

Science, Colonialism and the Case for Environmental Justice in Vieques¹

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Over the course of six decades, the United States Navy dropped between 150 and 700 million pounds of bombs and ammunition in military practices on the populated island of Vieques, Puerto Rico, an island roughly twice the size of Manhattan (Wargo, 2009). Of the estimated 39 million pounds dropped between 1983 and 1998, 17.7 million pounds were TNT and 88 pounds were depleted uranium (Davis, Hayes-Conroy & Jones, 2007; Sanderson, Fauser, Stauber, Christensen, Løfstrøm, & Becker, 2017; Wargo, 2009). The impacts of the bombing (Figure 1) were significant – flattened mountaintops, cratered lagoons and beaches, toxic levels of contaminants, compromised health of residents, and more (Berman Santana, 2002; Grupo de Apoyo Técnico y Profesional para el Desarrollo Sustentable de Vieques, 2002; Massol-Deyá & Díaz de Osborne, 2013; Díaz, Pérez, Delgado Acevedo & Massol-Deyá, 2018; McCaffrey, 2000; McCaffrey, 2018).



Figure 1. Smoke cloud from U.S. Navy bombing in Vieques.

On April 19 1999, two MK-82 500 pound bombs were mistakenly dropped from a Navy F/A-18C Hornet fighter jet near a clearly marked observation post in the Live-Impact-Area (LIA) of the Navy bombing range in east Vieques, killing the viequense civilian security guard David Sanes Rodríguez. This tragedy sparked a new phase of the protracted struggle, including massive protest and civil disobedience, to end the bombing in Vieques (Cátedra UNESCO de Educación para la Paz, 2000; McCaffrey, 2018). Local viequen-

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ses combined with mainland Puerto Ricans, Puerto Ricans from the diaspora, and others around the world forced the Navy to end the bombing in May 1, 2003 (Atilés-Osoria, 2014; McCaffrey, 2018; Zenón, 2018). The Navy transferred the former military camp and target impact area on the east of Vieques to the Department of Interior (DOI) in accordance with Public Law 107-107. The area became a federal national wildlife refuge managed by the DOI U.S. Fish and Wildlife Service.

On February 11, 2005, the U.S. Environmental Protection Agency (EPA) placed the Vieques bombing range and surrounding waters on its Superfund National Priorities List (NPL) under the designation Atlantic Fleet Weapons Training Area (AFWTA)-Vieques (National Priorities List for Uncontrolled Hazardous Waste Sites, 2005). The Superfund program is the common name for the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The NPL is EPA's priority list of sites throughout the United States and its territories with known or potential releases of hazardous substances, pollutants, or contaminants. Under CERCLA the Navy, as the agency responsible for the contamination, funds and conducts all cleanup activities on Vieques, with oversight by the EPA and the Puerto Rico Environmental Quality Board. After more than 16 years since the Navy stopped bombing in Vieques, the cleanup efforts have just consisted in removing bombs and other unexploded ordnance using methods that include open detonation and open burning, which present health risks to residents from the contaminants in the smoke column due to the prevailing trade winds in Vieques. In addition, no soil decontamination has yet occurred, and cleanup activities of underwater areas have not started; the current Navy estimate is that the cleanup activities might be completed by 2032 (almost 30 years after the Navy stopped the bombing). The decades of environmental and health deterioration in Vieques due to the U.S. Navy military practices and the current inappropriate cleanup efforts is a clear example of environmental colonialism (Atilés-Osoria, 2013; Atilés-Osoria, 2014; Ayala, 2003; Concepción, 1998).

The history of environmental colonialism in Vieques is tied to the colonial history of Puerto Rico (Ayala & Bernabe, 2007; Ayala Casás & Bolívar Fresneda, 2011). Puerto Rico, a Caribbean archipelago and colony of Spain for more than 400 years, was ceded, along with Philippines and Guam, to the United States after the Spanish-American War of 1898 by the Treaty of Paris (Immerwahr, 2019). In the now infamous Insular Cases, the U.S. Supreme Court declared that Puerto Rico "is a territory appurtenant and belonging to the United States, but not a part of the United States" (*Downes v Bidwell*, 1901; Rivera, 2007; Torruella, 2013). Puerto Rico is a non-incorporated territory belonging to the United States and subject to Congress's authority under the Territorial Clause of the U.S. Constitution (Article IV, Section 3, Clause 2 of the US Constitution). The colonial status of Puerto Rico did not change when Puerto Ricans were granted U.S. citizenship in 1917 nor upon the establishment of the Commonwealth of Puerto Rico in 1952. A recent court ruling (*Puerto Rico v. Sánchez Valle*, 2016) and a federal law (PROMESA, 2016) have reaffirmed the U.S. colonial control on the island, culminating with the appointment of an unelected seven-member Fiscal Oversight and Management Board that has imposed extreme austerity measures

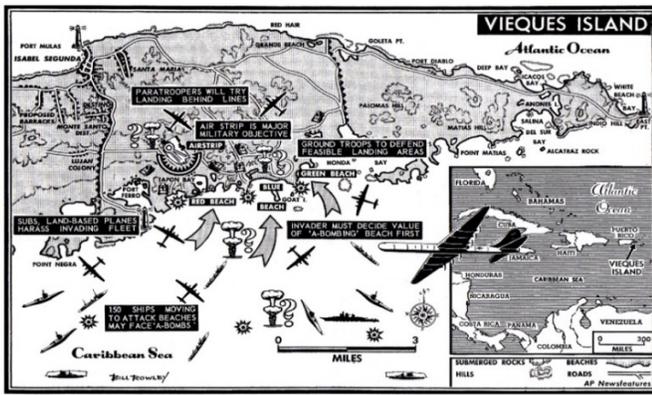


Figure 1: Vieques, 1953. Expeditionary Warfare Training Group. Atlantic, Box 7: LANT PHIBEX II-53. Marine Corps Archives, Quantico, VA. Courtesy of Bonnie Donohue.

Figure 3. Military plans for 1950 war maneuvers in the eastern end of Vieques (McCaffrey, 2018).

(2000) adds that the U.S. interventions in the Balkans, Haiti, Iraq and Somalia were tested in the invasion maneuvers in Vieques and that training was conducted there for the overthrow of Guatemalan president Jacobo Arbenz in 1954, the Bay of Pigs operation (Playa Girón) in Cuba in 1961, the invasion of the Dominican Republic in 1965, the overthrow of Chilean President Salvador Allende in 1973, and the invasions of Granada and Panama in 1983 and 1989, respectively.

Environmental and health consequences of the Navy presence in Vieques

The bombs and other military munitions used in Vieques contained toxic substances such as TNT, RDX, HMX, Teteryl, HBX, PETN, heavy metals (e.g., lead, cadmium, arsenic, mercury), napalm, Agent Orange, chaff, perchlorate, phosphorus and other pyrophoric materials, and residues of organic and inorganic chemical components, among other unknown contaminants (Massol-Deyá & Díaz de Osborne, 2013; Wargo, 2009). In 1999, the US Navy admitted to illegally firing depleted uranium (DU) munitions on Vieques (NAVFAC ATLANTIC, 2018). DU is mildly radioactive and toxic as a heavy metal. In 2002, the Department of Defense (DOD) admitted that Vieques had been used in exercises for biological and chemical warfare and that trioctyl phosphate (a simulant of the nerve agent VX and known animal carcinogen), had been used in those exercises; given the direction of trade winds, it is plausible that the civilian population was exposed (Government Accountability Office, 2004). Studies conducted by independent scientists demonstrated the presence of high concentrations of heavy metals and other contaminants, both in the soil and coastal waters in the bombing range and in the civil area in vegetation that is part of the food chain, thus posing a potential pathway and possible effects on the health of the population of Vieques (Díaz, Pérez, Delgado Acevedo & Massol-Deyá, 2018; Massol-Deyá & Díaz de Osborne, 2013; Wargo, 2009).

The U.S. Navy military practices exposed the citizens in Vieques to toxic contaminants associated to the explosion of ordnance and the thousands of bombs that were dropped in the LIA, as particles and fumes were carried by trade winds directly into the civil area. Even though the military practices stopped in 2003, the population continues to be exposed because Blow-In-Place (BIP), open burning and detonation of unexploded munitions is currently being used by the U.S. Navy contractors during the clean-up operations. The community, including members of the Restoration Advisory Board (RAB), have been opposed to these practices since the trade winds transport the smoke column produced after each detonation right into the civil area. Previous studies conducted in Vieques by Ortiz-Roque and Yadiris (2004) evaluated the presence of mercury among reproductive-aged

women and found that as many as 26.7% of those tested had mercury levels that were unsafe for a developing human fetus. This is much higher than the 7% that has been found previously among reproductive-aged women in the continental U.S. and the 6.6% for those tested in the coastal northeast of Puerto Rico. Another study was conducted by the Puerto Rico Department of Health (2006) to detect the presence of arsenic in hair and urine, cadmium in hair and creatinine, nickel in hair and creatinine, mercury, aluminum and lead in blood and uranium in urine. Some of the results were that at least one metal was detected in about 90% of the population in the study and there were fifteen viequenses with toxicity levels.

The Vieques population has been exposed to toxic contaminants by the military practices and bombing of land and sea from 1948 to 2003 and by the BIP, open burning and detonation methods used in the Superfund site cleanup efforts that have impacted the health of the Vieques population (Díaz, Pérez, Delgado-Acevedo & Massol-Deyá, 2018; Mansilla-Rivera, Nazario, Ramírez-Marrero, Crespo & Rodríguez-Sierra, 2014; Nazario, Suárez & Pérez, 1998; Ortiz-Roque & Yadiris, 2004; Porter, Barton & Torres, 2011; Sanderson, Fauser, Stauber, Christensen, Løfstrøm, & Becker, 2017; Wargo, 2009). In 1996, the Graduate School of Public Health of the University of Puerto Rico analyzed cancer data from the Puerto Rico Department of Health up to 1989 and confirmed that: 1) the incidence rate of cancer in Vieques increased since the early 1970s until 1989, 2) the incidence rate followed the pattern of increasing days and intensity of U.S. Navy use of the Vieques Bombing Range, after the Navy closed the Culebra Bombing Range in 1970s and transferred its maneuvers to Vieques, with a lag time of 20 years, 3) in the early 1980s the cancer incidence rate in Vieques surpassed the one in Puerto Rico, and 4) the excess cancer risk for the time period of 1985-89 was 27% ($p < 0.05$) for the population of Vieques compared to Puerto Rico, but the excess was 117% and 257% for viequenses 0-9 years and 10 to 19 years of age, respectively - compared to children of the same ages in Puerto Rico (Nazario, Suárez & Pérez, 1998).

The Agency for Toxic Substances and Disease Registry (ATSDR) was tasked in 1999 to evaluate whether health problems among Vieques residents were associated with exposure to hazardous substances resulting from military training exercises on the island that reached them through exposure pathways such as groundwater and drinking water, soil, fish and shellfish and air. The reports, called Public Health Assessments and published in 2003 (ATSDR 2001, 2003 a, b, c; ATSDR, 2009), did not establish a link between human health and military training. However, upon major criticism of the reports from Puerto Rican scientists and scientists from abroad for lacking scientific rigor, these reports were withdrawn by ATSDR in 2009, citing sample design inadequacy and sample size insufficiency (Navarro, 2009). A second ATSDR report (2013) reached similar conclusions as the first, but was strongly disputed on scientific grounds (Pierluisi, 2012). Vieques residents have been denouncing the Navy and its contractors for not providing the information needed to access the cleanup process and not considering alternatives suggested by their environmental consultants. The Navy pretends to “clean up” Vieques to the lowest standard possible (a

“low” cleanup/remediation level that would classify the ranges as “limited public access” to use them for wildlife preservation, but not for human habitation), as it has done in many of its former contaminated practice ranges (Government Accountability Office, 2001).

The U.S. Navy continues to use open burning/open detonation in the cleanup activities of thousands of remaining bombs in the former LIA, a Superfund site. In 2013, 7,000 Vieques residents filed a petition to the Inter-American Commission on Human Rights (IACHR) against the U.S. Navy, alleging violations of their human rights and environmental justice (Epting, 2015). This petition was supported by the Natural Resources Defense Council (NRDC) who submitted an *amicus curiae* brief in 2017. On April 3 2019, U.S. Ambassador Carlos Trujillo sent a letter to the IACHR with the U.S. response and, as expected, argued that the petition is inadmissible and must be dismissed. The response letter includes the following information about the Navy cleanup efforts: “During this effort, over 7.7 million items of Material Potentially Presenting an Explosive Hazard (MPPEH) have been safely recovered and processed. To date, the Navy has removed approximately 102,000 munitions items, including 39,000 projectiles, 32,000 bombs, 4,300 mortars, 1,300 rockets, 16,000 submunitions, and 9,400 grenades, flares, pyrotechnics, and other munitions. The remaining 7.6M items were scrap metal or other material documented as safe. Approximately 57,000 munitions items have been destroyed in controlled detonations, and 45,000 munitions items have been processed by other means.” (Trujillo, 2019, p.11). Since “controlled detonations” is the BIP, open burning/open detonation method, the U.S. government is admitting that thousands of bombs and other ordnance have been detonated in open air exposing the Vieques residents to the environmental and health consequences of such actions.

In January 2019 a report by the National Academies of Science, Engineering and Medicine indicated that there are alternative means of demilitarizing conventional bombs and munitions, including using closed detonation chambers (National Academies of Sciences, Engineering, and Medicine, 2018), as has been suggested for many years by community environmental consultants and the Vieques population. However, the Navy continues to oppose their use in Vieques. Swift land and underwater cleanup and decontamination from the unexploded ordnance left behind by the US military is necessary. Full disclosure by the Navy of all bombing activities has not occurred and it is urgently needed to provide a full assessment of contamination levels and future decontamination efforts.

Vieques community-based organizations such as *Vidas Viequenses Valen* (Figure 4), *La Colmena Cimarrona*, and *Vieques en Rescate*, among others, are actively leading the way in denouncing the Navy clean up efforts and providing health, farming and nutrition services to the population (McCaffrey, 2018; Medina, Pellegrini & Mogro-Wilson, 2014). The daily situation of the viequenses, particularly the ones in need of medical help, and the tourism industry, which provides jobs and injects money into the small island economy, is dire since the ferry service to the island operated by the Puerto Rico government is in such bad shape that recently the Governor had to call in the National Guard for help with transportation. In addition, medical facilities are urgently needed in Vieques. Unfortunately,

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Vieques is definitely a colony within a colony. The same solidarity demonstrated by so many people worldwide that helped stop the bombing in Vieques is required again to pressure the U.S. Navy to conduct a responsible and comprehensive cleanup of Vieques, and the Puerto Rican and U.S. government to provide funds for ferry and health services to the Vieques population. The Cease Fire Campaign (cswab.org) has included Vieques in its campaign to stop open burning and open detonation of military munitions.

The environmental injustice in Vieques cannot continue. Peace for Vieques will not be accomplished if health and environmental justice does not reach all of its citizens.



Figure 4. Protest of *Vidas Viequenses Valen* against the U.S. Navy.

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