

Atomic Times in the Pacific
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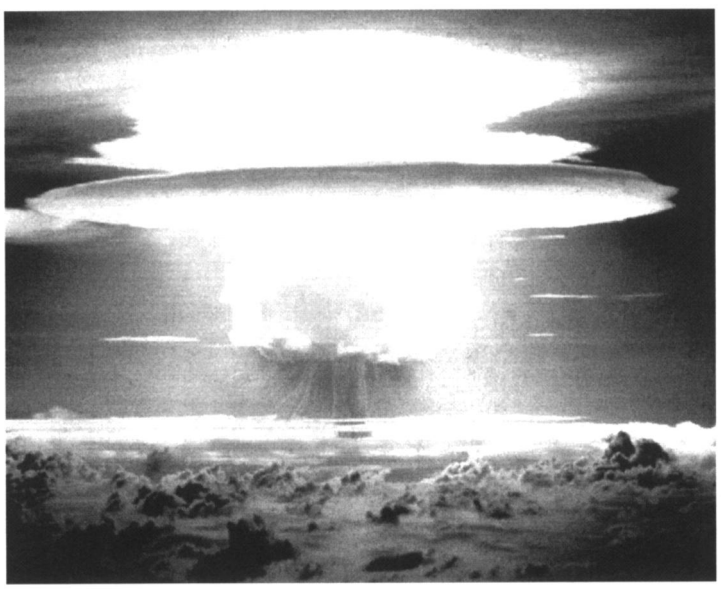
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☢ Atomic Times in the Pacific

Barbara Rose Johnston

In 1946, after evacuating the people of Bikini and nearby atoll communities, the United States detonated two atomic weapons in the Marshall Islands, a nation it liberated from Japanese control during World War II. The atomic bombs detonated were the same type as dropped on Nagasaki in 1945. In 1947, the United Nations designated the Marshall Islands a U.S. Trust Territory, and the U.S. officially claimed it as their Pacific Proving Grounds. Over the next eleven years, to test the biggest, dirtiest nuclear weapons in the U.S. arsenal in secrecy and at great distance from the continental United States, another sixty-five atomic and thermonuclear bombs were detonated in the skies and under the waters of this Pacific island nation.

The largest of these tests, code named Bravo, was detonated on March 1, 1954. This 15-megaton hydrogen bomb exploded close to the ground, melting and transforming huge quantities of coral atoll, and drawing this debris into the mushroom cloud that eventually blanketed the Marshall Islands with radioactive fallout. The wind was blowing that morning toward communities living in Rongelap, Ailinginae, and Utrik Atolls, 100 and 300 miles from Bikini ground zero. The Marshallese communities, U.S. servicemen on Rongerik Atoll (moni-



Bravo Test, March 1, 1954. (Source: U.S. Department of Energy.)

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toring winds and fallout), and the crew of the Japanese fishing vessel *Fukuryu Maru* received near-lethal doses of radiation from this fallout.

Once the news of atomic casualties hit the press, international protests were lodged in the United Nations, with India calling for a ban on nuclear weapons testing. Fearful that a test ban would pass and further fuel efforts to completely eliminate atomic weapons from national arsenals (thereby undermining a major source of U.S. power in the world), the United States acknowledged the incident and accepted liability. In statements to the U.N. General Assembly, the United States assured the world that injured people would be treated, assisted, and appropriately compensated.

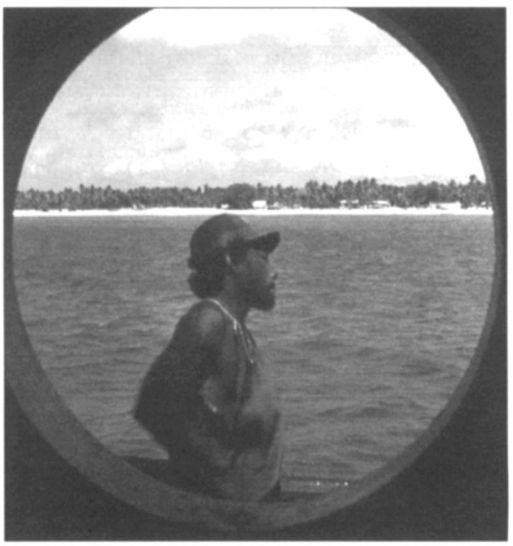
The United States evacuated communities on Rongelap, Utrik, and the 28 servicemen who were monitoring weather and fallout on neighboring Rongerik atoll to Kwajalein military base where they spent the next three months under intense medical scrutiny as human subjects in Project 4.1. A pre-existing classified research program, Project 4.1 was authorized, following an Atomic Energy Commission review of research programs and needs in 1953, to study the acute effects of radiation exposure on human populations including research on the carcinogenic action of ingested or inhaled radioactive materials and the effect of ionizing radiation on blood.

At the end of three months, Utrik residents were returned to their atoll, and servicemen were released for general duty. The people of Rongelap, who had been exposed to near-lethal levels of radiation, were kept for additional monitoring. Over the next three years, Naval doctors continued annual exams with the now-exiled Rongelap community, documenting radiation levels and related health effects. Other scientists monitored the presence of radioisotopes in the soil, water, plant, and marine life back on Rongelap. Atomic Energy Commission scientists reviewed the classified findings from this work and, in 1957, observed that returning the exposed people of Rongelap to their still-contaminated islands "afforded a unique opportunity to study the movement of radiation through the environment, food chain, and the human body." With false assurances that their islands were now safe, the Rongelap community was shipped home.

Decades passed. More and more people suffered from previously unknown health problems—thyroid cancer, stunted growth and retardation in children, high rates of miscarriage and congenital birth defects. These problems fed community fears that their atoll was still dangerously contami-

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nated, a fact that became evident to scientists in the restudy of radiological conditions in the northern Marshall Islands in 1978. The new findings were not, however, explained to the Rongelap community until 1982, when a representative from the U.S. Environmental Protection Agency informed residents that some islands were still highly radioactive. The Rongelap community asked to be evacuated, a request that the United States denied. Officials feared that evacuation would send a signal that low-level radiation in the environment truly endangers public health, news that might not only generate enough global concern for a full ban on nuclear weapons to finally pass in the United Nations, but the news would also endanger the rapidly expanding nuclear power industry. Arguing that it was safe to stay so long as people avoided the northern islands in the Rongelap atoll and consumed imported canned food, the United States refused to assist in any evacuation. In 1985, with the help of Greenpeace and its Rainbow Warrior ship in what proved to be its final voyage, the Rongelap community was moved to an island off Kwajalein.



Evacuation of Rongelap. This picture of Aisen Tima, the Rongelap school teacher, was taken through the porthole of Greenpeace Rainbow Warrior, with Rongelap in the background in May 1985. (Photo by Glenn Alcalay.)

Decades passed. More and more people suffered from previously unknown health problems—thyroid cancer, stunted growth and retardation in children, high rates of miscarriage and congenital birth defects.

For some forty years, the Rongelap community received annual and, later, biannual visits by U.S. scientists conducting classified radiation effects research. These scientists collected fish, plants, soil, and human body samples to document the presence of radioisotopes deposited from sixty-seven tests, the movement of these isotopes through the food chain and human body, and the adverse health impacts of this radiation on the human body.

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In 1998, I was invited to serve as an advisor for the Marshall Islands Nuclear Claims

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Tribunal. The Tribunal was created through Congressional action in 1986 as part of the Compact of Free Association between the United States and the Marshall Islands. Since 1991 it has operated as an administrative court receiving claims and awarding compensation for nuclear weapons testing damages. I was asked to assist the Tribunal in its effort to value land, assess damages, and provide compensation for damages associated with the U.S. nuclear weapons testing program. I have written a case study summary of the Rongelap community experience, and I have researched the impact of development, resettlement, and nuclear militarism on indigenous peoples.

The Tribunal had finished deliberations in the property claims for Enewetak and was close to completing the claim for Bikini, the two atolls that served as nuclear ground zero. These claims had been developed using a Western legal framework where property rights are owned by the individual and remedy comes in the form of cash compensation at rates reflecting fair market value. I recognized that this approach had its difficulties: land cannot be bought or sold in the Marshalls. Land and other critical resources in the Marshall Islands are part of a tightly structured, common property rights system in which use rights are inherited by women, with access granted by customary authorities to family members who demonstrate social responsibility and stewardship. Rights to use land are occasionally exchanged for cash payment, but this use is typically restricted to the right to occupy, and not the rights to freely use without permission coconuts, pandanus, and other material resources situated on the land, or reef heads and other marine resources adjoining the land. Customary exchanges of use rights, and many current use-rights agreements, do not involve cash transactions. People provide their labor and the products of labor in exchange for the right to occupy and use, with permission, the natural resources of a particular area. Traditional and current use-rights arrangements also include an implicit agreement to care for the land, including husbandry of trees, clearing and burning underbrush, and improving the fertility of soil. The right to occupy or use land can be revoked when stewardship principles are not being met. Customary laws governing access and use of property are codified in the Republic of the Marshall Islands National Constitution.

Since a fair market value based on the sale of land did not exist in the Marshall Islands, in the Bikini and Enewetak land claims cases the Nuclear Claims Tribunal valued property by relying upon the historic record of use-rights agreements, largely consisting of U.S. military leases, where rent was paid to customary authorities at predetermined rates. This, together with the cost to remediate contaminated land, and monetary compensation for hardships associated with the loss of land, formed the basis of the property damage claims.

For many reasons this approach taken in prior property damage claims was problematic, all the more so when considering the unique nature of the Rongelap community experience. The people of Rongelap had not

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The people of Rongelap ... were removed from the ability to safely live on their lands because of the contamination produced by fallout. ... Are there precedents ... for ... quantifying ... the loss of the means to sustain a healthy way of life?

seen their islands atomized, and they had not physically lost their lands. Rather they were removed from the ability to safely live on their lands because of the contamination produced by fallout. The public advocate wondered: How are damages defined and compensation provided for property losses in other parts of the world where people live largely outside of a market economy? Are there precedents or methodologies for identifying and quantifying the damages associated with the loss of the means to sustain a healthy way of life?

After much back and forth, I agreed to provide advice to the Nuclear Claims Tribunal and to lead a research team working in support of the Rongelap claim. This work included archival research, development of case precedents involving loss of a way of life, identification and description of methodologies used to value the critical resources in nonmarket economies, and, with linguist and ethnographer Holly Barker, participatory research and in-depth interviews with the Rongelap community. Here I summarize our findings, which were presented in the form of an expert witness report for the Nuclear Claims Tribunal in the fall of 2001.

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We found that the notion of compensation for the loss of access to and use of dry land over a defined period of time was woefully inadequate. Harm included, not only contamination of dry land and the life that it supports, but also the marine environment. For the people of Rongelap and other Marshallese people, the cultural landscape is fixed and fluid—both terrestrial and marine. Seamounts, reefs, islands, and lagoons are all significant features of the land and seascape. Cultivation of gardens and husbandry of trees and bushes were elements of a broader subsistence strategy that utilized the resources provided by wind and water: migratory birds, fish, and marine mammals were all essential elements of the Marshallese subsistence economy.

Harm to Rongelap included much more than suggested by the Tribunal list of radiation burns, poisoning, and cancers that constitute a claim for personal injury. Declassified studies of the Marshallese and their acute exposure to Bravo fallout in 1954 documented immediate effects including beta burns, loss of hair, depressed red cell and leukocyte counts, flu-like symptoms, nausea, fingernail discoloration, radioactivity in the urine, and changes at the cellular level in blood and bone marrow. Long-term studies documented immune-deficiency

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Holly Barker posing questions and Lijon Eknilang testifying to the RMI Nuclear Claims Tribunal, November 1, 2001. (Nuclear Claims Tribunal videotape of the hearing.)

diseases, metabolic disorders (diabetes), growth impairment in children, cancers, leukemia, premature aging (dental decay, cataracts, degenerative osteoarthritis), and a host of reproductive problems including miscarriages, congenital birth defects, and sterility. Long-term studies also confirmed what other classified research suggested: that radioiodine-131 adheres to and accumulates in the thyroid, stimulating the production of benign and cancerous nodules and interfering with the production of hormones, leaving children and pregnant women especially vulnerable. Thyroid cancer and other radiogenic changes occur, not only in people exposed to an acute level of ionizing radiation, but also in those who were born or moved into contaminated areas long after the initial blast and fallout had occurred.

Given these broader injuries, we argued that the Tribunal must consider and redress the many dimensions of the struggle to "survive" downwind from the U.S. nuclear testing. These dimensions include the trauma of living with an invisible, untouchable, all-encompassing poison. As Lijon Eknilang noted, in a 1999 interview with Holly Barker, "Psychologically, you stop believing in everything around you. Your feeling of safety no longer exists when the radiation-contaminated medicine and food around you is no good, restricted, and makes you worry."

And, these dimensions include the broader social traumas of humiliation, marginalization, and stigmatization, as Alimira Matayoshi noted in her 2001 interview with Holly Barker: "People didn't want to shake our hands for fear we would contaminate

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them. We were embarrassed to walk around where there were other Marshallese, because they would say things like 'they give birth to grapes.'"

We also argued that a narrow focus on damage to the atoll missed the larger human rights issues raised by the treatment of human subjects in radiation research which was often intrusive, painful, and potentially harmful to the health of the participants. Declassified transcripts from Atomic Energy Commission scientific advisory meetings made it clear that the medical research agenda served a dual role: to assure the United Nations and general public that all is well in the Marshalls and a weapons test ban is not needed; and, to conduct research that addresses military questions and needs, rather than attend to the health treatment needs of the affected population. Marshallese health concerns, especially worries that radiation from fallout remained in their environment, poisoning their food and their bodies, were often ignored. While health was monitored, only the most obvious radiogenic issues, such as the community-wide development of thyroid disease and cancer, were treated. Reproductive health problems and congenital birth defects were noted, but not studied or treated.

Finally, we reminded the Tribunal that much of the scientific record remained classified, and there was no full disclosure of the nature of the nuclear weapons testing program and the extent of its damages. A 1955 classified survey released to the Marshallese government in 1995 reports fallout from the 1954 Bravo test present at hazardous levels on all populated atolls in the Marshalls. Recent reassessment of the atmospheric tests in the Marshall Islands concludes that at least 3 billion curies of the highly radioactive iodine-131 were released in the Marshalls, with much of this release from Bravo test. In contrast, an estimated 150 million curies of iodine-131 were released from the Nevada proving grounds, and between 40 to 54 million curies of iodine-131 were release during Chernobyl disaster. Thus, the entire nation, not simply the four atolls, has been adversely affected by nuclear weapons.

In April 2007, the Nuclear Claims Tribunal issued its findings in this case: "The Tribunal has determined the amount of compensation due to the Claimants in this case is $1,031,231,200. This amount includes $212,000,000 for remediation and restoration of Rongelap and Rongerik Atolls. This award further includes $784,500,000 for past and future lost property value of Rongelap, Rongerik and Ailinginae Atolls as a re-

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sult of the Nuclear Testing Program. Finally, it includes $34,731,200 to the Claimants for consequential damages." Notably, the consequential damages portion of this award includes loss of a way of life, loss of a healthy way of life, and human subject experimentation.

As is the case for all the other property claims before the Tribunal, these damages far exceed the amount of money initially provided by the United States to meet personal injury and property and other consequential damages. The Nuclear Claims Tribunal can no longer pay on any personal injury award, let alone a community damage claim. Payment will require an act of the U.S. Congress or an order through the U.S. courts.

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The toxic and radioactive contamination of soil, water, terrestrial and marine biota, and human life that is the legacy of nuclear war games in the Marshall Islands is difficult and expensive to monitor, let alone remediate. What is clearly lacking in the Marshall Islands, and sorely needed, is a high-quality comprehensive health care and environmental remediation program addressing the direct and indirect consequences of U.S. nuclear militarism.

The declassified record of medical research with Marshallese subjects contains a long list of radiogenic conditions documented over the decades. Many of these conditions are also noted in the long-term and intergenerational experiences of the Japanese atomic survivors and post-Chernobyl communities. Malignant tumors and high cancer mortality rates prevail, as do a wide array of chronic health problems not present before testing, documented as occurring at markedly increased rates after exposure to fallout, which are now common. These chronic conditions include diabetes, hypercholesterolemia, heart disease, hypothyroidism, and osteoarthritis. Recent reassessments of the Japanese data point to the importance of considering the synergistic effects of radiation and the toxicity of other chemicals and minerals contained in fallout. Children exposed to radioactive heavy metals in utero or early childhood, for example, are at increased risk for cancer and reproductive health problems, and are especially vulnerable to impairment of neural and cognitive function and skeletal-muscular retardation.

In the ten years since I first traveled to the Marshall Islands to work with John Anjain and other members of the Rongelap community, I have received the sad news of so many deaths from illnesses that, had they occurred on the mainland, might have been diagnosed and treated. Over half of the

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In an effort to enforce the compensation settlements ... a petition was filed in the U.S. court system. In 2006, the lower court dismissed these claims. A petition to the Federal Circuit Appeals Court resulted in a 2009 dismissal of the case.

Marshallese advisors who helped support this work are now dead from radiogenic disease, as is the chairman of the Nuclear Claims Tribunal, and many of our key informants.

In an effort to enforce the compensation settlements in the Bikini and Enewetak claims, a petition was filed in the U.S. court system. In 2006, the lower court dismissed these claims. A petition to the Federal Circuit Appeals Court resulted in a 2009 dismissal of the case.

A petition requesting full funding of the Nuclear Claims Tribunal awards was filed with U.S. Congress in late 1999, noting that with declassification new information had come to light, and that the extent of damages are far greater than recognized when the Nuclear Claims Tribunal fund was established by the Ronald Reagan administration. The Bush Administration recommended dismissing the "Changed Circumstances" petition, arguing that all liabilities have been met.

I have to wonder if the U.S. failure to act responsibly in this matter reflects a conscious and pragmatic choice to sit and wait. With time, all the voices will be silenced. And, in a nation of islands that sit some eight feet above sea level, with time the rising seas will simply erase these polluted lands.

Barbara Rose Johnston is Senior Research Fellow at the Center for Political Ecology in Santa Cruz, California. Narrative quotes are excerpted from the book *Consequential Damages of Nuclear War—The Rongelap Report,* by Barbara Rose Johnston and Holly M. Barker (Walnut Creek, CA: Left Coast Press, 2008). For additional information on classified science and the enduring legacies of Cold War militarism, see *Half-Lives and Half-Truths: Confronting the Radioactive Legacies of the Cold War,* edited by Barbara Rose Johnston (Santa Fe, NM: SAR Press, 2007).

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