

Chapter VI

Protection of the Environment During Armed Conflict and Other Military Operations

Major General Robert E. Linhard, U.S. Air Force*

When the war starts all bets are off.” This is the consensus most environmental managers hold once a military action is under way. Several Air Force environmental managers we spoke to agreed. On the one hand, the Air Force has made an unwavering commitment to cleaning up and protecting the environment; on the other hand, military operations are capable of unprecedented destruction. On the surface it would appear that we are stuck with a dichotomy. In public statements, in our spending and in our day-to-day operations, the Air Force sets a high standard for environmental consciousness. Yet, during Operation Desert Storm the environmental damage was unprecedented. Environmental destruction is a fact of war and protecting the environment cannot stand in the way of military victory. This paper will address the Air Force’s unwavering commitment to protect the environment, review the environmental destruction that occurred during Operation Desert Storm, and suggest possible ways that environmental damage might be mitigated during military operations.

Air Force Commitment to Environmental Protection

Air Force conservation programs can be traced back to World War II, to air base construction by the US Army Corps of Engineers for the Army Air Corps. In those days, our programs focused on soil erosion and dust control around the airfields. It was not until the sweeping environmental cleanup and hazardous waste control legislation of the 1980’s that the Department of Defense undertook a multi-billion dollar installation restoration program.¹

In 1991, Air Force Chief of Staff, General Merrill McPeak made protection and enhancement of natural and cultural resources an environmental leadership goal for the Air Force.² As recently as March 1995, Secretary of the Air Force Sheila Widnall, referring to our military training areas, said:

We know we have an obligation to the American People to practice and promote positive resource stewardship . . . The Air Force is the lead agency in developing the first course in managing natural resources in military lands . . . We recognize that this is not enough. We must establish new policies to fully integrate our stewardship responsibilities with the military mission.³

58 Protection of the Environment During Armed Conflict

In April of this year, while presenting the Air Force Annual Environmental Awards, Air Force Vice Chief of Staff, General Thomas Moorman, asserted that the Air Force is a model for other government agencies. He said:

The Air Force is proactive in environmental clean up . . . Our goal is simple: no violation of federal standards. To do this, we have made environmental compliance a mind set for our daily operations . . . In our acquisition programs we have reduced our purchasing of toxic substances and made a deliberate decision not to incorporate environmentally damaging substances into our future purchases. Also, we established the Commanders' Environmental Leadership Course to train our commanders on how to recognize and solve environmental problems.⁴

Commitment to the environment at this level comes at a cost. Impacts on spending levels for cleanup, compliance, normal operations and even acquisitions have been substantial. Increased spending is a good news, bad news story, with a happy ending. Throughout the 1980s, we increased spending on compliance and cleanup. We are already seeing benefits in our compliance and pollution prevention programs. Spending has peaked and our investments are paying off.

On the acquisition front, the story is similar. A recent study was conducted on the impact environmental factors are having on the acquisition process. Offices that participated in the study said they are required to consider almost every aspect of the environment. Examples include: ozone depleting substances, toxins, volatile organic compounds, noise, petroleum products, heavy metals, endangered species, radioactive materials, historical or cultural site preservation, respirable fibers, thermal waste, and others. Seventy percent of the program management offices reported adverse impacts on their programs attributed to an environmental issue. Primarily, the impacts are increases in costs and excessive delays.⁵ The good news here is most often in the ultimate result. Numerous success stories exist. For example, the Joint Primary Aircraft Training System (JPATS), the replacement for the T-37 aircraft, has no ozone depleting substances and is almost free of toxins and dangerous heavy metals. Similar success stories can be told of the C-17, the F-16 and the F-22 aircraft.

The Dilemma of Environmental Protection and Military Operations

Clearly, the Air Force is committed to protecting the environment. But how are we addressing the environmental damage due to war and training for war? At least one author has seen some humor in this apparent dichotomy. In a recent article in *The Washington Times* Mario Mozzilo noted:

The ferocity of our nation's fighting personnel has been ameliorated by other species . . . Pressure by environmental managers and the Environmental Protection Agency (EPA), has resulted in the Pentagon agreeing to stop M-1 super tanks and Bradley Armored Personnel Carriers from roaring through the forest and blasting

the hillsides at Fort Bragg, N.C. Why? It seems this activity disturbs the nesting habits of the red-headed woodpecker . . . Public officials have closed some 25,000 acres of these military reservations to maneuvers. One might ask what is a military reservation for, if not to conduct military maneuvers? Or, why these guns are permitted to . . . kill humans in wartime but not annoy woodpeckers in peacetime?⁶

At least one point Mozzillo is trying to make is well taken. The Air Force is committed to protecting the environment, but we can use environmental programs to impact readiness. It is imperative that we consider all aspects of the environment when conducting our operations, to include war, but *not* to the extent that protecting the environment will inhibit our ability to successfully conduct operations or win a war. Damage to the environment during military operations, especially war, is inevitable. The Persian Gulf War stands as a recent reminder of war's destructive capability.

Operation Desert Storm Destruction

Through the eyes of television we learned, with the rest of the world, the true destructive nature of war. We also learned that environmental destruction during this conflict came in two forms; Saddam Hussein's deliberate destruction as an indirect way to achieve a military objective and the collateral environmental damage caused by Coalition forces while conducting military operations. The first case is a violation of international law. The second is apparently not. Laws of war reflected in custom and international agreements are problematic in this area. If the intent of the attacker is the destruction of enemy capabilities and not the devastating environmental side effects, then the environmental effects have to be considered as part of the traditional balancing of military necessity against foreseeable damage to noncombatants and civilian property. Where the expected collateral damage is not disproportionate, the attack is legal. Although outside the focus of this paper, it seems that Saddam Hussein's directive to deliberately spill millions of gallons of oil, blow up as many as 1,250 oil well-heads and leave 600 wells burning is a clear violation of international law. Primarily, his attack was on the environment. His secondary objectives were either to shut down desalinization plants or to destroy the economy of Kuwait.⁷

In contrast, United States and Coalition forces avoided environmentally sensitive targets. Nevertheless, the destruction by Coalition forces was significant and lasting. Susan Lanier-Graham, in her text *The Ecology of War* discusses the environmental damage of the Persian Gulf War:

Environmental hazards following the Persian Gulf War are primarily the results of oil fires and oil spills throughout the Gulf region . . . Smoke from the burning oil contained polycyclic aromatic hydrocarbons and trace metals such as nickel,

60 Protection of the Environment During Armed Conflict

chromium, and vanadium, all of which are known, or suspected to cause cancer in animals and humans . . . The smoke contains sulfur dioxide and nitrogen oxides that collect in the atmosphere and return to the surface as acid rain. The area's sandy soils are not acid tolerant, making agricultural conditions worse . . . Water supplies are also in danger of contamination from acid rain . . . Besides the publicized damage from oil fires and the spills, there were numerous other environmental disasters . . . Prior to the war, Kuwait had a camel population of 10,000. They are now estimated at 2,000 . . . The Kuwait City Zoo was destroyed by Iraqi soldiers . . . The bird population was decimated . . . and the damage to desert ecology, marine life is immeasurable. The thousands of military vehicles moving across the sand not only destroyed the fragile desert plants, but broke through the desert's natural crust that helps lessen problems of wind and erosion . . . One immediate result will be in the increased severity of dust storms. . . It has been estimated that as much as 25 percent of Kuwait's land surface has been devastated.⁸

Concern over environmental destruction during a military operation like Desert Storm takes a back seat to military objectives and protecting and taking care of lives. Once the war is over, the focus often shifts to the devastation and the need for remediation. Today, the United States and some of the Coalition countries are helping Kuwait clean up the residue and ravages of war. Working together, they are trying to ameliorate the ecological devastation that it caused.

Reportedly thousands of tons of unexploded ordnance exist. There were more unexploded bombs than in other circumstances, because of the soft landing spot. Blowing and drifting sands make it impossible . . . to easily locate objects . . . Of the 88,500 tons of bombs dropped on Iraq, 17,700 tons, or as many as 20 percent may have never exploded . . . An estimated 1 million unexploded Rockeye bomblets litter the U.S. designated sector of the Kuwait desert; an area comprising 1,207 square miles of the desert the United States is responsible for clearing. The difficulty with removing the Rockeyes is that they are small and not located in any particular pattern . . . Experts estimate it could be forty years before the desert is considered safe . . . Another closely related problem is the ammunition fired from the A-10 aircraft and the M-1 tank . . . Both fire ammunition with depleted uranium projectiles . . . If the projectile hits a solid object, such as a tank, it disintegrates, leaving uranium dust. If the penetrator hits the ground it stays intact . . . the uranium, 8-10 lbs per projectile, remains in the desert . . . The Kuwaiti government has asked to have all of the depleted uranium projectiles removed from Kuwaiti soil . . . The price for clean up will be astronomical.⁹

Coalition governments have already begun the clean up.

What Can We Do?

As military planners, we can ensure positive steps are taken to consider the environment throughout the entire range of military operations. We need to take the next step forward in environmental awareness. Environmental analysis and

environmental planning should be incorporated into all of our plans. Additionally, as military operations are prosecuted (war or otherwise), environmental managers should become part of the process. During the operation, environmental managers should stay current on the weapons used and the destruction taking place (land, sea, air and species). Environmental analysis should continue throughout the operation with two primary concerns. First, what recommendations can be made to the decision makers, the leaders, to minimize permanent or lasting environmental damage and still accomplish the mission? Second, what will be required for eventual remediation of the area of operation? The idea here is not to advocate that environmental concerns be the primary focus. Rather, continued involvement by a knowledgeable environmentalist would ensure compliance with environmental laws and that the decision makers are aware of the environmental implications of their choices. Incorporating environmental managers into the process is our best option to minimize any permanent or long-lasting environmental damage.

Incorporating environmental planning and involvement will take time. Current operational and war plans are being thoroughly reviewed. However, for the most part, they do not contain an environmental section. One war plan recently reviewed addressed operations in a chemical, biological, and nuclear environment, but the environmental consequences of those operations were not specifically addressed. In another plan, similar capabilities were discussed in terms of potential enemy capabilities, but, again, an environmental review was not undertaken.

The Air Force is now in a transition phase. Our planning review guides need to be reviewed and updated. Likewise, the core directives we use to develop our plans should ensure we consider and manage the environmental impacts of our operations. We are almost there. An Air Force manual, entitled *Operation Plan and Concept Development and Implementation*, promulgated on April 4, 1994, includes an Appendix to the Civil Engineer Annex detailing environmental protection and compliance tasks to be addressed in Air Force unique planning.¹⁰ Chairman of the Joint Chiefs of Staff Instruction entitled *Joint Operations Planning and Execution System, Volume II Planning Formats and Guidance* contains an extensive Environmental Assessment Appendix.¹¹ This Appendix requires a complete description of the contemplated military action. It discusses "major actions" and asks whether "significant harm to the environment or a global resource" will occur. In addition, this Instruction requires: analysis of options or alternatives, complete descriptions of the environmental settings (topology, vegetation, climate, wildlife, archeological and historic sites, water quality and air quality), the anticipated environmental impact of the operation and, finally, mitigation and monitoring. Although, this Instruction is still in draft, it will take us one large step closer to fully incorporating environmental planning, compliance and monitoring into our

62 Protection of the Environment During Armed Conflict

day-to-day operations. Admiral Jeremiah, when Vice Chairman of the Joint Chiefs of Staff, stated that:

Our mission of preparing for war will still come first, but with it should come the need to aggressively eliminate any permanently destructive effects our actions might have on the environment.¹²

It is clear, we will never be able to eliminate environmental destruction from our combat operations. Our commitment to the preservation and protection of the natural environment does not have to impede our operations or adversely impact our ability to win. Environmental involvement throughout our operations will simply provide decisionmakers with planning, prosecution and eventual clean up options: With full integration of our environmental commitment into our plans and operations, we can maximize our ability to achieve Admiral Jeremiah's goal of no permanent destruction to our environment.

Notes

*Director of Plans, Deputy Chief of Staff, Plans and Operations, Headquarters, U.S. Air Force.

1. Lillie & Ripley, *A Strategy for Implementing Ecosystem Management in the United States Air Force*, HQ USAF/CEVP, Pentagon, Washington DC, (unpublished).

2. McPeak, Chief of Staff, U.S. Air Force, Apr. 17, 1991, *in id.*

3. Widnall, Secretary of the Air Force, remarks to DoD Biodiversity Initiative National Wildlife Visitor Center, Laurel, MD, (Mar. 1, 1995).

4. Moorman, Air Force Vice Chief of Staff, remarks to the Annual Environmental Awards, Pentagon, Wash. D.C., (Apr. 1995).

5. Nobile, *Environmental Practice Management Offices*, DSMC Press, Technical report, TR1-95, January, 1995, Introduction, Chapter 12, Impacts of Environmental Issues on Acquisition Programs.

6. Mozzillio, *Fire Power Fallen From the Nest*, The Washington Times, July 19, 1995.

7. LANIER-GRAHAM, *THE ECOLOGY OF WAR*, 43-51, 69-73, 123-136 (1993).

8. *Id.*, at 49-50.

9. *Id.*, at 52, 63-66.

10. Department of the Air Force, Air Force Manual 10-402, *Operation Plan and Concept Development and Implementation* (1994).

11. Department of Defense, Chairman of the Joint Chiefs of Staff Instruction 3122.03, *Joint Operations Planning and Execution System, Volume II Planning Formats and Guidance* (in draft).

12. *Supra* n. 7, at 126.