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The Struggle for Environmental Justice in Vieques, Puerto Rico

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In 2003, the US Department of Fish and Wildlife announced the opening of a new National Wildlife Refuge on the site of a former US Navy bombing range. The department announced that the Vieques Wildlife Refuge, with 14,573 acres, was the largest and most ecologically diverse refuge in the Caribbean.

According to promotional materials, the Vieques Wildlife Refuge is a "unique area" that includes "beaches used by threatened and endangered sea turtles for nesting, subtropical dry forest, mangrove lagoons, salt flats and bioluminescent bays."[1] The Department of Fish and Wildlife promotes Vieques as a great place for a family vacation:

> From mountain biking on the dirt roads to swimming in the turquoise waters, Vieques National Wildlife Refuge offers all types of recreational opportunities. Playa Caracas and Playa la Chiva are an escape from reality. There's no high rise, no hustle or bustle just a quiet destination where you become one with nature. Sometimes you can find a few others. The swimming and snorkeling are fantastic. The waters are crystal clear and the variety of color found in the undersea life is astounding. Vieques National Wildlife Refuge offers more than just swimming, snorkeling, hiking, biking bird watching. It's a place where family and friends can eat "arroz con gandules," play Puerto Rico's national pastime—dominoes or a place to lounge under a palm tree and see no one. Summer is coming! So, make Vieques National Wildlife Refuge your destination. An escape from the everyday life; a place to revive your soul and bond with loved ones![2]

Yet this same tropical fantasy island is also a newly declared Superfund site, a designation reserved for the nation's most hazardous waste sites. Its coral reefs are shattered by explosions and its clear turquoise waters littered with bombs. Stormy waters wash bullets up on its white sand beaches. Its mangroves are contaminated by oil, battery acid, and live

munitions. According to the US Environmental Protection Agency (EPA), 60 years of live fire exercises have left a toxic legacy on its land and surrounding waters that may include "mercury, lead, copper, magnesium, lithium, perchlorate, TNT, napalm, depleted uranium, PCBs, solvents, and pesticides."[3] Most of the refuge is closed to public access indefinitely due to the presence of thousands of unexploded bombs. Cleanup is underway, so quiet nature walks may be punctuated by the open detonation of 500-pound bombs.

Vieques is a 51-square-mile island (roughly twice the size of Manhattan) where for more than 50 years a civilian population of 10,000 was wedged between a US Navy ammunition depot and a US Navy maneuver area. The Navy controlled three-fourths of the island and used Vieques for live fire practices, air-to-ground bombing, shelling, artillery fire, ship-to-shore bombing, and maneuvers. After years of conflict, a social movement erupted after the accidental bombing of a civilian security guard. Four years of mass mobilization, thousands of arrests for civil disobedience, and international media attention halted live bombing exercises on the island.

True victory, however, has proved elusive. Residents long aspired not only for the eviction of the Navy, but also for the recovery of land for public use. When the Navy left, however, jurisdiction over the land shifted to the US Department of Interior, with the former base land to be operated and managed as a National Wildlife Refuge. The conversion of former base land into a nature reserve represents an incomplete realization of residents' dreams and institutionalizes their exclusion from island land. Consequently, land ownership, land use, and environmental contamination remain highly contested.

Several articles have explored environmental justice as a framework for interpreting Vieques's struggle to halt live bombing exercises (Berman Santana 2005; McCaffrey and Baver 2006) and to understand the cleanup process now faced by islanders (Baver 2006). This chapter considers Vieques's struggle in classic environmental justice terms as unequal exposure to environmental risk. Risk is interpreted as residents' subjection to live fire practices, the contamination of military training activity, and continued exposure to toxins left behind by the Navy. The chapter considers not only resistance to exposure to environmental harm but

also the struggle for equal access to environmental good as important dimensions of the struggle for environmental justice. By considering two interconnected processes—the imposition of a wildlife refuge on Vieques and the gentrification of the former civilian sector—the chapter considers how environmental justice is not only about the struggle against unequal exposure to environmental harm, but also a struggle against exclusion and marginalization. Environmental justice, in a Latin American context, is inseparable from broader issues of foreign domination and external control of the landscape. By examining the case of Vieques, environmental justice is broadly interpreted to include people's desire to have some control over the development of their environments (Collinson 1997).

Environmental Justice

In the United States, environmental justice emerged from the civil rights movement as a powerful movement that challenged the class and racial dimensions of environmental problems. Proponents of environmental justice are concerned with socially unequal exposure to environmental risk. They argue that poor people and people of color suffer the unequal burden of exposure to environmental hazards, and a lack of voice in shaping environmental policy (Gibbs 1982; Bullard 1990; Camacho 1998; Faber 1998; Harvey 1999; Cole and Foster 2000). While scholarship has tended to focus on the unequal siting of industrial pollution, hazardous waste, and the negative environmental consequences of commercial development on minority and low income communities (Pellow 2004; Checker 2005), a growing number of works examine the unequal distribution of military toxics and exposure to military hazards, particularly on Native American land (Grinde and Johansen 1995; Kuletz 1998; LaDuke 1999; Hooks and Smith 2004).

Latin American environmentalism, in comparison with US mainstream environmentalism, analyzes environmental problems in relation to larger social and political inequalities. Lynch (1993, p. 115) argues that "the deepest roots of Latin American environmentalism come from resistance to conquest." In Vieques, conflict with the Navy is inseparable from broader issues of the United States' colonization and domination of

Puerto Rico. Vieques, an inhabited bombing range, a residential island simultaneously serving as a theater of war, is a fundamental expression of Puerto Rico's colonial status, the usurpation of its national territory, the pillaging and destruction of its natural resources, the unequal treatment of its citizens, and the state's disregard for their lives and aspirations. At its core, Vieques's struggle is about sovereignty. Who controls the land and for what purpose? What power does the state possess to determine what unfolds within its borders? What voice do citizens have in the state that governs them? The US Navy's control of Puerto Rican territory, the destruction of the environment, the subjection of civilians to bombs and toxic residues, and the lack of public voice in influencing military policy are inseparable from Puerto Rico's colonial status.

Vieques fits into a pattern of unequal distribution of military hazards and toxins. Residents have historically faced dramatic risk in terms of their exposure to military live fire practices and toxins, and now to its legacies of unexploded ordnance and contamination. Pro-statehood Puerto Rican Governor Pedro Rosselló, referring to the live bombing of an island inhabited by 10,000 American citizens, commented: "I think if this were happening in Manhattan, or if it were happening in Martha's Vineyard, certainly the delegations from those states would make certain that this would not continue."[4] Although the US Navy argued that Vieques was like many other communities near live fire ranges, there is no other parallel to its experience.

Unequal Risk, Unequal Exposure

The US Navy conducted maneuvers and target practice in Vieques from 1941 to 2003. The military expropriated three-quarters of island land and squeezed a resident civilian population of about 10,000 between an ammunition depot and a maneuver area. The Navy conducted artillery and small-arms firing, naval gunfire support, and missile shoots. It rehearsed amphibious landing exercises, parachute drops, and submarine maneuvers. The Navy bombed Vieques from air, land, and sea. In the 1980s and the 1990s, the Navy trained an average of 180 days and dropped or fired an average of 1,464 tons of bombs and explosives per year on the island (Shanahan and Lindsay-Poland 2002, p. 2). In 1998,

the last year before protest interrupted maneuvers, the Navy dropped 23,000 bombs on the island, the majority of which contained live explosives (US Navy 1999).

The Navy argued that Vieques was only one of 56 live fire ranges operated by the US military. Thus, according to the Navy, the island's share of the burden of national defense was not unusual: in fact there were a number of other communities in the United States with residents living closer to weapons ranges (US Navy 1999). Vieques, however, was only one of two naval sites in the United States where both air-to-ground and ship-to-shore bombardment were practiced, and "the only inhabited island under the US flag ever to have a bombing range" (Giusti 2000). Most US bombing ranges, "especially those with air-to-ground fire, lie deep within huge military bases between five and ten times the size of Vieques. The large military bases with bombing ranges often adjoin vast national forests or wilderness reserves that further isolate the bases' bombing ranges." (Giusti 2000) The Vieques civilian zone was 8.7 miles from the "live impact area." According to Giusti (2000), "while in the United States there may be communities just outside the gates of bases with bombing ranges, those communities are a considerable distance from the actual ranges, which lie deep inside the bases." The intensity of military exercises, the proximity of live fire practices to the civilian population, and the environmental destruction caused by the Navy were unparalleled (ibid.).

The US military originally planned to use Vieques as a part of a major operating base in the Caribbean that would have extended from eastern Puerto Rico to the islands of Culebra and Vieques. Instead, Vieques became a training site, used for live fire practices and the amphibious landings of tens of thousands of sailors and Marines. Residents struggled to subsist on an island strangled by the military. The Navy controlled the majority of the land, water, and air surrounding Vieques. Its takeover shut down the island's sugar cane industry, and stifled the local economy. The Navy controlled nautical routes, flight paths, aquifers, and zoning laws in civilian territory. It blocked developers from establishing a resort on the island. It held title to the resettlement tracts in the civilian sector, where the majority of the island's population lived under constant threat of eviction (McCaffrey 2002).

The Navy planned eventually to eradicate not only the residents' presence on the island but also their history. Recognizing the incompatibility of military training exercises on an inhabited island, the Navy drafted secret plans in 1961 to remove the entire civilian population of 8,000 from the island; even the dead were to be dug up and removed from their graves (Fernández 1996). The plan would have allowed the Navy to expand the base without interference. Governor Luis Muñoz Marín intervened and a presidential order from President John F. Kennedy eventually blocked the Navy from carrying out its plans but the tension between the military and civilian population persisted.

In the late 1970s, protest erupted in Vieques in response to the intensification of maneuvers and live-fire exercises on the island. Between 1978 and 1983, fishermen led a dramatic grassroots struggle against the military presence in Vieques. Despite winning several important concessions from the Navy and broadcasting Vieques's plight to the world, the movement was ultimately unsuccessful in its goal of evicting the Navy and recovering land (McCaffrey 2002).

Discontent with the military presence continued and in the early nineties, activists began grassroots organizing around themes of health and the environment. The intensification of weapons firing and live bombing exercises over time increasingly put the civilian population at risk. Military jets, traveling between 500 and 1,300 miles per hour, bombed the easternmost part of the island. A miscalculation of several seconds thus exposed residents to significant risks of accidental bombings, such as when a mishap in October 1993 exploded bombs near the center of town.[5]

While the Navy emphasized the importance of Vieques for rehearsing high-altitude bomb drops, it was precisely these high altitudes runs that increased the possibility of error and thus risk to the civilian population dwelling beneath bomb-toting jets. "An error in four seconds of fire from a ship can land up to 14 or 20 miles from the target, while a four second error from an aircraft pilot could drop a bomb up to 50 miles from a target." (Shanahan and Lindsay-Poland 2002, p. 3) An increasing number of mishaps suggested that the relatively small target area (the Vieques target range was 982 acres, roughly the size of New York's Central Park, and was only 8.7 miles upwind from the residential sector) was too small

to handle the powerful long-distance missiles in the Navy's arsenal (Shanahan and Lindsay-Poland 2002, p. 3).[6]

Not only were residents exposed to risk posed by jets practicing bomb drops from increasingly high altitudes; they were also subject to the toxic residue of bombs. One of the first studies to raise warning flags was published in 1988 in a Puerto Rican engineering journal (Cruz Pérez 1988). This article documented high concentrations of explosives in the local drinking water. Because Vieques's water is piped in from Puerto Rico, the study hypothesized, airborne contaminants were traveling from the bombing area into the civilian sector.

Residents were increasingly concerned about rising cancer rates and their possible connection to contamination from military explosives. Studies by the Puerto Rican Health Department eventually verified Vieques's cancer rate as significantly higher than that of the main island. Vieques's incidence of cancer for 1995–99 was 31 percent above that of the main island.[7]

The secretive nature of military activity and the community's lack of access to information intensified fear and suspicion. When the Navy imposed a radar installation on the island in the mid 1990s, local activists rallied renewed opposition to the Navy and built consciousness of the health and safety risks of the military presence.

In 1999 conflict erupted anew when a Navy jet on a training mission mistakenly dropped its load of 500-pound bombs not on the intended target range, but on the military observation post a mile away. The explosions injured one guard and killed a civilian employee of the base, David Sanes Rodríguez. Outrage over Sanes's death reignited the decades-long conflict.

Sanes's death came after 6 years of mobilizing and organizing against the threat military practices represented to civilian community. Within days of his death protestors occupied a military target range littered with live ordnance and shut down all Navy training exercises for more than a year. Tens of thousands of Puerto Rican marched in the streets of San Juan, demanding a halt to military training exercises in Vieques. Over the course of the next 4 years, mass mobilizations, constant pickets, thousands of acts of or civil disobedience, international solidarity and media attention eventually succeeded in halting live bombing exercises on the island.

The Navy's Pullout

Base land was decommissioned and converted to civilian use in two installments in May 2001 and May 2003. In response to mass protest, President Bill Clinton issued an executive directive in January 2000 that instructed the Navy to return all 8,000 acres on the former Naval Ammunition facility on the western side of Vieques to the government of Puerto Rico. In western Vieques, the Navy maintained a small operational base and dozens of magazines used for ammunition storage.

In military terms, western land was less significant than eastern land where maneuvers and bombing exercises were carried out. From a civilian perspective, however, the western part of the island was particularly valuable because it represented the closest transportation point between Vieques and Puerto Rico. Land turnover in the west seemed designed to quell protest and maintain the status quo in the strategically more important east.

Political developments, however, eroded the islanders' apparent victory. Congress altered the Clinton directive when it translated the order into law. Rather than returning land to the municipality, Congress ordered 4,000 acres returned to the municipality, 3,100 acres to the federal Department of the Interior, and 700 acres to the Puerto Rican Department of Natural Resources, with the remaining 200 acres (the site of a military radar installation) to remain under the control of the Navy. By the terms of the law passed by Congress, the Navy was responsible for cleaning up contaminated land according to future plans for its use.

The turnover of land failed to put an end to protest, which had built momentum around rising public concern about the risks to public safety, health and the environment created by live bombing exercises. Congress ultimately ordered the Navy to leave eastern Vieques and transfer its training activities elsewhere. Yet according to the terms of the Floyd D. Spence National Defense Authorization Act, 14,573 acres (40 percent of all island land) of eastern Vieques land was not returned to Puerto Rico. Instead, it was transferred to the US Department of Interior to be operated and administered as a National Wildlife Refuge. The 982-acre live impact range on the easternmost tip of Vieques was designated a Wilderness Area, the most protected status, and blocked from public access.

Fish, Wildlife, and Bombs

The idea of a bombing range turned overnight into a wildlife preserve on its face seems incongruous. Historically, however, many National Wildlife Refuges in United States and its territories were once military ranges, sites for military production, or bases (Lindsay-Poland 2006). In Vieques, the creation of the wildlife refuge is inseparable from a history of struggle against the US Navy's presence, and represents an incomplete realization of residents' desires to remove the Navy and recover island land. The establishment of the wildlife refuge represents a continuity of patterns of colonial usurpation and external control of the landscape.

Most fundamentally, the Vieques National Wildlife refuge enshrines unequal power relations that exclude the resident Viequense population from access to the land. The majority of island territory is placed under the jurisdiction of an external authority and the residents' access to land is curtailed. This approach to the land draws on a fortress model of conservation, which regards humans as a threat to the environment. According to this model, access to nature must be restricted by a paternalistic state, and the environment should be preserved and protected from human influence which is inherently negative (Adams and McShane 1997; Brockington 2002; Neumann 2004).

The fortress model of conservation assumes that the environment is static and ignores historic relations between people and the environment. Yet for thousands of years people have lived on Vieques Island and interacted with the ecology. Archaeological evidence suggests that several different cultural groups inhabited Vieques for at least 4,000 years before the Spanish conquest. Spanish and English colonists were attracted to the island because of its tropical forests and water supply. The land that is now under federal authority was dramatically transformed by human culture. Spain used Vieques as a hunting preserve until danger from Carib raids caused authorities to ban access to the island (Rouse 1952, p. 555). Sugar cane monoculture deforested land and cattle grazing programs initiated by the Navy contributed to soil erosion and the unchecked growth of mesquite. Navy construction of roads along the coast and interior of the island closed channels between lagoons and the sea, altering salinity levels and leading to the slow destruction of lagoons

(García Martínez 1979). Live bombing exercises blew away topsoil, contributing to the sedimentation of coral reefs. Human activity thus has fundamentally altered the pre-Columbian landscape.

Not only does the Wildlife refuge envision the environment as static, but also as pristine. In fact, the Wilderness Act of 1964, 16 USC. § 1131, et seq., under which the Vieques refuge was established, explicitly defines a wildlife refuge as a landscape "untrammeled by man" and "retaining its primeval character and influence." The designation of "wildlife refuge" therefore informs a land-use ethic that is focused on conservation, on maintaining the status quo, rather than remediation. Yet even the military acknowledges that "a natural progression of vegetative types from coastal areas to higher elevations has been lost and present day vegetation on the island is characteristic of the dry coastal zone vegetation of mainland Puerto Rico" (US Army Corps of Engineers 1998, quoted in Arbona 2004, p. 75). Centuries of human exploitation of the environment has reduced natural diversity to such an extent that one study suggested that "approximately eighty percent of the original vegetative cover . . . has been greatly modified by man" (Woodbury 1972, quoted in Arbona 2004, p. 74). The Department of Fish and Wildlife is constructing as pristine a landscape that has already been fundamentally altered by centuries of human activity.

Rather than focusing on restoration, then, the Wildlife refuge premises that land needs to be protected from human intrusion, and implies that local use practices are responsible for ecological degradation. Instead, the state has been responsible for overwhelming destruction of the environment. The "wildlife refuge" is the same land that was bombed 180 days a year, that is littered with both spent shells and live bombs, that is pockmarked with bomb craters. The most devastated terrain, the 980-acre live impact area, is officially designated as a "wilderness preserve," the most protected environmental status, and blocked from public access.

The military is using environmental designation as a cloak to evade its legal and ethical responsibility to clean up waste. Legally, cleanup of unexploded ordnance and other military waste is determined by projected land use. Land designated for "conservation use" requires only a superficial cleanup, since presumably no humans would inhabit it. The wilderness designation to the live impact range, bombed by air, land,

and sea for 60 years, has less to do with the quality of the ecosystem than with the nature of responsibility for environmental remediation. Land inhabited by pelicans and sea turtles, simply put, is not a national priority for cleanup. Reality is turned on its head as residents are fined for collecting a sack of crabs, while the military, which has annihilated whole ecosystems, walks away from responsibility for environmental catastrophe.

Fish and Wildlife officials have protested that the Department of Interior never wanted Vieques land, and that it was imposed on them by Congress. (Lindsay-Poland 2006, p. 3). By the terms of the Wilderness Act, a wilderness area should appear "to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable" and have "outstanding opportunities for solitude or a primitive and unconfined type of recreation." The former bombing range on Vieques clearly does not meet these statutory criteria.

The Department of Fish and Wildlife has become the lightning rod for local resentment because residents see the department as acting as handmaiden to the Navy, blocking access to land for which residents have struggled for decades. Although Fish and Wildlife argues that it restricts access to land out of necessity due to the threat of contamination and the danger of unexploded ordnance, it is imposing restrictions above and beyond what is required by law. Technically, only the 982-acre former bombing range has been designated with the most restrictive category of Wilderness area, but these access standards are being applied wholesale to the entire refuge. For example, the eastern beaches, which lie outside the former bombing range, are blocked from public access (Lindsay-Poland 2006). Moreover, the Department says that access depends upon a Navy certificate that land is cleared. In fact no such legal requirement exists. A number of wildlife refuges in the United States that have a history of military use and remaining problems of cleanup yet allow public access to land (Lindsay-Poland 2006).

Cleanup

The military used the two sides of Vieques very differently, and contamination and cleanup issues on western and eastern Vieques reflect different

patterns of military use. In the west, where the Navy maintained an ammunition depot and a small operational base, cleanup is connected to the storage and disposal of munitions. Nearly two million pounds of military and industrial waste—oil, solvents, lubricants, lead paint, acid, and other refuse—were disposed of in different sites in mangrove swamps and sensitive wetland areas. A portion of this waste contained extremely hazardous chemicals. One 200-acre site was used for open detonation and burning of excess and defective munitions (Márquez and Fernández Porto 2000; UMET et al. 2000).

The Navy initially identified 17 sites for investigation and engaged in surface removal of munitions. By March of 2005, however, the military committed itself to continued investigation and surface ordnance explosion at only three of the 17 sites. The Navy argued that "no further action" was required at nine of the 17 sites. Of the remaining eight sites, the Navy argued that five had only minimal contamination and posed no significant risk (Bearden 2005, p. 14). In a controversial move, the Navy argued that toxic contamination did not, in fact, originate from military activity, but rather from naturally occurring processes related to the island's geology.[8]

The military's resistance to cleaning up the relatively limited amount of contamination on the western "clean" side of Vieques indicates how contentious the cleanup process in the east may become. The cleanup on the eastern side of the island is much more dramatic in scope. The 14,573-acre eastern area was used for naval bombing exercises and maneuvers since the 1940s. In the military base conversion process, the cleanup of firing ranges has proved one of the most dangerous, expensive and challenging tasks (Sorenson 1998). The point of the most intense destruction is the live impact range, which constitutes 982 acres, about the size of New York City's Central Park, on the island's eastern tip. According to the EPA, extensive unexploded ordnance and remnants of exploded ordnance remain in this range and its surrounding waters. "Hazardous substances associated with ordnance use may include mercury, lead, copper, magnesium, lithium, perchlorate, TNT, napalm, and depleted uranium among others. At Camp Garcia, and in the NASD, the hazardous substances present may also include a range of chemicals such as PCBs, solvents, and pesticides."[9] A 1998 EPA survey cited by

the Military Toxics Project noted that most former firing ranges have significant contamination. The survey discussed widespread health dangers at 206 closed, transferred, and transferring (CTT) and inactive military ranges. The report concluded that: "contamination resulting from used or fired munitions including UXO [unexploded ordnance] is found on almost all ranges. . . . UXO has been found on 85 percent of the ranges and chemical or biological weapons are known to exist or are suspected at over 50 percent of the ranges. The risks from contamination resulting from ordnance use are widespread. Ranges in this report potentially pose significant risks to human health and safety because of their proximity to growing surrounding populations."[10]

Most unexploded ordnance in Vieques is concentrated in this easternmost former target area, yet some ordnance is likely to have strayed off target and into adjacent land, beaches, and water. In addition, land based maneuvers involving live fire exercises took place in different locations in the east, making it unclear how extensive the spread of munitions is outside the live impact area (Bearden 2005, p. 15).

The cleanup of eastern land will be expensive and time consuming. Over time live ordnance sinks beneath the surface of the land, requiring cleanup crews to remove both surface and subsurface soil. Depleted uranium, which was fired on the range in violation of federal law, poses its own unique problems for cleanup. Because of its mass and the size of the guns that fire it, depleted uranium can penetrate the earth to depths of hundreds of feet, requiring the removal of enormous amounts of soil to recover lost rounds (Sorenson 1998, p. 83, n. 174).

In addition, the groundwater has been contaminated by nitrates and explosives (Márquez and Fernández Porto 2000). Cleaning groundwater is also difficult and expensive. Subterranean water must first be located under thousands of acres of land, which is in itself a difficult process, then pumped to the surface, cleaned with scrubbing devices, and returned to the ground (Sorenson 1998, p. 81). Coral reefs and sea grass beds have sustained significant damage from bombing, sedimentation, and chemical contamination (Márquez and Fernández Porto 2000; Rogers, Cintrón, and Goenaga 1978). Despite the existence of numerous bombs off the shores of Vieques, cleaning the water is outside the purview of military cleanup requirements.

On February 11, 2005, the EPA responded to Puerto Rican Governor Sila Calderón's request to identify Vieques as a "Superfund site," a designation given to some of the nation's most hazardous waste sites. Placing Vieques on the National Priority List of hazardous sites did not, however, determine the stringency of the cleanup process, nor guarantee the availability of funds (Bearden 2005, p. 2). The cleanup process is ultimately contingent upon the designation of funds by Congress. Priority is established by the threat toxic waste poses to human health and the environment. This caveat is crucial because the extent to which people are barred access to the land reduces contact with hazardous sites and thus military responsibility for cleanup.

Establishing a pathway of human exposure to contamination, however, is another way to compel the military to clean up its waste. "If contamination has leached from munitions and migrated to present a pathway of exposure, removal of more munitions may be required to protect human health. Possible pathways include consumption of contaminated groundwater and contaminated fish or shellfish" (Beardon 2005, p. 2). Two studies (Massol and Díaz 2000a,b) suggest that toxic heavy metals have entered the Vieques food chain. The first study documented high levels of lead, cobalt, nickel and manganese in violin crabs and in plants near the Vieques impact area. The second study found vegetables and plants growing in some civilian areas of Vieques are highly contaminated with lead, cadmium, copper, and other metals.

In a major setback to community groups, however, the Agency for Toxic Substances and Disease Registry (ATSDR), the federal public-health agency responsible for determining human health effects associated with toxic exposure, announced that it found no toxic contamination in Vieques.[11] The agency's findings of no significant contamination after more than 60 years of bombing outraged community members who found this conclusion completely at odds with common sense and the fact of drastically increased cancer rates.[12] Indeed research data suggests a correlation between the onset of live bombing exercises in the 1970s, and the escalation of cancer rates in Vieques (Nazario et al. 1998). In this context, ATSDR's findings of no significant contamination and no danger to the health of the Vieques community, not withstanding 60-plus years of bombing, stood out as remarkably convenient for the Navy.

Seductive Fantasies and the Politics of Exclusion

Another pernicious consequence of the US government designating roughly half of Vieques Island as a wildlife refuge is that it has triggered a land grab in the existing civilian sector. This land grab is occurring in a context of impoverishment and marginalization of the overall population.

According to the 2000 US Census, the municipality of Vieques is one of the poorest in all of Puerto Rico, with 65 percent of the population living below the poverty level. Vieques has the highest child poverty rate in Puerto Rico, with 81 percent of its children living below poverty level (Mather 2003, p. 7). It has among the highest rates, 20 percent, of teenage high school drop outs (ibid., p. 7). Health indicators are poor, with high rates of cancer, and infant mortality compared to the rest of Puerto Rico. In 2001, the Puerto Rican Department of Health reported that death rates from cardiac illness, diabetes, HIV/AIDS, strokes, hypertension, liver disease, and cancer were substantially higher than on the main island of Puerto Rico.[13] The island suffers from a serious lack of infrastructure. Transportation to the mainland of Puerto Rico is poor, and there is no system of public transportation on a 52-square-mile island. Trash pickup and disposal have suffered from a lack of revenue due to a poor tax base. A 1999 Special Commission to the Governor of Puerto Rico concluded that the Navy's control of land, water and island resources caused high unemployment and economic stagnation on the island.

Although little has changed in the material conditions of the municipality since the departure of the Navy in 2003, the military's exit has removed the principal obstacle to development and has triggered wild speculation. Investors seek out homes and land that can be renovated and developed and resold for substantial profit. Housing prices and sales in beachfront neighborhoods have soared.

A recent article analyzed housing sales in the Esperanza neighborhood of Vieques. The article detailed frenzied buying in an 18 month period between 2003 and the first 6 months of 2004. During this period, 36 properties were sold—22 to buyers from the United States, eight to buyers from the Puerto Rican mainland, and only two to buyers from

Vieques. (The other buyers could not be classified.) During this same 18-month period, housing prices in the neighborhood rose by 50 percent.[14]

One unusual aspect of Vieques's real estate market is that a large amount of property is untitled, the legacy of decades of insecurity created by the military presence. In the 1940s, the Navy evicted residents and relocated them to resettlement plots without title. Later, residents' frustration with cramped and uncertain living quarters and resentment of the Navy's hold on three-fourths of the island spurred land takeovers in the idle lands of the military buffer zone. Today whole neighborhoods in Vieques, with water, roads, and electrical service, are effectively squatter communities where thousands of families live without title. Yet land sales in these areas are dizzying. Non-coastal lots sell for $70,000 an acre and beachfront property sells for $1 million an acre.[15] Vieques's mayor, Dámaso Serrano, proclaims himself powerless in the face of this frenzy: "The fact is that properties without land titles are being sold two and three times in a two-month period, reaching higher prices each time, and there is nothing we can do about it."[16]

Vieques is a classic scenario of gentrification: "Housing speculation thrives in rapidly changing markets, where properties turn over quickly, where low-income, often elderly original residents are anxious to pull out new found equity, or where original residents may not have sufficient information to understand the increasing value of their homes." (Kennedy and Leonard 2001, p. 11)

Perhaps the most striking indicator of the rapid gentrification of the island was a listing in the Escape section of the *New York Times* featuring a three- bedroom house with a guesthouse for sale in Vieques for $2.5 million. The owner was quoted as saying: "We love the beach, we love the Caribbean. Vieques, though, is very different from many of the other islands. Two-thirds of the island is a wild preserve, and there are a lot of beautiful beaches with no development—that's what is special to us."[17]

North American investors are surprisingly satisfied to overlook Vieques's troubled environmental history and to embrace the fantasy of a tropical, undiscovered Eden advanced by developers. Connections Real

Estate owned and operated by North Americans, paints an idyllic picture of Vieques in its promotional literature. With a pitch designed to appeal to soul and pocketbook, the island is marketed as a tropical Eden and an irresistible investment:

> Owning a piece of paradise is a seductive fantasy that many of us dream about and some of us turn into reality. The Vieques real estate market is an opportunity to make that dream come true. Come and see Vieques Island, Puerto Rico, known as one of "the Spanish Virgin Islands," and find the opportunity to make your dream come true.
>
> Vieques offers an attractive investment on a beautiful Caribbean island reminiscent of the "discovered" islands of at least thirty years ago. Development has not yet started and there are several properties with an amazing variety of views available.
>
> Come and enjoy our beaches that are preserved in their natural form, where one can enjoy white sand beaches, gentle breezes, incredible vistas, and an inviting turquoise sea, as well as many species of birds, turtles, dolphin, manatee, and whales as they travel through the Caribbean.

Describing Vieques as one of the "Spanish Virgin Islands" is highly charged. Local Viequenses bristle at a North American invention that they see as a thinly veiled racist attempt to distance Vieques from its association with Puerto Rico. "Spanish Virgin Islands" connects Vieques to the US-controlled English-speaking islands to the east, and away from "problematic" associations with Spanish-speaking, culturally unassimilated Puerto Ricans. Marketing Vieques as a "Virgin Island" draws a metaphorical connection between Vieques and a neighboring underdeveloped island, St. John. In the 1950s, Laurence Rockefeller bought up half of St. John and imposed a national park upon the island, excluding the Afro-Caribbean residents from access to land and wealth (Olwig 1986). Vieques's real estate propaganda mirrors the celebratory St. John tourist literature, marveling at the beauties and tranquility of the undeveloped terrain. Yet Vieques, with its toxic legacy of bombs and pockmarked terrain, is probably better compared to Love Canal than to its Caribbean neighbor St. John.

Reality has very little to do with real estate marketing campaigns, which are firmly planted in the realm of fantasy. Rainbow Realty, advertised to progressive circles as a gay-owned and gay-friendly business, markets Vieques as a laid-back alternative to life on the fast track:

Located in the turquoise Caribbean waters off the southeast coast of Puerto Rico is the small tropical island paradise called VIEQUES!! The place for a simple, casual, relaxing, and "laid back" get-a-way. No casinos, clubs, or glitz here . . . spend a night in San Juan for that. We have no traffic lights and no fast food. We do have wild horses and plenty of chickens. The coqui frog will serenade you and our Bioluminescent Bay will enchant you! Bring those books you have wanted to read and find a hammock. Sit on deserted beaches, watch dazzling sunsets, snorkel, dive the reefs, fish, or just float, all in perfect weather. All of this . . . and affordability!

Of course, "affordability" is relative. For North Americans who have access to capital and can draw second mortgages on homes up north to come up with the cash necessary to buy real estate on untitled land in Vieques, such real estate is attractive. For Vieques residents who earn $5.15 an hour cleaning hotels rooms in Martineau Bay Resort, island real estate prices are soaring out of reach.

Crow's Nest, another real estate competitor, sells its vision this way:

Vieques is a miracle. An unspoiled Caribbean island off the coast of Puerto Rico, easily reached from the United States and Canada. There are no traffic lights, no movie theatres and no bowling alley. We do have many fabulous restaurants, beautiful white sand beaches and a sky full of stars at night. There are no hawkers on the beach, no fast food joints, no neon signs. Under the US flag, Vieques is safe for property owners and for tourists.

Vieques, conveniently located under the US flag, is apparently ideal for "Americans," but will Puerto Rican Americans be able to own the land on which they were born? The immediate effect of military pull-out on the resident Viequense population has been an intensification of the island's housing crisis. For years, the military's control of island land and failure to issue title to residents relocated to military resettlement tracts created a housing crunch on the island. Now, rising real estate values threaten to further exclude the local population from access to affordable homes. Existing housing programs are underfunded and inadequate in addressing housing needs in this impoverished island. In 2004, 260 families were on the waiting list for Section 8 housing subsidies. Even families who have subsidies may be priced out of the rental market by escalating prices.[18]

Designating Vieques as a National Wildlife Refuge has added a premium to property values in the civilian sector. Value is based fundamentally on exclusion. By cordoning off parkland from the working

class, Puerto Rican population, the new wildlife refuge has effectively attracted off-shore capital that is displacing the working-class residents from the island. Thus residents are doubly excluded, by the refuge and the housing frenzy that it stimulated.

Although state intervention can constrain gentrification through control of zoning and code enforcement, both the municipal and commonwealth governments have been slow to enforce existing laws in Vieques. Plans to develop a land trust that might slow the pace of gentrification have not yet materialized. While the municipality approved an ordinance that imposed a fine of up to $10,000 and jail time on any person buying or selling property without title, it is not clear how effective a deterrent this has been. Additionally, while Puerto Rican law provides for equal access to the coasts and beaches of the islands, a Starwood resort opened on the northern coast of Vieques with financing from the Puerto Rican government, even though the resort blocked public access to the shore in violation of the law. And across the north coast of island wooden shacks and Moorish-style estates perched on cliffs behind high white walls block public access to the coast. Three story homes are built in defiance of zoning regulations. A public beach on the island's north coast is completely consumed by a newly constructed vacation rental property that pipes its sewage directly into the sea. Community groups, overwhelmed by the increasing complexity of struggle against the Navy, various federal agencies and market forces, have been slow to respond to these developments.

The Struggle for Inclusion

> I was always afraid during maneuvers. I was always worried that they'd make a mistake, miss, and drop a bomb on us and that would be the end of us. I was always worried about this. . . . [Now] there aren't anymore bombs! The planes aren't flying overhead dropping bombs, cracking the foundations of houses. It's a big change. It's great!
>
> —Felicita Solís Solís, Vieques resident, 2004

Vieques residents committed to the sustainable development of the island and the integration of the predominantly working-class residents with socioeconomic development of their island are rightfully concerned with

twin forces of privatization and state usurpation that are challenging the victory that the military eviction represented. Despite the victory that the end of bombing represents, the cessation of live fire exercises in and of itself was never the goal of the movement. Activists had long sought the recovery of land. This aspiration has yet to be realized and is challenged by the transformation of former base land into a National Wildlife Refugee and the concurrent rapid gentrification and privatization of the civilian sector.

I have argued for a broader interpretation of environmental justice, to include access to the positive aspects of the environment. Environmental justice should ensure that people who have suffered the greatest harm should be compensated at the very least by full access to the richness of the land and its resources.

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Notes

1. US Fish and Wildlife Service, South East Region 4, "Vieques National Wildlife Refuge Welcomes the Public to the Eastern End of the Island," April 30, 2003, http://www.fws.gov.

2. US Department of Fish and Wildlife, 2006, "Come and Enjoy Vieques National Wildlife Refuge This Summer," http://www.fws.gov.

3. US Environmental Protection Agency, Superfund, "EPA Proposes the Atlantic Fleet weapons Training Area on Vieques and Culebra for Inclusion on the Superfund National Priorities List," August 2004, http://www.epa.gov.

4. *CBS News*, "60 Minutes," August 15, 2000.

5. *Vieques Times*, November 1993.

6. A Special Commission appointed by the Governor of Puerto Rico concluded that the training accident that killed security guard David Sanes was "the last in a series of errors that prove that it is possible for an explosive or dangerous artifact to be discharged near or in the civilian population area, thus jeopardizing the life and safety of the citizens of Vieques." The Attorney General of Puerto Rico testified that "in 1998 alone, by the Navy's own admission, five separate live fire events . . . occurred during training exercises." He added that "this

pattern of live fire events has been repeated virtually every year," and concluded that "all of these incidents show that the Navy cannot ensure the safety of the population of Vieques. Source: report to the Secretary of Defense of the Special Panel of Military Operations in Vieques. June 1999, http://www.defenselink.mil/news.

7. *Miami Herald*, May 7, 2004.

8. Source: http://www.forusa.org.

9. Source: http://www.epa.gov.

10. Source: www.miltoxproj.org.

11. *Puerto Rican Herald*, November 6, 2001.

12. "The ATSDR inspires little confidence among environmental health activists," writes John Lindsay-Poland of the Fellowship for Reconciliation, "because its methodology has made it nearly impossible to find causality between contamination and illness. According to Linda King of the Environmental Health Network, who has monitored the agency for more than ten years, only one ATSDR study among hundreds showed a link between contaminants in the community and health problems." (http://www.forusa.org)

13. *Caribbean Business*, April 15, 2004.

14. *Claridad*, July 8–14, 2004.

15. *Puerto Rico Herald*, April 15, 2004.

16. Ibid.

17. *New York Times*, May 20, 2005.

18. *Claridad*, July 8–14, 2004.

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