In this section we review the DoD and Army land base and describe the organizational and physical boundaries that divide it.
Figure 12 divides the DoD’s 24 million acres by major military service. In rough numbers the Army manages 12 million acres, the Navy 3 million (including the Marine Corps), and the Air Force 9 million. The Defense Logistics Agency and other small agencies also manage small parcels of land. We refer to the divisions in Figure 12 as inter-agency organizational boundaries.

The lines within each of the three major categories indicate that each of the military services divides its holdings among major commands.
Interagency Organizational Boundaries
Within the Army’s 12 Million Acres

Figure 13 divides the 12-million-acre Army land circle presented in Figure 12 into ownership parcels by major Army command. We again refer to these divisions as “interagency” boundaries.

The Army Materiel Command (AMC) manages more than four million acres and is the Army’s largest land manager. AMC contains the Army’s industrial base of arsenals, laboratories, and depots. Its major land holdings are several large developmental weapons test ranges. Activity at these ranges has dropped significantly since the end of the Cold War. With the exception of the Jefferson Proving Ground, there have been no closures of major test ranges.

Forces Command houses most of the Army’s trained and ready units sustained in CONUS and contains 2.7 million acres. The Training and Doctrine Command (TRADOC) houses the Army schools and comprises 2.1 million acres. The Pacific Command contains bases in Alaska and Hawaii and manages 1.7 million acres. The National
Guard and the Washington Military District contain other numerous small holdings.
The institutional boundaries shown in Figure 13 can be divided into individual installations. Installations are generally separate organizational and physical entities. White Sands and Fort Bliss (shown connected in Figure 14) are contiguous and therefore represent distinct organizational but not physical entities. The same is true of the Fort Irwin’s National Training Center (NTC) and the China Lake Naval Weapons Station, as well as Dugway Proving Ground and the Air Force’s Utah Test and Training Range. Figure 14 is limited to Army lands and does not illustrate those last two cases.

Figure 14 displays a schematic of Army installations and divides the installations into four categories. The color code is identical to that of Figure 13, so the division by major command is also illustrated. Circle sizes are to scale. The four categories are “large ranges,” “training centers,” “home stations,” and “postage stamps.” The defining concept is size, with the categories representing land areas of approximately 1 million, 300,000, 150,000, and less than 10,000 acres.
There is significant variation in each group. The categories are arranged from right to left because, as will be discussed in Figure 16a, they are distributed in a rough east-to-west pattern across the CONUS.

The term “home station” is used because the Forces Command units are housed on bases of roughly 150,000 acres. Other commands also have bases in this size category. Since all the initiatives listed in Figure 7 involve training land, we have chosen the term “home station” for this category because Forces Command units have the most important training land requirements.

The Army has five “large ranges” constituting about half of its total acreage. Three are test ranges belonging to AMC, one is in Alaska, and Fort Bliss is part of TRADOC.

Air Force and Navy installations could also be characterized on a schematic like that of Figure 14. They can be significant for the Army because they may offer the possibility of joint use and because external critics ignore the divisions within the military (organizational boundaries) and assume that such joint use is practical. From this perspective, the most significant Navy and Air Force installations (for the Army) are Edwards Air Force Base, China Lake Naval Weapons Station, the Goldwater Range at Luke Air Force Base, and the Nellis Range. Each of these would be categorized as a “large range” in Figure 14.

1The largest Forces Command home station is Fort Stewart at 279,000 acres and the smallest is Fort Lewis at 86,000 acres.
Figure 15 highlights one of the most significant aspects of the physical boundaries described in Figure 14. The Army's soldiers, and hence much of its training infrastructure, are separated from its lands. The chart shows that about 90 percent of the Army's soldiers are assigned to installations comprising only about 15 percent of its lands. This includes lands in CONUS, Alaska, and Hawaii. Most of the Army's infrastructure is located on "home stations" and "postage stamps."

The curve "Army-wide" has been constructed from left to right in the order of density. The most crowded installations represent the nearly vertical left side of the curve. The large empty test ranges comprise the top, or horizontal, part of the curve. Figure 15 also shows how the curve would develop if we had begun with Forces Command home stations only. The close overlap with the steep part of the "Army-wide" curve shows that these home stations include many of the Army's most crowded installations. The Forces Com-
mand curve ends at about 10 percent of Army land, corresponding to the fraction of the Army’s total contained in these home stations.

Appendix A provides a detailed breakout of the Army’s 90 largest installations and is the basis for Figure 15.
Figure 16a

Figure 16a is a map of all military installations in the United States. It highlights the Forces Command home stations. Forces Command training areas, such as Yakima, Piñon Canyon, and the National Training Center, are not highlighted because these posts house few active soldiers. This figure expands the point made in Figure 15 by showing that infrastructure is separated from land by significant distances.

The map shows that most home stations are located far from the large ranges that constitute about half of the Army’s and the DoD’s land base. The bulk of that land base is in the West and the Southwest, while most of the Army’s trained and ready units are based in the East.

There are also Forces Command units housed on TRADOC installations. Most significant are III Corps Artillery stationed at Fort Sill, Oklahoma, the 3rd brigade of the 3rd Infantry Division (mechanized)
at Fort Benning, Georgia, and the units at Fort Bliss. The Bliss units constitute all domestically based air defense units at the corps level or above. Fort Bliss is also significant because it is the Army’s only “large range” in the lower 48 states that is not part of the AMC. As will be discussed in Figure 28, the organizational boundaries between AMC test ranges and the training portion of the Army have important implications for Army land policy.

Fort Bliss is contiguous with White Sands Missile Range, which is part of AMC, and both comprise the large military land area in southern New Mexico. Figure 16b shows the distance between the Army’s active soldiers and Fort Bliss.

Figure 16b shows that there are few troops, other than those stationed at Fort Bliss, within 400 miles of this large land parcel. Forts Sill, Hood, Carson, and Riley are within a 400-500 mile range, and
other units are much farther. The distances between the Army's soldiers and other large ranges would be represented by a similar graph but would be shifted by approximately 500 additional miles.
Figure 17 describes the intraorganizational boundaries that can occur within an Army installation. The users of land are the units performing the military mission at an installation. There is no single land manager. The garrison commander is responsible for running the entire installation. Range control schedules the training land and is responsible for some aspects of land maintenance. The environmental office is responsible for negotiating with environmental regulators and developing recommendations and restrictions that ensure compliance with statutes. Public works is responsible for the utilities and buildings in the cantonment and training areas.

The organization displayed in Figure 17 is replicated at the major command, headquarters, and DoD level of the organization. Every office reports through the highest-level on-site military commander at a site. The environmental office at an installation does not report to the environmental office at headquarters. The headquarters environmental office does, however, write policies, rules, and regulations.
that installation environmental offices are expected to follow. It also plays a role in allocating budgets.

A 1992 RAND report documented the difficulty in crossing the organizational lines shown in Figure 17 to effectively blend training and environmental concerns.\(^2\) Since that time the Army has made great strides in overcoming these boundaries and in ensuring that diverse installation functions are well coordinated. Nevertheless, many procedures, regulations, and policies remain “stovepiped.” By this term we mean they are developed by the analogous functional headquarters office and sent to installations down a narrow stovepipe with little regard for related functions. As an example, Army regulation AR 210-21, which governs the process for analyzing an installation’s land requirements, is written at headquarters by the Office of the Deputy Chief of Staff for Operations and Plans (ODSCOPS) and implemented at the installation level by the Directorate of Plans and Training. Input from the environmental function only occurs if the installation culture facilitates such interactions. While the Army has made great strides in building a multidisciplinary culture, many of the Army’s rules and regulations have changed more slowly.

Figure 18 summarizes this section. DoD’s land resource is divided by organizational boundaries. These are the different services, major commands, subcommands, and installations. Within each of these are intraorganizational boundaries separating the different functions. The users of the land are separated from the managers. Land management is fragmented among several functional areas.

Installations are individual organizations and are also isolated physical entities. As shown in the bottom of Figure 18, the largest land areas have fewer soldiers and infrastructure than the smaller ones. Large distances separate the small crowded installations from the large parcels.

The title of Figure 18 shows the central questions of this report. Do these boundaries lead to a situation where land is needed locally even if there is aggregate underutilization of the overall Army land resource? Do they also act make “land grabs” or “targets of opportunity” the strategy for addressing this problem?