

*High School Student Environmental Activism at  
John Dewey High School, Brooklyn, New York*

**from “Black, White and Green: High School Student Activism in the Civil Rights  
and Environmental Movements, 1945 -1975”**

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As the previous chapters have highlighted, high school student civil rights and environmental activism both manifested in diverging suburban localities across the Long Island landscape throughout the late 1960s and early 1970s. In rural Bellport and the more “urbanized” Malverne, successful movements for racial and ethnic equality were led by teenaged activists intent upon securing unbiased high school experiences for not only themselves, but for future generations of students as well. In Bellport, such activism was then followed by an evolving student interest in the budding environmental movement, particularly in the years following the nation’s first Earth Day in April of 1970. Although, as noted in chapter three, this latter movement did not take root in Malverne as high school student activists in this community focused their attention solely upon in-school cultural bias and community-wide racial discrimination. Having taken place within the confines of post-World War II suburbia, both types of student activism were uniquely contoured by the very communal and educational places within which they evolved. As the last two chapters have made clear, student activism in Bellport and Malverne – be it civil rights or environmental – was heavily inspired, influenced, and molded by not only the students’ personal and collective realities within their home communities, but also by their communities’ historical pasts and trajectories as well. In many ways then, the two individual suburban places themselves served as, and provided, significant impetus for the types of social and political change students therein hoped to instill.

Suburban communities such as Bellport and Malverne, however, were not the only settings within which high school student civil rights and environmental activism flourished in the late 1960s and early 1970s. As the following two case studies highlight, this same period also witnessed the fruition of both student movements upon the urban terrain of Brooklyn, New York as well. Manifesting independently of one another in two separate high schools, student-led civil rights and environmental activism in Brooklyn took on uniquely urban characteristics which differentiated both from similarly-situated social and political movements on nearby Long Island. In the case of John Dewey High School, at which students engaged in a variety of borough-wide environmental preservation campaigns, differentiation in spatial relationships between students and the sites of their activism proved significant throughout the early 1970s. Whereas students in Bellport lived and learned within close proximity of the natural wonders they studied and labored to preserve, most students at John Dewey did not, as their high school and hub of environmental activity were located several miles from the homes and neighborhoods in which they lived and had been raised. Unlike in Bellport, this expansive spatial reality in Brooklyn had limited individual students' opportunities to foment long-standing, personal and communal relationships with the endangered areas they would one day come to know and appreciate. Only as students of John Dewey would many come to be familiar with such places, as most were located within the general areas of their high school.

Similarly, the geographic expanse of the city also proved significant to the civil rights activism which manifested at Brooklyn's Franklin K. Lane High School in the late 1960s. Just as youth environmentalists in Bellport had lived and learned within the same community that housed their high school, so too had Bellport and Malverne's white, black and Hispanic civil rights advocates. For all of these suburban youth, regardless of the movement activity they chose, their lived realities and social worlds were uniquely tied to and, throughout their lives, had been contoured by their personal and collective

experiences as local community residents. For each and every one of these students and their respective families, all had stake in not only the success of the social and political campaigns that were waged, but also in the peaceful resolution of racial tensions and ecological debates within their home communities.

While such communal feelings certainly existed in Brooklyn and upon similarly-situated urban landscapes, such personal connections did not necessarily extend to the high schools in which students were assigned. As the case study of Franklin K. Lane High School in Chapter Five will later highlight, the majority of African American students at Lane hailed from Brownsville, Brooklyn – a primarily African American neighborhood which lacked its own community high school. As residents of a distant neighborhood which was far removed their school, black students were bused daily from Brownsville to Lane, the latter of which had historically served the predominantly white neighborhoods of Woodhaven and Cypress Hills. Throughout the late 1960s, as racial and ethnic tensions exploded throughout Brooklyn as well as in greater New York City, Lane's African American student population organized for racial and ethnic equality in a school within which they felt like outsiders and against a school administration that viewed them as such. In the following two chapter case studies, the aforementioned spatial realities, as well as the movement similarities and differences they brought forth, will be analyzed in relation to both high school student environmental and civil rights activism in Brooklyn, New York. While this chapter will focus specifically on youth environmentalism at John Dewey High School, chapter five will highlight the evolution of a Black Power-oriented civil rights campaign at Franklin K. Lane.

As participants in an interactive and hands-on high school Marine Biology program, teenaged environmentalists at John Dewey High School were routinely exposed to the open, green and undeveloped spaces within the general area of their high school. With John Dewey situated along the border of south Brooklyn and Coney Island, the high school placed hundreds, if not thousands, of urban youth in close proximity to New York

City's Atlantic coastline which consisted of not only boardwalks and ocean beaches, but several fragile and, at times, endangered wetland areas as well. Similar to Art Cooley's students in Bellport, science-oriented youth at Dewey spent considerable time researching, testing and cataloguing such places as required field-work for their courses in Marine Biology. Through these experiences, students, along with their instructors, developed their own personal and collective relationships with the natural environment they routinely encountered. From the spring of 1970 onward, such connections with what, for many students, had previously been a somewhat alien landscape, inspired them to become environmentally active as members of John Dewey's Marine Biology Club.

While some similarities between Bellport and John Dewey do, on the surface, seem ever-present, high school student environmental activism in Brooklyn did, in fact, diverge from the activism performed by Students for Environmental Quality on suburban Long Island. As an analysis of Dewey students' Earth Day, 1970 clean-up of Plum Beach on Jamaica Bay will reveal, man-made pollution was much more pervasive and threatening along the waterways of New York City than it had been along the Carmans River in rural Bellport. At the same time, while students on Long Island had concentrated most of their efforts on preserving the Carmans River and preventing the *possible* future endangerment of the ecosystems therein, John Dewey students routinely worked to halt *proposed* and much more imminent devastation of fragile areas along the Brooklyn coastline. As a study of these students' opposition to several projects proposed by the Army Corps of Engineers and various private land-use developers will highlight, youth environmental action in Brooklyn was always in response to very real, impending threats to the survival of land and marine-based ecosystems along the urban shoreline. In rural Bellport, such threats were typically much more hypothetical and plausible, which allowed student activists the time and resources to advocate for preventive legislation rather than battle to halt one or more specific projects.

The activism of John Dewey's Marine Biology Club differed from that which transpired in Bellport in other ways as well. To be sure, the fact that SEQ's faculty mentors, Art Cooley and Dennis Puleston, were already well-established environmental activists and co-founders of the EDF long before high school student environmentalism manifested on Long Island is more than significant. Due to the advisors' longstanding commitment to, and participation in, various local preservationist campaigns, SEQ was to organize as a separate, completely student-led group that was elective as an after school and weekend, extra-curricular activity. As the pages which follow detail, however, high school student environmentalism at John Dewey High School was different in that the ecological interests and activist tendencies of both students *and* advisors evolved simultaneously as a result of the work conducted in the field as well as in the classroom. As noted in Chapter Two, while mandatory field research analyses in Bellport certainly inspired Cooley's science students to organize SEQ in the fall of 1970, the students themselves decided to translate such experiences into some form of community-wide environmental action. At John Dewey, as the school's Marine Biology program evolved from 1969 onward, students who registered for the inventive and action-oriented science program also became, by extension, members of the Marine Biology Club. In essence, while local environmental activism in Bellport was elected after and in addition to registration in Advanced Biology and Marine Science, at John Dewey, youth environmentalism was part and parcel of the science program in which they had enrolled.

To this end, students in the Marine Biology Club at John Dewey High School complemented their in-class discussions and required field research analyses with mandatory internship and volunteer experiences, both of which grounded the curriculum designed by their instructors. Indeed, while students in Bellport only participated in such activities when they so desired, students in John Dewey's Marine Biology program were required to spend at least one day a week outside of the classroom volunteering at the nearby New York Aquarium on Coney Island. As the pages which follow explore in

detail, such volunteerism was required of all students at John Dewey High School, as the school was originally opened in 1969 as an “experimental” facility in which students garnered not only intellectual experiences within the classroom, but academically-related, practical experiences out in the community as well. Together, both types of educational experiences – in-class, textbook-based lectures and discussions along with required field research analyses and volunteerism – cultivated the environmental interests of John Dewey’s Marine Biology Club as well as that of the two instructors who guided their students along the way.

Unlike its contemporary in Bellport, however, high school student environmental activism did not evolve on the heels of a successful student-led civil rights movement. Just like suburban Malverne, John Dewey only witnessed the manifestation of one protracted form of high school student political activity in the late 1960s and early 1970s. As this chapter illustrates, John Dewey had been founded in 1969 as an “experimental” high school, which, upon its opening, was not only racially and ethnically integrated, but was also based upon a culturally-sensitive curriculum which was taught by a racially and ethnically diverse faculty. While other New York City Schools, including Franklin K. Lane, witnessed in-school civil rights and Black Power campaigns to instill these same progressive programs and ideals, John Dewey High School did not. As a facility, which, at its opening, had already addressed many of the concerns that black, white and Hispanic civil rights advocates in other schools repeatedly raised throughout the late 1960s, the John Dewey community enjoyed cordial race relations while other area high schools did not. As one of the only relatively calm and peaceful New York City Schools in the age of student protest, John Dewey stands out as a unique urban setting for high school student environmental activism.

### **Brooklyn as Place and the “Experimental” High School**

Just like its much smaller suburban counterparts on Long Island, Brooklyn – one of five expansive New York City boroughs – had been repeatedly shaped and

manipulated throughout time by the historical forces of social, cultural, and political succession. With its earliest place histories rooted by a strong Native American presence in the pre-colonial era, the Brooklyn landscape was first occupied by European settlers and enslaved African peoples in the first half of the seventeenth century.<sup>1</sup> Controlled first by the Dutch and, later, the English throughout the colonial period, Brooklyn quickly came into its own as an expanding colonial outpost and prosperous port city with between five and six thousand white and black inhabitants by 1800.<sup>2</sup> Throughout the succeeding one hundred year period, as Brooklyn industrialized and expanded, this relatively small urban population rapidly increased, reaching 279,122 residents in 1860 and totaling 1,166,582 by 1900.<sup>3</sup> In addition to witnessing an increase of roughly 900,000 residents, this forty year period also witnessed the opening of the Brooklyn Bridge in 1883 as well as the burgeoning city's merger with and annexation by greater New York City in 1898.<sup>4</sup> As a newly minted borough at the dawn of the twentieth century, the Brooklyn landscape continued to evolve throughout the 1900s, annually attracting thousands of foreign and domestic immigrants representing a host of differing racial, ethnic, and socio-economic backgrounds. By mid-century, this diverse urban population had crested at an astounding 2,738,175 residents, representing a fifty year net population increase of 1,571,593 people.<sup>5</sup>

Such population growth, however, soon became a relic of Brooklyn's past, as the borough's total population slowly began to decrease from the 1950s onward, dropping to 2,627,319 in 1960, 2,602,012 in 1970, and 2,230,936 in 1980.<sup>6</sup> Throughout this same thirty year period, Brooklyn's racial and ethnic demography also shifted as the total number of white residents declined and the total number of African American and

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<sup>1</sup> Craig Steven Wilder, *A Covenant with Color: Race and Social Power in Brooklyn*, (New York: Columbia University Press, 2000), 5-7; Leonard Benardo and Jennifer Weiss, *Brooklyn by Name: How the Neighborhoods, Streets, Parks, and More Got Their Names*, (New York: New York University Press, 2006), 3-4.

<sup>2</sup> Benardo and Weiss, 4; Wilder, 61, Table 4.1.

<sup>3</sup> Wilder, 118, Table 6.1.

<sup>4</sup> Benardo and Weiss, 4, 28.

<sup>5</sup> Wilder, 178, Table 9.1.

<sup>6</sup> Wilder, 178, Table 9.1.

Latinos rapidly increased. Indeed, while Brooklyn's white population between 1940 and 1970 dropped from 2,587,951 to 1,905,788, the borough's total African American population rose from 107,263 to 656,194.<sup>7</sup> By 1980, the borough's African American community had once again increased, totaling 723,748, while the total number of Latino residents was, for the first time, recorded separately at 393,103. With the latter population subgroup having been previously tallied as either "white" or "black" by the U.S. Census Bureau, the sharp ten year decline in Brooklyn's white population, from 1,905,788 in 1970 to 1,265,769 in 1980, illustrates a much greater decrease than the borough actually experienced.<sup>8</sup> Nevertheless, as the aforementioned census statistics do certainly indicate, not only did Brooklyn's total population exponentially increase and, later, slowly decrease throughout the twentieth centuries, so too did the total numbers of racial and ethnic majorities and minorities in the same period. More importantly, these numbers also illustrate the sheer size of Brooklyn's total population as it relates to the much smaller demographic realities in nearby suburban communities such as those found in Bellport and Malverne on Long Island.

As a one-time city in its own right as well as a borough of New York City, Brooklyn has also been geographically expansive throughout its long history of social, cultural, and political succession. Having evolved from a patchwork of farmlands to a patchwork of industrial zones, commercial centers and ethnic neighborhoods, Brooklyn has spanned the most western region of Long Island since long before its earliest settlement by the Canarsee Indians.<sup>9</sup> As a one-time city in its own right, this urban landscape continues to cover roughly ninety-seven square miles of total land mass with just fewer than seventeen of these miles underwater.<sup>10</sup> While these seventy-one miles of land mass hold roughly 36,000 people per square mile, they do so within a patchwork of anywhere between fifty and eighty separate neighborhoods and sub-neighborhoods, many

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<sup>7</sup> Wilder, 178, Table 9.1.

<sup>8</sup> Wilder, 178, Table 9.1.

<sup>9</sup> Benardo and Weiss, 4.

<sup>10</sup> [www.city-data.com/city/brooklyn-New-York.html](http://www.city-data.com/city/brooklyn-New-York.html), (12 January, 2011).

of which are over ten to fifteen miles apart from one another.<sup>11</sup> For students at John Dewey High School, which accepted students from any Brooklyn neighborhood, this geographic reality often times meant that students lived several miles from their school in a wholly separate community. For these students, particularly those who enrolled in Marine Biology and became environmentally active, these miles had kept them alienated from the very places they would one day learn to appreciate and protect.

This type of spatial separation only alienated those students who were politically active in Brooklyn, however. As the previous two chapters have noted, students in suburban Bellport and Malverne lived in the communities in which they were active and in close proximity to the high schools they attended. Unlike the vast Brooklyn landscape, Bellport and Malverne were much smaller in geographic size. Indeed, while Bellport and North Bellport had only been settled upon 1.46 and 4.65 square miles of land mass, Malverne, Lynbrook and Lakeview had only been settled upon 1.05, 2, and .96 respectively. At the same time, all five of these suburban neighborhoods were less dense than Brooklyn, with 1,639 and 2,058 residents per square mile in Bellport and North Bellport; 8,457 and 9,947 in Malverne and Lynbrook; and, 5,923 per square mile in Lakeview.<sup>12</sup> While these latter numbers appear to be rather high, they cover much less actual land-mass than Brooklyn's 70.61 square miles containing 35,956 people per mile.<sup>13</sup> Therefore, unlike in Bellport and Malverne – within which students lived, learned, and engaged in political activity – students at John Dewey were much less likely to live in close proximity to their high school or the various sites of their environmental activism.

While this geographic reality did not prevent John Dewey's Marine Biology Club members from becoming environmentally active in the coastal areas close to their high school, it certainly enhanced the agency of their faculty mentors. With many of their

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<sup>11</sup> [www.city-data.com/city/brooklyn-new-york.html](http://www.city-data.com/city/brooklyn-new-york.html), (12 January, 2011); Benardo and Weiss, vii-viii.

<sup>12</sup> [www.city-data.com/city/bellport-new-york.html](http://www.city-data.com/city/bellport-new-york.html), (12 January, 2011); [www.city-data.com/city/north-bellport-new-york.html](http://www.city-data.com/city/north-bellport-new-york.html), (12 January, 2011); [www.city-data.com/city/malverne-new-york.html](http://www.city-data.com/city/malverne-new-york.html), (12 January, 2011); [www.city-data.com/city/lynbrook-new-york.html](http://www.city-data.com/city/lynbrook-new-york.html), (12 January, 2011); [www.city-data.com/city/lakeview-new-york.html](http://www.city-data.com/city/lakeview-new-york.html), (12 January, 2011).

<sup>13</sup> [www.city-data.com/city/brooklyn-new-york.html](http://www.city-data.com/city/brooklyn-new-york.html), (12 January, 2011).

students having been previously far removed from “nature,” Marine Biology instructors at John Dewey played a much more directorial role in their students’ preservationist campaigns than Art Cooley and Dennis Puleston had in Bellport. As mentioned above, while students in Bellport had elected to engage in environmental activism on the side of, and in addition to, their regularly scheduled curricular exercises in Advanced Biology and the Marine Sciences, their urban counterparts were almost required to participate in such activities as not only registrants of Marine Biology but as students at John Dewey High School. Having willingly elected to attend Brooklyn’s first “experimental” school facility, teenaged attendees were exposed to a secondary education which routinely forced them to journey outside the confines of their classrooms for a more well-rounded experience based upon service learning and volunteerism.

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Opened in September of 1969, John Dewey was the New York City Board of Education’s response to the various youth rebellions of the mid to late 1960s. Conceived as a “dream” school by twelve New York City principals at a ten day administrator’s conference in Hershey, Pennsylvania roughly six years prior, Dewey was slated to be less like the typical 1960s high school and more like a college or university, at which students and faculty would both be granted academic and, over time, social and political autonomy. By the end of the decade, a period when high school and college students alike had begun to more openly question authority, demand change, and organize for social and political justice, New York City’s Board of Education recognized the need for something new, and more importantly, something different. A school founded on the principals and theories of educational philosopher John Dewey, namely a hands-on, autonomous, “democratic”, and student-centered experience, rather than a strictly lecture-based and regimented secondary education, seemed a miracle cure.<sup>14</sup> In the summer of

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<sup>14</sup> For more on Dewey’s educational philosophy, see John Dewey, *Democracy and Education: An Introduction to the Philosophy of Education* (New York: The Macmillan Company, 1916); John Dewey, *Experience and Education* (New York: Touchstone, 1938).

1969, Dewey's first class of admitted students committed themselves to a high school experience like no other in New York City.

Whereas the typical secondary school graded its students quarterly on a letter-graded scale, enrolled them for five subjects per term in a two semester academic year, and did so from a standardized list of basic subjects, Dewey's students were given literally hundreds of courses to choose from, within a school year divided into six seven-week cycles which included the summer. This meant that each student was afforded the opportunity to earn credit in at least thirty-five mini-courses every school year. Moreover, Dewey students were in attendance for eight hours each day rather than the standard six, and while teachers did grade their students, they employed a pass/fail scoring system in which students received an "M" for mastery, "MC" for conditional mastery, or an "R" for retention if a student failed to master his or her subject. Students were also given access to several subject-based resource centers and libraries, offered countless independent study options, and the opportunity to graduate in as few as two or as many as six years. This atypical secondary school experience provided students the opportunity to chart a more individual and autonomous path towards their own graduation.<sup>15</sup> While students in other high schools were demanding many of these same rights, John Dewey opened in 1969 guaranteeing an unprecedented level of student autonomy.

Similar to a college or university, students at John Dewey High School were able to focus their attention in the academic areas that interested them the most, including the various performing arts, foreign languages, literature, writing, the social sciences, and the natural sciences. One of the most important similarities, however, that John Dewey shared with post-secondary institutions was the student selection process. Whereas most New York City high schools served one specific neighborhood leaving most students with little choice in which public school they would attend, John Dewey accepted

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<sup>15</sup> Patricia Margaret Reilly, *The John Dewey High School* (Brooklyn, 1970), 2; See also: Sol Levine, "The John Dewey High School Adventure," *Phi Delta Kappan: Some Theory and Three Case Studies*, (October 1971), 108-109.

applications from youths all across Brooklyn. While most students were told which high school they would attend, John Dewey's students were given a choice. According to Saul Bruckner, the school's former Social Studies Department Chairman, such student autonomy, from the decision to apply to class selection and program of study, prevented student dissatisfaction in the new facility. More importantly, as Bruckner explained, "kids had to volunteer to get into that school...[which] right away meant a selective student body."<sup>16</sup> Although, selective not in who was able to apply, since all of Brooklyn's youth – white, black, male, female, rich, poor, average and above average academically - were afforded the opportunity, but selective in the sense of whom actually did apply. Indeed, prospective students were made fully aware of John Dewey's unique academic program long before they submitted their applications and were ultimately accepted to the new school.

Much like a college or university, Dewey quickly attracted an incredibly diverse student body, and unlike many urban and suburban high schools, opened with, what at the time would have been considered, a diverse faculty. This included nine African American teachers in a faculty of seventy-two.<sup>17</sup> Moreover, to be in accordance with the New York State Department of Education's policies on integrated schools, thirty percent of the student body was non-white on the first day, a percentage which would increase over time as the student-body grew in size. Indeed, by 1973, this percentage had already increased from thirty to thirty-five. Dewey was socio-economically diverse as well. Nevertheless, while the school served students from Brooklyn's richest to her poorest, the "predominant mode would [have to] be classified as lower-middle class."<sup>18</sup> With such a uniquely diverse group of students and faculty, who, on the whole, enjoyed a much higher level of academic and personal autonomy, it is no wonder that Dewey opened

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<sup>16</sup> Interview with Saul Bruckner by Neil P. Buffett, (28 September 2007); Interview with Brian Shmaefsky by Neil P. Buffett, (20 May, 2007).

<sup>17</sup> M.S. Handler, "Experimental High School is Opened in Brooklyn," *New York Times* (9 September 1969), 52.

<sup>18</sup> Wayne E. Williamson, "Assessment of Learning Environments in a Restructured Secondary School," (E.ED Thesis, Teacher's College, Columbia University, 1973), p. 12.

peacefully in September of 1969, as schools across New York, including Brooklyn's Franklin K. Lane High School, experienced racial, ethnic, and class conflict throughout same period.<sup>19</sup>

A diverse campus, however, was not the only advantage Brooklyn's newest high school offered the borough's youth. It also offered them a vast selection of unique courses and academic programs that were unavailable to students in the city's other school facilities. This included, among others, specified classes in art, such as art appreciation, sculpting, photography, fashion design and film making; business courses in accounting, data processing, bookkeeping and business law; literature courses on subjects from The Bible and Shakespeare to Mythology, Folklore, Science Fiction and Fantasy; Social Studies courses from African American History and Sociology to Nationalism and Colonialism, as well as American Foreign Policy; and, a slew of foreign language, mathematics, and natural lab science courses.<sup>20</sup> One of Dewey's most popular and unique programs, which intrigued and attracted hundreds of students and parents from across the borough, was Lou Siegel and Harold Silverstein's inventive and archetypical Marine Biology Curriculum. As one of the only schools in New York City with a Marine Science program, Dewey quickly became the Mecca for not only those students interested in a non-traditional high school experience, but those with a desire to study aquatic life. In the age of Jacques Cousteau, Rachel Carson, and Garrett Harding, the pair's new program, unbeknownst to them, would become the springboard for their students – and themselves – that would catapult them into the burgeoning environmental movement of the late 1960s and early 1970s.

### **The Rumpelstiltkins of Marine Biology**

Likened to Rumpelstiltskin by former student and now Marine Biologist, Dr. Merryl Kafka, Lou Siegel and Harold Silverstein have been credited with stringing

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<sup>19</sup> Harold Saltzman, *Race War in a High School: The Ten-Year Destruction of Franklin K. Lane High School* (New Rochelle: Arlington House, 1972).

<sup>20</sup> Reilly, *The John Dewey High School*.

“average” students “into gold” and, similar to Art Cooley and the “Cooley Kids” in Bellport, developed “their own little following of clique[y] kids.”<sup>21</sup> Unlike Cooley, however, who was able to cultivate a suburban-based marine science program throughout the 1960s, Siegel and Silverstein were, just like their first students, participants in the John Dewey High School “experiment.” Furthermore, their innovative curriculum, which consisted of in-class lessons, routine field trips, routine field work, and mandatory volunteer experience, was unique and untested for urban high schools prior to the 1969-1970 school year. Dewey, however, provided the perfect arena for such a program to not only be put to the test, but to flower into a state-sanctioned and officially recognized science program. As Siegel explained, New York State’s Board of Regents approved the school’s proposal to offer “Marine Biology as an alternative to Regents Biology” making John Dewey “the only school in the state [that] had that variance.” In the years that followed, word of Siegel and Silverstein’s techniques spread throughout the New York City School System, leading other science teachers to register for various in-service training workshops to hear them speak. Within just a few years, the number of city schools offering Marine Biology rose from just one to eight.<sup>22</sup>

Dewey’s Marine Biology Program, however, was only as unique as its two creators and their first few cohorts of students. While both men had taught high school in New York City prior to John Dewey’s opening, both had traveled upon differing, yet somewhat similar, trajectories. While Siegel had grown up on the Brooklyn Shore in Seagate and had always been interested in marine science, Silverstein had been much more of a traditional biologist and, as one former student surmised, more than likely had originally hoped to attend medical school.<sup>23</sup> Commenting on their different backgrounds, Siegel noted that while his elder colleague had taught Biology for over ten years and certainly knew “a lot about different kinds of organisms,” marine science was primarily

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<sup>21</sup> Interview with Meryll Kafka by Neil P. Buffett, (19 May 2007).

<sup>22</sup> Interview with Lou Siegel by Neil P. Buffett, (22 May, 2007).

<sup>23</sup> Interview with Jacqueline Webb by Neil P. Buffett, (31 May 2007).

his own interest. Having taken several graduate courses in Marine Science at Long Island University's C.W. Post Campus, Siegel, along with Silverstein, adapted and streamlined much of what he learned in these classes for his own curriculum at John Dewey. Unlike his seasoned colleague, however, by September of 1969, Siegel, who was just twenty-four years old, had not been teaching high school science for very long. Having only graduated with his Bachelors Degree in Zoology just two years prior, Siegel spent his first year as a teacher not in the laboratory or in the classroom, but on strike.<sup>24</sup>

Assigned to Brooklyn's infamous Ocean Hill-Brownsville experimental school district, Lou Siegel found himself planted squarely in the middle of what quickly became New York City's most polarizing political and Civil Rights episode of the late 1960s. In what has since become known as "*the strike that changed New York*," contestations and frustrations over race, class, educational equality, labor rights, and community control of schools, plagued New York City throughout the second half of the 1960s, ultimately erupting several times during the 1967-1968 and 1968-1969 academic school years.<sup>25</sup> As Civil Rights activists across the nation still celebrated national legislative victories such as the 1964 Civil Rights Act and the Voting Rights Act of the following year, they continued to vie for social justice in the communities and neighborhoods in which they lived. Educational equality remained a top priority for activists and parents across the nation, leading many, particularly in New York City, to demand community control of local schools. In the age of the burgeoning Black Power Movement which, by the end of the 1960s, had become increasingly popular as an alternative to the integrationist philosophies of Martin Luther King Jr. and the SCLC, black activists and community

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<sup>24</sup> Siegel interview, 2007.

<sup>25</sup> Jerald E. Podair, *The Strike that Changed New York: Blacks, Whites, and the Ocean Hill-Brownsville Crisis* (New Haven: Yale University, 2002); For more on the Ocean Hill-Brownsville experiment in community control and resulting UFT strikes, see Maurice R. Berube and Marilyn Gittell, eds., *Confrontation at Ocean Hill-Brownsville: The New York School Strikes of 1968* (New York: Frederick A. Praeger, 1969); Saltzman, Chapters 5 & 6; Diane Ravitch, *The Great School Wars: A History of the New York City Public Schools* (Baltimore: The Johns Hopkins University Press, 1974); Craig Steven Wilder, *A Covenant with Color: Race and Social Power in Brooklyn* (New York: Columbia, 2000), 223; Vincent J. Cannato, *The Ungovernable City: John Lindsay and His Struggle to Save New York* (New York: Basic Books, 2001); Wendell Pritchett, *Brownsville, Brooklyn: Blacks, Jews, and the Changing Face of the Ghetto* (Chicago: The University of Chicago Press, 2002), Chapter 8.

leaders recognized community control as the only way to ensure equal education for minority children. New York City's liberal Republican Mayor John V. Lindsay, agreed, and in the spring of 1967 moved to partially decentralize the power wielded by his city's Board of Education.

Ironically, however, Lindsay's decentralization plan seemed to promise much more local autonomy than the actual power transfer ultimately allowed. While local school districts, such as Ocean Hill-Brownsville were given *some* control over their schools, the plan in reality offered local districts only a limited authority, curtailing just *some* of the powers which had been originally enjoyed by city-wide Board of Education. According to historian Jerald Podair, community control "sought to make local school boards, which had heretofore been virtually irrelevant, into limited partners, but not co-managers, in the business of running the public school system." While local school boards were certainly granted more power over curriculum choice and more leeway when hiring minority faculty members, the central school board still "continued the central assignment of teaching and administrative personnel, and competitive, examination-based hiring procedures."<sup>26</sup> Such limitations, in effect, ran contrary to the black community's original purpose for seeking community control in the first place. With limited power over faculty recruitment and instructor assignment, local school boards were left without the ability to remove teachers deemed inefficient, indifferent, and in several instances, racist.

Nevertheless, Rhody McCoy, the local African American school district supervisor of Ocean Hill-Brownsville, believed that community control should and did, in fact, grant local administrators full authority over their schools, including the right to hire and fire staff, as well as transfer instructors out of their districts. Members of New York's United Federation of Teachers (UFT) disagreed. Over the course of the year and half that followed, beginning in the summer of 1967, McCoy and UFT leaders would

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<sup>26</sup> Podair, 79.

come to logger-heads over just how much control local school boards should ultimately wield. As Podair hypothesized, McCoy's "eventual goal was an all-black teaching staff in Ocean Hill-Brownsville" who would serve the district's primarily African American student population. Such a proposition, however, ran contrary to "the merit principle, and the idea of 'equality' itself" which the UFT's recruitment procedures had previously maintained. These different agendas and the ideologies in which both were grounded fomented an aura of distrust that was, seemingly overnight, understood by many as another manifestation of America's racial divide. Consequently, when members of the UFT went on strike for two weeks in September of 1967 during routine contract negotiations, which, according to Podair "did not arise out of events specific to Ocean Hill-Brownsville," they were ultimately "interpreted" as such by the community.<sup>27</sup>

Lou Siegel, who had been hired to teach in Ocean Hill-Brownsville months before the conflict began, disagreed with community control advocates *and* the teachers union, since tensions fueled by both placed him on a picket line instead of in a classroom on his first day of school that September. When the two week strike came to a close and classes finally began, Siegel's disappointment subsided for a short while, but enflamed once again as the school year ended the same way it had begun.<sup>28</sup> By the end of May, UFT members, Siegel included, were again on strike, this time in opposition to Rhody McCoy and the Ocean Hill-Brownsville Board of Education's decision to unilaterally transfer nineteen white, Jewish teachers out of the local district. According to the UFT and its members, McCoy and the community board of education possessed no such power. McCoy and his supporters disagreed.<sup>29</sup>

In Lou Siegel's mind, however, both sides were in the wrong. In fact, as he later explained, his only goal was to continue teaching his classes.

Being a good, liberal Jewish boy, I said, 'you know, both sides are wrong. I want to teach, [and] I'm going to go back in there and teach.' And one of my friends

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<sup>27</sup> Podair, 90-91; Pritchett, 231.

<sup>28</sup> Siegel interview; Email communication from Lou Siegel to Neil P. Buffett, (6 September, 2008).

<sup>29</sup> Podair, 100-102; Pritchett, 230-232.

and I went to the school, we were going to break the union...but the school was locked... so we decided that we would go in anyway. We went into the school...and we said, 'we're here to teach. Give us a class, and [we'll] teach. I don't want to hear anything about your politics...give me a class and I'll teach.' And they didn't know what to do with us. And what happened was that they would not allow us to teach the classes unless we swore an allegiance to the [Ocean Hill-Brownsville] school district...so we said, 'good-bye.'<sup>30</sup>

Immediately thereafter, Siegel transferred out of the district, and accepted a position at Brooklyn's Sinnott Junior High. Despite the move, the teacher's strike followed him to this new facility, as the city's entire UFT membership went on sympathy strike several times throughout the first half of the 1968-1969 school year, preventing roughly one million students from attending class.<sup>31</sup> Still, it was while teaching at this new school that Siegel first learned of the new experimental John Dewey High School, which was slated to open in the fall of 1969. Intrigued by the concept of an "experimental" school Siegel quickly applied for a position and was hired. Once on staff, he spent the summer at the school, along with all of Dewey's newly hired instructors, who were given the task of working on each of their specific course curriculums. Along with his new Science Department colleague and eventual friend, Harold Silverstein, Siegel began to craft his fledgling high school Marine Biology curriculum. By April of Dewey's opening year, Siegel and Silverstein's students would begin to translate this nascent and archetypical science curriculum into local environmental activism.<sup>32</sup>

### **Marine Biology, Earth Day, and Coastal Pollution**

When Eddie Wilensky applied to John Dewey High School in the summer of 1969, he had no idea that the new school's Marine Biology program would ultimately prove to be the foundation upon which he would build a life and a career devoted to the Marine Sciences. For that matter, before gaining admission to the new school, he hadn't even known that Marine Biology even existed or what it was. Having requested a fall registration in general Regents Biology, the young Wilensky was initially skeptical of the

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<sup>30</sup> Siegel interview.

<sup>31</sup> Gael Graham, *Young Activists: American High School Students in the Age of Protest* (De Kalb: Northern Illinois University, 2006) 70-71.

<sup>32</sup> Siegel interview; Email communication from Lou Siegel to Neil P. Buffett, 6 September, 2008.

“MAR BIO” designator which had been mistakenly listed on his fall program card when school opened that September. Rather than bring the mistake to the attention of school administrators, Wilensky instead opted to satiate his curiosity and go to the class just to see what, in fact, it was. Despite having never asked for Marine Biology, the young man quickly fell in love with the subject and, as he noted years later, he “never left it.” To be sure, he not only remained in the mysterious class, he also followed in its creators’ footsteps, studying to become a Marine Biologist and returning to John Dewey twenty years later to teach in the very same classroom.<sup>33</sup>

Still, while Wilensky’s path from unsuspecting high school student to college-educated Marine Biologist does illustrate the impact which Marine Biology had on students, several other alumni have echoed his stories about the program and its founders. For all of them, Lou Siegel and Harold Silverstein’s ability to bring the discipline alive, in the classroom as well as in the field, intensified their personal and collective interests in the subject. Keeping in the spirit of John Dewey, the two instructors’ curriculum mandated a fully hands-on experience which included not only in-class lecture and exercises, but routine field work and volunteer opportunities as well.<sup>34</sup> The school’s prime location, on the border of south Brooklyn and Coney Island, just blocks away from coastal wetlands and the New York City Aquarium, put students in close proximity to countless sites to experience Marine Biology first-hand. This hands-on component of the John Dewey experience, however, was not just limited to students registered for Marine Biology.

‘Four and one’ and ‘service-learning’ academic programs were some of the most unique opportunities afforded to students at John Dewey High School, designed to enrich their educational experience. While typical high schools focused primarily on in-class exercises, John Dewey incorporated an early form of ‘service-learning’ that not only

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<sup>33</sup> Interview with Ed Wilensky by Neil P. Buffett, 29 May 2007.

<sup>34</sup> Kafka interview; Josh Horowitz, “Marine Biology Students Explore Jamaica Bay,” *Bay News* (20, February, 1971).

illustrated the relevance of various curricula, but added another dimension to the learning-process designed to assist students in their understanding of academic material. In a period when students across the United States and in New York City in particular, questioned the relevance of abstract academic disciplines to their tangible and very real lives at the tail-end of the 1960s, such a program filled a necessary void in the learning process.<sup>35</sup> For example, John Dewey's Social Studies Department utilized 'service-learning' in its *American Dream* course to highlight the stark polarities of wealth and poverty, urban and rural through student exchange programs in which students temporarily traded lives with students from less affluent, more rural school districts.<sup>36</sup> Even more so than for Social Studies, 'service-learning' quickly became an integral component of Siegel and Silverstein's Marine Biology curriculum.

Located just down the street from the high school, the New York City Aquarium offered Marine Biology students a perfect opportunity to fully appreciate and employ the Marine Science education they received in the classroom. As former student Dr. Jackie Webb explained, "it was sort of a given that if [students] took the Marine Biology program, then [they'd] volunteer at the Aquarium." As a one-time volunteer herself, Webb recalled spending countless after-school and summer hours working as an "interpreter at the exhibits...stand[ing] by the 'touch-it tank' and explain[ing] to Joe Public what was going on."<sup>37</sup> While such volunteer experience certainly provided Webb and her classmates a venue in which to apply their in-class exercises to the real world, volunteering at the Aquarium was not the only hands-on opportunity that Siegel and Silverstein's students were offered.

Students were also led on a variety of field-research trips along Brooklyn's Atlantic coastline on which they collected samples, tested local waters, and observed land and marine-based ecosystems in tidal areas. In addition, students were also introduced to

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<sup>35</sup> Graham, 128-130.

<sup>36</sup> Interview with Jacqueline "Jackie" Webb by Neil P. Buffett, 31 May, 2007.

<sup>37</sup> Webb interview.

scuba diving and boating, as well as led on less frequent trips to such places as Southampton and Montauk Point on Long Island, and Woods Hole Oceanographic Institute in Massachusetts. Most importantly, Marine Biology students were provided with extensive training to comfortably use a variety of high-powered, technical, and professional laboratory equipment.<sup>38</sup> Former student, Dennis Bader explained the significance of these field research experiences as well as the training the students received.

When we went somewhere, we really showed up... and we went out to the beach with our field equipment...first of all, equipment-wise, if we wanted or needed a microscope to do studies...we would get our hands on a five thousand dollar precise full phase contrast microscope with a television camera and a TV remote monitor...We used and they bought the same thing that the Sewage Treatment Plant or the Water Quality Science Operator was using out in the field. So, we not only knew how to use a water conductivity meter, we knew how to use the WSI model B55 that you're using at the New York City Department of Environmental Protection or the state D.E.C. to do your monitoring. And we knew how to use your protocols according to the E.P.A to do the field titrations that needed to be done so that they would hold up in court in litigation.<sup>39</sup>

Indeed, the extensive training and hands-on experience that Siegel and Silverstein provided their students would adroitly lend itself to their students' eventual forays into environmental activism. For many of them, the first Earth Day in the spring of 1970 marked the beginning of their journey from inquisitive student to environmental advocate.

While millions of concerned Americans celebrated April 22, 1970 by attending lectures, participating in rallies, and volunteering in their local communities, nearly one hundred of Siegel and Silverstein's Marine Biology students met at Brooklyn's Plum Beach, just off the Belt Parkway, to clean it. Armed with rakes, wheel barrows, and sanitation trucks provided by the city's Parks Department, Dewey students spent the day picking up bottles, cans, drift wood, and a variety of other debris that had been scattered along the shoreline. In addition to removing trash, the students also refurbished

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<sup>38</sup> Interview with Dennis Bader by Neil P. Buffett, 20 September, 2007; Interview with David Goldenberg by Neil P. Buffett, 25 June, 2007; Webb interview; Siegel interview.

<sup>39</sup> Bader interview.

weathered park benches and picnic tables, applying fresh coats of paint to some and mending others that were in disrepair. As former student Dr. David Goldenberg explained years later, if any public area needed such a facelift, Plum Beach certainly did.

The reason why the first Earth Day occurred there was because...Plum Beach in Jamaica Bay was wildly polluted. It was a polluted open sewer in Jamaica Bay. It was dying. It was a cesspool, and the beach was neglected. It was strewn with garbage. I mean...all the beaches in New York City were just horrible. That whole environmental activism, you know, ecologically-aware student life stuff, was stimulated by the fact that the local eco-system was in such poor condition, and it was so neglected. It was so disgusting.<sup>40</sup>

For Goldenberg and his fellow classmates, Plum Beach offered too much for the observer, the naturalist, and for the general public to be left in disrepair.

This had not always been the case, however, as Sociologists William Kornblum and James Beshers have noted in their research on Brooklyn's Atlantic Coastline. In their article titled "White Ethnicity: Ecological Dimensions," both authors note that while "New York City's edge is an ecological zone, both in human and natural terms," "for much of the city's history [its] lowlands have been treated as urban wasteland, best suited for dumping garbage and construction fill." Moreover, such places, particularly in more modern times, routinely "became convenient terrain for commercial recreation, suburban housing tracts, public housing, harbor forts, and airports."<sup>41</sup> This latter commercial usage, made manifest with the 1948 opening of Idlewild Airport (later to be renamed after John F Kennedy in 1963) ultimately proved ecologically disastrous for nearby tidal wetlands and beachfronts along Brooklyn's Jamaica Bay. Situated just beyond the runways' end, the waters of Jamaica Bay had, for decades, been polluted by unregulated jet-fuel and oil flushing. As New York Times columnist Michael Harwood reported in 1971, combined with the ecological impact of runway extensions and underwater landfill projects, such

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<sup>40</sup> Goldenberg interview; Michael Harwood, "The 'Black Mayonnaise' at the Bottom of Jamaica Bay," *The New York Times* (7 February 1971), SM9.

<sup>41</sup> William Kornblum and James Beshers, "White Ethnicity: Ecological Dimensions," in John Hull Mollenkopf, ed., *Power, Culture and Place: Essays on New York City* (New York: Russell Sage Foundation, 1988), 201-202.

oil seepage and jet-fuel run-off created “a liquid quicksand” or “black mayonnaise” along the “difficult to find” bay bottom.<sup>42</sup>

Still, as the aforementioned condition of Plum Beach on the first Earth Day illustrates, pollution in Jamaica Bay was not only found along its bottom in man-made trenches and sludge fields. Indeed, as Harwood explained, “everywhere on the margins, even where man has not built and does not set his foot, there is trash – trash blown, trash washed up and trash dumped.” Exemplifying his point further, the writer noted “the marshes [in] bloom with flotsam and newspapers...[and] the meadows above the marsh [that had] collect[ed] abandoned cars, tires, beer cans, white plastic bottles, broken glass, piles of lumber peeling paint and sprouting rusty spikes – right to the edges of homes and shopping centers and gas stations.” At the same time, parts of the shoreline had also become home to not only “herds of two-family homes and monotonous brick apartment buildings,” but also to six sewage treatment plants which together “dump[ed] more than a quarter million gallons of partially treated waste [into the water] everyday.”<sup>43</sup> To be sure, all forms of such waste had reached the shores of Plum Beach, as well as several others, by April 22, 1970, and had certainly inspired the beach clean-up undertaken by students from John Dewey High School.

Members of the school’s Marine Biology Club, however, recognized that while their Earth Day “clean-in” had been fruitful, there was no way to guarantee that Plum Beach would remain clean. Hoping to embarrass those who would otherwise disrespect the area, the students drafted a sign and posted it at the entrance for all to see. Signed by Larry Cohen, a student volunteer, the posted message urged visitors to “wipe [their] feet before entering,” reminding them that “no littering, polluting, or desecrating [was] allowed.” In rather bleak, yet poignant terms, Cohen’s note reminded all that such acts would be “punishable by extinction under [the] laws of nature and ecology,” and before

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<sup>42</sup> Michael Harwood, “The ‘Black Mayonnaise’ at the Bottom of Jamaica Bay,” *New York Times* (7 February 1971), SM9.

<sup>43</sup> Harwood, *The New York Times*; See also, David Bird, “Cesspool or ‘Jewel’? City Studies the Reclamation of Jamaica Bay,” *New York Times* (16 September, 1969), 49.

they littered asked all to think of themselves, their “children, humanity, and our Earth.”<sup>44</sup> Impressive as it was, the students’ Plum Beach effort ultimately proved to be only the beginning of what would become a five year foray into local environmental activism for the preservation of their borough’s endangered Atlantic Shoreline.

In the early phases of that activism, however, the students’ projects remained relatively small in scale, and were more often than not only extensions of course-related assignments and exercises conducted in the field. The first of these was publicized by New York’s *Daily News* in May of 1971, when John Dewey Marine Biology students discovered high levels of coli form bacteria in Brooklyn’s coastal waterways. The students, whose survey included the waters off of and near Rockaway Beach, “Manhattan Beach, [the] Verrazano Bridge, [the] Bay Parkway, Sheepshead Bay, Dead Horse Bay, [the] Mill Basin Bridge, East Mill Basin, Paerdegat Basin, Fresh Creek, and [the] Gerritsen Beach Bridge,” noted that Rockaway proved to be the only site that did not “exceed the safe maximum levels” mandated by the New York State’s Department of Health. Moreover, just a few months prior, the students had also set out to ascertain the level of tidal current flow in Jamaica Bay. Hoping to learn whether organic pollutants could be washed out to sea or remain in local waters, student released “50 drift bottles, each containing a postcard, in the waters around Brooklyn.” With more than thirty postcards returned by area residents, students and instructors alike concluded that there was, in fact, ““little current flow from Jamaica Bay to the ocean...[and] that the dumping of organic wastes into the bay [could ultimately] destroy it.”<sup>45</sup> Unlike the Carmans River Corridor in Bellport, the waters off the coast of Brooklyn, and the ecosystems therein, had become thoroughly endangered by man-made pollutants by the late 1960s and early 1970s.

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<sup>44</sup> John Horowitz, “H.S. Students Clean Beach for ‘Earth Day’ Campaign,” *Bay News* (May, 1970); Joseph Lelyveld, “Mood is Joyful as City Gives its Support,” *New York Times*, (23 April, 1970), 1, 30; Plum Beach Photograph taken by Lou Siegel from the private collection of Lou Siegel.

<sup>45</sup> “Water Study Shows High Bacteria Count,” *Daily News* (29 May, 1971); Marine Biology (and for Credit) Brings out the Best in Students,” *New York Times* (6 June, 1971), BQ105.

Organic and inorganic pollutants would not be the only threat to the Brooklyn coastline, however. To be sure, just as students in Bellport had battled to preserve the natural wonders of the Carmans River shoreline from residential, commercial and industrial development, so too would members of John Dewey's Marine Biology Club. In the five years which followed the nation's first Earth Day, these latter students would rapidly evolve into quasi-environmentalists bent on not only limiting the spread of local pollution, but also preventing the destruction of tidal wetlands all along the Brooklyn shoreline. Unlike their counterparts in Bellport, whose landscape of activism was confined to a very small and much more closely-knit suburban area, students at John Dewey would spend the first half of the 1970s struggling to defend several miles of urban coastline. The sheer size and scope of the latter students' preservationist campaigns uniquely set them apart from their SEQ contemporaries on Long Island, despite the similar nature of much of their environmental pursuits.

### **Coney Island, Plum Beach, and Battling the Army Corps of Engineers**

Unlike in Bellport, where membership in Students for Environmental Quality remained an extra-curricular activity for students to elect, membership in what would become John Dewey's Marine Biology Club was, for all intents and purposes, a foregone conclusion for Siegel and Silverstein's students. While Art Cooley's Marine Biology program may have opened the door for his students to organize SEQ, his counterparts at Dewey had devised a curriculum that, in many ways, required that students participate in the budding Environmental Movement. However, similar to SEQ, John Dewey's Marine Biology Club was "primarily white" in racial composition, even though both schools' non-white population percentages rested at roughly twenty-five and thirty percent, respectively. While African American and Hispanic students did occasionally enroll in

Siegel and Silverstein's program, the action-oriented Marine Biology program at John Dewey remained less racially integrated than the high school on the whole.<sup>46</sup>

Siegel and Silverstein explained the merits of their "action" based science curriculum in the October 1975 edition of *The American Biology Teacher*.

Our young New Yorkers first encounter marine biology in the waters off Coney Island, where they measure the height and amplitude of waves...The second and third weeks of field work are devoted to the study of another outdoor area, Plum Beach, which offers a lagoon, marshland, and barrier beach. Here the students study water transport in a stream, measuring density and evaporation. Up to this point we have introduced marine biology through physical measurement: math tables, weighing techniques, density and temperature determinations. We have involved our students in *action* biology. [Emphasis original]

Most importantly, Siegel and Silverstein's curriculum allowed their students to "simulate what the senior scientist does in his laboratory: utilize those tools of science and mathematics necessary for undertaking a specific biological investigation."<sup>47</sup> It is through this type of field-specific 'biological investigation' that Dewey's Marine Biology students were able to, over time, foment a personal relationship and identify with many of Brooklyn's coastal wetlands, marshlands, and beaches. Such relationships and personal experiences ultimately inspired Siegel, Silverstein, and their students' to employ in-class and field-related Marine Biology studies in defense of the city's shoreline.

Their first opportunity to do so presented itself in the fall of 1971, when Lou Siegel learned of the U.S. Army Corps of Engineers' proposed Coney Island beach erosion control and flood prevention project. Hoping to safeguard the peninsula from Hurricane flood-waters and beachfront erosion, the Army Corps of Engineers had proposed several defensive measures, the most extreme of which included the construction of a fifteen foot concrete seawall that would encircle almost the entire island. Designed to prevent floodwaters from compromising the island's integrity, the proposed seawall was to stand between Coney Island's various beachfronts and her local

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<sup>46</sup> Siegel interview; Shmaefsky interview; Kafka interview; Goldenberg interview; Interview with Lisa Bresloff by Neil P. Buffett, (30 May, 2007); Interview with Erik Cohen by Neil P. Buffett, (2 June, 2007); Wilensky interview.

<sup>47</sup> Harold Silverstein and Lou Siegel, "45 Minutes from Broadway: An Action Approach to Marine Biology," *The American Biology Teacher* (October, 1975) 37:7, 422-425.

residents. As the *New York Times* explained, however, “the seawall would have openings for public access, but they could be closed in case of flood tides.”<sup>48</sup> Siegel and Silverstein as well as their Marine Biology students, were troubled by the prospects, especially since many of them had visited and studied Coney Island’s beaches throughout their time at John Dewey High School.<sup>49</sup>

In a 1975 interview and publication, Harold Silverstein reflected on the project, noting that the proposed wall “would be huge. It would be a hulking deterrent against the Ocean.” That being said, however, Silverstein also noted that New York City had only experienced four hurricanes since the late eighteenth century, and thus massive seawall around Coney Island was unjustifiable and unnecessary. Hoping to prevent its construction, Silverstein and his students set out to study the area and produce an “ecological report on the projects” to publicize “what would happen ecologically in building this thing.”<sup>50</sup> Throughout the fall of 1971, John Dewey’s Marine Biology Club and their advisors analyzed the Army Corps’ position, conducted their own examination of Coney Island’s beachfront areas, and drafted their own, albeit unofficial, Environmental Impact Statement. On March 21, 1972, Siegel and Silverstein, accompanied by a small group of students, presented their findings to Army Corps representatives as a public hearing held at the New York City Aquarium, which was attended by roughly 250 local residents and community leaders.<sup>51</sup> Present, but unable to speak or to be officially recognized in the Army Corp’s meeting minutes due to their

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<sup>48</sup> Kenneth P. Nolan, *Proposed Seawall Along Coney Island Kicks Up Storm* (16 April, 1972), A1.

<sup>49</sup> Siegel interview.

<sup>50</sup> Harold Silverstein, quoted in James Robertson and John Lewallen, eds., *The Grassroots Primer* (San Francisco: Sierra Club, 1975), 55.

<sup>51</sup> Siegel interview; Interview with Harold Silverstein by Neil P. Buffett, (6 May, 2007); Robertson and Lewallen, 55; Bader interview; Judith Gillespie and Stuart Lazarus, eds., *American Government: Comparing Political Experiences* (Englewood Cliffs: Prentice-Hall, 1979), 130; See also: Department of the Army, New York District Corps of Engineers, “Announcement of Public Meeting on the Cooperative Beach Erosion Control and Interim Hurricane Study for the Atlantic Coast of New York City from Rockaway Inlet to Norton Point, (3 March 1972), Public Notice No. 6984; U.S. Army Corps of Engineers, *Atlantic Coast of New York City from Rockaway Inlet to Norton Point: Communication of the Secretary of the Army* (Washington, D.C.: Dept. of Defense, Department of the Army Corps of Engineers, 1979), Appendix L, Digest of Public Hearings, 356-368.

young age, John Dewey students listened as their mentors presented the group's findings.<sup>52</sup>

In *A Critical Analysis of the Report Submitted by the Army Corps of Engineers*, Siegel, Silverstein and their Advanced Marine Biology students objected to the Corps' proposed seawall and groin construction, maintaining "that further experimentation is obligatory...to more accurately assess the effects of this phase of the project prior to any consideration of authorization of the plan." Citing Plum Beach as an example, their report explained what would be lost if Coney Island and southern Brooklyn's marine and beach-front eco-systems were disrupted by the Corp's defensive remedy.

Plum Beach represents a unique ecological park. Here we find the last remaining natural dune and lagoon communities to be found in Brooklyn and one of the very few to be found within the confines of the city limits. In addition, the area also encompasses a large mud flat and marsh community. It is truly a dream come true for both teachers and students attempting to study ecology within the city. Within the confines of the area one finds a large variety of common invertebrates of the New York seashore.

To exemplify this point, the authors listed the variety of species common to the Coney Island and Brooklyn shoreline, which included diverse populations of Sponges, Jellyfish, Comb Jellies, Segmented Worms, Univalve Mollusks, Bivalve Mollusks, Sea Squirts, Sea Stars, and joint legged animals such as Crab and Lobster. According to John Dewey's Marine Biology contingent, "it would be criminal for these organisms to be destroyed when further experimentation in flood control is suggested."<sup>53</sup>

In addition to laying out the ecological impact of the Corp's proposal, Siegel, Silverstein and their students also explained how a seawall and supplemental groin structures could actually *contribute* to, rather than limit, Coney Island's beach erosion problem. To this end, they cited the work of Wesley Marx, particularly his 1967 book, *The Frail Ocean*.

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<sup>52</sup> Bader interview; Siegel interview.

<sup>53</sup> Lou Siegel, Harold Silverstein and students in Advanced Marine Biology, John Dewey High School, *A Critical Analysis of the Report Submitted by the Army Corps of Engineers*, "Proposed Beach Erosion Control and Hurricane Protection Improvement – Atlantic Coast of New York City – From Rockaway Inlet to Norton Point (21 March, 1972), 3-4, from the private collection of Lou Siegel.

‘These fortifications [rock groins, steel-sheet pilings, concrete sea-walls, rubble revetments, timber bulkheads] although pictorially impressive, qualify as little more than holding devices. The groins which extend out from the beach to intercept and hoard the stingy littoral drift for upstream beaches, only compound erosion problems downstream. Downstream beach owners react by erecting their own groins to compete for what little sand is left...Communities that erect expensive seawalls to protect upland property only jeopardize the natural feature that attracted property development in the first place. The seawalls create a severe surf backwash that accelerates beach erosion.’<sup>54</sup>

Such erosion, the students concluded, would “continue despite the proposed plan of the Corps” and would, in some areas, “actually speed up the process.”<sup>55</sup> For John Dewey’s Marine Biology contingent, the possible benefits of the Army Corps of Engineer’s proposal were simply not worth the negative ecological costs, especially when beach erosion would more than likely continue, regardless.

Various local politicians and scores of Coney Island residents agreed, many of whom, according to the *New York Times*, “likened the seawall to the Berlin Wall.” While John Dewey’s Marine Biology Club opposed the plan on ecological grounds, local residents and concerned property owners opposed it more for its aesthetic impact. For many local residents who attended the March 21 public forum on the proposal, a seawall “would prevent accessibility” to the beach and “obstruct their view of the ocean.” As the Marine Biology Club’s use of Wesley Marx’s research relayed, such a measure would indeed “jeopardize the natural feature that attracted property development in the first place.”<sup>56</sup> The *New York Times* publication of Cartoonist Norm Doherty’s hyperbolic sketch of a possible Coney Island seawall, surely did not quell such concerns. Published in mid-April, Doherty’s cartoon depicted a roughly thirty foot concrete wall, separating beach-goers and sun-bathers from the waterfront, which appeared to only be accessible

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<sup>54</sup> Wesley Marx, *The Frail Ocean* (San Francisco: Sierra Club, 1967, 31, quoted in *A Critical Analysis of the Report Submitted by the Army Corps of Engineers, “Proposed Beach Erosion Control and Hurricane Protection Improvement – Atlantic Coast of New York City – From Rockaway Inlet to Norton Point, 7.*

<sup>55</sup> *A Critical Analysis of the Report Submitted by the Army Corps of Engineers, “Proposed Beach Erosion Control and Hurricane Protection Improvement – Atlantic Coast of New York City – From Rockaway Inlet to Norton Point, 7-8.*

<sup>56</sup> Marx, 31, quoted in *A Critical Analysis of the Report Submitted by the Army Corps of Engineers, “Proposed Beach Erosion Control and Hurricane Protection Improvement – Atlantic Coast of New York City – From Rockaway Inlet to Norton Point, 7; U.S. Army Corps of Engineers, Atlantic Coast of New York City from Rockaway Inlet to Norton Point: Communication of the Secretary of the Army, 70-71, 360-368.*

by one roughly ten-foot by five foot doorway. If a picture can, in fact, paint a thousand words, Doherty's illustration alone could have forced even the seawall's advocates to cringe.<sup>57</sup> Regardless, the Army Corps of Engineers continued to support its project, summarily publishing its Preliminary Draft Environmental Impact Statement on November 28, 1972.

In return, Marine Biology Club members, once again, submitted an unofficial environmental impact statement, hoping to quell the Army Corps' proposed floodwall and groin construction components of the beach erosion project. Again, John Dewey's Marine Biology Club articulated the probable ecological devastation that groin construction and/or a permanent seawall structure would elicit. In their estimation, the only viable and ecological-friendly alternative was to implement a natural beach replenishment program that would rely upon a nearby "feeder beach." In their report they explained the proposal in detail.

All nourishment sand would be placed upon this one area by barge or pumping. Sand from this feeder beach would then be transported by the littoral current and distributed to the beaches west. In this way, the sand would be added to the beaches in a more natural and non-destructive manner whereby the marine organisms would not be adversely affected. Thus the same effect to restore the beaches could be accomplished at a reduced cost and without the wholesale disruption of the food chain upon which the commercial and sport fisheries depend.

Ultimately, the students concluded, any unnatural methods of beach erosion control and/or hurricane protection would be detrimental to local marine and beachfront ecosystems. To them, collaboration with nature's very own shoreline replenishment processes seemed to be the best possible solution at hand.<sup>58</sup>

While the Army Corps of Engineers disagreed, the department did eventually withdraw its support for the construction of a floodwall mechanism, citing the negative

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<sup>57</sup> Kenneth P. Nolan, *Proposed Seawall Along Coney Island Kicks Up Storm* (16 April, 1972), A1.

<sup>58</sup> Marine Biology Club of John Dewey High School, "A Critical Analysis of the 'Preliminary Draft Environmental Impact Statement Rockaway Inlet to Norton Point, New York Beach Erosion Project – Prepared by the U.S. Army Engineer District – New York, 28 November 1972' – Promise and Performance," (22 March, 1973), 6-8, found in the personal collection of Lou Siegel.

community response which had declared the proposal “unacceptable”<sup>59</sup> In the Army Corps’ August 1973 Revised Draft Environmental Impact Statement, the floodwall measure had been removed from the beach replenishment and protection project.<sup>60</sup> Nevertheless, throughout the two decades which followed, various groin construction and non-littoral sand replenishment programs for Coney Island were touted by the department, the last of which would take until 1995 to be completed.<sup>61</sup> Despite their inability, however, to force the Army Corps of Engineers to rely upon nature’s own erosion abatement processes, John Dewey’s Marine Biology Club members, their faculty advisors, and the countless Coney Island residents who had shared their dismay, could claim at least a partial victory on behalf of New York City’s Atlantic coastline areas.

### **Spring Creek, Laurelton, and Pollution in Jamaica Bay**

Reflecting on his years as a member of John Dewey’s Marine Biology Club, Dennis Bader commented on the level of student excitement and overall interest in the group’s local environmental protection projects. He noted that while he and his colleagues were legally too young to testify at the various hearings they attended with Siegel and Silverstein, the students “did all of [their] scientific lobbying during the intermissions with the participants.” As Bader explained, anywhere from twenty to thirty Marine Biology students accompanied their instructors to scheduled public hearings, at which they sat quietly, listened, and took notes “so that during the break [they] could zing whomever [they] were talking to with the point [they] needed and would have scientific data to back it up.”<sup>62</sup> While Bader and his colleagues had employed this system throughout 1972 and 1973, specifically in their opposition to the Army Corps of

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<sup>59</sup> U.S. Army Corps of Engineers, “Atlantic Coast of New York City From Rockaway Inlet to Norton Point, Report of the Chief of Engineers, Department of the Army” (18 August, 1976), 94, found in U.S. Army Corps of Engineers, *Atlantic Coast of New York City from Rockaway Inlet to Norton Point: Communication of the Secretary of the Army*.

<sup>60</sup> U.S. Army Corps of Engineers, “Revised Draft Environmental Impact Statement, Rockaway Inlet to Norton Point, New York (Coney Island Area) Beach Erosion Control Project,” (August, 1973).

<sup>61</sup> Rockaway Inlet to Norton Point (Coney Island Area), NY, Completed Work <http://www.nan.usace.army.mil/business/prjlinks/coastal/norton/index.htm> (1 November, 2008); See also, U.S. Army Corps of Engineers, “Final Supplemental Environmental Impact Statement: Atlantic Coast of New York City, Rockaway Inlet to Norton Point (Coney Island Area) Shore Protection Project, New York City, New York, (March 1992).

<sup>62</sup> Bader interview.

Engineers, the students perfected the process throughout the 1973-1974 academic school year. Indeed, while John Dewey's Marine Biology students had been environmentally active since April 1970, 1974 became their busiest and most fruitful year as they submitted environmental impact assessments in four separate cases, three of which relied upon New York State's Tidal Wetlands Act.

Passed by the legislature in 1973 to preserve the state's remaining wetland areas, the Tidal Wetlands Act recognized the significance of marshland ecosystems, deeming them "one of the most vital and productive areas of our natural world." Defined "as areas that border or lie beneath tidal waters," tidal wetlands offer "multiple values," eight of which were highlighted in the legislation. Not only were such areas listed as essential for marine food production, flood and storm control, sedimentation, and natural pollution treatment, they were also noted as key places for recreation, education, research, open space, aesthetic appreciation, and as wildlife habitats. By 1973, however, it was clear to legislators that wetland survival was uncertain without state protection, as "vast acreage" had "already been irreparably lost or despoiled as a result of unregulated dredging, dumping, filling, excavating, polluting, and like activities." Hoping to stem the tide, legislators in Albany enacted an immediate cessation of all development projects in and around wetland areas, while granting the state's Department of Environmental Conservation (DEC) enough time to survey and chart them.<sup>63</sup> The new law, slated to take effect on September 1, would prove invaluable to Siegel, Silverstein and the Marine Biology Club's 1974 campaign to preserve Brooklyn's coastal wetlands, beginning with the Queens section of Spring Creek.

Located roughly ten miles from John Dewey High School, Spring Creek, consisted of undeveloped marshland along southeastern border of Brooklyn and Queens, and quickly became a local battleground over wetland preservation when the city's

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<sup>63</sup> Roy R. Silver, "The State's Tidal Wetlands Act Goes Into Effect," *The New York Times* (2 September, 1973), 34; *McKinney's Consolidated Laws of New York, Annotated, Book 17.5, Environmental Conservation Law* (New York: Thomson-West, 2007), 5-6.

Environmental Protection Agency proposed to fill it with solid waste incinerator residue. Having garnered significant notoriety for their work on the Coney Island Seawall project, Siegel and Silverstein's Marine Biology students were sought after by local residents hoping to defeat the EPA's proposal. "Hot with intellectual ego," Silverstein explained, he and his Advanced Marine Biology students conducted "a salinity study of the area, [in which they] looked for some chlorides, identified some organisms, and that was it." Along with their two instructors, the students presented their findings to the EPA in January of 1974.<sup>64</sup>

In their report, Marine Biology Club members chided the Commissioner of Environmental Conservation, stating that the EPA's proposal indicated "that that the New York City EPA has not yet steeped itself in the biology of the wetlands." Grounding their argument in the stated purposes of the state's newly enacted Tidal Wetlands legislation, the young activists explained the significance of the "shallow marshes which surround estuarine regions such as the Spring Creek marshes."

The most significant segment in the estuarine environment is the marshland fringe. Marine life dependent on these marshlands may be divided into several classes. Many important species, such as clams, oysters and certain fin fish are wholly indigenous to the estuaries and their marshes. Other species have more subtle dependence on the wetlands. Various species of fish spawn in the open ocean but must return to shallow wetland 'nurseries' in the early stages of their development. Other fish swim through estuarine areas to spawn and many species of mammals, birds, and other forms of wildlife are supported by the marshland environment.

In the students' estimation, if approved, the proposed landfill project would devastate the fragile wetland eco-system that had developed in and around Spring Creek. The youths noted, however, that the proposed project would also impact the lives of local residents as well. Indeed, not only would a prime educational laboratory be lost, but "fishermen [would] pay for wetlands development in reduced catches; consumers [would] pay higher prices for sea food; sportsman and nature enthusiasts [would] pay in lost recreational opportunities; and neighboring landowners [would] pay in increased flood damage."

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<sup>64</sup> Silverstein quoted in Robertson and Lewallen, eds., 56; See also Gillespie and Lazarus, eds., 130-132; Siegel interview.

Truly, the social, economic and environmental costs of such a project would not be worth what the EPA's proposal promised in return.<sup>65</sup>

Ironically, twelve lawyers and biologists hired by the EPA agreed, citing that the students' assessment of the EPA's proposed project was wholly accurate. Having thoroughly examined the students' report, the EPA's hired consultants were unable to dispute their findings. Reflecting on the proceedings years later, Silverstein recalled how, before he or any of his students could testify, EPA officials declared "'The Spring Creek areas will not be touched. We sent out our biologists and they agree with you.'" Despite the victory, however, Silverstein recognized that the report he and his students submitted had been based on a "very low viability study" which he himself "could have shot...full of holes."<sup>66</sup> Therefore, whether the students' report alone led the EPA to abandon its project remains unclear, especially since the proposed landfill, if approved, would have been in violation of the state's Tidal Wetlands Act. Regardless, John Dewey's Marine Biology Club members were able to once again claim victory on behalf of the local environment. By the end of February they had claimed two more, beginning with Laurelton, located in Queens, roughly seventeen miles from John Dewey High School.

Much like at Spring Creek, doubts of marshland preservation in Laurelton began circulating when New York City's EPA publicized a plan to completely fill the areas' marshland that, according to Silverstein, had already been "partially filled." John Dewey's Marine Biology students, however, were fully aware of the ecological consequences of such a project, having spent considerable time studying the city's wetland and marshland areas. Hoping to halt another questionable EPA project, the students researched the area, drafted their findings, and submitted their opposition in writing. In the report, almost cynically, they lamented the popular assessment that "wetlands...are considered by some to be zones of specialized successions: natural

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<sup>65</sup> Marine Biology Club of John Dewey High School and Faculty Advisors, *Opposition to Petition of NY City EPA (Petition No. Tw-20,000-0068, To fill in with solid waste incinerator residue the area of Queens section of Spring Creek Development)* (23 January, 1974), 1-4, from the private collection of Lou Siegel.

<sup>66</sup> Silverstein quoted in Robertson and Lewallen, eds., 56-57; See also Gillespie and Lazarus, eds., 130-132.

marsh, landfill, spoil areas, and finally, the climax community, a housing development.” Indeed, similar to historian Hal Rothman, who, in 1998, would argue that most Americans are only ““green”” when it is convenient, (or “inexpensive-economically, socially, and culturally,”) John Dewey’s Marine Biology Club had begun to realize society’s willingness to sacrifice its local environmental treasures, especially when the speculative residential, commercial, or industrial rewards promised abundance.<sup>67</sup> Such was the case in Laurelton.

Nevertheless, EPA administrators were also aware of the marshland’s ecological significance, prompting the agency to designate a portion of the site “prime marshland” that “would remain in its natural state.” This area, designated by the EPA as 1B, was home to a variety of fish, as well as “many species of mammals, birds and other forms of wildlife.” While the students applauded the agency’s decision, they did not waiver in their opposition of the overall proposal, citing that section 1A of the EPA’s proposed site plan would destroy several species of local plants which had been protected by the state’s Tidal Wetlands legislation – namely, *Spartina alterniflora*, *Distichlis*, *Baccharis* and *Samphire*. Recognizing the presence of such endangered plants as an essential bargaining chip, the students recommended that the EPA scale down its project, preserve the endangered plant life, and fill in the remaining area for development. While the students had originally hoped to preserve the sites’ entire marshland area, they, along with Siegel and Silverstein, shared a “willingness to compromise.” EPA administrators felt likewise, offering to fill only three acres with the promise of preservation for the remaining twelve. The students happily agreed, having successfully saved yet another marshland ecosystem.<sup>68</sup>

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<sup>67</sup> Marine Biology Classes of John Dewey High School and Faculty Advisers, *Opposition to Petition of NY City EPA to Fill Area Bounded by Springfield Boulevard to the West, 149<sup>th</sup> Avenue to the North; A Continuation of 232<sup>nd</sup> Street to the East and Proposed Rockaway Boulevard to the South* (Petition No. TW-24, 107-0068), (3 February, 1974), 1, from the private collection of Lou Siegel; Robertson and LeWallen, 57; Hal K. Rothman, *The Greening of a Nation: Environmentalism in the United States Since 1945* (Fort Worth: Harcourt Brace, 1998), 5.

<sup>68</sup> Marine Biology Classes of John Dewey High School and Faculty Advisers, *Opposition to Petition of NY City EPA to Fill Area Bounded by Springfield Boulevard to the West, 149<sup>th</sup> Avenue to the North; A*

Just weeks later, those same negotiating skills led to a similar turn of events when John Dewey's Marine Biology Club stood in opposition to twenty-four of the world's largest oil companies, including Exxon, Shell, B.P, and a host of others. Although, this time tidal wetlands and beachfront ecosystems were not the students' central concern. While their first three projects had dealt exclusively with such areas, the students' February 24<sup>th</sup> petition expanded the reach of their activism to include New York's open water areas, particularly in Jamaica Bay. Having learned of Exxon and its fellow petitioner's proposal to release increased levels of oil refuse into the waterway, the students surveyed the area and submitted their findings to the EPA. Once again, their work skillfully illustrated the environmental degradation that oil refuse would elicit. Roughly three years after journalist Michael Harwood published his 1971 *New York Times* article calling attention to the "'black mayonnaise' at the Bottom of Jamaica Bay," Siegel, Silverstein, and their students urged the EPA to deny "Big Oil" the right to enhance its destructive potential.<sup>69</sup>

Interestingly enough, however, John Dewey's Marine Biology students did find several key allies in the very companies they sought to hinder. In the opening paragraph of their report, the students highlighted their experience with Sun Oil, whose executives "without any hesitation" shared with them the company's laboratory results pertaining to oil deposits in Jamaica Bay. At the same time, the students cited one Sun Oil representative who likened the spillage of oil in the bay to "'dumping garbage on the sidewalk.'" In the students' estimation, his "attitude [was] a positive one [that could] only be commended." Representatives from other companies, "with the exception of one or two," were just as accommodating and just as positive when working with the young activists, "although not as fully cooperative as the Sun Oil Company."<sup>70</sup>

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*Continuation of 232<sup>nd</sup> Street to the East and Proposed Rockaway Boulevard to the South* (Petition No. TW-24, 107-0068), 3-4; Robertson and Lewallen, 57.

<sup>69</sup> Michael Harwood, "The 'Black Mayonnaise'" at the Bottom of Jamaica Bay," *New York Times* (7 February, 1971), SM9.

<sup>70</sup> John Dewey Marine Biology Club, Harold Silverstein, and Lou Siegel, *Opposition to NPDES 74-287, Petitioners: Exxon et al.* (24 February, 1974), 1, from the private collection of Lou Siegel.

Despite the cooperative nature of their interactions, however, both oil company representatives and John Dewey's Marine Biology Club *did* envision two competing futures for Jamaica Bay. While Siegel and Silverstein's students hoped to limit oil seepage and preserve marine life, representatives of the various oil companies *had* petitioned the EPA to increase the "maximum concentration of oil which was to be allowed in the waterway."<sup>71</sup> According to the students' February 24<sup>th</sup> opposition report, such a decision, and the resulting pollution, would devastate submarine ecosystems, leading to the "direct kill" of various organisms by means of poisoning, asphyxiation, and an imbalanced food chain. The students emphasized the latter of these in further detail.

Petroleum hydrocarbons are persistent poisons. They enter the marine food chain; they are stabilized in the lipids of marine organisms and they are transferred from prey to predator. Many biological processes which are important or the survival of marine organisms and which occupy key positions in their life processes are mediated by extremely low concentrations of chemical messengers in sea water. Marine predators are attracted to their prey by organic compounds at concentrations below one part per billion. Such attraction – repulsion plays a role in the location of food, escape from predators, homing of many commercial[ly] important species of fish, selection of habitats in sex attraction.

The students concluded that such processes would be hindered by water pollution, even when it was "seemingly innocuous... [and] at low concentrations" which could "have an irreversible effect on a marine species if not on various organisms in a specific marine food chain." As occasional members of this food chain, humans, the students explained, were also at risk, especially when commercial seafood products were harvested from fisheries exposed to oil's carcinogenic compounds. To limit the likelihood of such an occurrence, Club members urged EPA administrators to sustain oil pollution levels at 1ppm (one part per million), rather than raising them to the 40ppm requested by oil representatives.<sup>72</sup>

In light of the students' research, EPA administrators once again compromised. Rather than raising allowable refuse levels to 40ppm, the agency limited them to just

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<sup>71</sup> Robertson and Lewallen, 58.

<sup>72</sup> John Dewey Marine Biology Club, Harold Silverstein, and Lou Siegel, *Opposition to NPDES 74-287, Petitioners: Exxon et al.* (24 February, 1974), 1, from the private collection of Lou Siegel.

10.<sup>73</sup> For the second time, John Dewey students had persuaded the EPA to preserve and protect New York's local marine environments. As agency administrators reported to the *New York Times*, the strength of the students' analyses had fueled both of their decisions. In fact, EPA representatives explained that they were "much more receptive to [Marine Biology Club] presentations than to the emotional charges that [were] made by some environmentalists." More importantly, the EPA often took "such reports seriously because they [could] be a two-edge sword." Not only could they "give a regulatory agency ammunition in fighting pollution" they could also "be used to show that an agency is not doing its job if it does not act when it is given specific and detailed information."<sup>74</sup> Clearly, the students' scientific approach to each case they accepted had accomplished both. Despite their youth, Siegel and Silverstein's students had, by 1974, become full-fledged environmental activists, and only enhanced their skills as such when they took on the Department of Environmental Conservation in their fourth and final major ecological study of that school year.

### **Halting Development at Fresh Creek, Gravesend, and Beyond**

On June 26, 1974, members of John Dewey's Marine Biology Club traveled the ten miles across Brooklyn to Canarsie High School to, once again, submit an opposition brief in defense of the borough's coastal wetlands. Hoping to sway Department of Environmental Conservation (DEC) officials, like they had with the EPA, the students delivered, what Silverstein later explained was, their "first truly competent work," in the form of a nineteen page report rich with charts, graphs, and ecological analyses. Similar to their case strategy with Spring Creek and Laurelton, the students' argument in favor of Brooklyn's Fresh Creek Basin relied heavily on New York's 1973 Tidal Wetlands legislation. Unlike before, however, this time the students' expertise was sought after by local community associations, which included the Canarsie Committee

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<sup>73</sup> Robertson and Lewallen, 58.

<sup>74</sup> David Bird, "Marine Biology Students Attempting to Cut Pollution," *New York Times* (7 April, 1974), 102; Robertson and Lewallen, 58.

for Better Transportation as well as the Rockwood Park Civic Association.<sup>75</sup> Both organizations had clearly come to understand the level of credibility that a John Dewey Marine Biology Club scientific study and public presentation could afford any local environmental campaign. Despite the fact that Fresh Creek was, like Spring Creek and Laurelton, located several miles away from John Dewey, the school's young environmentalists agreed to study the area and draft their analyses for public consumption.

Club members opened their report with an acknowledgement of the unceasing debate over Brooklyn's coastal wetlands that prevailed throughout the early 1970s. Such debates had been, they explained, "a source of continuing controversy between those who wish[ed] to develop and expand housing, shopping and other activities" and "those...who wish[ed] to maintain the marshland's integrity and its concomitant beneficial ecology." For them, as well as for concerned local citizens, Fresh Creek, which flowed into Jamaica Bay, had "become a focal point of such conflict." With this in mind, Siegel and Silverstein's students spent considerable time and effort sampling and studying Fresh Creek's estuarine ecosystem. In their report, they detailed their methods for DEC officials, noting that they visited the site on at least seven occasions for research and study, and then spent another 120 hours in the laboratory analyzing their results. At the same time, Siegel, Silverstein and their students were also able to enlist the support of Dr. John Teal, a biologist from Woods Hole Oceanographic Institute, who, on multiple occasions, advised Club members as their study progressed.<sup>76</sup> Although, Teal offered much more than just his advice, as former student Dennis Bader recalled. Teal, who, along with his wife Mildred, authored the *Life and Death of the Salt Marsh*, also served

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<sup>75</sup> Advanced Marine Biology Class and Harold Silverstein, "Opposition to Application to Fill in With Solid Waste Residue and Construct Bulkhead in the Area Adjacent to Fresh Creek in Fresh Creek Basin, Kings County, New York," (Opposition to Petition No. TW 22405-0068 SPWQ, Submitted to the Department of Environmental Conservation by Seymour Tillinger, Seaview Estates), (26 June, 1974), Exhibit 1 and 1A, from the private collection of Lou Siegel; "Brooklyn Students' Data Used at Wetland Hearings," *NYS Environment* (1 December, 1974).

<sup>76</sup> Advanced Marine Biology Class and Harold Silverstein, "Opposition to Application to Fill in With Solid Waste Residue and Construct Bulkhead in the Area Adjacent to Fresh Creek in Fresh Creek Basin, Kings County, New York," 2.

as the students' "expert witness on the witness stand" before DEC officials at the June 26<sup>th</sup> hearing. Indeed, as Bader later surmised, Dewey students "were directly engaged with the best and the brightest that this country had in Marine Science or wetlands conservation at the time."<sup>77</sup>

Like they had in prior cases, Maine Biology Club members explained the ecological degradation that would inevitably result if a housing development were to be allowed on or near Fresh Creek Basin. According to the students' drafted analyses, "the proposed housing [development]...would radically alter the character of the creek by introducing an ever increasing amount of pollutants due to leaching and storm water outflow." Not only would such pollutants be harmful to the estuarine ecosystem, they explained, it would also endanger residents' private property.

The varying types of pollutants would eventually destroy the phytoplankton population, a basic trophic source for higher life organisms. The dredging resulting from building activities would increase the "flush-time" with the consequent result that noxious odors arising from the waters would intensify. These odors now present, would increase, resulting in an unpleasant and unhealthy effect on the residents of the community. The chemicals contained in these noxious gases would increase the deleterious effect to the outside paint on the houses further south on 108<sup>th</sup> street.

In addition, the students explained, alterations, including landfill projects and construction, on one wetland property would certainly lead to the destruction of neighboring marine environments as well as to the flora and fauna therein. Most importantly, though, Club members noted that the "productivity" of one marshland area could not be reproduced by neighboring estuaries; therefore, if Fresh Creek were to be filled in and construction was allowed, its "productivity" as a unique marine ecosystem would be "lost" forever.<sup>78</sup> Such an outcome, they concluded, would ultimately run counter to the stated goals of New York's Tidal Wetlands legislation.

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<sup>77</sup> Bader interview.

<sup>78</sup> Advanced Marine Biology Class and Harold Silverstein, "Opposition to Application to Fill in With Solid Waste Residue and Construct Bulkhead in the Area Adjacent to Fresh Creek in Fresh Creek Basin, Kings County, New York," 3-4.

This legislation undoubtedly provided a necessary boon to the Marine Biology students' argument against filling the Fresh Creek marshland, especially since, as they noted, their "analysis fits the various categories and criteria of the Act." Not only did the estuarine area provide a source of marine food production, a wildlife habitat, natural flood and storm protections, and sedimentation, the area also provided "hundreds of square miles and millions of days of recreation," various educational and research-based opportunities, natural pollution treatment, as well as "unique open spaces and aesthetic qualities." Since the marshland clearly met all eight criteria of the legislation, Club members "strongly urge[d]" the DEC to reject any proposal that endangered Fresh Creek's viability. The students, however, did not limit their criticisms and recommendations to just a simple repudiation of the applicant's petition. The area, they explained, should also "be considered as a vital adjunct to the [nearby] Gateway National Park" and summarily urged the department to prepare "suitable legislation...to incorporate this land area."<sup>79</sup> After careful consideration, DEC administrators concurred with the students' recommendations, subsequently denying the petitioner's request to fill Fresh Creek for residential development.

In his official report, John Saccar of the DEC's Office of Hearings and Mediation Services cited the ecological importance of tidal wetlands as one of the central reasons for the department's denial. Not only, Saccar explained, would "the proposed project...eliminate 4 acres of tidal wetlands which [were] performing a very valuable function," the project would also significantly impact the local fish population, "result[ing] in a loss of some 2,000 pounds of fish annually." Citing the findings of U.S. Fish and Wildlife Biologist John Hanlon, Saccar stressed Fresh Creek's importance "as an area for spawning, nursery feeding, nesting and resting for many fish, wildlife and marsh birds." Just as John Dewey's Marine Biology students had noted in their own

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<sup>79</sup> Advanced Marine Biology Class and Harold Silverstein, "Opposition to Application to Fill in With Solid Waste Residue and Construct Bulkhead in the Area Adjacent to Fresh Creek in Fresh Creek Basin, Kings County, New York," 17-19.

study, biologists from the DEC and the U.S. Fish and Wildlife Service (FWS) concluded that the local eco-system would be drastically altered if Fresh Creek were filled. Saccar agreed, and based his denial not only on the testimony of his professional expert witnesses, but also on the students' report which, he noted, "support[ed] the testimony of Mssrs. Colvin and Hanlon" of the DEC and FWS, respectively.<sup>80</sup> With yet another success under their proverbial belt, John Dewey's Marine Biology Club turned their attention to Gravesend Bay.

Located on the southwestern shore of Brooklyn, Gravesend's tidal wetlands had, by 1975, become, like Fresh Creek before them, contested space: recognized by some as prime real estate, and by others, a potpourri of flora and fauna worthy of preservation. Like they had throughout 1974, John Dewey's Marine Biology students, once again, fully injected themselves into this contentious debate and committed themselves to the preservation of Brooklyn's shoreline. In the spring of 1975, with their collective resume padded with success, Marine Biology Club members and their advisors confidently contested local land developer David S. Ziff's petition to fill sections of Gravesend Bay for future residential development. Like they had many times before, the students submitted their opposition report to the DEC which detailed the environmental hazards that such a project, if approved, would elicit. Using their Fresh Creek report as a template, the students explained their methodology and their findings, most of which mirrored the earlier study. After roughly sixty hours of field research, and another five hundred hours of laboratory study and analysis, Club members concluded that Ziff's property was "highly productive" as a marshland and worthy of preservation. Moreover, having fit "the various categories and criteria of the [Tidal Wetlands] Act," Gravesend's wetlands should, in fact, be protected by New York State law.<sup>81</sup>

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<sup>80</sup> New York State Department of Environmental Conservation, "Tidal Wetlands Application No. TW-22405-0068, Final Report by John Saccar, In the Matter of the Application of Seaview Estates, INC.," (16 January, 1975), 4-7.

<sup>81</sup> Harold Silverstein, Marine Biology Consultant and the Advanced Marine Biology Class, John Dewey High School, "Opposition to: Fill in Land Under Water. Approximately 32,000 Cubic Yards, Clean Fill,

In his March 9, 1976 denial report, DEC hearing Officer, Fiero DeMasi concurred with Silverstein and his students' apprehension, citing the clear ecological degradation that would result if he approved Ziff's application. He explained.

The placement of some 32,000 cubic yards of fill on the Applicant's property would result in the destruction of approximately 90,100 square feet of tidal wetlands which are contiguous with Gravesend Bay, including a small area of marsh cordgrass (*Spartina alterniflora*). The area provides habitat for several species of fish, hermit crabs, periwinkles, mud snails and other marine organisms.

In addition, DeMasi noted, Ziff did not "carry the burden of showing that the project [was] reasonable or necessary or in the public interest." In DeMasi's opinion, Ziff was unable to prove that the Gravesend area in question was in need of further residential development, or even "compatible with residential construction." Recognizing no clear need for the proposed project, DeMasi denied Ziff's petition for a moratorium permit, allowing John Dewey's Marine Biology students, as well as their instructors, to claim yet another victory for Brooklyn's coastal wetlands.<sup>82</sup>

In the years that followed, however, while John Dewey's Marine Biology students continued to visit and study New York City's various beaches and waterfront eco-systems, their involvement in the local environmental movement evolved from political activism to community-based marine science education. Rather than continuing to focus their efforts only upon wetland preservation, Siegel, Silverstein, and their students hoped to inculcate an appreciation for such areas through a variety of educational experiences targeted at New York City's youth. To this end, they designed and directed various community-education programs for New York and New Jersey's Gateway National Recreation Area, including "Explore the Beach" and "Environmental Sailing." Through these programs and others, Siegel, as well as several of his students, volunteered their time to teach thousands of New York City children about the very

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Sand, Gravel, and Clay. In the Matter of David Ziff, Petition No. TW SP 22406-0056." (12 June, 1975) 19-20.

<sup>82</sup> New York State Department of Environmental Conservation, "Tidal Wetlands Application No. TW-22406-0056-SP-WQ, Final Report by Fiero DeMasi, In the Matter of the Application of David S. Ziff," (9 March, 1976), 4.

marine environments they had spent previous five years laboring to preserve.<sup>83</sup> Moreover, when Gateway eventually hired full-time park rangers to lead such program, Siegel and his students were asked to assist in their training.<sup>84</sup>

The students' forays into environmental education, however, were not limited to their activities with New York City's youth or Gateway National Recreation Area. While the students continued to volunteer at the New York City Aquarium, they also volunteered to help their advisors lead various Marine Biology in-service programs for New York City teachers. Not only were students allowed to help lead such in-service programs, they were also encouraged to co-present with Siegel and Silverstein at professional development science education conferences. One former student, Marlene Zichlinsky, who assisted in this way recalled one event in particular, that took place at Manhattan's Americana Hotel in 1976. Along with Lou Siegel, a small contingent of students presented on salt-marsh ecology, a topic John Dewey students had spent the first half of the 1970s studying in much detail. Zichlinsky noted the paradoxical moment, when she and her colleagues were, in fact, "teaching teachers how to teach Marine Biology." Having been thoroughly trained by Siegel and Silverstein, and having repeatedly employed their knowledge in defense of Brooklyn's Atlantic Coastline, Zichlinsky and her peers were certainly well-suited for such a task. Indeed, despite their young age, student environmentalists at John Dewey High School had, over the years, become relative authorities on the marine sciences as well as the local ecology within their midst. Just as it had for members of SEQ in Bellport, this knowledge-base had served as a solid foundation for successful high school student environmental activism upon the urban landscape in Brooklyn.

As this chapter has highlighted, however, it is exactly the breadth of this latter landscape which differentiated teen environmental activism in New York City from

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<sup>83</sup> Lou Siegel, e-mail message to author, (10 November, 2008); Siegel interview; James Elardi & Warren E. Yasso, "Brooklyn and the Sea: 'Explore the Beach'," *The Journal of Marine Education* (Summer 1976), 10-12.

<sup>84</sup> Interview with Marlene Zichlinsky by Neil P. Buffett, (12 June, 2007).

similar undertakings on suburban Long Island. Indeed, as noted above, the more expansive geography of Brooklyn erected two spatial barriers for John Dewey students that were not faced by their contemporaries in SEQ; not only were many Brooklyn youth's residences spatially separated from their high school, their home *and* their high school were spatially separated from the various places they researched and preserved as students and activists. While such spatial barriers did not necessarily inhibit student success in protecting such locations, most of which contained fragile and jeopardized marshland ecosystems, they certainly made the task that much more difficult. Unlike their contemporaries in Bellport, all of whom lived in and around the areas they targeted for local activism, students at John Dewey were usually "outsiders" who lived and learned in Brooklyn neighborhoods far removed from the sites of their activism. As a result, Marine Biology Club members and their advisors were unable to employ *local residence* as an additional credential to bolster their preservationist aims. As residents of greater Brooklyn – and not necessarily the neighborhood or section targeted for activism – students and instructors alike needed to fully base their called for local preservation on the strength of their research and analyses alone. While members of SEQ in Bellport could certainly depend upon their status as local residents of the small area within which they were active, Lou Siegel, Harold Silverstein, and their students could not and did not.

At the same time, such spatial differentiation in Brooklyn also led to a much stronger and centralized faculty role in the environmental campaigns undertaken by students at John Dewey High School. As noted above, the influence of Lou Siegel and Harold Silverstein stands out as a prominent impetus for the activism performed by their students, especially in light of the action-oriented nature in which they designed their innovative Marine Biology program. Unlike in Bellport, where Art Cooley and Dennis Puleston served as advisors of an optional, extra-curricular activity for interested students, Siegel and Silverstein, for all intents and purposes, almost required some form of environmental action from the students enrolled in their program. Again, this

differentiation can be viewed as a natural result of the spatial differences between the relatively small suburban community in Bellport and the expansive urban geography in Brooklyn. For youths in rural Bellport, their familiarity with “nature” – be it the Carmans River, Swan Lake, the Great South Bay, open and green parklands, or the mini-forests of trees at the ends of their block – began at a very young age and, once in high school, was further cultivated by their interactions with Art Cooley and Dennis Puleston. For these students’ contemporaries in Brooklyn, familiarity with such places in their formative years was not necessarily assured. While some certainly hailed from neighborhoods in close proximity to John Dewey High School and within walking distance of the Brooklyn shoreline, just as many, if not more, hailed from inner-borough neighborhoods which were far removed from marshlands, ocean beaches and other recreational areas. For these latter students in particular, many of their first interactions with what as youngsters they would have narrowly defined as “nature,” took place in Lou Siegel and Harold Silverstein’s Marine Biology program. Understanding this implicit reality, both teachers designed a program which would not only cultivate their students’ relationships with the natural world, but would force them to engage and defend it as well.

The increased level of pollution along the Brooklyn shoreline also differentiated the experiences of John Dewey High School students from those of their activist contemporaries on Long Island. While students in Bellport had engaged in preservationist activity as a means to *prevent* inorganic pollution from harming the green spaces within their midst, students at John Dewey labored to clean and advocate for the natural spaces which had *already been* polluted. For these latter student activists, the shorelines they engaged were not simply composed of suburban homes and parklands, as they were in rural Bellport. In Brooklyn, the Atlantic coastline was, among other things, a patchwork of airports, manufacturing firms, shopping centers, treatment facilities, resort communities, beaches, marshlands, apartment complexes, *as well as* privately-owned homes and parklands. By the early 1970s, the mixed-use nature of this waterfront terrain

had led to various levels and forms of inorganic pollution in the waters and waterfront areas of Jamaica Bay. In their first five years as a high school environmental organization, members of John Dewey's Marine Biology Club inserted themselves into various debates over pollution abatement as well as wetland preservation that spanned their entire home borough. While students in Bellport certainly engaged in similar activities on their less dense and much smaller suburban landscape, they did so on a much smaller scale and in a much more *preventative* style. Ultimately, the levels of synthetic and the amount of tangible pollution along the Carmans River corridor and elsewhere in Bellport was much less than the levels found along the coastal areas of Brooklyn. As this chapter has clearly illustrated then, the urban landscape of New York City necessitated a much more expansive environmentalism than the one which concurrently evolved on nearby Long Island. As the next chapter will reveal, the same can be said of the high school student civil rights activism which manifested at Brooklyn's Franklin K. Lane High School and – unlike in Bellport or Malverne – across the urban landscape of New York City as well.