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Report to **STAKEHOLDERS**

Volume 15 No. 10

Arthropod encounters

page 4

Munitions cleanup program preps for first public review

page 6

New Air Force regulation brings environmental compliance task home

page 3

Report to Stakeholders is a publication of Edwards Air Force Base, 95th Air Base Wing, Civil Engineer Division, Environmental Management. Its purpose is to inform and educate the public, base workers and residents about continuing environmental and safety efforts on base. It currently has a circulation of 6,000, including about 2,000 subscribers.

Contents of the *Report to Stakeholders* are not necessarily the official view of, or endorsed by, the U.S. government, the Department of Defense or the Department of the Air Force.

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WHAT'S ON THE COVER?

Base biologists saw these ants during a routine survey and snapped this photo. There are at least 25 species of ants on base and each has its own niche. See the article about arthropods at Edwards on page 4.

Walking in the desert can lead to arthropod encounters	4
Military munitions cleanup program preps for first public review	6
Information	8

Volunteer Opportunities at Environmental Management

Interested in learning new skills? Do you need community service hours? Are you environmentally conscious? The Environmental Management Volunteer Program is looking for volunteers with base access. If you are interested, you may contact the Environmental Management Customer Service Desk at: 95abw.cev.customer.service.helpdesk@edwards.af.mil for more information. Or you may obtain an application at <https://bsx.edwards.af.mil>, after clicking on "Edwards Air Force Base - Environmental Management," and then "Volunteering Opportunities at EM."



Would YOU Like to be MY Human Parent?

The Edwards Air Force Base Desert Tortoise Adoption Program is looking for base residents who would like to become parents of a captive desert tortoise. Temporary and permanent homes with safe and secure backyards are needed to join the program's waiting list. Desert tortoises are harmless and spend the winter months hibernating in underground burrows. Biologists will conduct a home assessment and provide care instructions. To add your name to the waiting list, or for more information, contact Environmental Management at (661) 277-1401.



New Air Force regulation brings environmental compliance task home

For some time, like private industry, the Air Force has emphasized self-assessments as a way to improve the quality of its work. Until recently, environmental compliance wasn't formally part of an Air Force Unit Compliance Inspection (UCI). That is about to change.

Published in March 2010, Air Force Instruction (AFI) 90-803, *Environmental, Safety, and Occupational Health Compliance Assessment and Management Program*, will require individual shops to conduct quarterly environmental compliance self-assessments.

Robert Wood, chief of Environmental Management at Edwards Air Force Base, doesn't think this is going to make a big difference in day-to-day tasks for shop workers. "All along the way, people were doing what was required to stay compliant with environmental regulations," he said. "Workers at hazardous material pharmacies and technicians who use permitted equipment have been good at tracking things. Looking at environmental compliance issues during regular self-assessments is just a minor evolutionary step as we move forward with smarter, more cost-effective quality efforts."

In the past, environmental assessments were a separate affair. Known first as Environmental Compliance Assessment and Management Program, or ECAMP for short, the assessments are now known as ESOHCAMP. The "S" represents safety and "OH" represents occupational health.

The AFI establishes a three-tier requirement. Tier 1 includes quarterly shop assessments, Tier 2 involves the internal annual assessments, and Tier 3 includes the external assessments to be conducted by the various major commands every three years.

"With the addition of quarterly shop assessments, the new AFI really pushes for shop-level ownership of environmental compliance," said Carmela Gonzalez, ESOHCAMP program manager. "Individual shops will be verifying environmental compliance each quarter and are doing what is necessary to remain in compliance."

Environmental Management conducts

an internal ESOHCAMP assessment every year; this assessment is now known as Tier 2. "Edwards' Environmental Management staff members visit various shops on base as part of the annual ESOHCAMP. This includes documentation detailing both positive findings and also where there is room for improvement," Gonzalez said. "Every three years, at a minimum, an external ESOHCAMP is conducted by Air Force Materiel Command and other environmental subject matter experts." This external assessment is known as Tier 3.

Another significant change is that the Tier 3 assessment can be rolled into a regular UCI, which can be conducted with limited or no notice.

"No-notice assessments are the wave of the future," Gonzalez said. "With no time to prepare, shops will have to stay on top of environmental requirements at all times. Environmental compliance is part of each organization's cost of doing business."

The next internal assessment is anticipated for November 2010, and the external assessment is scheduled in fiscal year 2012 — however, an external assessment could happen at any time.

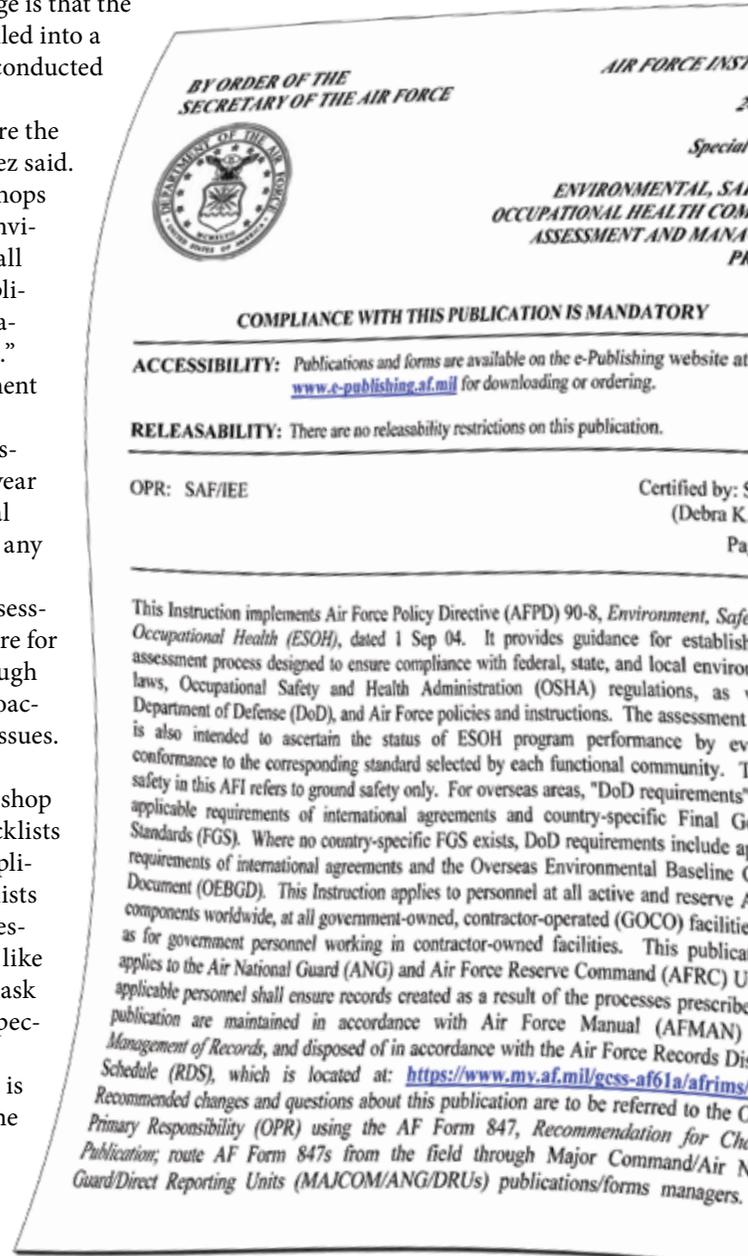
The new quarterly self-assessments will help shops prepare for the bigger assessments through good work practices and proactively addressing potential issues. Quarterly shop-level assessments will be conducted by shop personnel using simple checklists that focus on everyday compliance operations. The checklists will contain the types of questions that outside assessors, like regulators, would normally ask shop workers during an inspection.

Developing the checklists is a job that will take some time to accomplish. Not all parts of the new regulation are going into effect immediately.

"A tool to assist in the development of shop-specific checklists will be available soon," Gonzalez said. "As soon as the tool is deployed, Tier 1 inspections will be required by all shops on base."

In the meantime, Gonzalez emphasized that shops should maintain the status quo. "Shops should continue with their normal weekly hazardous waste inspections, etc.," she said. "And, as always, Environmental Management is available to help with any questions or issues, and will be available to assist shops in developing their shop-specific checklists."

RTS



Walking in the desert can lead to close encounters with arthropods

Go on a desert nature walk during the cool of a summer morning or evening and chances are you won't see a desert tortoise, a snake or even a kangaroo rat. But you'll probably see a stink bug — possibly more than one. But don't get too close — when it gets annoyed, the stink bug points its rear end into the air and produces a drop of stinky fluid that could make your nature walk less than enjoyable.

Most of the local stink bugs come from a group of beetles commonly known as darkling beetles. The most common one is a black, oblong beetle that ranges from 0.4 to 1.4 inches in length. Entomologists, biologists who specialize in insects, might not be able to tell you exactly which species it is, because sometimes only a beetle expert can tell the difference.

Not exactly cute and cuddly, darkling beetles and another estimated 3,000 species of arthropods make Edwards Air Force Base their home. Arthropods are animals with an external skeleton, a segmented body and jointed limbs. In the late 1990s, the base contracted with insect experts to conduct studies on invertebrates (animals without backbones) to get a better handle on what lives here. The report on the study was published in 2000.

Most of the animals collected were arthropods. Entomologists surveyed 32 different sites throughout the base, ranging from wet areas, like Piute Ponds, to sand dunes. They collected more than 15,000 arthropods, representing 1,536 different species, during three years of study using butterfly nets and small shovels. The researchers literally turned over rocks to find some species. At night-time, some species were drawn in from several yards away using a mercury vapor light.

Although the study didn't find any endangered arthropods, researchers did find three entirely new species of crickets and one new scarab beetle.

The study was important because this chunk of the animal kingdom is crucial to the health of any ecosystem, biologists say. "Arthropods are a critical part of



FLYING ARTHROPODS — *Bees are just one type of arthropod that makes Edwards its home. Studies have revealed that 107 different species of bees live in the area.*

nature, performing elemental functions that keep an ecosystem going," said biologist Misty Hailstone.

Stink bugs are on the cleanup crew. Without them and other arthropods, waste, including dead plants and other animals would start stacking up. Insects, along with fungi and bacteria, are crucial in the decomposition process by not only digesting parts that are too small for other animals, but also bringing those parts underground where there are more

constant temperatures and moisture so that the bacteria and fungi can go to work. They also aerate the soil by creating small channels which provide needed oxygen and other elements to microbes.

Another member of the insect cleanup crew is the ant: the Edwards study found that several different species of ants live on base and they all have their own niche. For example, carpenter ants help break down old Joshua trees. Some ants are seed eaters; some do the final cleanup on dead

animals, or even attack live animals like baby tortoises.

Other arthropods are crucial to creating new life — they pollinate plants. The study also found that 107 different species of bees make Edwards their home.

Edwards is home to yucca moths (*Tegeticula paradoxa*). These flying pollinators are the only insects that can pollinate Joshua trees. The female moth is so specialized that she has developed unique organs to spread pollen during her nighttime activity. Yucca moths lay their eggs in the flowers of Joshua trees where the larvae can feed on seeds. Without this relationship, Joshua trees could spread only through cloning themselves by extending their roots out and the yucca moth wouldn't exist at all.

Finally, arthropods serve as food for other creatures, including other arthropods. One of the largest wasps, the tarantula hawk (*Pepsis chrysothemia*), has a 2-inch long, blue-black body and bright orange wings. They eat pollen from creosote bushes and other plants. However, when it comes time to reproduce, the female tarantula hawk hunts down a tarantula, stings it and then lays a single egg on the spider. The larvae hatches and lives off the tarantula until it grows to adulthood.

Despite the risk, another favorite food for desert animals is our friend from the nature walk: the stink bug. Grasshopper mice have learned to get around the stink by jamming the bug's behind into the sand, and eating it head first. Other animals that like stink bugs include burrowing owls, loggerhead shrikes and skunks.

RTS



PARALYZER — Tarantula hawks, like the one shown on the right, are wasps that hunt tarantulas and use them as a food source for their larvae. These blue-black insects with bright orangish wings can be up to 2 inches long and are found anywhere tarantulas occur.



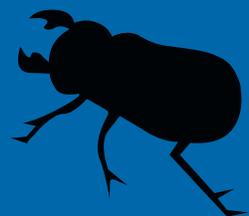
Did you know: A spider is not an insect

Most people would look at a spider and call it a bug. While spiders are loosely defined as bugs, they aren't truly bugs. A spider is not even an insect, according to the taxonomic classification of animals. "Insects have to have a chitinous exoskeleton, a three-part body (head, thorax and abdomen), three pairs of jointed legs, compound eyes, and two antennae," said Misty Hailstone, a base biologist.

However, spiders and insects share enough similarities that they are grouped together as arthropods — animals with external skeletons, segmented bodies, and jointed appendages (including legs, wings, mouth parts, genitals and antennae).

Just to confuse the issue further, the study conducted in 2000 at Edwards looked at land-based invertebrates, which means animals without backbones. Invertebrates make up 97 percent of all known species on the planet. According to Hailstone, beetles alone make up 25 percent of all known animal species.

Scientists estimate that 95 percent of invertebrates are arthropods. Insects make up 95 percent of arthropods within the desert, according to Dr. Gordon Pratt from the University of Riverside, author of the Edwards report.



Military munitions cleanup program at Edwards preps for first public review

Imagine the difficulty of finding something that has been hidden for decades. Right now, that's a task facing cleanup officials at Edwards Air Force Base. They are hunting for weapons and ammunition from military activities that occurred on base between the 1930s and early 1960s.

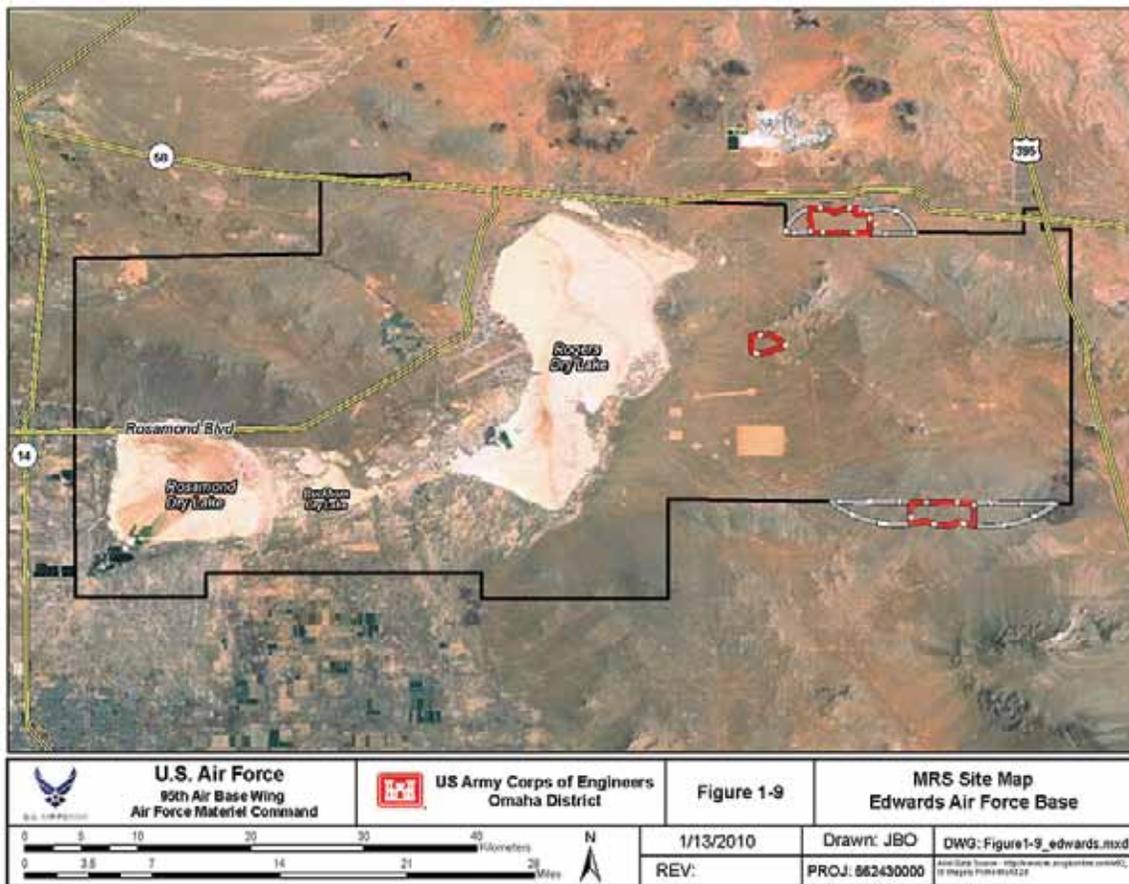
Years of training or test activities have left some military bases littered with practice bombs, mortars, projectiles, bomb fragments and gun shell debris in target locations. In 2001, the Department of Defense established the Military Munitions Response Program (MMRP) to address environmental, health and safety concerns regarding these munitions.

"The MMRP works just like the CERCLA [Comprehensive Environmental Response, Compensation, and Liability Act of 1980] program," said Paul Schiff, restoration program manager at Environmental Management. The CERCLA program drives cleanup of historic hazardous waste contamination in the soil and groundwater at Edwards. "As with CERCLA, the Air Force has a responsibility to keep the public updated on our munitions cleanup."

Drawing an accurate picture

To properly inform the public, Air Force officials first needed to establish the extent of the munitions cleanup required at Edwards. The munitions areas managed under the MMRP exclude operational ranges the base currently uses, or may use in the future, for test and evaluation.

Instead, officials intend to clear areas where munitions historically may have been used, but are no longer allowed to be used for munitions testing under current and future land use requirements. These areas include Main Base, South Base, North Base, the Air Force Research Laboratory, areas around the entry gates and off-base areas adjacent to the base boundary.



CLEAN UP AND CLOSE — The figure above shows the areas on base that munitions cleanup officials are planning to clear of inactive surface munitions and associated debris. The on-base area has been designated as inactive and will not be used in current or future munitions testing. The off-base areas are on private property and cannot be used for testing.

"Many of these areas are closed to range activities because people work or live there," Schiff explained.

Identifying potential munitions areas required a two-pronged site investigation, called a comprehensive site evaluation. In Phase I of the investigation, base officials looked at historical records, interviewed previous range personnel and conducted a preliminary visual survey of the area. Light detection and ranging, known as LIDAR, and digital high-resolution color orthophotography generated topographic information used to identify surface craters, or berms, which may have resulted from munitions activities.

Phase II included noninvasive geophysical surveys using equipment designed to detect munitions. Base officials used helicopter magnetometry and digital geophysical mapping to identify metallic objects or debris indicative of munitions. People walked across areas in organized patterns to visually identify any surface munitions or debris. Also, soil samples were taken to determine if any munitions residue or metal contamination was present.

"First we had to identify which areas might contain muni-

tions,” Schiff said. “We recently finished conducting site investigations to pinpoint which areas will need further attention and which ones can be closed out.”

For the most part, Edwards used practice munitions. “There are a few areas where we know live munitions were used,” Schiff said, “and we have found evidence of that in terms of crater formations, target features, and debris. We are preparing documents for public review on three of those areas.”

Two other areas will require further site assessments and another area, a pistol range at South Base, will require further action. But other areas will not require further study.

“Some of these areas support numerous buildings, plenty of foot and vehicle traffic, and we cannot find any evidence of munitions activities,” Schiff said. “The Main Base closed range is one such example. That’s why we are recommending this area for no further action.”

Moving toward public review

Currently, base officials are preparing a public review document for three areas that need to be addressed under the MMRP. These areas include:

- 436 acres within AL504, the site of a former mock battleship bombing target near the Air Force Research Laboratory.
- 1,200 acres within AL505-2, an off-base area adjacent to the northeastern boundary of the base, where a historical on-base target known as PB-9 existed.
- 1,250 acres within AL505-4, an off-base area adjacent to the southeastern boundary of the base, where a historical on-base target known as PB-5 existed.

Based on the site evaluations, the Air Force recommends surface clearances for each area to clean up metallic debris

STUCK IN THE SAND —

A 100-pound bomb, found in area AL505-2, is shown with its tail fin and fuse housing assembly. Through the Military Munitions Response Program at Edwards, areas of the base designated for potential or known human use have been investigated to determine the extent of munitions. Base restoration officials will have a planning document, called an engineering evaluation and cost analysis, ready for public review in the coming months.



PRACTICE — This 100-pound practice bomb was found in area AL505-4.

and any munitions. Base officials also considered institutional controls, like fencing, and no action alternatives for the areas.

“It makes sense for us to clear up any debris and surface munitions from these areas now,” Schiff said. “This will make it easier for us to locate any debris or munitions that might be buried beneath the ground surface. Right now, all we can see is what’s on the surface.”

The public review document (called an engineering evaluation/cost analysis) is currently in review with federal and state regulators. Once comments are incorporated, the document

can be released for public review and comment. Schiff predicts the document will be ready for public review in the latter part of 2010.

If surface clearance is chosen as an interim removal action, base officials must obtain approval on several documents before field work can begin. “The cleanup of these areas may take some time as we wait for approvals,” Schiff said. “But the public should not be alarmed. For the most part, historic munitions use and those found at or near Edwards have been practice bombs.

“To ensure your safety, always practice the three ‘R’s — recognize, retreat and report,” he said. “Once you recognize something that

looks like a munition, retreat from it and report its location to the proper authorities. Never pick up the item yourself.”

To report munitions sightings on base, please contact the 95th Security Forces Squadron by dialing 911 from a base phone, or (661) 277-6901 from a cell phone. For off-base sightings, please dial 911 to alert local law enforcement. To learn more about the MMRP at Edwards, please contact Environmental Management at (661) 277-1401.

RTS



Where to find more INFORMATION

Published data and documents relating to Environmental Management are available for public review in information repositories at three locations. The current information repositories are located in the cities of Lancaster and Rosamond, as well as Edwards Air Force Base. They are updated when new documents are released.

For questions about information in the repositories, you may contact Gary Hatch, Environmental Public Affairs at (661) 277-4127 or by e-mail at 95abw.pae@edwards.af.mil. Here is a list of our current information repositories:

Edwards Air Force Base Library

5 W. Yeager Blvd.
Edwards AFB, Calif.
(661) 275-2665
Hours of operation: Mon-Thu 9:30 a.m. – 7 p.m.
Fri 9:30 a.m. – 6 p.m.
Sat-Sun 10:30 a.m. – 6 p.m.

Kern County Public Library

Wanda Kirk Branch
3611 Rosamond Blvd.
Rosamond, Calif.
(661) 256-3236
Hours of operation: Wed 11 a.m. – 7 p.m.
Fri-Sat 9 a.m. – 5 p.m.

Los Angeles County Public Library

601 W. Lancaster Blvd.
Lancaster, Calif.
(661) 948-5029
Hours of operation: Mon-Wed 10 a.m. – 8 p.m.
Thu-Fri 10 a.m. – 5 p.m.
Sat 11 a.m. – 5 p.m.

For general information about Edwards or other documents of public interest, you may visit the following link:
www.edwards.af.mil/library/environment.

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Restoration Advisory Board (RAB) Information

The RAB is made up of appointed representatives from communities in and around Edwards Air Force Base, regulators from federal and state agencies and base officials. The board's purpose is to provide a forum for two-way communication among base restoration officials, regulators and the community representatives regarding the cleanup of contamination from past military activities.

The board meets quarterly, rotating meeting locations in communities surrounding the base. The public is welcome to attend. Those who have questions

or concerns about cleanup activities at Edwards may contact any RAB member or Gary Hatch, Environmental Public Affairs, at (661) 277-4127.

NEXT QUARTERLY MEETING

Date: Nov. 18 2010

Time: 5:30 p.m.

Location: North Edwards, Calif.

Venue to be determined

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