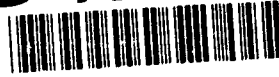


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**DOD ENVIRONMENTAL POLICY IMPLEMENTATION:  
A UNIT-LEVEL ASSESSMENT**

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little progress toward integrating these two values can be expected.

This paper is an exploratory examination of the DOD's new emphasis on environmental policy as integral to the defense mission, focusing on implementation at two USAF bases. The idea of joining two previously competitive policy issues and values -- defense and the environment -- is an untested venture for the military hierarchy, offering fertile ground for practical application of the abundance of implementation theory. As such, this study examines the impetus behind the policy, which may or may not be a suitable impetus for change at the unit level, and the constraints on implementation in order to evaluate the potential for the Defense Department to achieve policy comprehensiveness.

No discussion of environmental policy, however, is complete without considering in brief the extensive literature on the imprecise concept of "comprehensiveness." Few would argue that any decision can be made in a completely comprehensive manner -- neither the human intellect nor available data resources allow for such all-inclusive decision making. Yet, to disregard the idea as entirely impractical is equally unacceptable. Peter House, in his exploration of comprehensive analysis, offered a definition highlighting the integrative character. He suggested comprehensiveness refers to, "all cases where there is a deliberate attempt to carry out an analysis or develop a technique that transcends a single issue or discipline" (House, 1976: xv). For the purposes of this research in which two issues (i.e., defense and the environment) are intended to be joined in the decision making process at all levels, this definition provides a basis for understanding. If the unit level activities are pursued in a manner that encompasses both values, then the Air Force demonstrates a degree of rationality.

But is it realistic to assume this rational, comprehensive approach at both the Air Force and unit levels? In his study, Berman attributed the uncertainty associated with policy implementation to the differences between the federal (macro-implementation) and the local (micro-implementation) levels. Federal policy makers execute policy in order that local level activities will remain consistent with the policy's intent, while the local level implementors must respond through their own organizational structures which may or may not be conducive to the federal requirements (Berman, 1978). Certainly, the USAF policy chain represents a microcosm of American government in which the demands and processes of Headquarters, USAF and Secretary of the Air Force policy implementors differ considerably from those facing the implementors at the bases.

Berman's dichotomy of the "macro-implementation" level and the "micro-implementation" level provides a framework for analysis in this study. As his work suggests, the different requirements facing federal (Headquarters and Secretary of the

Air Force) and local (base) implementors impacts the degree of integration achieved. If USAF environmental policy is to be fully integrated into the defense mission, then comprehensiveness must be evident at both the macro- and micro-implementation levels, though one would anticipate discovering different criteria at these levels as suggestive of comprehensive decision making. For this research, the micro-implementation level, the base, is the focus of study, though related federal actions must also be considered. The assumption is also made that defense values remain a priority and environmental quality must be emphasized to elevate its importance within DOD decision making.

Of interest in this unit level assessment is Bartlett's theory that comprehensiveness is most relevant on a smaller scale, based upon the overwhelming complexity of macro-level rationality (Bartlett, 1990: 248). In other words, based upon human capabilities, those responsible for day-to-day environmental activities would have the best chance of successfully integrating the environmental mission with the defense mission. Thus, the logical conclusion to be drawn is that the base is the most appropriate structure for integrating these competing values. From this notion that comprehensiveness is better suited to certain administrative levels (and, perhaps, more so in the case of decision making under conditions of potentially conflicting values), evidence will be sought of this integration as a realistic and achievable goal at the unit level.

### Methodology

This initial assessment of DOD environmental policy implementation will focus on the lowest level where environmental compliance or degradation occurs. It utilizes a most-similar-systems design in comparing two USAF bases: The Eastern Space and Missile Center (ESMC) at Patrick Air Force Base, Florida (with environmental management responsibilities extending to Cape Canaveral Air Force Station), and the Western Space and Missile Center (WSMC) at Vandenberg Air Force Base, California. These USAF units were selected based upon their common and significant environmental management tasks and defense missions, representative of the complexity of DOD environmental policy implementation both now and in the distant future.

The similarities between the bases studied includes:

1. Both have significant coastal management responsibilities. ESMC maintains the coast along Cocoa Beach and the wetlands bordering Merritt Island National Wildlife Refuge. WSMC manages 35 miles of the California coast, along with nearly 100,000 acres of generally pristine landscape.
2. Both are responsible for the preservation of significant cultural and historic sites, including over 50 prehistoric and historic (primarily early manned space program) sites at ESMC and

over 752 identified cultural/historic sites (many related to the Chumash Indians) at WSMC (Levy, 1984; Spanne, 1991).

3. Both bases must protect various endangered and threatened wildlife and plant species. ESMC manages 13 species listed by the federal government, and WSMC manages 8 such identified species (USFWS, 1984: 6,32).

4. As for defense mission requirements, both bases are dedicated to launch and support of space and missile systems. This role provides them with unique environmental quality challenges and represents a growing mission in the years ahead.

5. Organizationally, both units are under the same hierarchy and policy directives, extending downward from DOD to Headquarters USAF to Headquarters Air Force Space Command to the base level.

6. Both bases face considerable pressures from non-DOD interests, including state and local regulators and public interest groups. State regulations are among some of the most stringent in the United States.

The major difference between the two units studied is the structure of the base-level environmental management office. The ESMC unit is located within the base civil engineering function; the WSMC unit is placed on the center commander's staff (Figure 1). These represent the two authorized organizational structures for environmental management at Air Force bases.

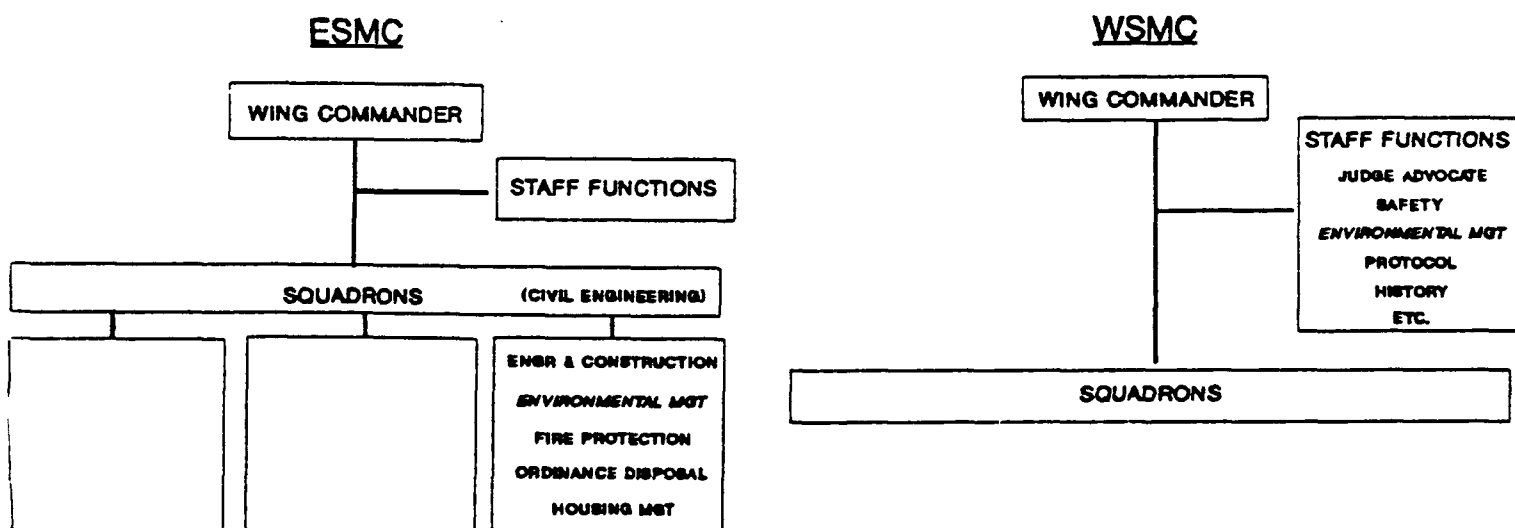


Figure 1: USAF Environmental Organizations

In order to assess unit-level environmental policy implementation, specialized interviews were conducted at both USAF bases. All environmental managers were interviewed, as were commanders and local government and interest group officials. The interviews focused on evaluating three areas: 1) the intent and attitude of managers toward fulfilling policy goals, 2) the resources (money and personnel) available to manage the base's environmental program, and 3) the unit's environmental management organization. In addition to these areas, planning for future needs, as opposed to merely retroactive correction of "past sins," would be considered evidence of comprehensiveness at the base level.<sup>1</sup>

### Why Environmentalism?

The USAF environmental policy statement is consistent with overall DOD goals, claiming that "Environmental Quality is a keystone in the support structure for maintaining the national defense and accomplishing the Air Force mission" (Dept of AF, 1990: 3). More specific environmental goals are identified:

1. Demonstrate leadership in environmental protection and enhancement.
2. Identify and budget for resources to meet environmental quality goals.
3. Assure that consideration of environmental impacts is an integral part of the Air Force planning, acquisition, and decisionmaking process.
4. Maintain aggressive programs to ensure compliance with all applicable Federal, State, and local environmental quality requirements.
5. Manage wisely the lands and natural resources over which we have stewardship, and restore those resources which have been damaged by our past practices.

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<sup>1</sup> Certain limitations in this methodology are admitted. The unique mission of the studied bases does limit, to a degree, the applicability to other USAF units; yet, the demands they face arguably represent the most complex case the USAF must manage. Certain other features of the bases are common to all military units. Ultimately, interviews at bases from major commands other than Air Force Space Command would improve the study's reliability and validity. Further research would also benefit from quantitative measurements of the effectiveness of environmental management.

6. Enhance relationships with our neighboring communities by actively addressing environmental quality issues.

7. Reduce waste generation and pollution potential through recycling, minimization, or materials substitution. (1990:3)

Clearly, the USAF has committed to some far-reaching environmental goals. Yet, this movement toward environmental quality has taken 20 years since the passage of NEPA. The impetus behind the change can be viewed as a combination of various factors, primarily, though not exclusively, external to the USAF and DOD.

One major change is the perceived threat and utility of the military in the post-Cold War era. Beginning in 1989, the changes around the world have produced a number of substantial alterations in military doctrine, basing, and strategies. The DOD, once dedicated to containing the communist threat and building weapons to counter the Soviet arsenal is now faced with an uncertain threat, and without a clear enemy, it must fight to justify its relevance. Moreover, this diminished threat has resulted in the much touted "peace dividend" in which the DOD budget and personnel levels are undergoing significant reductions. This, in itself, leads the defense community to search for creative methods for obtaining funds and for projecting the need to maintain a credible, strong military.

Environmental leadership is one such avenue for the USAF to enhance its funding position during this tentative era. An environmental program manager at Headquarters, USAF asserts that,

Attention to the environment is . . . essential if we hope to secure the resources we need from the public to accomplish our mission. . . . [The environment] is our best hope to retain funding in this deficit budget climate. (Morehouse, 1991: 1)

Morehouse echoes sentiments that are being expressed throughout the Washington community.

Equally important is the perception that the military still plays a vital role in defending the values of our society. Recognizing that public opinion is shifting away from the maintenance of a large military and increasingly seeking environmental quality, as indicated in recent public opinion polls (Niemi, 1989), the attempt to make the environment a "defense mission" can increase the perceived societal value of the DOD. Recent literature and defense publications suggest that environmental degradation represents a growing national and international security threat, and that the defense establishment has research opportunities and emerging technologies that can do much to combat this ecological threat (Ackerman, 1990; Morehouse, 1991).

As the DOD creates this new perception that the threat of environmental deterioration is a proper role for the military to combat, evidence exists, not only of the growing awareness that the world's ecological systems are endangered, but also of the increased possibility of environmental terrorism. During the recent war in the Persian Gulf, the Iraqis executed a number of acts considered to be environmental terrorism. Most notably, the release of oil into the Gulf waters, threatening wildlife and Saudi water desalinization plants. To stem the flow of this destructive oil, the USAF targeted bombs from aircraft and promoted this mission as representative of the significant capability inherent in modern weapons systems.

Another input to the fostering of this environmental ethic has been the movement away from sovereign immunity. Once in a position of immunity from prosecution, commanders of military bases now face the possibility of being held personally liable for unsound environmental practices. The impetus behind the change has been the Aberdeen Proving Ground case, in which federal employees who knowingly disregarded environmental laws were fined and sentenced in criminal proceedings.

These factors combined with the growing public awareness of environmental deterioration resulting from ecological disasters such as Chernobyl and the Exxon Valdez oil spill opened a policy window in which the DOD faced fertile conditions to initiate the new "environmental ethic" within the military. In fact, it is likely that 1990 represented a limited time frame in which this policy window was open and the shifted emphasis possible; initiating environmental policies during the Middle East crisis seems an unlikely scenario. In the final estimation, it is reasonable to conclude that the Defense Department has embarked upon a policy goal of joining environmental considerations to its defense mission, propelled forward primarily by inputs and events external to the bureaucracy itself.

It would, however, be misleading to ignore claims that the USAF has been working consistently toward increased environmental quality, and this apparently heightened activity merely reflects a new era in an ongoing evolutionary process (Vest, 1991a). This is consistent with the growing concern of and understanding by the population as a whole toward environmentalism. Whether evolutionary or reactionary, the DOD and USAF have recognized and acted upon the need to formulate environmental policies. Yet, the question must be posed as to whether or not this movement and change has significantly altered the day-to-day activities at USAF bases. In other words, do implementors at the unit level perceive the same urgency to fully integrate environmental quality goals with their traditional mission requirements?

### Assessing Unit Level Implementation

As one would anticipate, the base or micro-implementation level [in this study, Patrick AFB and Vandenberg AFB] must respond to diverse inputs, daily hands-on management activities, and immediate, often unforeseen, requirements and crises, which complicate the integration task. The attitudes at unit level, the resources utilized, and the organizational structures reveal varying degrees of success with comprehensive decision making of all kinds.

Attitudes toward integrating environmental criteria with defense mission requirements varied at both units. Senior commanders, both of whom have attended environmental leadership workshops, view the environment as integral to the mission and to avoiding personal liability for unsound practices. One commander expressed that, "Environmental planning and compliance can combine successfully with operational requirements; both the environment and defense constitute threats to the nation" (Wormington, 1991). The commander at Vandenberg AFB echoes these remarks and adds that, "every person in every organization must adopt an attitude of responsibility for compliance with environmental regulations" (Severo, 1991: 2). This top level support is essential to implementation, but must be deemed incomplete in the absence of an environmental ethic permeating the organization down to the lowest level workers.

This culture is not yet evident at all levels of the base. When faced with a job to accomplish, in the name of expediency, some personnel continue to circumvent pollution minimizing techniques. Others remain unaware of the proper practices and procedures. This is true even at Vandenberg AFB which is located in one of the strictest environmentally regulated areas of the nation (Johnston, 1991). Environmental managers are fully aware of the need to educate and train all base personnel, but this constitutes a great challenge based upon differing requirements and emphases levied from base to base and the transient nature of military personnel. Although some educational programs are underway, the environmental offices are limited by time and people available to conduct training. Nonetheless, creating the desired cultural change mandates local level educational programs. It is not sufficient to merely order workers to behave in a certain way, and without developing an environmental ethic, implementation is undermined.

This shortcoming, of course, is not entirely attributable to the unit level administrators. USAF-wide educational programs are directed primarily toward senior level leaders and the environmental managers who are, by and large, civil engineers. In focusing on the education of senior leaders, the vast majority of the Air Force population -- those who create or prevent pollution in their daily work -- respond not out of a sense and understanding of individual environmental responsibility, but in response

to a direct order. In the absence of specific command authority, the desired environmental thinking may be absent. Little attention has been given to including environmental education within the curriculum of officer training programs, professional military education courses, and basic military training. Although the importance of having senior leaders concerned about and active in fostering environmentalism on their bases cannot be overemphasized, it clearly is not enough to create the innate ethic or "culture change" sought by policy makers.

Similar weaknesses are found in the emphasis on training civil engineers in environmental management practices. Although civil engineers are those responsible for clean up activities, as well as base construction projects and comprehensive land-use planning, much of this is "end of the pipeline" activity. In other words, they traditionally focus on restoration actions vice prevention, which certainly degrades attempted comprehensiveness, particularly when other base activities are generating pollution that the civil engineers must clean up.

The graduate degree programs at the Air Force Institute of Technology, training mid-level active duty and civil service personnel, provides an excellent illustration of this shortfall. In 1990, the USAF initiated a program leading to a Master of Science in Engineering and Environmental Management. The school trains these people to manage all aspects of base environmental programs, including fiscal, technical, logistical, contractual, and legal requirements. Although some 30 civil engineers are being trained as "environmental managers," there are well over a hundred other Air Force students working on master's degrees in logistics management, acquisition logistics, cost analysis, contracting, and engineering disciplines, among others. Environmental issues permeate these disciplines, and may even represent a common thread among them, as represented in a simple Venn diagram at Figure 2. However, only the engineering and environmental management curriculum requires courses in environmental

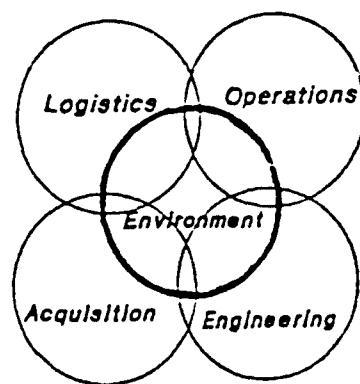


Figure 2: Environmental Issues as a Linkage Among USAF Activities

management, policy, or law. Electives are available to other graduate students, but few elect to fill optional requirements with environmental studies (Holt, 1991). Needless to say, this education process, although developing more trained environmental managers, misses many opportunities to further the desired environmental attitude, impacting limited numbers of USAF personnel.

Some potentially contradictory messages also surface in the wake of USAF activities in the Gulf War. Comprehensiveness is clearly an admirable goal in peacetime, but will mission considerations continue to override sound environmental practices during conflict, even when environmental considerations do not degrade mission accomplishment? It has been suggested that the USAF performance during the Middle East conflict reflected a neglect for the environment, while accusing Iraq of engaging in environmental terrorism:

it appeared that at least three spills, totaling 11 million barrels of oil, had been released. Saudi and American officials charged that the oil had been deliberately released by Iraq from Kuwaiti oil terminals; . . .

Later reports indicated that about one-third of the oil was, in fact, the result of allied bombing of Iraqi oil tankers anchored off Kuwait . . . U.S. officials who had decried the Iraqi . . . "environmental terrorism" offered no comment on the conclusion that U.S. bombs had released the equivalent of two Exxon Valdez spills. (Pope, 1991: 56)

If personnel receive mixed messages indicating that sometimes the two values are not, in fact, compatible, the desired culture change will likely be undermined, even in daily operational tasks.

In addition to an environmental ethic, integrating the environmental mission requires the availability of resources for developing programs and managing activities on the base. These resources can be separated into monetary and personnel resources, both of which are critical to mission accomplishment and currently serve as limiting factors to integration. Funding is received in three different categories: Level I for compliance requirements, Level II for projected future compliance needs, and Level III for proactive environmental activities. Overall, resources programmed for base level activities are on the rise. In an era of declining defense budgets, the environment represents one of the few areas showing dramatic increases. In the 1970's, following the birth of NEPA, the support for environmental programs was limited to some \$5 - 10 million annually, but in fiscal year 1992, the environmental budget will climb over one billion dollars and should level out around \$1.5 to \$1.8 billion annually to fund projected requirements through the year 2000 (Vest, 1991a).

However, although Level I requests have been fully funded at both bases and represent a bright spot in management activities,

enabling all sites out of compliance to be retrograded by the year 2000, policies beyond restoration are not being implemented as intended at the base level. Both bases claim an inability to acquire Level II funding. Patrick AFB managers cite the specific case of the base's wastewater discharge into the local river. Currently in compliance, a change in the state law effective in 1995 will require that no treated effluent whatsoever be released. Currently, they have been unable to receive the funding to fulfill this pending requirement (Hansen, 1991). Whether entirely accurate or not, the perception exists among leaders on base that funds are available only for issues of non-compliance (Wormington, 1991).

Other funding issues raise doubts about the ability to implement designed policies at the unit level. The budgeting process itself is complex and poorly understood by base level environmental managers. In many cases, they lack a thorough understanding of the process for identifying and projecting needs. As a result, Air Force Space Command has worked to educate the bases on budget issues so that they will not only prepare sound requests for the next fiscal year, but also adequately project future requirements (Maher, 1991). This has contributed to the lack of funding for Level II projects, and implementation is hampered as a result of failing to plan for environmental projects in the out-years.

Another budgetary concern raised at the base level involved inadequate mechanisms for responding to environmental emergencies or crises. At Patrick AFB, a recent problem with asbestos forced the evacuation of a building and immediate clean up, funded out of other base budgets. Knowing the potential liability charges for failing to remedy this health hazard, the base shifted monies and planned to request additional funding for mission activities from higher headquarters, if the depleted resources interfered with defense mission accomplishment. In addition, the procedures utilized by contracting personnel, in accordance with federal acquisition regulations, complicates the immediate expenditure of funds for environmental emergencies. Without crisis procedures, the ability to execute environmental policies is restricted.

In addition to monetary resources, the issue of personnel available for managing the base level environmental programs is of concern. In light of overall reductions in DOD personnel strength, concern exists that as the environmental programs grow significantly, the people authorized to manage these activities cannot keep pace. Officially, funding is available for a few additional positions (Kelley, 1991) and manpower studies have recommended an average increase of 24 percent to manage base environmental compliance programs, though the funds for these additional positions have not yet been incorporated into the USAF budget (Vest, 1991b: 11). Although the higher levels paint a rosy picture of the trend in environmental positions, the view from the bases is less positive. Both locations have experienced

great difficulty in hiring qualified people into the authorized grades and retaining them, since civilian employers offer better compensation for similar jobs. With the existing hiring freeze across the Defense Department, the bases find that advertised positions remain unfilled, and of course, qualified active duty military managers are few and subject to frequent moves which offers a unit little continuity.

With the phenomenal growth in environmental policy and activity over the past few years, the implementation task has increased dramatically. Although both offices have grown in numbers over the years, evidence suggests that environmental managers are currently task saturated. Most managers commented that the greater part of each work day was spent "putting out fires" and responding to priorities and requests initiated at higher levels, including the wing, major command, and Pentagon. In essence, managers are relegated to completing administrative tasks in the office and have little, if any, time to do the field work that utilizes the particular expertise for which they were hired. Thus, managers repeatedly addressed their inability to plan for future needs, assess the current activities underway, or monitor contractors hired to perform jobs or manage specific environmental programs. What these environmental managers articulated as their most pressing need was more time, and only additional personnel and/or better management systems such as computerized databases, can alleviate this condition.

Although the two bases studied organize their environmental offices differently, little impact on environmental policy implementation was evident. At each base, managers made a point of indicating the flaws in the other manner of organizing and the strengths in their own organizational structure. Placing the environmental office on the commander's staff, in theory, offers a greater opportunity to integrate the diverse functions and operational requirements on a base. When first introduced at Vandenberg AFB in 1985, it represented an innovative approach to managing an increasingly regulated environment and met with great success, receiving numerous environmental excellence awards. The idea was to integrate environmental considerations into the daily conduct of operational requirements. One senior environmental manager supportive of the staff organization commented that "placing the environmental shop under civil engineering is like putting the safety function under operations -- they must be separate functions because they provide for checks and balances" (Atwood, 1991).

Yet, in this context, the environmental office itself has become something of a watchdog organization, rather than a force for integration, and the resulting conflict can undermine the willingness of outside organizations to cooperate with environmental planning and pollution prevention requirements. Air Force Space Command managers are seeking ways to reduce the conflict inherent in this staff organization (Maher, 1991). In addition, a senior level official commented, off the record, that the staff

organization at WSMC was being reorganized as a result of having lost its focus, essentially viewing environmental quality and its watchdog role as more important than accomplishing the defense mission.

While the staff organization at Vandenberg is being reviewed for possible downgrading in the base hierarchy, the environmental office at Patrick AFB is being elevated from the "section" level to a "branch" within the civil engineering squadron. This move provides the environmental managers with direct access to the squadron commander, rather than having to go through a branch chief to reach the commander. The projected branch chief, now the environmental section chief, expressed that this organizational level would prove to be "just right" (Miller, 1991). Yet, as long as environmental managers remain under the control of civil engineering, the potential exists for environmental mismanagement if the squadron commander views these programs as a lower priority than his or her other operational requirements. Ultimately, little evidence was found (despite vehement claims to the contrary) that the organizational structure for managing environmental programs at the base level is the key to successful implementation, though clearly it can impact the process.

In considering and assessing the ability of the local level to implement environmental policy, it becomes evident that in order for implementation to be fulfilled, successful macro-level implementation must be accomplished simultaneously with unit level activities. The bases are constrained by the actions and resources proffered by the Headquarters, USAF and Secretary of the Air Force level. In other words, much of the base level success must trickle down from the top. Reviewing the seven USAF policy goals listed at the beginning of this study emphasizes the importance of this divided implementation process and allows preliminary conclusions to be drawn.

### Analysis and Conclusions

Successful implementation of environmental policy as an integral part of the defense mission must be initiated at two primary levels as described by Berman: the macro-implementation level (higher headquarters) and the micro-implementation level (USAF bases). The realization of both historically competing values clearly requires specific and different actions be accomplished at each level. Although the micro-implementation level represents the pivotal point at which environmental compliance and pollution prevention (or conversely, degradation) occurs, this effectiveness will be drastically reduced without adequate macro-implementation level actions. Thus, a tension is present between these levels, and its resolution, or lack thereof, emerges as the key to furthering the implementation of environmental policy.

The necessary division of labor between macro- and micro-level implementors is clearly demonstrated by returning to the stated USAF policy goals. Some actions must be accomplished by one or the other level and are not transferrable. Other activities require joint effort in order to be fulfilled. The recognition by both levels of this division of labor and those tasks specifically within their purview, as well as those that are not, is essential to successful policy implementation.

In this particular case study, the environmental goals for which the micro-level must assume responsibility are threefold: compliance, management/restoration, and building community relationships (Goals 4, 5, and 6 as listed above). First, compliance with Federal, State, and Local requirements must be accomplished by the unit level administrators. Considering the tremendous diversity of regulations confronting environmental managers from base to base, the federal level cannot possibly respond in an expedient manner. Therefore, actions to ensure the base remains in compliance, particularly in light of the dynamic nature of environmental regulations, are purely a micro-level responsibility. The managers at unit level have to establish and promote harmonious working relationships with individual federal, state, and local regulators in order to obtain information and assistance that will allow them to stay current on the rapidly evolving requirements. Furthermore, only managers at individual units can assess, on an ongoing basis, the level of compliance achieved by base activities and the areas of shortfall. The success of the working relationships and the level of knowledge about base operations developed by local level administrators will undoubtedly directly impact the compliance task.

The broad objective of managing and restoring resources is likewise a burden placed upon the local level. Those who are most familiar with the specific resources and environmental quality issues will always be the managers directly responsible for them on a daily basis. In particular, civilian personnel who have worked in their respective environmental offices often for more than a decade ultimately understand the needs and challenges of those particular resources -- and the expertise of Florida's managers is not interchangeable with the acquired expertise of those in California. Nor are the required restoration actions identical from unit to unit. As a result, individuals above the unit level cannot expertly assess the multitude of needs to fulfill this goal. Macro-level administrators can, however, hinder the implementation of this policy objective by micro-managing unit-level programs or tasking base managers so heavily that they are unable to do that which they know must be done.

The third environmental goal facing local-level implementation is that of enhancing relationships with neighboring communities. Individuals who are in weekly, if not daily, communication with members of the surrounding communities and who, themselves, are members of these neighborhoods can promote or

undermine the public view regarding the unit's concern for environmental quality and its responsiveness to citizens. The openness and honesty of base managers when dealing with the surrounding communities clearly improves the base-community relationships at both Patrick AFB and Vandenberg AFB. If the unit does not accomplish this, the macro-level cannot.

On the other hand, if the unit-level is to adequately implement the four remaining goals, specific federal level actions are necessary, though often related to efforts required by the micro-implementation level. First, demonstrating "leadership" -- a rather nebulous goal -- must be considered a characteristic of sound management at both levels. Leadership is an attitude and an approach to environmental quality that must permeate the USAF from top to bottom. The challenge to administrators at both levels is to further the culture change to ensure the new environmental ethic is internalized. Specific programs can and should be undertaken at both levels to realize this goal. One simple program which the federal level could implement is an "environmental suggestion program" mirroring the USAF's cost-saving suggestion program, but instead rewarding individuals for identifying unsafe or more environmentally sound practices. A basic incentive program such as this could help foster a new way of thinking about the mission.

Identifying and targeting resources is another shared responsibility. Local level managers who best understand the individual unit's needs must adequately identify them and develop sound budget proposals. The federal level, in turn, is obligated to educate unit level managers on budget procedures and to fight for the resources needed to accomplish the local level environmental mission as an integral aspect of defense.

Although some planning and decision making is undertaken at the base level, much of this work and virtually all acquisition is accomplished at the macro-level. Yet, how well the macro-level fulfills this objective will directly impact unit managers. If environmental factors are not considered in the design and purchase of weapons systems, nor in the development of doctrine, strategy, and tactics, then the base-level environmental office will be faced with an ongoing battle of compliance and restoration at the "end of the pipeline." Hazardous wastes and pollution will continue to spill onto the unit, and environmental managers will be forced to focus their energies on reactive vice proactive undertakings. The evidence supporting the value of up-front expenditures to minimize long-term clean up costs over the lifetime of a weapons system is substantial. Thus, individual bases can make decisions on how to best accomplish the mission with the given systems, but the most far-reaching planning and decision making actions are levied on the federal level.

Finally, pollution minimization relates directly to the willingness of macro-level implementators to consider environmental quality factors in long range planning. Again, if

environmental factors receive adequate consideration during the development of plans, field units will be given weapons systems and operational requirements that naturally fulfill this goal. The micro-level must be equally responsive in accomplishing those actions within its range of options that are unavailable to federal administrators. Executing programs such as base recycling, locating various operations at sites least detrimental to the local environment, and developing and utilizing innovative techniques are just a few base-level actions that can reduce pollution generated on a daily basis.

Clearly, both levels are necessary for successful implementation of environmental policy, as each level is faced with its own set of required actions. The failure, by policy makers and implementors, to recognize the difference in "sightedness" can create an unrelenting tension between the macro- and micro-levels. Federal administrators can and must focus on long term goals and planning, while local level managers have to be most concerned with the immediate environmental quality issues that arise in accomplishing the day-to-day defense mission. Undoubtedly, managers can succumb to the fruitless pursuit of fighting administrators at the other level at the expense of accomplishing the desired policy outcomes.

If environmental quality is to be fully integrated into the defense mission, as has been proposed by policy makers within the Department of Defense, it must be acted upon at both levels with a clear understanding of their individual tasks. If the macro-level fails to fulfill its role, the micro-level will be deprived of the required resources while being given missions, systems, and taskings that degrade the base environment. If micro-level administrators do not fulfill their proper tasks, the intent of the federal level policy will not be translated into improved environmental quality at the unit level, and what has always been done will continue to be done. In other words, defense values will override environmental quality concerns, at times. The importance of awareness among implementors at both levels of this tension, the need for cooperation, and the essential division of labor between the levels cannot be overemphasized, for it is the key to implementing policies.

In the final estimation, the implementation of comprehensive environmental policy in the Air Force requires specific actions by the federal level, as well as the unit level where hands-on management occurs. The macro-implementation level provides the long-range planning and vision necessary to provide resources for the managers at base level. Yet, micro-level implementation is essential to execute the immediate, day-to-day environmental programs that can improve environmental quality on the vast federal lands managed by the Defense Department. The potential exists to perform a tremendous twofold service to the nation in not only protecting Americans from foreign enemies, but also in protecting and preserving the country's natural resources. There can be little doubt that these values are compatible and that

decisions can optimize the tradeoff between defense needs and environmental protection. If the process of integration is evolutionary, as suggested by Secretary Vest, then the potential for realizing the environmental policy goals is realistic. However, if the Air Force's new environmental stance is merely opportunistic and an issue of institutional survival in the post-Cold War era, then changed circumstances could lead these values to once again become competitors with the defense mission taking priority. Further research beyond this exploratory study, addressing many of the significant issues raised, would provide a more complete understanding of the motives behind comprehensiveness and the degree of success achievable in policy implementation.

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