

Natural Resource Management and National Environmental Policy Act (NEPA) Compliance Support for Large DoD Installations

For nearly a decade, Redhorse has been performing National Environmental Policy Act (NEPA) compliance by providing long-term natural and cultural resources, and Geographical Information System (GIS) support for large Department of Defense (DoD) installations including: The National Training Center (NTC) Fort Irwin, Edwards Air Force Base (AFB), the Hawthorne Army Depot (HWAD), the Naval Air Weapons Station China Lake, and the Joint Readiness Training Center (JRTC) Fort Polk. Under these contracts, we have undertaken hundreds of environmental resource regulatory compliance projects.

As a Native-American owned firm, we bring a relevant sensitivity and awareness to our natural and cultural resource programs. We understand the importance of effectively executing our client's missions. We provide qualified professionals with region-specific knowledge and strong work ethics; we have developed well-defined field, lab, data management, and GIS protocols to program manage efficiently and with consistent methods; and we optimize technology by pursuing efforts to keep pace with evolving technologies and practices while maintaining contemporary knowledge of new sensors, software, remote sensing platforms, and industry practices, which we successfully implement for our customers.

Fort Irwin

The National Training Center at Fort Irwin encompasses approximately 755,000 acres of the Mojave Desert and is home to six known flora/fauna and threatened, endangered or sensitive species (TES), as well as over 1,600 known cultural resources. Redhorse has been providing environmental resources support to the NTC since 2012. Our multi-disciplinary team produced the Environmental Assessment (EA) for the updated 2016-2020 Integrated Cultural Resources Management Plan (ICRMP). Redhorse continues to support the development and implementation of the Fort Irwin ICRMP as well as the Integrated Natural Resources Management Plan (INRMP).

Our **biologists** survey for presence or absence of TES species, habitat quality/use, impacts to habitat, the effects of the identified project on the landscape and recommend mitigation measures to offset identified impacts. This includes conducting: annual surveys of TES species including: Lake Mountain Milkvetch, Mojave Fringe Toed Lizard, Desert Cymopterus, Burrowing Owl, and Mohave Ground Squirrel, and produces the associated reports; spring/seep monitoring and establishing spring and seep baseline conditions; and help to develop and implement monitoring plans, including conducting macro- and micro-ecology surveys by wildlife, plant,

wetland, and aquatic biologists and collecting plant, water and sediment samples for testing and analysis.

Our **archaeologists** undertake Section 106 compliance surveys to identify potentially effected cultural resources and recommend mitigation measures where appropriate. We conduct a twice annual monitoring program of significant cultural resources on the installation. We maintain a 36 CFR 79 compliant archaeological curation facility, with fully accessioned and curated collections, and a comprehensive curation database.

Edwards Air Force Base (AFB)

Edwards Air Force Base (AFB) consists of approximately 308,000 acres located in the Mojave Desert. Redhorse has been providing environmental resources support to Edwards AFB since 2016. Redhorse provides environmental regulatory compliance support activities necessary to support the AF and AFCEC environmental mission requirements at Edwards AFB through the Edwards Air Force Fence to Fence (F2F) contract. Our multi-disciplinary team supports the development and implementation of the Edwards AFB INRMP and ICRMP.

Our **biologists** conduct Desert tortoise habitat management on over 66,000 acres of critical habitat and performed a base-wide desert tortoise density survey. All Desert tortoise habitat assessments are conducted by an Authorized Biologist in accordance with the USFWS protocol and regulatory guidance and are in accordance with the requirements of current Biological Opinions. Redhorse also performs a Desert tortoise fencing inspection and maintenance task to protect critical habitat from adjacent BLM land and the unauthorized recreating public, and from mission activities; a camera trap Mohave ground squirrel species management survey, that will be part of a five-year interval population monitoring effort to determine long-term trends; and a two-year invasive species management component.

Our **archaeologists** perform cultural resources monitoring including preparing archaeological site damage assessments and ARPA violation reports; monitoring sensitive or threatened historic period homesites (adobe ruins); providing archaeological evaluations management including State Historic Preservation Office (SHPO) concurrence; assisting with Native American consultation functions for four federally-recognized tribes; performing cultural resources survey/inventory updates on up to 3,200 acres annually, including Phase I archaeological surveys and recordation of archaeological sites and isolates; maintaining the Edwards AFB curation facility that houses 300 ft.³ of curated artifacts and 450 linear feet of associated records all derived from historic properties and archaeological sites on base; historical buildings surveys/inventory updates for Edwards AFB revetments; and assisting with updates to the installations ICRMP. maintaining and updating the GIS geodatabase and creating project maps in accordance with Edwards AFB delivery standards.

Our **GIS specialists** provide natural and cultural resources data management at the NTC and at Edwards AFB. They provide data development services for our environmental programs, including the creation, configuration, and administration of databases, GIS data, metadata, and attribute tables. Redhorse also creates ArcGIS models, Toolboxes, and Scripts for advanced data processing and analysis. Our team ensures that these products all comply with Federal

Geographic Data Committee standards and Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE).

Hawthorne Army Depot

Hawthorne Army Depot is a US Army ammunition storage depot that covers 147,000 acres, located in Western Nevada. Redhorse has provided environmental services to Hawthorne Army Depot (HWAD) since 2009. This service includes preparing documents for Resource Conservation and Recovery Act (RCRA) permit modifications; conducting air admission inventories and impact analysis in compliance with the Clean Air Act; and developing risk characterization.

Redhorse prepared the Title V, RCRA Part B, and Operating Permit to Construct air permits applications for permit renewals. We have compiled a detailed emission inventory of over 700 emission sources including numerous complex closed loop demilitarization systems for the removal of obsolete ordnance, utilized AERMOD and open burn open detonation models to perform a complex air dispersion model and developed the associated human and ecological risk assessment, and ultimately helped HWAD achieve regulatory concurrence on the permitting strategy for several hazardous waste incinerators.

Redhorse performed NEPA/SHPO compliance projects including an ICRMP, a preliminary EA for the ICRMP, and a 32 CFR 651.19 Record of Environmental Consideration (REC) prepared for the Categorical Exclusion (CX) for the ICRMP. Redhorse also conducted a cultural resource investigation, architectural assessment, and a Memorandum of Agreement between HWAD and the SHPO for the demolition of the Conelly Housing Duplexes.