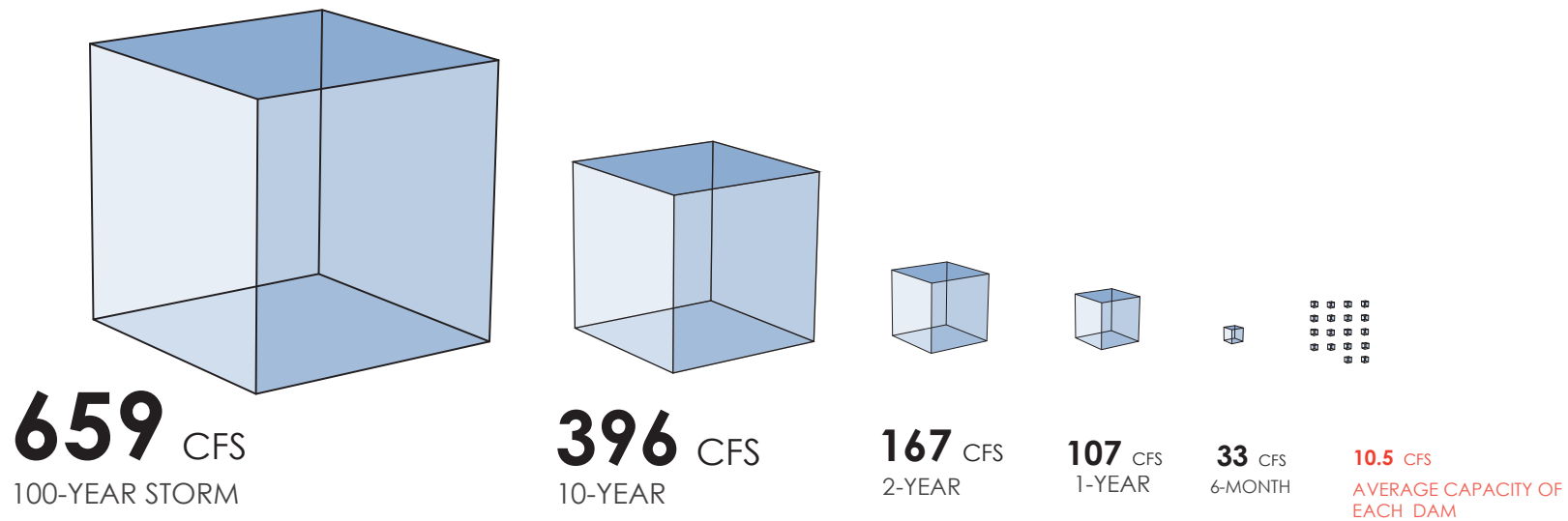
Ultimately Root's 1942 plan languished after defeat at the hands of the War Production Board, which refused the project on the grounds that the necessary materials could not be diverted from the war effort.<sup>27</sup> Surviving correspondence indicates that no further measures were attempted to improve the stormwater situation, likely due to budgetary issues as well as the failure of the advisory committee advocated by Farrand and the Blissés.<sup>28</sup> Farrand's involvement in the park declined dramatically after the storms of 1942, and as a result she offered no further advice for handling the increased runoff in the valley. Yet she was a designer who constantly evaluated and revised her works

over time,<sup>29</sup> and had she continued in her role as adviser she would likely have altered the design to ensure a more optimal interaction with water. In the years that followed the problem persisted unchecked, consistent with the hands-off approach that characterized NPS management of the park for the bulk of the mid- to late 20<sup>th</sup> century. By 1997, the park service reported that the site’s “natural, cultural, and historic” resources were in “perilous jeopardy of being completely destroyed within the park boundaries” by unmitigated runoff.<sup>30</sup>

**Current conditions**

The runoff damage in the valley is caused by three interrelated issues: erosion, sedimentation, and a restricted stream capacity. In a hydrological survey completed for the park in 1999, the average

capacity for each dam was measured at 10.5 cubic feet per second (cfs), while a 6-month storm was estimated to produce 32.8 cfs of runoff, and a 100-year storm was projected to contribute 659 cfs, when measured in the stream at the foot of Lovers’ Lane.<sup>31</sup> A subsequent hydrological analysis prepared in 2011 by geologist Zoe Kulakowski found that dam capacity had further decreased in the intervening years due to stormwater damage to the structures. Kulakowski reported that by 2011, six of the dams could not handle a storm discharge of 2.4 cfs, the result of 0.74 inches of rainfall over an 11-hour period. This new data was particularly grave given the evaluation of Greenhorne & O’Mara, the consulting engineers who prepared the 1999 report: their survey had concluded that the capacity of the stream was limited by the capacity of the dams themselves.<sup>32</sup>



STORM DISCHARGE VS. **CAPACITY** [CUBIC FEET PER SECOND]

Today the ever-increasing speed of stormwater combined with degradation of the park's woodland, particularly on the northwest slope, has intensified erosion and thus sedimentation in the stream. This has further reduced the capacity of Farrand's weirs, and when the creek level rises above their elevation the water travels around them, heavily scouring their wing walls, dismantling their mortared river stones, and even leaping the bank to follow the easier route of human pathways. Farrand was once concerned that her plantings would creep over the streamside path in the absence of Bliss-level maintenance:<sup>33</sup> in fact the opposite has occurred, as water and heavy foot traffic alike have denuded many of the stream banks.

A number of studies have addressed the park's hydrology over the past two decades, proposing a range of mitigation measures that reflect evolving views on stormwater management. In 1997, the District of Columbia Water and Sewer Authority (WASA) advised the construction of a 36-inch stormwater sewer that would run entirely under the park and daylight downstream, near the Branch's confluence with Rock Creek. The impacts

of the increasingly paved, roofed, and otherwise urbanized "sewershed" had become apparent to the district as well as to the NPS. A 1996 hydrology report prepared for the NPS National Capital Region estimated that 78 percent of the park's 160-acre watershed was "highly impervious."<sup>34</sup> Calculations comparing the stream capacity to that of the sewer lines entering the park revealed that 1,800 square inches of line entered the valley with only 450 square inches leaving, in addition to the scant 180 square inches contributed by the waterway itself. The engineer who prepared the report observed that the potential overload of 1,170 square inches was roughly equivalent to the capacity of a new 36-inch line.<sup>35</sup>

The prospective pipe would be buried along the farm track, in the same position as the line proposed in 1942. This location would avoid impacts to Farrand-era structures, plantings, and circulation features. In addition to a new 36-inch pipe, in the late 1990s the park service advocated for the construction of two detention ponds: one at the stream's piped headwaters and the other just below the Naval Observatory. The ponds were intended



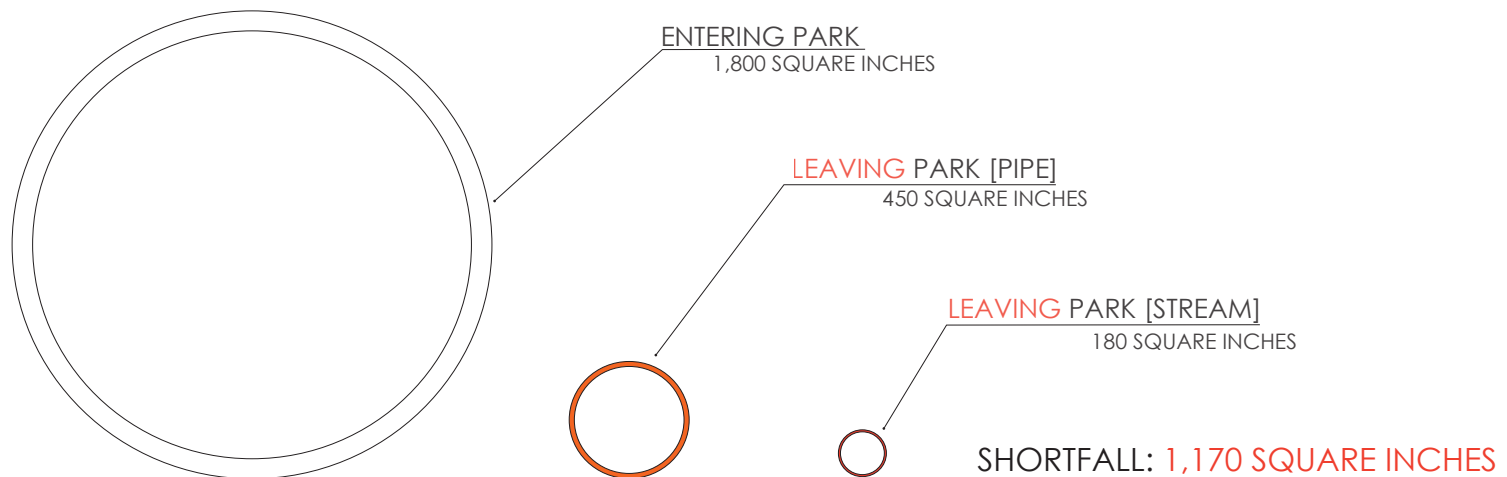
to capture overflow during major storm events (up to 15-year storms),<sup>36</sup> allowing it to discharge slowly back into the tributary while recharging the groundwater. Like the pipe, the ponds were deemed sufficiently compatible with the park's historic character to warrant construction, largely because the location selected for the pond within the park was so degraded by invasive plant growth that it was no longer considered to have integrity under the Secretary of the Interior's *Guidelines for the Treatment of Cultural Landscapes*.<sup>37</sup>

According to Bill Yeaman, natural resource manager for Rock Creek Park, the NPS and WASA jointly initiated the stormwater mitigation plan (including both pipe and ponds), which was abandoned by WASA after several years. Yeaman conjectures that the project ultimately ran out of funding due to the extensive planning process required by the park service.<sup>38</sup> Correspondence

between project participants also indicates that the proposed ponds were eventually judged to be too small to hold an adequate quantity of water during a storm event, perhaps another explanation for their abandonment.<sup>39</sup> Moreover, although the projected ponds would capture stormwater and sediment from the far northwest corner of the valley, due to their location they would have no influence on water and sediment descending valley slopes to the east.

Other alternatives proposed over the years have included removing the dams and allowing the stream to return to its natural morphology; modifying the stream bed to include widening, dredging, and raising the banks;<sup>40</sup> and increasing the size of the historic dams themselves.<sup>41</sup> Kulakowski's 2011 hydrology study for the park recommended a more holistic plan for runoff mitigation that disperses stormwater management

## CONDUIT CAPACITY: INPUT + OUTLET



throughout the valley and across neighboring properties. The report's suggestions, including bioswales, rain gardens, and bioretention ponds, align well with Washington, DC's new stormwater initiatives, including River Smart Homes, which encourage a comprehensive network of runoff mitigation strategies implemented at the scale of individual properties.<sup>42</sup>

### **A place for stormwater**

Slowing stormwater and capturing sediment before it enters the park will be vital to any runoff management plan, however the site's identity as a stream valley means that at least some water and sediment will find their way into the park regardless of upslope measures. The valley has always actively engaged water—whether naturally or through human interventions—and enhancing the landscape's absorptive performance and resilience will be crucial to maintaining its future health and cultural resources. This increased performance does not require a dramatic overhaul of the cultural landscape, however. Beatrix Farrand's design of the naturalistic garden included elements that were highly effective at slowing and storing runoff: the wooded slopes, meadows, pools, and floodable stream banks proposed by Farrand need only to be augmented to respond to a greater quantity of water, arriving more quickly. If flash flooding from runoff is identified as the park's major affliction, if this flooding is caused by limited dam capacity, and if dam capacity is further constrained by increased sediment load, then the valley must be vigorously used to trap sediment, slow and disperse the stormwater running downhill, and provide an alternate place for water to go when it exceeds the capacity of the dams.

Farrand understood that the visual experience of her garden was predicated on the many other natural and manmade systems with which it interacted, therefore those charged with "preserving" her historic landscape must likewise engage its full depth, complexity, and dynamism. A study of her design—and the underlying

topographical and hydrological conditions that informed it—reveals that the woods and meadows along the north slopes are well poised to receive and spread runoff arriving from properties such as the Naval Observatory and the embassies of Denmark and New Zealand. Riparian plantings along the creek and the former sub-tributaries will effectively slow water and are compatible with Farrand's planting design that tended to follow depressions in the landform (figures 2.7–2.9).<sup>43</sup> Similarly, points along the Branch that correspond to the historical confluence of sub-tributaries still bear the topographical signature of a floodplain: these are sites that continue to receive an abundance of water during storms and should be intentionally developed to hold that water without damage to surrounding features, while encouraging valuable floodplain habitat (figures 2.10–2.12).

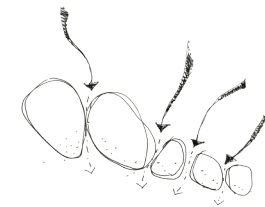
This suggests that the landscape's role as stormwater infrastructure can be—and has been—deeply layered into its aesthetic performance. This is well-illustrated by Farrand's design of the Pebble Stream, which transforms the stormwater running onto the site into a multisensory experience (figures 2.13–2.14). The coupling of this stormwater channel with the Spring Grotto and cedar rill presents in a beautifully articulated microcosm the larger relationship between fresh and waste water in the valley. The parallel water courses express on a human scale the twinned infrastructural conduits of the valley: one an above-ground stream, and the other an iron sewer pipe, which asserted itself even in the garden's heyday in a series of manhole covers positioned along the watercourse nearly as frequently as Farrand's dams (figures 2.15–2.17). These evocations of the garden's functional underside were and remain palpable reminders that the Branch valley was once viewed very differently. Indeed, only a generation had passed since city planners considered all waterways in the capital to be practical conveyance channels for waste.



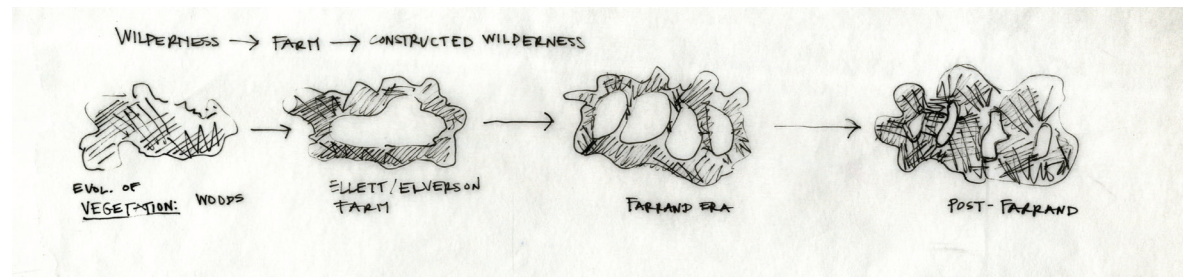
FARRAND ERA: SPATIAL ORGANIZATION OF FIVE MEADOWS IS SUPPORTED BY + SUPPORTS ECOLOGICAL FUNCTION



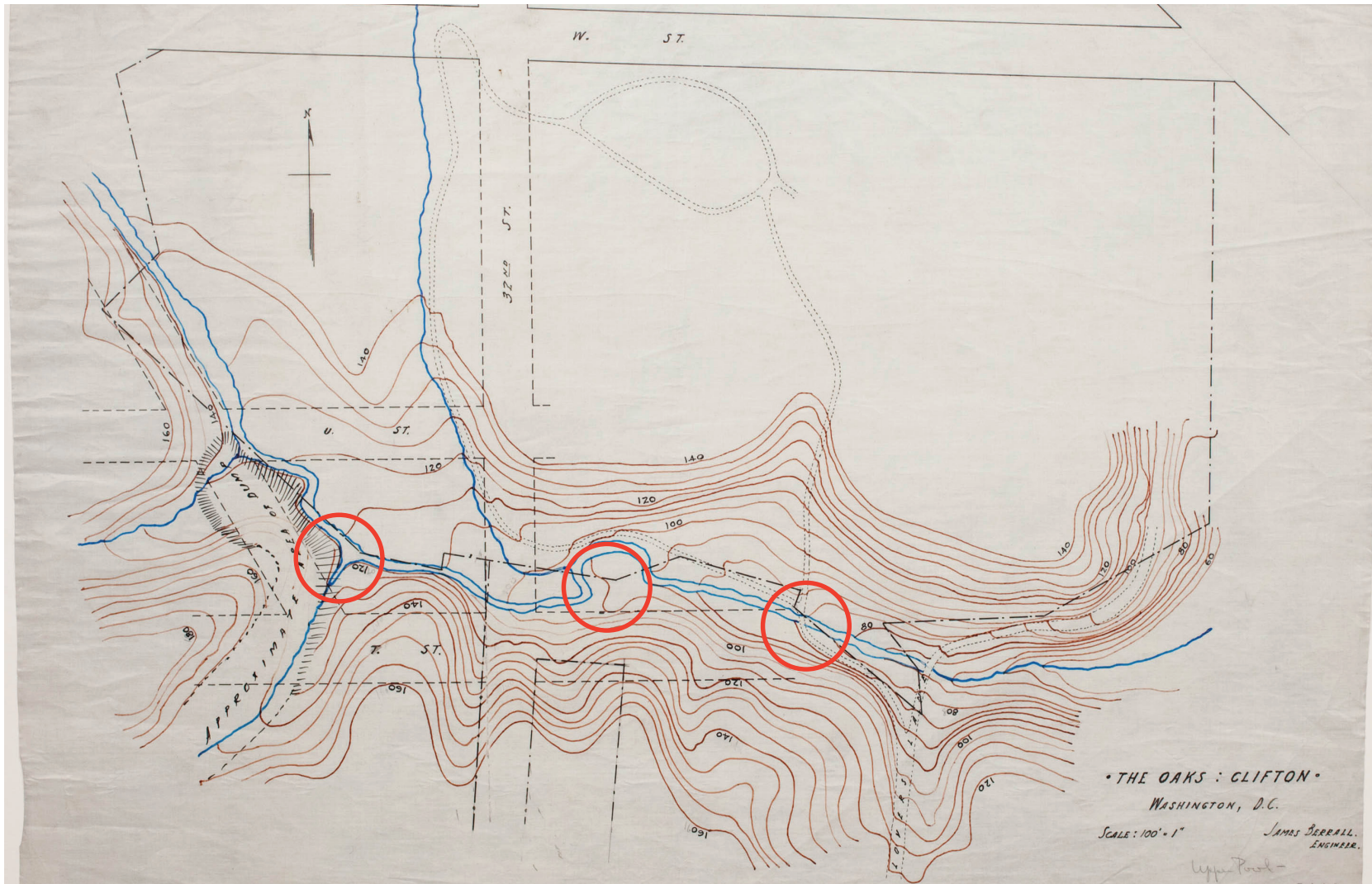
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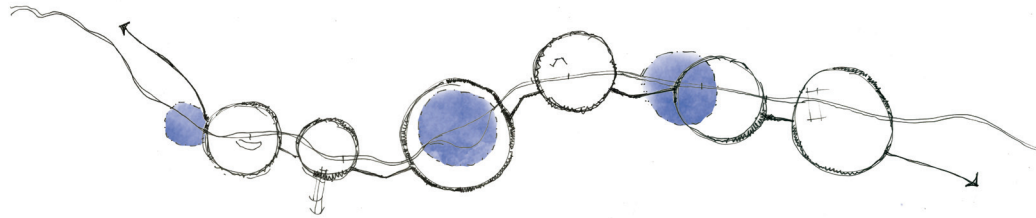
performative



2.7 [opposite] The pattern of Farrand's meadows is critical to the spatial organization of the landscape but also follows topographical and hydrological imprints. Photo n.d., Dumbarton Oaks Rare Book Collection. 2.8 - 2.9 [this page] Sketches exploring the change in vegetation pattern over time and illustrating how this pattern might be re-established with riparian plantings to slow runoff.



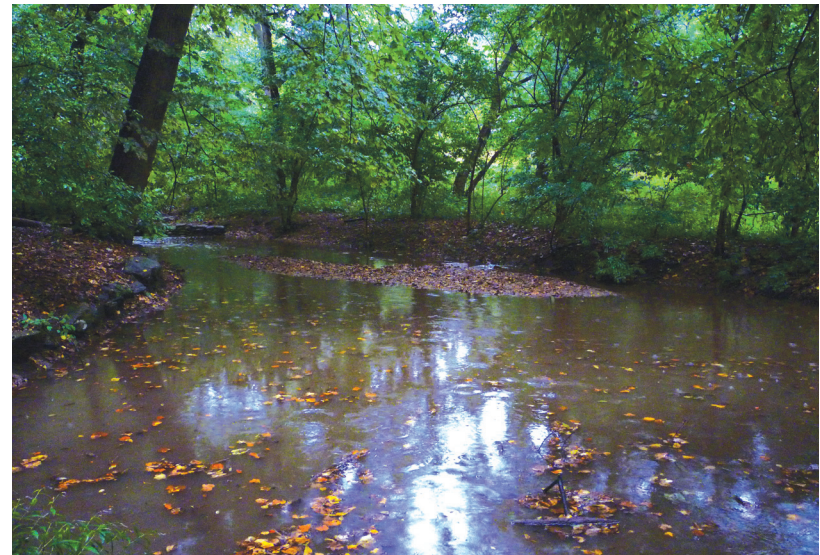
**2.10** [this page] A 1920s topographical map by James Berrall describes the confluence points of the Branch and its sub-tributaries and also indicates the proposed extension of streets through the park. Dumbarton Oaks Rare Book Collection. **2.11 – 2.12** [opposite] Like her meadow plantings, Farrand's pools also served a role in the valley's ecological performance. Historical photograph of Farrand-era pool, Dumbarton Oaks Rare Book Collection.



INTEGRATION OF SPATIAL AND  
PERFORMATIVE LAYERS



POOL, 1931



POOL RECEIVING STORMWATER TODAY



**2.13 – 2.14** Farrand's design of the Pebble Stream and Stream Grotto is a functional aesthetic representation of the dual hydrologies at play in the valley. The photo on the left dates from the Bliss era and the photo above, taken in 2013, shows the degradation of the feature today. Historic photo: Dumbarton Oaks Rare Book Collection.



**2.15 – 2.17** The Branch is punctuated at regular intervals by manhole covers, revealing the path of the combined sewer system through the valley. [above left] This infrastructural reminder was present when Farrand began design work and persisted when the naturalistic garden was given to the National Park Service. In this 1940 photo, park managers have attempted to disguise one of the manhole covers with a boulder. Dumbarton Oaks Rare Book Collection.

## Waste

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For much of the century following its founding, Washington, DC looked on its fine-grained infrastructure of creeks as a pragmatic circulatory system to support human life and commerce. The valleys of Rock Creek and its many tributaries were no exception and were valued as a source of water and power, a transportation network, and a convenient means of waste disposal. This perception of riparian corridors profoundly shaped one layer of the landscape while setting the stage for another, namely the valley's second incarnation as a park. As they share both a watershed and a sewershed, the Branch and Rock Creek are considered in this account as a single system: though their land use histories differ slightly, the broad strokes of each site's transformation from working valley to naturalistic park are similar enough to warrant their joint analysis.

As in many 19<sup>th</sup>-century cities, national capital planners often found it expeditious to channelize or fully transform open waterways into underground sewers. Tiber Creek, which once wound south to the Potomac through the present-day environs of Capitol Hill, was famously converted to the Washington Canal and finally covered over in 1871.<sup>44</sup> Despite engineer-architect Pierre L'Enfant's grandiose plans for this channel—which was to extend as a ceremonial ribbon from the White House to the Capitol—practical concerns soon won out over aesthetics. Heavily used for transportation and even more heavily polluted, specifically with raw sewage, the canal's proximity to the White House was in part responsible for the first measures to create Rock Creek Park: in 1866 a congressional study was initiated to determine a more salubrious location for the presidential mansion and grounds, and its findings identified the Rock Creek valley as the most suitable setting.<sup>45</sup>

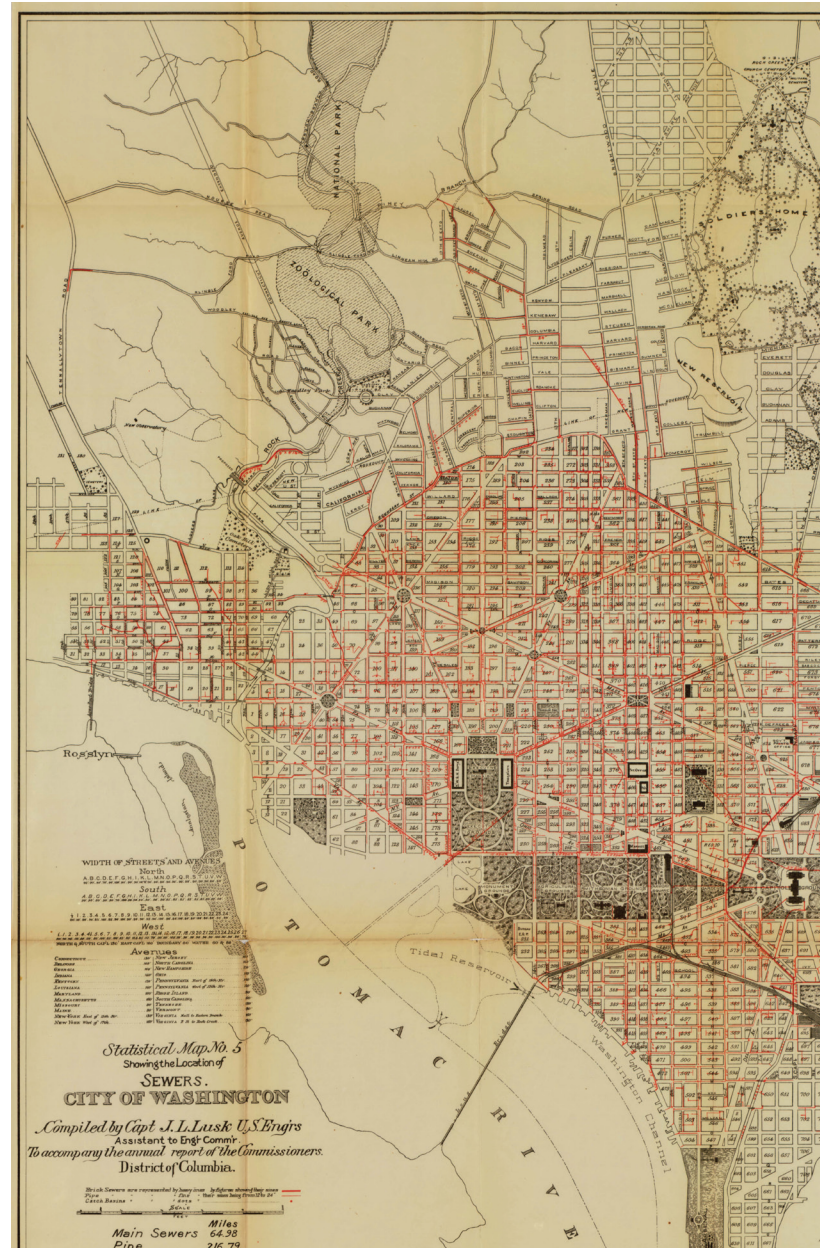
The Senate Committee on Public Buildings and Grounds, which was charged with the project, had commissioned Major Nathaniel Michler of the Army Corps of Engineers to conduct a survey for appropriate properties in the vicinity of the city. Michler delivered his report in January 1867, having examined numerous sites in and around the district. Though instructed to look for a location that could accommodate both the presidential house and a public park, Michler intriguingly dedicated the majority of his submission to the park, perhaps inspired by Rock Creek and the surrounding terrain that was largely more conducive for walks, rides, and picnics than the construction of large buildings.<sup>46</sup>

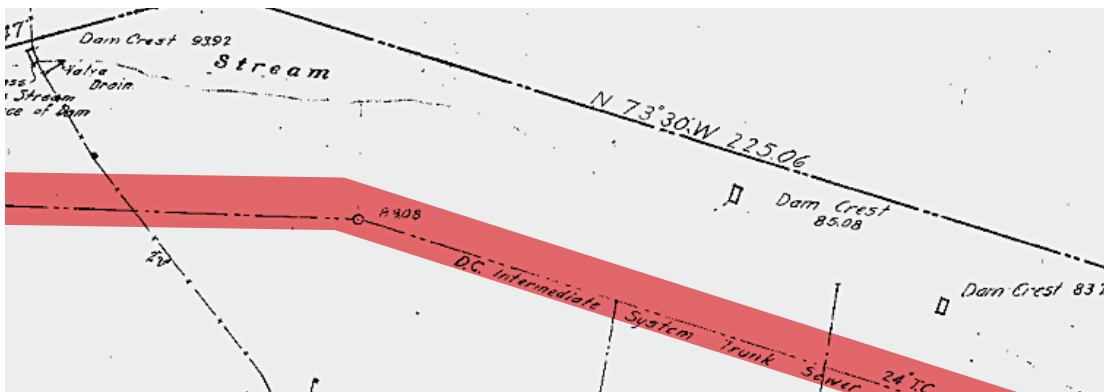
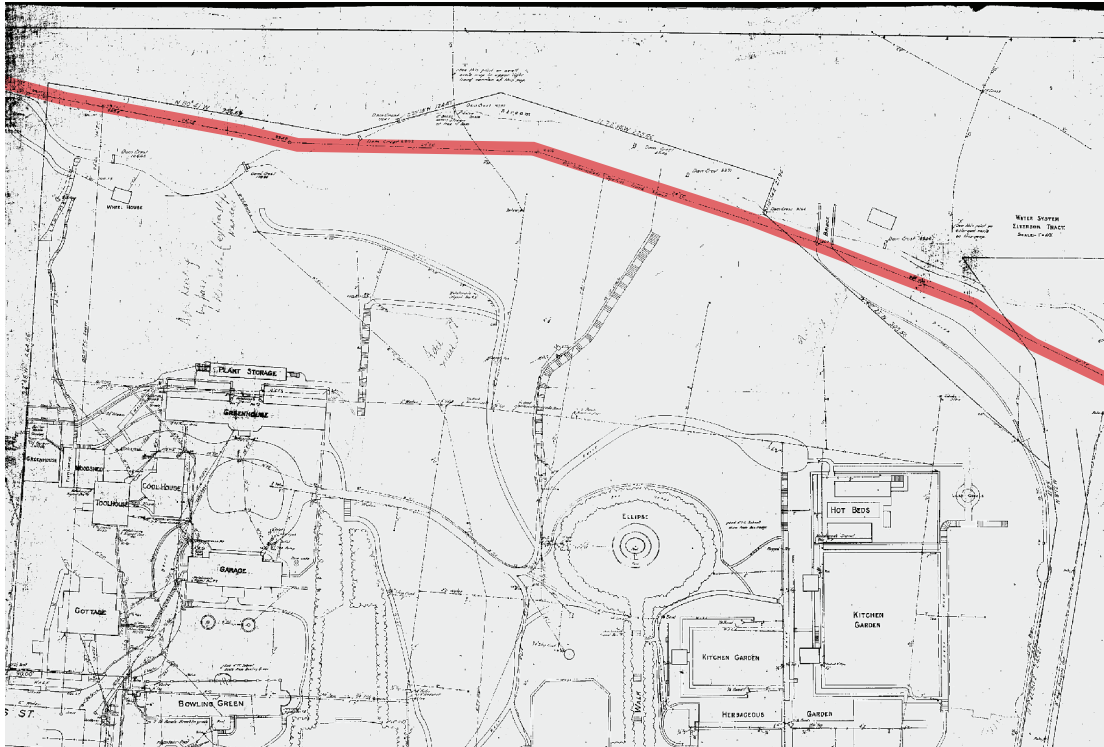
Much like the Branch valley when Farrand first saw it, the Rock Creek that greeted Michler was far from a pristine wilderness. Though the steeper slopes along the creek maintained their wooded cover, the gentler landforms of the valley had long been cleared for agriculture: first tobacco farms beginning in the late 1700s, and then corn and wheat were cultivated as the soil became depleted. Mills burgeoned along the creek and its larger tributaries, many of which were gristmills that ground grain into flour.<sup>47</sup> In addition to deforestation for agriculture, significant logging had recently occurred in the vicinity of the creek to improve the visibility from the numerous Civil War defenses perched on nearby ridges.<sup>48</sup> Slash left in formerly wooded areas was intended to impede Confederate access through the valley.<sup>49</sup> These less-than-picturesque elements seemed not to cloud the appreciation of Michler, who enthused that Rock Creek's "charming drives and walks, its hills and dales, its pleasant valleys and deep ravines, its primeval forests and cultivated fields, its running waters, its rocks clothed with rich fern and mosses, its repose and tranquility, its light and shade, its ever-varying shrubbery, its beautiful and extensive views" offered "nature

diversified in almost every hue and form, needing but the taste of the artist and the skill of the engineer to enhance its beauty and usefulness.”<sup>50</sup>

Michler’s portrait significantly paired “usefulness” and engineering prowess with the beguiling suggestion of natural beauty and recreation: from the earliest moments of the park’s conception, Rock Creek and its tributaries were therefore valued both for their infrastructural promise and for their capacity to provide a delightful outdoor experience for harried urban dwellers. In the late 19<sup>th</sup> and early 20<sup>th</sup> centuries these qualities—that we might today describe as landscape performance attributes—were viewed as connected only insofar as the setting aside of public land helped ensure the construction of a much-needed district sewer network. Although Michler’s report passionately expounded the virtues of Rock Creek’s rare scenery and wildness, including its “thickly mantled primeval forest,” “wild, bold, rapid streams,” and “gently undulating glade[s],”<sup>51</sup> all in close proximity to the capital, his findings languished in Congress for more than twenty years until supporters of the new park could convince their fellow lawmakers that its formation could protect public health by fulfilling the grave need for sewer infrastructure in the valley.<sup>52</sup> Rock Creek Park and its sewer system are therefore the same age: the park became one of the country’s first national parks in September 1890, designated the same day as Sequoia National Park and four days before Yosemite. A map of sewer locations indicates that by 1891 sewer construction had begun in the Rock Creek Valley (figure 2.18), and by 1909 combined storm and sewer lines traced most of the creek and its tributaries, including the stream in present-day Dumbarton Oaks Park.<sup>53</sup>

**2.18** A sewer map for the district from 1891 indicates that installation had begun in the Rock Creek valley immediately north of the Branch. Part of a collection prepared by W. T. Rossel, *Maps accompanying the report of the operations of the Engineer Department of the District of Columbia*. Library of Congress.





**CSO LINE INSTALLED IN BRANCH VALLEY, 1909**

**2.19** Early blueprints for the Dumbarton Oaks gardens document the location of the combined sewer (in red) and its adjacency to the stream course. Utility plan by James Berrall, engineer, April 14, 1930. Dumbarton Oaks Archives.

Yet concerns about the sewer and its interaction with the surrounding landscape date as far back as its construction and were notably described in an 1890 report submitted to the district by sanitary engineer Rudolph Hering. Commissioned by President Benjamin Harrison, the Hering Report addressed the sewer system in the district at large and included recommendations for the Rock Creek valley, still unsewered when the document was written. Hering and his colleagues on the specially formed Board of Sanitary Engineers advised a separated system for sewage and stormwater in this area:

Up the valley of Rock Creek, where new streets are being laid out, but where sewers are not yet built, the conditions are different from those which obtain in the populated parts of the City, and for this District we advise the adoption of a modified separate system. The surface water from the streets should not be allowed to enter the sewers which carry the sewage, but should be collected in separate underground channels discharging into Rock Creek, or its large branches, whenever underground removal becomes necessary.<sup>54</sup>

Hering's advice was not heeded, however, resulting in the current combined storm and sanitary sewer that still conveys sewage and stormwater together through the valleys. It is unclear how much Farrand knew about these issues, although heavy flood conditions along Rock Creek in 1933 likely impacted the Branch as well.<sup>55</sup> By 1934, combined sewer overflows occurred with such frequency and intensity that the National Park Service was granted \$25,000 from the Federal Emergency Administration of Public Works to study and mitigate pollution in Rock Creek.<sup>56</sup> The resulting *Report on Measures for Elimination of Pollution of Rock Creek and its Tributaries in Washington*, published by the Department of the Interior in 1935, acknowledged that a separate system was the optimal solution to pipes overwhelmed

with stormwater, however the installation of such a system in the by-then highly developed sewershed was deemed too expensive.<sup>57</sup> Instead, report authors LeRoy K. Sherman and Wesley W. Horner advocated the construction of two relief sewers, one on each side of the creek, that would carry excess runoff to the Potomac during large storm events and thereby reduce the occurrence of overflows. Their description of the goals for the project acknowledges the highly urban character of Rock Creek and its tributaries:

When all the aforesaid remedial works in the basin are completed, the water in Rock Creek will be entirely free from foul odor or sewage deposits. The water will support fish and aquatic life. It will not be fit for drinking. It may be desirable to chlorinate the water for bathing purposes.

This is all that can be said for any stream, entirely free from sewage pollution, which serves a basin occupied by from 5 to 60 persons per acre.<sup>58</sup>

Even these modest standards proved unattainable over time, however. By 1954, water quality in Rock Creek had declined to such a degree that Bernard Frank of the U.S. Forest Service questioned how “the foul-smelling, mud-laden, debris-choked watercourse which winds its sickly way from Montgomery County, Maryland, through the nation’s capital [could] be the same stream which Major Michler described . . . some 90 years ago.”<sup>59</sup> Frank’s critique called for improved sewage and stormwater infrastructure and erosion controls for nearby development projects. A 1972 article in *Washingtonian* magazine suggests that pollution levels in the waterway continued to increase, describing Rock Creek Park as “a wilderness preserve largely untrammelled by man, but the polluted stream that flows through it is dangerous to touch.”<sup>60</sup>

# INFRASTRUCTURAL PERMUTATIONS

watershed -----> sewershed



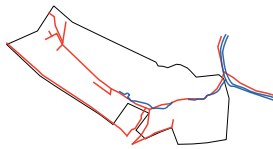
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formation of the "Branch" valley



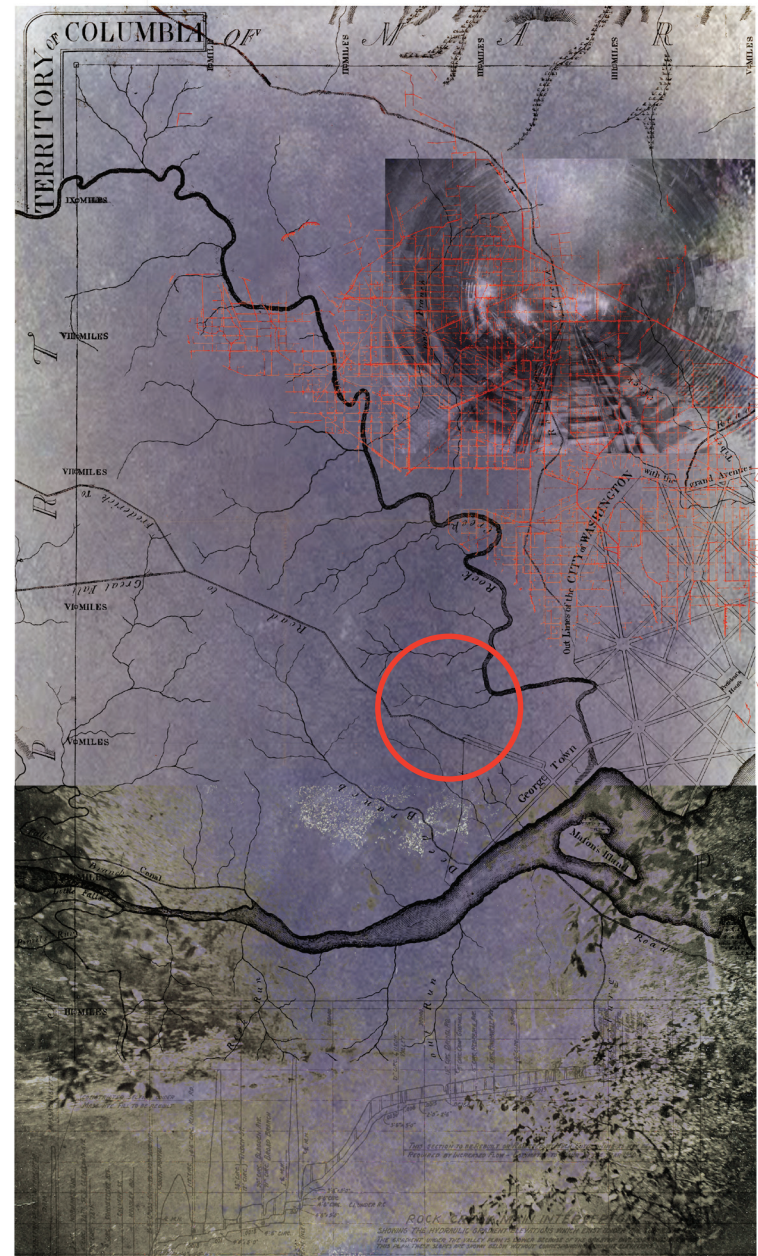
1909

installation of combined sewer and stormwater line



2014

combined sewer system inscribes creek



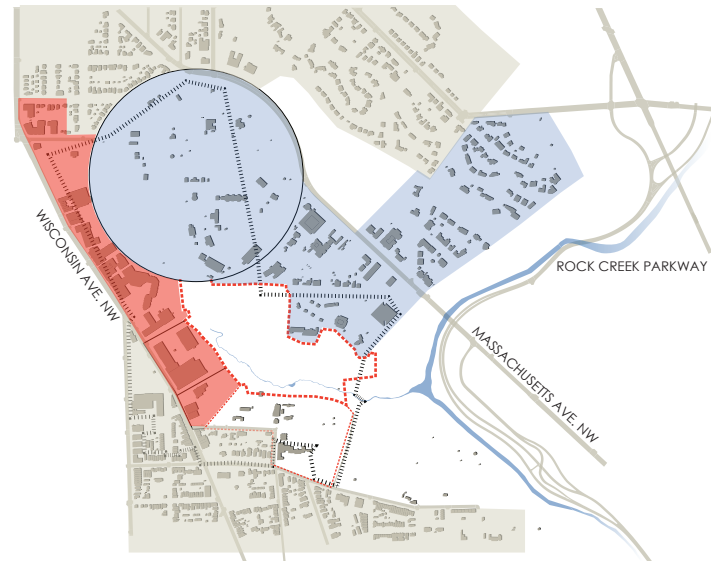
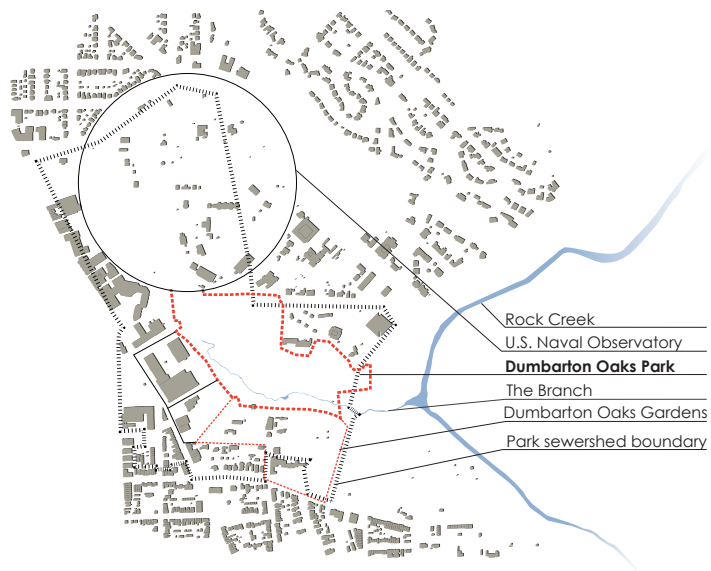
The Branch itself has at various times absorbed pollution from leaking sewer pipes and swimming pool drains as well as other mysterious discharges.<sup>61</sup> In 2004 the Water Quality Division of the DC Department of Health measured pollutant levels in Rock Creek and 11 of its tributaries, including the Branch. The creek through Dumbarton Oaks Park was estimated to contain higher-than-recommended levels of several organic pollutants, including the pesticides chlordane, dieldrin, heptachlor epoxide, DDD, DDE, and DDT, as well as an over-abundance of PAHs, a class of organic compounds found in fossil fuels and produced by combustion of organic materials. Through a simulation model based on precipitation data from a three-year period, the Department of Health calculated that these pollutant loads in stormwater would need to be reduced by 85 to 98 percent (depending on the chemical) to meet acceptable District of Columbia Water Quality Standards for the Branch.<sup>62</sup> Studies of macroinvertebrates and riparian habitat undertaken in the 1990s found the stream to be “moderately impaired” in terms of stream life,<sup>63</sup> further quantifying the impacts of a highly urbanized, heavily populated watershed.

### **A place for infrastructure**

Although the park offers a sensation of escape from the city, it is nonetheless embedded in the district’s waste-receiving network, in ways both known and unknown. While the NPS has been unable to trace every source contributing runoff to the valley,<sup>64</sup> certain contributors are regularly apparent. For example, a 36-inch stormwater line runs downhill into the park from the boys and girls club located on its southwest slope, and the intersection of this pipe with the 21-inch combined sewer line causes sewage overflows in storm conditions, in which the manhole cover is forced off the connection and projected through a chain-link fence and across the NPS boundary (figure 2.20). Signals such



**2.20** The manhole cover marking the connection between a 36-inch stormwater line and the 21-inch combined sewer line, September 2013. The cover is repeatedly ejected through the fence and into the park during combined sewer overflows.



- COMMERCIAL
- RESIDENTIAL
- GOVERNMENT

## DUMBARTON OAKS PARK + NEIGHBORING PROPERTIES, 2014

**2.21 – 2.22** Dumbarton Oaks Park is heavily visited by its local community, including those who live, work, and go to school nearby. Its neighbors include the U.S. Naval Observatory, residence of the vice president, as well as numerous embassies including the Embassy of Denmark, the Embassy of New Zealand, and the Embassy of Italy. To the west, a large Safeway store anchors the commercial district along Wisconsin Avenue. The park offers opportunities for active recreation, dog walking, and contemplation, and today often serves as a leafy shortcut for commuters traveling from one part of Georgetown to another.

as these are apparent to those who look carefully, but not all visitors to the site detect the persistent relationship between infrastructure and recreation in the valley.

Deconstructing the prevailing perceptions of the landscape—reduced to either a decorative naturalistic garden or a pristine wilderness—reveals that the infrastructural capacities of Dumbarton Oaks and Rock Creek parks impelled their very founding and continued existence as public places. Moreover, this relationship persists with even greater intensity today, as the two systems find themselves in conflict due to simplified interpretations and management guidelines that have struggled to actively promote the infrastructural capacity of recreational, culturally significant sites (though Michler himself was comfortable with their pairing when he advocated for the preservation of the watershed in the mid-19<sup>th</sup> century).

Today the profession of landscape architecture is well-poised to transform the valley's troubled infrastructure into an operative, aesthetic public amenity. This would demand genuine collaboration between the design and preservation fields but could contribute significantly to the park's relationship with its most powerful shaping agents: its human inhabitants and their understanding of the place.

## People

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The valley is a long-inhabited landscape, shifting over the millennia from a site valued for its food and more briefly, its lumber production to a site valued for recreation, first as a garden and later a park. Although the experience of the streamside garden was more intimate during the Bliss tenure, the presence of people and their movement through the valley were integral to the designer's goals for the landscape. When the garden was given to the National Park Service, Farrand sought to ensure

its adaptation to its new, more heavily populated context by widening paths and proposing wayfinding measures.<sup>65</sup> This constant revision was a hallmark of her design approach and was also applied to the upper gardens upon their donation to Harvard University. There path materials were changed to better accommodate the landscape's new use as a garden open to the public, and, at Director Thacher's urging, Farrand composed a *Plant Book* to guide future stewardship of the garden's plant collection.

### Private garden to public park

In the early years of the park, the tension between public access and resource protection was mitigated by limiting open hours to weekends and holidays in the spring, summer, and autumn months. By 1964, however, the park was open daily, and this coincided with a period of declined maintenance. Symbolically, any suggestion that the park was once part of a highly cultivated estate garden vanished when the gates to Dumbarton Oaks Gardens were removed, sometime in the late 1960s or early 1970s. As a means to alleviate persistent vandalism in the upper gardens, the Forsythia Arch was filled with rough-laid masonry and the gate on the Hazel Walk was permanently replaced with chain-link fencing.<sup>66</sup>

Today park managers are still anxious about heavy public use, particularly its impact on already eroded stream banks and historic structures, as well as damage caused by off-leash dogs that are allowed to scramble into and out of the stream. Despite these concerns, it is clear that the park is a well-loved public amenity that provides diverse opportunities for reflection, physical activity, and social gathering: it is very much a local park as well as a national park.



Park stewards have struggled to reconcile the demands placed on the site by its dense urban community with the NPS mandate to safeguard the integrity of its features—which are equated with its significance (see chapter 3). This balancing act between protection and public use is emblematic of the paradox embodied by every national park, though in this case additional challenges are posed by the valley’s location in one of the fastest growing regions in the United States.<sup>67</sup> The 1916 Organic Act, which founded the National Park Service, embedded contradictory objectives in the agency’s mission, stating that the purpose of the NPS is both “to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”

This management paradox was already impacting adjacent Rock Creek Park by the early 20<sup>th</sup> century and is well-described in a report on the park prepared by the Olmsted Brothers firm in 1918. Though the 66-page document is imbued with the vision of the park as an unspoiled natural landscape, it is one in which people have a defined and integral role:

It is unnecessary to praise the very exceptional natural beauty of Rock Creek Park, because it is well known and widely appreciated.

But it is important to emphasize the fact that it is upon the subtle qualities of this essentially wild and natural beauty that the public value of the Park mainly depends.



**2.23** [above] A photo of Rock Creek in September 1885 reveals the seemingly unspoiled character of the valley that was so striking to Major Michler and the Olmsted Brothers. Washingtoniana Collection, Martin Luther King Jr. Memorial Library. **2.24** [below] Rock Creek Park has served as a vital public amenity since its founding, as this July 1926 photograph attests. Library of Congress.

The real justification for this large park is unquestionably found in the recreative value of its natural qualities—large stretches of forest, the river valley, dark ravines, steep and rolling hills, and occasional meadow lands—and no use or exploitation or development of any sort can ever be right that is not based upon this fundamental conception. [...] But no matter how perfect the scenery of the Park may be or may become, no matter how high its potential value, that value remains potential except insofar as it is enjoyed by large and ever larger numbers of people, poor and rich alike.<sup>68</sup>

The challenges of preserving “wild and natural beauty” within an increasingly urbanized context were seized upon by the Olmsted report’s recipients, members of the district Office of Public Buildings and Grounds. In 1919, James L. Greenleaf, landscape consultant to the office, wrote its head, Colonel Clarence S. Ridley:

The Report declares the “dominant motives” of the Park to be to preserve its natural character of wooded valley and upland and open meadow, and to make it accessible to the public with the least injury to this natural beauty. The two motives are inevitably opposed in any naturalistic park and increasingly so in proportion as a large city grows about it. Yet they must be balanced and adjusted, and this basic problem of adjusting artistic values and utility will arise continually in a thousand different places . . .<sup>69</sup>

**2.25** [above] A volunteer crew on site at Dumbarton Oaks Park prepares to replant the slope between the park and the upper gardens, March 2014. Dumbarton Oaks Park Conservancy.

**2.26** [below] Students from the nearby British School learn how to wattle while protecting the park’s vulnerable stream banks, 2013. The British School of Washington.



The need for constant change and adaptation had been highlighted by the Olmsteds as well, who emphasized that “preservation” in a swiftly evolving landscape like that of Rock Creek looked quite a bit different from traditional conceptions of the word:

Its preservation differs radically from the protection of any unchanging thing of beauty in a museum in that it involves an unending watchful struggle to neutralize destructive forces inevitably acting on the scenery; to reinforce and supplement its natural powers of resistance and recuperation; and patiently, skilfully, and humbly to restore the actual deterioration. The scenery of the Park cannot remain absolutely static; it is always changing for better or for worse: in many respects it has for years been deteriorating. The great problem of its management is to convert progressive deterioration into progressive restoration.<sup>70</sup>

### **A place for change**

Early notions of the park’s relationship to its urban context therefore emphasize the importance of change in landscape preservation. Farrand’s observant adjustments in Dumbarton Oaks Park and the Olmsted Brothers’ vision for Rock Creek Park illustrate an approach to stewardship that does not seek to freeze or return the landscape to a particular point in time. Rather, these earlier designers understood the necessity of allowing parks to evolve with their changing social and cultural contexts, ensuring that they remained resilient to increased or altered forms of human use. This is a different but perhaps ultimately more successful way of answering the demands of the Organic Act, specifically because it allows parks to grow and change in the future along with the people they are mandated to serve.

Although intervening managers in Dumbarton Oaks Park have attempted to return the landscape to its Bliss-era form and function, current public use illustrates that the human relationship with the site has significantly changed in the interim. While some have viewed heavy traffic through the park as a threat to resources, it is likely that public involvement has had a net positive effect on park conditions. Specifically, the park’s community has assumed full responsibility for its stewardship in recent years: with no dedicated funding source to support park maintenance, the National Park Service has relied for decades on volunteers to care for the valley. Since 2010 the Dumbarton Oaks Park Conservancy has led an energetic effort to raise awareness about the significance of the park and combat degradation from stormwater and invasive species (figure 2.25).

Conservancy leaders have actively sought the involvement of diverse participants in park stewardship, notably youth from student groups such as the Student Conservation Association and nearby educational institutions including the British School of Washington and Georgetown University. The British School in particular has thoughtfully integrated work and play in the park into their curriculum (figure 2.26).<sup>71</sup> This emphasis on hands-on education and community building aligns with many of Farrand’s values and beliefs about landscapes and horticultural instruction, as exemplified by her development of the educational gardens at Reef Point in Maine. Moreover, explicitly framing the park as an edifying public amenity reflects the founding spirit of Dumbarton Oaks as a research institution, allowing the vision of Mildred and Robert Woods Bliss to leap the fence between the two properties and reunite them on a conceptual level.

A fluid administrative structure is in place that coordinates the conservancy’s training and maintenance activities with NPS procedure and priorities, suggesting that this social infrastructure could be expanded with time to shift the concept

of stewardship in our national parks to one that is increasingly local and participatory. Could Dumbarton Oaks Park represent a new paradigm for the community garden, one that is not devoted to growing food but which instead allows participants an active hand in shaping their shared landscape heritage? A community wild garden could thereby illustrate the intricate layering of ecological and human-imposed systems on a site, our aesthetic experience of them, and the relationship between this infrastructure and our changing understanding of what it means to be natural and what it means to be in a city. This complex understanding ultimately holds the key to the future ecological and cultural resilience of the landscape, and it is only achieved when the landscape is able to communicate with people. To do this, the landscape must be able to evolve with its context, to remain socially and culturally, as well as ecologically, relevant.

## NOTES

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1. National Park Service, *Cultural Landscape Report : Dumbarton Oaks Park, Rock Creek Park; Part I: Site History, Existing Conditions, and Analysis and Evaluation* (Washington, DC: National Capital Region Cultural Landscape Program, 2000): 44.
2. By the time a history of Dumbarton Oaks was published in 1967, its author, Walter Muir Whitehill, quoted a description of the former naturalistic garden as “our excellent, most beautiful and least known wilderness National Park.” See Walter Muir Whitehill, *Dumbarton Oaks: The History of a Georgetown House and Garden, 1800–1966* (Cambridge, MA: The Belknap Press of Harvard University Press, 1967): vii.
3. National Park Service, *CLR: Dumbarton Oaks Park*, 54.
4. Dorothy Butler, “Thoreau’s Death Marked in Woods,” *The Washington Post*, 12 May 1962, C1. This convocation of poets and policymakers was not accidental: the event was organized by Secretary Udall and the Wilderness Society of Washington to raise awareness about a wilderness bill mired in Congress at the time. See also Joseph C. Wheeler, “Remembering Thoreau in 1962 at Dumbarton Oaks,” *Thoreau Society Bulletin* 279 (Fall 2012). Available at <http://myemail.constantcontact.com/The-Thoreau-Society---eNewsletter-March-2013.html?oid=1102537682899&aid=QmuEuANXx38>, accessed 19 January 2014.
5. National Park Service, *CLR: Dumbarton Oaks Park*, 54. Maureen Joseph, personal communication, 17 April 2013.
6. Darwina L. Neal, landscape architect, National Park Service, memo to the superintendent of Rock Creek Park, 15 July 1983. On file at Rock Creek Park (Washington, DC).
7. *Ibid.*, 4.
8. *Ibid.*, 3.
9. DC Department of Health, Environmental Health Administration, Bureau of Environmental Quality, Water Quality Division, *District of Columbia Final Total Maximum Daily Loads for Organics and Metals in Broad Branch, Dumbarton Oaks, Fenwick Branch, Klinge Valley Creek, Luzon Branch, Melvin Hazen Valley Branch, Normanstone Creek, Pinehurst Branch, Piney Branch, Portal Branch, and Soapstone Creek* (Washington, DC: February 2004): 10.
10. Carol Harden, “Geography at the Edge,” *AAG Newsletter* 45(2): 3.
11. National Park Service, *Rock Creek Park: Geologic Resources Inventory Report*, Natural Resource Report NPS/NRPC/GRD/NRR—2009/146 (Denver: Natural Resource Program Center, National Park Service, 2009): 2.
12. *Ibid.*, 5.
13. Zoe Kulakowski, “Dumbarton Oaks Park Hydrologic Analysis Update, September–November 2011,” Geological Society of America Geoscientist-in-Park report (Washington, DC: Rock Creek Park, December 2011): 14–17.
14. National Park Service, *Geologic Resources Inventory Report*, 5. See also Kulakowski, “Dumbarton Oaks Park Hydrologic Analysis Update,” 5.
15. Photographs held by the Library of Congress illustrate that Rock Creek flooded in August 1933, see <http://www.loc.gov/pictures/item/thc1995004630/PP/>. It is likely that the creek’s tributaries, including the Branch, were impacted.

16. During the first two years of NPS ownership, Farrand and the Blisses pushed tirelessly for the establishment of an advisory committee to steer park management. The committee was to consist of five members: one of the Blisses, Farrand, representatives of Harvard and the NPS, and a fifth member selected by the rest of the committee. Despite the forbearance and perseverance of its advocates, and despite a stated commitment from the NPS, the committee never materialized. The cultural landscape report describes the failed advisory committee as “a source of great frustration,” for Farrand and the Blisses, and letters sent to potential committee members reveal increasing dissatisfaction with the lack of progress. By 1943 Farrand’s involvement in the park had declined dramatically, and in 1951, increasingly frail, she resigned from her supervisory role for both the park and the gardens.

See correspondence between Beatrix Farrand, Mildred Bliss, John Thacher, Irving C. Root, and Newton B. Drury, May 13, 1941 through April 2, 1942. Rare Book Collection, Dumbarton Oaks Research Library and Collection (Washington, DC). See also National Park Service, *CLR: Dumbarton Oaks Park*, 44–48.

17. Beatrix Farrand telegram to John Thacher, March 25, 1942. Rare Book Collection, Dumbarton Oaks Research Library and Collection (Washington, DC).

18. John Thacher telegram to Beatrix Farrand, March 26, 1942. Rare Book Collection, Dumbarton Oaks Research Library and Collection (Washington, DC).

19. Kulakowski, “Dumbarton Oaks Park Hydrologic Analysis Update,” 28.

20. *Ibid.*, 28–29.

21. National Park Service, *CLR: Dumbarton Oaks Park*, 53.

22. Kulakowski, “Dumbarton Oaks Park Hydrologic Analysis Update,” 28–29.

23. *Ibid.*

24. Irving C. Root to Beatrix Farrand, September 9, 1942. Rare Book Collection, Dumbarton Oaks Research Library and Collection (Washington, DC).

25. Beatrix Farrand to John Thacher, September 14, 1942. Rare Book Collection, Dumbarton Oaks Research Library and Collection (Washington, DC).

26. Beatrix Farrand to Irving C. Root, September 4, 1942. Rare Book Collection, Dumbarton Oaks Research Library and Collection (Washington, DC).

27. William Cochran, “Preliminary Analysis of the Water Flow into Dumbarton Oaks Park,” April 10, 1995. On file at Rock Creek Park (Washington, DC): 4.

28. Along with the lack of a long-term vision for maintenance, the park was plagued from the outset by a serious budget deficit. In May 1942, the National Capital Parks division that administered Dumbarton Oaks Park requested that \$8,600 be dedicated to park maintenance for fiscal year 1943. This was the sum identified as necessary to support the upkeep of a park described by NPS planning chief Donald Kline as “a highly developed naturalistic area and . . . famous garden spot in the District of Columbia.” However in a letter to Farrand, Kline admitted that an unsympathetic fiscal climate threatened the allocation of *any* funding for the park. Greeted with this news, the Blisses sought to resurrect plans for a private trust to supplement the park’s maintenance budget, but were advised against doing so by their trustees, who expressed concern that funds could not be specifically dedicated to Dumbarton Oaks Park without losing the financial contribution of the NPS. Due to this advice and to their disappointment with NPS maintenance standards in the park in general, the Blisses ultimately chose not to commit funds. To this day the park does not receive its own line item in the maintenance budget for Rock Creek Park.

See Donald L. Kline to Beatrix Farrand, May 21, 1942. See also Ellis Russell to Beatrix Farrand, May 25, 1942, and John Thacher to Beatrix Farrand, June 27, 1942. Rare Book Collection, Dumbarton Oaks Research Library and Collection (Washington, DC).

29. This is well-illustrated by Farrand’s *Plant Book* for the upper gardens at Dumbarton Oaks, written for Dumbarton Oaks director John Thacher in 1941.

30. Water Resources Division, National Park Service, “Water Resources Division Project Statement: Dumbarton Oaks Park Stream Stability Project,” n.d.:1. On file at Rock Creek Park, Washington, DC.

31. Greenhorne & O'Mara, Inc., *Dumbarton Oaks Phase I Hydrological Survey* (Greenbelt, MD: August 1999): 4–5. The consulting engineering firm Greenhorne & O'Mara recorded the capacity of 11 of Farrand's 18 original dams: though each dam possesses a different capacity, the author calculated an average capacity per dam for ease of comparison. In addition to discharges for a 6-month and a 100-year storm, the firm additionally calculated discharges for a 10-year storm (396 cfs), a 2-year storm (166.8 cfs), and a 1-year storm (106.9 cfs) at the Lovers' Lane location. Discharges during the same storm events were also calculated for the stream headwaters area and the U.S. Naval Observatory (*ibid.*, 5).
32. *Ibid.*
33. In a 1941 letter to the superintendent of Dumbarton Oaks Gardens and the Blissess' former gardener, James Bryce, Farrand described the path revision: "as I remember it a good deal of the material that borders the path is spring-flowering and can be moved in early summer. The path certainly should be five feet wide at a minimum, and it would seem to me perhaps wiser to plan for five foot six inches, or six feet, as both you and I know that the tendency of a path edging is to "crawl" in over the path rather than the path to widen." Beatrix Farrand to James Bryce, May 20, 1941. Rare Book Collection, Dumbarton Oaks Research Library and Collection (Washington, DC).
34. Greenhorne & O'Mara, *Dumbarton Oaks Phase I Hydrological Survey*, 3.
35. Cochran, "Preliminary Analysis of the Water Flow into Dumbarton Oaks Park," 4.
36. Memorandum, Field Meeting with DC-WASA and NPS personnel for the proposed Dumbarton Oaks Storm Sewer Separation Project, June 18, 2001: 2. On file at Rock Creek Park (Washington, DC).
37. Bill Yeaman, Natural Resource Manager, Rock Creek Park, personal communication, September 16, 2013. Also "Comments on plans for Dumbarton Oaks storm sewer and Naval Observatory BMPs," March 15, 2002. Notes on file at Rock Creek Park (Washington, DC).
38. Yeaman, pers. comm., September 16, 2013.
39. Scot Ahrensbrak, National Park Service, National Capital Region, e-mail to Cindy Cox, Julia Washburn, and Bob Ford regarding meeting between WASA, NPS, and engineers, July 9, 1999. On file at Rock Creek Park (Washington, DC). Ahrensbrak writes: "Conclusions—retaining ponds at Navy and in Dumboaks would not be sufficient to handle damaging flow from a 10 yr storm. Would reduce damage from 2 and 5 yr storm but not enough." See also Greenhorne & O'Mara, *Dumbarton Oaks Phase I Hydrological Survey*, 5.
40. Memorandum from NCA Hydrologist to Superintendent, Rock Creek Park, regarding Stream Restoration at Dumbarton Oaks Park, February 14, 1996. On file at Rock Creek Park, Washington, DC.
41. Kulakowski, "Dumbarton Oaks Park Hydrologic Analysis Update," 51.
42. See District of Columbia Department of the Environment, "River Smart Homes." Available at <http://ddoe.dc.gov/riversmarthomes>, accessed 1 June 2014.
43. National Park Service, *CLR: Dumbarton Oaks Park*, 96.
44. Garnett P. Williams, "Washington, D.C.'s Vanishing Springs and Waterways," in *Geology, Hydrology and History of the Washington, D.C. Area*, ed. John E. Moore and Julia A. Jackson (Alexandria, VA: American Geological Institute, 1989): 86–87.
45. Barry Mackintosh, *Rock Creek Park: An Administrative History* (Washington, DC: History Division, National Park Service, 1985): 1.
46. *Ibid.*, 2.
47. William Bushong, *Historic Resource Study: Rock Creek Park, District of Columbia* (Washington, DC: National Park Service, 1990): 34. See also National Park Service, "History and Culture," Rock Creek Park website, <http://www.nps.gov/rocr/historyculture/index.htm>, accessed 18 January 2014.
48. Yeaman, pers. comm., September 16, 2013. See also Bushong, *Historic Resource Study*, 42.
49. National Park Service, "History and Culture."
50. Quoted in Mackintosh, *Rock Creek Park*, 3.

51. Ibid.
52. Mackintosh, *Rock Creek Park*, 11.
53. National Park Service, *CLR: Dumbarton Oaks Park*, 36.
54. Leroy K. Sherman and Wesley W. Horner, *Report on Measures for Elimination of Pollution of Rock Creek and Its Tributaries in Washington* (Washington, DC: National Park Service, 1935): 13.
55. The Library of Congress photo collection includes images of the 1933 floods: <http://www.loc.gov/pictures/item/thc1995004630/PP/>. No correspondence has been discovered by the author describing their impact on the naturalistic valley.
56. Mackintosh, *Rock Creek Park*, 77.
57. Sherman and Horner, *Report on Measures for Elimination of Pollution of Rock Creek*, 2.
58. Ibid., 4.
59. Mackintosh, *Rock Creek Park*, 77.
60. Ibid., 80.
61. Yeaman, pers. comm., September 16, 2013. Bill Yeaman, in a 2001 e-mail to Laura Illige describes “one or two instances of mystery discharges of pollutants . . . a few years ago” from the 30” outfall emerging in the park from under Whitehaven Street. E-mail on file at Rock Creek Park. Zoe Kulakowski’s hydrology report records that park staff recall lining the sewer pipe from the Laurel Pool area to its connection with the Rock Creek sewer pipe (pp. 32–33).
62. The DC Department of Health measured pollutant load levels against Total Maximum Daily Load (TMDL) amounts required to meet Water Quality Class D, which calls for the “protection of human health related to consumption of fish and shellfish.” See DC Department of Health, *District of Columbia Final Total Maximum Daily Loads for Organics and Metals*, 7, 13–16, 18.
63. U.S. Environmental Protection Agency, draft *Data Report for the Washington, DC Portion of the Rock Creek Watershed, Total Maximum Daily Load Calculation* (Washington, DC: January 2003): 12.
64. Yeaman, pers. comm., September 16, 2013.
65. In response to the public use, Farrand made provisions for public wayfinding during the NPS transition, requesting that a formal trail be constructed across Clifton Hill, “which would be in a sense the “return” path from the brook and would give visitors the opportunity [of] going up the brook-side, through the woods, back to the old road, and then along an easily graded path across the face of the hillside and descending to the stone bridge.” She also drew up a series of plans for public signage and made recommendations as to their location in the landscape. See Beatrix Farrand to Mildred Bliss, June 17, 1941. Rare Book Collection, Dumbarton Oaks Research Library and Collection (Washington, DC).
66. National Park Service, *Cultural Landscape Report*, 55.
67. Dana Hedgpeth, “D.C. region continues population growth; year-long increase fifth among metro areas,” *The Washington Post*, March 27, 2014. Available at [http://www.washingtonpost.com/local/dc-region-continues-population-growth-us-census-finds/2014/03/27/81645516-b5c3-11e3-8020-b2d790b3c9e1\\_story.html](http://www.washingtonpost.com/local/dc-region-continues-population-growth-us-census-finds/2014/03/27/81645516-b5c3-11e3-8020-b2d790b3c9e1_story.html), accessed 1 June 2014.
68. Olmsted Brothers, *Rock Creek Park: A Report by Olmsted Brothers, December 1918*: 1–2.
69. Quoted in Mackintosh, *Rock Creek Park*, 42.
70. Olmsted Brothers, *Rock Creek Park*, foreword (no page number).
71. The Dumbarton Oaks Park Conservancy website records the activities of British School students in the park, as well as the contributions of other volunteer groups: <http://dopark.org/park-observations/british-school-sightings/>.

### THREE: Reconstructing Preservation

The perceptual frameworks that have conditioned interpretations of Farrand's work in the valley have also shaped management guidelines for the park. While Farrand and the Olmsteds promoted a dynamic vision of cultural landscape stewardship (see chapter 2), the method of cultural landscape treatment that has historically prevailed in this country is visually based, discourages alteration, and struggles to engage changing systems, as the term "cultural landscape *preservation*" implies. This method has proved inadequate, as patently illustrated by the conflicted landscape in Dumbarton Oaks Park. However, recent work by landscape architects, historians, preservationists, and cultural geographers, and new projects implemented by the NPS and other agencies suggest a more nuanced, responsive approach to landscape preservation that acknowledges that preserving a landscape means preserving its capacity to change. For the park this promises resiliency and the ability to adapt to a shifting hydrological context while safeguarding its cultural heritage.

For the past three decades the National Park Service has set the standard for cultural landscape management in the United States. The term "cultural landscape" was first coined in 1925 by cultural geographer Carl Ortwin Sauer and was used extensively by historian J. B. Jackson in his journal, *Landscape*, beginning in the 1950s.<sup>1</sup> However it did not achieve mainstream management resonance until the early 1980s, when the NPS first recognized



3.1 Farrand's Pebble Stream and Spring Grotto, 2013.

cultural landscapes as a distinct resource type.<sup>2</sup> The National Park Service administers *The Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for the Treatment of Cultural Landscapes*, which govern the stewardship of all sites listed on the National Register of Historic Places, including Dumbarton Oaks Park. First published in 1996, the guidelines were the outgrowth of a fertile intellectual atmosphere that shaped the landscape preservation field in the 1980s. "This period was an intensely creative time . . . a pioneering time," observes Susan Dolan, manager of the NPS Park Cultural Landscapes Program. "Previously the NPS considered only battlefields and presidents' homes under this category," she adds. "The landscape was viewed only as a setting, as a passive bystander or repository, a place where something important once had happened." Rather than understanding the landscape as an inert receptacle for important events and people, historians and preservationists began to consider the cultural landscape as a complex matrix that contributed to the significance of everything that occurred therein.<sup>3</sup>

The publication of the Secretary's standards in 1996 was part of a larger trend of codification that attempted to transform the groundbreaking work of the previous decade into an implementable suite of policies. In 1994, the cultural landscape inventory program was launched,<sup>4</sup> and the same year saw the release of *Preservation Brief 36: Protecting Cultural Landscapes*. The cultural landscape program grew exponentially in this period, with significant congressional funding allocated for the newly created cultural landscape inventory database.<sup>5</sup> The treatment and evaluation standards promoted under the new policies hinged on the assessment of a site's "character-defining features," which the NPS describes as "[those] prominent or distinctive aspect[s], [qualities], or characteristic[s] of a cultural landscape

that contribute significantly to its physical character. Land use patterns, vegetation, furnishings, decorative details and materials may be such features."<sup>6</sup>

Although these features are analyzed in terms of their spatial relationship within the larger landscape, and although the NPS acknowledges that spatial relationships and land patterns may change over time according to both natural and human-initiated processes,<sup>7</sup> the use of character-defining features as a unit of evaluation presupposes a form-based, visual appraisal of the landscape. In practice it has proved difficult to reconcile this assessment metric to actual landscapes, as noted by landscape architect and historian Heidi Hohmann: "A feature by definition is a 'structure, form, or appearance,' a definition that does not accommodate the more complex systematic relationships of nature."<sup>8</sup>

The treatment recommendations proposed by the guidelines similarly allow little scope for change, outside impacts, or other alterations that might be considered. Of the four possible treatment approaches—preservation, rehabilitation, restoration, and reconstruction—only one category allows a departure from past or present conditions.<sup>9</sup> This category, rehabilitation, is consequently the only sanctioned approach that acknowledges a landscape's evolution over time. Rehabilitation is described as "the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values." The remaining categories involve freezing the landscape at a particular point in time. Preservation is defined as retaining the landscape's "existing form, features, and materials." Restoration is "the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction

## SECRETARY OF THE INTERIOR'S GUIDELINES FOR THE TREATMENT OF CULTURAL LANDSCAPES



### **PRESERVATION**

SUSTAIN THE EXISTING FORM, INTEGRITY,  
+ MATERIALS OF AN HISTORIC PROPERTY



### **REHABILITATION**

REPAIR, ALTER, OR ADD WHILE  
PRESERVING FEATURES THAT  
CONVEY HISTORICAL, CULTURAL, +  
ARCHITECTURAL VALUES



### **RESTORATION**

DEPICTING FORM, FEATURES, +  
CHARACTER OF A LANDSCAPE AS IT  
APPEARED AT A PARTICULAR POINT IN TIME



### **RECONSTRUCTION**

REPLICATING, WITH NEW CONSTRUCTION,  
THE APPEARANCE OF A LANDSCAPE AT A  
PARTICULAR POINT IN TIME



of missing features from the restoration period.” Reconstruction is “the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.”<sup>10</sup>

This emphasis on capturing the site at a single moment is clearly problematic for managers caring for landscapes that are, without exception, subject to a constantly shifting environmental context. For Dumbarton Oaks Park, this would mean defining the capacity of the stream in terms of its undersized dams and conceiving of its visitation levels according to its intimate use in the Bliss era. Even the rehabilitation approach is challenging to apply to this landscape: based on “preserving . . . portions or features,” it offers little leeway for alteration of features, such as Farrand’s dams, that may be negatively interacting with other systems on site and threatening the future health and longevity of the landscape. Nor does the rehabilitation approach allow for alternative interpretations of design elements in terms of performance rather than form. The failure of the current cultural landscape guidelines to adequately address the role of ecological, social, and cultural systems has been highlighted with increasing frequency by practitioners and theorists such as Catherine Howett (1997, 2000), Arnold R. Alanen and Robert Z. Melnick (2000), Heidi Hohmann (2008), Richard Longstreth (2008), Nancy Rottle (2008), and Manish Chalana (2010).

The body of available literature clearly describes the evolution of the guidelines in their present form and identifies their shortcomings in terms of their engagement with complex

**3.2** [above] The naturalistic garden at Dumbarton Oaks and its stream course, looking northwest toward the meadows and farm track, c. 1931. Dumbarton Oaks Rare Book Collection.

**3.3** [below] Approximately the same view in September 2013, illustrating the degree to which the site context has altered.

dynamic systems. However, few examples are provided that suggest what an active relationship between preservation and change might look like: this is because few examples exist, due to diminished involvement from the design fields as well as a recent decrease in political and financial support for cultural landscape initiatives at the national level. Located in our nation's capital—a place deeply associated with tradition, and one from which we demand a certain degree of permanence—Dumbarton Oaks Park is uniquely poised to propose an alternative model of cultural landscape preservation that embraces the constancy of change and illustrates that historical sites can remain relevant to future generations.

### Set in stone

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A clear lineage can be traced between the largely static, visually based, and object-oriented focus of cultural landscape preservation efforts and the discipline's origins in the field of architectural preservation. This is evident in terms such as “preservation,” “features,” and “integrity,” that were originally defined to describe architectural preservation and persisted when the movement expanded to include landscapes.<sup>11</sup> As Dolores Hayden notes, “architectural preservation has often limited itself by a focus on buildings as architectural objects. Neither the city, as a human creation, nor the natural landscape has easily been accommodated within it.”<sup>12</sup> Richard Longstreth suggests that the rigidity of present-day methods can be traced to the National Historic Preservation Act of 1966, which separated “history” and “architecture” into separate categories, both suggesting that history was lacking in a physical dimension and restricting the built environment to an inert assemblage of objects.<sup>13</sup>

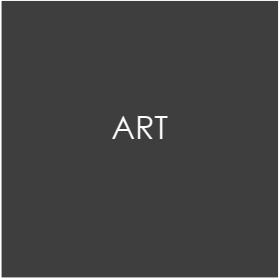
Stasis has been accorded a great deal of consequence in preservation treatment policies ever since. It is in particular bound up with national standards for determining the

significance of historical resources, specifically the National Register evaluation, which suggests that the integrity of a resource—or its relative lack of change over time—is a primary determining factor of its significance:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, association, and:

- A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. that are associated with the lives of persons significant in our past; or
- C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. that have yielded, or may be likely to yield, information important in prehistory or history.<sup>14</sup>

Catherine Howett contends that the organization of this statement points to an evaluation that favors integrity even over historical importance: in short, if a building or a site has undergone too many changes, it cannot be considered significant, no matter what may have happened there.<sup>15</sup> Moreover, the concept of integrity is necessarily predicated on the material



**INTERPRETATION**

LANDSCAPE  
ARCHITECTURE IN THE  
POST-MCHARG ERA



**MANAGEMENT**

NATIONAL PARK SERVICE  
CATEGORIZATION

PERVASIVE DICHOTOMIES

aspects of the resource.<sup>16</sup> This suggests that although the field may nominally view a cultural landscape as both artifact and system,<sup>17</sup> the fundamental philosophical framework that underpins its evaluation does not engage both aspects, remaining rooted in antiquated, inappropriate models.

Such simplified models are heir to an entrenched Western cultural bias that accords primacy almost exclusively to visual values, described by historian Martin Jay as “the dominant, even totally hegemonic, visual model of the modern era; that which we can identify with Renaissance notions of perspective in the visual arts and Cartesian ideas of subjective rationality in philosophy.”<sup>18</sup> Such a visual, object-oriented emphasis was bolstered by the modernist preoccupation with abstract geometrical forms, applied to buildings and landscapes alike.<sup>19</sup> As the subject of scenic paintings and perspectival exercises, the landscape in particular has been indelibly imbued with scenographic values for several hundred years at least. This helps explain how Farrand’s work and the designs of other earlier practitioners have been so readily appraised in strictly visual terms, and it helps explain the traction of the art-science dichotomy that has proved so influential in landscape architecture: viewed through this dominant lens, a project either operates visually or it doesn’t, both science and art cannot be possible because the visual model offers no means to comprehend or describe their interaction outside the visual realm (indeed it is challenging to describe this condition without the use of terms such as “viewed” or “lens”).

In the park itself, this hegemony of visual evaluation explains the profound influence that various perceptions of the site have exerted on its materiality and, as a consequence, its ecological function: if the park looks like wilderness, then it must be wilderness and should therefore be “managed” as such (i.e., left alone). This situation is particularly pernicious, because the visual bias that attends our aesthetic experience of the landscape is

so ingrained that we are unlikely to understand it as a cultural perspective—a critical issue of choice, in other words. This is detrimental, as Howett argues, because “design and policy decisions based on a culturally conditioned aesthetic canon whose premises remain largely unexamined simply perpetuate environmental biases that may actually subvert ecological and/or social goods.”<sup>20</sup>

Conditions in the park certainly illustrate a subversion of ecological processes. However, a blind acceptance of traditional cultural landscape conventions also has wide-reaching social and cultural implications. These impact our understanding of both our individual and collective relationships to history, thereby affecting our sense of our own national and cultural identities and our appreciation for historic sites. For example, the freezing and visual categorization of cultural landscapes that historically accompanies preservation has regularly and lamentably disenfranchised those who are not seen as integral to the desired portrait. This is well-documented in the case of Native Americans who were forcibly evicted from their lands in the early 20<sup>th</sup> century in order to reinforce the NPS-promoted myth of an unspoiled (read unpopulated) wilderness.

Manish Chalana illustrates that present-day cultural landscape practices within the NPS serve to construct a similarly curated history of park landscapes.<sup>21</sup> Evident is the relatively small number of cultural landscape inventories conducted for sites with vernacular and ethnographic associations, compared to those that reflect the park service’s own design and development history. Not only are vernacular and ethnographic landscapes substantially underrepresented, the predominant NPS narrative that emerges is confined to a relatively narrow window between the Civilian Conservation Corps-era rustic style and the 1965 advent of Mission 66 modernist design.<sup>22</sup> The result is a

circumscribed vision of NPS history that largely excludes what occurred before agency founding as well as the nearer-term history of modernism in the parks.

The National Park Service definition of a “period of significance” perpetuates this bounded vision of time that in turn presents serious challenges to the ongoing social relevance of our national parks, in addition to encouraging conflicts with ecological systems. According to the NPS National Register Bulletin on “Researching a Historic Property,” the period of significance “refers to the span of time during which significant events and activities occurred. Events and associations with historic properties are finite; most properties have a clearly definable period of significance.”<sup>23</sup> While useful for defending and prioritizing management and interpretive decisions, such a limited view of significance may serve to exclude many groups of people who might otherwise feel a sense of investment in a cultural landscape. In the case of Dumbarton Oaks Park, whose period of significance corresponds to Farrand’s involvement (1921 to 1951), it is easy to imagine that many people might feel no connection whatsoever to a site that—were it presented differently—could be deeply compelling. A landscape’s importance to Country Place Era design may be of little interest to someone who cares most about the Piscataway history of the valley, or its significant role in the early sewage infrastructure of the city. Perhaps the site’s early farmers or its past homeless inhabitants are more relatable characters for some than the well-heeled Blisses. Regardless, it is a personal connection with the landscape that seems most important, and critics have argued that the preservation movement has had the unintended consequence of estranging many Americans.

Cultural geographer Riesenweber suggests that this is because the concepts of greatest importance to the preservation movement may not resonate for most Americans, who

do not necessarily share the distinct connotations of concepts such as significance and integrity. For most people, a significant place or event is one that has had great impact on their or other people’s lives. [...] Most value places because of the memories associated with them, because these memories and the attached places are part of who they are. The insights of critical landscape geography might, then, lead us to a sense of significance closer to this popular meaning. From both the popular and discursive points of view, what is important is not that which is unique and monumental, celebrates success, fits into some canon, or has remained unchanged but that which most decisively shapes how we view and interact with the world.<sup>24</sup>

This vision of significance calls for historical landscapes that are allowed to live and evolve with us, to knit themselves into our everyday lives. Without this constantly reinforced relevance, the meaning and longevity of the landscape may suffer, as suggested by folklorist Bernard Herman, who likens preservation to taxidermy, “implying that stopping change takes landscapes and buildings out of the organic world, an act that often means stopping life.”<sup>25</sup>

A loss of relevance may also lead to decreased political support for cultural landscape initiatives, a trend that has already occurred in this country at the national level. Over the past ten years, significant budget cuts to the NPS Cultural Landscapes Program have prevented almost all new work, including in sites such as Dumbarton Oaks Park.<sup>26</sup> As a result, the NPS has had no venue to illustrate updated theoretical approaches and policies, and the prevailing, visible methods date puzzlingly from the 1996 publication of the guidelines, when the program was well-funded. Outward appearances suggest that the NPS is not evolving with the times: however, an examination of

the website for the Cultural Landscapes Program reveals an active online presence with connections to social media and prominently displayed resources relating to sustainability and climate change.<sup>27</sup> Due to budget limitations the program has had to focus on website outreach: although it stewards more than 100,000 acres, no funds are available to implement treatment. A new edition of the guidelines is planned, however, one that will confer a more central position to issues of sustainability, accessibility, adaptation, and response to climate change.<sup>28</sup>

An increased focus on sustainability and adaptation is promising, as it suggests a potential shift in emphasis away from integrity and toward a more active vision of cultural landscape stewardship. For example, the park service is developing agreements to return small-scale agriculture and farmers to many of its vernacular landscapes, recognizing that the NPS is charged with supporting the cultural as well as the natural systems that gave rise to these landscapes.<sup>29</sup> In the future, the park service should continue to move from the artifact to the process view of cultural landscapes and consider compatible alterations that will build resiliency. This is particularly vital in the face of a changing climate, and in view of this the program is about to announce a suite of new cultural landscape guidelines based on definitions and subcategories of resilience defined by the Federal Emergency Management Agency (FEMA). These categories bear resemblance to those defined by ecologists and include: diversity, redundancy, network connectivity, modularity, and adaptability.<sup>30</sup>

A new philosophy of cultural landscape treatment is thus percolating at the agency, one that is more responsive to the notion of landscape as a system. But until these concepts are physically expressed on a site, they will likely remain difficult to communicate to the public and political leaders alike, resulting in a Catch-22 that perpetuates the current dearth of political and financial support for the program.

## Visions for the preservation of change

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Despite the difficulties posed by existing cultural landscape frameworks, a handful of successful precedents unite changing social and ecological concerns with treatment recommendations for historical sites. These projects share a multidisciplinary approach, a creative integration of design and preservation, an understanding of the influence of time, and a deep desire to ensure the ongoing relevance of the landscape.

### **Platt Historic District, Chickasaw National Recreation Area**

Heidi Hohmann's "Mediating Ecology and History: Rehabilitation of Vegetation in Oklahoma's Platt Historic District" (2008) describes how principles of ecological restoration may inform vegetation treatment when rehabilitation guidelines struggle to engage complex natural systems. Part of the Chickasaw National Recreation Area in south-central Oklahoma, the Platt Historic District consists of an aggregation of historic structures and landscapes associated with early 20<sup>th</sup>-century, NPS rustic style park facilities. These are framed by forest and grassland areas, for which the project team was charged with developing treatment recommendations. Planting and maintenance decisions executed in this area in the 1930s had resulted in succession from a historically fire-adapted grassland-hardwood ecotone to a landscape largely covered by invasive red cedar (*Juniperus virginiana*).<sup>31</sup> Neither restoration nor preservation were deemed appropriate approaches to treatment in this context. Restoration was dismissed because it would entail the extremely expensive removal of hundreds of acres of cedar forest and because the period of significance, identified as 1940, included the young cedar plantations introduced in the 1930s—in other words, the intention of a future forest. As Hohmann states, "a restoration treatment would not just simply 'turn back



**3.4** [above] This photo of the Platt Historic District, c. 1920, records the site's original oak-hickory savanna ecosystem. **3.5** [below] Encroachment by newly introduced red cedar is visible in this 1940 image of the Platt Historic District. Both photos: National Park Service, reprinted in Hohmann 2008.

time,' but would also 'restart the clock,' beginning again the cycle of historical growth," a situation undesirable both from an historical and an ecological perspective.<sup>32</sup>

The preservation approach similarly left much to be desired culturally and ecologically. The team interpreted preservation in two possible ways: it could be seen either as an attempt to freeze the current physical reality of the forest in time by judicious pruning and removal of any new seedlings or it could be construed as allowing current conditions—i.e., the dissemination of an invasive species—to continue unchecked. In either iteration, the preservation approach could not ensure the historical appearance of the site, nor was it optimal ecologically. While the rehabilitation method was ultimately embraced in the vegetation treatment, Hohmann argues that it too falls short when engaging ecological systems. This is because the approved treatment actions privilege only human use when defining acceptable examples of rehabilitation. The four admissible actions for vegetation described by this approach call for preserving or replacing historic vegetation (and not removal); the only instance in which an alteration is allowed is when the vegetation is altered for a new "use."<sup>33</sup> This language favors human utility over other potential values—such as ecological performance—making it difficult in this case to propose an ecologically responsible treatment plan that also adheres to cultural landscape guidelines.

Taking a cue from ecological restoration practices, Hohmann and her team proposed a treatment for the site that considers historic ecological function as well as appearance and allows for a comprehensive integration of ecological and cultural preservation goals. This was achieved by accepting—as the field of ecological restoration has done—that if an ideal state is no longer achievable other desirable qualities may be identified and designed for. In this case a more balanced ecosystem was identified as a management objective. The plan

proposed removing significant areas of cedar from the park and reintroducing cyclical burning to bolster rapidly decreasing grasslands. The intended result will more closely approximate the pre-park era landscape than the identified period of significance. However, it is hoped that a more stable ecosystem will support both ecological health and maintenance goals, in the long term assuring a more historically appropriate appearance.

The experience of trying to mesh environmental objectives with historic preservation concerns reveals that the disciplines of ecology and landscape preservation have much to learn from one another. In her account of the project, Hohmann cites ecology's diverse array of metrics to assess projects, including technical performance, function, and economics. This ability to measure performance in several categories distinguishes ecology from landscape preservation, which relies solely on standards of historical appearance. Her questions provide a helpful framework for evaluating current conditions in Dumbarton Oaks Park: "Has landscape preservation perhaps overemphasized historical appearance and human use over other concerns? Should historical restorations of landscapes only look and feel historic? Should they also function historically? Should they function sustainably?"<sup>34</sup>

These questions arise when alternative perspectives are brought to bear on an historical site, specifically perspectives that are comfortable grappling with the landscape's change over time and assessing its performance from different angles. Such questions suggest that the landscape's performance might be the standard that best protects meaning and integrity. The work achieved in the Platt Historic District illustrates that cultural landscapes can be managed as dynamic systems; it does not suggest a wholesale dismissal of cultural landscape guidelines but rather their expansion to allow for and evaluate multiple dimensions and alternative metrics.

### **Rapidan Camp, Shenandoah National Park**

President and Mrs. Hoover's summer retreat, Rapidan Camp, in Shenandoah National Park offers another valuable example of integrating ecological change and landscape preservation. The Olmsted Center for Landscape Preservation is currently completing a cultural landscape report for the site, whose identified period of significance corresponds to the Hoover administration, 1929 to 1933. During the Hoover period the camp was surrounded by a mature grove of eastern hemlock (*Tsuga canadensis*), whose protection and cool shade were crucial to the experience of the landscape. By the late 1990s, however, the Rapidan Camp hemlocks were infested by the hemlock woolly adelgid, an exotic insect with the potential to eliminate all stands of the tree in the park.<sup>35</sup> Today few mature hemlocks remain in the camp, and their decline has allowed sunlight to reach the forest understory, resulting in the growth of early successional species at odds with the site's historic character.

In their plan for Rapidan Camp, the Olmsted Center identified shade as vital to the landscape's historical significance. To restore a shady canopy to the site, the preservation team collaborated with forest ecologists at the University of Tennessee to develop a proposal that works in concert with past and present ecological systems, while imagining and initiating future change. Studying the successional patterns of Rapidan's forest suggested that the failing hemlock is not a viable candidate for canopy restoration. Instead, the tulip poplar (*Liriodendron tulipifera*) was selected for its disease and pest resistance, its quick growth, its high canopy and straight trunks, and because it is one of the pioneering species that is already colonizing the newly sunny areas of the landscape. Managers have only to protect those plants already established, while transplanting volunteer seedlings to new areas. It is hoped that the shade cast by the tulip poplars will



3.6 Rapidan Camp in August 1929 was a shady retreat fringed by mature eastern hemlock. Library of Congress.

relatively quickly restore the shady canopy to Rapidan Camp, while discouraging invasives and supporting the return of native understory species.<sup>36</sup>

This reforestation plan proposes a striking experiential transcription of a changing environmental context: the removal of dark, fine-needled hemlocks and the replanting of a pale, large-leaved deciduous tree will be highly legible even to those who know little about plants. Their shade and their light will be different, as will be their scents and temperatures, and the aspect of the landscape will be subject to significant temporal variation, both seasonally and as the new forest matures. In this way the camp's position in an evolving ecosystem will be powerfully conveyed: visitors will tangibly experience both the aesthetic and physical ramifications of stand replacement and will understand the forest as an active agent that contributes to past and ongoing meanings of the presidential retreat.

A shift in the landscape preservation paradigm will require that managers engage with future change on a similarly vigorous level and communicate this responsiveness clearly to the public. This promises an increasingly important role for the landscape architect, given the profession's focus on planning for change and revealing time and other dynamic processes through corporeal, memorable landscape experiences. This temporal engagement is central to the practice, as J. B. Jackson observes in his definition of a landscape as "a space deliberately created to speed up or slow down the process of nature. As Eliade expressed it, it represents



**3.7** [above] Rapidan Camp in 2011, shortly after initiation of the new vegetation plan. **3.8** [below] Rapidan Camp only two years later, showing the dramatic growth of the tulip poplars. Both photos: National Park Service.



3.9 The plan for the south slope of the National Cathedral, drawn by Andropogon Associates, illustrates the path of stormwater through the Olmsted Woods and All Hallows Amphitheater.

man taking upon himself the role of time.”<sup>37</sup> The meaningful participation of the design fields in preservation would thus be a fruitful and fitting reconciliation not seen for decades.<sup>38</sup>

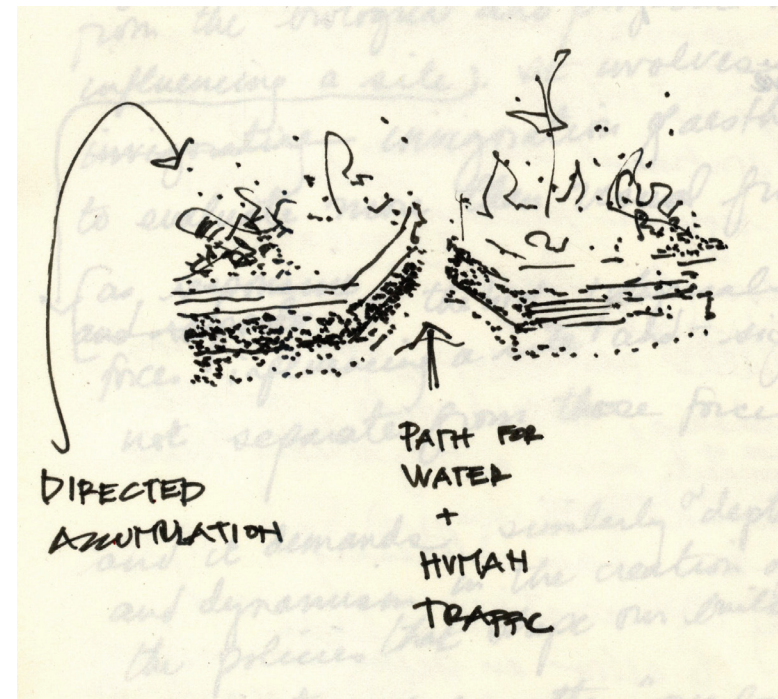
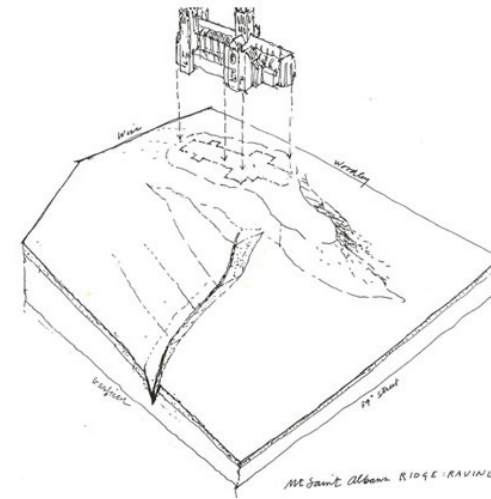
### All Hallows Amphitheater and Olmsted Woods, National Cathedral

A vision for such cross-disciplinary collaboration is expressed in two projects recently completed on the grounds of Washington’s National Cathedral: the Olmsted Woods and All Hallows Amphitheater. Located only a mile or so from Dumbarton Oaks Park, the hillside sweeping south below the cathedral shares an environmental context with the park that includes a degraded historic woodland, heavy public foot traffic, and a stream valley overwhelmed with stormwater. After decades of unmitigated erosion and compaction, by the late 1990s the ancient beech and oak forest skirting the slope was on the verge of extinction. The woodland had been protected since the cathedral’s beginnings in 1907, when the project landscape architect, Frederick Law Olmsted Jr., proposed curving a path through the woods as a valuable prelude to worship. The path was never built, but Olmsted succeeded in protecting the site from further construction. Though the forest escaped development it could not avoid its impacts, however, and increasing runoff and use by the neighboring school, local residents, and cathedral visitors exerted a substantial toll on the soil, prohibiting the natural regeneration of the understory.

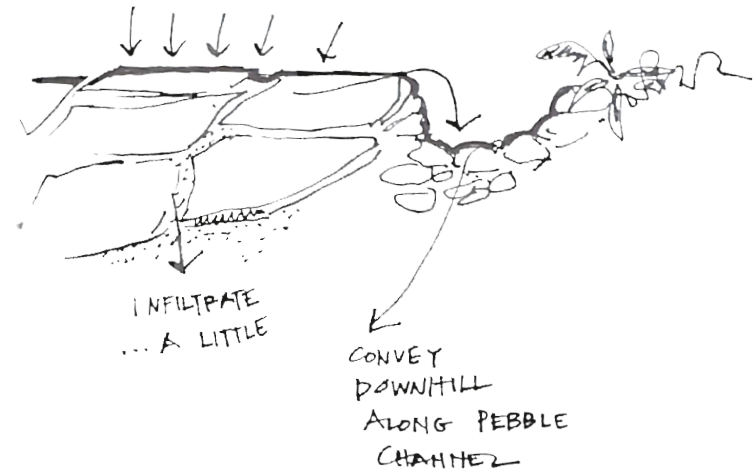
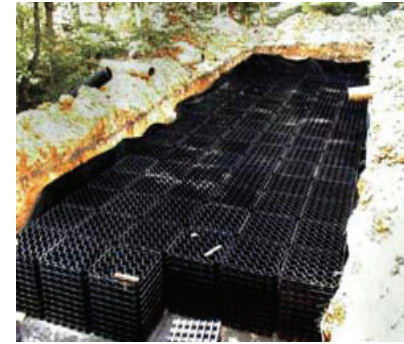
At the turn of the 21<sup>st</sup> century, the design firm Andropogon Associates proposed an updated iteration of Olmsted’s path in the woods—Pilgrim Way—to simultaneously channel stormwater and people. A formalized trail through the woods protects the soil and tender young plants from trampling, while an underground storage and conveyance system captures and directs stormwater away from vulnerable slopes, releasing it slowly back into the soil (see figures 3.12–3.15). Additionally, a

once-beloved amphitheater located in a natural topographical bowl was returned to service but in a way that similarly layers the accumulation of stormwater and people. Michael Vergason's design for the All Hallows Amphitheater illustrates how runoff management can serve as a space-making device: rather than an eroded eyesore causing further damage to the woodland, today the amphitheater stage holds water while fulfilling an important social function (figures 3.16–3.20).<sup>39</sup>

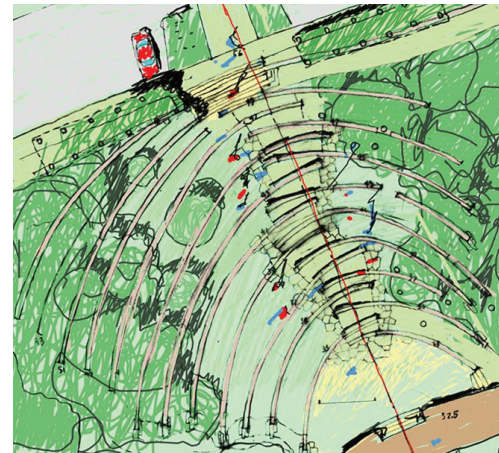
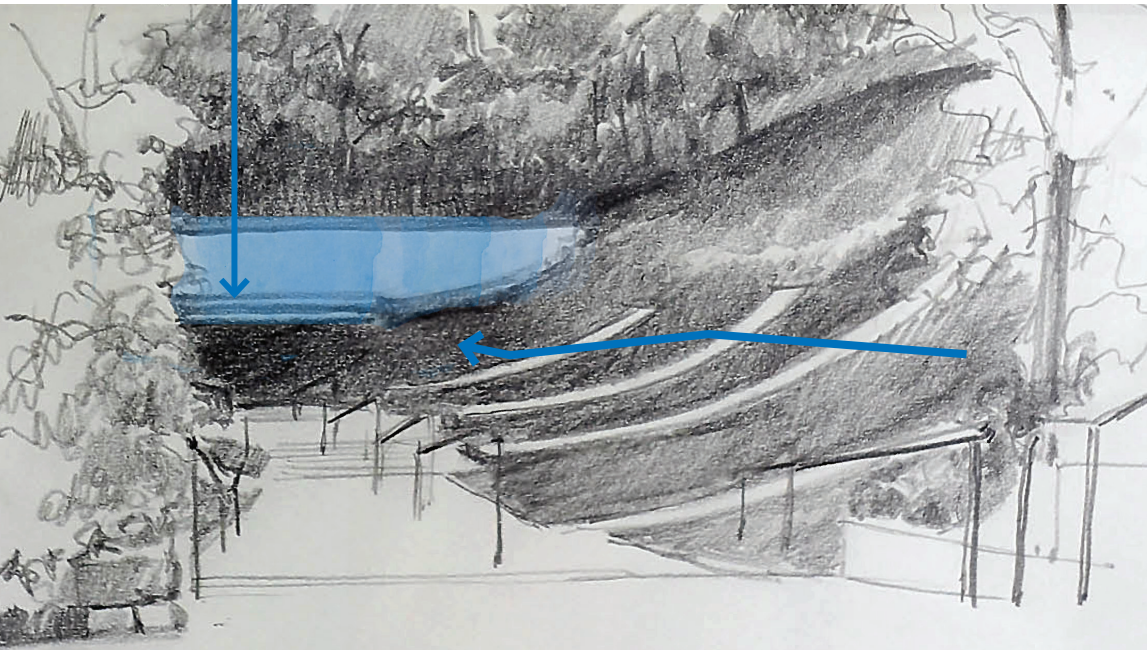
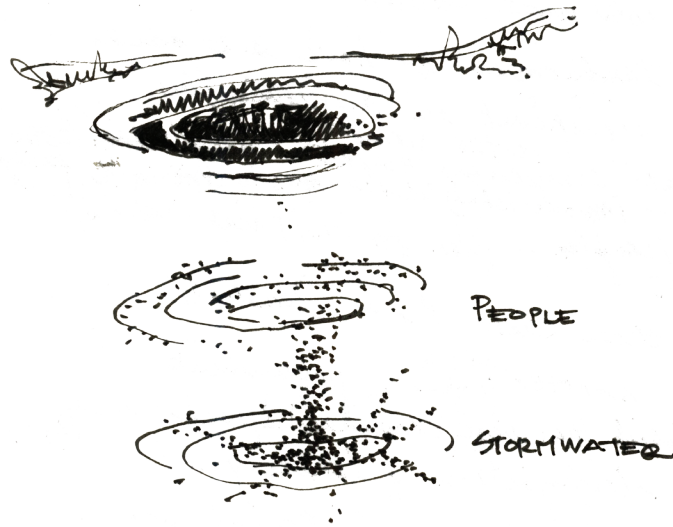
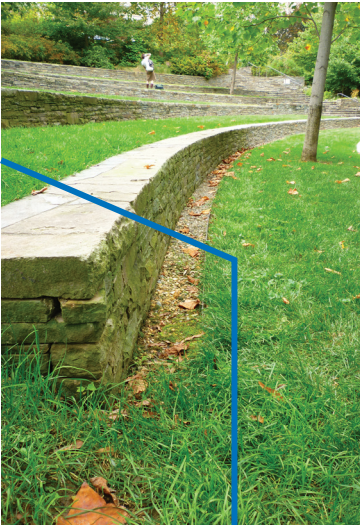
The imaginative solutions implemented at the National Cathedral suggest a more central role for landscape architects when historically significant sites collide with present-day design issues. Olmsted built neither the path nor a formal amphitheater in the end—only proposing them in plan form—and as a result the project team was less constrained by cultural landscape treatment guidelines. Nonetheless the design was executed in a politically charged atmosphere, for a group for whom the heritage of the site was of the utmost importance,<sup>40</sup> and the designers were able to successfully negotiate the site's significant cultural resource, social, and ecological concerns. Though achieved within a somewhat more flexible environment, the Olmsted Woods and All Hallows Amphitheater serve as a relevant model for national park units, such as Dumbarton Oaks Park, that could similarly layer different types of performance given more adaptive treatment guidelines.



3.10 [above] Sketch of the National Cathedral and its context by Michael Vergason. 3.11 [below] The design of Pilgrim Way is based on targeted accumulation: humans and water in some areas, topsoil and sensitive vegetation in others.



**3.12 – 3.15** Pilgrim Way incorporates both new and traditional materials to create a resilient pathway able to withstand both increased stormwater and visitor traffic. [above right] Pebble gutters convey stormwater downhill toward underground infiltration pits, spaced every 50 feet, that collect runoff and return it slowly to the ground. Photo [upper right]: Paul Steinbeifer, reproduced in *Landscape Architecture*, July 2006.



**3.16 – 3.20** The design for the All Hallows Amphitheater similarly accumulates people and stormwater, as it has done for more than a century. Historic photo: Detail of a service in the amphitheater, 1901. All Hallows Guild. Rendered plan: Michael Vergason Landscape Architects.

## Returning change to Dumbarton Oaks Park

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Existing precedents illustrate that common ground can be found among the varied disciplines and approaches to the stewardship of historical landscapes. Moreover recent NPS projects and initiatives demonstrate that the agency is increasingly managing cultural landscapes from a systems-based perspective. Expanded partnerships between preservationists and fields more accustomed to grappling with change—such as ecology and landscape architecture—could embed responsiveness into the prevailing idea of preservation. Analyzing an historical landscape from multiple dimensions, not just visually, allows a better understanding of a site’s performance over time, in terms of natural as well as human-initiated systems. A systems-oriented focus on performance, rather than features, allows the landscape to keep pace with changes in its surroundings and user groups. It furthermore offers a much richer, more complex reading of the site’s history that may speak to a wider audience and similarly adapt over time.

Like the precedents described above, Dumbarton Oaks Park is in conflict with its ecological systems. Available treatment options for the landscape do not adequately address its present problems, although plans for national park sites such as Rapidan Camp and the Platt Historic District indicate that a more flexible, responsive application of cultural landscape guidelines is possible when the integrity of the cultural landscape is understood as dependant on the healthy functioning of its ecosystem. This begins to suggest a definition of integrity that is performance-based, that could be evaluated according to the ecological, social, and cultural function of a site over time—indeed the term “integrity” could be exchanged for a new expression that better conveys this idea. This also fits neatly with Farrand’s design

approach in the valley, which similarly understood that the aesthetic experience of the garden had everything to do with its surrounding human and non-human systems.

Yet unlike Rapidan Camp and the Platt Historic District, the park is subject to the significant pressures that influence any public space in a large city. Although projects such as those achieved at the National Cathedral beautifully reconcile heavy urban use with sensitive ecosystem protection, they were notably executed in a site with no pre-existing structures or formally designed pathways. Farrand’s canonical status has ultimately conferred a mausoleum-like quality upon her design, making it ever more difficult to understand the valley as a living landscape. This is why a historical analysis focused on the landscape’s performance—and not its appearance—is so vital: it allows us to understand Farrand’s work from a different angle, to see that she was a constant reviser, carefully watching and adjusting as each of her compositions matured. Dumbarton Oaks Gardens, just uphill, have better communicated this portrait: though one of the most significant designed landscapes in the United States, the gardens frequently change with the regular addition of contemporary sculpture and fountain basins transformed to support native wetland plants and animals. The gardens, notably, are not on the National Register and thereby not constrained by the Secretary of the Interior’s guidelines, but their evolving interpretation of Farrand’s work serves as another crucial precedent for the valley below.

Dumbarton Oaks Gardens and the National Cathedral projects illustrate the expansive potential for change in cultural landscapes unfettered by federal regulations. Given its National Register status, however, the park is in a unique position to model a new regulatory framework that allows the maximum evolution of the site within prescribed limits that could be defined—for the first time—by the landscape’s performance and interaction with

its environment. Such guidelines would necessarily be site-specific and based on a clear articulation of desired performance conditions, addressing cultural, social, and ecological interactions. The dynamic origins of the guidelines would by default embed a regular need for evaluation and revision, allowing landscapes as well as the guidelines themselves to remain relevant to the context of each site. Moving to a systems-based framework would ensure that not only actions but also defined limits are appropriate to a given landscape, conceived not as an inert setting but rather a nexus of ever shifting processes and materials.

In Dumbarton Oaks Park, a preservation focus on landscape performance would identify the key functions of the valley that have persisted over time, including its active absorption of water, its role in city infrastructure, and its aesthetic and recreational value. Analysis of existing conditions would conclude that the site's topography and its buried combined sewer line are currently vital factors in its historic, present-day, and likely future relationships with both clean and waste water. The human inscriptions in the valley, such as the farm road and Farrand's circuit of paths and structures would be understood as contributing resources not because of their degree of integrity (i.e., their degree of stasis), but because they are in themselves a dynamic expression of the changing relationships between humans and site systems over time. Rather than emphasizing the dams as individual relics, Farrand's intention to create a responsive water system that was intended to work with the stream flow could be viewed as the resource. Her allowance for pools in areas receiving high runoff volume, as well as her scheme for self-cleaning dam structures that allowed sediment to wash downstream could inform a cultural landscape treatment plan that would similarly allow an optimal interaction between the more architectural elements of the site and the water and soil moving around them.

An approach centered on performance thus provides space for the operation of ecological processes but it also, significantly, creates space for multiple human stories, perspectives, and uses. The prevailing practice of identifying a period of significance necessarily implies that the experience of one group on a site is more important than that of another, which has had the unintended consequence of alienating people from places that are nominally supposed to represent their shared heritage. If people are seen as an integral part of landscape processes, each human inscription on the site—past as well as present—is understood as a contributing resource worthy of stewardship. Instead of celebrating the group that may have left the largest stamp on a place, an examination of the cultural and social performance of landscapes privileges a more equitable give-and-take that echoes the comprehensive view of community promoted by conservationists such as Aldo Leopold. For Dumbarton Oaks Park this means that the current human use of the site could be viewed not as a threat but as an equally significant resource that is just as necessary to the existence of the park as Farrand's original design. As the Olmsted Brothers suggested in their evaluation of Rock Creek Park, “no matter how perfect the scenery of the Park may be or may become, no matter how high its potential value, that value remains potential except insofar as it is enjoyed by large and ever larger numbers of people, poor and rich alike.”<sup>41</sup>

This sense of ongoing contribution to the landscape is crucial to ensure that the value of such sites—not only national parks, but all public landscapes—is communicated to future generations. If the present-day budget situation of the NPS Cultural Landscapes Program is any kind of referendum, we are in danger of losing our living connection to these places . . . and if this connection is lost, the preservation of features that possess historical integrity matters very little indeed.

## NOTES

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1. Julie Riesenweber, "Landscape Preservation and Cultural Geography," in *Cultural Landscapes: Balancing Nature and Heritage in Preservation Practice*, ed. Richard Longstreth (Minneapolis: University of Minnesota Press, 2008): 23.
2. The National Park Service identified four categories of cultural landscape: Historic Site, Historic Designed Landscape, Historic Vernacular Landscape, and Ethnographic Landscape. Arnold R. Alanen and Robert Z. Melnick, "Introduction," in *Preserving Cultural Landscapes in America*, ed. Arnold R. Alanen and Robert Z. Melnick (Baltimore: Johns Hopkins University Press, 2000): 7–8.
3. Susan Dolan, National Park Service, personal communication, November 25, 2013.
4. Manish Chalana, "With Heritage so Wild: Cultural Landscape Inventory in United States National Parks," *Preservation Education & Research*, vol. 3, offprint form, 2010:1.
5. Dolan, pers. comm., Nov. 25, 2013.
6. National Park Service, "Defining Landscape Terminology," in *The Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes*. Available at <http://www.nps.gov/tps/standards/four-treatments/landscape-guidelines/terminology.htm>.
7. National Park Service, "Organization of the Guidelines," in *The Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes*. Available at <http://www.nps.gov/tps/standards/four-treatments/landscape-guidelines/organization.htm>.
8. Heidi Hohmann, "Mediating Ecology and History: Rehabilitation of Vegetation in Oklahoma's Platt Historic District," in *Cultural Landscapes: Balancing Nature and Heritage in Preservation Practice*, ed. Richard Longstreth (Minneapolis: University of Minnesota Press, 2008): 109.
9. Dolan, pers. comm., Nov. 25, 2013.
10. NPS, The Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes. Available at <http://www.nps.gov/tps/standards/four-treatments/landscape-guidelines/index.htm>.
11. See Riesenweber, "Landscape Preservation and Cultural Geography" and Alanen and Melnick, "Introduction." See also Richard Longstreth, "Introduction," in *Cultural Landscapes: Balancing Nature and Heritage in Preservation Practice*, ed. Richard Longstreth (Minneapolis: University of Minnesota Press, 2008).
12. Dolores Hayden, "Foreword," in *Preserving Cultural Landscapes in America*, ed. Arnold R. Alanen and Robert Z. Melnick (Baltimore: Johns Hopkins University Press, 2000): viii.
13. Longstreth, "Introduction," 12–13.
14. Reprinted in Catherine Howett, "Integrity as a Value in Cultural Landscape Preservation," in *Preserving Cultural Landscapes in America*, ed. Arnold R. Alanen and Robert Z. Melnick (Baltimore: Johns Hopkins University Press, 2000):188.
15. Ibid.
16. Riesenweber, "Landscape Preservation and Cultural Geography," 29.
17. Alanen and Melnick, "Introduction," 16.
18. Martin Jay, "Scopic regimes of modernity," in *Modernity and Identity*, ed. S. Lash and J. Friedmann (Oxford: Basil Blackwell, 1992): 179. Quoted in John Wylie, *Landscape* (London: Routledge, 2007): 55.
19. Catherine Howett, "Where the One-Eyed Man is King: The Tyranny of Visual and Formalist Values in Evaluating Landscapes," in *Understanding Ordinary Landscapes*, ed. Paul Groth and Todd W. Bressi (New Haven, CT: Yale University Press, 1997): 96.
20. Ibid., 86.
21. Chalana, "With Heritage so Wild."

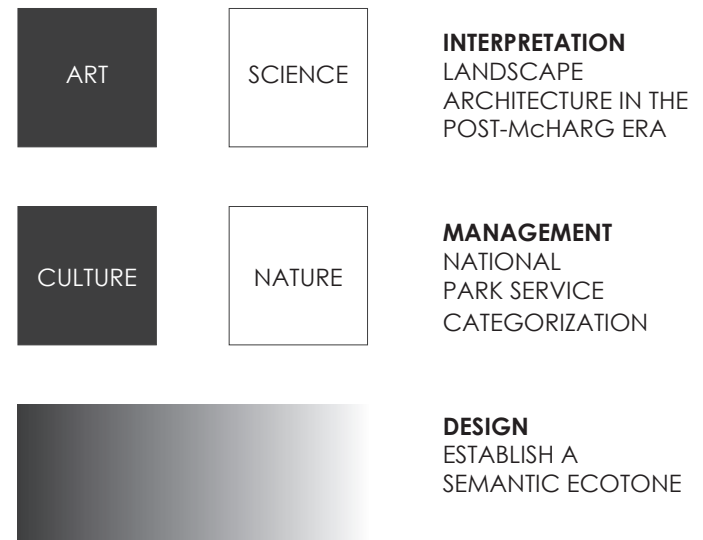
22. Ibid., 8.
23. National Park Service, “Research and the National Register Form.” Available at [http://www.nps.gov/nr/publications/bulletins/nrb39/nrb39\\_ii.HTM](http://www.nps.gov/nr/publications/bulletins/nrb39/nrb39_ii.HTM).
24. Riesenweber, “Landscape Preservation and Cultural Geography,” 30.
25. Ibid., 29.
26. Dolan, pers. comm., Nov. 25, 2013.
27. See [http://www.nps.gov/cultural\\_landscapes/](http://www.nps.gov/cultural_landscapes/).
28. Dolan, pers. comm., Nov. 25, 2013.
29. Ibid.
30. Ibid.
31. Hohmann, “Mediating Ecology and History,” 116.
32. Ibid., 119.
33. Ibid., 122.
34. Ibid., 123.
35. National Park Service, “Shenandoah National Park: Eastern Hemlock.” Available at [http://www.nps.gov/shen/naturescience/eastern\\_hemlock.htm](http://www.nps.gov/shen/naturescience/eastern_hemlock.htm). Since its arrival in the 1950s, the adelgid infestation has spread to impact native hemlocks from Maine to Georgia, dramatically altering the landscape context of historical sites.
36. John Hammond, Olmsted Center for Landscape Preservation, personal communication, May 14, 2014.
37. John Brinckerhoff Jackson, *Discovering the Vernacular Landscape* (New Haven, CT: Yale University Press, 1984): 7.
38. Preservationist and landscape architect Charles Birnbaum describes the “divorce” of the two disciplines in the 1980s as a casualty of the resurgence of the preservation movement. See Charles A. Birnbaum and Mary V. Hughes, “Introduction: Landscape Preservation in Context, 1890–1950,” in *Design with Culture: Claiming America’s Landscape Heritage* (Charlottesville: University of Virginia Press, 2005): 1.
39. For a project overview, see Linda McIntyre, “On the Side of the Angels—Landscape Architects Restore the Woods at the Washington National Cathedral,” *Landscape Architecture* 96 (July 2006): 66–77.
40. Founded in 1916, the All Hallows Guild has cared for the cathedral gardens for nearly a century. See Peggy Pickard, “The Gardens at Mount Saint Alban: Protecting and Perpetuating the Beauty and Inspirational Value Inherent in Nature’s Landscape.” Available at <https://www.allhallowsguild.org/news/publications.html>, accessed 1 June 2014.
41. Olmsted Brothers, *Rock Creek Park: A Report by Olmsted Brothers, December 1918*: 1–2.



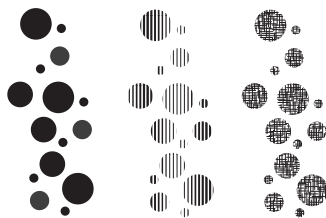
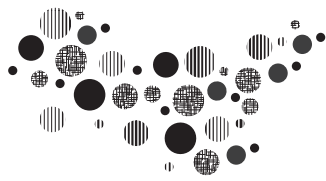
## FOUR: Practice and Process— Shaping an Iterative, Integrative Approach to History and Design

An analysis of Dumbarton Oaks Park and its stewardship over the past seven decades suggests that the dissolution of disciplinary silos could allow for a more complex, nuanced understanding of a place and its people. Without the bifurcate lenses of natural and cultural, art and science, and aesthetics and performance (to name only a few) we might perceive a site more expansively, with greater depth and a fuller awareness of its matrix of systems and their interplay over time. This results in increasingly mindful stewardship and design. In the case of a landscape deemed historically significant, it may also help us realize that attempting to deny a site the ability to evolve within its current context is to sever it—and us—from its past and ultimately its present and its future.

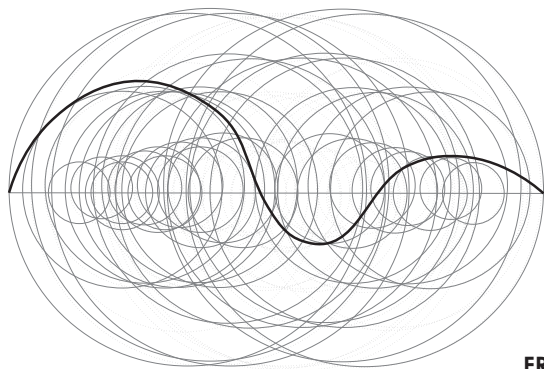
It was in this spirit of multidisciplinary exploration that I began to study Dumbarton Oaks Park, seeking to determine, in particular, the implications of a rigorous historical site analysis on the design process. The past century has seen the fields of landscape architecture, landscape history, and cultural landscape



4.1 Diagram addressing the potential role of design in transcending the dichotomies that condition our treatment of historical landscapes. Robert Z. Melnick calls this new lexicon a "semantic ecotone" (2000).



COMPLEXITY  
CATEGORIZED +  
HOMOGENIZED



SITE DYNAMICS  
FROZEN + SIMPLIFIED

preservation develop into their own professional arenas, each marking its own distinct territory. An increasing separation between each discipline has ensued, whether intentional or not. This has resulted in sites that are unresponsive to current ecological or social conditions, or both, because the act of designing a space is not embedded in the continuation of changing systems that shape each site.

Dumbarton Oaks Park is itself a shifting aggregate of layered inscriptions: water carves its way through land, land imposes itself in the trajectory of water, people attempt to control the direction of both, and water takes over again, etc. Each imposition reforms the substrate, influencing the response of the other systems, and the highly receptive site refashions itself bit by bit, but always building on, always replying to what came before. To understand this I needed to trace the threads of water, land, and humans through the site over time. Luckily the park possesses a rich archival record, and the research process was shaped by a fascinating conversation between the history of the place as revealed in written and photographic documentation and its history as inscribed in present-day physical conditions.

## Threads

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I first landed in the Branch valley while thinking of another stream entirely, a more obedient watercourse in western Massachusetts that winds around a wooded entrance drive. This creek and driveway led to The Mount, Edith Wharton's house and gardens, and the sequence of the brook, clearly braided around the roadway, greatly intrigued me in the three years I worked there as the garden historian. Farrand designed the

**4.2 - 4.3** Diagrams exploring the impact of current management guidelines on cultural landscapes such as Dumbarton Oaks Park.

entrance drive for her aunt, Edith Wharton, in 1901, and the sugar maple-lined descent to the house is her earliest extant design (for a detailed description, see chapter 1). The stream emerged from a natural spring, collected stormwater from the roadway, and passed through a native forest landscape that Farrand had encouraged to return to the site by employing the principles of ecological succession. The young landscape architect also made reference to the site's agricultural history by engaging part of an old farm road alignment and allowing the dark, wooded enclosure of the drive to open in a gracious, sunny sweep of meadow and rocky outcroppings before arrival to the house.

Parallels can clearly be drawn between Farrand's work at The Mount and her design of the Dumbarton Oaks stream valley, more than two decades later. The manipulation of the watercourse to serve aesthetic and functional purposes, the preservation of a scaffold of native trees and the successional regeneration of woodland along rocky slopes, the conservation of remnants of the landscape's agricultural past, and a rhythmic spatial composition of openings and enclosures are tactics shared by both projects. Today we would describe much of this as ecological design, and though we should be careful of imposing our present point of view too literally, it is worth emphasizing that Farrand embraced these sites with an innate awareness of ecological principles, acquired through years of training, observation, and practice. She may not have articulated these aspects of her design within the theoretical frameworks and vocabularies we employ today, but this and subsequent simplistic readings of her work do not diminish the embedded ecological intelligence of these projects.

An early research objective was therefore to illustrate the often one-dimensional perspective with which landscape architects approach the work of past designers, particularly when we consider their application of ecological design principles from



**4.4** Farrand encouraged revegetation along the steep northern slopes of the Dumbarton Oaks valley. Today this woodland is still extant, though severely degraded in places.

Page No. 25

**SCHEDULE 1. Free Inhabitants in West Virginia in the County of Boone**  
of J. C. enumerated by me, on the 11th day of June 1860. J. C. W. [Signature]

Post Office Chesley Town

1	2	3	4	5	6	7		10	11	12	13	14
						Value of Real Estate	Value of Personal Estate					
1		Slave M. L. L. b.	3.0	♂	Therapist	1,000		Pa. W. I.				
2		Henry Henderson	2.5	♂	Bookman	1,000		England				
3		John McFarley	2.5	♂	Farmer			Chesland				
4		James Ferguson	2.5	♂	Th. House servant			D. C.				
5		May Peterson	2.5	♀	Do			Virginia				
6	99	Patrick McFarley	1.0	♂	Farmer	2,000	100	Chesland				
7		John "	2.5	♂				Virginia				
8		John "	2.5	♂				D. C.				
9		William "	2.5	♂								
10	107	John Almond	2.5	♂	Chapman	1,000	200	Ohio				
11		Isaac "	2.5	♂				Virginia				
12		John "	1.7	♂	College Student			D. C.				
13		Joseph "	1.4	♂								
14		May "	1.2	♀								
15		George "	1.0	♂								
16		Isaac "	1.0	♂								
17		James "	1.0	♂								
18		John "	1.0	♂								
19		John "	1.0	♂								
20		John "	1.0	♂								
21		John "	1.0	♂								
22		John "	1.0	♂								
23	101	Robert Ellet	2.5	♂	Civil Engineer	10,000	20,000	Pennsylvania				
24		John "	2.5	♂				Virginia				
25		May "	2.1	♀								

a post-Ian McHarg viewpoint, as chapter 1 discusses. I also sought to contest the notion that earlier designers are somehow irrelevant—that landscape history is the domain of doilies or dusty bookshelves—and to demonstrate that the study of past work is vital to our continuing practice as landscape architects and not just a curriculum requirement. As I delved further into Farrand’s training and later design of the valley at Dumbarton Oaks, it struck me as paradoxical that a landscape intended to collaborate with water had somehow found itself in such violent opposition to it. This seemed directly attributable to oversimplified or erroneous readings of the site that for various reasons had ignored the active human hand that had attempted to direct the valley’s water since it was first developed with a water-powered sawmill in the 18<sup>th</sup> century.<sup>1</sup> I soon realized that any credible critique of previous interpretation and, by extension, management of the cultural landscape would require a vision for embracing water in the 21<sup>st</sup> century.

### Deconstructing perceptual hydrologies

My first step was to chart the changing human relationships with the valley to discover how the perception of stormwater had altered over time. Human inscriptions on the site were traced in the archival record, published materials, and interviews, and by in situ documentation of existing features. My period of inquiry stretched from the examination of 19<sup>th</sup>-century agricultural census records for the former Ellet farm to joining a 2013 volunteer work party to remove invasive species from the same sloped meadows.

Though it provides only a nebulous history of pre-20<sup>th</sup>-century human occupation, the archival record for the valley reveals active engagement with stormwater beginning with the Bliss purchase of the property in 1920 and extending, after a revival of interest in the 1990s, to the present day. Fine-grained utility



4.5 [above] Detail, 1860 agricultural census record including the Ellet farm. National Archives. 4.6 Photograph of a work party (joined by the author) removing invasives from the first meadow, September 2013. Photo by Cynthia Goodson.

plans produced by civil engineer James Berrall in the 1920s and '30s delineated the complicated constructed hydrology of water and drain pipes laid between the upper formal gardens and the naturalistic stream garden and combined sewer line below (see figures 4.7–4.8). These water maps include information about overland flows, including Farrand's exposed stormwater conveyance channel, the Pebble Stream, and denote the location of the creek and dams. Farrand's own sketches explore the potential configuration of dams and their impact on the stream morphology. Much as she had done in the upper gardens,<sup>2</sup> Farrand struck a balance between the valley's natural hydrology and the imposition of human methods of water conveyance, working with the landscape's inherent drainage patterns.

Such early drawings are mirrored by a later flurry of hydrological and geotechnical reports and plans produced between 1996 and 2003. Due to concerns about extensive erosion and increased runoff, the District of Columbia Water and Sewer Authority (WASA), in partnership with the NPS, proposed in 2003 that a new stormwater line divert runoff under the valley and daylight outside the park near the stream's confluence with Rock Creek. Retention ponds near the Branch headwaters were also projected, however the project dissolved due to lack of funding and an unwieldy compliance process.<sup>3</sup> Though the inclusion of an onsite retention pond reveals a willingness to accept the presence of stormwater in the park, the overall thrust of the project illustrates a shift in values between the Farrand/Bliss era and today: namely the present emphasis on water as a problem rather than a partner.



**4.7 – 4.8** Details from James Berrall's utility plan for Dumbarton Oaks, 1930, illustrating the fine network of underground pipes connecting the upper gardens with the valley. Dumbarton Oaks Archives.



The perception of stormwater as a threat was overwhelmingly echoed in 2013 interviews with staff from the National Park Service and Dumbarton Oaks and with members of the Dumbarton Oaks Park Conservancy, the volunteer organization that spearheads park maintenance. And walking through the park, it is easy to understand why: gouged pathways, denuded stream banks, and the frail appearance of remnant Farrand structures state resoundingly that water has the upper hand in this place. Current mitigation suggestions, carefully outlined in reports such as Zoe Kulakowski's invaluable 2011 hydrologic analysis, still stress keeping excess water out of the park and notably out of the streambed.



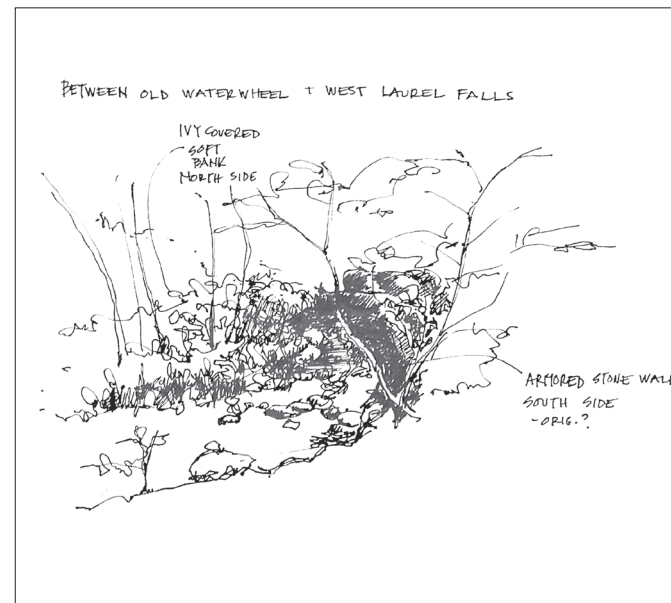
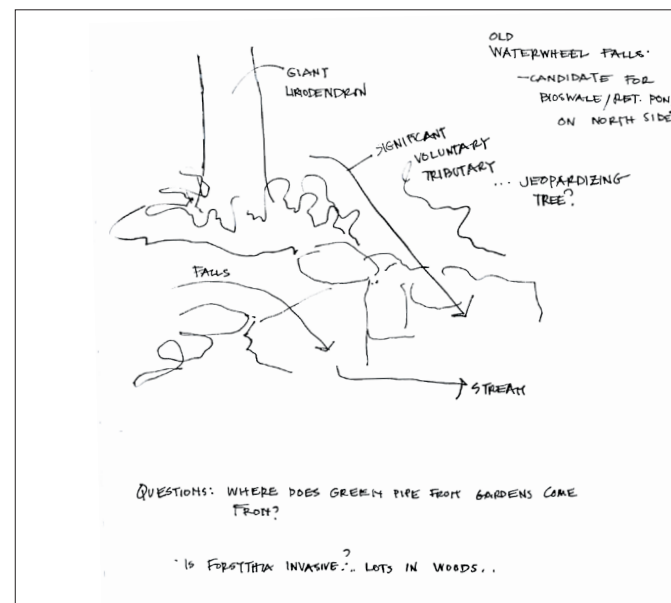
But Kulakowski's report also proposes a regenerative stormwater conveyance channel in the location of the historical tributary south of the Naval Observatory, and she resurrects the notion of a retention pond near the stream headwaters in the northwest corner of the park. A report such as Kulakowski's indicates that attitudes may be shifting, and conversations with Gail Griffin, Director of Gardens at Dumbarton Oaks, and Bill Yeaman, Natural Resource Manager for Rock Creek Park, suggest that stewards of the park and adjacent properties are beginning to realize that it is now our turn to respond—differently—to the changing hydrological context of these sites. For example, compelling initiatives are underway to productively direct runoff in Dumbarton Oaks Gardens and in select areas of Rock Creek Park.<sup>4</sup>

That greater stormwater performance could be integrated into the existing cultural landscape of the park was first proposed by David Wooden in a thesis completed in 2011 for the University of Virginia's Master of Landscape Architecture program.<sup>5</sup>

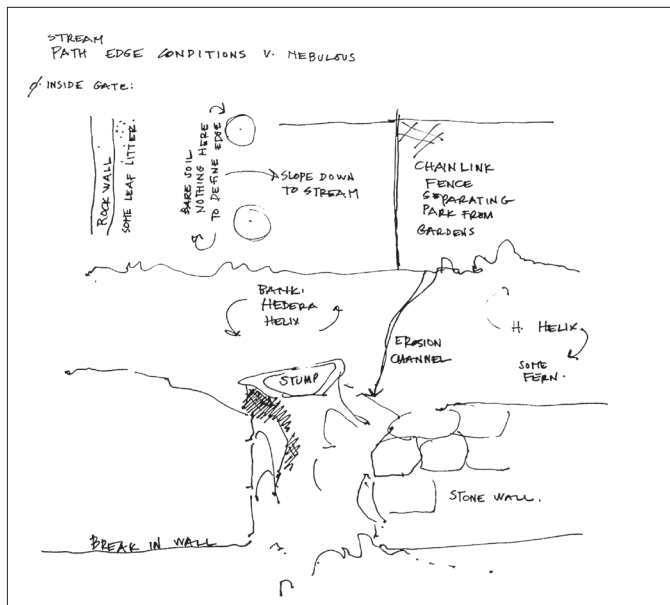
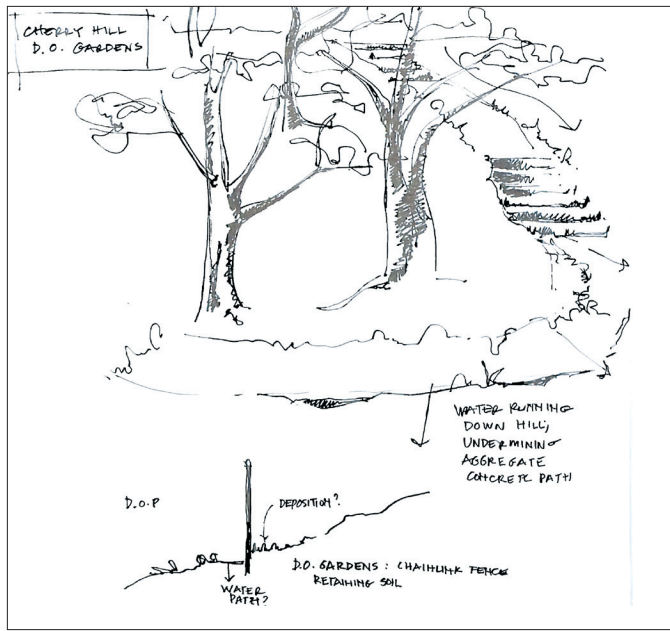
**4.9** [above] An Osage orange tree uprooted by stormwater. Runoff has taken over former pathways in many areas of the park. **4.10** [below] An informal trail along the brow of Clifton Hill also exhibits signs of erosion. Both photos: 2013.

Wooden employed parametric modeling tools in tandem with GIS and Stormwater Management Modeling software (SWMM) from the EPA to analyze water movement and saturation in the valley, using advanced topographical analysis to suggest potential locations for retention ponds and vegetative buffers. He argued that these mitigation elements—namely pools and planted slopes and banks—could be considered an enhancement of design strategies executed by Farrand. Though the scope of Wooden’s project stopped short of proposing a specific plan, his work is a significant precedent for this study.

I conducted onsite analysis during the month of September 2013, and early in the process both the historical record and physical conditions in the valley made it clear that the park needed a plan that would engage stormwater as a contributing resource rather than a threat to be protected against. In an effort to better understand the substrate I documented Farrand-era design features and spatial devices, along with their present-day overlay of voluntary runoff channels, erosion, and invasive species growth. Transects were measured at seven points along the creek to describe the erosion around the dams at a close-grained scale; the vegetation noted along each transect revealed important patterns, for example conditions in which native plants were successfully establishing, locations that still supported Farrand-era plantings, areas where invasives were taking hold, and stretches too severely eroded and trampled to support any vegetation. In two locations, runoff from the Dumbarton Oaks (south) hillside is beginning to form toe-of-slope wetlands filled with native plants such as jewelweed (*Impatiens capensis*) and black willow (*Salix nigra*), and these areas are significantly resisting incursion by invasive species.



4.11 – 4.12 Examples of quick field sketches documenting the condition of Farrand’s dams and stream banks, September 2013.



My consistent presence in the park offered the opportunity to speak with others who spend time there as well: this includes Georgetown residents enjoying the celebrated “escapist paradise” of the “hollow,”<sup>6</sup> as well as students at the nearby British School of Washington, commuters using Farrand’s strolling paths for a short cut between Massachusetts and Wisconsin avenues, runners, dog walkers, and volunteer groups clearing invasive plants from the meadows. In recent years the park’s human users have begun to be perceived as another threat to park resources: heavy use of footpaths intended to be intimate and damage from dogs, in particular, are concerns for managers. Much like the stormwater, however, it became apparent that people, too, were always going to be present in this valley—whether activating its historic trails or fighting the spread of invasive species—and that they are themselves one the park’s most vital resources. Engaging and formalizing the current human contribution to the park would be as important as embracing its water.

Visitors’ perceptions of the park and sensitivity to its historical context seemed to vary widely: several individuals were aware of the valley’s significance as a Beatrix Farrand design and asked pointed questions about the severity of erosion and stormwater issues. Others were quite happily allowing their (unsanctioned) off-leash dogs to scramble up and around the dams, ripping up tenuous stream bank vegetation and disturbing the stonework on the vulnerable structures. In observing this great breadth of responses I realized that the legibility of the site to its average user has declined significantly since the Bliss/Farrand era: as a naturalistic, or “wild” garden, the valley would have been highly legible for the group of people intended to experience it in the 1920s. These were individuals who shared an elite and relatively homogenous culture and education, and who read this landscape

4.13 – 4.14 These sketches document the path of water from Dumbarton Oaks Gardens to the park and stream below.

automatically as a highly designed abstraction of nature, and not nature itself. Today this is not the case, and those enjoying the park come from myriad backgrounds with myriad expectations for a woodland park in the city. Rather than preserving the old language, then, this new context demands an updated lexicon that allows a diversity of visitors to understand the layered inscriptions at work in the site, to develop what Kevin Lynch calls a “personal image of time,” “flexible [and] consonant with external reality.”<sup>7</sup>

## Questions

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Key design questions emerged from the site analysis that guided the design process. All of the questions address the articulation of inscriptions currently present in the valley, with the goal of improving ecological, cultural, and human conditions. With the primary objectives of keeping stormwater and people onsite, I considered how stormwater could serve as an ecological, cultural, and social place-making device. Instead of focusing solely on capturing runoff at the perimeter of the valley or piping it under the park, could the site act as an enormous rain garden, celebrating the functional as well as the aesthetic presence of water, as Farrand had originally intended?

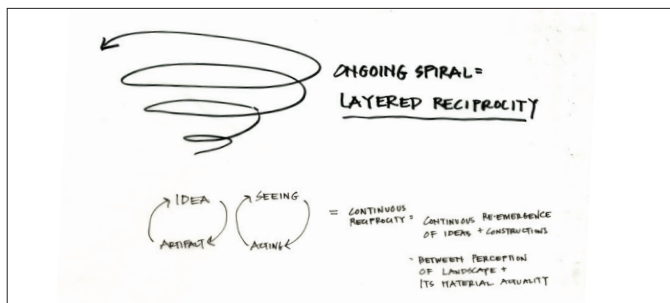
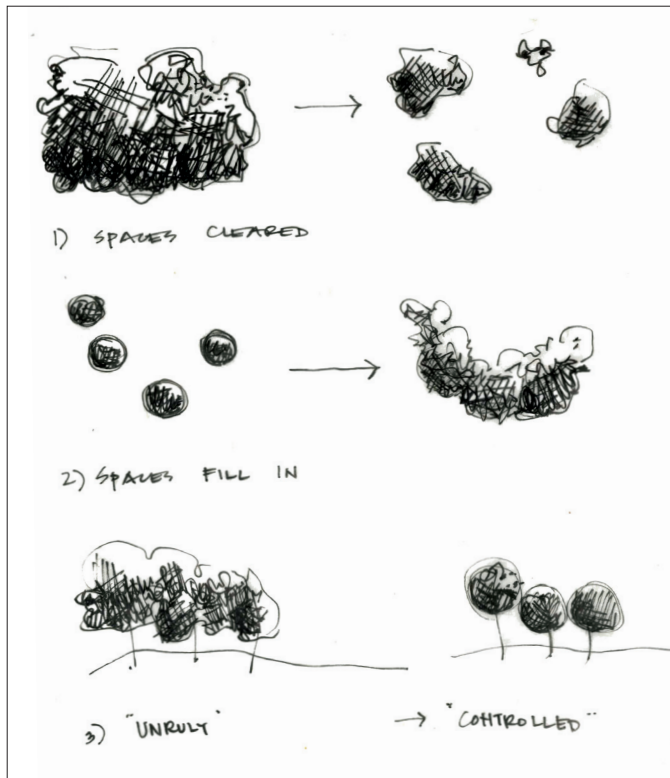
Could the persistent hydrological connection between the upper gardens and the stream valley be made visible and operative once more?

Could water streaming into the park be cleaned and stored to irrigate new plantings?<sup>8</sup>

Could the deposition of sediment in the creek bed be harnessed to improve the health of the stream and safeguard historic structures rather than degrade them?



Field sketches describing potential locations for stormwater retention features, September 2013. **4.15** [above] The area at the foot of the slope below Dumbarton Oaks Gardens is receiving enough stormwater and sediment in some areas to discourage invasives and support the establishment of native riparian plant species. **4.16** The area surrounding the headwaters of the Branch, now piped, is severely degraded by porcelain berry (*Ampelopsis brevipedunculata*) and thus a prime candidate for retention infrastructure.



4.17 – 4.18 Early conceptual sketches questioning how visual cues might express human inscriptions on the landscape. The vegetation diagrams above explore how plants reveal human stewardship. Below, a spiral emerged relatively quickly as a fitting metaphor for constant change in a cultural landscape.

Could we plan for and direct the flooding of human pathways in storm events to allow for maximum resilience of ecological communities and historic features?

And could we formalize the maintenance efforts of the park’s many volunteers by creating a community wild garden in the valley, suggesting a new paradigm for collaborative local gardening efforts?

### Conceptual development

The process of conceptual development explored the visual expression of these changing inscriptions and constantly questioned how we register their presence—and the history of their presence—on a site. This is challenging because we all read landscapes differently, as geographer D. W. Meinig observes in “The Beholding Eye: Ten Versions of the Same Scene.”<sup>9</sup> I was thus keenly aware that any suggestion I made would necessarily fall within the register of what was decipherable to me, but perhaps not to anyone else. Still, I assumed that certain fundamental aspects of the way humans perceive change could be distilled and applied to the site.

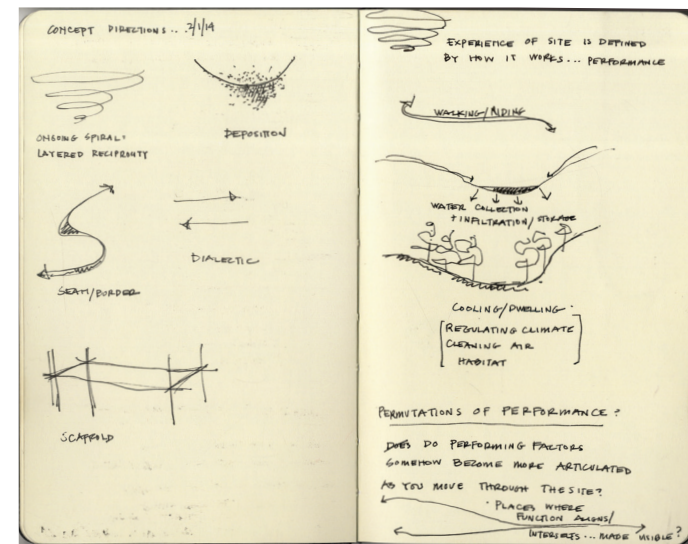
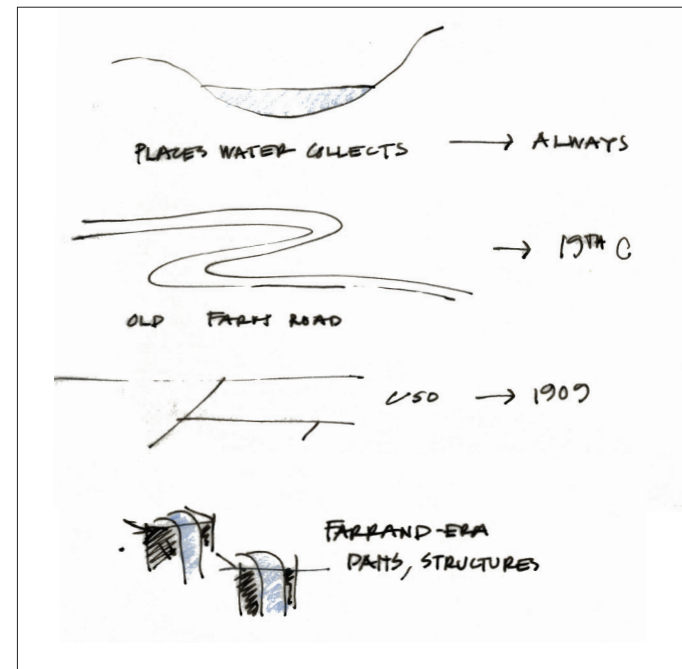
Initially it seemed necessary to ensure the presence of a datum, or something against which time and change could be measured. The park is replete with examples: whether old boundary markers or manhole covers carved out of the earth by erosion; or Farrand’s structures themselves, burdened by loads of sediment, leaf litter, and water and serving as the most potent testament to the processes at work in the valley. In considering what might operate as a potential datum, I identified what I began to call an “inviolable matrix,” composed of aspects of the site that were either unlikely to change or inadvisable to change, i.e., that were integral to the site’s performance over time (see chapter 3): these

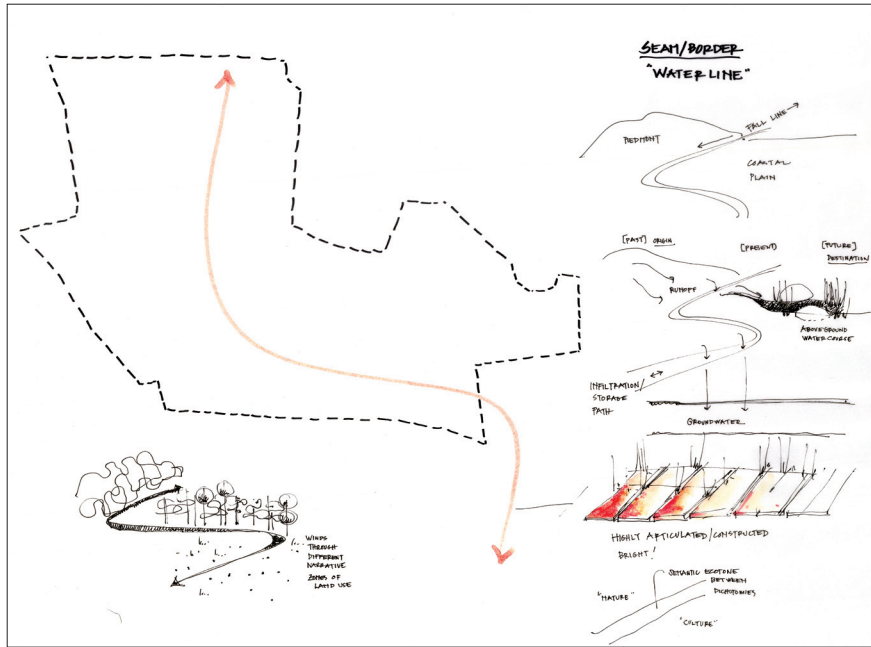
included the topography, or points of natural water movement and collection, as well as the 18<sup>th</sup>-century farm road, the 1909 combined sewer, and Farrand's series of stone dams. If the human and water systems were able to move through this matrix with maximum flexibility, could its future resilience be assured? This suggested that water might be given free reign over the site as long as it did not threaten the dam structures, road, or sewer system.

Early concepts experimented with key site conditions and explored what it might mean to apply the notion of "Scaffold," or "Deposition" to the landscape. One idea, "Park as a Seam," expressed the valley's identity as a Fall Line landscape by stitching a highly visible path through the park that would capture, direct, and infiltrate runoff; unite past and present; and serve as a formal articulation of what landscape architect Robert Z. Melnick considers a necessary "semantic ecotone"<sup>10</sup> between nature and culture. The last two concepts addressed the constantly shifting nature of the site, and indeed the initial forms proposed by each eventually began to merge: "Dialectic" suggested that the diverse—and sometimes contradictory—readings of the valley could somehow be engaged in an unpredictable conversation that would re-script the original curated sequence of human and water pathways. And "Spiral" illustrated the continuous reciprocity between ways of seeing and ways of acting, between conceptions of the valley and its physical reality. With its implication of constant re-creation, the spiral emphasized the constant change and motion that captured the essence of this place more, I realized, than a series of artifacts or historical plant communities.

4.19 [above] Initial identification of the "inviolable matrix."

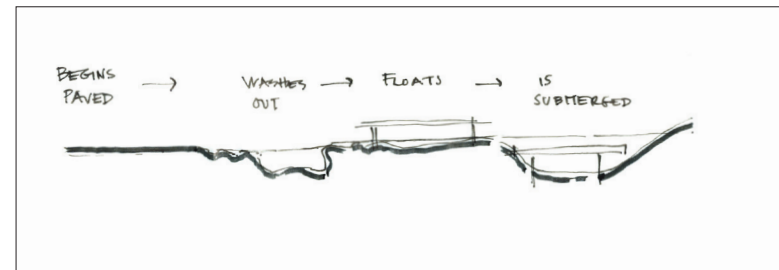
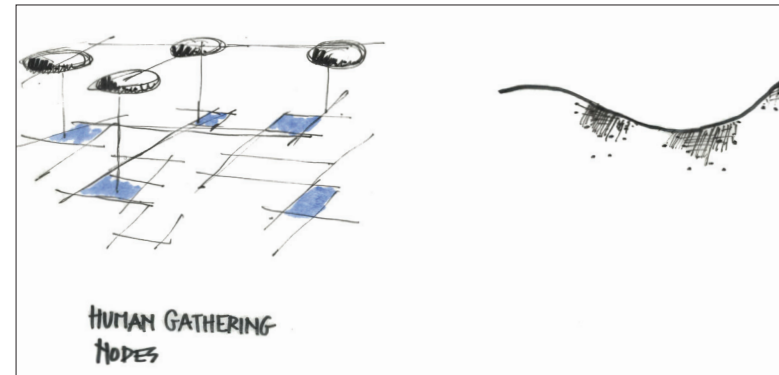
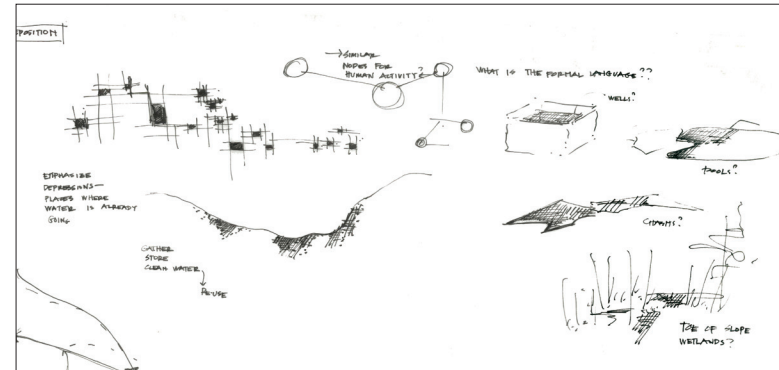
4.20 [below] Diagrams of early concepts and tactics for aligning visual and performance-based landscape qualities.

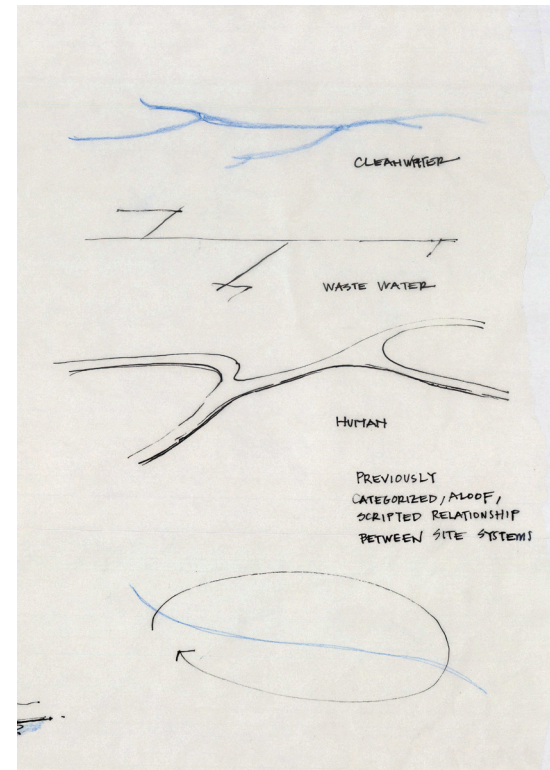
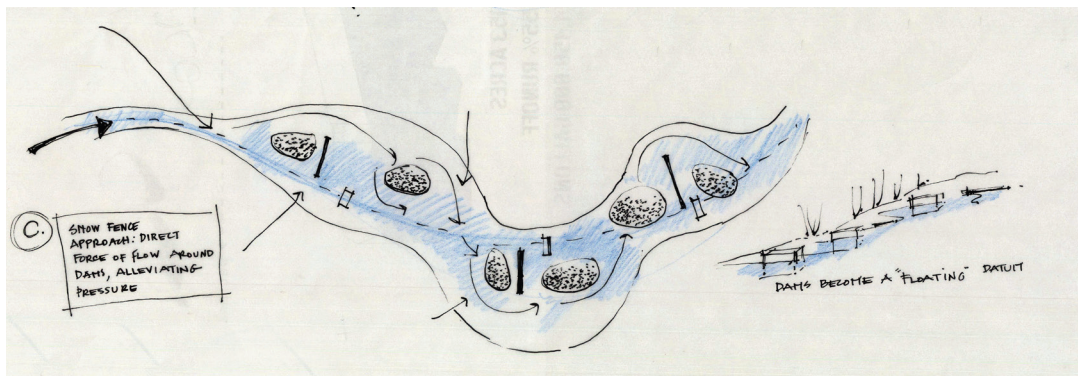
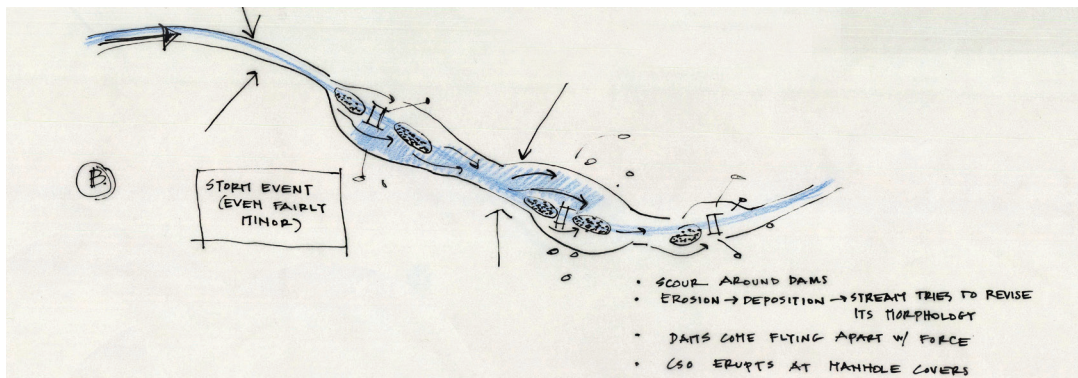
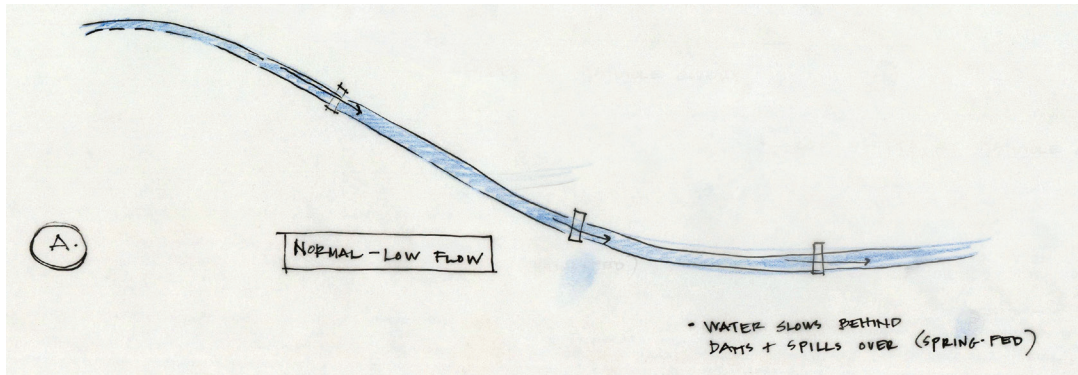


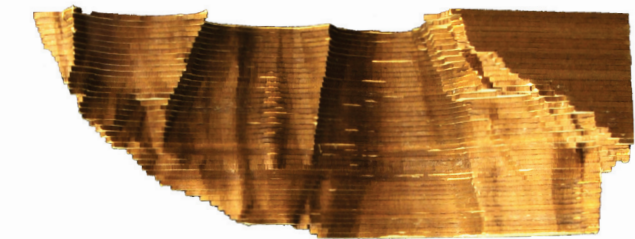
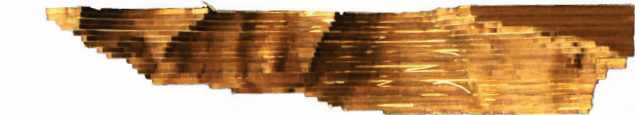


Early conceptual diagrams [this page, clockwise from top left] **4.21** "Park as a Seam" expressed the park's geological identity as a Fall Line landscape while reuniting, or stitching together, interpretation and management dichotomies such as nature vs. culture, visual vs. performance, etc. **4.22 – 4.23** "Deposition" sought to identify and augment locations of natural gravity to capture water and people in the places they are already collecting. **4.24** The experience, materiality, and accessibility of pathways was considered throughout the process. In particular it seemed important to allow the twinned movement corridors of the pathway and stream to have a more direct relationship with one another. Periodic flooding and closure of pathways was also contemplated as a means of connecting park visitors to the effects of stormwater.

[opposite] **4.25 – 4.30** The notion of a spiral or a dialectic expressed itself more literally in the first concept developed for the streambed. Inspired by the physics of snow and sand fencing, here the sedimentation process is harnessed to relieve pressure on the dams: new weir structures change channel morphology in high-volume areas. Eventually the dams are flooded and left to serve as a datum marking the historic course of the stream.







**4.31 – 4.33** [this page] Inverse models of the valley attempt to convey a sense of deposition and layering over time. **4.34** [opposite] Early diagram of the final concept, which seeks to employ stormwater as a place-making device.

Rather than a static substrate against which movement is measured, I ultimately realized that the only unchanging aspect of this landscape is the dynamic relationship it reveals between water, land, and people. Instead of viewing the farm road, the combined sewer, and the dams as part of a fixed medium through which current systems move, they could be seen as human inscriptions, or distinct human responses to the relentless interplay of land and water in the valley. This called for a design that could express change relative to other shifting gestures on the site. Instead of forcing land and water systems into subservient roles that fulfill one or another image we hold of the landscape—a situation that is especially likely to afflict an historical landscape—we allow the land and the water, respectively, to sometimes have the upper hand. This meant that my interjections in the valley would be only a brief layer in a limitless piling-up of space-shaping actions, but a layer that could potentially work in concert with other system movements.

Water, land, and people became the main conceptual drivers of the schematic design that in turn inscribes the prevailing patterns of each. The concept, which includes wet meadows and reconnected floodplains (see figure 4.34), traces the threads of water, land, and humans through the valley. Established lines of water movement are formalized by accentuating the places where water runs—the creek bed and the sloped meadows—as well as where it collects—the foot of the south slope between the park and Dumbarton Oaks and the historical confluence points of the Branch and its buried former tributaries. Land, too, is allowed to do what it has always done, namely accumulate sediment in the creek bed and at the foot of the south slope, and both absorb water and selectively abrade across the meadows. Humans are acknowledged by the preservation of Farrand’s design intent in the meadows and along much of the stream course, the restoration of certain historic structures, the revision of pathways to accommodate present-day use, provisions to assist

\* FOCUS WATER  
TO ACHIEVE  
Ecol., CULT., +  
SOCIAL OBJECTIVES

WATER AS A SPACE-  
MAKING DEVICE



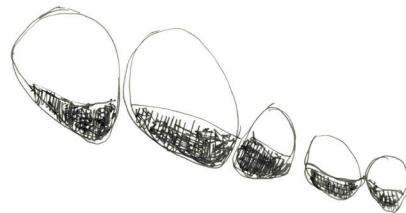
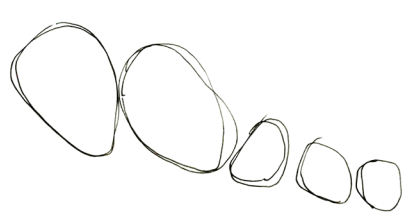
↪ ↪ RESCRIPTED CREEK

▨ NATURALLY FORMING,  
TOE-OF-SLOPE WETLANDS

▨ MEADOW/WETLAND → RETENTION/DIVERSION  
DURING MAJOR STORMS

▨ MEADOW WETLANDS COLLECT, SLOW, STORE NAVAL OBSERVATORY  
RUNOFF + SHEET FLOW ACROSS  
CLIFTON HILL

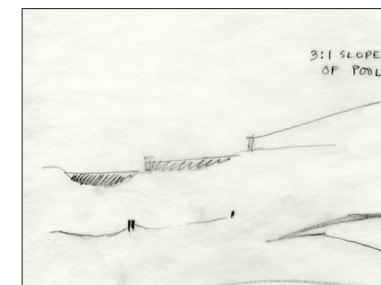
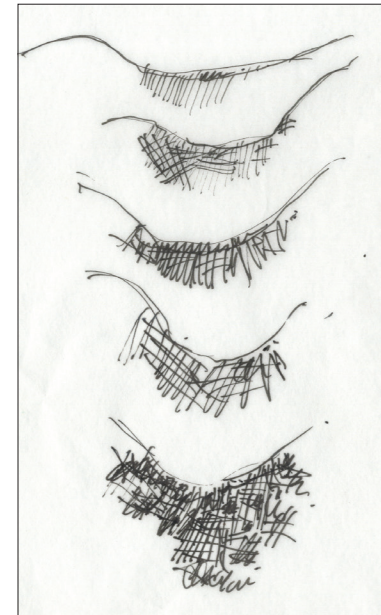
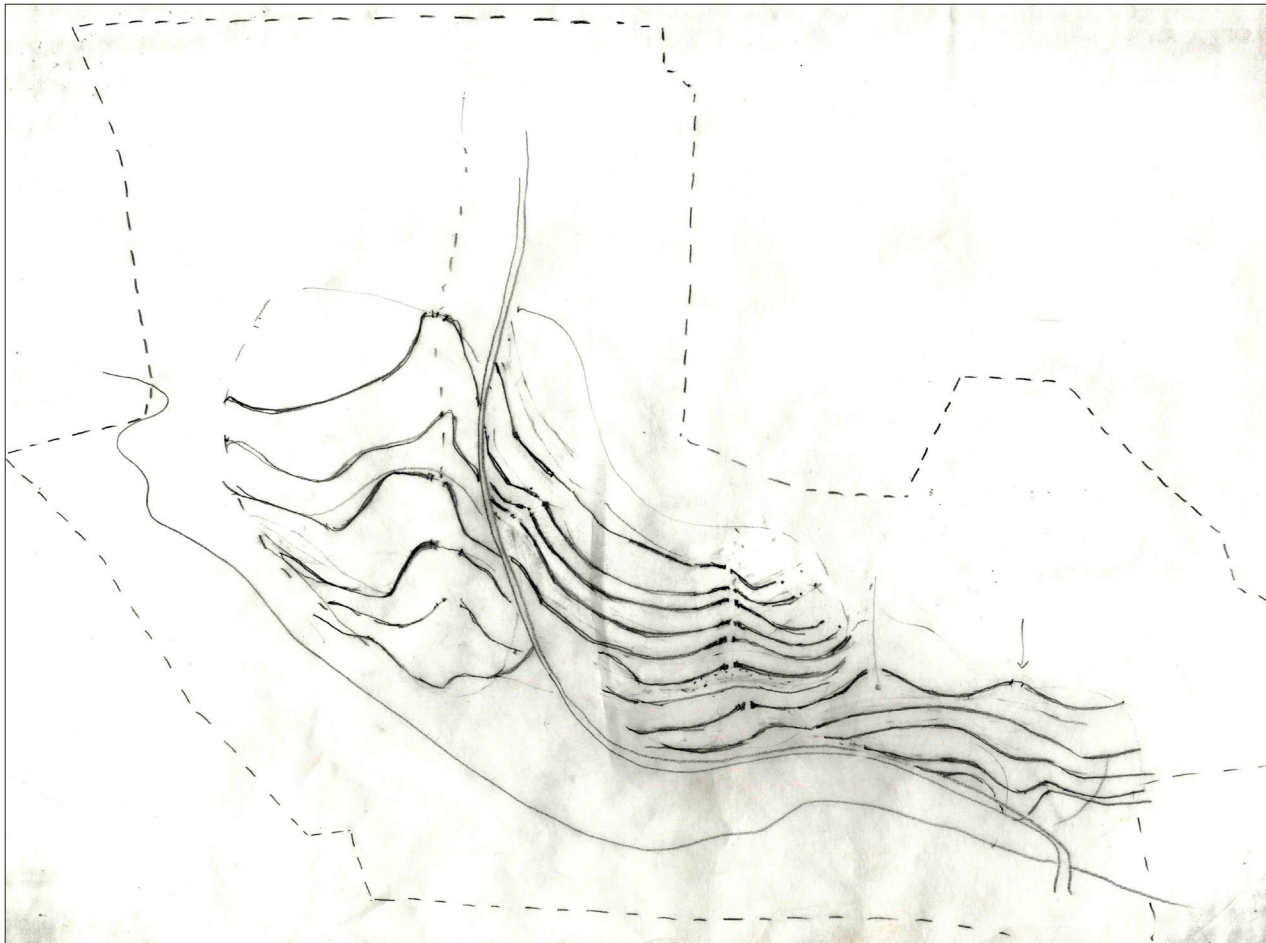





## WET MEADOWS

meadows -----> wet meadows

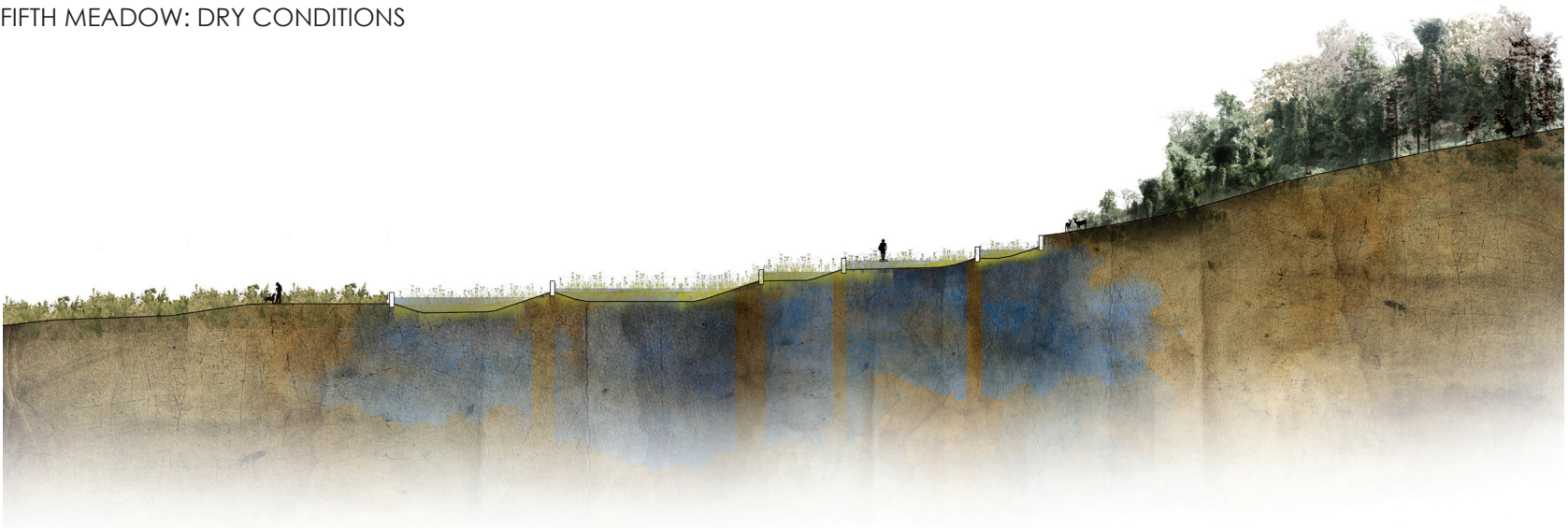




 Early visions for the wet meadows. **4.35** [opposite] A proposal to augment the sediment and water storage capacity of Farrand's meadows. **4.36 – 4.38** [above] One of the first iterations of the wet meadow idea focused on actively storing the water on site in a series of rice paddy-like terraces.



FIFTH MEADOW: DRY CONDITIONS



FIFTH MEADOW: STORM CONDITIONS



and celebrate the work of volunteer maintenance crews, and the concept's potential to integrate with current NPS standards for the treatment of cultural landscapes.

### Finding an ecotone: design meets preservation

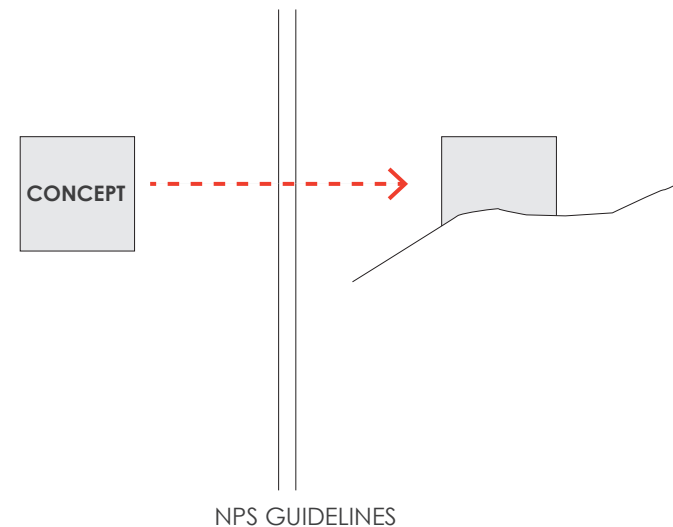
To extend beyond the scope of an intellectual exercise and productively address the park's current issues, the concept was tested through yet another filter: the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, specifically the standards for Rehabilitation, which as chapter 3 discusses, is the only available treatment approach that actively allows the landscape to respond to the passage of time.<sup>11</sup> Any design proposal for the valley would therefore need to align with identified character-defining features of the landscape from its period of significance, 1921–51, as described in the cultural landscape report for the park.<sup>12</sup>

I was initially hesitant to pass the design through this filter, concerned that doing so would result in the type of cultural landscape treatment I had criticized, specifically a re-creation of the Branch valley as Beatrix Farrand knew it, with no visible reference to the site's changing stormwater context. However, the introduction of the NPS analysis to the design process served both to deepen my understanding of the landscape itself and to ground the concept more solidly on site through the suggestion of specific textures, materials, and forms. It also convincingly illustrated that synergies can be identified between design approaches and NPS standards that serve to strengthen both.

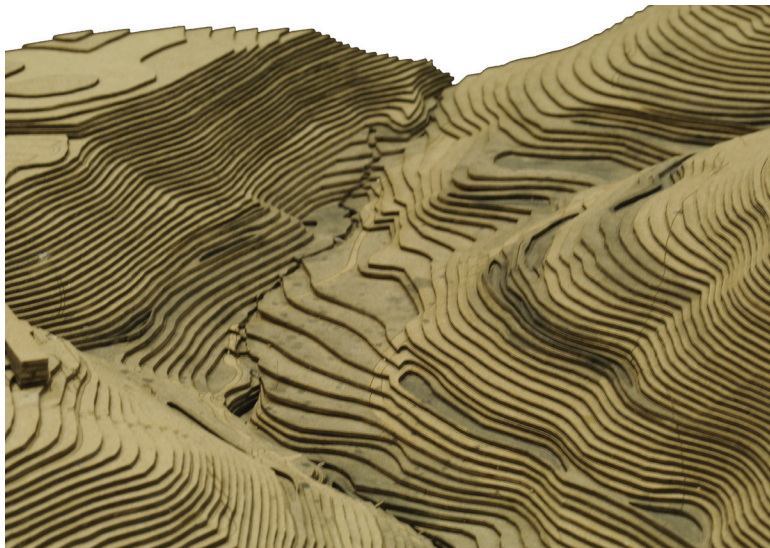
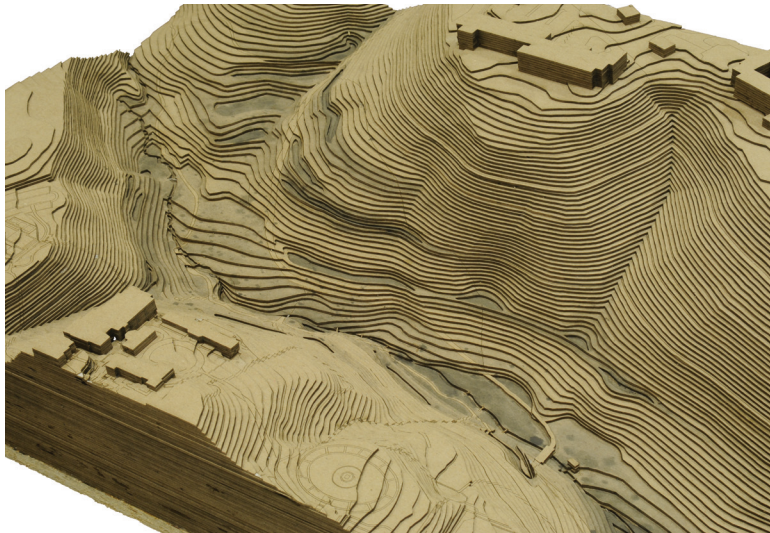
If Farrand's meadows and tree lines were delineated according to topographical variation, then her wet meadows would be as well. If the meadows' primary character-defining feature was a careful contrast between open and enclosed spaces, flooding them would

encourage native wetland plants and discourage the invasive species currently encroaching into the open spaces and disrupting their balance.

If the farm road once featured a grass strip down the center—which would have absorbed a certain amount of runoff originally—could this be transformed into an active stormwater conveyance channel, similarly vegetated? Although the south slope between the gardens and the park was organized around the four paths that once led down the hillside, could Farrand's



**4.39** [opposite] A sectional view of the "rice paddy-style" terraces, in both wet and dry conditions. **4.40** [above] Passing the initial concept ideas through the filter of the NPS regulatory framework resulted in a design that was more sensitively grounded in the landscape.

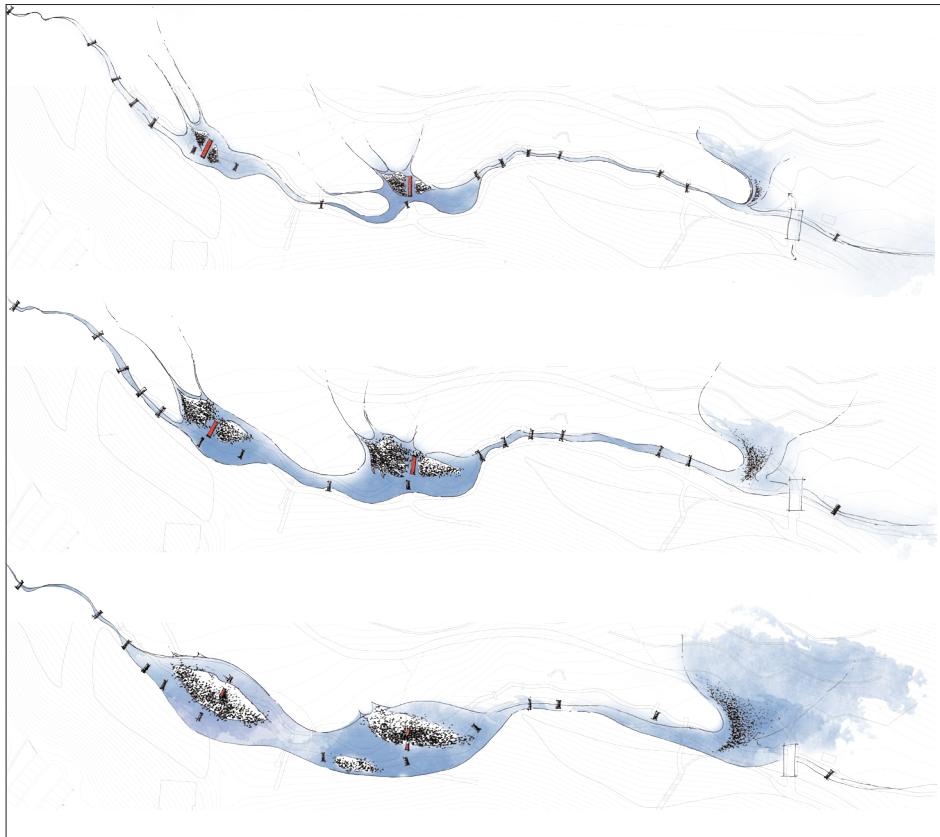


careful gradient of plant sizes in this area still be preserved in toe-of-slope wetlands with small-scale plants at the edges of paths and increasingly larger specimens beyond?

Could her original streamside sequence of small, room-like spaces linked with corridors be maintained in such a way that sedimentation and creek movement could occur without damage to the dams? Farrand originally defined three laurel leaf-shaped pools in the streamside sequence: Laurel Pool was the largest, but a pool was also formed just west of the Three Bridge Falls and a third was found west of the Clapper Bridge Falls.<sup>13</sup> These locations correspond to major runoff convergence zones and are located at or near the confluence of tributaries that appear on historic maps of the valley, indicating that she may have anticipated additional water streaming into these areas (see figures 2.10–2.12). If this was the case, could these pool regions be made larger still to alleviate pressure on the creek in high-volume areas?

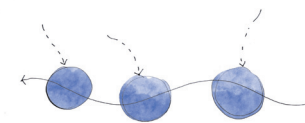
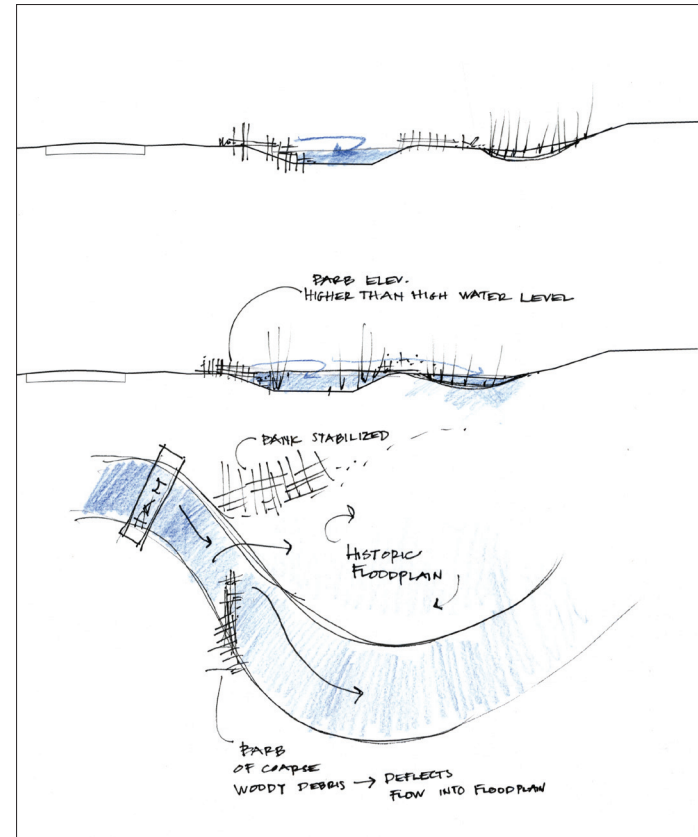
The engagement of the concept with the NPS framework for the park thus embedded the plan more robustly and more sensitively in the history of design and management in the valley, illustrating the potential value of cultural landscape treatment standards when they are allowed to operate with flexibility, as part of a multidisciplinary discourse instead of a monologue.

**4.41 – 4.42** Revisiting the identified “character-defining features” of the site prompted the revision of the meadow concept to propose subtle scoops in the topography rather than constructed terraces. The undulating sward-like quality of the meadows currently provides a significant contrast to the formal gardens that could be impaired by the introduction of highly constructed features.



**4.43** [above left] Similarly, the “re-scripted creek” concept that involved flooding the dams was considered problematic because it would essentially take some of the dams offline, fundamentally altering their intended role in the watercourse composition and in effect transforming them into the type of architectural relics that I was arguing against.

**4.44 – 4.46** [above right and right] The revised version of this concept connects more forcefully to Farrand’s original design intent and the fluvial geomorphology of the site by proposing that Farrand’s pools be expanded to correspond to the historic floodplain and store stormwater in high-flow events. Bank stabilization with large woody debris was inspired by the installation of engineered log jams on the Nisqually River at Mount Rainier National Park. Many of the hydrological issues affecting the Nisqually can be seen—on a significantly smaller scale—along the Branch.



Farrand-era pools made larger



augment historical sequence of streamside rooms

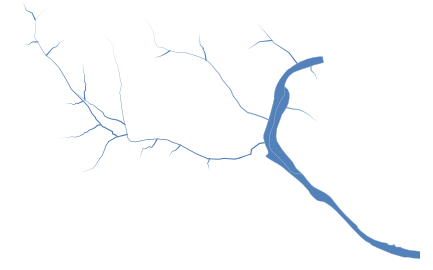
## NOTES

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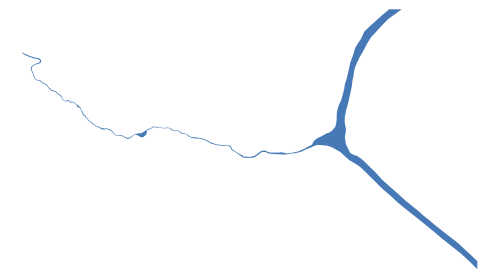
1. Walter Muir Whitehill, *Dumbarton Oaks: The History of a Georgetown House and Garden, 1800–1966* (Cambridge: The Belknap Press of Harvard University Press, 1967): 8.
2. Farrand actively encouraged the site's existing hydrology in the upper gardens as well, where she transformed a naturally occurring pond into the formal Lovers' Lane Pool with surrounding amphitheater.
3. Bill Yeaman, Rock Creek Park, personal communication, September 16, 2013.
4. Dumbarton Oaks Gardens have recently initiated a stormwater management project that will strive to capture and reuse rainwater and greywater onsite for use in irrigation and fountains (Gail Griffin, personal communication, September 13, 2013). Rock Creek Park has installed two regenerative stormwater conveyance systems (or RSCs) along Milkhouse and Bingham Runs, two spring-fed streams severely degraded by runoff. Two years following their installation, the RSCs are successfully slowing, cleaning, and infiltrating stormwater; vegetation is returning to the stream banks, and new habitats are emerging. See National Park Service, Rock Creek Park, *Installation of Regenerative Stormwater Conveyances at Bingham Run and Milkhouse Run: Environmental Assessment / Assessment of Effect*, May 2011.
5. David Wooden, "Wild Garden // Wild Infrastructure: Analysis & Restoration Strategy for Dumbarton Oaks Park," master's thesis in landscape architecture, the University of Virginia, 2011. See also "DC Urban Watersheds: Digital Mapping and Representation," <http://dwlabs.wordpress.com/>.
6. Whitehill, *Dumbarton Oaks*, vii.
7. Kevin Lynch, *What Time Is This Place?* (Cambridge: The MIT Press, 1972): 1.
8. Gail Griffin, Director of Gardens at Dumbarton Oaks, observes that while the park may receive too much water from the upper gardens in the way of overland flows, it ironically requires access to the piped water supply from Dumbarton Oaks to support new restoration plantings (personal communication, September 13, 2013).
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11. For an overview of treatment approaches included in *The Secretary of the Interior's Standards for the Treatment of Historic Properties*, see "Four Approaches to the Treatment of Historic Properties," <http://www.nps.gov/tps/standards/four-treatments.htm>.
12. Susan Dolan, Manager: Park Cultural Landscapes Program, National Park Service, personal communication, March 13, 2014. National Park Service, *Cultural Landscape Report : Dumbarton Oaks Park, Rock Creek Park; Part I: Site History, Existing Conditions, and Analysis and Evaluation* (Washington, DC: National Capital Region Cultural Landscape Program, 2000): 89.
13. National Park Service, *CLR: Dumbarton Oaks Park*, 90–98, 102–24, 214–21.

# FIVE: Inscribing Hydrologies

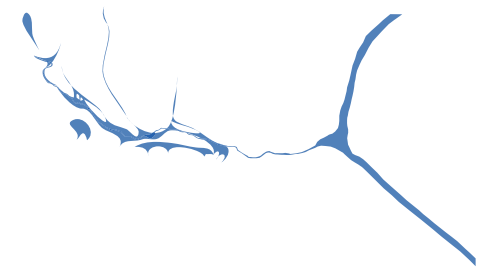
the Branch,  
pre-development



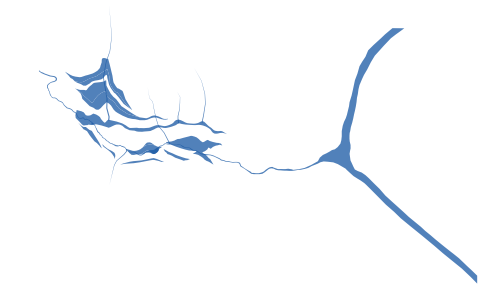
normal to low flow



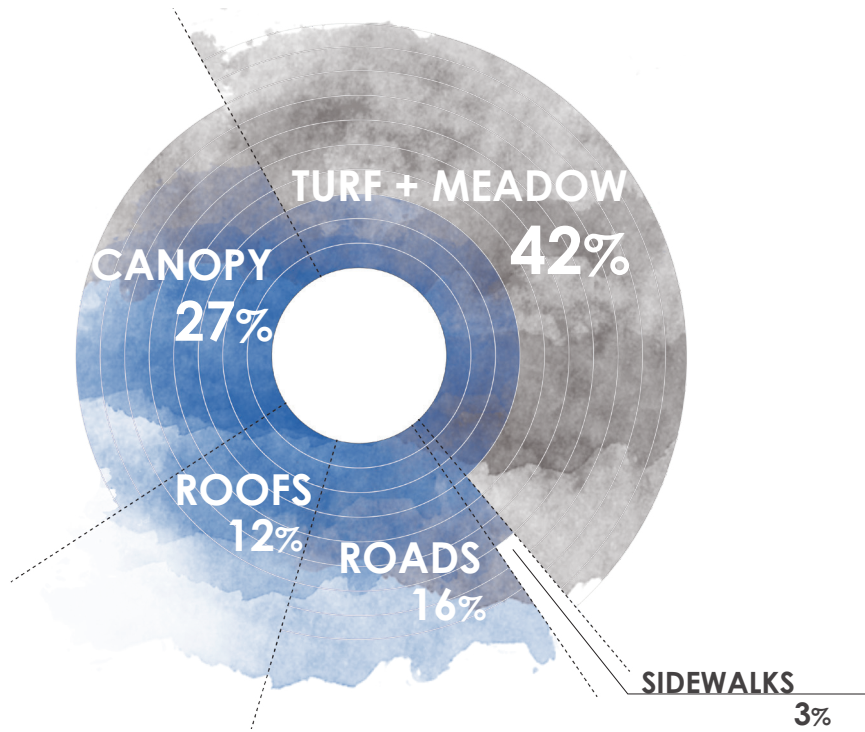
storm



proposed revision



# SEWERSHED SURFACE COVERAGE + RUNOFF VOLUME

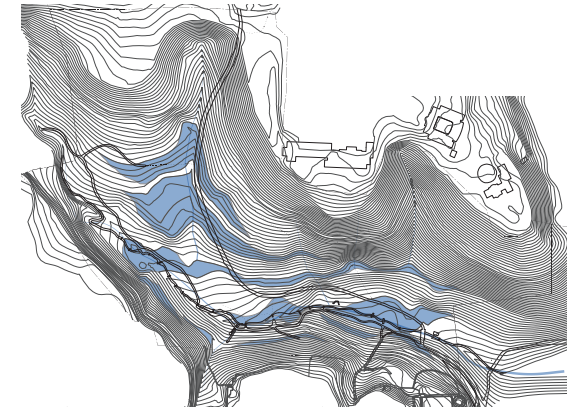


2-INCH, 24-HOUR  
RAINFALL EVENT

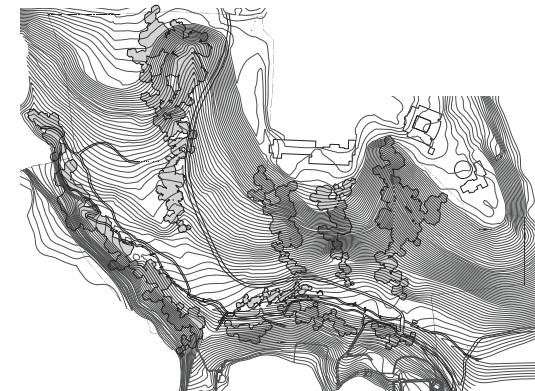
sewershed = 153 acres  
55% runoff = 4,450,000 gallons

[above ] Due to its significant percentage of permeable surface coverage, Dumbarton Oaks Park is well-poised to serve a primary role in stormwater infrastructure. Source of data: Wooden 2011.

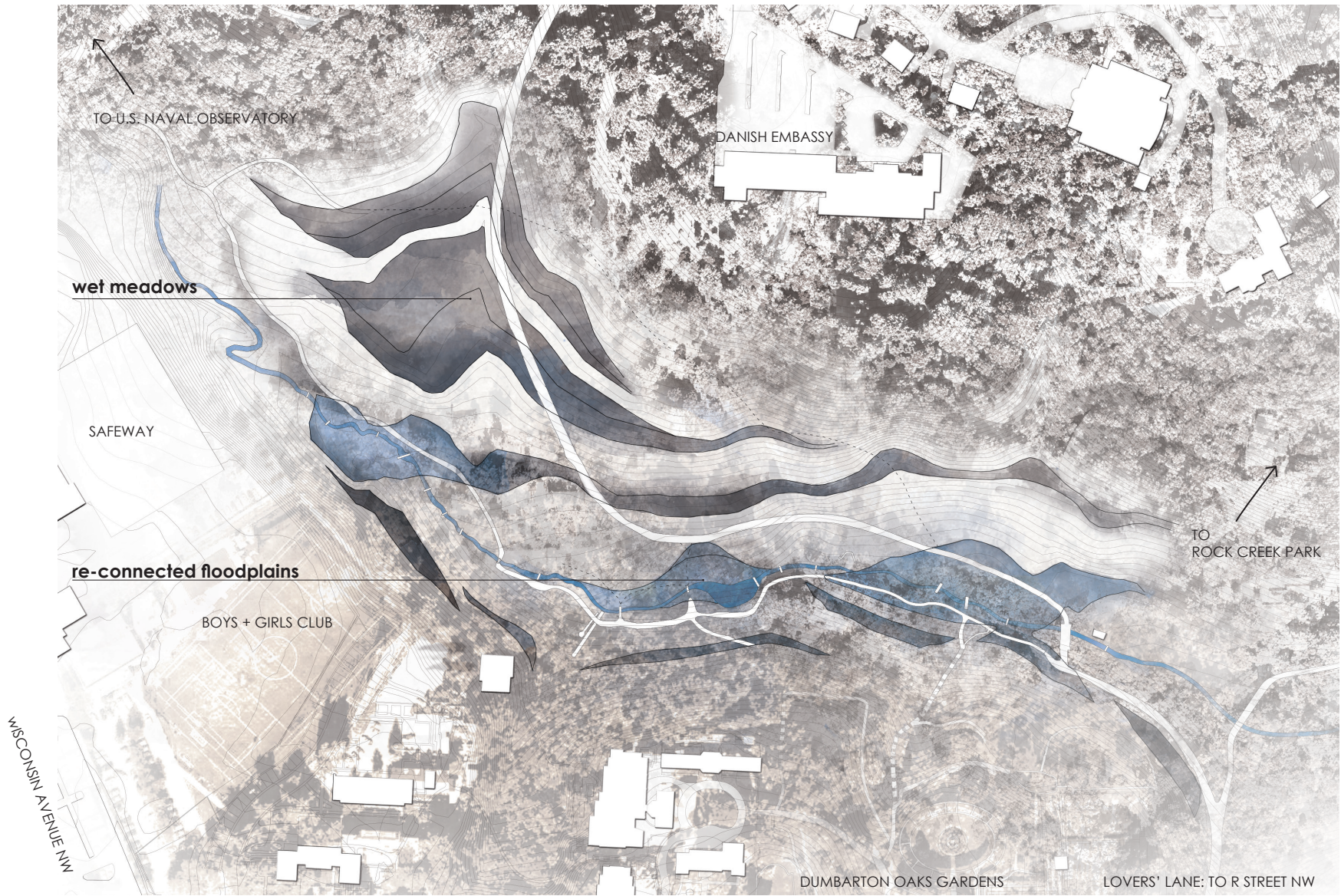
[right] Topographical and planting tactics more closely approximate the historical stormwater performance of the site, both in its pre-development state and during the Bliss-Farrand era.



activate fluvial terraces + floodplains  
to slow water + trap sediment



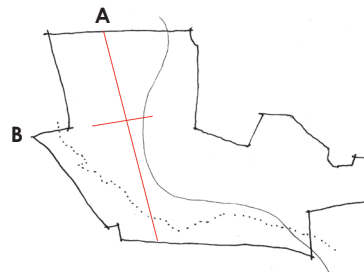
riparian revegetation along historic sub-tributaries  
slows water + reduces erosion



STORMWATER AS A SPACE-MAKING DEVICE

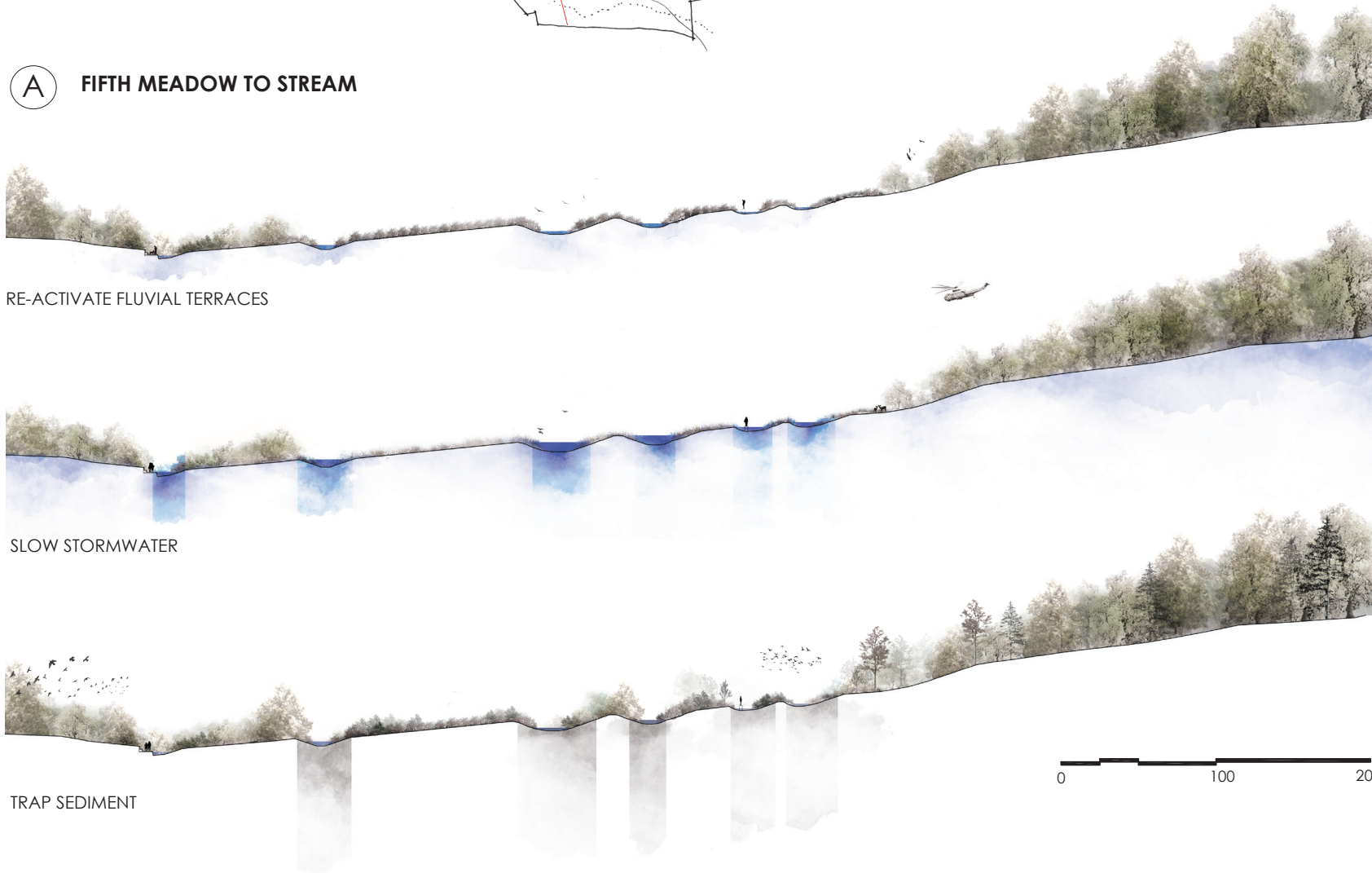


# WET MEADOWS



Scooped-out meadows more actively catch and slow water, trap sediment, and clean runoff as it moves downhill. Wetland conditions created by stormwater discourage the growth of invasive species and promote Farrand's original spatial organization of the meadows. The accumulation of sediment in the meadows over time alters the landform, ensuring the constancy of change and embedding the need for future stewardship and responsiveness.

## A FIFTH MEADOW TO STREAM



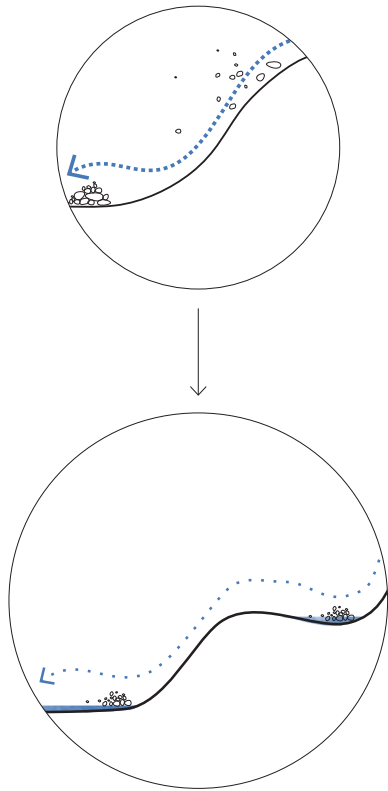
RE-ACTIVATE FLUVIAL TERRACES

SLOW STORMWATER

TRAP SEDIMENT

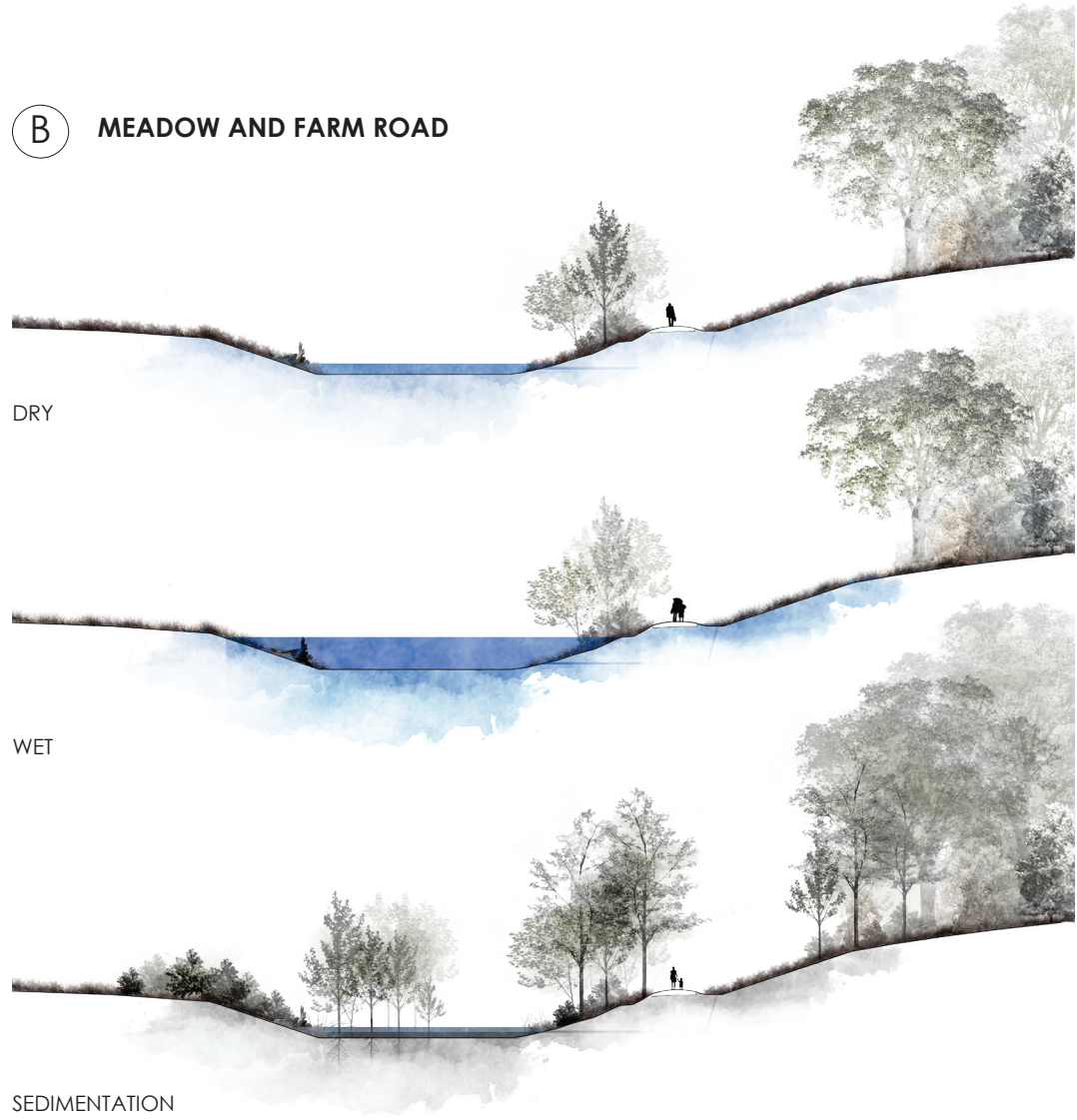


CURRENT CONDITIONS: unimpeded flows deliver excess sediment to stream



PROPOSAL: landform is engaged to incrementally trap sediment and slow water

## B MEADOW AND FARM ROAD



0 40 80

U.S. Naval Observatory  
0.25 miles

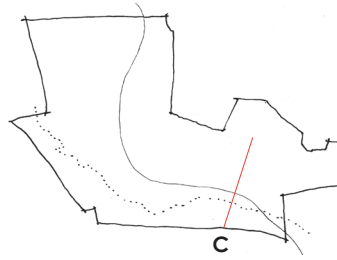
Washington Monument  
2.3 miles



Depth to groundwater  
0.0018 miles

# RE-CONNECTED FLOODPLAINS

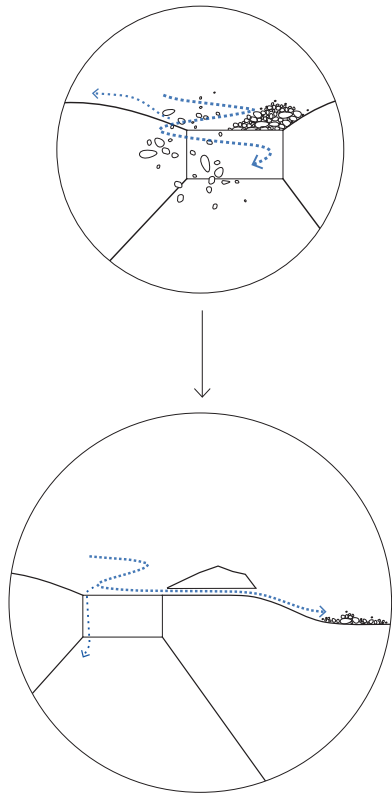
## C FIRST MEADOW, STREAM, AND PATHWAYS



Overflow channels reconnect floodplains to relieve pressure on Farrand-era dams in high-flow conditions. Coarse woody debris and engineered log jams deflect stream flow, stabilizing and rejuvenating stream banks. Revegetation along the stream and historic sub-tributaries supports Farrand's historic spatial composition while slowing runoff and restoring rare floodplain habitat.

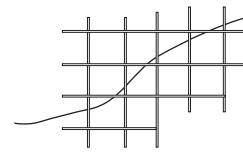


CURRENT CONDITIONS: sedimentation and limited capacity damage dams and streambanks

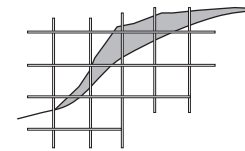


PROPOSAL: an overflow channel at dam height relieves pressure and reconnects historic floodplains

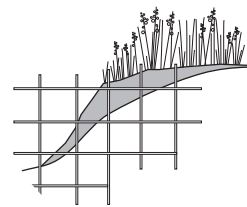
STREAMBANK STABILIZATION



bank **stabilizes** with engineered log jams



bank **rebuilds** with accumulated sediment



bank **revegetates** with hydrophilic species



bank **emulates** Farrand-era conditions



National Cathedral  
1.1 miles

Blue Plains Wastewater  
Treatment Plant  
5.5 miles

Potomac River  
0.9 miles



## LOOKING FORWARD

This exploration of Dumbarton Oaks Park has conferred a wonderful sense of continuity. In the accumulations of Farrand's valley I have found greater or lesser fragments of every question that has preoccupied me for the past ten years: matters of landscape perception and presentation so central to my undergraduate thesis on the 17<sup>th</sup>-century French garden; Beatrix Farrand and her work, that figured so largely in my tenure in her aunt's garden at The Mount; the gravitas of the National Park Service—as moveable but also as reliable as a vault— which I've come to genuinely appreciate as an NPS employee; and an education in landscape architecture that has inspired me to constantly look for the gritty underbelly and find its relationship to the whole.

In particular, this effort has made some progress toward resolving a conflict I've held ever since I realized that a landscape was something that a) could be mindfully manipulated and b) could be analyzed. The union of design and history had always seemed an impossibility, one that was reinforced by almost everyone I spoke with as I sought a place for myself in a field that I deeply knew was the right place to be. This disciplinary boundary was puzzling, because it was the experience of powerful landscapes that propelled me simultaneously in each direction: I wanted both to trace the threads of these places to discover how they worked and try to create such places myself. Curiously these

disciplinary silos are often reinforced by educational programs, which have a tendency to divide curriculum requirements and faculty into the categories of design and history: this perpetuates the notion that we are speaking of two different skill sets, when in point of fact each is crucial to the other. I cannot imagine embarking on a landscape design without a deep plunge into the history of a site, for example, and it seems impossible to speak with authority about past interventions in the built environment without the spatial, visual, and experiential expression relied on by the subjects of such research.

Still the organizational dictates of my education made it challenging to integrate design and history in any meaningful way—until this project, that represents my first sustained attempt to work in an iterative way in the nexus of the two disciplines. I wanted to test design as a tool of inquiry in history and vice versa. After some initial anxiety relating to how this might play out, I was indeed able to establish a cyclical rhythm between the two processes that led to a deeper understanding of the workings of the site across layers of time.

I could easily have devoted twice (or thrice) as much time to this process, and given the opportunity the design development could have been pushed more rigorously to express the valley's

functional permutations at a human scale. Farrand did this artfully in her execution of the twinned Spring Grotto and Pebble Stream, and an updated iteration would have been a natural inclusion in the design proposal. Similarly, the relationship between the 1921 garden and today's context should be delineated in a phased planting plan that could illustrate at a fine scale the resonance between Farrand's concept and current—and future—environmental conditions.

Considerations of human use must be more stringently examined, both in terms of what the design proposal could contribute and what it might take away. The notion that Dumbarton Oaks Park could serve as a new kind of community garden is compelling, and additional design iterations could formalize the valuable stewardship service performed by the park's dedicated volunteers. Also, the heavy public use of the park means that any removal of publicly accessible lawn—including the wet meadow and floodplain areas in my design—must be scrutinized and possibly mitigated. ADA access is another question that requires careful attention, as well as water catchment, which should be integrated into select areas of the wet meadows in order to support the irrigation of new park plantings.

Additional next steps might include the adaptation of this project to a format better suited to NPS standards and funding proposals. Construction details, along with analytical plans more closely identifying the relationship between historical conditions and the proposed new design would be vital components of such a document and could perhaps speak more effectively in the current language of management. My ultimate hope for this effort, however, is to show that a common language already exists between disciplines, and that we need only look, feel, and

experience these sites more closely and from different angles to understand that we share a core set of values—the appreciation of place that drew me to landscape in the first place.

Dumbarton Oaks Park clearly articulates the loss of design to the practices of history and preservation, however the reverse situation is expressed in contemporary projects every day, installed without sufficient knowledge of a site's environmental and social background. In removing history from design we risk leaving a damaged, maladapted legacy in the built environment not unlike the situation that results from freezing historical landscapes in time.

However like landscapes themselves, cultural landscape guidelines are evolving, albeit slowly. Beliefs about what a cultural landscape is and whose stories it represents have become increasingly complex and nuanced; we've seen the landscape shift from inert repository to an active shaper of life. As increased knowledge of human impacts has compressed the time scale with which we understand environmental change, we may find ourselves better and better able to comprehend and adjust to a vision of landscape preservation predicated on such change. We may appreciate with renewed conviction that the landscape's most challenging aspects—its dynamism and its constant revision—are also its greatest gifts.

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