Marine Corps Air Station
Cherry Point, North Carolina

Range Environmental Vulnerability Assessment (REVA) Factsheet August 2020

Background

The Department of Defense (DoD) uses and manages operational ranges to support national security objectives and maintain the high state of operational readiness essential to its mission requirements. DoD conducts non-regulatory, proactive, and comprehensive operational range assessments (ORAs) to support the long-term sustainability of these ranges while protecting human health and the environment.

The purpose of an ORA is to determine if there is a release or substantial threat of a release of munitions constituents (MC) from an operational range to an off-range area that exceeds an applicable regulatory standard or creates a potential unacceptable risk to human health or the environment.

The Range Environmental Vulnerability Assessment (REVA) Program is the U.S. Marine Corps (USMC) program designed to meet the DoD ORA requirements.

Operational Ranges Overview

Marine Corps Air Station (MCAS) Cherry Point is a leader in aviation support facilities and services within the DoD. The installation is located in coastal North Carolina, approximately 100 miles north of Wilmington. It includes nine noncontiguous areas located among several water bodies and separated from the Atlantic Ocean by barrier islands. Eight of these areas are land-based, and one is water-based. The primary MC deposited on the ranges and evaluated under REVA are lead on small arms ranges and lead, perchlorate, and explosive constituents on the demolition range and bombing targets. The small arms (Rifle, Pistol, Action, and Skeet and Trap) ranges, demolition range (explosive ordnance) range, and bombing targets (BT-9 and BT-11) are located at the Air Station, Brandt Island Shoal, and Piney Island. Other areas of the installation authorize only inert munitions or do not support use of munitions.

ORA Findings (08/2020)

The MCAS Cherry Point Second Periodic Review concluded that MC source-receptor pathways are incomplete, indicating there is no known off-range migration of MC (lead, explosives, or perchlorate). MC sources included four small arms ranges, one demolition range, and two bombing targets. Off-range migration of MC is unlikely due to periodic lead removal from impact berms, flat topography, vegetation surrounding the ranges, and/or large water bodies that dilute concentrations. There is no known or substantial threat of off-range migration of MC that presents a potential unacceptable risk to human health or the environment.

Next Steps

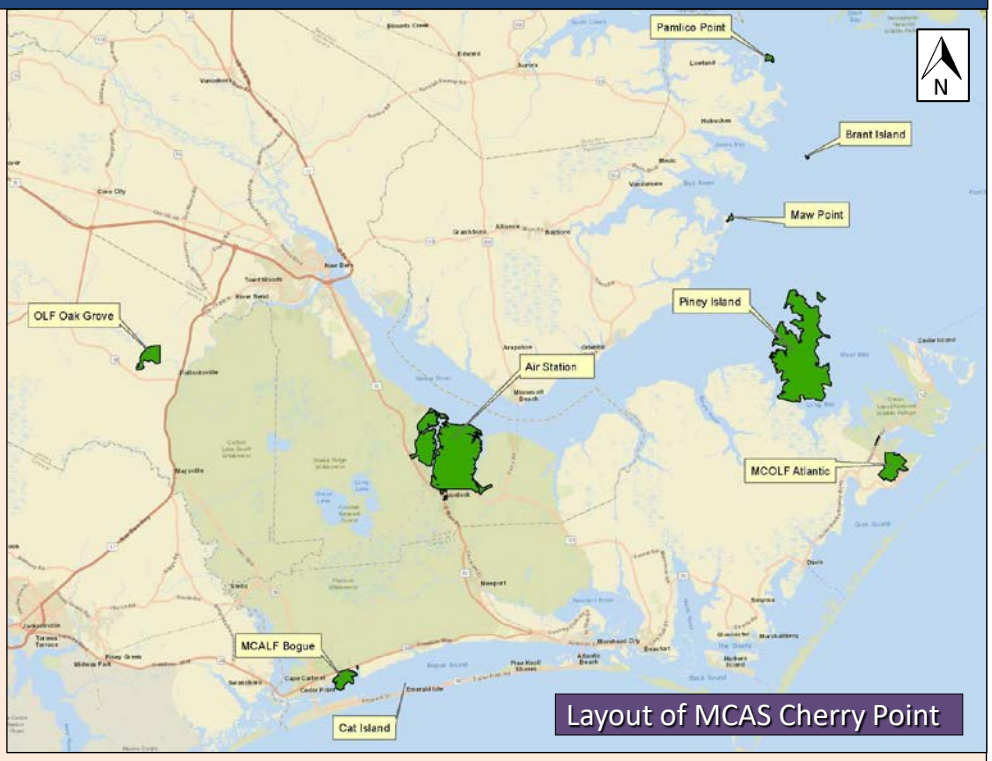
The operational ranges will be reassessed during the next REVA Periodic Review (in five years), or sooner if there are changes to site conditions or training.

Location of MCAS Cherry Point, North Carolina

Range Assessment Overview

Scope: This REVA Second Periodic Review for MCAS Cherry Point covers munitions use on operational ranges that occurred from October 2014 through July 2019. The previous REVA study at MCAS Cherry Point, for the period of 2011 to September 2014, concluded that there was no known threat to identified receptors.

Approach: REVA uses a conceptual site model (CSM) to inform decision making. A complete CSM pathway consists of a source of MC, transport mechanism of MC to an off-range exposure media, and receptor interaction with the off-range exposure media.



For this REVA Periodic Review, data were collected to update the CSM since the previous REVA review was completed in 2014. This included a review of the operational ranges (e.g., range inventory and changes in design), changes in range use (e.g., amounts and types of munitions expended), changes in potential migration pathways, and changes to receptors (e.g., newly installed groundwater supply wells, ecological).

Results: The CSM pathways for MC migration from the operational ranges to off-range receptors at MCAS Cherry Point are incomplete. This is predominantly due to flat gradients, vegetation around ranges, large water bodies surrounding the ranges, depth to water supply wells, and range maintenance practices. Expenditure rates are generally the same or have decreased since the first Periodic Review, with the exception of small arms use at BT-11.

Source: Munitions used on most ranges and training areas are inert, containing little or no MC (lead, explosives, perchlorate). Use at seven range areas could create a potentially viable MC source for off-range migration. Engineering and natural controls inhibit MC migration off-range.

Transport Mechanisms: The primary transport mechanism for off-range MC migration is stormwater runoff moving surface soil from the MC deposition areas (impact areas) toward off-range areas. However, the flat gradient and vegetation surrounding most of the ranges limits MC migration. Range maintenance at the small arms complex periodically removes the lead source from the impact berms. MC is deposited directly into water at the bombing targets, where large bodies of water dilute concentrations. Although MC may infiltrate to the shallow water table, most shallow groundwater discharges to nearby surface water bodies.

Off-Range Receptors: Potential human receptors for all the ranges include recreational users of surface water and for Air Station ranges and BT-11, include consumers of drinking water. Ecological receptors include wetlands at the Air Station and BT-11 and protected species using water bodies located at and near BT-9 and BT-11.

Conclusion: The REVA Periodic Review of MCAS Cherry Point concludes that there is no known or substantial threat of off-range migration of MC that presents a potential unacceptable risk to human health or the environment. The operational ranges will be reassessed during the next REVA Periodic Review.

For more information on this range/range complex/installation contact Jennifer Wilber (jennifer.wilber@usmc.mil).
For more information on the DoD Operational Range Assessment Program visit http://www.denix.osd.mil/sri/home/