



Vieques

Environmental Restoration
Fact Sheet

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Controlled Burning in the Submunitions Area of Vieques

Summary

Submunitions are small bombs, or “bomblets,” that are released from larger cluster munitions. Within the former bombing range on Vieques, the 75-acre Submunitions Area contains thousands of dangerous submunitions that are lying on the ground surface and are hidden under vegetation. These submunitions are shock-sensitive and may explode if moved or disturbed in any way. This situation poses a very high risk to anyone who may enter the area, including local residents, tourists, wildlife managers, and cleanup workers. In order for cleanup workers to see the submunitions, avoid accidental contact, and clear the submunitions safely, the vegetation must be removed. The Navy has determined that the only safe method for vegetation removal is to conduct small (approximately 2 acre) controlled burns. Air modeling and extensive air sampling over a period of 12 years indicate that the burn events comply with air quality standards, and smoke does not reach any residences or businesses, which are 8 miles from the Submunitions Area. Therefore, controlled burning in the Submunitions Area is done in a manner that is protective of human health and the environment.

In order to protect the safety of wildlife managers, local residents, cleanup workers, and visitors to Vieques who may enter this dangerous location, the Submunitions Area must be cleared of munitions. Controlled burning of vegetation is necessary in the Submunitions Area to allow workers to see the submunitions, avoid accidental contact, and clear the submunitions safely.





Why is the Submunitions Area so dangerous?

The 75-acre Submunitions Area contains thousands of submunitions that are extremely sensitive and very small – small enough to hide under vegetation, and sensitive enough to explode if accidentally bumped, stepped on, or disturbed in any way. Although they are small, submunitions contain enough explosive material to kill or maim people.



Without burning, the submunition is hidden under vegetation.

Why burn the Submunitions Area when other areas have been cleared without burning?

The Navy has safely cleared munitions from over 3,800 acres that lie outside the Submunitions Area. This work was performed without the need to burn vegetation because the munitions were large enough to be seen, or stable enough to be stepped on or bumped accidentally without exploding. In contrast, submunitions are small and easily hidden by vegetation, and many submunitions are very sensitive and ready to explode if they are accidentally bumped, stepped on, or disturbed in any way. As a result, it would be unsafe for site workers to remove the vegetation manually, or to enter the area and attempt to clear the submunitions while the site is covered with vegetation. Simply cutting the vegetation would not work because the cut vegetation

would remain on the ground surface and continue to hide the submunitions. The vegetation in the Submunitions Area must be burned to allow workers to see the submunitions, avoid accidental contact, and clear the submunitions safely.

Why not just leave the Submunitions Area alone?

The Submunitions Area is dangerous, and it must be addressed. Despite access restrictions and the remote location, it is possible that local residents or tourists may wander into the Submunitions Area, where they would face a significant risk of being maimed or killed. While the Navy's on-going cleanup activities have reduced the explosive hazard in surrounding areas, the Submunitions Area continues to present a severe threat of explosion and an imminent and substantial danger. The Navy is unwilling to allow this dangerous situation to continue. Therefore, as the lead agency under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Navy has invoked CERCLA Section 121(e)(1) in order to proceed with a time critical response action in the Submunitions Area.

How are the controlled burns conducted?

The controlled burns follow procedures described in the Submunitions Area Removal Action Work Plan for the Time Critical Removal of Munitions within the Live Impact Area at the former Vieques Naval Training Range (NAVFAC Atlantic, 2016). This document has been reviewed by the Puerto Rico Environmental Quality Board (PREQB), the Puerto Rico Department of Natural and Environmental Resources (DNER), the US Environmental Protection Agency (EPA), and the US Fish and Wildlife Service (FWS). Each controlled burn covers approximately 2 acres and lasts for several hours. Following each burn, workers take several weeks to clear the area of munitions and set up the next burn. It is expected that controlled burns will occur 1 to 2 times per month over a period of 2 to 3 years.

In accordance with the work plan, the Navy has installed fire breaks and initiates burning only during times of favorable weather conditions. Although the work plan has undergone agency review, approval for the burns from PREQB is pending.

How effective are the controlled burns?

In order to evaluate controlled burning on Vieques, the Navy conducted a test burn on January 20, 2015, within a 2 acre portion of the Submunitions Area. The fire removed leaves and vegetation from the ground surface, allowing workers to see submunitions that had been hidden. Thus, they were able to avoid the danger of accidentally disturbing or stepping on submunitions. Workers also saw that many submunitions had detonated or burned out during the controlled burn and were no longer a threat. As a result, the burn provided an immediate and significant reduction in the safety hazard for site workers, and the test area was successfully surface cleared of submunitions.

What about the smoke?

Since the populated areas of Vieques are approximately 8 miles from the Submunitions Area, smoke from the controlled burns does not reach any residences or businesses.

This conclusion has been confirmed many times during the past 12 years. Since 2005, the Navy has collected over 50 air samples during 19 accidental brush fires in the former bombing range. Additional air sampling occurs during each burn event in the Submunitions Area. No explosive compounds have been detected in any air samples, and all concentrations of particulate matter and metals are in compliance with air quality standards. In addition to the sampling, the Navy has completed air modeling of a hypothetical 103 acre fire in the Submunitions Area, which is highly conservative since the controlled burns cover approximately 2 acres. The air modeling of the hypothetical fire showed no effect on the residential areas of Vieques. Overall, the air sampling and air modeling show that burning in the Submunitions Area is conducted in a manner that is protective of human health and the environment.



View of the test burn from OP-1, approximately 2 miles from the burn area. Inhabited areas of Vieques are 7 to 8 miles from the burn area.



How are the burns controlled?

The thin soil in the Submunitions Area supports little or no grass cover, so fires are difficult to start, and they spread very little before going out. During the 2015 test burn, remote controlled equipment was used to cut the vegetation, and the cut vegetation was allowed to dry for several weeks prior to burning. The cut vegetation burned successfully, but the fire went out when it reached uncut vegetation at the boundaries of the test area. Thus the fire was readily controlled and contained within the planned area. For additional control measures, the Navy maintains fire breaks and initiates burning only during times of favorable weather conditions.



Submunitions fully visible after being burned out and rendered safe during the test burn.

What about endangered species?

Sea turtles are the only threatened or endangered species that may be in the vicinity of the controlled burns. Turtle monitoring is conducted on any beach that may be affected by a particular controlled burn, and fire breaks are added as needed to protect the beach. If turtle monitoring is conducted, the Fish and Wildlife Service (FWS) and the Puerto Rico Department of Natural and Environmental Resources (DNER) are given the opportunity to participate.

What about erosion?

The Navy installs erosion control measures as needed to prevent erosion from the Submunitions Area. During the past 12 years of munitions clearance on Vieques, these erosion control measures have proven to be reliable and effective. In addition, the potential for erosion is minimized because the controlled burns occur only in small areas, and the vegetation grows back quickly.

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