Guidebook on Outreach for Mission Sustainability

A Joint United States - Republic of South Africa Environmental Security Working Group Project

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PREFACE

The relationship between the United States of America (US) and the Republic of South Africa (RSA), which has taken shape under the US – RSA Defence Committee (DEFCOM), is a critical one to both countries. Our cooperative initiatives have strengthened our mutual understanding and serve as a model for other nations to jointly address common interests and identify solutions to problems.

Bilateral and multilateral cooperation on topics of mutual interest – such as defence-related environmental issues – benefit us all by saving time, money and resources as well as learning from the past experiences of others. The environmental initiatives between the US Department of Defense and the RSA Department of Defence under the auspices of the Environmental Security Working Group (ESWG) have already created a number of specific products including other guidebooks and an international conference on military integrated environmental management.

World dynamics are creating new environmental challenges and requirements for military organisations everywhere. At the same time, military mission readiness must not be impaired; defence organisations must be able to train their troops, test their equipment, and sustain their installations in an environmentally sound manner. The development of an effective outreach program, involving all relevant stakeholders, can make an important contribution toward ensuring mission sustainability.

This guidebook is intended to assist the international military community in developing an outreach program – from explaining why it is important, to how to organize such an effort, to the results it can produce. Its focus is on existing military bases and does not cover expeditionary forces or operations. This guidebook can be utilised by any defence organisation to help achieve overall environmental goals and objectives in the context of mission sustainability.

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United States – South Africa Defence Committee
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EXECUTIVE SUMMARY

The ability to meet the demands of today's military training requirements while also taking into account environmental considerations and constraints is a growing challenge world-wide. All military organisations face environmental and natural resource challenges as part of their day-to-day operations. The purpose of this guidebook is to suggest one approach that can be used by any military to address the balancing act between military needs and environmental protection, and to demonstrate that these are not mutually exclusive. The ability to ensure adequate area to meet military training and testing requirements is increasingly encroached upon by competing land, sea, and air uses such as population growth, transportation corridors, energy development and transmission, threatened and endangered species, and wildlife corridors. An outreach program that brings together a full range of stakeholders can be an effective way to develop win-win solutions for all interested parties and help ensure mission sustainability. The process described in this guidebook is for application at existing military bases; it does not endeavour to encompass the added complexities involved in expeditionary operations.

This document begins with an explanation of what mission sustainability means and why it is important. It also identifies a range of encroachment pressures and the impacts that these pressures can have on the military and other stakeholders. Chapter II describes how an outreach program can help protect and sustain the military mission. In Chapter III, each step necessary in the process for getting organized and creating an outreach program is outlined, to include who must be involved, what are the issues of concern, and how to engage various stakeholders. Chapter IV outlines some of the basic principles for a successful outreach program. The tools and resources – such as communication, internal training programs, public education, and the use of maps – for the outreach process are then examined in Chapter V. Chapter VI highlights some of the results that can be anticipated from a successful outreach program, such as enhanced governance and improved community relationships. This chapter also identifies the negative results that can arise if an outreach program is not developed or is developed poorly. Chapter VII summarizes the central points of this guidebook, with a particular focus on the process for building the outreach program. Finally, the Appendices contain a series of case studies which illustrate various types of encroachment pressures and describe how outreach programs at specific installations have sought to address these pressures.

This guidebook was developed via a joint US-RSA project team, under the auspices of the US-RSA Defence Committee's Environmental Security Working Group (ESWG). The team also developed a Primer version of this guidebook, which is available electronically at: https://www.denix.osd.mil/portal/page/portal/Sustain-ableRangeInitiative/Tools/Primers. The team is comprised of subject matter experts in environmental management, sustainability, and outreach programs from both countries. A list of team members and a glossary of terms, acronyms, and references used are provided at the end of the guidebook.

BACKGROUND

Purpose of This Guidebook

This guidebook aims, first, to enhance understanding about the impact that encroachment pressures can have on military training and overall mission sustainability. Second, it offers a generic template for the military to develop an outreach and engagement program, which brings together all the people that care about an issue or are affected by it. These "stakeholders" can include representatives from the military, local community, other parts of the government (whether national, regional or local), non-governmental organizations (NGOs), and any other interested parties who need to participate in decision processes leading to mutually acceptable solutions. Third, it identifies some of the benefits of a successful outreach program. For example, a program that manages to balance mission sustainability and environmental and natural resource protection can change previously adversarial relationships into cooperative ones. The Appendices offer case studies that illustrate different encroachment challenges and describe how outreach programs have sought to address these challenges in these particular cases.

Intended Users of This Guidebook

This guidebook has been developed and written with an extensive target audience in mind. It is intended for use by militaries throughout the world as well as by civilian personnel at any level of government that may have responsibility for mission sustainability, environmental management on a military facility, or public relations with the external community.

While this document is designed for use by a broad community, it is not meant to supersede or replace policies and processes developed by individual countries; nor is it intended to prescribe comprehensive methods for an outreach program. Rather, it is intended to be a guide or "tool" that organisations can customize for their own situations in working with non-military stakeholders to find mutually beneficial solutions to encroachment pressures so that mission sustainability is assured.

CHAPTER I: WHAT IS MISSION SUSTAINABILITY AND WHY IS IT IMPORTANT?

Historically, many nations' armed forces established military installations on lands that were not in high demand for other uses by their surrounding civilian population. This allowed a country's military to meet its mission requirements of training its armed forces and testing its weapons systems, with minimal impact on (and minimal conflict with) its surrounding civilian population. As populations have grown worldwide, so too have the "conflicts" (strains) between the armed forces and their civilian communities, thereby creating greater challenges for a nation's military to sustain its mission readiness. This chapter discusses what *mission sustainability* is, the challenges that *encroachment* places on the military in maintaining mission preparedness, and how these challenges require the military of today to continually evolve to remain relevant and ready – including both safeguarding the natural systems upon which a nation's quality of life depends, and sustaining effective partnerships with stakeholders at all levels.

Where military interests were once deemed sacrosanct, a shift in traditional civil-military relations in the post-Cold War era has sometimes brought civil interests in direct competition with those of the military. This shift is driven by a common quest for scarce spatial and other resources. Rapid economic development, socio-political priorities other than military, and environmental change have presented a whole new set of encroachment pressures that threaten sustained military use of bases, the airspace or maritime ranges. As these tendencies intensify, military planners are avidly exploring innovative ways to deal with the range of contemporary encroachment pressures that impact on military capabilities.

It is now more important than ever for military – and political – leaders to understand the risk to training and testing operations that encroachment poses. In order to remain true to its primary mission of training its forces and testing its weapons systems, a military must continually evolve in order to stay relevant and in order to mitigate the impacts of encroachment on mission sustainability. This will involve both safeguarding the natural systems upon which our quality of life depends, and more effectively partnering at all levels. Taking a proactive approach by partnering with others can ultimately provide win-win solutions for all stakeholders.

Defining Mission Sustainability

For the purposes of this guidebook, mission sustainability is defined as "meeting current and future mission requirements – in the air, on land, and at sea – while concurrently safeguarding human health, quality of life, and the natural environment."

What Does it Mean to "Sustain the Mission"?

Mission sustainment is inspired by the need to address factors influencing a nation's security and stability. These factors have dramatically changed in recent years; potential enemies are no longer exclusively established states with physical assets at risk. Advances in technology (including modern military weapons systems which now require ever-increasing areas in which to train), an exploding global population, and

urbanization, have effectively made the world smaller. This perfect storm of *encroachment* factors now challenges the militaries' need to "*train as they fight.*"

Ensuring defense capability and the protection of military personnel require rigorous, real-life training in the air, on land and at sea. "*Train as we fight*" is not simply a phrase. It represents the absolute necessity for realistic training and preparing service members for the conditions in which they may find themselves while protecting the nation. Training to prepare for national defense is usually stipulated in the national mandate of any statutory force. Realistic training inherently requires access to areas and environments that closely resemble the locations where service members may face combat, complex military situations or engagement. In their quest to train military personnel, today's defense forces are confronting the mounting challenges of international events, shifts in military strategy, base closures, and many of the effects of population growth and the consequent competing demands and stresses on natural resources.

What Is Encroachment?

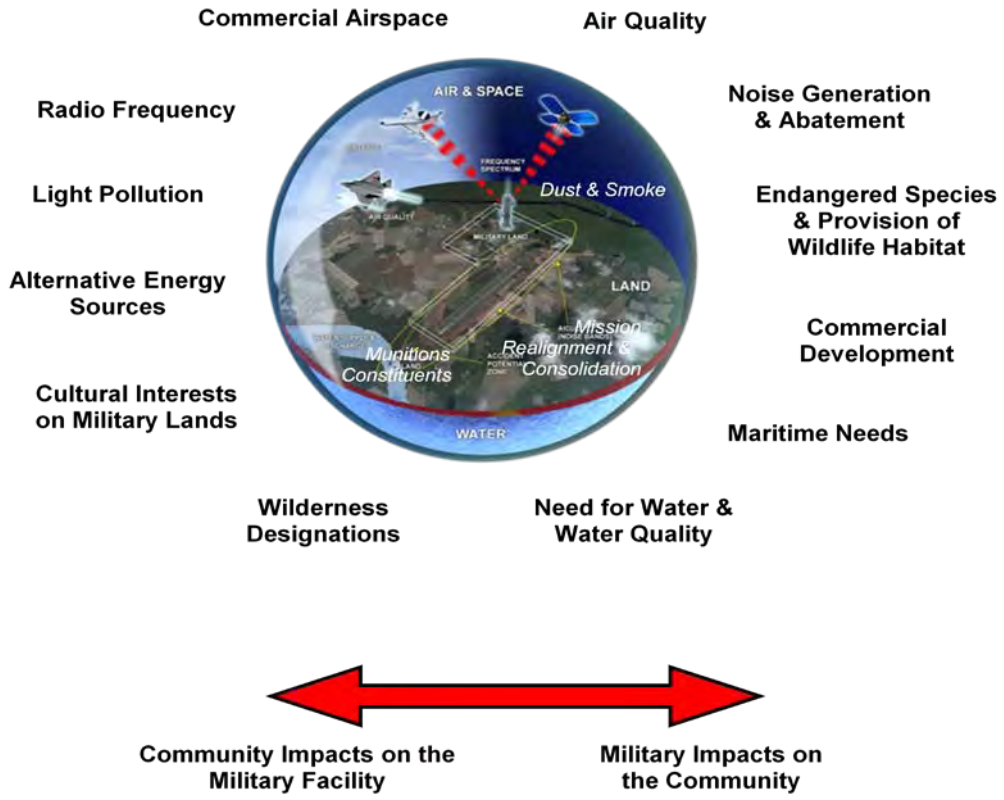
Encroachment is the real or perceived conflict between the reasonable spatial requirements for mission sustainability and a host of economic, socio-political or environmental imperatives.

Commanders today are increasingly required to choose between being a good neighbour and meeting training and testing requirements. Urban sprawl, the presence of cultural and historic resources, and the distribution of threatened and endangered species (TES) are just a few of the factors that can result in training restrictions which affect mission preparedness. In addition, the military's own activities within its installations often affect stakeholders in the vicinity of the military's area of operations. For example, in the United States military installations were originally established in rural areas, far from population centres. As the nation's population has grown, urban sprawl now abuts many installations. Noise, dust, and smoke from weapons, vehicles, and aircraft prompt citizen complaints about military training.

The cumulative impact of uncontrolled development and/or incompatible uses of land, air, water, and other resources can seriously hamper – encroach on – the military's ability to carry out its testing and training missions. The encroachment issue can be inside the fence line, such as when TES move into the open spaces available on military installations when nearby land traditionally used by the species is developed for commercial or residential use. The encroachment issue can be immediately outside the fence line, such as when aircraft noise and dust or noise from (other) military operations interferes with the day-to-day lives of neighbours. Or, the encroachment issue can be located in tactical training areas many kilometres away, such as when a new housing development is placed under a low-level flight path. Encroachment can also take place in the waters surrounding a country, such as when endangered marine mammals are perceived to be at risk from military operations. In some cases, encroachment effects can go both ways. For example, in water-stressed areas, the community's water demand can result in limits on the military base's water supply, just as the base's water demand can impact the community's water supply.

Thus, dealing with encroachment challenges becomes a two-way issue. On the one hand, the military can lose its ability to effectively maintain its mission readiness if it has to compromise its training or testing events in order to address the issues that are a problem for its neighbours (the surrounding community). On the other hand, the neighbours can be unduly stressed by the military's training and testing activities. Figure 1.1 illustrates this two-way concept: the military's impact on the surrounding community and vice versa, and the resulting effect of less flexibility for both the military and the community.

Figure 1.1. The Two-Way Nature of Encroachment



Result: Reduced Flexibility for the Military and the Community

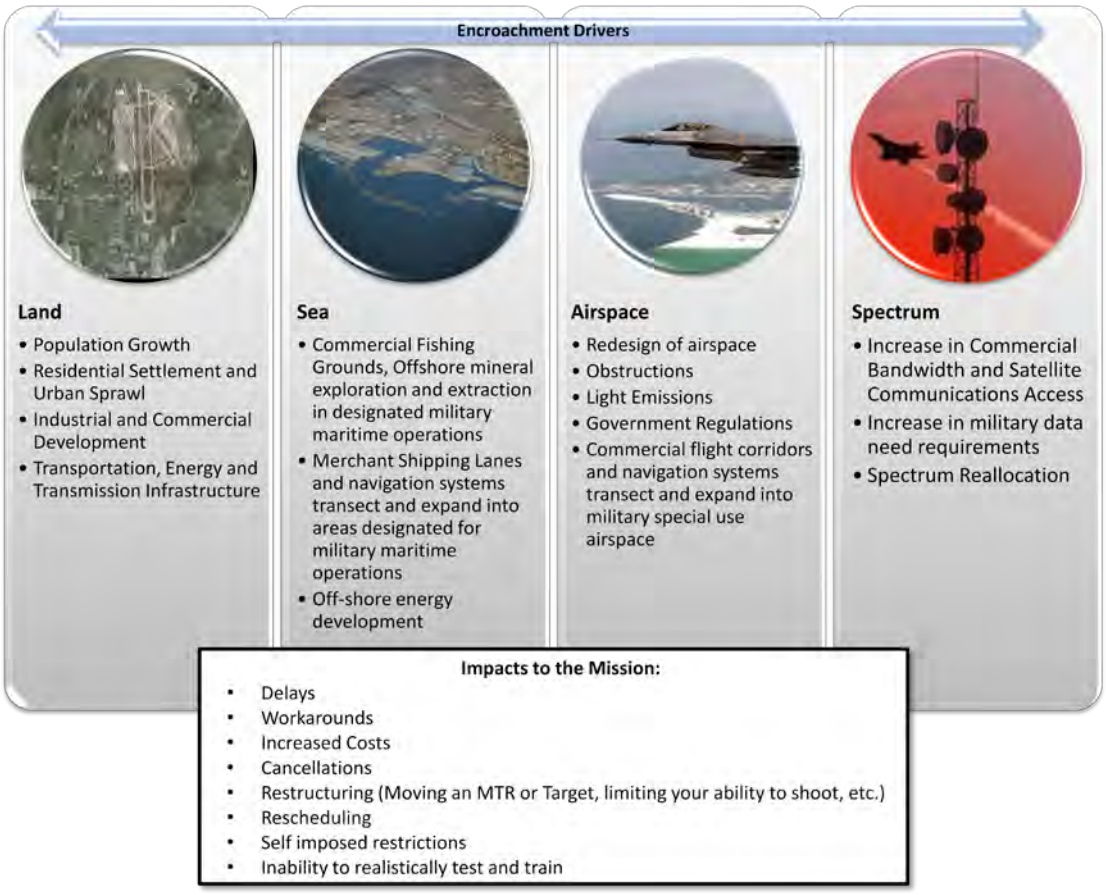
Real conflict can arise when the military does not adequately understand the encroachment problems evolving in its area of operations. Therefore, it is imperative to institute an outreach program that can forecast the natural infrastructure necessary to support the military requirements – both now and in the future – and also to identify the events outside the installation that may affect "access" for those requirements. This guidebook is designed to assist the military in putting such a program into place.

Encroachment Impacts and Scope of Examples

The impacts of encroachment on military training and testing may sometimes appear minimal, but cumulatively they can have a major impact on a military's ability to "train as we fight," as well as to test new weapons systems. These impacts include delays and workarounds to accommodate other stakeholder requirements and concerns. These delays reduce the amount of time that military forces have available to train, while workarounds such as not flying at night, restricting the use of pyrotechnics during combat training exercises, and travelling to more distant locations to train, fail to meet the "train as you fight" standard of performance while increasing costs and the likelihood of additional delays and/or cancellations of required training and testing operations.

Figure 1.2 lays out examples of encroachment and some of the impacts they can have. No matter what the types of encroachment or the reason(s), they can lead to conflict if not properly addressed.

Figure 1.2. Examples of Encroachment and Their Impacts



Appendices 9 through 19 of this guidebook describe specific case studies of how various types of encroachment pressures have affected the military's testing and training. These case studies also highlight how some of these problems have been successfully addressed in either the United States or in South Africa through outreach programs, as described in the following chapters.

CHAPTER II: HOW CAN OUTREACH HELP PROTECT AND SUSTAIN THE MILITARY MISSION?

In the previous chapter we described the various forms of encroachment pressures and the impacts they can have on the military mission. This chapter expands on how *outreach* is one necessary, in fact critical, tool to address and mitigate these pressures on military installations and their operations.

Defining Outreach

Outreach is an on-going, two-way relationship in which the military engages with a range of stakeholders. One element of outreach involves military organizations and personnel formally, informally, and routinely working with a wide range of key external stakeholder organizations about specific issues. The other key element of outreach aims to improve public support for the military and to increase public awareness about the military's training requirements and environmental stewardship. Everyone who works at an installation has the potential to contribute to outreach efforts.

By creating a two-way street of trust between the military and other stakeholders, outreach helps to minimize the chances of either party overreacting to challenges and it offers a framework for solving problems when they do arise. Awareness and involvement with community development and planning, along with other partnership activities, help the military work with community leaders early and often in order to minimize or avoid encroachment issues. This ensures continued execution of the military mission.

Factors Outside of Military Control

Important to recognize up front is the fact that most encroachment issues originate beyond the fence lines of a military installation, and therefore cannot be dealt with in the traditional military "command and control" approach. These issues are generally the result of policy-making and other decision processes exercised outside of the military organization. Perhaps the most compelling example is with land use planning conducted at the local, regional or national levels. Growing populations and the resulting shifting of land development patterns present a challenge for militaries since these shifting land uses are often not compatible with a neighbouring military operation. For example, as people move closer to military installations or as more modern kinds of military equipment is put into use, citizen complaints arise about the noise, dust, and smoke from weapons, vehicles and aircraft during military training.

Responsibility for managing community growth and development rests with the regional and local governments charged with exercising land use authority. This job is extraordinarily complex, not to mention controversial. The processes followed most typically are defined by a legal framework, are highly structured yet often not consistent from government to government. In many cases, the military may not be consulted about potential impacts of these plans on its operations. Land use decisions are economically- and often politically-charged; they must carefully balance the competing (sometimes conflicting) interests and rights of property owners and developers with citizen concerns, military requirements, and the long-term future of

the community and region. For instance, in the United States, residential and commercial developments generate revenue to pay for local government services such as fire and emergency response, police, and public works.

It is also important to be sensitive to the idea that encroachment is a two-way street. Ironically, most military installations were originally located in places of relative isolation, and their presence created jobs and ultimately drove economic and community development around the base. That economic impact remains today, whereby the installation still makes an important economic contribution to the local economy; thus there is still mutual benefit from the military's presence. Yet, today, a base facing significant growth in operations and personnel places stress on the local community in the form of demands for additional transportation, water and energy infrastructure, housing and schools. Meanwhile, rapid urban growth around military installations creates the potential tension that residents may be exposed to aircraft over-flights, dust, and noise from the military activities. These are shared matters that create interdependencies between the military and its surrounding community. The military and surrounding communities must compete for shrinking air space, limited water resources, and a decreasing supply of open space and land. Here again, how these matters will be addressed will be driven largely by local and/or regional government, but typically with a significant amount of public participation in that process. And this is why the military must strive for respectful and resilient relationships that foster communication and cooperation among all involved.

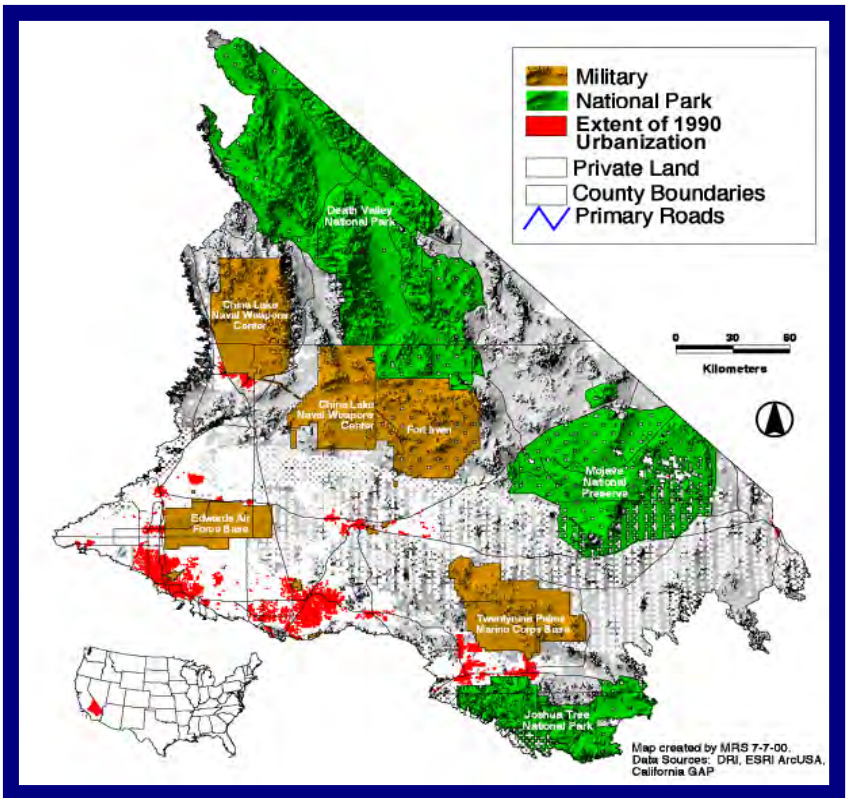
In some cases, the military needs access to other lands outside of its immediate vicinity and control.[1] This is known as "white space," which is defined as "an area outside the installation or range that, at any given time, is required to meet current or future military mission needs but is not under the management control of the military." Figure 2.1 shows an example of white space around several military installations in the state of California. And, in certain cases, the way these lands are managed may fall outside of the local land-planning processes described above. In any event, planning processes should exist that invite stakeholder participation and input, and that are subject to higher governmental oversight. Similarly, commercial flight paths are established by the governing aviation authority, or sea lanes and coastal zone management issues by a host of other regulatory or governance bodies. In all cases, decisions on land use, access to special resources, commercial flight paths, etc. are exercised by an external governing body. The military must explore how it can (and should) have an input to these additional governance structures.

The military thus must find a way to engage. With or without this input, others that are competing for the same resources needed by the military are no doubt fully prepared and already participating in the decision processes. These other entities include other governmental agencies, industries, trade associations, civil activists and NGOs. In the case of the latter two, the importance of their role cannot be overstated. They are increasingly focused and organized around an issue, and they tend to bring relevant expertise and a unique perspective. With increasing societal expectations of

[1] See, for example, the case study on "white space" at Yuma Training Range Complex in Arizona, Appendix 9.

transparency, timely information and a say in the decision process, the civil activist plays a strong role. And the decision makers *will* listen to them.

Figure 2.1. Example of White Space around Military Installations in Southern California



Another critical dynamic that may come into play – which often works against military interests – is when decisions are made or influenced by individuals or organizations who do not necessarily understand the military requirements or the impacts their decisions have on the military. In some societies, fewer and fewer citizens have a direct military connection – either having served in the military or knowing someone who has. From an external stakeholder standpoint, it can be very confusing to know with whom and how to engage with the military.

Outreach is Essential to the Military Mission

The increasing competition for space and resources is multi-faceted in its complexity, and, while certainly affected by, it cannot be resolved through legislation and regulation alone. In order for the military to fulfil its responsibility of preparing its uniformed men and women to defend a nation's security, the military needs a seat at the table early on in the relevant decision processes. It must work proactively with the appropriate stakeholders to encourage compatible uses of land and airspace around its military installations and operating areas. This will require outreach and engagement with the policy makers, planning officials, and other interested (perhaps competing) stakeholders that affect land use decisions – sometimes all together around one table. Traditionally, the military has not been "invited to the table" when

many land use and planning decisions have been made. One major purpose of an engagement strategy therefore is to make sure that the military is at the table when decisions are being made that may affect the military's ability to execute its mission.

Engaging with the decision-makers in the right place, at the right time can help get military issues taken into account and thus ensure the military's continued access to its ranges and operational areas in ways that also serve the community's socio-economic and environmental needs. Through cooperative partnerships and consistent, transparent – both formal and informal – two-way communication, relationships will develop that lead to more collaborative, mutually beneficial decision processes. Furthermore, the more you conduct outreach, the more you find out about what is going on outside the military base, and the more quickly you can engage in productive discussions – with the right players, in the right place, at the right time – to achieve win-win solutions. It will also lead to better awareness and sensitivity on the part of the stakeholders regarding how their actions may affect the military's ability to operate. *Partnering* is the key word – the military is not working for the community nor is the community working for the military. Rather, both parties are working together toward mutually beneficial sustainability.

Land trusts, the agricultural community, and conservation organizations (e.g., The Nature Conservancy or the African Wildlife Foundation) can leverage their respective interests in open space conservation areas and preservation of working lands. Both are highly compatible contiguous land-use arrangements for the military. Protecting wildlife corridors, farm, forest, and ranch lands near military bases and operating areas can help sustain the military's ability to test and train by buffering these activities from residential or commercial neighbours and by providing habitats for endangered species. The military must therefore recognize these intersecting goals and begin to cooperatively engage with these prospective allies. It is also important to be mindful that military operating areas can be well outside the immediate proximity of a military base (e.g., military low-level flying routes). And, therefore, these opportunities must be evaluated and may need to be pursued regionally, wherever the military conducts its operations.

Growth patterns and other encroachment effects often occur on a regional landscape scale that transcends jurisdictional boundaries (e.g., species and ecosystems do not obey borders). Furthermore, the complexity of today's sustainability challenges requires creative, holistic and integrative approaches, cooperatively participated in by a host of players. This drives the need for more collaborative partnerships designed around regional resource competition is
sues, such as a sensitive ecosystem experiencing competing demands for military training, recreational use, wildlife corridors, energy generation and energy transmission corridors. This serves to underscore the importance that military engagement take place not just local to an installation, but also at regional and national levels. Engagement at the regional and national levels may help to drive national-level land use coordination protocols and centralized policies (e.g., tax incentives for the preservation of open space, creation of grants to purchase development rights, or requiring planning authorities to consult the military regarding land use activities outside a military installation).

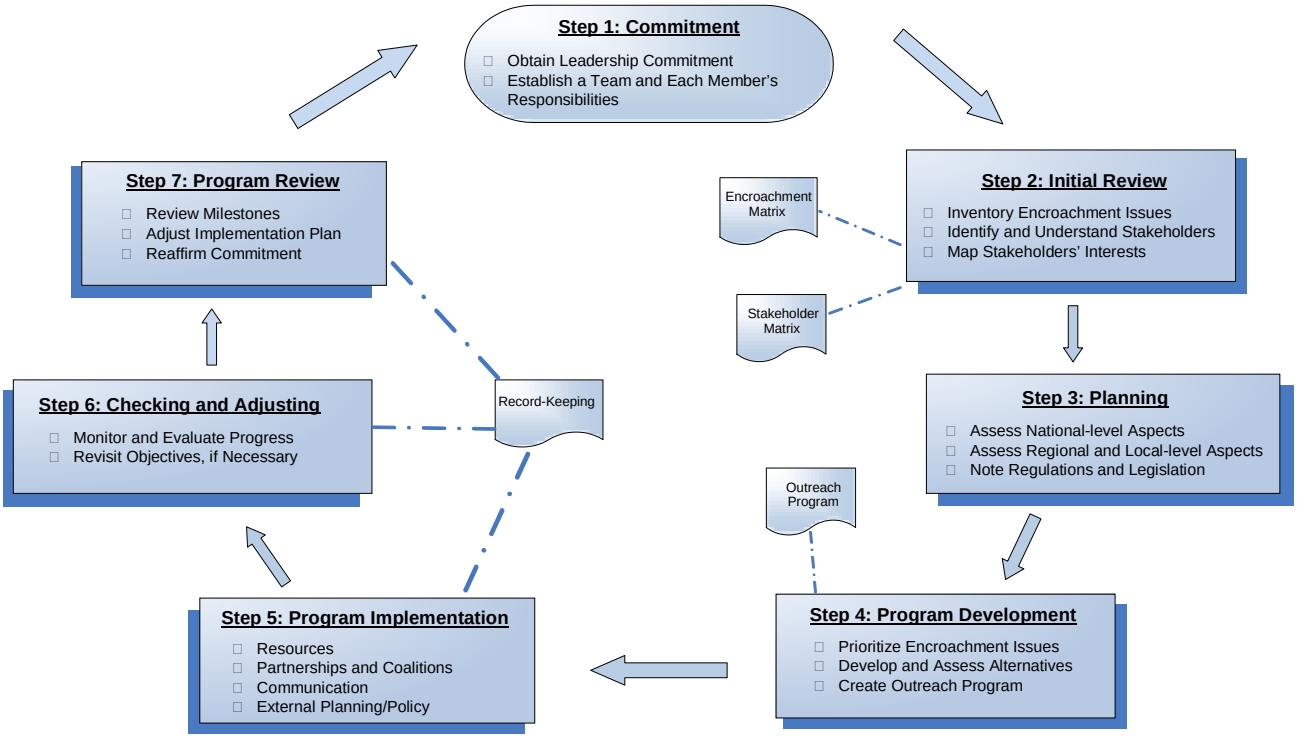
The Commander of an installation is the most important and influential person in creating and maintaining cooperation between the base and its surrounding community. S/he must set the example of being proactive and positive in these relationships. But broader success is only possible if the military is organized around its engagement strategies, with responsibility being shared among an interdisciplinary team of base staff, as well as designated outreach specialists at the regional and national levels.

The next chapter of this guidebook will elaborate more on the "who"s and "how to"s of forming an internal management team with clearly defined engagement strategies.

CHAPTER III: A STEP-BY-STEP PROCESS OF BUILDING AN OUTREACH PROGRAM FOR MISSION SUSTAINABILITY

This chapter lays out a step-by-step process that can be used to initiate, develop, implement, and improve an outreach program at any military facility. The first step involves getting the necessary support for the initiative and determining who needs to be involved. The second step includes identifying the challenges that need to be addressed, who the stakeholders are, and what their main motivations are. In step 3, national-level and regional/local-level issues are examined. Using this knowledge, in step 4 the outreach program is formulated. In step 5, the program is actually assembled and then implemented. Recognizing that virtually nothing is perfect the first time it is done, steps 6 and 7 outline the need to constantly review the program, determine what is working and what is not, and what changes should be implemented to make the program more effective. Figure 3.1 illustrates this process. Above all, the program must have built-in flexibility to adjust to changing requirements, new priorities, etc.

Figure 3.1 Outreach for Mission Sustainability: Process Map



STEP 1: COMMITMENT

Obtain Leadership Commitment

Step 1:

- *Obtain leadership commitment*
- *Establish a Team and Each Member's Responsibilities*

Critical to the success of any outreach program is the commitment of the organization's leadership. Often the military culture tends to be more inwardly focused and very linear in approach. In order to establish unique partnerships and find ways to partner with those outside the military, the military leadership must make clear that these issues are critical to the readiness of the force and that finding new ways of working with outside partners is a priority for the command. Ideally, this message is issued at the headquarters level (of the DoD and the individual Services) as well as by the base commander. Sample memoranda are contained in Appendix 1. At the headquarters level, the guidance should not be too prescriptive; each base must have the flexibility to implement the concept of outreach according to its specific situation.

In order to achieve leadership buy-in to new processes, a base must define its problem statement that clearly identifies the issues at hand, how they can have a negative effect on the mission of the installation or range, and how the problems might be solved. For example:

Naval Base Simon's Town, South Africa: Although Simon's Town has been a strategic naval port at the near-southern extremity of the Cape Peninsula since the 17th century, escalating real estate value in the 1990s brought select property investors and wealthy residents into conflict with the Navy over noise generated at the local naval dockyard. There was also concern for the safety of the public and marine life during naval exercises, which are accompanied by gunfire from local gun batteries and battleships in the False Bay area. By 1998, the Flag Officer Fleet had instituted a standing communication forum among local naval authorities, residents, and civil authorities in Simon's Town at which conflict – over noise, other sources of pollution, and its use of the marine environment – is resolved through dialogue and the implementation of the best practicable solutions for continuing naval operations amid good neighbour relations and environmentally responsible conduct. Today, this affirmative step has resulted in the recognition that Simon's Town owes its origins to its importance as a naval port, and the constructive influence of the South African Navy on the town is still profound.

Establish a Team

To determine the issues, consequences and possible solutions, it is important to bring together a comprehensive team at the installation in order to identify the outside encroachment pressures and associated stakeholders, as well as potential solutions to the issue. This team – which can be called a Mission Sustainability Team (MST) – should be an interdisciplinary, cross-functional committee. The composition of its membership is described in the next section.

By identifying these issues and laying out the effects on the training mission, the military leadership will pay attention. But it is not enough to get the leadership's attention focused on the problem; it is equally important to offer the leadership a solution. So, when the MST raises the leadership's awareness of a particular issue, the

MST should simultaneously provide a possible scenario for addressing or resolving the identified issue. The text box below illustrates this concept.

Example: Base X is now unable to do night helicopter training due to light pollution and noise issues from a new housing/shopping development on the west side of the range. This means that the training must now be conducted at a range that is 350 kms from the installation. This means that more time and money will be needed to transport personnel and equipment to the new training area.
Consequences:
- Additional costs for training
- Additional stress on military equipment and personnel
- Long-term use of range may need to be re-evaluated

Possible Solutions:
- Work with community to install different types of lighting
- Work with community to identify times that the noise from training will not be as large an issue
- Notify community in advance when training is planned to take place

Structure and Responsibilities of the Mission Sustainability Team (MST)

There are several personnel from different offices that should be included in the MST. An essential element to maximize the MST's effectiveness is training for the MST members who will interact with external stakeholders. Knowing how to use "civilian" language when describing military operations and requirements and be able to make a presentation to a group of partners in an interesting and convincing way can be a challenge because the military often has a way of speaking its own language.[3]

The creation of the interdisciplinary MST includes, at a minimum:

- Liaison officer
- Operational staff (which will include an air-space manager)
- Legal counsel
- Public affairs personnel
- Logistics staff
- Installation (base) planner
- Environmental officer

An example of the team's composition and each member's duties is contained in Appendix 2. It is essential that the leader of the MST – ideally the Liaison Officer (LO) – be a member of the staff that has the authority to report directly to the commander. Moreover, this leader should have the authority to speak on behalf of the base commander when interacting with external stakeholders.

It is important to remember that most of the issues that will affect the ability to maintain the mission will be identified at the installation level; thus, the process will

[3] There are some excellent training programs available through the International Association of Public Participation (IAP2). The primer series developed by the US DoD have been used extensively for training US personnel. These latter are included in the reference section at the end of this guidebook.

be a reverse of the normal military "top-down" process. This requires staff *at all levels* to be involved in the process.

A good way to train and coalesce the team is to have a two- or three-day seminar, bringing in speakers from outside the organization to talk about their issues and solutions and address how to work with them on a regular basis.

Additional Responsibilities of the Liaison Officer (LO)
As the preferred overall lead for the MST, the role of the LO is to understand what the community is planning to do, how decisions are made, and to coordinate between the community and the military facility. It will not always be possible for each installation to have an LO of its own focused solely on outreach activities, but there should always be a sole point of contact for these issues. The skill set for this position is not necessarily found in the normal military personnel systems. The LO needs to understand:

- How local, regional and national government work and how the decision processes work at each of these levels
- The nature of the military mission and its impact on the community
- The effects of diverse external encroachment pressures on the military mission
- How to find opinion leaders that can work with the military installation to solve encroachment problems
- Methods of forming stakeholder coalitions that can make good planning decisions which consider the military's needs.

Appendix 3 contains a sample job description for the LO position.

This individual needs to report directly to the commander and, at complex installations, will most likely need a staff to support the many activities necessary to keep information flowing in both directions – from the installation to the community and from the community to the installation's leadership. Because this effort is very much about building relationships, this person should, ideally, be stationed at the installation for the long term in order to ensure maximum continuity. The importance of this continuity for relationships cannot, in fact, be overstated. The other stakeholders will know who to contact and that this person speaks with authority. Moreover, by having one long-term point of contact, this can dissuade others from trying to "shop around" for an answer they want to hear.

STEP 2: INITIAL REVIEW

Step 2:

- *Inventory Encroachment Issues*
- *Identify and Understand Stakeholders*
- *Map Stakeholders' interests*

Inventory Encroachment Pressures and Impacts
As noted in chapter 1, military activities can encroach on the civilian community, and vice versa. Encroachment pressures can be local, regional or national. Examples of local encroachment include:

- Urban sprawl
- Noise restrictions that limit training opportunities
- Light pollution that interferes with

night training
    - Management of endangered species and critical habitats

Examples of regional encroachment factors are:

- Airspace access
- Wildlife corridors
- Energy transmission

National encroachment issues include:

- Endangered species listings or critical habitat designations
- Mineral and resource extraction policies
- Increasing emphasis on alternative energy development

These pressures have impacts on land, in the air, and at sea. In all cases, it is important to consider the three-dimensional nature of any mission. Appendix 4 contains two tables. The first provides a comprehensive checklist of typical encroachment pressures in which economic, socio-political, and environmental drivers are expressed as a function of the spatial media of land, sea, and air space. The second table describes encroachment factors and the corresponding impacts each can have on military training and testing missions, including the factors that contribute to the impact on missions. These (and other) documents can be referred to as the MST develops its inventory of encroachment factors and their impacts.

Identify and Understand the Stakeholders and Map the Issues

After going through an exercise to clearly articulate the requirements for the military mission to succeed, the next step is to *identify and understand* those other organizations that can become partners in solving the encroachment issues facing the installation. It is not only a question of knowing (or finding out) who the stakeholders are, but also how they function, how they make decisions, what their motivations are, and what they desire. These issues may be local, regional, national or, in some cases, even international.

Perhaps the most critical part of an effective outreach program is determining who the *real* stakeholders are. A common error in building outreach programs is to try to engage with a large arena of people and organizations, such as the general population or all residents of a town. In fact, most all decisions and actions are driven by a very few people that are looked upon by others as "opinion leaders." Chapter 4 describes this concept in greater detail.

To keep track of the information obtained, create a matrix for *each* encroachment threat, making sure to identify common issues and overlapping areas on which to engage, as outlined below.

- Encroachment Threat – describe the issue and the potential impact on mission capability/sustainability
- Stakeholders – list affected military and other stakeholders and points of contact for each
- Opinion Leader(s) – identify people who are likely to influence the decision maker and affect the outcome
- Decision Maker(s) – identify the person or entity that makes the decision on the outcome

- Means of Engagement – describe communication method such as written correspondence, conference call, in-person meeting
- Decision timelines and milestones – list short-, medium- and long-term milestones and when events or decisions will occur
- Desired Outcome and Ultimate Results – indicate what you hope to have happen and, once the process reaches a specific milestone, return to the matrix to note the result: what did the military gain or lose?

This is a working document that will be revised and updated as new information becomes available. The matrix is the key product resulting from Step 2. A Stakeholder Matrix illustrating real-world examples is contained in Appendix 5. In addition, Appendix 6 lays out the steps to follow in stakeholder analysis for managing the relationship.

As part of preparing the matrix, it is important to identify the common issues and the overlapping areas on which to engage. The issues may be topical, geographic, political, etc. Gaining an understanding about how the stakeholders operate will involve spending some time on research into the organization, then engaging in an "information-exchange" dialogue. This is often done most effectively in an informal manner. This kind of opening is "non-threatening" and will help lead to a positive relationship in the future. Such an approach can be especially important when (at least in some cases) the military is seen as "the 800 pound gorilla" in the room and overtures may be met with suspicion early on.

This beginning process is a labour-intensive one, but will form the basis for the entire outreach program. There are several methods for identifying different types of stakeholders:

- Identify local government leadership (town, city, region, etc.). Then meet with these leaders and ask them who they depend on for good advice on policy, problems, etc. As you gather this information, the same names will begin to appear. These are the "opinion leaders" in your various communities of interest with whom you will need to form relationships.
- Read through past newspapers to identify who is quoted in various stories of relevance to the issue at hand; this will also give you names of opinion leaders on the topic.
- Attend conferences, professional meetings, and community meetings and note who speaks and who is consulted. You can do this at different levels of government, as well as with community groups and NGO meetings.

STEP 3: PLANNING

Inputs from national-level documents as well as inputs and assessments from the regional and local levels will form the basis for developing an Outreach Program for Mission Sustainability (OPMS).

Step 3:

- *Assess National-level Aspects*
- *Assess Regional- and Local-level Aspects*
  - *Master planning*
  - *Considerations inside and outside the installation*
- *Note Regulations and Legislation*

Assess National-Level Aspects

In general, national security is no longer viewed as a predominantly military or policing issue. It has been broadened to incorporate political, economic, social and environmental matters.[4] This security framework commonly determines the roles and functions, posture, and doctrine of a statutory force, which directly impacts force structure, force design, and funding.

Although this rationale is determined at a national (strategic) level, it can affect the location of a particular military installation, the capabilities and force levels at the installation, and the mandate for carrying out the specific military mission in the area of responsibility. At the same time, the local military mandate must be offset against the collective national security debate in which the quest for both stability and development go hand-in-hand. Ideally, national strategies for sustainable development outlining social, economic, and ecosystem targets and objectives are underpinned by systems of governance at respective levels. The national premium on sustainable development targets and objectives would decide the precedence of national military priorities.[5] These national-level aspects are factored into the OPMS as a foundation for the local-level position.

Assess Regional- and Local-Level Aspects

Land management agreements and supporting policies should be entered into with local authorities where specific military land, sea, and airspace requirements exist. A uniform, effective, and integrated regulatory framework for land use and land use management must be visible at regional and local levels.[6] A public governing body – through national, regional or local legislation – endeavours to administer the use or development of land, to include:

- The subdivision and consolidation of land;
- The use (type and intensity or density of development) of land;
- The location and impact of unwanted, but necessary, land uses; and
- The direction, type, and intensity or density of future land uses.

Perhaps the most difficult part of combating encroachment on a military installation or on areas used by the military is the military's ability to clearly define its current and, more importantly, its future requirements. As new weapons systems come on board, the requirements for space often change – but development in the region can make it very difficult to accommodate these new spatial requirements. The result can be increased tension among the military, the local government, and the affected community.

When supporting military requirements, it is important for the outreach program to consider the training and testing needs, three-dimensional spatial planning, and local community priorities.

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[4] Chapter 2, *South African Defence Review* (1998). United Nations General Assembly 96th Plenary Meeting, *42/187 Report of the World Commission on Environment and Development* (1987).

[5] Department of Environmental Affairs, Draft National Strategy on Sustainable Development and Action Plan, 2010-2014," *Government Gazette No. 33184*, 14 May 2010.

[6] Department of Provincial and Local Government, "Land Use Management Bill," *Government Gazette No. 30979*, 15 April 2008.

Master Planning

A master plan is a comprehensive document that identifies the military's planning, land requirements, development and management of resources, programs and infrastructure needs. It can be used to guide the decision making process for a military facility over 5 to 10 years. The master plan is the culmination of a wide range of information composed of that which exists and future plans. The primary goal of a master plan is to "plan with, not for" the community. It allows the base leadership to make both short-term and long-range decisions based on the best available information. Base master planning should take community development into account by means of community involvement and interaction. In order to maintain mission sustainability and ensure sound community relations, it is important that municipal authorities also take note of military land uses within their town planning schemes and zoning plans. Appendix 7 contains a template for a community-military joint land use study.

Considerations inside the Installation

To understand the testing and training requirements inside an installation, good communication between the operators and those who have responsibility for the facilities is vital. For example, when a base is being constructed (or renovated), the location, structure, etc. of buildings are often planned without consultation with the operators of the training ranges and may ultimately cause a "self-encroachment." This can be true for roads, energy development or other building projects.

As another example, environmental and natural resource concerns (e.g., care for threatened and endangered species) can also be an issue affecting how the ranges are used, such as what areas cannot be used at specific times of the day or year and what (other) adjustments must be made to the training schedule to accommodate habitat and species.[7]

Having a good dialogue with the operators is essential and can be worked through the MST discussed above.

Military Considerations outside the Installation

The requirements for testing and training that have an impact outside the installation and in the overall region are admittedly more complex, as issues such as noise contours, airspace, and troop movement corridors can be many kilometres from the installation.

[7] See Appendix 10, which describes the system that Eglin Air Force Base has in place to manage natural resources and range activities.

Using good mapping tools (such as Geographic Information Systems, or GIS) and bringing together the operators to actually define their needs is critical to the success of staving off both current and future encroachment problems.[8] This has been an ongoing challenge for the US military, as the Services bring on new weapons systems or change the battle tactics, thus changing the training requirements.

An additional complication in the encroachment equation can arise when different military services have overlapping needs, such as flight paths. In such cases, while the forces may be located at different bases, the weapons systems require the use of the same space, which is not even under the control of the military.[9] In such cases, it is important for the military to coordinate its positions in advance so that it can speak with one voice in dialog with the other stakeholders.

Note Regulations and Legislation

Emerging legislation and regulations can have important impacts – both positive and negative – on the military. It is therefore vital for the military to take a proactive approach in interacting in these policy processes to ensure military-unique impacts and requirements are understood and considered. This pertains at all levels – national, regional, and local.

One aspect of this work involves keeping abreast of legislative and regulatory activity and identifying ways in which the initiatives may affect the military at any level. For example:

- An effort to ban the use of mid-frequency sonar would have a national-level impact on a country's naval training capabilities.
- A proposal to regulate diesel particulate matter emissions from engines could have national, regional or local impacts, depending on who was proposing this regulation. It could make it necessary to seek an exclusion for tactical vehicles in order to meet combat deployment conditions.
- A proposal for critical habitat for threatened and endangered species may require the military to advocate for a more holistic management approach for the species in lieu of critical habitat because the latter could reduce flexibility for military training.[10]

Other initiatives might be to the direct *benefit* of the military, in which case the military may wish to go on the record to endorse the initiative. Such would be the case if local land-use authorities were required to notify the military when new development or changes to zoning will occur within a specified distance of a military operation.

The most important aspect of this work is timeliness. The time to get involved is when the legislation or regulations are first being considered and drafted. When relevant, the military needs to interact in – not just track – the process in order to make the military perspective understood, to explain the potential impacts of the

[8] Chapter 5 includes a more detailed discussion about the utility of using GIS.

[9] This space could often be "white space," which is an area outside the actual boundaries of the military installation. Appendix 9 on the Yuma training range describes the challenges of using white space and how an outreach program can help.

[10] In the United Sates this takes the form of an "Integrated Natural Resources Management Plan."

military mission, and to assess whether there is a need to build in military considerations. Timelines for public comment are set by the legislature or regulatory body and are rarely flexible. This means the military must act quickly when coordinating formal input to the process, or even when conducting informal educational outreach to make sure military impacts are understood. As with other aspects of the outreach program, continuity of effort also contributes to a greater likelihood of success. Legislation gets modified or amended multiple times throughout the legislative process. Therefore, it is critical that the military follow the legislation and engage as necessary from beginning to end.

STEP 4: PROGRAM DEVELOPMENT

The ultimate product of the fourth step is the creation of the Outreach Program, using inputs from all the previous steps, as well as prioritising the encroachment challenges that have been identified and assessing potential solutions to them.

Step 4:

- *Prioritise Encroachment Issues*
- *Develop and Assess Alternatives*
- *Create Outreach Program*

Prioritise Encroachment Issues: Significance and Timing

Several factors need to be considered when assessing the significance of each encroachment pressure:

- How significant is the threat to the military mission?
- How quickly could it affect the mission?
- Is it driven by a timeline outside of the military's control?
- How extensive or intensive will engagement mechanisms need to be?

The impact of encroachment on military installations will vary, depending on how much the issue affects the base's mission and military capability. Some encroachment issues may be overcome quickly by day-to-day communication efforts or by addressing them through existing partnerships. As one example, at Ft. Campbell, Kentucky, where helicopter units train in modern night fighting aviation techniques that include the use of Night Vision Devices (NVDs), street lighting off the base was impacting the ability of Apache helicopters to conduct this training. The answer: replace existing street lighting with ones that point light down instead of up and around. The solution is useful for many reasons, not just avoiding NVD interference. Thus, this lighting is now being used more commonly in communities to reduce conflict between commercial and residential uses as well. It is also more energy efficient because it focuses the light down, so fewer lumens are needed.

In contrast, other encroachment challenges may require long-term and extensive and/or intensive engagement. For instance, a specific military encroachment factor may start as a low priority but turn into a high-risk issue in the long term, as in the case of urban sprawl. Growing water scarcity, as another example, might not be an imminent threat but is clearly a serious emerging trend. It should therefore be addressed both in the form of internal management controls (i.e., conservation/ mitigation/adaptation measures) and engagement in external policy processes to ensure overarching management of this critical resource is sustainable in the long run.

Therefore monitoring development and resource-use trends, understanding how they are being addressed, and engaging and cooperating in those processes as appropriate is critically important.

Another factor to consider is what is driving the timeline and decision process of the encroachment threat. If the issue is newly proposed legislation or regulations, these will be driven by a process and timeline outside of military control (see "Regulations and Legislation" section, Step 3). Even though the potential impact may not be the base's biggest threat to its mission, it may need to become a high priority to coordinate and articulate a military position in accordance with public comment periods. It may even require one-on-one engagement with the legislative sponsor, public authority or their staffs to make sure military interests are considered.

Develop and Assess Alternative Solutions

Once the range of encroachment factors have been prioritised, possible solutions should be identified and assessed. Outcomes to some encroachment threats are likely to harbour resource-demanding solutions whose costs may have to be borne by either the military, civil agencies, or both. At the same time, alternative solutions may have their own environmental, economic or social consequences that could cause unforeseen new problems. These factors must be thoroughly appraised in determining the most viable alternative solutions. For example, to address community complaints about noise from helicopters training early in the morning, one base in the United States scheduled this training for later in the day. However, the later take-off times resulted in greater clouds of dust, thereby creating a new and unanticipated environmental impact.

There will obviously be no "one size fits all" fix, either for a specific problem or location. Assessments should consider not only the military's perspective but also the perspectives of the various stakeholders. Possible solutions have been described throughout the guidebook and especially in the Appendices, and include efforts to:

- Develop compatible use planning;
- Establish conservation easements or buffer zones;
- Enhance information exchange
- Adjust time or location of military activity, *if* such an adjustment would still allow for realistic training
- Modify operations or install new equipment (e.g., if water is increasingly scarce, restrictions on its use can be instituted, conservation monitoring equipment could be installed, and/or new low-use water equipment could be purchased).

Create an Outreach Program for Mission Sustainability with Objectives and Targets

"Outreach," "engagement," "inter-governmental relations," "external affairs" – all of these phrases refer to a planned, sustained two-way engagement with stakeholders, both internal and external to the organization. There are many ways to conduct this type of program, but the essential core element is identifying, creating and maintaining the relationships necessary to conduct, over the long term, the core mission of the organization.

The stakeholder matrix from Step 2 becomes the foundation of the Outreach Program and is critical to its success. A clear connection to the mission will be important to secure the leadership's willingness to allocate the resources necessary for conducting an outreach program. This is true for any organization, whether it be government, private industry, or an NGO. The key to conducting an effective outreach program is to identify the core issues for your organization that can benefit from working with partners, and to then match up those issues with the missions of internal and external stakeholders.

For example: Protecting endangered wildlife can be a requirement and/or interest for a military installation, local, regional and international NGOs, private industry (tour companies), and local inhabitants of an area. A common goal (protecting endangered wildlife) can bring together disparate groups into a series of common or complementary actions, such as the joint purchase of land for conservation purposes, collaborative planning on current and future land use, or the creation of media products to highlight the common objectives. In the book *Mega-Communities* this process is described as "optimizing" a group of interested organizations.[11]

STEP 5: PROGRAM IMPLEMENTATION

The objective in Step 5 is to *execute* the Outreach Program, to obtain and organize the resources for such implementation, and to communicate – both internally and externally – what the Outreach Program intends to do. This step also includes participation in external planning and policy processes. It is important to recognize that, in many cases, a lot of work is already being done by the base and its personnel when interacting with the community, but these activities may not be fully coordinated or formally recognized as an "Outreach Program." Thus, one important first step is simply to track such activities in a useful way, perhaps by including a line in the installation's daily situation report for anything that would qualify as outreach. The MST should also be involved in these discussions and coordination.

Step 5:

- *Resource Issues*
- *Partnerships, Coalitions*
- *Communication*
- *External Planning/Policy*

Resource Issues

The three most valuable resources for an outreach program are time, staff, and money. One successful strategy is to use existing tools and programs (such as public affairs capabilities and environmental programs) to avoid "reinventing the wheel."

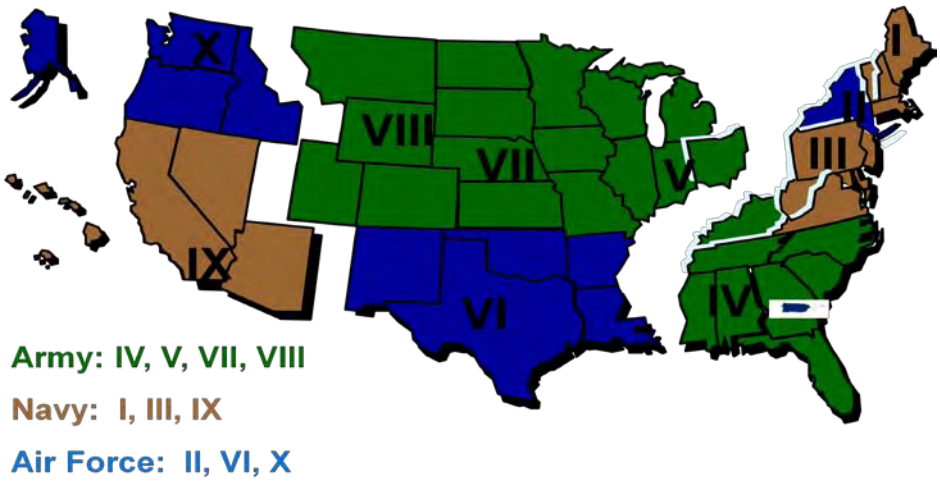
One of the biggest challenges to recognizing and mitigating encroachment pressures of all types is to have a suitably qualified staff person(s) – perhaps even an organization – whose (ideally) sole responsibility is to monitor and evaluate what is happening off the installation, in the region, and nationally that many affect the mission either in the immediate or long term. Two examples of how this has been done in the United States are:

[11] Mark Gerencser et al., *Megacommunities: How Leaders of Government, Business and Non-Profits Can Tackle Today's Global Challenges Together* (NY: Palgrave Macmillan, 2008), pp. 82-83.

- "Community Plans and Liaison Offices" (CPLOs) at installations, regional commands, and the headquarters level of the Services. As noted above, Appendix 3 contains a position description for a regional-level CPLO in the US Navy.
- The Regional Environmental Coordinators (RECs) whose primary function is to advocate and outreach on behalf of the military in external decision processes. The RECs are distributed across ten regions of the United States (as indicated by Roman numerals), and are assigned equitably across the three military Services (depicted in Figure 3.2). Their mission objectives are:

  - Monitoring and engaging on State regulatory and legislative activity
  - Informing military installations about new requirements and rules that provide opportunities to support community goals
  - Educating State/Tribal governments and Federal agencies on the military's training, testing, and operational needs
  - Developing cooperative partnerships that support long-term military and environmental sustainability with support from the local community
  - Coordinating and communicating unified military positions on issues that can affect military preparedness
  - Providing strategic regional perspectives to military policy makers

Figure 3.2. US Regional Environmental Coordinators and Lead Service



While these examples make reference to US-specific organizations and structures, they can be adapted by any country, making necessary adjustments for its own circumstances, organizations, etc.[12] The basic tasks of these offices are clear from the titles: to understand what the external community is planning to do and to be a link between the community and the military facility.

[12] Elsewhere in this guidebook, we refer to the Liaison Officer (LO); this is the term we have adopted for this document, believing it to be more generic. However, there is no difference in the meanings of the two terms, LO and CPLO.

The true value of an outreach program is that it can actually save resources in the long run by creating opportunities to leverage resources and capabilities from multiple sources. There are simply not enough resources to reach out to everyone in today's complex world; it is therefore necessary to find ways to focus and leverage resources from several areas to solve complex problems. Although an outreach program requires an up-front investment, the return on that investment can be significant. Among the requirements for ensuring success in this program are:

- Creating and executing training programs
- Participating in panels and working groups
- Developing and producing information materials
- Hosting events (such as base tours)

Partnerships and Coalitions

Command emphasis and support is a key factor for a successful outreach effort. The military leadership must fully appreciate that partnerships are essential to sustain the military missions and thus be willing to provide the resources needed to manage the outreach program. Partnerships can be created within your organization, with the local community, within a larger region or even at the national level. They can take the form of everything from formal agreements to informal networking. Once you have built a series of relationships, you can then determine, by looking at your stakeholder matrix, which organizations fit together to work on issues of mutual interest or concern. Partnerships yield a number of important benefits. They can:

- create relationships and ensure their continuity
- proactively address issues ideally before they become problems
- ensure military needs and challenges are understood
- build trust
- provide for collaborative problem-solving
- share technical knowledge and capacity
- leverage resources and skills

Table 3.1 illustrates some of the military and civilian actors at the national, regional, and local levels. It also suggests possible results (outcomes) of them working in partnership. Importantly, partnering undertaken at the national level can "flow down" to the regional and local level, forming a platform and basis for local efforts to take hold.

Table 3.1. Civil-Military Partnerships at Local, Regional, and National Levels

LEVELS OF PARTNERING OR COOPERATIVE GOVERNANCE	MILITARY ACTORS	CIVIL COUNTERPARTS	OUTCOMES
National	Military leadership Joint military/service headquarters Operational command	Political leadership National or federal government agencies Public defence enterprises National community-based organizations (CBOs) and NGOs	National security policy framework Legislation and review Defence strategy Force structure Force design Resourcing
Regional	Regional command	Regional government agencies Regional CBOs and NGOs	Execution and enforcement of policy/legislation Planning and resourcing
Local	Base commander	Local government agencies Local CBOs and NGOs	Direct liaison and consultation Community involvement/Outreach Representation Joint planning

In contrast, coalitions represent an alliance of independent organizations, potentially with diverse or even conflicting purposes, which choose to work together temporarily or as a matter of convenience to advocate for a specific common interest. For example, the Fort A.P. Hill Army base in Virginia was able to preserve over 200 hectares that contain the site of a 17th century American Indian community. This agreement between the U.S. Army and non-military organizations represents the first example of the Department of Defense and a state historic preservation office working together to mitigate cultural impacts on a military installation through off-post resource conservation.

A by-product of such coalitions can be enhanced good will toward the military from some of its strongest critics. These efforts educate critics about military readiness, which can translate into supportive actions and positive press.

Communication

An effective communication approach includes identifying what issue you want to communicate and to whom, what information is to be provided and sought, and how best to do this. Today, many community members and opinions leaders in communities have never served in the military. Their only knowledge of the military is through the television or newspaper accounts of various conflicts around the world. The military speaks a different language and can be seen as “scary” or “arrogant” by civilians. It is therefore essential that you show people who you are and what you are about. Chapter V describes some of the tools for doing this.

Participation in External Planning and Policy Processes

Lastly, as described in Step 3, external planning processes at the regional or national level would require single-point military representation on behalf of the various bases in that region to represent positions. At the local level, the designated staff (from the MST) would represent the installation at community planning meetings. Ideally, the town planner and community planner would also participate in such planning meetings.

STEP 6: CHECKING AND ADJUSTING

Step 6:

- *Monitor and Evaluate Progress*
- *Revisit Objectives, if Necessary*

Step 6 assesses and evaluates the progress being made by the Outreach Program, whether using normative or other criteria, and what adjustments might be necessary for improving it. The key to success will be to show steady progress. It should be cautioned, however, that this is not a process that shows results overnight. It takes time to build relationships, to identify issues/solutions and to see change. But having patience to nurture these processes pays large dividends in due time.

It may be necessary to revisit the Outreach Program's objectives or how some of its efforts are being executed, depending on what these assessments reveal.

Monitor and Evaluate Progress

To ensure success of the Outreach Program, it is critical to identify ways to periodically measure performance in meeting outreach objectives. Monitoring and measurement is important in order to:

- track performance
- identify trends for implementing predictive action
- verify achievement of objectives and targets
- update procedural control measures.

As explained in Step 2 ("identify and understand the stakeholders and map the issues"), the desired outcome and ultimate results of specific engagement efforts relative to each encroachment threat should be documented. The results – i.e., what did the military gain or lose – would relate to a discrete engagement activity and how it ultimately affects the relationship with a stakeholder over time. Results of engagement on discrete activities versus results of long-term relationships would perhaps be measured differently.

For instance, if the discrete issue is to advocate for height restrictions outside the fence but located in the flight line path to the military airfield, did your engagement with the local planning authority result in the desired official zoning restrictions? In order for this form of performance measure to be useful, you will need to pinpoint precisely your engagement objective. In this example, you would like the height restriction to be no more than 30 meters. (See Appendix 5 "Stakeholder Matrix" for other examples.) As for the effectiveness over time in interacting with this same planning authority on a multitude of issues, is there appropriate recognition of and adjustment to accommodate the military's needs for restricted, compatible land uses outside of the military fence lines? For instance, are the aforementioned zoning restrictions being effectively enforced? Importantly, is the military being notified of new land-use developments and is its input being solicited before final decisions are made? Along these lines, one normative measure could be the percentage of local or regional planning authorities that have introduced "anti-encroachment" legislation (see Chapter VI, the section titled "Examples of What Has Worked"). Such legislation in the United States requires a local planning authority to coordinate with

the military if land uses within a set proximity of a military base or its operations will be changed or if there will be new development.

In general, it is important to assess whether a stakeholder contacts the military early on in a decision process – proactively soliciting input versus surprising the military with a formal announcement. In other words, is the military being invited to the table in important decision processes? As the saying goes, "if you do not have a seat at the table, you are on the menu." Identifying ways to measure the success rate of being invited to provide input to decision processes will help to gauge how transparent and open your relationships with your stakeholders really are. This helps evaluate the overall effectiveness of your stakeholder relationships.

These themes not only apply to land use issues, but also to other forms of regulatory and legislative policy developments, such as those focused on the environment. Are military needs and concerns, as articulated by outreach coordinators, being factored into these rules and policies? One common example in the US military is the need to adopt waivers for tactical vehicles and equipment within air quality regulations. So, another performance measure could be "percentage of recommended military inputs to policy/regulation being accepted." Lastly, along these lines, there could be a measure of how many regional authorities are assigning "military liaisons" or, as referred to within US State Governments, "Military Affairs Officers." These critical posts are created to advise and inform Governors (the head of a State) or equivalent senior authorities on the unique needs and nature of military operations, ultimately leading to better-informed policies that do not jeopardize a military's ability to conduct its operations within that geo-political region.

The effectiveness of the Outreach Program can also be gauged through proxy measures such as media coverage of military issues. More specifically, is the press positive in its reporting of the military needs and issues, or is it projecting a negative image about the military's involvement in or its impacts on the environment, social or economic conditions in the community? "No negative press" could be one goal for this type of performance measure, as could "numbers of positive press reports." Other more normative measures could include the number of complaints issued to the base on a particular issue – e.g., noise complaints by the surrounding community.[13]

Other ways in which to measure the quality and effectiveness of the Outreach Program and your stakeholder relationships would be to conduct interviews or surveys to assess the stakeholder's perception of the military's behaviour, or more specifically, its performance in meeting the stakeholder's expectations on an issue. This form of survey or questionnaire should be created by someone knowledgeable in preparing credible, objective survey tools for such a purpose and should include a careful upfront explanation of the survey's purpose, as well as clear instructions for its completion. Alternatively or in combination, the military could set up and actively administer an interactive web hotline where opinions or complaints could be recorded along with the base's response. This latter example would reflect a very transparent way to interact with the public at large on a real-time basis.

[13] In such cases, it is important also to track the source of complaints. There is a difference between 50 people complaining about noise and one person complaining 50 times about the noise.

Revisit Objectives, if Necessary

Collecting this type of information on a periodic basis is important for maintaining a record of engagement discussions and agreements for both consistency and knowledge-continuity purposes. This is especially important when either 1) a particular agreement (especially of an informal nature) is challenged at a later date, or 2) if key personnel (either within the military – Commanding Officers, LOs, or any MST member – or an outside stakeholder or opinion leader) leave. These performance measures and records of discussions, and particularly any decisions or agreements, should be documented and carefully filed, whether for formal or informal engagement processes.

Over time, either through repeated engagement activities with a particular stakeholder on a collection of discrete encroachment threats, or through the more normative systems of measuring relationship effectiveness (e.g., surveys, interviews, media coverage), you should have an adequate body of evidence to suggest whether the outreach efforts are working, or whether adjustments to the overall approach are necessary. This performance evaluation should be conducted by the MST and reported to the installation Commander on a routine, periodic basis, as described in Step 7.

Appendix 6, "Steps to Follow in Stakeholder Analysis for Purposes of Relationship Management," provides further discussion on evaluating the state of your relationships.

STEP 7: PROGRAM REVIEW

Step 7:

- *Review Program Milestones*
- *Adjust Implementation Plan*
- *Reaffirm Leadership Commitment*

This final step in creating the Outreach Program involves reviewing the overall program and system elements with the Commander to determine whether the program's goals and objectives have been met, to make any necessary adjustments to the program, and to renew the leadership's commitment to the program. As such, it creates a feedback loop to help improve the program as needed. At this stage, the inputs of the stakeholders will also be incorporated, with an emphasis on transparency so that the stakeholders have an adequate appreciation for and involvement in the process.

The next chapter describes in detail some of the principles for identifying stakeholders and conducting successful outreach.

CHAPTER IV: PRINCIPLES FOR SUCCESSFUL OUTREACH

Once the structure for an outreach program has been assembled, it is equally important to know how to put the program into effect. This chapter describes how *not* to engage with stakeholders, how *best* to engage, and how to determine who needs to be engaged.

Rules of Engagement for Developing Effective Relationships

Perhaps the most difficult part of the process for effective outreach in a large bureaucratic organization is being proactive. Large organizations tend by nature to be reactive to situations. It is therefore common to try to address a situation *after* it has become a problem, only to find that no trust is in place to give the issue or its solution credibility.

Basic Principles of How Not to Engage

For many years, outreach by large corporations and governments was conducted by a method now known as "Decide/Announce/Defend." This is a common trap into which many organizations fall. In an attempt to resolve an issue, the organization brings together its best experts and determines a solution. This is the DECIDE part.

Then in an attempt to be transparent, the organization holds a very public event or does a news media event and ANNOUNCES the decision, being willing to answer questions, but not to change direction.

This leads to the need to then DEFEND the decision. Most people want to be part of a decision process if that process has a result that affects them or their lifestyle. Therefore, even if they may ultimately agree with the decision, they desire to be consulted early in the process.

This process has led to many issues becoming contentious, when an earlier inclusion of those being affected could have prevented such a problem. The example provided in the textbox here regarding an oil platform in the North Sea is a classic example of this ineffective approach. In other cases pertaining specifically to a military base's inability (or unwillingness) to engage with the local community when the situation warranted, training had to be stopped or, in extreme cases, an entire base had to be closed permanently. At the same time, it has been possible to learn from earlier mistakes so that, once the military base, local

Royal Dutch Shell Company's handling of its expired Brent Spar Oil Platform in the North Sea in 1995: Although Shell had done due diligence in performing an extensive environmental impact assessment of alternatives for the platform, eventually justifying the best decision to sink it in place, they did not properly engage in discussions with interested stakeholders. This led to vehement protests by Greenpeace – an environmental activist NGO – and other governments. In fact, Greenpeace executed an extremely dangerous maneuver in attempting to approach and mount the platform as a protest. This action received tremendous press coverage, ultimately scarring Shell's brand image. It also put them on the defensive to attempt to correct the record on its decision. It took Shell a great deal of time and effort to overcome this tainted image with its stakeholder community.

community, and government learned to work together to find mutually acceptable solutions, training was able to resume.

Basic Principles of How <u>Best</u> to Engage

Long-term relationships must be based on openly communicating; having mutual trust, understanding, and respect; and identifying common ground. There are several essential principles and rules of engagement that an organization must appreciate to be successful in outreach:

- **Be proactive.** Bad news does not get any better with time. If you inform stakeholders as soon as possible, it will help maintain your credibility with them. Moreover, when you tell your own story, *you* control the tone. If others have described the issue (in a news story, for instance) *they* control the tone. You are automatically put on the defensive.
- **Build trust**. If there is no trust, there is no credibility for your issues. Trust is built on long-term relationships, developed over time, not when you need someone's help. You do this by meeting face-to-face rather than solely through emails or phone conversations. For instance, if the first time you meet your neighbour of many months is when you need to use his tools or borrow his car, he may not feel at ease in loaning them to you – no relationship has been developed, thus no trust is in place.
- **Each party needs to be committed**, believing that the relationship is worth spending energy to maintain and promote. This is not a one-time event, but a continuous process that must last over time.
- **Be transparent.** Be open and honest about your issues and why you desire to develop a relationship or a partnership with that person or organization. Look for "mutual benefits" – put yourself in the other person's place and think what they may need from you.
- **Show respect.** It is important to respect others' cultures, customs, and languages.

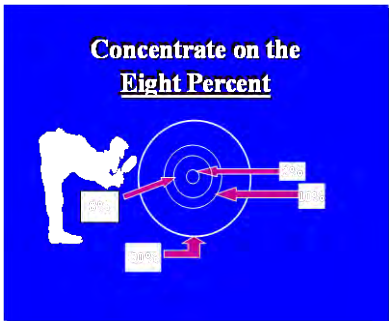
Identifying the Real Stakeholders and Issues

As described in Chapter 3, identifying the real stakeholders is an important process. It should not be expected – or even encouraged – to try to reach out to everyone. Research has shown that in any given situation, not everyone has the same level of interest.[14] One set of terms for "typing" the stakeholders is contained in Appendix 6 (section 1) and these terms are included in the descriptions here:

- About 2% of people will fall into the extreme of opinion on a given topic – these are the "value-based" activists who feel very strongly about an issue and have a deep-seated value concerning the topic. It is almost impossible to change a person's value system and trying to do so only makes them more likely to react either very negatively or very positively. They could be called "adversarial" stakeholders. It is generally not a good use of resources to attempt to change their views, but to the extent there is any outreach, it should focus on finding win-win solutions through conflict resolution strategies.

[14] The concept of this percentage breakdown, ultimately focusing on 8% of the population, is based on research and publications by Patrick Johnson. The names given to the types of stakeholders, as described also in Appendix 6, is taken from Relationship Management Mapping Assessment, as facilitated by the Public Relations Institute in 2003 to the South African DoD.

- 10% of a population are "dormant" stakeholders; they will join interest-based activist organizations only once they see that the issue will directly impact them. For instance, a home owners' association is concerned about low-level flight paths that interrupt the sleep patterns of the community, or noise from training activities become a nuisance to them. These activists tend to be willing to compromise if they can be engaged with in a positive and proactive way to solve the issue – e.g., changing times of flights, notifying them about training times.
- 80% of people could be called "passive" stakeholders – they do not really care, nor will they engage unless you are doing something that directly affects them. Many outreach programs spend many resources on fact sheets, newsletters, etc. to try to reach a large population. These efforts generally yield only limited benefits, but to the extent they can be done, some efforts to increase awareness can help avoid a future conflict situation and can help create a sense of buy-in to the issue at hand.
- Where you need to spend the majority of your time and resources is on the remaining 8% of the population who are true opinion leaders – the "advocate" stakeholders. These are the people that – in any family, organization or neighbourhood – others look to for "the answers." They are not usually the most obvious or well-known leaders or bosses. They are seldom at the head of the table; rather they are the ones with whom the person at the head of the table makes eye contact to see if s/he is on the right track on an issue. These are the people that leaders go to for advice. They are the people you ask in your family to find out what is really going on in a situation, or in your organization the person who always knows the latest news and the solutions being implemented.



How Do You Find This 8% of the Population?

The first task is to define what issues are important. If the general issue is encroachment, what kind of encroachment is it? Is it urban sprawl, loss of flight paths, endangered species, etc.? The LO should bring the internal team (the MST) together in order to identify the major issues to address.

Once the military's issues are defined, you need to identify the visible people and organizations that work on each of those issues. As described in Appendix 6, there are three factors that can determine how important a stakeholder is: power, legitimacy, and urgency. Those stakeholders that possess all three attributes are the ones who should be at the top of your priority list for outreach; those with two attributes would rank second, and those with only one of the attributes would generally rank lowest in the prioritization for engagement. Once this (rough) prioritization has been established, you should then make an appointment to meet with the leaders of that organization or the most visible people for that issue. During the meeting, ask them "who do you go to for help on this issue?" Also look in news articles on the topic to see who is quoted. News people are very knowledgeable about who other people listen to on an issue. Soon the same names will begin to appear

again and again. These are the key opinion leaders and the people with whom you need to have long-term relationships.

Remember that part of this process is to learn what the issues are for the people with whom you are engaging. You may be surprised to learn that they are concerned about issues you would not expect and on which you may be able to assist. For example, in an economically challenged area, the military can demonstrate the economic benefits of its presence.

CHAPTER V: OUTREACH TOOLS

An outreach program relies on a number of tools that can assist in the implementation process. This chapter focuses on communication as the most fundamental tool. It also describes the utility of maps and site visits to the base.

Importance of Communication

The main tool for the outreach program is communication. This communication can take different forms, which can be grouped into activities that involve personal interactions and those that create specific products. All of these should involve to varying degrees the liaison officer, the public relations officer, and the installation commander. One example of each is described in more detail below.

Among the tools that involve personal interactions are:

- Meetings of the commander with local community groups
- Interviews on radio and television
- Site visits, whether related to a specific issue or as a general "open house" where the public is invited to visit the base and learn about what the military does

Among the tools that create specific products are:

- Brochures
- Press releases
- Maps

An effective communication approach includes identifying what issue you want to communicate and to whom, what information is to be provided and sought, and how to do this. This approach is captured in Appendix 8, Encroachment Management Communication Objectives.

Communication can be on a specific issue (e.g., plans for a high-rise structure that will impact flight paths or a fuel spill on base that has a migratory path potentially impacting the community). There is also day-to-day communication, which includes (1) general interactions with stakeholders in order to keep abreast of current and planned activities and maintain the relationships you have developed, and (2) those that pertain specifically to the installation's activities to enhance the public's understanding of what the military is doing and why.

How to Organize and Conduct a Site Visit

If a picture is worth a thousand words, a site visit can be worth its weight in gold. By bringing stakeholders onto the base and showing them what you must do for training and why, what is being done to protect the environment, and how you are trying to address both of these requirements to the best of your ability, you create a powerful message that can win over many sceptics. There are admittedly challenges in organizing such visits for non-military personnel: there can be difficulties in allowing base access, particularly in today's heightened security environment; the time it takes to arrange and execute the visits can be significant; and finding the right balance of

messages you want to convey may take some time and practice. Nevertheless, base visits have repeatedly demonstrated that the pay-off far exceeds the costs.

There are several factors to consider when making the preparations for a visit by local community representatives, politicians, NGOs, and others. Among the most salient that relate to the participants (both on the base and the invited guests):

- Ensure you are reaching out to the stakeholders and opinion leaders; make sure that you have done the necessary homework on this issue before investing the time and effort in setting up a site visit.
- Keep the numbers of participants manageable (both those invited and base personnel asked to participate).
- The installation commander (or deputy, if former is unavailable) should provide the orientation and welcoming remarks. This does not need to take a lot of time, but it is important for demonstrating the leadership's commitment to this initiative.
- Ensure that the involved staff are knowledgeable and effective communicators, although casual contacts with other personnel at the base should not be discouraged. You do not want to create the impression that the visitors are only allowed to talk with the people you have designated.
- Be sure to include the Public Affairs Office (PAO) either directly in the planning of the event, or at a minimum keep them informed about the planned visit, and have someone from the PAO participate in the visit itself.
- Consider media coverage, depending on your objectives. The inclusion of the media admittedly adds a new complexity to the initiative, but in some cases, it may be valuable to help get the message out to a broader audience than can be accommodated during the actual site visit.

In terms of the content of the program, additional considerations include:

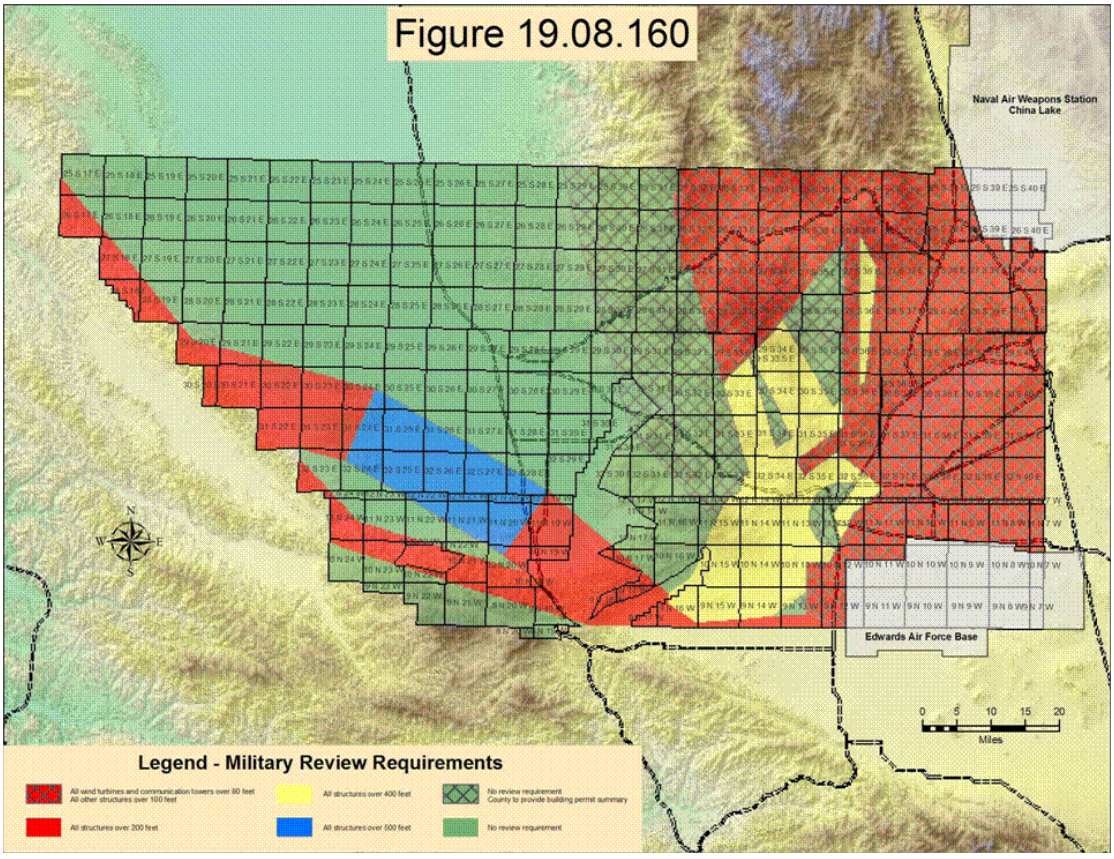
- Welcoming comments, a basic orientation briefing, and all other briefings should minimize the use of military jargon and acronyms.
- As the overall agenda for the visit is developed, keep briefing time (and the numbers of briefing slides) to a minimum. Aside from the commander's welcome, consider only one other more specific orientation briefing related to the visit, and then let the experience of the tour itself convey the rest of the important messages.
- The emphasis should be on direct observation and interactivity.
- The focus of the tour should be to show the elements of the mission and efforts in environmental stewardship while also highlighting the encroachment pressures.
- If appropriate, use the opportunity to distinguish between the value of simulated training and real-world training.
- Encourage the base personnel who are participating as part of this tour to interact with the guests; do not allow the military to remain segregated and interact only among themselves.
- Anticipate the desire of guests to take photos and/or videos; thus determine in advance what will be allowed and explain why there may be restrictions.

- Be sure that participants know whom they can contact (LO, PAO) with any follow-up questions or comments.
- Allow time at the end for at least informal feedback from the participants (what most impressed them, concerns they still have, etc.).

Use of Mapping Tools

Maps are a useful tool both for helping the military internally visualize the challenges it is facing and for helping the military communicate with the external community. Maps offer a common language to depict competing or conflicting interests or mutual benefits or concerns. Having this information available electronically further enhances use of this tool. For example, at bases in the US, systems have been developed that allow the test and training range operators to keep other base activities informed of their plans, which often works to keep unintentional encroachment from occurring within the base. The use of Geographic Information System (GIS)-based maps that are simple to use and accessible on personal computers are the most effective tool, but can be costly to obtain and operate. From an internal military perspective, the first important step is to figure out what information needs to be conveyed to the decision maker so that s/he understands the problem. This will then determine what information the maps need to provide.

Figure 5.1. Example of Red-Yellow-Green Mapping Using GIS



The military must be able to clearly articulate its needs – in language that civilians can understand – in order for stakeholders in the civilian community to best be able to work with them. Maps can be an effective tool for communicating these needs. They should be used to depict not only what is happening on the base, but also in the surrounding community. For example, in the Western United States, the military has worked with county governments to develop a system of "red, yellow, green" maps that indicate where development of wind-generated energy facilities (i.e., "wind farms") could present a problem to the military. The red indicates areas where the military may not agree to a proposed wind farm because it could severely impact the military mission (e.g., if a wind turbine were to be erected in a flight path or were to affect radar performance) and therefore pursuing its development may simply be impractical. The yellow indicates areas where the mission could be impacted and a more careful coordination with the military will be required. The green areas are those where no impact on the military mission is predicted and therefore the proposed wind farm is not likely to face objections from the installation. Developing this colour-coded system has helped the stakeholders (in this case, wind farm developers) understand the importance of early coordination with the military for assessing land use compatibility. Figure 5.1, above, is an example of this process, used at the R2508 complex (described in detail in Appendix 11).

CHAPTER VI: OUTCOME (RESULTS)

As the previous chapter spelled out, there are multiple dimensions to the engagement activity that the military can and should be practicing as a normal way of doing business. Stated simply, by organizing itself around these suggested engagement efforts, the military can appreciably minimize constraints on activities on its bases, and maintain access to the air, land, sea, and natural resources necessary for its operations, now and well into the future. Effective engagement with governmental officials at all levels and other appropriate stakeholders can result in cohesive, mutually beneficial programs and plans. These relationships facilitate what is best for all who are affected. Working collaboratively, the military, various levels of government organizations, and other stakeholder groups can protect military training capabilities while conserving important natural resources and maintaining community well-being. In short, this offers a win-win solution.

Enhanced Governance

As one benefit, an appropriate level of participation and cooperation by the military will lead to enhanced governance and collaborative planning outside its fences. It can provide opportunities for cooperation among different levels of government, as well as across agencies and stakeholder groups – cooperation that may not currently exist and for which there are often no real structures in place. The way in which this cooperation takes place can be informal as well as through formal protocols. Interagency (regional) working groups formed to address military issues (e.g., environmental contamination or compliance) and related matters (e.g., encroachment pressures) are one tried and true model for this type of collaboration. Through this type of structured, routine communication, the agencies that share responsibility for the issues at hand can keep calibrated on schedules and expectations, and perhaps most importantly, can often work quickly through any differences of opinion or interpretation.

Improved Brand Image

Among the most important products of outreach activity are trust, credibility and cooperation. In other words, enhanced relationships with the community and other stakeholders will help secure public confidence and trust in the military. This in turn will improve the military's *brand image* and lead to increased support for its operations. Information will be shared between parties more freely, in some cases also leading to shared information management tools that help improve efficiency and inform decisions. By sharing information early and often, conflicts over current and future use planning can be avoided. Cooperation among stakeholders can help leverage resources in other ways (e.g., expertise, time and effort, research tools, money, relationships), aimed toward a common goal of sustainable solutions. It can also help avert negative reactions and possible confrontation in the event of an unforeseen problem or issue. The military may create allies they never expected to have (e.g., environmental activists like Greenpeace). In fact, these new-found allies may even tell the good news on the military's behalf; this is a very powerful endorsement.

Compatible Land, Air, Water Resource Use

The ultimate endpoint in which all parties hold a stake is the compatible use of air, land, water and other natural resources. This includes the preservation of open spaces and working lands, which not only serve to buffer military operations from a community, but also serve to protect valuable natural resources – an important component of sustainable communities. Because natural resources, or the "natural infrastructure," are increasingly the focus of competing demands, those advocating for these competing interests must come together to discuss and mutually agree on the solutions that will sustain these resources for the long-term while ensuring viability of the interests involved. That is a tall order, but one that is achievable through open, cooperative dialogue and sensible long-term planning.

Win-Win Scenario

Through the course of dialogue and negotiation, it becomes clear that there is no need to be enemies. In fact, all "sides" can and should benefit from the open and collaborative exchange. After all, compatible land-use decisions lead to sustainable communities, sustainable economies, and the protection of key natural resources from which all can benefit. While at some point compromise may become necessary, in the end every stakeholder should feel satisfied that their interests and concerns were considered, and that the decision process was collective and well-informed. Look at it as "team building"! Collaborative planning that involves all appropriate stakeholders should not only lead to better trust and cooperation, it should lead to decisions that best support compatible land and resource uses. This, of course, is in the best interest of the community at large.

Effects of *Failing* to Use Outreach

It should be clear that choosing *not* to engage with stakeholders, or engaging ineffectively, is simply not a reasonable option for the military. First and foremost, it will inevitably lead to limitations in military capabilities on its properties and designated training routes – a common example being limited ability to train due to noise complaints. This, in turn, will lead to an erosion of military readiness. It will further result in contentious civil-military relations, and ultimately a negative *brand image* for the military. Worse still, if left unattended, the necessary diversion of military funding to counter encroachment that threatens an installation's existence will be much more costly than an upfront investment in proactive and preventative outreach. This would be especially true over the long term. Once a base or training/ testing area has become encroached to the point it can no longer perform its intended mission, it is often too late to recover. There have indeed been cases when a base had to close because the encroachment pressures were not addressed in a timely or adequate fashion. And acquiring new land to conduct that mission elsewhere is simply not realistic in today's environment. Open and continuous dialogue with the community will help decision-makers and other interested stakeholders value the military's contribution to the local community which will in turn lead to better support for the military's interests in decision processes.

Examples of What Has Worked

Through transparency and open dialogue, new ideas will emerge that serve the collective interests involved. One good example is with co-use initiatives. These initiatives can take the form of sharing services (such as military water treatment facilities) with the surrounding community, or making available under-utilized property on a base for "enhanced use leases." They can also take the form of public-private ventures. An example of the latter could be a project to develop renewable energy such as wind and solar power that would not only supply the military installation's energy needs, but would produce surplus quantities that could feed the outside energy grid.

For many militaries throughout the world, some of their facilities are becoming totally redundant while others are becoming partially redundant. Redundant facilities qualify to be closed down and, in some cases, handed back to another organization within the government. In order to promote the concept of maximum utilization of state assets and cost effectiveness, the Department of Defence can opt to share its under-utilized facilities as a means of achieving greater efficiency. This however has to be done in a manner that does not compromise the autonomy and proficiencies of the defence force and its operations. The co-use of defence facilities is located within the framework of the public private partnership (PPP) policy. A co-use strategy maximizes the use of a facility, thus minimizing the maintenance costs and promoting partnerships between the public and private sectors.

Another successful approach, discussed at length throughout this document, is that of cooperative conservation. This can result in the designation of "buffer zones" or "conservation easements" for the purpose of conserving open spaces and/or ensuring compatible land uses around military operations. In some cases, the military may have been able to create a buffer zone within its own fence line, but in other cases, outreach with the local community and other stakeholders can result in a joint effort to create a buffer zone outside the fence line.[15]

There are also many policy options available to local/regional/national governments that aim to minimize encroachment and reinforce compatible uses of air, land and water resources around military installations. Some that have already been demonstrated with success include variations on the following six specific themes:

- Appropriation of grants or general revenue funds, coupled with authorization to purchase land or development rights that would preserve open space to serve as buffers between military installations and expanding urban growth.
- Requirement that communities and local/regional governments consult with installation commanders on land use activities around military installations.
- Requirement that communities near military installations consider land use planning and commercial development/zoning requirements that are compatible with the operations and missions of neighbouring installations.

[15] An example of the former is the South African Army Combat Training Center, while the Florida Greeenway Project illustrates the latter approach. Both of these are described in the Appendices.

- Requirement that implementation of zoning, land use, and noise and nuisance regulations are consistent with the operations and mission at the neighbouring military installation.
- Requirement that local communities perform an impact assessment of land use activities and commercial and residential development or growth on military installations and the operations or mission at the military installation before developing.
- Creation of military advisory boards, commissions, or committees composed of government officials, military liaisons, and other stakeholders to facilitate discussion and craft policy toward abating encroachment challenges around military installations.

A key point in these examples is that routine, open engagement not only helps raise awareness about military needs and challenges, it lets others know to look to the military for input *before* making decisions that may adversely affect the military's operations.

CHAPTER VII: SUMMARY

This guidebook has explained that mission sustainability – meeting current and future training requirements in the air, on land, and at sea – can be impacted by encroachment pressures, such as uncontrolled development and/or incompatible uses of land, air, water and other resources. The cumulative impact of encroachment pressures can seriously hamper the military's requirement to "train as we fight."

A critical tool to address and mitigate these encroachment pressures on military installations and their operations is outreach. Most encroachment issues originate beyond the fence lines of military installations. Therefore engagement with policy makers, planning officials and other interested stakeholders is very important to ensure that the military perspective is considered in decisions that may affect its ability to execute the mission.

The process of building an outreach program is laid out step by step:

- Step 1 obtains leadership commitment and establishes a multidisciplinary team to execute the program.
- Step 2 conducts an initial review that analyses encroachment pressures and their impacts; it also identifies stakeholders and maps their interests and/or ability to influence outcomes.
- Step 3 encompasses the planning stage to address national, regional and local level aspects, drawing on considerations inside and outside the installation in accordance with the base master plan.
- Step 4 develops the Outreach Program. The significance of encroachment issues is determined, alternatives are developed and assessed, and objectives and targets for the program are established.
- Step 5 executes the Outreach Program. Its implementation is achieved through proper resourcing, partnerships and coalitions, effective communication, and participation in external planning and policy processes.
- Step 6 encompasses checking and adjustments, with an emphasis on ways to monitor and evaluate progress and performance.
- In Step 7, program performance is reviewed at the highest level, with inputs from the stakeholders, and necessary adjustments are made.

The principles for successful outreach include knowing how best to engage with stakeholders, being aware of how not to engage, and determining who needs to be engaged. These comprise the rules of engagement for developing effective relationships between the military and the external community. The most fundamental tool for an outreach program is communication. The use of mapping tools will greatly facilitate the outreach effort as well. Conducting site visits with stakeholders is another important tool to enhance understanding of the issues and build trust.

Collaborative efforts among the military, various levels of government organizations, and other stakeholder groups can enhance governance, improve the military's brand image, promote compatible use of land, air, and water resources, and ultimately produce win-win solutions. Above all, an effective outreach program ensures mission sustainability.

APPENDIX 1: SAMPLE LETTERS TO ESTABLISH AND SUPPORT AN OUTREACH PROGRAM

This appendix contains several memoranda which provide guidance and support for military environmental initiatives at both the headquarters level (from the defense department and the Services) and at the installation level. Such documents help provide the foundation for an effective outreach program. The specific themes addressed in each are, respectively:

- the importance of internal coordination and cooperation within the military (issued by US Office of the Secretary of Defense [OSD])
- defense department emphasis on the importance of creating an outreach program with external entities (issued by US OSD)
- Service Headquarters-level emphasis on the importance of institutionalizing sustainability for conducting the military mission (co-issued by the US Under Secretary of the Army and the Vice Chief of Staff of the Army). The Executive Summary of this document underscores that, through its sustainable practices, the Army "is accelerating its actions to protect the environment; conserve energy, water, and other resources; support human capital; and *partner with our communities*." [emphasis added]
- Installation-level command support for a strong environmental program (issued by the Commanding Officer at Marine Corps Air Station, Yuma. As noted in the case study on this base in Appendix 9, Yuma has been at the forefront in its engagement with the local community through its CPLO.)

DEPUTY SECRETARY OF DEFENSE

1010 DEFENSE PENTAGON
WASHINGTON, DC 20301-1010

DEC 4 2001

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
ASSISTANT SECRETARIES OF DEFENSE
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE
DIRECTOR, OPERATIONAL TEST AND EVALUATION
ASSISTANTS TO THE SECRETARY OF DEFENSE
DIRECTOR, ADMINISTRATION AND MANAGEMENT
EXECUTIVE SECRETARY, DEPARTMENT OF DEFENSE

SUBJECT: Sustainable Defense Readiness and Ranges Initiative

Maintaining the readiness of our forces is one of the highest priorities of the Department. To meet this priority, we strive to maintain a reasonable balance between test and training requirements, the concerns of our range neighbors, and the importance of sound environmental stewardship. Maintaining this balance is a difficult proposition. I would like to thank everyone for their efforts to date in defining the issue, but now is the time for specific actions.

I direct that the Under Secretary of Defense for Personnel and Readiness, in partnership with the Deputy Under Secretary of Defense (Installations and Environment), the Director of Operational Test and Evaluation and the Military Departments, form an Integrated Product Team (IPT) to act as the DoD coordinating body for all issues of encroachment on our ranges, operating areas, and other locations where we train or test and evaluate new weapons and sensors.

The IPT, working through the Defense Test and Training Steering Group (DTTSG), shall develop a comprehensive legislative and regulatory set of proposals by January 2002, as well as formulating and managing a disciplined, multi tier outreach effort with a goal of obtaining relief in 2002. These legislative proposals will be appropriately coordinated within the Administration. Such actions will require your personal attention, along with that of other senior appointees and military officers. This must be a coordinated effort, and I request that you not move ahead unilaterally on the legislative front.

The DTTSG shall provide a full report on progress to the Senior Readiness Oversight Council (SROC) in January 2002.

U18485 /01

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

ACQUISITION,
TECHNOLOGY
AND LOGISTICS

AUG 2 3 2004

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY
(INSTALLATIONS AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE NAVY
(INSTALLATIONS AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE AIR FORCE
(INSTALLATIONS, ENVIRONMENT AND LOGISTICS)

SUBJECT: Working with State and Local Governments to Combat Encroachment

As each of you is keenly aware, the Department of Defense (DoD) faces the challenge of encroachment on military readiness activities. Encroachment occurs when the supply of resources needed to perform the mission (attributes of land, water and air-is restricted by market) based regulations or unavailable due to competing needs in the surrounding community. As part of our effort to prevent encroachment, we have actively pursued clarifications to existing federal law to assure our ability to train as we fight. However, legislative action at the national level is just one element of our encroachment strategy. In addition, we must focus at the regional, state and installations level to educate and advise local/state governments and communities on the safety and operational impact of decisions affecting resource use on and around installations and test and training areas.

Component staff has inquired whether active participation in local planning processes could be seen as a compensable "taking" of property by the United States if local authorities act in accordance with installation recommendations. DoD General Counsel has advised that the majority of judicial decisions addressing the issue dispel this concern. Specifically, most courts considering the issue (generally in the context of local zoning decisions) have determined that there is no federal liability for a taking where a federal agency uses its position as an influential landowner to persuade local governmental bodies to adopt a position compatible with an installation mission needs.

The Department of Defense and the Military Departments have a number of programs in place to develop and share information to assist local governments in making land use decisions that are compatible with operations at defense installations. For example, DoD Instruction 4165.57, Air Installation Compatible Use Zones (AICUZ) (32 CFR, Part 256), and similar instructions for ranges and ground installations, establish an approach for installations to analyze land use compatibility issues in the vicinity of military operations and propose potential solutions to local governing bodies and planning officials.

Similarly, DoD Directive 3030.1, Office of Economic Adjustment (OEA), authorizes grants to eligible state and local governments to conduct Joint Land Use Studies in cooperation with a military installation and DoD Directive 3200.15, Sustainment of Ranges and Operating Areas, requires multi-tiered (e.g., national, regional and local) coordination and outreach programs in support of sustaining ranges and operational areas. Each of these policies encourages active involvement and technical assistance in local land use planning processes to ensure concerns related to encroachment are shared and appropriately resolved. Of course, in developing our outreach strategies, we should take an interdisciplinary approach that includes our Regional Environmental Coordinators, installation representatives, legal representatives and other needed disciplines.

As we continue our efforts addressing the impact of encroachment on military readiness, it is imperative that we effectively use all the tools and resources available to us. In this regard, I recommend you direct more active involvement at the installation and Regional Environmental Coordinator level in all aspects of state and local planning that could impact readiness. I have also asked my staff to include this topic as a discussion item at an upcoming Range Sustainment Working Integrated Product Team meeting to discuss actions being taken in furtherance of this policy.

Philip W. Grone
Principal Assistant Deputy Under Secretary of Defense
(Installations and Environment)

cc: DoD/GC (E&I)

Army Sustainability Campaign Plan

Sustainable Operations For A Secure Future

May 2010

ARMY STRONG.

FOREWORD MAY 12 2006

The blueprint for us to achieve new levels of effectiveness as the land component member of the joint war-fighting team is Army Vision 2010. To that end, as we fulfill our mission in support of the Combatant Commanders meeting their global commitments, we are ever cognizant of the National Security nexus between sustainability and the conduct of our mission.

With the advent of the Presidential Executive Order 13514 – Federal Leadership in Environmental, Energy, and Economic Performance, the Army has prepositioned itself to address the Administration's strategic goals and statutory drivers. For example, we have already promulgated key policy and guidance to include the Army Strategy for the Environment; the Army Installation Energy and Water Campaign Plan; the Army Energy Strategy for Installations; the Army Green Procurement Guide; and the Army Energy Security Implementation Strategy.

Going forward we will build off of this successful foundation using the Army Sustainability Campaign Plan as our roadmap and organizing principle integrated across the Department's missions and functions to:

- Institutionalize sustainability in doctrine, policy, training, operations, and acquisitions
- Implement enterprise-wide approaches that leverage our collective throw-weight, maximize efficiencies, and enable us to focus our resources and efforts
- Increase cross-functional awareness, cooperation, and support for sustainable practices
- Enable up-front investments that will result in lower total operating costs
- Instill a sustainability ethic and personal commitment, from Soldiers and Civilians through the highest Army leadership

Our vision for a 'Sustainable, Secure Future' will be a challenging undertaking, but worthy of our Nation and the Army men and women serving throughout our global contingencies. We remain heartened, as it is through their service we are Army Strong!

Peter W. Chiarelli
General, United States Army
Vice Chief of Staff

Joseph W. Westphal
Under Secretary of the Army

MARINE CORPS AIR STATION, YUMA
ENVIRONMENTAL MANAGEMENT SYSTEM POLICY

Marine Corps Air Station (MCAS) Yuma is a Center of Excellence for aviation needs in preparing our men and women to protect our country from hostile forces. Therefore, we must maintain the necessary facilities and training areas so that we can continue to "train as we fight". The integrity of these valuable assets must be preserved for future generations of Marines. Sustaining future operations requires that we practice a policy of continual improvement of our environmental performance in management of ranges, training areas, support facilities, and even our homes. The Secretary of Defense has tasked Department of Defense installations to take the lead in environmental compliance, management and protection. As the Commander of MCAS, Yuma, I fully support this policy.

Providing Environmental Stewardship into mission decisions and day-to-day operations is no longer a regulated necessity, it is a way of doing business in order to ensure we remain mission capable, combat ready, and able to support our mission training needs. It is my intent to use a formal, comprehensive Environmental Management System (EMS) as the tool to maintain our freedom of action and manage risk to operational readiness.

Marines uphold the Constitution by obeying the Nation's laws. Environmental laws are no exception. We must police ourselves, correcting deficiencies quickly and demonstrating compliance.

The public relies on us to protect the natural and cultural resources of MCAS Yuma. We consider this an issue of special trust and confidence. We respond to it with a commitment to clean up contaminated sites and by implementing pollution prevention efforts to maximize the use of products and processes that reduce exposure to hazardous materials. Pollution prevention and source reduction will also alleviate the burden of environmental compliance. By implementing innovative operations we can reduce the volume of waste streams, reduce disposal and cleanup costs, and improve efficiency.

Our mission achievement depends upon our success as stewards of the installations, training areas, and the environment of the areas that have been entrusted to us. The Marine Corps EMS will guide us toward this goal. I expect all Marines and Sailors, both military and civilian, to support our EMS and ensure access to land and airspace for future Marines.

M. A. WERTH
Colonel United States Marine Corps
Commanding Officer
Marine Corps Air Station
Yuma, Arizona

APPENDIX 2: SAMPLE GUIDANCE FOR CREATING A MISSION SUSTAINABILITY TEAM AND IDENTIFYING THE MEMBERS' ROLES AND RESPONSIBILITIES

This appendix contains a memorandum issued at Marine Corps Air Station Yuma which established the guidelines and responsibilities for a team to identify encroachment issues. It furthermore points out the nature and scope of encroachment pressures as the driver behind the creation of this team.

UNITED STATES MARINE CORPS
MARINE CORPS AIR STATION YUMA
BOX 99100
YUMA, ARIZONA 85369-9100

StaO 11011.1B
CP&L

0 1 MAR 2007

STATION ORDER 11011.1B

From: Commanding Officer, Marine Corps Air Station Yuma
To: Distribution List

Subj: ENCROACHMENT CONTROL PROGRAM

Ref: (a) MCO 11011.22A

1. Purpose. To establish guidelines and responsibilities for early identification and control of encroachment on real property and operations at Marine Corps Air Station (MCAS) Yuma, Arizona and the Bob Stump Training Range Complex (BSTRC).

2. Cancellation. StaO 11011.1A.

3. Action. Addressees shall implement the Station Encroachment Control Program in accordance with this order.

4. Definition. Encroachment is the cumulative result of any and all outside influences that inhibit normal military training and testing. Although physical development in conflict with military operations is the most often cited source of encroachment, the actions of more removed entities such as counties, states, and other Federal agencies that determine land use and occupancy are also potential encroachment sources.

5. Background. With urbanization, regional population shifts, and environmental/natural resources restrictions, MCAS Yuma, the BSTRC and neighboring military installations are experiencing ever-increasing encroachment. At the same time, the mission of MCAS Yuma continues to be the provision of aviation ranges, facilities and services that support the operating forces, tenant commands and activities. MCAS Yuma functions as the resource manager and/or scheduling authority for assigned ranges. These crucial tasks require proper training facilities, adequate billeting, and a healthy environment for all personnel. The combination of population growth within the Yuma community, environmental/natural resource restrictions, and the Marine Corps' mission has often placed MCAS Yuma at cross-purposes with our surrounding civilian neighbors. In order to maintain mission readiness and operational capability, an active program designed to identify, prevent, or control encroachment threats is warranted.

6. Discussion. Encroachment problems vary in both nature and magnitude. The growth of the Yuma community surrounding MCAS Yuma and the western edge of the Barry M. Goldwater Range has generated pressures for increased commercial and residential development and the expansion of surface and air transportation capacity. This continuing expansion has the ominous potential to interfere with the successful execution of this activity's mission. Unabated encroachment from residential, commercial, industrial, transportation, or public development could cause curtailment of training and communications operations, ordnance storage capability or use of the designated ranges. These developments frequently act as magnets which attract further development in adjacent areas. Finally, rising environmental concerns have resulted in a myriad of new and expanded environmental and natural resource conservation regulations. These laws are either prohibitive in nature or mandate certain requirements to protect the environment or a natural resource. Because of the preceding issues, early recognition of potential encroachment and careful assessment of likely impacts is essential. Systematic, routine monitoring of community and regulatory trends provide a basic means for early detection of potential encroachment.

7. Responsibilities

a. The Community Planning and Liaison Office (CP&L) shall:

(1) Have the responsibility for encroachment source monitoring for MCAS Yuma and the BSTRC which includes the screening of local and regional media and the tracking of local, regional, and state government legislative action and public hearings. Maximum use should be made of contacts in the civilian community.

(2) Ensure outgoing, open dialogue with appropriate local officials concerning on-base and off-base actions which may affect MCAS Yuma's facilities and operations.

(3) Ensure continuing dialogue among the staff to identify and assess potential encroachment threats.

(4) Ensure maintenance of a directory of the key agencies and individuals that plan, review, and approve projects in the area.

(5) Have the installation placed on local agencies' mailing lists for notice of relevant meetings and hearings.

(6) Provide representation, as appropriate, at meetings or hearings and provide input on topics of Marine Corps interest.

b. The Range Management Officer shall:

(1) Coordinate with the CP&L Office on all encroachment issues which could be a threat to the use of the BSTRC.

(2) Ensure ongoing, open dialogue with appropriate local officials concerning actions which may affect BSTRC operations.

(3) Ensure continuing dialogue among the staff to identify and assess potential encroachment threats.

(4) Be prepared to host local officials and concerned citizens and present a briefing on BSTRC issues within the local community while stressing the beneficial relationship between the Air Station and the surrounding area.

(5) Maintain a file of endangered species that limit mission performance.

c. The Staff Judge Advocate and/or Counsel, MCAS Yuma, as appropriate, shall provide legal guidance on encroachment issues affecting MCAS Yuma and the BSTRC.

d. The Public Affairs Officer shall utilize every opportunity afforded to keep the public informed of issues affecting the continued presence of MCAS Yuma and the BSTRC within the local community while stressing the beneficial relationship between the Air Station and the surrounding area.

e. The Environmental Officer shall:

(1) Maintain a file of environmental constraints, such as pollution control regulations, which limit mission performance.

(2) Through the auspices of the Environmental Impact Review Board, ensure that tenant organizations are kept aware of local encroachment problems and receive appropriate guidance to avoid unduly aggravating any such problem areas.

8. Summary of Revision. This Order has been revised and contains numerous changes and should be completely reviewed.

B. D. HANCOCK

Copy to: SPL
Dir, JLC
Counsel MCASY
PAO
Range Mgt Off
Dir, CP&L
Dir, Env

APPENDIX 3: JOB DESCRIPTION FOR A LIAISON OFFICER

This appendix provides a job description for a Liaison Officer, known as the Community Plans and Liaison Officer (CPLO), at a regional level in the United States. We have kept references in the document to specific commands and other organizations to illustrate in concrete terms how the CPLO functions. In developing their own Liaison Officer (LO) positions, other militaries can use this as a general template, inserting their own organizations and structures into the description as appropriate.

INSTALLATION(S) COMMUNITY PLANNING AND LIAISON OFFICER
[List here the Salary Range or Grade]
FACILITIES ENGINEERING COMMAND, MID-ATLANTIC

INTRODUCTION:

The Installation Community Planning and Liaison Officer (CPLO) is the technical expert to one or more Navy installation(s) and associated Special Areas for management, coordination and oversight of community land use and land development programs to prevent encroachment upon and incompatible development adjacent to Navy property. These duties must be performed by interacting with many operational components within the Navy, Marine Corps, Department of Defense (DoD), as well as various local communities, and governmental and regulatory agencies. The CPLO provides authoritative interpretation of agency policies, regulations and standards while balancing divergent interests and relationships to protect the DoD mission, essential training and support requirements of the installation(s) and its ability to meet national security objectives.

The CPLO provides vital expertise and continuity on land use needs, weighing the legal ramifications and precedent-setting nature of these recommendations. The CPLO is responsible for quickly identifying encroachment stemming from civilian development, thus allowing timely action to preclude the loss of DoD land or operational and support capabilities. The CPLO promotes new and established professional relationships with both military and civilian agencies to ensure preservation of military operating areas in light of continuing urban growth in surrounding communities. Examples of interaction include:

- Coordinating on long-range planning, development proposals, and conservation partnering with various government and non-government organizations, such as the City of Norfolk, Virginia Port Authority, Virginia Department of Transportation, and The Nature Conservancy
- Advisory support to the Installation Commanding Officer(s) (ICO) for participation, or direct participation, in regional organizations, such as the Hampton Roads Planning District Commission and Hampton Roads Military and Federal Facilities Alliance.

- Represents Navy interests on development issues brought about by agencies, such as the Philadelphia Authority for Industrial Development and the Aquidneck Island Planning Commission.

MAJOR DUTIES AND RESPONSIBILITIES:

A. Technical Leadership and Community Planning Expertise (90% of time)
The CPLO is the principal civilian consultant and representative for the Installation(s) on community planning, land use planning, inter-governmental coordination and encroachment management. The CPLO represents the Installation(s) to local agencies and elected officials concerned with urban development and coordinates among customer activities, claimants, contractors, local and state elected officials and agencies, Navy Facilities Engineering Command (NAVFAC), and organizational components.

The CPLO is required to make effective oral and written presentations to elected officials, flag officers and executive military leadership, as well as public audiences, to ensure and perpetuate public awareness of the installation(s) activities and importance of the mission(s). Experience in conducting effective meetings is needed and skill in negotiating with persuasive arguments and reconciling differing interests into consensus is required. The CPLO routinely speaks as the authority for and regularly represents the installation(s) as requested in discussions with local citizenry, professionals (engineers, architects, lawyers, developers, etc.) and local, regional and state officials directly concerned with community planning and growth management strategies.

The CPLO coordinates the installation's(s') strategic plans in encroachment control, compatible land use, real estate development, environmental protection and community relations to ensure long-term viability of the installation(s). The CPLO establishes and maintains a dynamic and extensive liaison network with elected and appointed officials at state, regional and local levels, as well as with senior military leadership. Through this complex and ever changing network, the CPLO identifies and takes action to prevent encroachment stemming from civilian development on and around the installation(s).

Specific roles and responsibilities include:

1. Serves as the Installation(s) representative for managing intergovernmental and interagency issues about encroachment, land use and real property planning. Supports and works with, though not in place of, other Program Directors, Commands, or business lines, to help resolve issues that occur outside Navy boundaries and impact Navy property, mission and operations.

2. Assists the ICO(s) with facilitating the Installation(s) Encroachment Working Group, which includes representatives from operations, planning, environmental, real estate, public affairs, public safety/security, legal, and other military services as applicable. Determines goals and objectives, and conducts meetings as necessary to accomplish the actions associated with implementation of the Encroachment Action Plan(s) (EAP).

3. Establishes and maintains close liaison with local agencies to gain early information concerning future development plans which might affect the installation(s) operations. Attends meetings with government and non-government agencies as necessary. Attendance will often be outside of normal, established working hours. Appropriate compensation time will be offered to the incumbent.

4. Serves as Installation(s) point of contact, or augments existing Air Installation Compatible Use Zones (AICUZ) personnel, for AICUZ and RAICUZ programs and Joint Land Use Studies, as applicable. As applicable, assists in the implementation of the AICUZ/RAICUZ Program, reviews proposed developments for compatibility with the operations, and prepares responses to noise complaints and inquiries regarding noise abatement policy.

5. Responsible for data calls, populating the encroachment management database, responding to annual request for nominations of EAPs and Encroachment Partnering (EP) projects. Responsible for developing scopes of work for installation EAP(s) and EP Projects.

6. Works with other government and non-government organizations to identify opportunities for EP projects. Assists with preparation for negotiations for all real estate actions related to acquisitions, restrictive easements, disposal or other use of government land. Ensures implementation of approved real estate actions through coordination with the local NAVFAC representative.

7. Prepares correspondence regarding encroachment issues. Prepares information on compatible land uses and educational materials for developers, real estate agents and other interested parties. Prepares briefings and presentations for visiting general officers, local elected officials, government agencies, and civic groups on encroachment, issues, AICUZ program, and special topics upon request. Provides technical assistance on a variety of unique special projects, such as base closure and force structure realignment studies, that require quick responses to higher headquarters. Assists with responding to higher Regional requests, such as Congressional taskers.

B. Miscellaneous (10% of time)

Performs other duties as required and assigned.

EVALUATION:

Factor 1. Knowledge Required by the Position

1. Mastery of planning principles related to land use planning and community liaison, as well as knowledge of technically related fields, such as real estate, housing, engineering, legal concepts, noise attenuation, environmental management and airspace.
2. Ability to apply practical knowledge of these fields to develop innovative solutions to unique problems and provide expert advice and recommendations to military and community leaders.

3. Ability to work routinely with technical personnel experienced in civil engineering, architecture, landscape design, urban and regional planning and airspace structure.
4. Ability to effectively and proactively evaluate and engage on local initiatives, community general development and land use plans, and private development projects for impact to the Navy mission.
5. In depth knowledge of DoD and Navy directives pertaining to planning, joint use, environmental policy, real estate, encroachment, range and aviation programs.
6. Ability to translate organizational requirements and mission objectives into strategic planning principles, translate military operations to the layman, and make objective recommendations that may have significant long-term impact on community development.
7. Innate ability to establish and maintain effective working relationships with local governments, media and community organizations, whose goals are often in direct conflict with those of the Command.
8. Social personality and strong communication skills (oral and written) to articulate ideas and issues in a clear, concise, and impartial manner.
9. A high degree of technical judgment, tact, diplomacy, resourcefulness, and intuitive ability, and the ability to adapt these skills to work with diverse organizations and to negotiate agreement among conflicting interests.

Factor 2. Supervisory Controls
The installation CPLO reports either to the Regional Community Plans & Liaison Officer or other Regional designee, if located at the Assistant Regional Engineer's office, or to the ICO if located at the installation, with programmatic leadership from the Regional CPLO. The supervisor provides guidance about expected results and relies on the CPLO to perform the work in accordance with existing guidelines of land use planning, encroachment, AICUZ, media and governmental relations; the supervisor is normally available for consultation in unusual or unprecedented situations.

Factor 3. Guidelines
Guidelines include broad DoD/DoN policies including OPNAV Instruction 11010.40, applicable federal and state law, rules and regulations. Since such guidelines can be incompatible and/or vague, the CPLO is expected to use experience, judgment and initiative to interpret policy as a means to evaluate and resolve complex community concerns of a sensitive nature. These problems evolve from potential or recognized community impacts on military activities and military impacts on the community, and may include significant political pressure in the resolution process. The CPLO must exercise sound judgment, discretion, initiative, diplomacy and originality in developing solutions to problems. The CPLO must continually deal with mission requirements and conflicting land use proposals in an atmosphere of intensified public interest and awareness. Innovative approaches and new methods for evaluation and controlling risk are a constant requirement for this position.
The CPLO is a liaison for the ICO(s) to the community and others to ensure that the goals, policies, and programs defined by the ICO(s) and/or the Regional Community Plans and Liaison Officer are known to local government and community groups throughout the installation's(s') region of influence. The CPLO will directly contact

individuals to complete major duties and to exchange information activities of the station, internal and external. The CPLO will develop strong relationships with community stakeholders to create effective two-way communications and be in a position to influence decision processes that ultimately affect mission sustainment and prevent encroachment. The CPLO will participate in conferences, hearings, and public forums as directed by the ICO(s) or the Regional CPLO involving land use issues and smart growth strategic plans to promote the continued viability of mission essential training.

Factor 4. Complexity
The work performed consists of tasks, many of which are non-routine and require individual treatment and deviation from established procedures. The employee must use innovation, originality and technical knowledge and experience to identify constraints, develop effective compromises, and implement new, effective and timely actions in an atmosphere that may be uncertain. Tasks usually require seeking and integrating the advice of technical and legal subject matter experts and combining many complex features including: conforming to policy objectives; intra- and inter-agency organizational relationships; conflicting operational and regulatory requirements and local political desires. The position requires liaison with installation military and civilian personnel as well as staff of local governments to obtain necessary information.

Factor 5. Scope and Effect
The purpose of this position is to assist in interactions with competing interest groups such as government agencies, private corporations and developers, and the public to prevent encroachment and incompatible development near the assigned installation(s) and special areas. Failure to adequately coordinate these actions could result in irreversible encroachment or reduction of essential real estate assets, noncompliance with federal and local environmental policy law, delay or cancellation of mission essential-operations, or force structure realignments. The program segment, because of its impact on the immediate and long-term operations of DoD installations, as well as on the development of neighbouring communities and the inhabitants' quality of life, has a significant effect. Accordingly, high levels of Congressional and media attention may be focused on this employee.

Factor 6. Personal Contacts
Contacts are with elected local officials, high-ranking military or civilian managers, supervisors and technical staff within the agency as well as the media and public and private entities interested in land use decisions adjacent to the installation(s).

Factor 7. Purpose of Contacts
Contacts are made to maximize the success of the Navy efforts to resolve community planning issues of mutual concern and to promote and defend Navy policy and decisions. Issues/topics may be of considerable consequence or controversy, requiring a high level of understanding and the ability to influence favourable decisions and/or achieve compromise. The work requires an active, participatory role in meetings, at public gatherings and conferences.

Factor 8. Physical Demands
The work is sedentary. Typically the employee may sit comfortably to do the work. However, there may be some walking, standing, bending, carrying of light items such as papers or books, or driving an automobile. No special physical demands are required to perform the work.

Factor 9. Work Environment
The environment involves everyday risks or discomforts that require normal safety precautions typical of offices, meeting and training rooms. The work area is adequately lighted, heated and ventilated.

REQUIREMENTS FOR EDUCATION AND REGISTRATION:
A degree from an accredited college or university in one of the following (or related) areas is required: community or urban planning, urban affairs, architecture, engineering, public administration, etc. In addition to the education, extensive professional experience in land-use planning is required. Registration or certification in career discipline is encouraged but not required.

SECURITY: This position is Non-Critical Sensitive. Ability to qualify for a secret clearance is required.

PROCUREMENT INTEGRITY CERTIFICATION: This position is required to comply with Federal Procurement Policy Act (41 USC 423) as amended. The incumbent is required to complete Standard Form 450 annually.

TRAVEL: Travel by military and commercial aircraft may be required.

APPENDIX 4: ENCROACHMENT DRIVERS AND IMPACTS

This appendix contains two charts. The first one depicts three categories of encroachment – economic, socio-political, and environmental – and what impacts they can have on the military. The different colours highlight the spatial medium in which they will be found, i.e., whether they will be found on land (orange), at sea (green), or in the air (blue). In the case of "combined colours," they can occur in more than one of the spatial media. The second chart offers specific examples of encroachment, why they arise, contributing factors, and what impacts they can have on the military.

Encroachment Drivers

SPATIAL MEDIUM		Economic	Socio-Political	Environmental
	Land	▪ **Residential settlement & urban sprawl** expanding on the periphery of military areas increases the potential for dispute arising from incompatible patterns of contiguous land-use ▪ **Industrial & commercial development** on the edges of military estate increase the potential for dispute arising from incompatible patterns of contiguous land use ▪ **Prospecting & mining rights** exercised close to, or on the military estate may impact, disrupt or displace military activities ▪ **Agricultural development** increases the potential for compensation claims by landowners alleging loss of property or production both in the vicinity of military installations and in tactical flying areas ▪ **Deterioration & decay of military infrastructure** as a result of funding deficits and maintenance backlogs erodes mission sustainability ▪ **Property rates levies** on state-owned or leased estate escalates overhead costs of maintaining an extensive military footprint in high premium areas ▪ **Informal settlements** in the proximity of military lands can result in infringements of social justice and security risk ▪ **Advertising on billboards** on the military estate or adjacent to these areas represents a visual impact as well as a source of interference with the frequency spectrum ▪ **Transportation & communication lines** traversing or skirting the military estate increase the potential for disputes arising from incompatible patterns of contiguous land use	▪ **Hostile incursion & attack** on military land as the most extreme of instances will place mission sustainability at risk ▪ **Land reform & restitution claims** on the military estate intrudes on mission sustainability when civilians are re-settled in such areas ▪ **Cultural, archaeological or paleontological interests** on site restricts optimal use of military land ▪ **High incidence of crime** increases risks to security of the military estate and installations ▪ **Public recreational areas** adjacent to military estate or in tactical flying areas increases the potential for dispute arising from incompatible patterns of contiguous land use ▪ **Regional or domestic political instability & civil unrest** can result in the military estate being designated as prolonged refuges for displaced people ▪ **Transition in national military priority & aspirations** of government coincides with the ebb of political will and funding from military to other national objectives to represent a prime imperative for premature loss of military capabilities accompanying varying scales of base realignment or even closure ▪ **Social judicial activism** can lead to criticism of such tendencies as situating military installations closer to disadvantaged communities than more affluent areas ▪ **Adverse public perceptions** in which the civilian population assumes varying forms of resistance to resident military communities or objects to a permanent military presence at an installation	▪ **Terrestrial protected areas** designated in the vicinity of or incorporating the military estate restricts the total mission envelope of such land ▪ **Desertification & land degradation** are global trends that alter the physical characteristics also of military land to render it ineffectual for training purposes particularly by increasing susceptibility to fugitive dust ▪ **Rare & endangered species/habitat** on site restricts optimal use of military land ▪ **Alien or native invasive & damage-causing or dangerous species** on site restricts optimal use of military land and also poses risks to personnel ▪ **Spillage & contamination** on the military estate of hydrocarbons, toxins, radioactive material, UXOs or other wastes can result in contingent liabilities as well as land-use restrictions ▪ **Forces of corrosion** in prone regions of the territory adversely affects the serviceability of infrastructure that supports mission sustainability ▪ **Freshwater decline** is a global trend that also restricts optimal dispersion of military capabilities and force levels in parts of territories affected by the scarcity of water ▪ **Light pollution** emanating from expanding settlements is a global trend that restricts the use of night vision equipment on military training/testing areas ▪ **Geophysical anomalies** such as poor or unstable substrates in dolomite/karst, turf, earthquake-prone geology, periodic flooding or ocean surges restrict the total mission envelope of the military estate in these landscapes ▪ **Endemic disease** is an emergent factor as part of the global trend in which the distribution of communicable diseases migrates with changing climatic patterns to where personnel at military installations may also be at risk

	Maritime	▪ **Commercial fishing grounds** coincide with designated military maritime training areas as dwindling marine resources force commercial fishing fleets to exploit these areas ▪ **Offshore mineral exploration & extraction** impacts, disrupts or displaces military maritime training in designated areas where activities coincide ▪ **Merchant shipping lanes & navigation systems** transect and expand into areas designated for military maritime training	▪ **Hostile incursion & attack** in territorial water as the most extreme of instances will adversely affect the use of such areas for purposes of maritime training ▪ **Marine & coastal recreational areas** in the vicinity of military maritime installations or training areas increases the potential for dispute arising from disturbances ▪ **Contemporary piracy hotspots** increases risks to security of military maritime training, installations and vessels	▪ **Rising sea level** is a global trend as part of overall warming of oceans, melting of polar ice sheets and glaciers across the planet that could endanger coastal military installations such as naval harbors and dockyards ▪ **Marine protected areas** designated in the vicinity of or incorporating military maritime training areas restricts the total mission envelope of areas ▪ **Marine mammal migration, feeding & breeding grounds** transect and extend onto areas designated for military maritime training
	Airspace	▪ **Civilian airports & controlled airspace** restrict the movement of military aircraft ▪ **Commercial flight corridors & navigation systems** transect and expand into areas designated for military aviation and over training areas for artillery ▪ **Competition for the frequency spectrum** restricts bandwidth for operation and testing of military command & control systems and telemetry ▪ **Key national strategic points** restrict the movement of military aircraft ▪ **Advertising on billboards** at military aerodromes or adjacent to these areas represents a visual impact, obstacles to runway approach as well as interference with navigation signals	▪ **Hostile incursion & attack** in territorial airspace as the most extreme of instances will restrict the movement of military aircraft ▪ **Public & private nuisance** claims by civilian residents in the vicinity of military aerodromes; or livestock farmers, the conservation community or eco-tourism industry in tactical flying areas result in the designation of complaint areas restricting movement of military aircraft ▪ **Recreational aviation activity** near military aerodromes or in tactical flying areas increases the potential for dispute arising from disturbances while posing a mutual hazard to aviation safety	▪ **Changing weather patterns** is a global trend as part of climate change in which atmospheric phenomena such as hurricanes and floods are expected to escalate in intensity thereby posing risks both to military operations at sea and in the air ▪ **Noise generation & abatement** measures can be legally invoked by civilian residents living near military aerodromes and in tactical flying areas ▪ **Flying altitude restrictions over protected areas** limit the movement of military aircraft during operations or exercises in these areas ▪ **Airborne volcanic ash plumes** in areas prone to frequent eruption pose hazards to military aviation ▪ **Renewable energy plants** involving wind or solar farms are accompanied by transmission infrastructure that interfere with ground radar, navigation systems, and flight paths ▪ **Periods of increased solar activity** can cause interference with military communication systems ▪ **Wildlife hazards to aviation safety** at military aerodromes, in flight corridors or tactical flying areas pose hazards to military aviation ▪ **Space debris & artifacts** pose hazards to orbiting military spacecraft

Type of Encroachment	Cause	Contributing Factors	Impacts
Urban Sprawl	Population Growth	Presence of military bases contributes to the creation of local jobs and increased development; ultimately drives economic and community development around the base.	Incompatible land use around military installation borders, negatively impacting ability to train and test. Creates tension between military and local community.
Cultural and Historical Sites	Establishing and/or expanding military installations.	New or increased training and/or testing requirements.	Limits the military's ability to use 100% of its land for training and/or testing.
Threatened & Endangered (T&E) Species and habitat.	Uncontrolled development outside/around military bases.	Population growth along with increased development due in part to the presence of military installations.	Limits the military's ability to use 100% of its land for training and/or testing.
Radio frequency	Limited availability of bandwidth.	Increasing civilian and military use of radio frequencies.	Interferes with military training and testing operations; interferes with local community's use of bandwidth.
Light Pollution	Civilian development near military bases	Population growth along with increased development due in part to the presence of military installations.	Limits the military's ability to conduct required night-time training operations, including flight training with NVGs.
Siting of Alternative Energy Sources	Increased energy demand	Reduced availability of fossil fuels.	Limits military's use of land and air corridors for training and testing operations.
Airspace	Population Growth; increased use of air corridors	Rising demand for commercial use of historically military-controlled airspace.	Limits military's use of air corridors for training and testing operations.
Munitions constituents	Military training and testing operations.	Long-term use of ranges and training areas by the military.	Potential reduction of natural resources availability for use by local communities.
Scarcity of Water Resources	Increased demand for both civilian and military uses.	Population growth along with increased development due in part to the presence of military installations.	Potential to severely limit military training and testing operations, as well as negatively impact growth and development in civilian communities.
Noise	Military training and testing operations.	Urban sprawl/development around military installations increases impacts of noise on local communities.	Interferes with local communities' quality of life; contributes to delays and workarounds for military training/testing to accommodate stakeholders' requirements and concerns.
Dust and Smoke	Military training and testing operations.	Urban sprawl/development around military installations increases impacts of noise on local communities.	Interferes with local communities' quality of life; contributes to limitations being placed on local military training/testing operations and may result in increased costs/travel to meet military requirements while accommodating stakeholders' concerns.

APPENDIX 5: EXAMPLES OF STAKEHOLDER MATRIX

The stakeholder matrix, as shown below with some specific case study examples, is a valuable tool for the outreach program. As noted in the guidebook text, however, prior to using this matrix, it is imperative that the military be able to demonstrate its operational needs and requirements to the stakeholders identified.

Encroachment Threat *(description of the issues and the potential impact on mission capability/ sustainability)*	**Military and Other Stakeholders** *(affected military and other stakeholders and points of contact for each)*	**Opinion Leader(s)** *(people who are likely to influence the decision maker and affect the outcome)*	**Decision Maker(s)** *(the person or entity that makes the decision on the outcome)*	**Means of Engagement** *(communication method such as conf call, in-person meeting, written)*	**Decision Timelines and Milestones** *(short-, medium- and long-term milestones and when events or decisions will occur)*	**Desired Outcome and Ultimate Results** *(what do you hope to have happen? Once a milestone is reached, note what the military gained or lost)*
Arizona Legislation that would have eliminated the need for the community to notify the military about planned development (2009). Notification is important to provide early disclosure to the military of nearby land use changes.	Arizona Military Airports; Arizona Legislator (sponsor of the bill); Department of Real Estate; realtors; local governments	Committee staff in the Arizona legislature	Committee Chairperson	Based on the fact that military personnel had already established rapport with legislative staff and legislators, it was possible to engage via email and phone conversations	Learned about the proposed legislative change at the beginning of the legislative session and had to provide the military's input during committee mark-up (typically less than one week). Completed by end-2009 – military input was provided in time to be considered in	Bill was stopped in Committee. Notifications to the military will continue, which benefits both the military and the local community because it avoids incompatible development.

					the legislative process.	
Draft Planning Agreement by the California (CA) Energy Commission (CEC) for the Desert Renewable Energy Conservation Plan, which will help determine the future uses of the Mojave Desert. This desert is a significant asset to military operations	Marine Corps Base 29 Palms; Edwards Air Force Base; Naval Air Warfare Center China Lake; National Training Center Fort Irwin; Marine Corps Base Logistical Barstow; CA Energy Commission (CEC); Other CA agencies; Bureau of Land Management; Off-Highway Vehicle users; wilderness advocates; renewable energy advocates; the Forest Service	CA Governor's Office Staff; CEC Staff; The Nature Conservancy; Senator Feinstein's staff	CEC	DoD to formulate formal written input	Draft plan released October 27, 2009; Written comments due by end of 2009; DoD needs to prepare a unified position regarding specific future mission requirements in the Desert. The current perception is that the military is not responsive).	Pending – if the military adequately defines and advocates their future needs, the Plan will address them in a way that protects the mission's sustainability in the Mojave Desert.
State of Washington (WA) Greenhouse Gas (GHG) Reporting Rule, which will require industry (including government organizations) to annually report on	Ft Lewis Army Base; McChord and Fairchild Air Force Bases; multiple Northwest Navy operations; US Coast Guard; Army and Air National	WA Department of Ecology staff	Director, WA Department of Ecology	Formal written comments, submitted during the rule's public comment period; In-person engagement with WA Department	Written comments due in early November 2009. Verbal engagement in December 2009. Will follow-up with further informal engagement in early	WA introduced legislation to remove mobile sources (including tactical vehicles and equipment) from the rule. WA Dept of Ecology

GHG emissions from both stationary and mobile sources that annually exceed 10,000 metric tons. The proposed rule would require that military tactical vehicles and equipment be included in the reporting.	Guard; industry in WA; WA Department of Ecology; WA Governor's Office			of Ecology senior staff	2010.	also accepted the military's comments to separate major sources within an installation, which may result in less or no reporting
Coordinating the Siting of Wind Energy Facilities on Bureau of Land Management (BLM) properties in the Western US. Military operations throughout the Western United States – particularly flying and training routes and operating areas on or nearby BLM lands – could be affected.	All military facilities in the Western United States that either are near to BLM land, or use the air space over this land; BLM; wind energy developers; State regulatory agencies with purview over this activity (siting agencies and wildlife managers).	BLM staff; wind industry, wind energy developers; renewable energy advocacy groups; political leaders	BLM; wind project proponent; State regulatory agencies	Formal written input, quantifying any impacts to the mission, submitted to BLM within 45 days of their inquiry. Educational outreach to BLM and the wind industry.	On-going process. Each time a siting is being considered, stakeholders have 45 days to provide a-written response. If there is a DoD objection, BLM has 14 days to forward to its HQ for joint DoD/BLM headquarters review.	Early coordination to avoid land use conflicts can protect the military from physical obstructions and radar interferences caused by wind turbines and transmission lines

APPENDIX 6: STEPS TO FOLLOW IN STAKEHOLDER ANALYSIS FOR MANAGING RELATIONSHIPS

1. Identify and Prioritize Stakeholders

Identify stakeholders by the following forms of linkage to the organization:

- **Enabling linkages** that provide resources and a mandate.
- **Functional linkages** that provide input functions (labor, resources) or output functions (consume/benefit from products, services).
- **Normative linkages** that have a common interest such as values, goals or problems.
- **Diffuse linkages** with intermittent interaction, often in crises noting such examples as the media, community, activists and the like.

A stakeholder typology model developed in the late 1990s offers a novel approach to prioritizing stakeholders based on attributes of (1) power, (2) legitimacy and (3) urgency,[16] with these attributes being ordered as follows:

- **Latent stakeholders** are parties in which only one of these attributes is evident. For example, an activist group may have an urgent issue, but with neither power nor legitimacy, the group can make demands without necessarily deserving much management attention.
- **Expectant stakeholders** are characterized by two of these attributes, such as employees and investors, who always have a degree of power and a legitimate claim on the resources of an organization.
- **Definitive stakeholders** are parties who posses all three of these attributes and, on the basis of this, would always take top priority.

Another model that offers prospects of prioritizing stakeholders in a way that is especially relevant for communications managers can be differentiated as follows:

- **Advocate stakeholders** are both active and supportive. These audiences should be approached with action-orientated messages and engaged in third-party endorsements, letter-writing campaigns, donations, investments, attendance at functions and the like.
- **Dormant stakeholders** are indeed not ready to become involved. Messages to these audiences should focus on creating awareness and understanding of issues or on reducing barriers to action and increasing emotional attachment to the issue at hand.
- **Adversarial stakeholders** do not respond to defensive messages, which could indeed cause these opponents to dig in deeper. Conflict resolution strategies that seek win-win solutions work far better with this audience denomination.
- **Passive stakeholders** probably should not be ignored, even though that is often the inclination with management. A better strategy is to increase awareness of the issue with an invitation to collaborate before the issue

[16] Relationship Management Mapping Assessment, as facilitated by the Public Relations Institute in 2003 for the South African DOD.

morphs into a crisis. Messages should focus on the salience of the issue and the likely benefits of involvement.

2. Define Stakeholders' Needs, Issues and Concerns

It is important to keep abreast of changing stakeholder needs. Among stakeholder needs to be considered:

- Review effectiveness of the system.
- Evaluate and improve stakeholder contact performance.
- Review and update the organization's management process.

Stakeholder issues and concerns to be considered:

- Evaluate, process and act on information received.
- Resolve complaints effectively and promptly.
- Aggregate and analyze complaints received by all units of the organization and distribute for use throughout the organization.

Areas to address must include stakeholders' perceptions from surveys that relate to the overall image as well as products and services.

3. Determine the Needs of the Organization (Military)

The following needs can be identified as crucial to the organization:

- Greater flexibility in self-determination of organizational requirements rather than having to concede to constant or unknown external forces of coercion.
- Public awareness of intrinsic value of the organization to create a compelling lobby for sustainability.
- Branding of the organization to establish favorable associations with the public.
- Accountability and credibility to affirm legitimacy of the organization.

4. Define the Desired Relationship

There must be a mutual understanding and consensus between the military organization and stakeholders in terms of the level of the relationship. Drawing upon the stakeholders' needs and issues already identified, areas to be addressed could include how the organization:

- Determines stakeholder contact requirements and distributes these requirements to all employees.
- Determines and reviews stakeholder contact requirements.
- Evaluates and improves stakeholder contact performance.
- Resolves complaints effectively and promptly.
- Aggregates and analyses complaints received by all organization units while distributing results for use throughout the organization.
- Reviews and updates the organization's complaint management process.
- Promote and support performance and excellence outside the organization.

- Address current and potential impacts on society of its products, services, facilities and operations while taking into consideration those that are good or bad. Openness in this instance is imperative.
- Determines for each stakeholder the modal links of contact, i.e., level, frequency, etc.
- Determines the level of the relationship by how well the organization performs in terms of service delivery and excellence.
- Meets the expectations of stakeholders.
- Forges long-term relationships with strategic stakeholders.
- Determines the corporate level of a stakeholder especially with new stakeholders.
- Tailors the level of contact for each stakeholder.

The following must be considered to outline the desired relationship with stakeholders:

- Perceptions must match the reality of the organization.
- A desired relationship is one that is open and transparent.
- Develop a relationship of trust between the organization and the stakeholder.

The following characteristics are important for a desired relationship:

- Communication
- Fairness and courtesy
- Ethics
- Flexibility
- Integrity
- Proactive behavior
- Transparency
- Commitment
- Professionalism
- Satisfaction
- Trust
- Diplomacy
- Priority
- Agreed upon frequency of contact
- Agreed upon code of contact
- Loyalty
- Honesty
- Empathy
- Knowledge
- Sensitivity
- Care
- Courtesy
- Concern
- Equality and balance
- Appropriate protocol and etiquette
- Interaction
- Respect
- Reliability
- Actions

The following types of relationships can be identified:

- **Exchange relationships** in which one party provides another with benefits to reciprocate an earlier exchange or to solicit one in the future.
- **Communal relationships** in which both parties provide benefits to each other whether or not this is reciprocated; they do so because they have a mutual concern for the common well-being.

The following terms apply to products and services as the basis for forging relationships:

- Accessibility of services
- Reliability of services
- Available facilities
- Performance delivery and response time
- Responsiveness and flexibility in meeting stakeholder needs
- Quantity and processing of complaints
- Cost of services
- Accessibility of key staff – visibility and accessibility of champions
- Service level performance
- Documentation simplicity, convenience and accuracy
- Stakeholder perception of relevance or service
- Service guarantee and redress
- Development of new products and services

5. Evaluate the Current State of the Relationship

All measurement implies the collection of information from whatever appropriate and available source. There are subjective and objective methods to measure the qualities and elements of a relationship, which are appropriate for individual stakeholders. This can be achieved through the use of qualitative or quantitative techniques using surveys, questionnaires or focus groups. Indirect means of collecting information and observation can also be applied. Role players use indicators (red, amber or green code) to gauge the state of stakeholder relationships.

Formal measurement is more structured, follows a process headed by a process facilitator, takes longer, requires more professional or specialized input, but can be used to extract the most difficult or complex interpretations of information. Informal measurement is in itself less structured.

Role players are listed in the stakeholder management process. A champion is assigned as the owner responsible for managing a relationship or suite of relationships linked to a specific issue.

Perceptions regarding an organization's longer-term relationships with key stakeholders can best be measured by focusing on six elements or components of a relationship. They can be assessed to some extent by measuring the perception one or both parties have of the relationship by means of a questionnaire. These elements are:

- **Control mutuality.** The degree to which parties agree on which has the rightful power to influence one another. Although some imbalance is natural, stable relationships require that organizations and audiences have some control over the other.
- **Trust.** One party's level of confidence in and willingness to expose itself to the other. There are three dimensions to trust:
  Integrity – the belief that an organization is fair and just.
  Dependency – the belief that an organization will do what it says.

Competence – the belief that an organization has the ability to do what it says.

- **Satisfaction.** The extent to which each party feels favorably disposed toward the other because positive expectations about the relationship are reinforced. A satisfying relationship is one in which the benefits outweigh the costs.
- **Commitment.** The extent to which each party believes and feels that the relationship is worth spending energy to maintain and promote. The two dimensions of commitment are:

  Continuance commitment – referring to a certain line of action.

  Affective commitment – as an emotional orientation.
- **Exchange relationships.** One party provides another with benefits to reciprocate an earlier exchange or to solicit this in the future.
- **Communal relationships.** Both parties provide benefits to each other whether or not this is reciprocated; they do so because they have a mutual concern for the common well-being.

A questionnaire is administered to measure the perception of an organization's relationships with key stakeholders focusing on these six elements. A series of agree/disagree statements pertaining to the relationship may be included. Respondents are asked also to use a scale of 1 – 9 to indicate the extent to which they agree or disagree.

Once the questionnaire is completed, the negative indicators of each concept should be reversed, and the answers to all of the items measuring each perception of the relationship should be averaged, so that overall mean scores can be calculated.

6. List the Influencing Factors

The following factors can have an influence on relationships:

- Current state of the relationship
- Situational awareness of stakeholders
- Service delivery
- Way in which service is delivered
- Communication
- Response to changing issues or situations that affect stakeholders

7. List Opportunities and Threats

This phase assumes the form of a "SWOT" analysis in which the Strengths, Weaknesses, Opportunities and Threats (SWOT) of stakeholder relationships are gauged.

8. Develop a Strategy

Having identified the organization's top stakeholders and having worked out key messages and intervention plans, the next step is to close the relationship management process map with the assignment of champions to take responsibility for the relationship with each key stakeholder. This must be formally delegated to these incumbents.

9. Compile an Action Plan

The action plan assumes the form of a participation matrix highlighting exploits to:

- Inform identified stakeholders
- Consult with stakeholders
- Forge partnerships/relationships
- Control or manage relationships

10. Implement and Evaluate the Stakeholder Relationship Management Plan

APPENDIX 7: TEMPLATE FOR A COMMUNITY-MILITARY JOINT LAND USE STUDY

This appendix has been slightly modified from that contained in the Office of Economic Adjustment's *Joint Land Use Study Program Guidance Manual* (Washington, DC: November 2006), available at www.oea.gov.

A joint military-civilian land use study should, at a minimum, address four things: the planning and development issues and why they are important to military and civilian study participants, the process that the applicants intend to use in completing the study, the product(s) of the study, and the cost.

The study design framework will most likely evolve over several iterations, depending primarily on whether the study will be done in-house by the sponsoring organizations, or whether it will be done under contract. If the technical work is to be done in-house, the participating organizations, both civilian and military, can develop the scope of services document relatively easily after conferring with all participating organizations and gaining consensus on what should be included in the study. Of course the complexity of the study will be driven by the issues to be addressed and the perceived needs of the participants.

If the study is going to be contracted out to a private consulting firm or other technical resource such as a university, the scope of services must be detailed in a statement of work sufficient for potential bidders to make a cost determination.

A comprehensive study design must specify responsibilities of all parties, and particularly what is to be done by a contractor. An option is to prepare two study designs, one addressing the overall program, and a subset covering only those items to be done by a contractor. Some flexibility should be built into the study design whichever method is used so that unforeseen issues that may arise during the study can be addressed without formally amending the study design.

The following outline is illustrative. It shows those issues that should be considered in any JLUS program, and should be used as a guide or checklist to facilitate local consensus building on what the study should include.

I. STUDY PURPOSE
   - A. Problem/Issues Statement
   - B. Study Goals (e.g., protection of public health, safety and welfare, and sustainability of military mission)
   - C. Objectives and Expectations of Participants
     - i. Military
     - ii. Jurisdictions (cities, counties, regions/states)
     - iii. Other interests (e.g., development, conservation, natural resource protection)

II. ORGANIZATION
   - A. Planning Area, Participating Agencies, and Jurisdictions
   - B. Organizational Structure (include chart)

i. Sponsor
ii. Policy committee
iii. Working group
iv. Others as applicable

C. Organizational Roles and Responsibilities
D. Public Participation
i. Advisory group(s)
ii. Public forums, meetings, workshops, hearings
iii. JLUS Program brochure
iv. Newsletter
v. Media relations, press packets, news releases

III. BACKGROUND INFORMATION
A. Chronology of events leading up to a JLUS
B. Economic impacts of the installation in the region
C. Current community and regional plans/studies – Relationship to the JLUS
D. Current AICUZ and Base Master Plan – Relationship to the JLUS
E. Land Stewardship Agreements (e.g., endangered species, environmentally sensitive areas)

IV. TECHNICAL INFORMATION
A. Planning area profile
i. Existing land use
ii. Water, sewer, gas utilities
iii. Existing development controls
1. zoning
2. building codes
3. height restrictions
4. easements
5. moratoriums
6. conservation/preservation
iv. Projections
1. population by age
2. employment by category
3. land use by category
4. traffic (highway and air)
5. utility extensions

B. Military Mission(s)
i. Current or projected
ii. Reasonable full use scenario

C. Military Operations and Impacts on Community
i. Economic impact on adjacent communities
ii. Environmental and safety impacts (AICUZ)
1. noise (aircraft, artillery, other)
2. flight tracks
3. aircraft accident potential
4. height restrictions
5. traffic
6. off-base manoeuvres
7. other (dust, smoke light)

8. natural habitat, conservation

iii. Current measures to mitigate impacts

iv. Potential operational changes to mitigate impacts

D. Civilian Development Impacts on Mission Accomplishment

i. Existing incompatible development, potential for incompatible development under existing controls and growth scenarios

ii. Transportation (highways and airports)

iii. Other (electromagnetic interference, light, dust, birds, wildlife, pollution)

iv. Development control enforcement record

E. State/Regional/Local Legislation Permitting or Impeding Use of Development Controls

i. Areas of critical concern

ii. Land conservation/preservation programs

iii. Real estate disclosure

iv. Special land use/zoning districts

V. RECOMMENDATIONS

A. General Recommendations

i. Land uses

ii. Transportation improvements

iii. Community facilities, infrastructure, and services

iv. Intergovernmental planning coordination

v. Regulation

vi. State/regional/local legislative actions required

B. Community Specific Recommendations

i. Land use and zoning

ii. Transportation

iii. Community facilities, infrastructure and services

iv. Regulation (e.g., building codes, disclosure)

C. Installation Specific Recommendations

i. Operational patterns

ii. Mitigation measures

VI. IMPLEMENTATION STRATEGIES

A. What Should be Done

B. Who is Responsible

C. When

VII. MONITORING PLAN

A. Responsibility for Monitoring Implementation Activities

B. Procedures for Follow-Up on Implementation Slippage

VIII. STUDY PHASING (chart or graph)

A. Tasks, Milestones, Target Dates, and Responsibilities

B. Preliminary Schedule of Implementation Activities

IX. PROJECT COST AND FUNDING SOURCES (national, regional and local levels; cash or in-kind)

APPENDIX 8: ENCROACHMENT MANAGEMENT COMMUNICATION OBJECTIVES

This chart illustrates the types of information that should be provided to and solicited from different stakeholders at each stage in the process of addressing an encroachment issue. It also suggests ways in which this information can be provided or obtained.

Encroachment Management Communication Objectives				
Communications Objective	Stakeholders	Information Provided to Stakeholders	Information Sought from Stakeholders	How to Accomplish Communication
Communication Objective 1: **Obtain Public Participation and Input**				
1.1 Learn stakeholder attitudes about the installation	Initial list developed from stakeholder analysis and added to as new stakeholders are identified	What an encroachment management process is; How stakeholder input will be sought and used in the process	Assessment of installation/community relationship; Views on encroachment; What other stakeholders should be involved	One-on-one interviews
1.2 Learn how stakeholders believe that they are being impacted by military training and operations	Initial list developed from stakeholder analysis	Current operational and training footprints; SOPs in effect	What areas of actual or potential conflict with civilian uses exist	One-on-one interviews
Communication Objective 2: **Build Support for Encroachment Management**				
2.1 Build stakeholder understanding of military mission and training procedures and requirements. Increase public understanding of "why we do what we do"	All; Special emphasis on local government officials	Why the military must train as it fights for mission success; What threats are posed by encroachment	Questions about training and operations; views on encroachment	One-on-one interviews Installation open house; By-invitation range tour for local and state officials
2.2 Build stakeholder understanding of the military's positive impact on the community, region, and state in terms of economic benefits, social responsibility, and environmental stewardship	Local officials; Business community (Chamber of Commerce); State economic development agency	Economic impact of installation; Contributions to local social well-being; Community partnerships; Environmental activities underway; What threats are posed by encroachment	Questions about military's impact on community and region. Views on encroachment.	Brochure; Standard overview briefing and list of well-versed speakers who can provide the briefing
2.3 Build understanding and acceptance by local governments of compatible land use guidelines	Local government officials	Rationale for guidelines; How to use guidelines	Questions and reservations about the use of guidelines	Briefings and meetings
Communication Objective 3: **Enhance Understanding of Options**				

Encroachment Management Communication Objectives				
Communications Objective	Stakeholders	Information Provided to Stakeholders	Information Sought from Stakeholders	How to Accomplish Communication
3.1 Learn about stakeholders' visions for future growth and development	Initial list developed from stakeholder analysis	Current operational and training footprints; SOPs in effect	What areas of actual or potential conflict with civilian planned uses exist	One-on-one interviews
Communication Objective 4: **Build Support for Actions**				
4.1 Build stakeholder understanding of range of potential actions to address encroachment	Initial list developed from stakeholder analysis	Range of encroachment management actions available	Questions and reservations about actions; Ideas for additional actions	One-on-one interviews Briefings and meetings
Communication Objective 5: **Keep Stakeholders Informed of Progress**				
5.1 Report on status of encroachment management effort	All; Special emphasis on local government officials	What encroachment management is and why it is necessary; What is being done; Where we are in the process; How people can be involved	Statements of interest; Questions and concerns	Information articles in local news outlets; Standard overview briefing and list of well-versed speakers who can provide the briefing; Installation web page

APPENDIX 9: CASE STUDY ON WORKING IN THE "WHITE SPACE" BETWEEN AN INSTALLATION AND A RANGE
Yuma Training Range Complex, Arizona, US

Background

Military installations and training and testing ranges provide distinct boundaries within which DoD operates. However, often there is a stretch of land, air, or sea that sits between the installations, where equipment and troops are based, and the ranges where they train and test those assets or plan to do so in the future; this is called "White Space," over which the military does not have control. Through communication and cooperation with the civilian community, the Marines based at Marine Corps Air Station (MCAS), Yuma, Arizona have established a process by which they can use the White Space not only for transit but also for full-scale training and testing, thereby preserving access to the land, sea, and airspace they need to accomplish their mission. This process has been established and executed by the MCAS Yuma Community Plans and Liaison Office (CPLO).

(Photo Courtesy of Range Commanders Council Sustainability Group)

The Yuma Training Range Complex (YTRC) is a military aviation training facility composed of airspace and lands located in south-western Arizona and south-eastern California (approximately 200 km east of San Diego, CA). The YTRC includes the Chocolate Mountain Aerial Bombing and Gunnery Range and approximately 13,000 sq kms of airspace designated for military use in California, and approximately 13,000 sq kms of airspace in the western segment of the Barry M. Goldwater Air Force Range (BMGR) designated for military use in Arizona. The Complex is the only location available to and operated by the Marine Corps where the primary

mission is to provide full spectrum support for Marine Corps tactical aviation training. In and amongst the range complex is White Space.

Mission Requirements

Considered one of the Marines' premier aviation training bases, nearly 80 percent of the Marines' air-to-ground aviation and aerial weapons training takes place at Yuma and the surrounding 1.13 million hectares. In addition, other U.S. and NATO forces travel to Yuma for training each year. Marine Aviation Weapons and Tactics Squadron 1 (MAWTS-1) is a major aviation command at MCAS Yuma, conducting training for all Marine Corps tactical aviation units, most notably the Weapons and Tactics Instructor course. Marine Fighter Training Squadron 401 is a Marine Air Reserve squadron also based at MCAS Yuma, comprised of both active duty and Selected Marine Corps Reservists, providing aerial adversary/aggressor services and dissimilar air combat training (DACT) for all US military services and selected NATO, Allied and Coalition partners. MCAS Yuma is a critical installation that trains soldiers in every USMC aviation-related operation currently in use, and some under development. Providing the most realistic training possible is key to the success and survival of military forces.

Encroachment Threat(s)

DoD training and testing faces several encroachment factors nation-wide. In Arizona and California, USMC training is working to prevent future encroachment such as:

- Mission expansion without Range expansion
- Airspace usage conflicts
- Noise conflicts affecting DoD operations
- Greater restrictions on the use of public lands
- Population growth
- Commercial development

MCAS Yuma is unique in that the local Yuma community and the Community Plans and Liaison staff have coordinated missions and planning efforts so successfully over the last decade that encroachment remains a manageable threat, rather than a restriction.

Objective(s)

As communities around military installations grow, the population in and around installations is becoming increasingly sensitive to growing military operations. Additionally, DoD does not possess the range of variant conditions needed to fully rehearse current operational plans unless complemented by public lands. To work effectively with such issues and sustain their collective mission, military bases must emphasize partnering with surrounding communities to find common ground. With the vast majority of activities operating out of MCAS Yuma being aviation related, White Space operations require honest and regular communication with, and approval by, the residents and officials represented there. Over-flight by large amounts of aircraft, transport of troops, and large military vehicles traversing the region must be done with consideration of the residents, landowners, and environment affected. Due to a well-established relationship with and the support of the City of Yuma, Yuma County, and Arizona, Marines have been able to conduct aerial and ground operations

on installation, within their defined ranges, as well as in the space in between, including amongst the community in the Yuma City Limits. The objectives of the successful Community Plans and Liaison Office program are:

- Ensuring access to land, sea, and airspace necessary for operations, training, and testing applications.
- Continuously communicating development, operational, and mission planning information to land planners and range manager stakeholders.
- Assisting Yuma officials with keeping citizens informed of DoD activities in the area in order to reduce tension or complaints in the future.
- Incorporating regional planners into USMC exercise development in order to effectively maximize access to land and air as necessary.
- Conducting outreach and education for the public, and encouraging public participation and approval of local USMC operations.
- Providing a model for other DoD ranges and installations, as well as communities that are host to DoD lands

Program Description

MCAS Yuma is proactively engaged in community outreach and has developed good, working relationships with cities, counties, and towns in both Arizona and California, that have planning authority of land adjacent to MCAS Yuma's operating areas. These governmental bodies notify MCAS Yuma about all requests for land use changes near the base, Auxiliary Airfield II, the Barry M. Goldwater Range, and the Chocolate Mountains Aerial Gunnery Range. In turn, the base planning offices notify these governmental bodies of any needs to conduct operations in the same areas. To best respond to these land use requests, MCAS Yuma has set up a process to ensure consistent, timely, and two-way communication.

For land use changes, the MCAS CPLO determines if the installation needs to submit a letter to the relevant jurisdiction. When a letter is submitted, a "Case Information" Form is completed. These forms are used to track and record what happens to the land use request from the time the initial MCAS Yuma letter is sent, through the Planning and Zoning hearings, to a final land use decision by the respective City Council or County Board of Supervisors. The case files contain any correspondence from the installation, all City/County staff reports, newspaper articles, and/or other pertinent correspondence. The case files are maintained for historical purposes in the CPLO. The case files have proven invaluable in researching uses of a particular piece of property or to detect changes in how an area is being developed. Through this process, the CPLO has been able to demonstrate that the response from outside the fence line is not always "No." It also allows MCAS to anticipate the communities' planning processes and identify meetings that require MCAS presence.

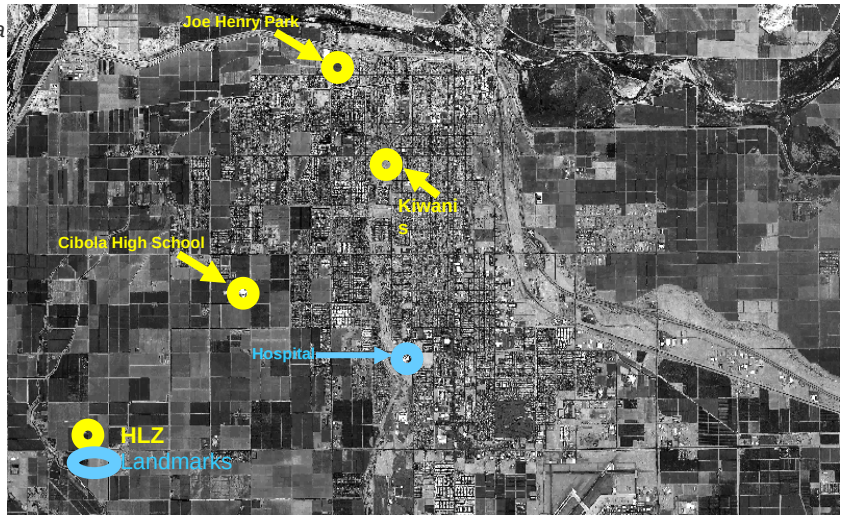
For operational requests out in the community, there is a 5-step process that enables Marines to conduct exercises within the White Space surrounding DoD land.

- The training unit selects the site
- The MCAS Yuma CPLO checks ownership and contacts the owner(s) to request authorization to use and photograph the property
- Property owners include School Districts, City, County, Bureau of Land Management, Bureau of Recreation, and private citizens

- The CPLO prepares the Letter of Agreement for signature
- The CPLO coordinates the exercise and conducts outreach with the city, county, sheriff, police, parks and recreation, border patrol, private airfields, private citizens and media.

The city of Yuma is truly unique when analyzing "community relations." The installation's staff in the CPLO works diligently to maintain an effective, strong relationship with local community leaders. That relationship, a consistent and comprehensive information exchange, and community support for MCAS Yuma has allowed extensive operational exercises to take place on school, park, and Federal Non-DoD property. Property used for USMC exercises includes public and private schools as well as parks.

Aerial map of the city of Yuma with helicopter landing zones indicated around the community. Private citizens are able to watch operations up close.



Stakeholders

- Yuma County, Arizona residents and officials
- Imperial County, CA residents and officials
- Riverside County, CA residents and officials
- Surrounding Cities' residents and officials
- Developers
- Real Estate Agents
- Marine Corps Installation West
- Headquarters Marine Corps
- Department of Defense
- State Agencies
- State Legislature
- Other Federal Agencies

Marines practicing Non-Combatant Evacuation Operations at area High Schools in Yuma, AZ in partnership with the local community

Lessons Learned

The ability for MCAS Yuma to continue to operate in the White Space surrounding the installation and ranges, with the full support of the civilian agencies and community that host them, is largely due to the proactive management of these relationships and the information via the CPLO. Lessons learned include:

Enhanced notification of needs and activities provides a greater level of information to landowners, which results in fewer obstructions and complaints. When developers and property owners have full information, this helps them in their development plans, and constituents are aware of critical issues.

The community will respond to information given to them by the military. The community's mission is to protect the health, welfare, and safety of their constituents. If the military provides information that makes sense, the community will act on it so that their constituents are better served. It is important to provide a comprehensive perspective when working with communities. For example, if information only relates to the military installation, then the community will focus its efforts on the military installation. This case study shows it is also important to share information on the range and corridors needed to access the range, or White Space.

For More Information: www.yuma.army.mil.

APPENDIX 10: CASE STUDY ON BUFFER ZONES
Northwest Florida Greenway Partnership Initiative
Eglin AFB, Florida, US

Background

Since the late 1980s, Eglin Air Force Base has partnered with The Nature Conservancy (TNC) to inventory flora and fauna on the 188-hectare military reservation and explore alternative ecosystem management techniques. The initial goal was to mitigate mission constraints through the recovery of the red-cockaded woodpecker, a keystone endangered species in the longleaf pine wiregrass ecosystem that dominates Eglin. Later this goal was broadened to cover Eglin's full spectrum of varied species and ecosystems. Much progress was made in the early 1990s, principally through the introduction of an aggressive, prescribed burn program and an expanded partnership with conservation groups and academia. In 1995, TNC and Eglin joined Naval Air Station Whiting Field, Blackwater River State Forest, Conecuh National Forest, Gulf Islands National Seashore Park, and International Paper to form the Gulf Coastal Plains Ecosystem Partnership (GCPEP) in an effort to share ecosystem management knowledge and resources.

In 2002, TNC requested that officials at Eglin AFB support TNC's efforts to secure "Florida Forever" funding to preserve an area adjacent to Eglin's northwest boundary known as the "Yellow River Ravines." The Florida Forever Program was spending some $300 million dollars annually to purchase lands and conservation easements of strategic interest across Florida. Purchasing the Yellow River Ravines would provide a critical land bridge between Eglin and Blackwater. Officials for the 46th Test Wing at Eglin agreed to support TNC's project as it would not only keep Eglin from becoming an "island of biodiversity" but also protect a critical low-level flight approach into Eglin. TNC, Eglin, and the State of Florida held a follow-up meeting where they decided to partner together with the aim of preserving open space across Northwest Florida in support of mutual strategic interests. This common goal resulted in the formation of the Northwest Florida Greenway (NWF) Partnership, which seeks to create buffer zones to allow sustainability of the military mission and preservation of biodiversity in northwest Florida. The region hosts five military installations and is one of six biodiversity hotspots in the United States.

The 2003 Bob Sikes National Defense Authorization Act provided the authority for the Secretary of Defense and/or Service Secretaries to enter into agreements with states and conservation organizations to protect existing military installations and operating areas from incompatible development or to preserve habitat in order to minimize or eliminate current or future regulatory restrictions.

Mission Requirements

The Air Armament Center (AAC), located at Eglin AFB in Florida, is the largest Air Force installation in the world. The Center develops, tests, acquires, and sustains integrated air armament and provides expeditionary combat support needed to defend the United States and its interests. In addition to its primary mission, Eglin hosts some seventy tenant military units representing the full spectrum of military test and

training missions across all Services. In 2005, the Base Realignment and Closure Commission directed the relocation of the Army's 7th Special Forces Group from Fort Bragg to Eglin, as well as the stand-up of the Joint International Training Center for the new Joint Strike Fighter (JSF). In addition, NAS Whiting Field and Tyndall AFB serve as a Pilot Training Centers. Pensacola Naval Air Station and the Naval Surface Warfare Center Panama City round out the region's military installations.

Encroachment Threat(s)

Sustaining the region's military missions requires continued access to air, land and water ranges, so that the nation's war fighters can train and test as they are expected to fight. The largest encroachment threats are (1) development that is incompatible with military operations and (2) loss of habitat and biological connectivity. Loss of open space not only threatens the military mission, but also historic public access to open space for recreation, conservation, and quality of life.

The NWF Greenway Partnership, built on the success of GCPEP, recognizes the common strategic interest of open space across diverse groups. Key military encroachment concerns include:

- noise
- tall structures
- lighting, and
- frequency spectrum.

These issues arise in the areas surrounding installations, approaches to airfields, and under low-level training routes. Of greatest concern today are encroachment pressures around the end of the runway at the airfield.

The military is also concerned that regional development will effectively turn installations into nature preserves. Urban sprawl has the potential to facilitate all of these challenges. It also poses a threat to regional environmental quality, conservation, and quality of life.

Objective(s)

In November 2003, the Governor of Florida signed a Memorandum of Partnership with TNC and the Department of Defense, stating that a swath of land and air between Eglin and the Apalachicola National Forest would be preserved in order to:

> *Promote the sustainability of the military mission in Northwest Florida to meet national defense testing, operational and training requirements; and, Protect lands that will sustain the high biodiversity of the region, link protected natural areas, preserve water resources and provide recreation; and, Strengthen the regional economy by sustaining the mission capabilities of the military in the region and enhancing recreation and tourism.*

In July 2004, another Memorandum of Agreement was executed to expand the number of partners.

Program Description

Even before the Greenway initiative was launched, Eglin AFB appreciated the need to anticipate and address encroachment issues that could impact the mission. The installation commander therefore established the Eglin AFB Encroachment Committee and the Eglin AFB Encroachment Office, since renamed the Mission Enhancement Committee (MEC). The Eglin AFB Enhancement Office manages the Program and provides staff support to the MEC.

Membership in the MEC includes representatives from the following offices:

- Legal
- Public Affairs
- Civil Engineering
- Communications
- Finance
- Safety
- Operations
- Range Management
- Plans and Programs Office
- 46th Test Wing (TW)
- 96th Air Base Wing
- Flight Operations

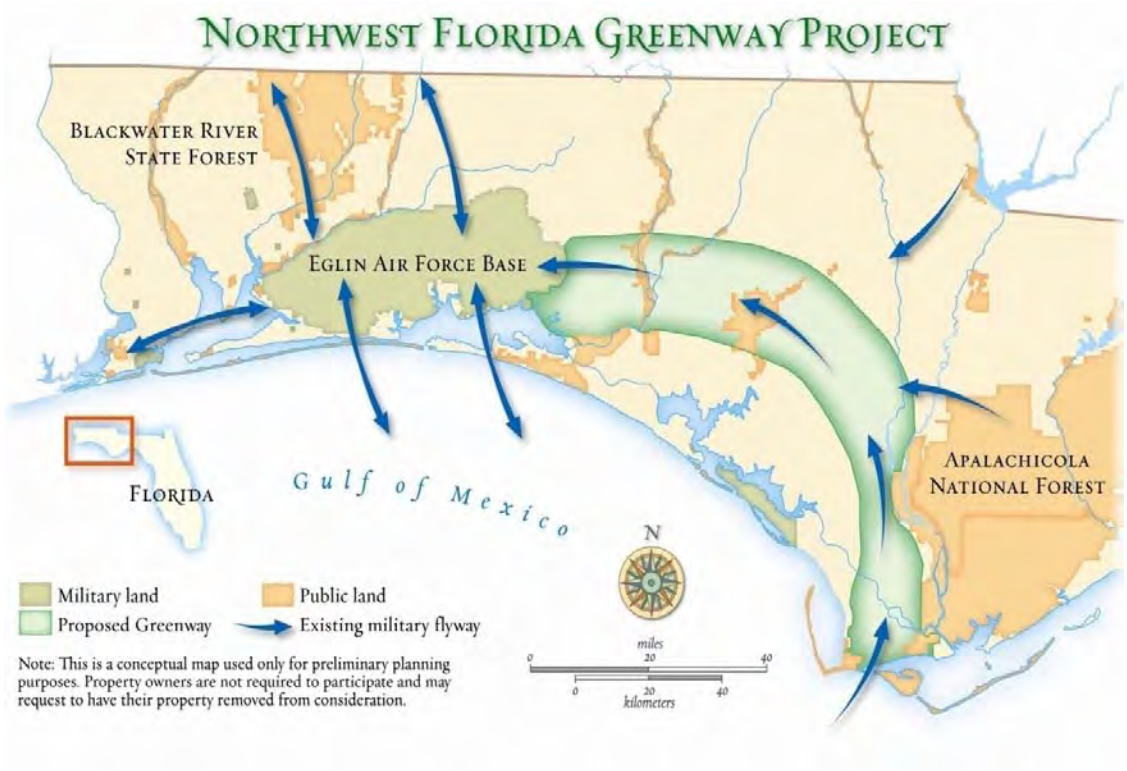
To ensure a regional approach, both Naval Air Station (NAS) Whiting Field and Hurlburt Field also provide representatives.

The 46th Test Wing Technical Advisor chairs the MEC and all requests and issues approved by the Installation Commander are vetted through the Chairs of the Installation Development Committee, The Range Development Executive Steering Committee, and the Environmental Committee.

In terms of the Greenway Partnership Initiative, in September 2002, the Governor of Florida awarded $250,000 to develop and design an execution strategy for the NWF Greenway under the leadership of an advisory board consisting of representatives from Eglin AFB, TNC, Florida Department of Environmental Protection, and The Okaloosa Economic Development Council. Subsequently, Memorandums of Agreement (MoAs) were signed with the major stakeholders, which included necessary mechanisms for the transfer of funds from the Air Force to the State of Florida. Programming for future defense funds to purchase additional conservation easements is ongoing.

Stakeholders

- Eglin AFB
- TNC
- Florida Department of Environmental Protection
- The Okaloosa Economic Development Council
- US Forest Service
- US Fish and Wildlife Service
- Florida Department of Community Affairs
- Florida Department of Agriculture and Consumer Services
- Florida Freshwater Fish and Wildlife Commission
- Northwest Florida Water Management District
- Regional Military Installations



The figure above represents the NWF Greenway Study Area, which is roughly 32 kilometres wide by 160 kilometres long. The goal of the partnership is to pursue preservation of open space and connectivity through voluntary acquisition of real property interests (fee simple and conservation easements), as well as other creative land use planning and private sector initiatives. Linking Eglin to the Apalachicola National Forest would expand the amount of land connected to over 1.2 million hectares.

The primary mission benefit from the Greenway Initiative is that Eglin's historic access to regional special use airspace is ensured, and the area is protected against urban encroachment. Another mission benefit is that wildlife biodiversity corridors near Eglin are protected, meaning that Eglin will not become an "island of biodiversity." If it were to become such an "island," the pressures of ensuring all biodiversity within Eglin's boundaries could negatively impact on Eglin's military mission.

Lessons Learned

The formation of a partnership between the Department of Defense, the State of Florida, and The Nature Conservancy provides a strong coalition for procuring open space across Northwest Florida in support of mutual strategic interests.

APPENDIX 11: CASE STUDY ON COOPERATIVE LAND USE DEVELOPMENT
R-2508 Restricted Airspace Complex, California

Background

The mission of the R-2508 Restricted Airspace Complex is test, training, evaluation and experimentation of aircraft and weapons systems. Spanning some 52,000 sq kms, California's R2508 Complex is comprised of eight counties and numerous communities. Most of those 52,000 sq kms are not controlled by the Department of Defense but, rather, are public lands controlled by the Bureau of Land Management. The R-2508 is jointly managed by the Commander, Naval Air Systems Command (NAVAIR) Weapons Division; Commander, Air Force Flight Test Center; and Commanding General, National Training Center. Each Service has a representative Sustainability Officer, and together these representatives make up the Sustainability Office, which speaks with "one voice" for R2508. To ensure consistent policy across the entire 52,000 sq km complex, the three commands coordinate communication with local jurisdictions (city, county, regional and state), and project proponents.

Military-Wind Industry Partnership at R2508

(Photo Courtesy of Range Commanders Council Sustainability Group)

The military is recognized as an economic driver for the area. Elected officials from the area counties are generally quite supportive of the military's mission and installations' needs. Of the various communities around R2508, San Bernardino and Kern counties are undergoing the most extensive growth. R2508 is facing many encroachment issues associated with that growth, making land use cooperation a major priority.

The Tehachapi area of California is one of the most productive wind resource areas in the country. Based on national green energy policy, there is increasing pressure to expand the wind generation capacity in the area from a current 700 to 4,000 megawatts using taller, more efficient turbines. As these turbines get taller, they can significantly impact the low-level (60 meters above ground level) Special Use Airspace (SUA) and Military Training Routes (MTRs) crucial to both testing and training. Turbine heights are currently nearly 120 meters and will exceed 150 meters

in the near future. Additionally, the number of turbines and location of the farms can impact critical quiet radar testing areas.

Mission Requirements

The R-2508 Range Complex includes all the airspace and associated land presently used and managed by the three principal military activities in the Upper Mojave Desert region:

- Air Force Flight Test Center, Edwards AFB
- National Training Center, Fort Irwin
- Naval Air Weapons Station China Lake

The R-2508 Complex is composed of internal restricted areas, Military Operations Areas, Air Traffic Control Assigned Airspace areas, and other special airspace. Use of these areas include bombing ranges, supersonic corridors, low altitude high speed manoeuvres, radar intercept areas, and aerial refuelling areas.

Encroachment Threat(s)

The R-2508 complex faces a number of encroachment threats, to include:

- Frequency spectrum usage
- Radar interference
- Environmental pressures on DoD lands that are a safe haven to threatened and endangered species
- Airspace usage conflicts
- Noise conflicts affecting DoD operations
- Population growth
- Commercial development
- The height of cell phone towers and wind turbines

The region is a prime wind resource area, which has resulted in increasing wind energy development that can obstruct radar signals in military operating areas. Additionally, proposals for developing wind turbines include building turbines over 120 meters in the air, which conflicts with military and commercial flight patterns.

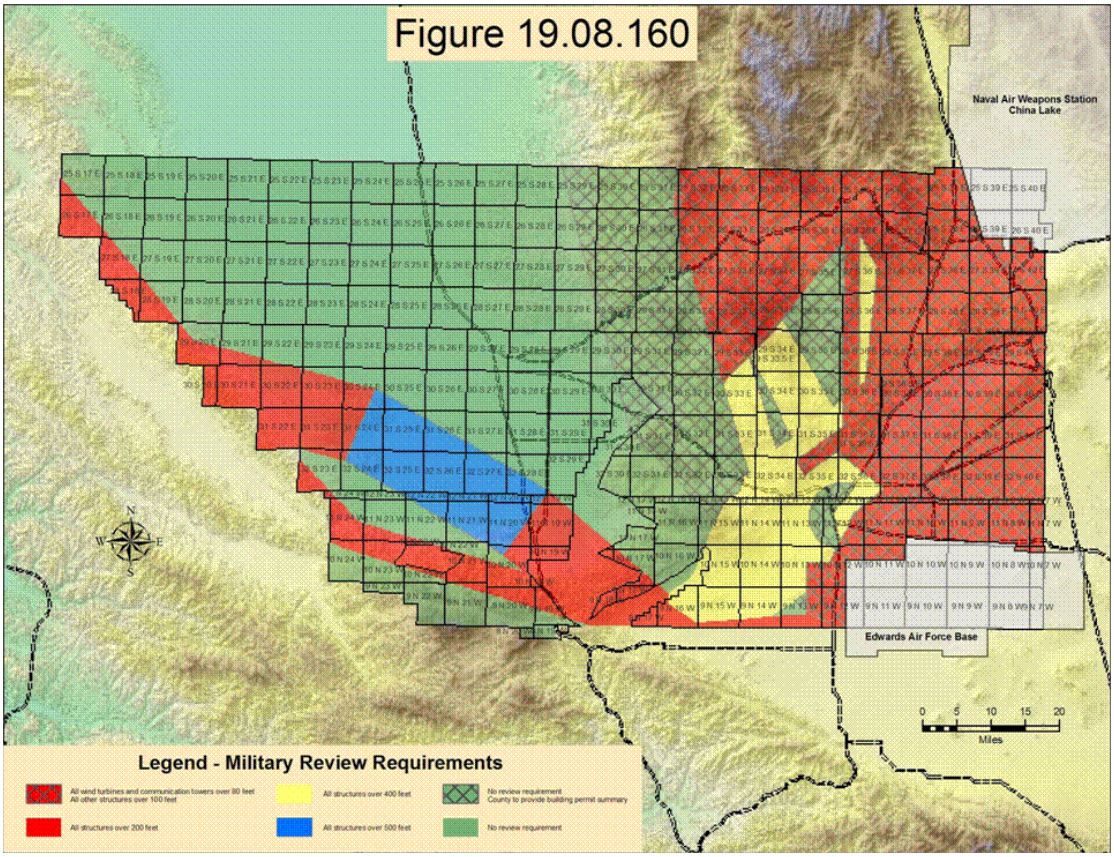
Objective(s)

The R2508 complex has emphasized partnering with surrounding communities to find common ground and thereby work toward compatible land use initiatives. These efforts focus on:

- Protecting critical operating areas
- Providing the wind energy industry with a clear understanding of military needs and impacts
- Reducing tension between both DoD and civilian stakeholders by promoting open communication
- Utilizing what is called a “Red-Yellow-Green” strategy to simplify the issues, as described in the next section
- Reducing the collective workload regionally
- Providing a model for other DoD ranges and installations, as well as communities that are host to DoD lands

Program Description

While the issues of concern to R2508 are relatively straightforward, coming up with effective solutions is far more complicated. The "one voice" structure established through the Sustainability Office and its Service representatives is a solid building block for R2508. Tension over land use between the installation and the wind energy industry is the most pressing concern, and the parties have worked together to develop a creative solution. The program initiated a dialogue among county planning agencies, DoD, and the wind energy industry whereby each realized that beyond mission requirement, mission priority needed to be conveyed. Prioritization allowed each stakeholder to ensure some boundaries are preserved, while others are available to change for joint and compatible land use and development. This prioritization is called the "Red-Yellow-Green" Strategy.



The Red-Yellow-Green Strategy (RYG) was created to reduce friction between DoD and the wind energy groups. The concept allows one to literally paint (using RYG) a picture of critical Operating Areas and share them with decision makers in order to avoid unintended consequences of decisions that could adversely affect the R2508 mission. A DoD group composed of operators, airspace experts, and sustainability professionals was formed to define those areas the wind industry could develop and to identify various height limits that would not impact the testing and training mission. All analyses were Geographic Information System (GIS)-based.

The RYG Strategy is a method of analyzing and segmenting the base areas into different levels of mission importance. For example, red indicates areas of extreme concern to the military. Yellow applies to areas of slightly less concern. Green indicates areas where the military does not expect new construction to adversely impact its test and training activities. There is also a blue area that corresponds with a major military flight corridor where new structures above 500 feet could endanger military operations. Each colour has different development requirements associated with it. Putting areas of concern into a clear and discernable map opens the door for clear communication and tangible evidence of possible solutions.

Today, civilian, DoD, and NGO agencies meet on a proactive basis to discuss land use, updates to planning initiatives, and mission concerns. They are able to utilize the RYG methodology to do so effectively. Additionally, Kern County planning officials developed a brochure explaining the military mission, local activities, and how to achieve compatibility illustrating the impact of credible, consistent and clear dialogue regarding compatible land use.

Following the lead of the military-wind partnership, Kern County adopted its own RYG strategy as part of planning to help guide development and management policies. Out of the RYG coordination process grew a regional wind working group, which includes representatives such as regional environmental coordinators, Federal Aviation Administration military representatives, and the various DoD operators (naval air forces, marines). This group has been so successful, they recently expanded the scope of their efforts to encompass all forms of renewable energy development.

The approach to partnership and, ultimately, sustainability at R2508 also includes execution of a Joint Land Use Study (JLUS). The JLUS format creates a formal structure for cooperation on land use issues between the military and its outside-the-fence neighbours. The resulting recommendations are intended to reduce potential conflicts while accommodating growth, sustaining the economic health of the region, and protecting public health and safety. Notably, the R2508 Complex is one of the most comprehensive projects in the JLUS program, allowing SUAs and MTRs crucial to testing and training to be protected from encroachment.

Stakeholders

- Inyo County, California officials and citizens from the counties of: Inyo, Kern, San Bernardino, Tulare, Fresno, Los Angeles, and Esmeralda.
- Major communities beneath the R-2508 Complex
- Department of Defense
- Bureau of Land Management
- National Park Service
- Sequoia and Inyo National Forests
- Death Valley, Sequoia, and Kings Canyon National Parks
- Native American land use areas including the Tule River Indian Reservation and three Indian reservations at Big Pine, Lone Pine, and Fort Independence
- State-owned areas, including Red Rock Canyon State Park and the Tomo Kahini Project
- The wind industry

Lessons Learned

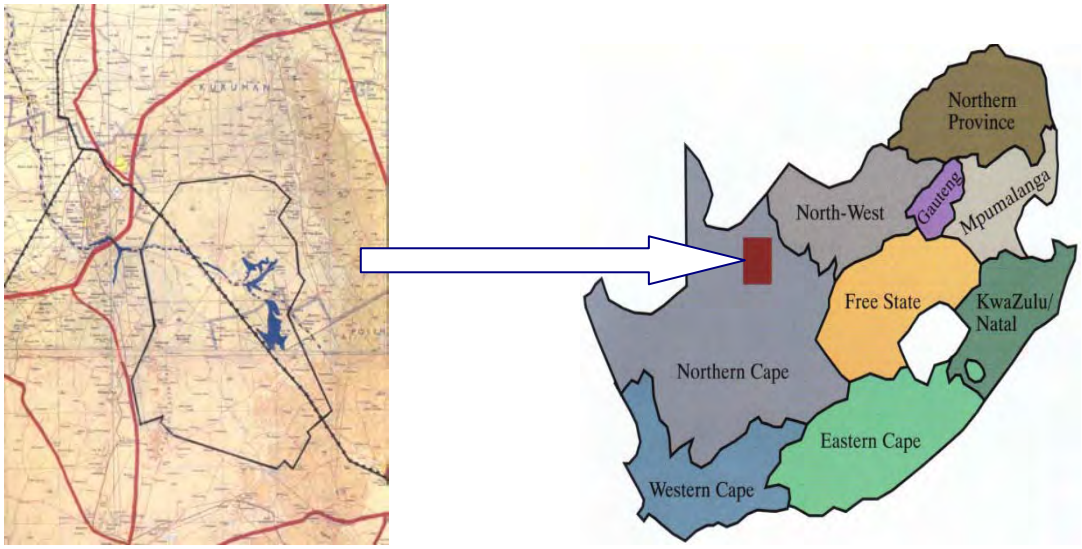
The ability for R2508 to develop and implement an effective program for long-term planning provides several lessons about communication and information exchange:

- The wind energy industry and military generated a dialogue, and the RYG Strategy would have been impossible without it.
- Creating a liaison position between military and the surrounding community institutionalised the partnership and encourages cooperation.
- The Kern County Planning Department's development of a brochure on compatibility with the military illustrates the potential benefits of positive communication.
- Using GIS capability helped make the most accurate projection of what future land use issues will look like. It is essential to be able to share this GIS data with industry, project proponents, and land use jurisdictions.

APPENDIX 12: CASE STUDY ON INVASIVE VEGETATION AND BUSH ENCROACHMENT
South African Army Combat Training Centre

Background

Situated at Lohatlha in the Northern Cape Province, the South African Army Battle School was founded in 1978. It later became known as the South African Army Combat Training Centre (SAACTC). SAACTC is one of only ten institutions in the world that provide exclusive and permanent facilities for landward warfare training. Only two of these institutions are located in the Southern hemisphere, of which SAACTC is the largest, comprising 158,000 hectares. Other similar institutions are situated in the Mojave Desert in the United States of America, the Negev Desert in Israel, as well as in Canada, France, India, Australia and Pakistan. The map on the right below indicates SAACTC's location within South Africa, while the map on the left is an overview of the SAACTC itself.



Mission Requirements

The development of SAACTC originated due to a need by the Department of Defense for a military training facility where conventional and integrated training at divisional level could be executed. Combined practical training is a requisite for all armies worldwide. The development of such a training facility presented the South African government with the ability to ensure a well-trained South African National Defence Force (SANDF).

The training facility was developed and adapted to accommodate specific requirements of different army capabilities in order to successfully conduct modern mobile combat exercises. The key to these successes lies in the facilities, technology, and quality of training.

Encroachment Threats

There are a number of encroachment threats at SAACTC, such as surrounding mining activities, illegal grazing and bush encroachment. The training area was initially designed with a buffer area inside the outer perimeter, to limit encroachment threats. However, arguably the most challenging encroachment pressure at the facility has been the management and counteraction of the blackthorn. Blackthorn *(Acacia mellifera)* is a woody, indigenous, very thorny form of vegetation, ranging in size from that of a shrub to a small tree. It has a rounded or spreading flat crown, and grows in savannah, semi-desert areas, and often on Kalahari sand. The trees form impenetrable thickets in overgrazed or utilized areas.

As a result of continuous combat training concentrated on more or less the same areas at SAACTC, blackthorn encroaches on the training areas, forming dense thickets and restricting movement of foot soldiers. With each new thicket formed, valuable training area is lost.

Black thorn tree

Black thorn dense thicket

Objective(s)

Management intervention concentrates on invasive plant eradication with an emphasis on controlling bush encroachment.

Program Description

The Department of Water Affairs and Forestry (DWAF) manages different programs, for instance: Working for Water, Working for Wetlands, Working for Fire, etc., which seek to repair and maintain natural resources. The Working for Water program seeks to repair natural resources through the control and prevention of invasive alien plants that harbor critical ecological and social ramifications. The program's interventions are aimed at enhancing water security, biological diversity, the ecological functioning of natural systems, the productive use of land, and reducing the intensity of fires and floods. The program is labor-intensive, offering jobs to the unemployed, and integrates its efforts with social-development initiatives. This approach is having a marked influence on employment opportunities, training and capacity building, community empowerment and life-skill enhancement, thereby resulting in the creation of sustainable employment opportunities.

The DWAF has incorporated military veterans into its Working for Water program under the name Operation Vuselela, specifically to function on military training areas. Operation Vuselela was aimed initially only at the control of alien invasive plants on military training areas, but it has since been expanded to include action against indigenous invasive plants in order to combat bush encroachment.

One of the projects under the Operation Vuselela program has been an attempt to control the blackthorn's encroachment and thereby ensure maximum possible use of the SAACTC for its important training purposes.

Stakeholders

- South African National Defence Force (SANDF)
- Operation Vuselela (Military Veterans and a civilian implementing agency)
- Department of Water Affairs and Forestry (Working for Water program)

Lessons Learned and Next Steps

Because of safety issues, specific exercises can be conducted only in specific training areas. This long-term intensive use results in the over utilization of certain portions of the estate. The customary option of allowing heavily used areas to rest (or lie fallow) for intervals of two or three years are precluded by the predominantly arid conditions. Such arid conditions mean that passive recovery of vegetation takes much longer, sometimes as much as 20-40 years. Such an approach would in itself represent "encroachment" because large tracts of land could not be used for military training, thereby markedly impacting mission sustainability.

A tandem approach involving active control of bush encroachment and restoration of disturbed or degraded habitat is necessary to ensure mission sustainability.

As part of the Working for Water program, Operation Vuselela represents a short-term solution, comprising an initial clearing of invaders and two successive follow up

operations on the area, after which responsibility falls to the SANDF to ensure that the cleared land is maintained. This will require dedicated resources and capacity in the medium-term.

Immediate research is necessary to focus on why the natural disturbance regime is distorted, thus resulting in aggressive invasion by the blackthorn. Solutions are expected to guide longer-term measures of habitat restoration, rehabilitation or patterns of land use that would resist blackthorn invasion on a more natural and sustainable basis.

APPENDIX 13: CASE STUDY ON ECOSYSTEM MANAGEMENT
US Marine Corps Base Camp Pendleton

Background

Camp Pendleton was one of the first US military bases to face severe encroachment issues both on and off the installation. Because of its diligent management of species on the base, there were many areas off limits for training because they had been designated as critical habitat areas under US federal law. At the same time, development on the west coast of the United States began to close in on Camp Pendleton and create noise complaints, light pollution, etc.

The Camp Pendleton Integrated Natural Resources Management Plan (INRMP) provides the foundation for ecosystem management goals and objectives to direct management and stewardship of the lands entrusted to the Marine Corps to use. One important ecosystem on the base comprises the unique estuaries and beaches and associated dune habitat. Camp Pendleton's undeveloped shoreline represents a rare resource along the otherwise heavily developed California coastline. The base successfully implements a multi-faceted, interdisciplinary approach to managing these unique and sensitive resources while also providing training capabilities to the Marines. The Wildlife Management and Land Management offices cooperatively address habitat management issues to ensure that suitable nesting habitat is available for two species of federally listed birds (least terns and snowy plovers) while preserving the unique dune ecosystem that is imperilled off-base due to development. Because of this adaptive program, Camp Pendleton has significant populations of two highly imperilled dune plants (Brand's star phacelia and red sand verbena) and the largest tern and plover colonies in the region.

Camp Pendleton manages its natural resources using a series of programmatic instructions that protect the long-term viability of the estuaries and beaches, while supporting the training mission. As part of these programmatic instructions, the base

has written an Estuary and Beach Conservation Plan whose primary goals include (1) maintaining healthy ecosystem function, (2) restoring the dune systems, (3) eliminating exotics, and (4) promoting healthy growth of western snowy plover (*Charadrius alexandrius nivosus*) and California least tern (*Sternula antillarum browni*) populations through predator management and maintaining the integrity of essential habitat.

Mission Requirements

Marine Corps Base Camp Pendleton is located in Northern San Diego County, California. The base mission is to operate an amphibious training base that promotes the combat readiness of operating forces by providing facilities (including a unique mixture of geographic terrain), services, and support responsive to the needs of Marines, Sailors, and their families.

Encroachment Threat(s)

Encroachment threats that increase the conservation value of natural resources on Camp Pendleton and diminish operational flexibility of base lands include:

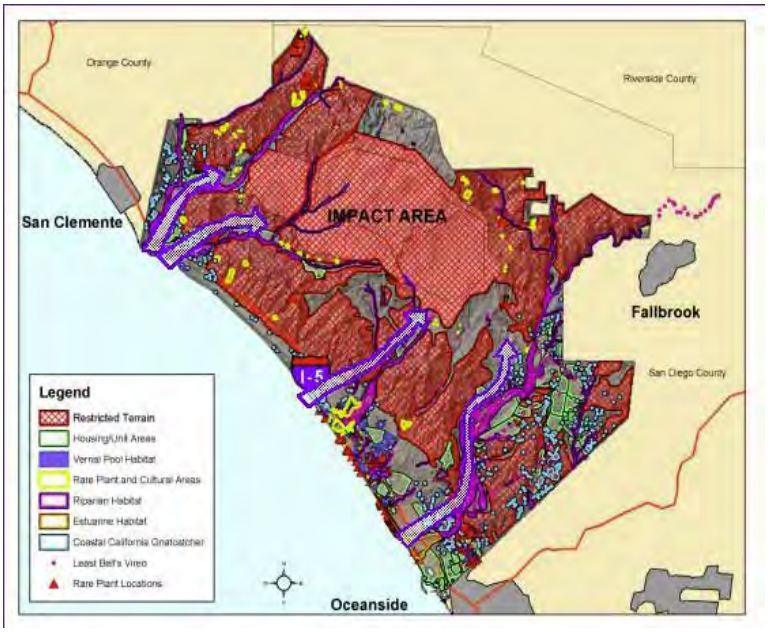
- Depletion of off-base habitats in Southern California
- Environmental regulatory pressures on DoD lands to maintain safe haven to multiple threatened and endangered species
- Increased population, which is contributing to increased runoff, sediment, and noise in and around important habitats.

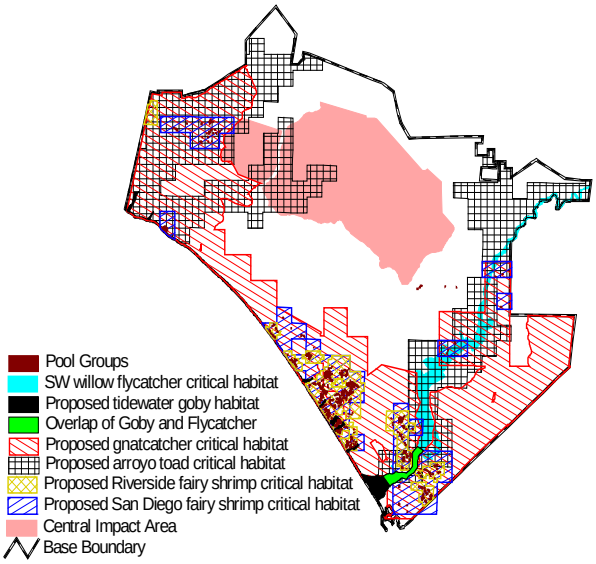
The maps on the following page illustrate some of these challenges. The first map shows the importance of beach access for training, along with some of the impediment to that access, such as a major highway running through the area (I-5) and habitats. It also shows the main impact area, which is restricted terrain. The second map emphasizes the scope of habitat designations for various species and fauna, with the main impact area (restricted terrain) highlighted in pink.

Objective(s)

Like many military installations in the United States and elsewhere, the community around Camp Pendleton has grown, making the land in and around the base an increasingly scarce and valuable resource. To deal effectively with such issues and maintain their collective mission, military bases must emphasize conservation and developing compatible solutions that enhance training resources as well as natural resources simultaneously. Working together with NGOs, universities, and other local experts, Camp Pendleton has accomplished both of these as it has remained focused on the following objectives:

- Protecting critical operating areas
- Maintaining ecologically functional coastal dune habitat
- Enhancing the snowy plover and California least tern populations
- Controlling exotic and invasive species
- Improving outreach and education for beach goers and the local community at large





Camp Pendleton, above, showing training requirements and impacts; below, effects of habitat designations on Pendleton

Program Description

External Outreach and Cooperation

The Marine Corps instituted a Community Plans and Liaison Office to manage the off-base issues. One of the activities which helped to preserve open space around the installation was the formation of a Conservation Forum, which was made up of representatives from conservation NGOs, the Marine Corps, and local governments. This group went through a period of exchange of information and trust building, but the result was a better land use planning process in the entire region, with military

issues being brought to the table when decisions were being made. It also enabled the Marine Corps to form partnerships with NGOs who have subsequently brought matching funds to projects that help protect the mission of the installation.

The value of this work became clear to all concerned when a developer was considering a project, which was located many kilometres from the base but was under an area where several critical low-level flight training routes intersected. A housing development at that site would have been a severe issue not only for the Marines, but also for the Navy and Air Force. By knowing in advance about the developer's plans and being able to work with NGO partners, much of the area has now been preserved as a conservation area and the low-level flight routes are not endangered.

The following subsections detail some of the components of ecosystem management at Camp Pendleton and its environs, and how working with others has helped make this management so successful.

Cooperation in Habitat Management

Due to the unique beach/dune systems on Camp Pendleton, the base faces a difficult challenge of managing habitat to meet the needs of all sensitive resources found within them. As part of the *Coastal Dunes Vegetation Restoration and Management Plan* written for base in 1996 by The Nature Conservancy, the base conducts plant inventories to identify and map rare plant species on the dunes as well as areas needing exotic plant control. Dune mapping efforts in 2007 indicated that 92% of the cover on the dunes was native vegetation and that the base dunes had significant populations of red sand verbena, Nuttall's lotus, Brand's star phaceila, and coast woolly heads; all species listed on the California Native Plant Society's sensitive plant list. In conflict with preserving dune habitat, western snowy plovers and California least terns prefer open beach habitat with limited vegetation (~5-10% vegetation cover). This requires mechanical manipulation of the habitat to remove vegetation and provide suitable nesting habitat. Due to development that has eliminated off-base dune habitat for these birds, it is imperative that the base preserves these unique dunes and provide suitable nesting habitat for them. To accommodate the needs of both TES and rare dune plants, the base conducts a program that balances vegetation management to ~15-20% cover and actively protects rare plants and dune topography within the same management area.

Exotics Control

Exotic plant removal efforts target areas with high densities of invasive species. Species removed include wild radish, sea rocket, Bermuda buttercup, iceplant, and Arundo. Between 2003 and 2007, exotics control and biomass removal treated approximately 23 hectares of dune habitat. Results indicate iceplant cover, one of the most invasive species, has declined 97% from 1.45 hectares in 1996 to 0.04 hectares in 2007. Combining exotics control with outreach, in November of 2007, the base invited a local Sierra Club chapter to participate in an "iceplant pull." This event successfully educated the public about the threat of exotic vegetation and removed ~4000 pounds of iceplant from the base dunes.

In addition to exotic plant control, the base also conducts research on how to prevent non-native Argentine ants (*Linepithema humile*) from invading the beaches. Argentine ants can cause reproductive failure in birds by preying on young nestlings. On-going assessments indicate Argentine ants have invaded base beaches by using woody debris washed ashore for nesting structures. Ant populations have grown so large that the threat to tern and plover chicks is high. In an effort to reduce the threat of ants, the base collaborates with researchers from the University of California-Riverside to find baiting and control techniques to reduce ant densities. In addition, habitat management efforts include intensive wood debris removal to minimize potential ant nest sites. In 2007 and 2008, researchers successfully reduced the number of ants using an innovative virtual bait system.

Invasive Plant Control

Camp Pendleton's Land Management office implements an aggressive and effective invasive plant management program in riparian and upland ecosystems. The multimillion-dollar program is managed so that it will be cost effective and goal oriented, providing benefits to both ecosystem management goals and training mission. The program was conceived using stakeholder input and supports technology transfer off-site. Invasive control uses adaptive management techniques focused on effective and cost efficient treatment and monitoring methods. Base-wide weed inventories are conducted and incorporated into a GIS database. Treatment strategies are based on cost of treatment, level of infestation, impairment to training, and impairment to ecosystem health. Treatment strategies and GIS technologies are communicated to stakeholders and the public through pamphlets, press coverage, and presentations at conferences.

In riparian systems, *Arundo*, tamarisk, and perennial pepperweed convert species-rich willow dominated woodlands into non-native monogamous stands of little value to native wildlife. In addition, *Arundo* impairs military training due to its extensive and impenetrable dense growth. Approximately 364 hectares of *Arundo* have been treated within base watersheds. In 2008, 40 hectares of *Arundo* were treated within the Santa Margarita River using a new removal technique that mulches the dead Arundo on site. This new technique is expected to reduce long-term, re-treatment efforts and result in quicker recovery of the habitat compared to previous methods, which required at least five years of re-treatment. Approximately 40 hectares of *Arundo* in the lower Santa Margarita remain for future treatment. *Arundo* treatment areas serve as a "habitat bank" from which credits are deducted to offset permanent riparian impacts from training or infrastructure projects as deemed necessary by the U.S. Fish and Wildlife Service and Army Corps of Engineers.

Upland ecosystems such as native grasslands and coastal sage scrub have been invaded by the noxious artichoke thistle and fennel, which impair both military training and ecosystem function. In 2007 and 2008, approximately 3,312 hectares of artichoke thistle were treated with only trace densities remaining. Additionally, the base treated 339 hectares of fennel-infested coastal sage scrub and native grasslands. The base also has an upland emergency weed treatment program that quickly responds to new invasive weed threats and continues to treat smaller isolated weed patches before they become large-scale infestations.

Outreach within the Military Community

An important component of any conservation program is natural resource awareness. Because of the importance of the beach training areas to the Marine Corps and the enjoyment people get from visiting beaches, the base has taken a multi-pronged approach to educating both Marine units and the public about the resources on the beaches and how to help protect them. The base has created a PowerPoint presentation and a brochure that highlight the beach resources and training regulations that protect them. The PowerPoint presentation is given annually to inform units, which regularly train on the beaches, about the sensitive resources and the regulations protecting them. The brochure is also distributed to units through environmental briefs.

The base has a recreation beach and campground adjacent to the tern and plover management areas. Patrons of the recreation area often wander up the beach into the sensitive breeding colonies. In 2008, in an effort to reduce beach patron disturbance, the base created a brochure that explains the function and importance of estuaries and beach/dune habitats and how people using the recreation areas on base could help protect sensitive resources. Additionally, in 2008, the base funded the fabrication of a large education kiosk. Installed at the Del Mar Beach, this kiosk highlights the function of estuaries, educates about tern and plovers, and discusses how the base is balancing training mission support and resource conservation.

Camp Pendleton beaches are important to the Marine Corps mission to continue the tradition of operating one of the largest amphibious training bases in the Marine Corps. However, because of the limited amount of undeveloped beach habitat in southern California, the base beaches are unique and critical to the persistence of several species. Only through the multi-disciplined approach to ecosystem management can the base continue its success with both training support and resource conservation.

Stakeholders

- Marine Corps Base Camp Pendleton
- US Fish and Wildlife Serve
- California Department of Fish and Game
- National Marine Fisheries Service
- San Onofre State Park management and users
- The Nature Conservancy

Lessons Learned

The ability for Camp Pendleton to develop and implement an effective ecosystem management program for long-term planning provides several lessons about communication and information exchange:

- *Technology Exchange* – Long-term, working relationships take time to develop, but they are instrumental to carry out the kind of productive discussions that enable progress. By working with the US Fish and Wildlife Service, The Nature Conservancy, and other local experts, Camp Pendleton

has been able to conserve and enhance sensitive species and habitats, and increase training space.

- *Dedicated Community Partnership Personnel* – Creating a liaison position between the military and the surrounding community institutionalizes the partnership, encourages cooperation, and enables more efficient information exchange.
- *Outreach* – It is only possible to accomplish effective conservation and restoration while preserving both the DoD mission and open recreation for the public when outreach and education has been implemented.
- *Education*– While communicating to the public is paramount, arguably even more crucial is the education of internal stakeholders such as the installation environmental staff, and most importantly, the soldiers conducting the operations that require access to sensitive and valuable natural resources such as dunes, coastal waters, and other habitats.

APPENDIX 14: CASE STUDY ON CO-USE AS A SUSTAINABLE DEVELOPMENT SOLUTION
Piennaarsrivier (Ditholo) Training Area, Gauteng Province, South Africa

Background

In 1971, the South African Government purchased 3,000 hectares of land located 50 kilometres to the north of the city of Pretoria (in Gauteng Province), which the Department of Water Affairs then used for irrigation. By 1976, the South African Air Force was also using the land, mainly to train patrol dogs. In 1977, it became known as the Pienaarsrivier Training Area (PTA),[17] and it began to be used more extensively for military training, although large parts were still leased out for emergency grazing purposes until 1987. Within PTA, a nature reserve was established in 1993, known as Ditholo.

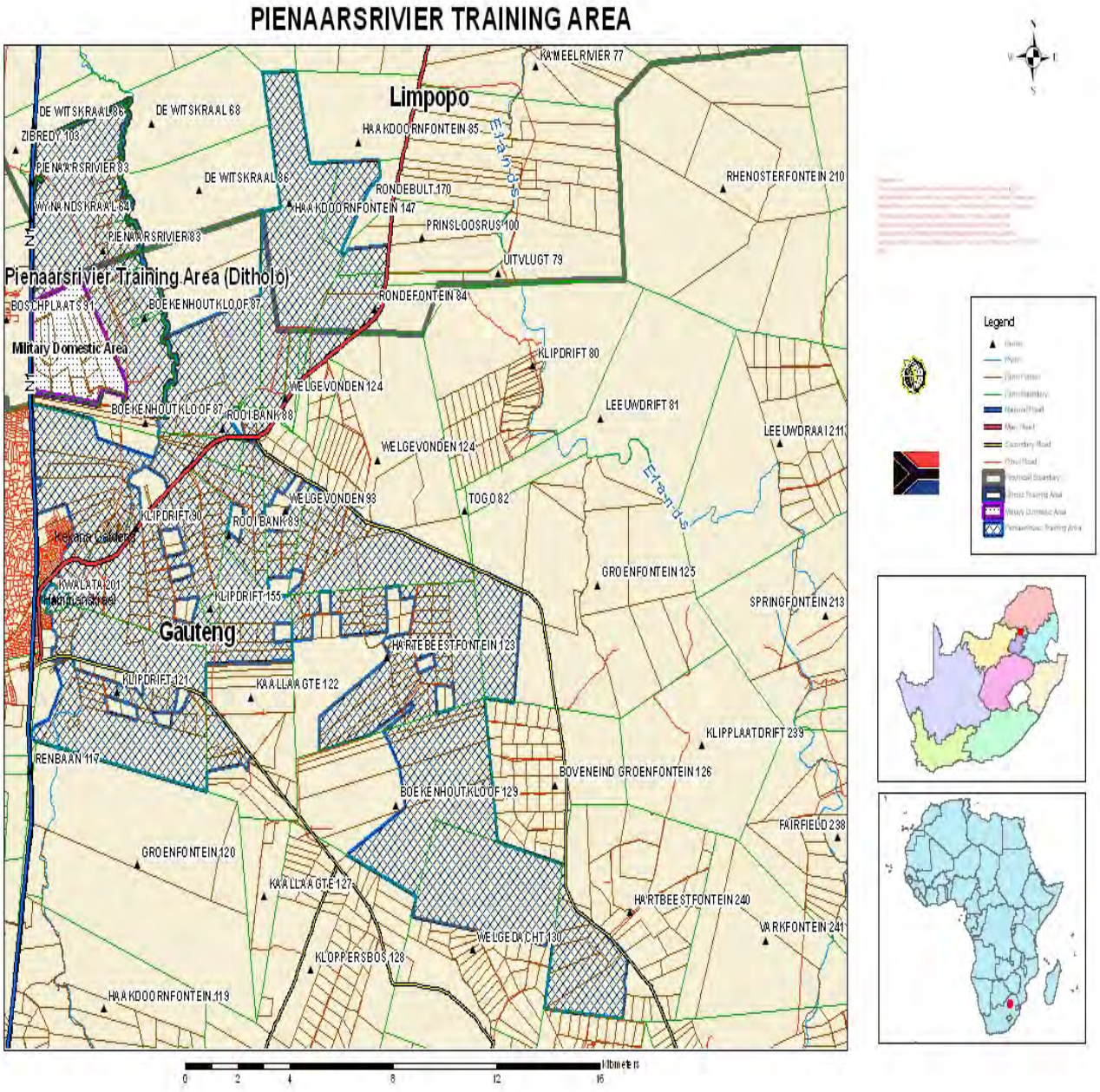
For some time, the Air Force used this facility largely as a training centre for ground-to-air defence. Although the Air Force's 250 Air Defence Artillery Group was stationed here until its closure in the early 1990s, no live fire ever took place at PTA. The facility also included an area with a surrounding safety zone that was used as a drop zone for airborne tactical freight delivery exercises until this, too, was ceased as a result of increased civil aviation activities and development in the region, which imposed restrictions on this high-risk mode of military flying.

The military land has since been used for more diverse, low-intensity military training purposes. The Air Force Gymnasium, for instance, deployed small detachments here for periods rarely exceeding three weeks during which time service members and recruits would embark on route marches and field craft training. PTA's unpaved runway serves both the domestic defence industry, which uses the site as ideal testing grounds for unmanned aerial vehicle development, and the South African Air Force, which uses it as a convenient forward airfield for training flights mainly by Pretoria-based helicopter and air transport squadrons. Following a resolution in 2007 to optimise Air Force use of PTA in order to relieve mounting accommodation pressure on military facilities in Pretoria, the Military Aviation Rescue & Fire Fighting School has also relocated training operations to this facility.

Mission requirements

The long-term sustainability of PTA as a versatile facility for diverse modes of force preparation is of strategic importance to the Air Force. Its strategic significance is all the greater because of PTA's close proximity to Pretoria where adequate military facilities are at a premium. Sustaining local training infrastructure in terms of military accommodation, briefing, lecturing and conferencing facilities, as well as forward airfield and small-scale mobile deployment possibilities all remain paramount.

[17] Its name is derived from the Afrikaans for Pienaar's River, which skirts the eastern boundary of the land.



Prepared by the Directorate Geospatial Information, South African Defence Intelligence Division.

The Pienaarsrivier Training Area (Ditholo), the area in the northwestern corner of the map, straddles the provincial borders of Gauteng in the south and Limpopo to the north. The National Highway bounds the perimeter on the west of the military land, while meanders of the Pienaar's river form the eastern boundary. A rectangular portion of unshaded farmland skirts the southern boundary of the military land. A large portion of the Pienaarsrivier Training Area (Ditholo) traditionally reserved for low-intensity military use, now constitutes part of the Dinokeng Game Reserve conservancy lands, the greater area shaded yellow. The area shaded in light blue has been fenced off from the conservancy lands for exclusive, more intensive military domestic use."

The retention of optimum levels of biodiversity at PTA already lends intrinsic natural resilience to the asset as a whole. Any significant loss or distortion of local biodiversity – due to poor land management practices (or any other reason) – under prevailing dry climatic conditions would inevitably lead to deterioration of the land. Such deterioration could translate into increased soil erosion, susceptibility to flash flooding, bush encroachment and wildfire hazard – all of which would impose severe military land use restrictions and costly, labour-intensive, land restoration interventions. The robust natural infrastructure adds to the physical characteristics of this facility, which provide training realism as well as safe and cost-effective operations support.

Encroachment Threats

The following encroachment pressures threaten the sustainability of PTA:

- **Residential settlement and urban sprawl.** Approximately 300,000 people reside in the Hammanskraal area (pictured below), which extends virtually to the western and southern boundaries of the PTA. This population is constantly increasing due to natural growth as well as migration into the area. In all, this represents 10% of the total population of metropolitan Pretoria. Hammanskraal serves a large, albeit rural, community of approximately 51,600 households. The people living in the area can be considered poor, with a low skills base, which gives rise to a prevailing high unemployment rate. The permanency of their location is, however, confirmed by the high percentage of formal brick structures found in the area as well as the fact that the majority of these houses are owned and fully paid off. The provision of services – especially water and sanitation – demanded the attention of the metropolitan authorities. The Tshwane Metropolitan Municipality in Pretoria commissioned a regional spatial development framework for this area in 2004. While the implementation of this initiative is expected to curtail unplanned growth of the settlement thereby diminishing this fact or as an encroachment

pressure on the adjacent military estate, it will not in itself immediately resolve enduring unemployment and poverty in this community. These socio-

economic conditions foster rampant crime, which impacts PTA in the form of pilfering of public property such as fence lines and biomass, particularly in instances where civilians trespass on military land to collect firewood or poach wildlife. Organised crime in the area has developed to the extent that there are syndicates of wildlife poaching operations, which frequently strike game populations on private as well as military lands, posing undue security risks to service members. The fact that service members are not authorised to persecute offenders on site without the assistance of the South African Police Service renders the facility vulnerable to the onslaught of poachers.

- **Transportation and communication lines.** The N1 national highway from Pretoria adjoins the western boundary of PTA on its northerly trajectory to the border with Zimbabwe. While the road forms a permanent barrier between military land and the Hammanskraal settlement, the Minister of Transport has identified this section of highway in particular as one of twelve road accident "hotspots" in the country. The high incidence of vehicle accidents along this stretch of highway is ascribed to speeding, drunk driving, overloading and unroadworthy vehicles. These incidents pose a constant hazard to the integrity of the military property when vehicles collide with or breach the perimeter fence, spill shipments of noxious substances or burst into flames thereby causing wildfires in the adjacent habitat.

- **Rare or endangered habitat.** Part of PTA was legally proclaimed a provincial nature reserve in 1993 because of the presence of Kalahari Thornveld Savannah here, the most easterly location of this rare habitat in the region. The newly established nature reserve was named Ditholo, which in the local Setswana language refers to the abundance of kudu (pictured below), a species of antelope that is closely associated with this landscape. The habitat, which occurs in patches throughout the estate, is characterised by vegetation particularly favoured by herbivores. These areas are therefore susceptible to overgrazing or deterioration due to ill-timed burning as well as trampling from excessive wildlife or human traffic. At least two red data tree species, *Boscia foetida subsp minima* and *Brachystelma discoideum* are associated with this habitat. The military avoids these areas as much as possible when using the property, which limits flexibility for training.

- **Invasive species.** Habitat disturbance linked to historic agricultural land uses and prolonged exclusion of natural fires on the estate stimulated the proliferation of a dominant woody component of mostly Sicklebush (*Dichrostachys cinerea*), pictured above, in what would otherwise have been open bushveld habitat – a popular term for the local Savannah vegetation. The resulting bush encroachment renders areas on the estate inaccessible for purposes of military training or management while displacing valuable pasture, browsing and access to wildlife. Bush encroachment further escalates the danger of wildfires and ecological damage. Non-native invasive plant species mainly of the *Cactaceae*, *Fabaceae* and *Asteraceae* also threaten the natural habitat at PTA. While non-native invasive elements, if left unchecked, pose hazards similar to those of native invaders, they post an additional threat in their uncanny ability to sequester resources, out-compete, and displace indigenous species or their habitat. This brings about distortions in local biodiversity and associated natural infrastructure, which in turn, threatens not only the survival of rare indigenous habitat, but also the long-term sustainability of PTA as a strategic military training facility.

In addition to these encroachment pressures, PTA's sustainability is further challenged by the nature of its soils. The soils at PTA include:

- shallow, red Hutton sands on the weathered Ecca Shales of the Karoo Supergroup;
- coarse, sandy and shallow soils of the acid-phase Lebowa Granites associated with the Bushveld Igneous Complex; and
- black turf or gumbo soils in the low lying riparian zone of the Pienaar's River.

"Black gumbo" is a generic term for highly elastic, clay-based soils. When it rains, the clay in these soils absorbs the moisture and swells. When these soils dry out, the clay loses moisture and shrinks, and not only does the soil move horizontally, it can also move vertically. This is referred to as "heaving," and is a continual process that occurs throughout the year. While these soils are usually ideal for raising crops, they pose a significant hazard to the foundations of buildings and other infrastructure.

Although most buildings at PTA are situated on more stable substrate, less prone to heaving, some of the unpaved roads, particularly in low lying areas on the property nearest the river, transect these heaving soils where this represents a hazard to vehicular passage and general access to large parts of the estate during the months of the summer monsoon.

Current wildlife and habitat at PTA

Objectives

To address these contemporary pressures of encroachment, the Department of Defence therefore adopted the following multi-stakeholder-driven programme objectives in 2007:

- Make a Defence contribution to socio-economic development in the under-developed outreaches of northeastern Gauteng Province.
- Secure a formal mandate for the Department of Defence to participate in the Dinokeng Game Reserve Blue IQ initiative of the Gauteng Provincial Government, which is described in the next section.
- Contribute critical area and its ecological carrying capacity for the re-introduction of large herbivores and apex predators by incorporating PTA (Ditholo) into the Dinokeng Game Reserve.
- Guarantee primary military use of PTA (Ditholo) as a strategic asset to the Air Force.
- Isolate the PTA's cantonment area from joint-use biodiversity conservation core areas.
- Ensure sustainability within the PTA's cantonment area through recognized best practices of military integrated environmental management.
- Use efforts to conserve local biodiversity to help the long-term sustainability of PTA (Ditholo).

- Institute formal mechanisms for stakeholder coordination in the overall management of the joint-use biodiversity conservation efforts.

Program description

Although the smallest of the nine provinces, Gauteng is the powerhouse of South Africa and the heart of its commercial, business and industrial sectors. The province is not only an important contributor to the country's gross domestic product but also plays a critical role in the regional Southern African Development Community (SADC) and African economies. This province alone generates about 9% and 25% respectively of the total African continent and SADC gross national products. The three most important sectors contributing to this revenue are financial and business services, logistics and communications, and mining. The growth and development plans for the province are underpinned by so-called Blue IQ projects.[18] These consist of eleven mega projects in economic infrastructure development in the areas of technology, tourism, transport and high-value-added manufacturing. The aim is to attract some R100 billion (approximately $14 billion) in direct investment over a period of ten years.

Among the provincial tourism-driven Blue IQ projects with roots dating back as early as 1994, is the Dinokeng Big 5 Game Reserve situated in the northeastern quadrant of Gauteng Province. The name "Dinokeng" is aptly derived from the Setswana meaning "place of rivers" to signify its location in a delta formed by the Pienaar's, Eland's and Boekenhoutskloof rivers, while "Big 5" of course, refers to the five flagship African wildlife species for eco-tourism: lion, Cape buffalo, rhinoceros, leopard and African elephant. Of these five, those that are not currently found in this area are to be gradually reintroduced here as a prime drawing card for tourists. This is fundamental to the objective of the whole Dinokeng Game Reserve initiative, which aims to establish a premier tourism destination close to metropolitan Gauteng and, in so doing, to promote economic growth, job creation and social improvement through conserving and developing the historical, natural and cultural heritage of the area.

The greater Dinokeng project area covers approximately 281,000 hectares of rural land, incorporating a significant expanse of the open bushveld north of Pretoria. Dinokeng is modeled on the conservancy blueprint whereby the entire reserve is made up of individually owned properties. While much of the land was historically used for farming, it has over the last decade been slowly converted into land uses more suited to eco-tourism. With the cooperation of the local communities and government, the area has been developed into a functioning game reserve. Although Dinokeng was financially supported and developed as a provincial government Blue IQ Project, a local landowners' association manages the initiative through a registered non-profit enterprise.

Dinokeng is therefore not exclusively a tourism destination or protected area, but rather a social and economic core that fosters sustainable development throughout the region. The project has significant benefits for local communities and

[18] Government Communication & Information System, *South African Yearbook 2005/06*, thirteenth edition 19-20.

contributes toward the overall improvement of the quality of life of disadvantaged rural communities and individuals resident in the largely under-developed outreaches of northeastern Gauteng.

By April 2007, the expansion of the Dinokeng Game Reserve had progressed to the eastern and southern boundaries of the Air Force's PTA (Ditholo); at that point, the Department of Defence granted ministerial approval to Gauteng Province's request to incorporate this 3,000-hectare military training facility. This resolution was accompanied by an instruction that the Department of Defence should enter into a contractual agreement to set out the terms and conditions of participation and the inclusion of military land into the Dinokeng Game Reserve. The prime signatories of the ensuing Ditholo Nature Reserve Cooperation Agreement in November 2009 were the Department of Defence, the Dinokeng trading entity (representing Gauteng Provincial Government and the Dinokeng landowners' association), and the Department of Public Works. The latter is included as a party because it is responsible for all state-owned land and infrastructure in South Africa. Consistent with the guidelines of the Department of Defence that incorporation of PTA into the greater Dinokeng Game Reserve should not compromise primary military use of the property, the agreement succeeds in regulating and protecting this provision. The prime imperative for incorporating PTA (Ditholo) into the Dinokeng Game Reserve is to secure critical area and accompanying ecological carrying capacity for the re-introduction of large herbivores and apex predators into the area in accordance with the objectives of the provincial Blue IQ project.

The agreement stipulated that the Dinokeng trading entity replace the existing decaying boundary fences with a new fence that is resistant to dangerous animals on the southern, western and northern boundaries of PTA (Ditholo), which they patrol and maintain. The eastern boundary fence on the Pienaar's River will eventually be removed to allow unrestricted passage of wildlife, yet still restrict random tourist access to the military estate. Responsibility for all the game on the military estate has been transferred from Department of Defence to the Gauteng Provincial Government by means of an intra-governmental asset transfer.

The runway, drop zone and cantonment area at PTA (Ditholo) – all high-intensity use areas – have been fenced off and reinforced with buffer and safety margins for exclusive military use, representing a total area of 765 hectares. The remainder of the estate is still reserved for primary use by the military although it had traditionally been utilised for this purpose at a much lower level of intensity than it will be now. The Dinokeng trading entity assumed responsibility for biodiversity conservation management of the portion of the military estate which was incorporated into the Game Reserve, while the Air Force will continue to implement customary environmental management best practices mainly in the excluded 765 hectares of high-intensity use. The Air Force's existing best practice of integrated training area management on site will be used to help ease the implementation of the cooperation agreement to the mutual benefit of both parties.

A Joint Committee consisting of representatives from the Defence (Air Force), Public Works and the Dinokeng trading entity facilitates the implementation of the agreement. A supplementary land use and management plan will be developed by the

Joint Committee along with standing operating procedures for the cooperative use of the entire property.

Some of the responsibilities assumed by the Dinokeng trading entity under this agreement translate into direct benefits to the Air Force, such as:

- Patrol and maintenance of the newly installed fencing that is resistant to dangerous animals.
- Anti-poaching action in cooperation with the South African Police Service.
- Maintenance and mowing of road verges.
- Maintenance of firebreaks with the assistance of the Working for Fire programme, which in itself is an expanded public works initiative of the Department of Water Affairs that combines sound land management principles and best-practice range and wildfire fighting expertise with the need to create jobs and develop skills.
- Conservation management of the greater portion of the estate, focused on management of rare habitat, control of invasive species, and the management of game.
- Rehabilitation of land on the greater portion of the estate.

The program makes the Air Force footprint at PTA (Ditholo) an integral part of the community with collective bargaining potential to withstand contemporary encroachment pressures. Although fundamentally a military training area, optimal utilization of PTA (Ditholo) is achieved through concentrating training infrastructure on sites on the estate most suited for this purpose while ensuring long-term sustainability through partnership-driven joint use of its biodiversity.

Stakeholders

The following partners are involved in implementation of the Ditholo Nature Reserve Cooperation Agreement:

- Department of Defence (Air Force)
- Gauteng Provincial Department of Economic Development
- Gauteng Department of Agriculture and Rural Development
- Dinokeng Landowners' Association
- Department of Public Works

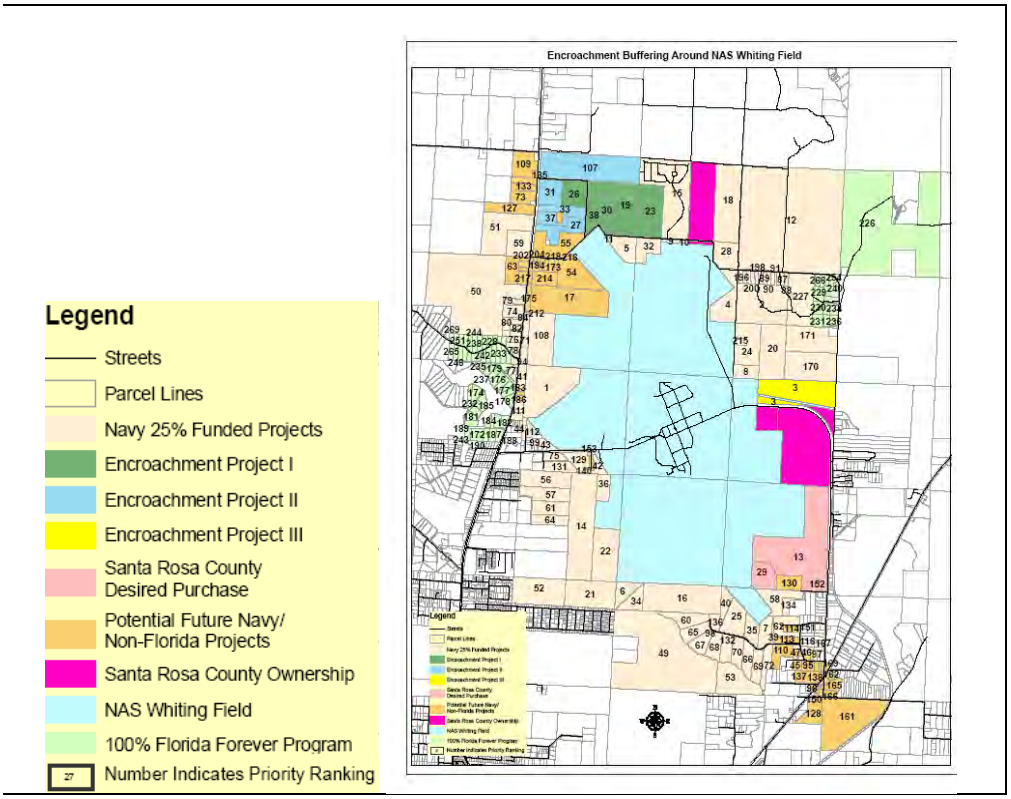
Lessons Learned

Healthy military integrated environmental management practices have been consistently followed at PTA since the 1980s. Contemporary encroachment threats amidst a renewed Air Force operational demand for this facility however, have warranted a more holistic approach in the quest for sustainability at PTA, certainly one that encompasses more stakeholders and a broader base than simply the military. The Ditholo Nature Reserve Cooperation initiative has created a sustainable development option which meets the requirements of both the Air Force and the community within which it serves.

APPENDIX 15: CASE STUDY ON GENERAL ENCROACHMENT AND ENSURING CONTINUED MILITARY PRESENCE
Naval Air Station Whiting Field, Florida, US

Background

Located in Florida's northwest corner, Santa Rosa County is home to Naval Air Station Whiting Field, the Navy's primary base for fixed wing training. It is also the exclusive home of all helicopter training for the Navy, Marine Corps and Coast Guard. As with many of the Defense Department's training installations, Whiting Field is faced with a number of encroachment issues, so working to find and maintain common ground with the surrounding community is crucial to its longevity.



Encroachment Buffering around NAS Whiting Field

(Photo Marty Martin, NAS Whiting Field)

The areas around Whiting Field are growing rapidly. Florida is one of the fastest growing states and Santa Rosa County one of the fastest growing counties in the country. In response to this growth, the Florida state government has instituted several policy measures such as the Growth Management Act of 1985, requiring a comprehensive plan for land use in each community, and the law includes military airfields such as Whiting Field.

Mission Requirements

Naval Air Station Whiting Field in Milton, Florida is the busiest Naval Air Station in the world, responsible for an estimated 46 percent of the Chief of Naval Air Command's total flight time and over 10 percent of Navy and Marine Corps total flight time. Over 1,200 personnel complete their essential flight training early. The station has served as a naval aviation training facility since it was established as a naval air auxiliary station in July 1943. Its present mission is to train student naval aviators in the primary and intermediate phases of fixed-wing aviation, and in the advanced phases of helicopter training.

Encroachment Threat(s)

The main encroachment issues at Whiting Field are similar to what is generally found at other installations around the country and elsewhere in the world, essentially all related to growth. Growth trends around the installation make tension with land developers almost inevitable. The influx of new industries into the market is also a growth-related concern. Specific issues that have emerged around Whiting Field include:

- Smoke from landfills and controlled burning can impair pilots' vision.
- Developers have complained that military operations impacting surrounding lands are negatively affecting market prices. Citing this argument, one developer filed a legal suit because of the flyovers.
- The building of cell phone towers, which corresponds to growth, restricts air space and radio frequencies.

Objective(s)

In order to promote cooperation among major landholders, the state of Florida now mandates that localities get commentary from military bases about any major land management plans looking into the future. This enables military personnel to provide input about potential impacts on the military's mission. Base commanders in the state also provide feedback to the Governor's office on major issues related to military installations. The installation's objectives for developing and maintaining relationships with stakeholders are to preserve the military mission while also preserving the health and economy of the local and state community. Specifically, Whiting Field's partnership program focuses on

- Local community outreach
- Preserving the military mission
- Environmental considerations
- Conservation
- Recreation
- Education

Program description

Recognizing that good relations between the installation and community are critical to mission readiness and that there was no mechanism in place for partnering or long-term planning, the installation commander created the position of Aviation/Community Planner and Encroachment/Air Installation Compatible Use Zone (AICUZ) Officer. The same person has held this position since 1986, which has provided continuity that has been critical to developing productive and trusting

relationships with stakeholders. Sitting on nearly a dozen planning and advisory boards, the Community Plans and Liaison Office (CPLO) interacts with community officials on a daily basis. The CPLO informs county and private planners about the base's needs and, in turn, provides feedback about how their plans for development will impact the Navy's mission. Range tours have become integral to NAS Whiting Field's partnership efforts; they have proved to be a good method of making installation priorities tangible for community leaders.

Among the specific programs and events that illustrate the success of Whiting Field's approach to community partnerships are:

- Being an integral member of the Florida Forever Program.[19] Whiting Field has worked with the State to buy land from TNC. (The Navy contributes part of the funding to reduce the overall cost to the state of the land purchase.)
- The community approved the implementation of a Joint Land Use Study (JLUS), which creates a formal structure for interaction between the military and stakeholders. During the JLUS process, Santa Rosa County sent letters to 4,000 landowners who might be affected. This effort prompted intense coordination and successful communication between landowners and the Santa Rosa County Planning Department, resulting in the resolution of many community concerns. In addition, 250 residents attended a community meeting that was held to explain the process.
- Whiting Field offers AICUZ seminars for base personnel.
- Whiting Field develops PowerPoint presentations to brief the community on the installation's mission and scope of operations. Prior to creation of the CPLO, the community had an inadequate familiarity with and understanding of the Navy's operations and presence.
- The CPLO uses two-way communication, accessibility, and understanding to mitigate potential encroachment conflicts. This approach helped thwart a land use tension when local officials agreed not to move forward with their plans for a construction and debris landfill that would have affected the Navy training mission at Whiting Field.

Stakeholders

- Santa Rosa County, Florida officials and citizens
- Escambia County, Florida officials and citizens
- The Nature Conservancy
- Florida Governor's office
- Local business interests
- Cities of Foley, Brewton, and Evergreen.

Lessons learned

Whiting Field offers a number of valuable lessons about community partnering on land use issues:

- It is essential to find the right person to be the liaison between the installation and the community. Requirements include a steady, flexible and outgoing

[19] The Florida Forever program is described in more detail in Appendix 11, Northwest Florida Greenway Partnership Initiative.

personality and some knowledge of community and development needs. It is a time-demanding position, including night and weekend meetings.

- Other installation officials must also establish a rapport with community leaders, planners, and other stakeholders. This means maintaining constant contact so that, when issues arise, the relationships are in good standing.
- Through the CPLO, installation officials should stay informed about the community's development plans and offer feedback about tensions that potential projects would create for the military. Furthermore, it is good practice to be informed about local ordinances and the history of the surrounding community. In turn, keep the community well educated about military operations and potential changes. One preventative measure is to urge property purchasers to sign disclosure statements before the sale, confirming that buyers understand potential issues.
- It is good practice to create institutional frameworks that encourage collaboration such as JLUS or external working groups with representatives from multiple interest groups.
- Whiting Field involves geographically dispersed operations that impact over a dozen communities, thus making coordination difficult. It is also difficult to align each stakeholder's interests.

For More Information: www.cnic.navy.mil.

APPENDIX 16: CASE STUDY ON GENERAL ENCROACHMENT PRESSURES AND ENSURING CONTINUED MILITARY PRESENCE AFB Overberg, South Africa

Background

From modest beginnings, the Test Flight & Development Center (TFDC) of the South African Air Force was first established in 1975 at Air Force Base Waterkloof, Pretoria with a satellite unit based at Upington in the Northern Cape Province. With the entry of South Africa into the aerospace industry and the establishment of the sophisticated technical facilities of the Overberg Test Range (OTB) for the space program, TFDC was relocated to Bredasdorp near the southernmost tip of Africa in 1987. Here as a lodger unit at Air Force Base Overberg, a relatively small workforce has since dispatched approximately 30,000 flying hours and concluded more than 2,000 flight-test programs. TFDC conducts the major portion of experimental as well as research and development flight-test work in South Africa.

Air Force Base Overberg is collocated with the extensive OTB, which is curated by the armament division of the South African industrial group, Denel. OTB is a well-established test facility specializing in the in-flight testing and evaluation of missiles and aviation systems for the local and international aerospace industries. OTB also plays an important part in discharging flight-test trials for TFDC. Accurate spatial positioning, optical and radar tracking of airborne targets is provided. Cinetheodolites are located throughout the test range for visual tracking of aircraft and released ordnance, while the laser track mount and Doppler tracking radars are used for accurate multi-target tracking.

Mission Requirements

The strategic positioning of Air Force Base Overberg and the associated TFDC in a region with a large volume of airspace, allows flexibility for flight testing, while intrinsic capabilities and facilities are the envy of many foreign aerospace companies.

Encroachment Threats

- **Agricultural development.** The region in which Air Force Base Overberg is situated is known for its extensive cereal crops and livestock farming, to include prime wool, mutton, dairy and ostrich production. Agricultural lands enclose the base directly to the west, north and northeast. Commercial aircraft used in administering pesticides to cereal crops compete with military aircraft for use of the airspace. Where livestock farms are situated in the vicinity of the base or in more distant tactical flying areas, there is a constant risk of compensation claims by landowners, alleging loss of property or production when domestic animals are subjected to stress due to disturbance wrought by military aircraft.
- **Marine protected areas.** The nearby inshore areas represent important marine habitat, including breeding grounds for much of the over-wintering population of the southern right whale, other rare marine wildlife, and

commercial fish stocks. As a result, the adjacent coastline and inshore areas are managed as a marine reserve.

- **Commercial fishing grounds.** This coastline represents a mainstay to the commercial fishing industry. As marine resources elsewhere dwindle, fishing fleets venture into the offshore maritime testing grounds (which are a protected marine reserve off the coast near the Air Force Base Overberg-OTB complex) in order to exploit rich fish stocks in this protected area.
- **Marine and coastal recreation.** The De Hoop Nature Reserve and other pristine or rustic areas surrounding the base and test range complex support a vibrant albeit largely seasonal trade in eco-tourism and coastal recreation. This harbors the potential for disputes arising from disturbance to tourism by military aircraft activity in the area.
- **Competition for the frequency spectrum.** The use of the frequency spectrum by civilians in nearby villages, settlements and at agricultural homesteads impacts on command and control as well as telemetry systems used at Air Force Base Overberg.
- **Recreational aviation.** Private, homebuilt and micro-light aircraft are launched from civilian landing strips and informal airfields in the area. On occasion, pilots of these craft violated military airspace restrictions over Air Force Base Overberg and OTB, in most instances out of ignorance although there have also been emergency landings of these craft at the base.
- **Adverse public perceptions.** The expropriation of ancestral lands from various landowners along with resettlement of the Skipskop fishing community under some duress in order to establish the base and test range in the area evoked widespread emotion throughout the nation. In the early years, this resulted in public resistance to the Air Force Base Overberg military community as well as general objections to a permanent military presence in this ecologically and culturally sensitive area.
- **Cultural & archeological interest.** Various ancestral homesteads dating back to early European settlement punctuate the area, while Neolithic stone fishing traps of the since-vanished San cultures are found along the inter-tidal zone. These areas are protected from any form of disturbance.
- **Terrestrial protected areas.** Both the base and associated test range are situated in the heartland of the Cape Floral Kingdom with its high incidence of endemic flora. The De Hoop Nature Reserve interrupts the eastern sector of the test range. Here the Western Cape provincial conservation authority is the curator of unique karst landscapes incorporating the endemic limestone Fynbos vegetation of the Cape Floral Kingdom, one of the last remaining Cape Griffon vulture rookeries in the Western Cape, waterfowl and their habitat associated with the De Hoop Ramsar Wetland as well as keystone wildlife species such as Cape Mountain Zebra and the endemic Bontebok found in the area. More recently, the statutory South African National Parks have initiated a process for designating the Agulhas Plain National Park, thereby effectively hemming in the base and test range complex on its western sectors as well. Such designation entails the threat of regulated altitude restrictions for aircraft traversing protected areas.
- **Rare and endangered species/habitat.** The habitat for several rare and endangered species coincide with the location of Air Force Base Overberg and

OTB and, in isolated instances, this area represents their only habitat. These occurrences restrict access and utilization of these areas for mission purposes.

- **Alien invasive plant species.** Dense historic invasions of introduced woody Australian *Acacia* and *Eucalyptus* species infest areas of the base and test range complex. These infestations escalate the risk of fire, deplete groundwater resources, contaminate native habitat, and bar surface access to parts of the range. The infestations also pose an aviation safety risk where stands of these invaders skirt the runway to contribute to dramatic deflection of surface winds.
- **Freshwater decline.** Since the base and associated test range are situated on the Agulhas Plain aquifer, water supply was originally tapped from this source firstly as a measure to avoid excessive costs of pipelines to distant mainstream supply and secondly to ensure greater self-reliance on resources consistent with the military philosophy of the time. Fluctuating supply and quality of this resource however has impacted on mission sustainability in the past.
- **Geophysical anomalies.** Depressions in the landscape are susceptible to periodic flooding following heavy winter rains. Prolonged inundation of areas on the base and associated test range restricts access by land to telemetry stations and at times even to the base itself.
- **Wildlife hazards to aviation safety.** The location of the base at the nexus of a diverse selection of dynamic ecosystems and topography on the Agulhas coastal plain, which is interspersed with wetlands, coastline, agricultural areas and stands of native vegetation, ensures the constant presence of birds. The risk of collision poses a significant aviation safety hazard to low-flying military aircraft. Small antelope furthermore seek refuge on the runway verges when low-lying areas of the base are inundated with floodwaters during the wet season. Here these animals pose a risk in distracting aircrew and interfering with the free movement of aircraft in airfield maneuvering areas.

Objectives

Objectives for the management of these encroachment issues were initially derived from pertinent recommendations of the Douglas Hey Report which had been commissioned by Parliament in 1983 during the planning stages of the project to site the weapons range and Air Force base in the coastal area between Waenhuiskrans/Arniston and Cape Infanta.[20] Objectives were formulated to manage all aspects of and interfaces with the following:

- Environment
- Fauna and flora
- Recreation
- Education
- Agriculture
- Local communities
- National interest

[20] Commission of Inquiry under the Chairmanship of Douglas Hey, *Report on the Environmental Implications of the Proposed Experimental Weapons Test and Evaluation Facility between Waenhuiskrans and Cape Infanta, Bredasdorp*, 1983.

Program Description

In May 1983, the South African Deputy Minister of Environmental Affairs nominated a panel of experts to a commission of enquiry charged with investigating and reporting on the environmental influences of the proposed arms testing range and all related activities in the designated area between Waenhuiskrans/Arniston and Cape Infanta. This incidentally represented a landmark decision for environmental activism in South Africa to eventually pioneer the path for developing national environmental impact assessment regulation, ultimately passed by Parliament 14 years later. In this instance, though, the commission reviewed memoranda and verbal representations of diverse stakeholders, interested and affected parties. They evaluated alternative sites; characteristics of the area; the project's socio-economic implications; impacts and mitigation; advantages of using the area as a test range; and recommended ideal terms of ownership and control. It was concluded that the area is of national importance not only for its scenic beauty and wilderness, but also for purposes of both conservation and national security. The commission affirmed a view that multiple use of this diverse natural area as both a proclaimed nature reserve and a weapons test range would be possible without undue prejudice to either cause, provided the conditions stipulated in the report were met and honored.

To oversee implementation of the Commission's recommendations, Parliament instituted the Overberg Review Committee headed by the provincial conservation authority with representation by the Air Force, Denel, and sectors of the local community. The Air Force and Denel respectively appointed resident environmental management practitioners to systematically implement, integrate, and sustain the recommendations of the report in weapons testing activities and the general footprint of the Air Force Base Overberg-OTB complex. The Committee continues to meet twice a year.

By 1999, the accumulated data and best practices were captured in the format of ISO14000 international standard for environmental management to ensure:

- Compliance with environmental legislation.
- Assessment of environmental performance.
- Responsibility towards the community through environmental awareness.
- Greater efficiency, decrease in waste, recycling and re-use of products as well as savings in electricity consumption.
- Recognition as an environmentally safe marketer in the international arena, which facilitates contracts with key clients.

Stakeholders

- South African Air Force
- Denel Armament Corporation
- Civil aviation
- Provincial authority, Cape Nature Conservation
- South African National Parks
- Local Municipalities
- Non-governmental and community-based organizations for the environment, civil action groups, commercial or recreational fishing, agriculture, aviation, and others

- Key clients in the weapons industry

Lessons Learned

The identification of potential encroachment pressures in the earliest stages of planning the Air Force Base Overberg-OTB complex and the incorporation of counteracting strategies in the design and operation of these facilities have largely pre-empted adverse effects on mission sustainability. Firm *in situ* management objectives, measures and mechanisms based on a multi-disciplinary and multi-stakeholder approach have enhanced credibility, legitimacy and overall mission sustainability of the Air Force Base Overberg-OTB complex.

APPENDIX 17: CASE STUDY ON URBAN DEVELOPMENT AND NOISE IMPACTS ON CONTINUED MILITARY PRESENCE
Air Force Base Waterkloof

Background

Officially opened on 1 August 1938 as Waterkloof Air Station, this facility was initially used as a practiced forced landing field with a grass landing strip. With the introduction of jet-powered aircraft such as the Vampire, the jet efflux destroyed the grass runways. As a result, tarred runways with concrete hardstands were constructed in the early 1950s. Today Air Force Base Waterkloof, at approximately 827 hectares, represents the largest operational base within Southern Africa. AFB Waterkloof is situated between the Pretoria and Centurion urban areas and is surrounded by several residential communities as well as major freeways, intersections, and service communication lines. The base is also partially co-located with the Groenkloof Nature Reserve and is situated within a species-rich ecotone between the savannah and grassland bioregions. The combination of its unique location and mission requirements necessitates close community relationships and involvement to ensure mission sustainability.

Not only does this base serve a crucial military role in terms of transport and freight, but it is currently being utilized as a staging point for humanitarian operations as well as the accommodation of "commercial" air traffic. The strategic and national importance of AFB Waterkloof requires the upgrade of runways, taxiways and airside facilities at the base to international standards and specifications capable of accommodating future aircraft operations.

Mission Requirements

Designed originally for fighter and medium-sized cargo aircraft, AFB Waterkloof now serves as an air transport hub with Hercules C130 as the largest aircraft operating from here. Waterkloof currently accommodates mainly large transport and commercial aircraft. Future traffic includes the Airbus A380, the Boeing 747-400 and other wide-bodied heavy aircraft – both military and commercial.

Current upgrades are meant to ensure continued future operational status at AFB Waterkloof out to a 30-year horizon. Waterkloof will also be part of an initiative called Centurion Aviation Village Airside development (in partnership with the domestic aviation industry) to conduct Maintenance, Repair and Overhaul (MRO) on fixed and rotary wing aircraft.

Encroachment Threats

The proposed base upgrades as well as current land use involves "listed activities" which are defined as activities that "may have potentially detrimental impacts on the environment and therefore require environmental authorization from the relevant

authorizing body."[21] The proposed development is deemed to be of national interest and thus the National Department of Environmental Affairs & Tourism (DEAT) is the competent authority in this instance. Before an Environmental Impact Assessment (EIA) may commence, the full application must be registered formally with DEAT where the Scoping Report is reviewed to issue an environmental authorization as a Record of Decision (ROD) based on the final Environmental Impact Report, as depicted in the figure. The outcome of the ROD is legally binding to the proposed development.

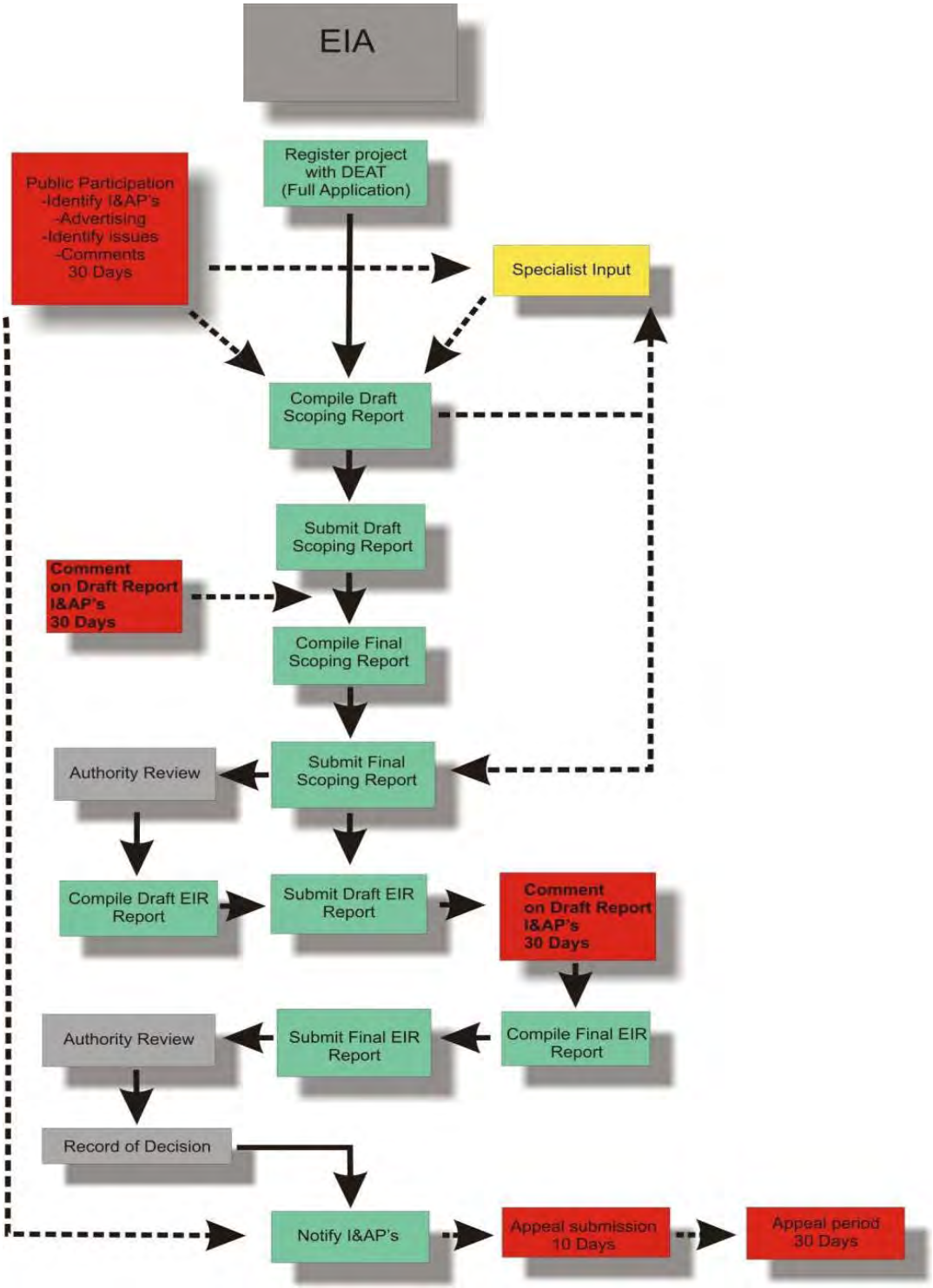
The key environmental issues at AFB Waterkloof include:

- Obstacle Limitations. Flight Safety Zoning and associated Building Restrictions as prescribed by International Civil Aviation Organization (ICAO) regulations and Civil Aviation Authority (CAA).
- Aircraft noise. The operating noise of new generation engines must conform to European noise standards for urban areas. However, this "good news" is offset by the fact that more flights might operate in the future, resulting in overall greater noise generation.
- Visual impact. Due to the height of structures such as aircraft hangers and Air Traffic Control Towers, a Visual Impact assessment forms part of the Environmental Impact Assessment (EIA) in order to verify the impact and to reduce visual intrusion. The visual impact of airfield lighting on surrounding suburbs must also be investigated.
- Storm water and Geotechnical. Due to the dolomitic sensitivity of the base, proper storm water management needs to be implemented in order to minimize the formation of sinkholes on the base and the impact on lower co-located areas. Addressing the increase in surface water runoff as a result of surface hardening must be done in consultation with the relevant municipalities. All new facilities must meet the specifications laid out by the National Department of Public Works (NDPW), as the custodian of all State facilities in South Africa.

General issues identified include:

- Traffic Impact. Current, as well as planned additional, access routes to the base require additional traffic impact studies beyond what was done for the Master Plan Study.
- Services. The adequacy of services (such as electricity) must be clarified based on demands that further development will impose. For example, runway lighting is a major power consumer and might require additional substations.
- Emissions. The potential dust impacts during construction on the base must be mitigated through dust abatement measures. While aircraft emissions are anticipated to be below historical levels due to the fact that new generation aircraft will comply with European emission standards, an increase in number of flights will result in greater overall emissions.

[21] This definition comes from the National Environmental Management Act: NEMA, 1998 (Act No. 107 of 1998) as amended and the Environmental Impact Assessment Regulations of 2006.



- Public and On-Base Safety. All workers on construction sites are security checked and must carry ID cards. Any worker without an ID card or any loiterer is turned over to Military Police for investigation and removal from the site. In addition, no temporary construction camps are allowed.
- Property value. The overall increase in noise levels due to increased numbers of aircraft and frequency of air traffic will negatively impact on adjacent property values. The greater visual impact of new structures may also

negatively affect property values. In the case of AFB Waterkloof, development is located away from the base periphery; therefore the possible impact on property values is significantly lowered.

- Timeframes. During construction, the impact of the construction work must be mitigated in line with the recommendations of the Environmental Management Plan, to be developed through the EIA. The construction programme has been accelerated to minimise disruption of base operations as well as negative impacts (e.g., noise, dust) on surrounding suburbs and road networks due to the presence of heavy construction vehicles.

The *most significant concerns* raised by interested and affected parties (I&APs) during AFB Waterkloof's EIA process include the following:

- Noise pollution: I&APs were concerned about the possibility of noise from aircraft and the measures taken to counteract it.
- Groundwater pollution: I&APs were concerned about the possibility of fuel spillage and storm water runoff pollution.
- Visual pollution: I&APs were concerned about visual pollution with regard to infrastructure to be built during the upgrade of AFB Waterkloof.
- Air quality: I&APs were concerned with how the upgrade will affect air quality both in terms of direct emissions and fugitive emissions such as dust.
- Alternatives assessment: I&APs re-iterated the need to evaluate design alternatives.
- Engineering specifications: I&APs were concerned that all infrastructure be built with Civil Aviation Regulations, South African Bureau of Standards (SABS), and all relevant legislation/guidelines in mind.
- Dolomitic sinkholes: All I&APs were concerned that any development must take into consideration recognised mitigation measures regarding dolomite and sinkholes.
- Traffic: I&APs raised the concern that traffic might be affected during both the construction and operational phases.

Objectives

The main objective relating to the current and proposed activities at the base is to keep the community informed by means of outreach programs to address concerns and build relationships of trust with stakeholders. In the instance of an air base, the utilization of airspace poses additional encroachment challenges outside the base's territorial boundaries particularly as concerns conformance to building height restrictions, safety zones and noise pollution. By means of pro-active community involvement and city council planning, it is possible to build a win-win situation between the military and civilian community. In general, the South African Air Force is engaging with municipal authorities and local communities to recognize the impact of military installations within urban and rural areas in order to guide new developments and ensure optimized land use.

Program Description

The communities adjacent to the base have been divided into different Wards under leadership of elected Ward Councillors. AFB Waterkloof forms a ward on its own

with a Base Representative, usually in the Facilities or Environmental Services department. A formal Community Forum is held on a monthly basis with representatives from each Ward. All new developments on and outside the base are made visible at this forum and concerns are minuted and made visible to the SAAF (and if required the Department of Defence) and local communities via the Ward Councillors. As a result of the military's outreach to the local community and its coordination with other relevant government agencies, a number of modifications have been made to the proposed developments and upgrades at AFB Waterkloof. By means of community interaction, issues like power consumption, water usage, storm water runoff and management and community policing have been able to be effectively managed in the past. The management of storm water on the base by means of new technology drainage piping has solved numerous drainage problems to lower lying areas adjacent to the base. By means of repositioning certain noise-generating facilities (e.g., Engine Test facilities or Engine Run-up Bays) on the base, the impact of noise on surrounding communities can and has been significantly minimised in the past.

The DOD as a national-level Department must comment on all new developments and township applications before the proposed development can be approved by the relevant City Council. Inputs to proposed developments adjacent to AFB Waterkloof are usually related to height restrictions due to flight safety zones and aircraft noise. In this regard, no development may proceed if the prescribed ICAO and/or CAA regulations are not adhered to.

Stakeholders

- DOD Environmental Services.
- Owners and occupiers of land both adjacent to and within 100 metres of the boundary of AFB Waterkloof.
- The municipal councillor of the ward in which the site is situated and any civil action organisation that represent the community in the area.
- The municipality which has jurisdiction in the area.
- Any organ of state having jurisdiction with respect to any aspect of the activity.
- National Department of Public Works (as custodian of all State Land).
- Consultant Engineers.
- Civil Aviation Authority (CAA).
- Department of Health.
- Roads Agency.

Lessons learned

The lack of community involvement and recognition of military installations within Town Planning Schemes and Urban Master Plans in the past have, to a great extent, caused a situation where urban sprawl has led to the co-location of military and civilian land uses. In the case of AFB Waterkloof, this situation leads to pressures being placed on the military to reduce or re-route flying activities in order to prevent possible depreciating land values as a result of noise and dust pollution as well as storm water impact on surrounding geology.

APPENDIX 18: CASE STUDY ON THE PROTECTION AND COLLABORATIVE USE OF NATURAL RESOURCES
The Southeast Regional Partnership for Planning and Sustainability (SERPPAS)

Background

The South-eastern United States is experiencing rapid growth and development resulting in an intensifying and accelerating competition for scarce natural resources. These encroachment forces have resulted in the loss of agricultural land, critical wildlife habitats, and working landscapes such as farms, forests, and fisheries. Furthermore, these pressures have caused increasing encroachment on military facilities, installations, systems, areas, and ranges supporting testing and training operations. Because the issue of long-term sustainability, in the face of growth and encroachment, crosses geographic and organizational boundaries, it is essential for the affected communities and agencies across the Southeast to work collaboratively to protect both natural resources and military readiness.

In 2005, state environmental and natural resource officials from across the south-eastern United States partnered with the Department of Defense and other federal agencies to form the Southeast Regional Partnership for Planning and Sustainability (SERPPAS) to promote better collaboration in making resource-use decisions. SERPPAS works to prevent encroachment around military lands, encourage compatible resource-use decisions, and improve coordination among regions, states, communities, and military services.

The inaugural meeting of SERPPAS took place in July 2005, in Chapel Hill, North Carolina. The Principals came together in response to a common goal – a sustainable Southeast. To work towards this goal, the SERPPAS Principals agreed to form the partnership around a basic equation:

Effective Working Relationships + A Good Map = Mutual and Multiple Benefits

The "good map" was defined as a seamless and shared Geographic Information System (GIS) that describes the relevant military, natural, and other systems across the Southeast. These maps provide the information and scales the partnership needs for effective planning and sustainability across the region. More importantly, such a partnership affords both mutual and multiple benefits.

The efforts of SERPPAS have continued since that inaugural meeting. Subsequent meetings have moved the partnership from concept toward specific place-based projects, project timelines, and planned next steps for the partnership. The mission of SERPPAS is to seize opportunities and solve problems in ways that provide mutual and multiple benefits to the partners, sustain the individual and collective mission of partner organizations, and secure the future for all the partners, the region, and the nation. This mission will be accomplished through identifying opportunities for

mutual gain among all partner groups, effectively addressing differences among the partners, and focusing on identifying solutions to complex problems. The region covered by SERPPAS today includes the states of North Carolina, South Carolina, Georgia, Alabama, Florida, and Mississippi.

Mission Requirements

The military bases in the six states that are part of SERPPAS have a full range of testing and training requirements. As depicted in the map, which is colour-coded according to each of the services, all six states have Air Force bases, five have Army installations, four have naval bases, three of the states have Marine Corps facilities, and there are notable National Guard facilities throughout as well. Among these are such important training areas as the Marine Corps' Camp LeJeune, Eglin AFB, the Army's Fort Bragg, and Pensacola Naval Air Station.

Encroachment Threat(s)

The competition for scarce resources presents threats to the sustainability of national defence natural assets (land, air, sea, space and frequency spectrum) as well as natural and economic resources that drive growth and the economy throughout the Southeast United States. These challenges include:

- Rapid population growth
- Climate change
- Accelerated growth and modernization in renewable energy research and development
- Greater restrictions on the use of public lands
- Commercial development
- Loss of critical wildlife habitat
- Loss of America's working lands
- National economic challenges that restrict state and federal ability to take action

Objective(s)

SERPPAS partners, whose logos are depicted in the following page, have identified the following objectives that support the mission of SERPPAS:

- Promote improved regional, state, and local coordination.
- Manage, sustain, and enhance natural, economic, and human resources as well as national defence.
- Develop and complete regional sustainability projects supporting the sustainment of natural, economic, and national defence resources related to

base realignment planning in the southeast region as well as other identified sustainability needs.

- Develop a GIS Sustainability Decision Support Tool that integrates federal, DoD, military services, and state data for use in regional planning by SERPPAS and individual states.

Program Description

SERPPAS consists of Principals, a Steering Committee, and project working groups. SERPPAS is co-chaired by a Principal representing the Department of Defense and a Principal representing one of the state partners. These co-chairs serve on a rotating basis and the addition of new members is contingent upon the approval of the current Principals. Participation is wholly voluntary and any partner can discontinue participation at any time.

Principal members come from the senior leadership of participating organizations. Principals are responsible for identifying priorities, developing strategies, making decisions, and providing overall leadership and direction on efforts undertaken by the partnership. In addition, the Principals act as the primary champions for SERPPAS-led efforts within their respective organizations.

Steering Committee members are staff-level representatives from the participating organizations. The Steering Committee leads the development of projects and efforts supported by the SERPPAS Principals. Each SERPPAS member organization/agency appoints one Steering Committee representative, with additional staff participating in project-related work groups as needed.

Approach

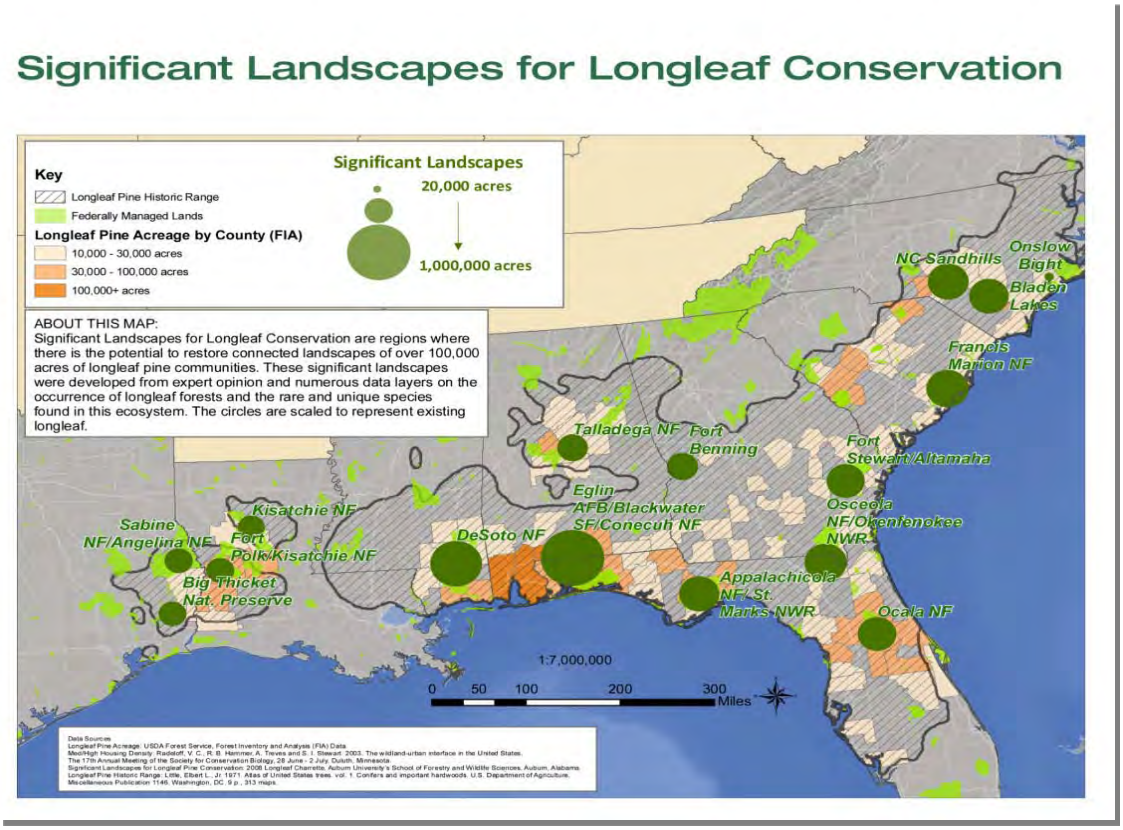
SERPPAS partners seek to work with community leaders and citizens to encourage resource-use decisions that support conservation of natural resources, economic development, the missions of military installations, as well as other issues that must be considered to provide a sustainable world for future generations.

Regional issues that have been identified as important to sustainability and addressing encroachment threats include:

- Longleaf pine conservation
- Energy use
- Marine coastal planning
- Endangered species, such as the red-cockaded woodpecker and gopher tortoise
- Climate change adaptation
- Comprehensive GIS mapping

In the case of the longleaf pine, pictured on the right, areas have been identified where there is the potential to restore connected landscapes of longleaf pine communities. The map on the following page shows these areas of "significant landscapes" as well as the historic range of the longleaf pine (marked by stripes) as well as areas that are federally managed lands (shown in bright green).

The regional approach strives to build working relationships among states, communities and the military to improve conservation, the economy, sustainability, and military readiness. SERPPAS' focus is on promoting compatible use of military, agricultural, and forestry lands, mapping areas of interest, and identifying interested stakeholders. The partnership will also examine policy and possible legislation to support the mission of SERPPAS, including maintaining working lands and promoting resource use that is both compatible with and complementary to military, community, and environmental efforts.



Stakeholders

Groups participating and benefiting from SERPPAS information sharing and collaboration include:

- Residents and officials from States of Georgia, Florida, North Carolina, South Carolina, Alabama, and Mississippi
- Department of Defense and military services
- Other Federal Agencies, including United States Geological Survey, Natural Resources Conservation Service, National Oceanic and Atmospheric Administration, United States Fish and Wildlife Service, Environmental Protection Agency, and United States Forest Service
- Non-governmental agencies and private land owners

Lessons Learned

The success of SERPPAS hinges upon the members' ability to share information and resources on cross-boundary sustainability issues. Above all, SERPPAS has made clear that it is possible to do broad landscape planning for future use of resources and leverage funds from multiple partners if each entity comes to the table with an equal seat and looks for mutually beneficial gains. Additional lessons learned include:

- Long-term, working relationships are instrumental to carrying out the kind of productive discussions that enable compatibility and mutual support. With the diversity of the SERPPAS membership, gaining a full understanding of the structure, needs, and mission of each partner is vital.

- Consistent and open communication facilitates information exchange. From the bi-annual SERPPAS Principal and Steering Committee Meetings to a powerful SERPPAS Website, to communications materials such as one pagers, brochures, and comprehensive posters, SERPPAS maintains multiple powerful forums from which to gain information, data, perspective, and assistance.
- Processes should be well-established and clear to the stakeholders. Procedures need to be developed to ensure state and local governments are getting the information they need from their federal partners to make fully informed choices as they represent the safety and confidence of their community. Furthermore, a consistent process needs to be in place to effectively execute and implement collaborative projects that cross state and federal boundaries.
- SERPPAS projects incorporate multiple administrative, economic, and stakeholder foundations that each function uniquely and are beholden to their own formal mandates and processes. It is imperative that the methodology of a Regional Partnership respects those processes in order to gain maximum achievement and contribution from each partner.

More information about this initiative is available at www.SERPPAS.org

APPENDIX 19: CASE STUDY ON COMPATIBLE USE BUFFER ZONES
Fort Bragg, North Carolina, US

Background

Army training, private development, and federally protected species are competing for a limited, non-renewable resource: land. Military and private lands often contain valuable habitat for protected species. As rapid development occurs on private lands, habitat is fragmented and degraded, leaving the military with an increased responsibility to limit its training, testing, and operations to avoid species decline and ultimately provide for habitat recovery.

Species management on military lands often results in adverse impacts on military missions (i.e. encroachment) as the timing, type, and location of training is adjusted to protect and conserve habitat. Recognizing the need to engage private landowners in the regional protection and conservation of the red-cockaded woodpecker (RCW), the Army initiated a unique partnership with The Nature Conservancy in North Carolina called the Private Lands Initiative (PLI), which provides for purchasing the outright fee to key parcels of RCW habitat, or working with landowners for the sale of conservation easements.

The longleaf-wiregrass communities on Fort Bragg are among the most important for the recovery of the federally-listed red-cockaded woodpecker. Conservation Easements at Fort Bragg served as a model for the Army's Compatible Use Buffer Program. (Photo: U.S. Army)

Mission Requirements

By population, Fort Bragg is the largest Army installation in the world, providing a home to almost 10 percent of the US Army's active component forces. Approximately 43,000 military and 8,000 civilian personnel work at Fort Bragg. Every day military and civilian employees provide the services needed to train, sustain, and deploy combat forces to America's Crisis Response Contingency Corps and Special Operations Forces. Their common daily focus is on training, deploying, mobilizing, and demobilizing America's strategic response forces and providing first-class services in such areas as military operations, housing, recreation, medicine, and education. The Fort provides those services to a customer base of more than 250,000 soldiers, civilians, family members, and retirees.

Fort Bragg occupies approximately 140,000 acres, reaching into four counties in North Carolina. Included within the purview of Fort Bragg and its tenants are 7 major

drop zones, 4 impact areas, 82 ranges, 16 live fire manoeuvre areas, and 2 Army airfields.

Encroachment Threat(s)

Fort Bragg is home to many tenant organizations, but the most significant units it trains are within the 82nd Airborne Division, XVIIIth Airborne Corps, and U.S. Army Special Operations Command. Fort Bragg is the "Home of the Airborne," and its units are expected to rapidly deploy anywhere in the world and to fight and win upon arrival. Because it is such a large installation and military asset, Fort Bragg must manage multiple encroachment threats while training these soldiers. Encroachment threats include:

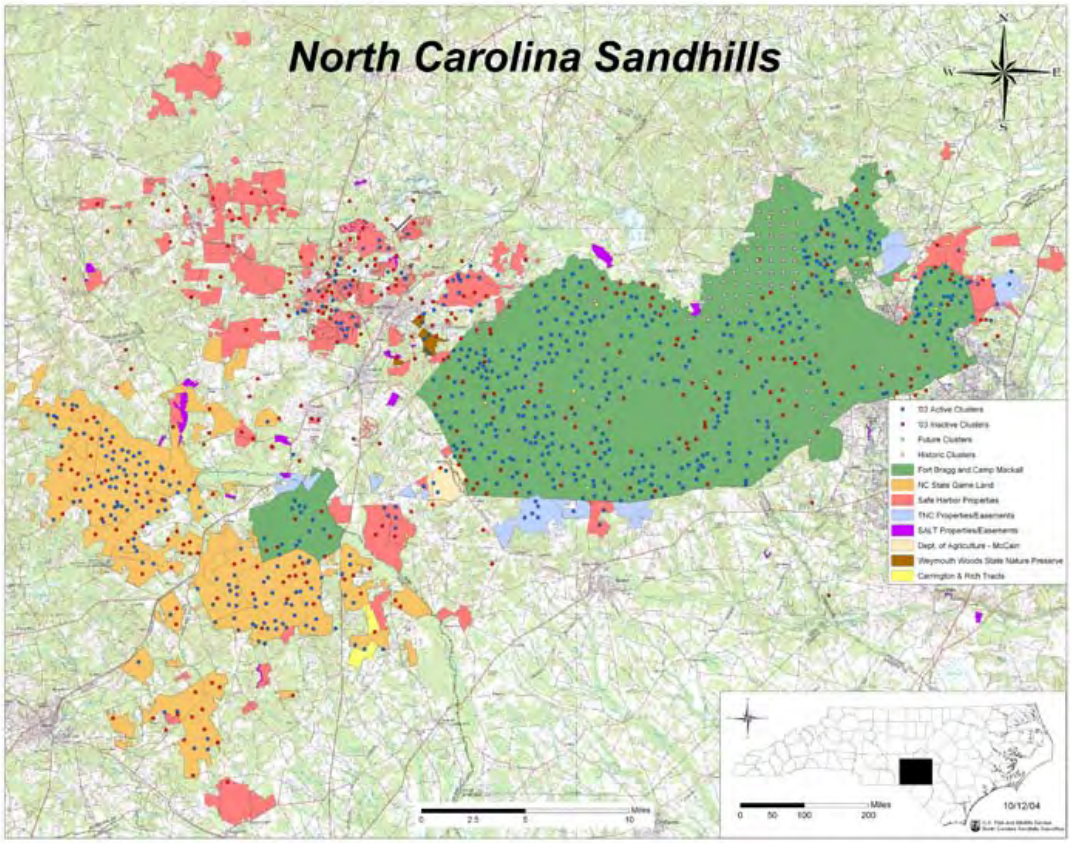
- Environmental pressures on DoD lands that are safe haven to threatened and endangered species
- Population growth
- Commercial development
- Increasing noise complaints due to ever-increasing training requirements

The installation is the Army's most important power projection platform, is in constant use for soldier training, and requires constant use of its 140,000 acres of training lands. At the same time, it provides the largest block of contiguous long-leaf pine and wiregrass habitat for conservation of the red-cockaded woodpecker in the Sandhills East Recovery Unit for the RCW. In the 1990s the competition between military training and RCW management on Fort Bragg lead to serious conflicts between Fort Bragg and the U.S. Fish and Wildlife Service (USFWS) with the shutdown of important training ranges and the prospect of increased training limitations.

Objective(s)

To deal effectively with encroachment issues while maintaining their mission, military bases must emphasize partnering with surrounding communities to find common ground. Specifically, Fort Bragg made it a priority to engage off-post landowners in the perpetual conservation of RCW habitat with the dual goals of restoring habitat across the recovery unit while easing Fort Bragg's burden. Fort Bragg's success in alleviating tensions and concerns has lead to success both within DoD and nationally.

The map on the following page shows the location of the North Carolina Sandhills within the state of North Carolina, which is the RCW's habitat. The large green area is Fort Bragg (the small green area is another military installation), while the orange area represents the North Carolina State Game Land, the pink areas are "safe harbour properties," and the blue areas are properties and easements of The Nature Conservancy. The blue dots depict active cluster areas for the RCW, while the other dots show inactive, historic, and possible future cluster areas.



Program Description

Fort Bragg

Encroachment outside its fence line made Ft Bragg a critical land manager for the Red Cockaded Woodpecker, which is protected by the Endangered Species Act, inside the fence line. The North Carolina Sandhills region has the second largest concentration of RCW in the nation. The Army established the Private Lands Initiative (PLI) in 1995 to preserve RCW habitat and reduce training restrictions. PLI is a cooperative agreement between the Army and The Nature Conservancy (TNC) to cost share TNC's purchase of land or interest in land from willing sellers. Conserved lands protect RCW habitat and the perimeter of the installation from incompatible land uses. The Army incurs no management responsibility or costs, and the protected land may be available to Ft Bragg for training, provided the types of training activities are consistent with conservation objectives and according to manoeuvre agreements. In addition to permanently protecting RCW habitat the purchase or encumbrance of tracts along the installation border preclude incompatible land uses (sprawl) while furthering RCW recovery. Technical support and oversight of this protection initiative is provided by the North Carolina Sandhills Conservation Partnership which includes Fort Bragg, the State of North Carolina, The Nature Conservancy, the U.S. Fish and Wildlife Service, Sandhills Ecological Institute, Sandhills Area Land Trust, and others.

As of the end of 2009, 37 tracts of land totalling 12,861 acres had been acquired or protected. The military cost was about $14 million, with partners contributing about $29 million. On June 7, 2006, the Department of the Interior, the U.S. Fish and

Wildlife Service, and the U.S. Army partnered to celebrate and commemorate the recovery milestone of the RCW population in the Sandhills East Recovery unit, a primary core recovery population, five years earlier than anticipated. Furthermore, the Army and USFWS recently revised management guidelines for the RCW on Army installations, virtually eliminating restrictions on training at Fort Bragg. Though a highly professional on-post conservation program was the foundation, the Army's progressive PLI played a significant role in these successes.

Broader DoD Approach to Institutionalize Success

DoD recognized the power of Fort Bragg's approach to address encroachment by conserving habitat and reducing the effects of burgeoning urban and suburban sprawl. Using the Fort Bragg approach as a model, DoD worked with Congress to clarify and expand legislative authority. Congress (through the National Defense Authorization Act for Fiscal Year 2003, Section 2811) enacted "Agreements to Limit Encroachment and Other Constraints on Military Training," now codified at 10 U.S.C. Section 2684a. The Army implemented this authority, formalizing the Army Compatible Use Buffer (ACUB) Program. In 2005, the DoD established the Readiness and Environmental Protection Initiative (REPI) which endeavours to fund buffer protection programs throughout the DoD modelled largely on the Army's ACUB program. Due to the Army's success with PLI at Fort Bragg and establishment of the ACUB program, many other Army installations across the United States (e.g. Ft. Huachuca, Arizona; Ft. Carson, Colorado; Ft. Stewart, Georgia; Camp Blanding, Florida, and others) quickly developed similar cooperative conservation partnerships. The other military services have followed suit on lands under their jurisdiction.

Through REPI, the DoD funded the ACUB program for the first time in FY05, granting $6.5 million to the Army. The Army supplemented this with an additional $12.9 million. Those funds were obligated towards cooperative agreements at Fort Bragg; Camp Blanding, Florida; Camp Ripley, Minnesota; Fort Carson, Colorado; Fort Stewart, Georgia; and the U.S. Army Garrison Hawaii. As of 30 September 2008, ACUB had protected in perpetuity a total of 123 parcels covering approximately 59,030 acres in 17 states. Additionally, the value of partnership contributions is estimated at $86 million. The number of Army installations with approved ACUB projects had expanded to 29 as of 30 September 2009.

Stakeholders

Stakeholders in the Fort Bragg compatible use program include:

- Local citizens
- Adjacent County citizens
- Land Owners
- Conservation Organizations
- Farming Organizations
- US Fish and Wildlife Service
- Department of Defense

Lessons Learned

The ability of Fort Bragg and eventually so many other military installations to develop and implement an effective program for long-term conservation and mission

sustainability provides several valuable lessons learned on partnership, open communication, and a common goal:

- *Personal Relationships* – Long-term, working relationships take time to develop, but they are instrumental to carry out the kind of productive discussions that enable compatibility. The conservation community and military generated a dialogue, without which the ACUB strategy would have been impossible.
- *Dedicated Community Partnership Personnel* – Creating a sustainability and/or a liaison position between military and the surrounding community institutionalizes the partnership and encourages cooperation.
- *Communication* – It is crucial for the military to educate partners about its mission, needs and why certain lands and activities are priorities, as well as what *Information and Technology Sharing* – Including all the tools at one's disposal, such as the GIS capability, helps make the most accurate projection of what future land use issues will look like. The process is key, and part of that process is proactive engagement with stakeholders, which, in turn enables early action, with accurate and effective results.
- *Training* – Formal sustainability and community partnership training will entrench best practices for working with civilian partners on land use compatibility and ensuring success.

More information on Ft Bragg is available at:
http://www.bragg.army.mil/ESB/program_faqs.htm
More information on the US Army's Compatible Use Buffer program is available at:
http://www.sustainability.army.mil/tools/programtools_acub.cfm

GLOSSARY

AICUZ	Air Installations Compatible Use Zones provide local communities the tools required to identify land uses compatible with noise levels, accident potential and obstruction clearance criteria associated with military airfield operations
Buffer zone	An area abutting land used by the military that is set aside and precluded from being developed
Compatible Use	Uses of adjacent lands that do not adversely impact each other
Conservation easement	Encumbrance, sometimes including a transfer of usage rights, which creates a legally enforceable land preservation agreement
Co-use	Facility infrastructure on a military installation that is shared by the installation and the local community
Cultural resources	Any place of aesthetic, architectural, historical or spiritual value or significance
Deployment	The period a base is occupied from the moment of arrival until the base is deemed obsolete for the purpose of the operation and includes mobilisation (i.e., movement to area), execution of the mission, and rotation of forces.
Encroachment	The real or perceived conflict between the reasonable spatial requirements for mission sustainability and a host of economic, socio-political or environmental imperatives
Engagement	Interaction with others, such as stakeholders
Enhanced use leases	Allowing unused property on a base to be used for non-military purposes
Impact assessment	An analysis of how an activity may affect other people, organizations, or the environment
Infrastructure	Man-made features not natural to the environment, part and parcel of human activities and ways of life (e.g., transportation networks, buildings, utilities and fences)
Joint Use	Use of land or other space by more than one organization for their own purposes

Land Trusts	An organization that purchases and holds real estate under the terms of the organization's charter
Land use planning	Process of determining how land will be used and by whom over a set period of time
Lead agency	Refers to the highest level of operational planning within the organisation
Master Plan	A comprehensive document that identifies an organization's planning, land acquisition, development and management of the resources, programs and infrastructure needs
Military Advisory Board	Committee composed of government officials, military liaisons, and other stakeholders designed to facilitate discussion and work toward abating encroachment challenges around military installations
Mitigate	The implementation of practical measures to reduce or negate adverse impacts as well as to enhance beneficial results of the action.
Monitoring	A method to ensure that the requirements for compliance with relevant legislation and management systems are met.
Memorandum of Understanding (MOU)	An official document between two governments or agencies of those governments addressing the rights and responsibilities of both parties.
Mission Sustainability	Meeting current and future mission requirements – in the air, on land, and at sea – while concurrently safeguarding human health, quality of life, and the natural environment
Networking	Establishing and maintaining relationships with other people and organizations to improve communication and mutual understanding
Outreach	A process to inform and/or involve potential stakeholders in the issue being considered.
Partnering	Working with organizations outside the traditional chain of command
Rehabilitation	Rectifying adverse impacts by repairing or enhancing the affected resource to its original state
Stakeholder	A person, group of people, or organization that can be affected by or affect (either positively or negatively) the planned activity

Sustainability	To create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling a social, economic, and other requirements of present and future generations
Sustainable Development	Development that "meets the needs of the present without compromising the ability of future generations to meet their own needs." (UN Bruntland Commission, 1983)
White Space	Area outside the installation or range that, at any given time, is required to meet current or future military mission needs but is not under the management control of the military.

ACRONYMS

AAC	Air Armament Center
ACUB	Air Compatible Use Buffer
AFB	Air Force Base
AICUZ	Air Installation Compatible Use Zone
CAA	Civil Aviation Authority
CBO	Community Based Organization
CPLO	Community Plans and Liaison Office
DACE	Department of Agriculture, Conservation and Environment
DEAT	Department of Environmental Affairs and Tourism
DEFCOM	Defence Committee
DENIX	Defense Environmental Network and Information Exchange
DoD	Department of Defence
DoN	Department of the Navy
DWAF	Department of Water Affairs and Forestry
EAP	Encroachment Action Plan
EIA	Environmental Impact Assessment
ESD	Ecological Sustained Development
EP	Encroachment Partnering
ESWG	Environmental Security Working Group
GIS	Geographic Information System
I&AP	Interested and Affected Parties
ICAO	International Civil Aviation Organization
ICO	Installation Commanding Officer
IEM	Integrated Environmental Management
IMT	Internal Management Team
INRMP	Integrated Natural Resources Management Plan
JLUS	Joint Land Use Study
LASS	Lowveld Airspace Control Sector
LO	Liaison Officer
MoA	Memorandum of Agreement
MoD	Ministry of Defence
MST	Mission Sustainability Team
MTR	Military Training Route
NAS	Naval Air Station
NAVAIR	Naval Air
NAVFAC	Navy Facilities Engineering Command
NDPW	National Department of Public Works
NEMA	National Environmental Management Act
NGO	Non-Governmental Organisation
NVD	Night Vision Devices
NWF	Northwest Florida
OPMS	Outreach Program for Mission Sustainability
OTB	Overberg Test Range
PLI	Private Lands Initiative
PTA	Pienaarsrivier Training Area

RAICUZ	Range Compatible Use Zone
RCW	Red-cockaded Woodpecker
REPI	Readiness and Environmental Protection Initiative
RYG	Red-Yellow-Green
SAACTC	South African Army Combat Training Centre
SAAF	South African Air Force
SANDF	South Africa National Defence Force
SEA	Strategic Environmental Assessment
SECDEF	Secretary of Defense
SERPPAS	Southeast Regional Partnership for Planning and Sustainability
SUA	Special Use Airspace
SWOT	Strengths, weaknesses, opportunities, and threats
TES	Threatened and Endangered Species
TFDC	Test Flight and Development Centre
TNC	The Nature Conservancy
USFWS	United States Fish and Wildlife Service

REFERENCES

Numerous documents from international organizations as well as the US and RSA Defence Departments were utilised during the development of this guidebook. Some of these documents are available as public domain on the World Wide Web, and are so noted below. For those publications which list availability on www.denix.osd.mil, the specific location within that website is:
https://www.denix.osd.mil/portal/page/portal/SustainableRangeInitiative/Tools/Primers.

Army National Guard, *Community Involvement Handbook* (2009 draft version). Concise document focused on how US Army National Guard can create an outreach program with the local community, but much is applicable to similar efforts by any military facility. Also includes a number of templates in its Appendices such as who should be part of the outreach team, types of potential stakeholder organizations, and who might be involved in outreach of specific issues (e.g., noise, environmental restoration, endangered species, compatible use buffer zones). A copy may be obtained by writing to the following address: NGB-ARE; 111 South George Mason Drive; Arlington, VA 22204; USA.

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Collaborative Land Use Planning: A Guide for Military Installations and Local Governments (International City/County Management Association and Metropolitan Institute at Virginia Tech), https://www.denix.osd.mil. Addresses the importance of collaboration between military installations and regional committees (in the US, Regional Councils) in managing the infrastructure and resources to meet the needs of all stakeholders.

Commander's Guide to Community Involvement (Range Commanders Council Sustainability Group), https://www.denix.osd.mil. An overview document to provide commanders the information they need to work with the community in order to protect their military mission. Explains that effective stakeholder involvement is key in maintaining the military's current and future mission.

Creighton, James L., "*The Public Participation Handbook: Making Better Decisions through Citizen Involvement* (Jossey-Bass, 2005). A guide about how to design and facilitate public participation in environmental and public policy decision making. Offers a tool kit for designing a participation process, selecting techniques to encourage participation, facilitating public meetings, working with the media, and evaluating the program. Includes checklists, worksheets, and case studies.

Department of Defense Office of Economic Adjustment, *Joint Land Use Study Program Guidance Manual* (November 2006), www.oea.gov. Describes how the military and civilian communities can work together to create a Joint Land Use Study

(JLUS). The purpose of a JLUS is to promote compatible civilian development near military installations. It includes a template for what should be included in a JLUS.

Department of Defense Sustainable Ranges: Better Planning through Partnerships, https://www.denix.osd.mil. Written for a military audience, this primer describes and stresses the importance of good environmental stewardship and compatible land uses necessary to ensure that ranges can support realistic weapons systems' testing and combat training, which is so vital to war fighting readiness.

DoD Conservation Partnerships to Support Military Training and Testing: A Primer for Partnering with the Military, https://www.denix.osd.mil. Written to assist people working in land trusts and local governments who partner with DoD on buffer zone projects. Designed to: help these partners understand how DoD's Readiness and Environmental Protection Initiative (REPI) works; provide essential steps to partnering with the military; and facilitate communication and potential collaboration among stakeholders on encroachment issues.

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International Civil Aviation Authority (ICAO). Annex 14 guides the Air Force with respect to inputs to new developments adjacent to air bases, in order to protect navigable air pace as well as flight safety restrictions on new developments.

National Environmental Management Act (NEMA) Act 107, 1998. This South African document stipulates that any potential impact of activities that may significantly affect the environment must be assessed prior to implementation. The public participation process forms an integral part of this process.

Non Governmental Organization Primer; to be posted on https://www.denix.osd.mil. Describes the evolution and scope of NGOs in the US and describes a cyclical engagement strategy for working with NGOs.

Readiness and Environmental Protection Initiative: Diverse Partners, Common Goals. Uncommon Results (US Department of Defense), https://www.denix.osd.mil. Describes the US DoD's Readiness and Environmental Protection Initiative, which provides funding for the military to work with state and local governments, non-governmental organizations (NGOs), and willing land owners to help prevent

encroachment of test and training areas. The funding leverages public/private partnerships and additional financial commitments to promote innovative land conservation solutions that benefit both military readiness and the environment.

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Strengthening Military-Community Partnerships: Land Use, Clean Energy and Mission Change (National Conference of State Legislatures), https://www.denix.osd.mil. Explains to military and local government officials the state (regional) legislative sustainability practices and highlights strategies for dealing with base and community growth through encroachment prevention, resource conservation, joint planning, and cost-sharing for future mission changes. Provides policy options to the military and legislators to sustain a military installation's operation through changing times.

Supporting Defense Communities: State and Military Lessons Learned (National Conference of State Legislatures), https://www.denix.osd.mil. Analyzes trends in the legislation of US states that support defence communities. Covers three categories in which significant legislation has occurred: compatible land use near military bases; clean energy and environmental practices; and overall development of installations-community partnerships. Includes case studies.

White Paper on National Defence for the Republic of South Africa, 1996 and the *South African Defence Review*, 1998. Shortly after the 1994 elections, the Government of National Unity started with the development of the White Paper on Defence (completed in 1996) and the Defence Review (completed in 1998). The latter was the culmination of the defence policy development process. The White Paper presents the defence policy of the Government of National Unity following a process of consultation with Parliament and the public. Its principle purpose is to inform citizens and other states (particularly those in Africa) of South Africa's new defence policy. The White Paper also provides for a Defence Review, the aim of which is to elaborate on this policy framework through comprehensive long-range

planning on such matters as posture, doctrine, force design, force levels, logistic support, armaments, equipment, human resources, and funding.

Working to Preserve Farm, Forest and Ranch Lands: A Guide for Military Installations (American Farmland Trust), https://www.denix.osd.mil. Describes some US DoD initiatives to engage with local communities to help conserve land for farming, protect valuable habitat, support well-planned growth, and preserve significant historical and cultural assets while promoting development that is consistent with the military's mission.

Working with Land Trusts: A Guide for Military Installations and Land Trusts (Land Trust Alliance), https://www.denix.osd.mil. Designed to provide military installation leaders with insight and understanding about land trusts and how they use land purchases and conservation easements to address encroachment and urban growth. By partnering with land trusts, the military can keep encroachment to a minimum near the installation fence line, while protecting important natural resources and maintaining agricultural and recreational lands.

Working with Local Governments: A Practical Guide for Installations (International City/County Management Association, National Association of Counties), https://www.denix.osd.mil. Offers suggestions and solutions for installation managers when working with local governments. Both parties must ensure that decisions are mutually advantageous. By engaging with local government officials—both formally and informally—the result will be cohesive, mutually beneficial regulations that adequately represent what is best for the entire locality.

Working with State Legislators: A Guide for Military Installations and State Legislators (National Conference of State Legislators), https://www.denix.osd.mil. This document notes that both states (regions) and the military face significant challenges from urban growth and development and explains how these encroachment challenges affect them both. It provides information to enhance the military's understanding of state (regional) legislatures, and suggests resources and tools for engaging with legislators in compatible land use planning to meet sustainability requirements in mutually beneficial ways.

Other Documents Developed under the Auspices of the US-RSA DEFCOM ESWG

The following are guidebooks and other documents previously developed by joint US-RSA teams for use by the international defence environmental community.

Publication ESWG/001 – Conversion of Military Bases in South Africa

Publication ESWG/002 – Military Integrated Training Range Management Guidebook

Publication ESWG/003 – Partnering to Build a South African Ministry of Defence Facilities Management Web Site

Publication ESWG/004 – Guidebook on the Development and Implementation of Environmental Education and Training in the Military

Publication ESWG/005 – Guidebook on Environmental Impact Assessment in the Military

Publication ESWG/006 – Guidebook on Environmental Considerations during Military Operations

Publication ESWG/007 – Guidebook on Integrated Waste Management in the Military

Publication ESWG/008 – Ten Years On: The US-RSA Environmental Security Working Group, 1997-2007: 10 Years of International Military Environmental Cooperation

Copies may be downloaded from the publicly accessible portion of the DENIX website, https://www.denix.osd.mil, in the “References” section of the “International” toolbar.

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The United States of America and Republic of South Africa cooperate on defence-related issues of mutual concern under the bilateral DEFCOM. The ESWG, which was established in December 1997 to address strategic environmental considerations, is part of the DEFCOM structure. The ESWG, co-chaired by RSA and US DOD senior environmental leaders, is tasked with identifying bilateral project initiatives. For each initiative, joint project teams are then established based upon the required subject matter expertise, with project teams convening in either of the two countries to develop and complete their efforts. The project team for this Guidebook was comprised of subject matter experts from the US and RSA with experience in environmental management, sustainability, and outreach programs. The team met for three working group sessions in Pretoria, South Africa, participated in the Sustainable Range Management conference in Phoenix, Arizona in August 2009, and conducted site visits to several US military bases throughout Arizona. The following individuals provided significant contributions to the development and completion of this Guidebook.

Guidebook team during site visit to Luke AFB, Arizona in August 2009. Front: Joe Knott, Annelle Human. Back: Etienne van Blerk, Clare Mendelsohn, Tommie Arpin, Eric Mali, Susan Clark-Sestak. Missing from photograph: Jan Larkin.

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