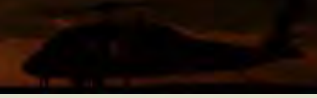




U.S. ARMY SUSTAINABILITY



The Army on the Move

Sustain the Mission Secure the Future



Michael L Cain, Director Army Environmental Policy Institute
27 January 2009



U.S. ARMY SUSTAINABILITY

PURPOSE

Information Briefing, the Status and Accomplishments of the Army's Sustainability Initiative.



U.S. ARMY

U.S. ARMY SUSTAINABILITY

The Army... Our National Standard Bearer

“Pay attention: When the U.S. Army desegregated, the country really desegregated; when the Army goes green, the country could really go green.”

Thomas L. Friedman

NY Times columnist and Pulitzer Prize winning author
(Speaker at AEPI Sustainability Lecture Series)



U.S. ARMY SUSTAINABILITY

BLUF

Army Sustainability essential to:

1. Restoring balance to the Army
2. Setting conditions to fulfill strategic role as integral element of Landpower

Army sustainability supports CSA imperatives:

1. Sustain
2. Prepare
3. Reset
4. Transform

Sustain the Mission – Secure the Future



U.S. ARMY SUSTAINABILITY

Sustainability is about Balancing *...the whole system*

“Sustainability connects our activities today to those of tomorrow with sound business and environmental practices. We have learned over the past decades that simply complying with environmental regulations will not ensure that we will be able to sustain our mission. We must strive to become systems thinkers if we are to benefit from the interrelationships of the *triple bottom line* of sustainability: mission, environment, and community.”

(September 2004)

Peter J. Schoomaker

General, United States Army

Chief of Staff





Army Sustainability

Sustainability Defined

A sustainable Army simultaneously

- meets current as well as future mission requirements worldwide
- safeguards human health
- improves quality of life, and
- enhances the natural environment.

The Army Strategy for the Environment



Our Goals

- Foster a sustainability ethic
- Strengthen Army operations
- Meet test, training, and mission requirements
- Minimize impacts and total ownership costs
- Enhance Well-being
- Drive Innovation

“Triple bottom line” Plus –

Mission Environment, Community + Economy



U.S. ARMY SUSTAINABILITY

Senior Army Leadership

"Sustainability is a national security imperative, in a world of decreasing natural resources and increasing demand. The Army is building green, buying green, and going green in order to ensure that soldiers have the resources they need to accomplish their mission in the United States and globally"

Pete Geren
Secretary of the Army



Sustain by Building Green

- LEED Silver construction
- Zero Footprint Camp
- Sustainable Training Areas



Stream crossing
at Ft. Hood



Solar Power at Fort Dix Barracks

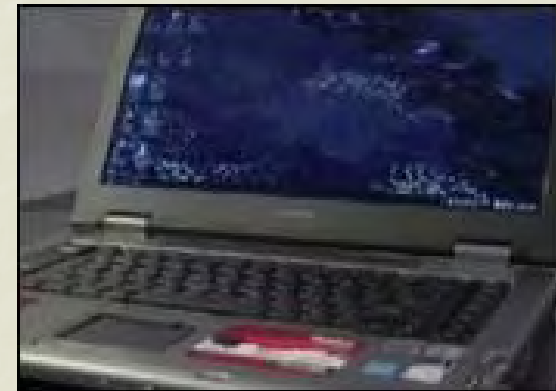


Insulating Foam for
FOBs



Prepare by Buying Green

- Army's Green Procurement Guide. Preference for:
 - Recovered Materials
 - Biobased products
 - Energy efficient products
 - Non Ozone-depleting substances
 - Environmentally preferred products



Green Computers



Stryker system



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Prepare with renewable Energy



Camp Williams, UT



Hawaii Housing



Rapid Equipping Force



Field tactical battery charging



Fort Carson photo-voltaic



New Jersey National Guard



Reset by Going Green

- Integrated Hybrid Technology
- Alternative fuel vehicles
- Renewable Energy



Hybrid Heavy Truck (HEMMT)



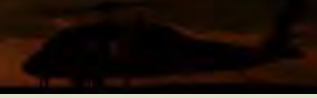
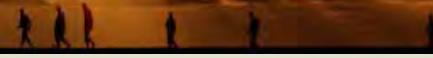
Hybrid Electric Drive Vehicle



Army/GM Fuel Cell Pickup



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Army Energy Enterprise Update

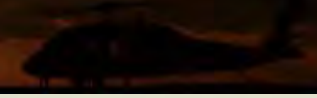
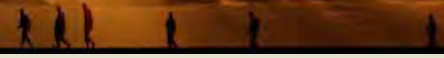
- SECARMY Stands Up AESTF – 16 April 2008
- AESTF Recommendations Approved by SECARMY - 19 June 2008
 - Establish Army Governance - Senior Energy Executive (SEE) & Senior Energy Council (SEC) to achieve the following goals:
 - ✿ Create a culture of energy accountability across the Army
 - ✿ Reduce Army energy consumption and increase efficiency to enhance operational capabilities
 - ✿ Increase use of new/alternative energy sources
 - ✿ Establish benchmarks for energy footprint
 - ✿ Champion investment strategies supporting Army energy programs
- SECARMY Inaugural SEC – 26 August 2008
- SEC Charter Signed By SECARMY & CSA – September 2008
- SECARMY Directive 2008-04, Army Energy Enterprise – 20 October 2008
- Army/Industry Dialogue on Renewable Energy – 17 November 2008
- Next Steps - Development/Implementation Of Energy Strategic Plan



Transform with Army Green Chemistry

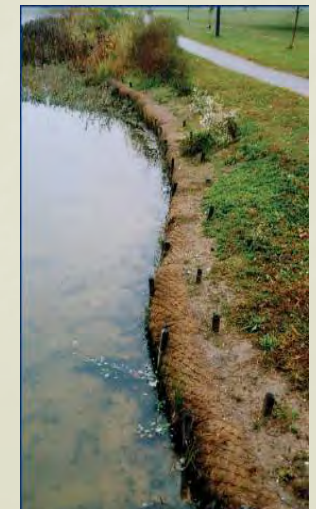
- Halon and ODS alternatives
- Cadmium, Chrome (VI) substitutes
- Perchlorate replacements
- Green munitions
 - M115A2 Artillery Simulator
 - M116A1 Hand Grenade Simulator
- HAP-Free/Low VOC paints and solvents
- Redwater-free TNT
- Energetic material “Virtual Laboratory”

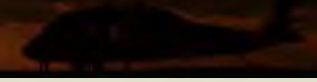




Transform with Low Impact Installations

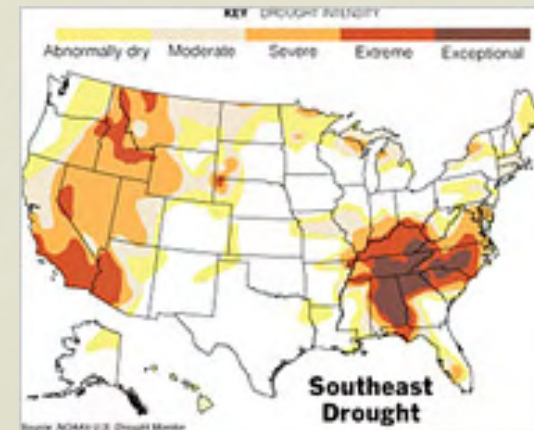
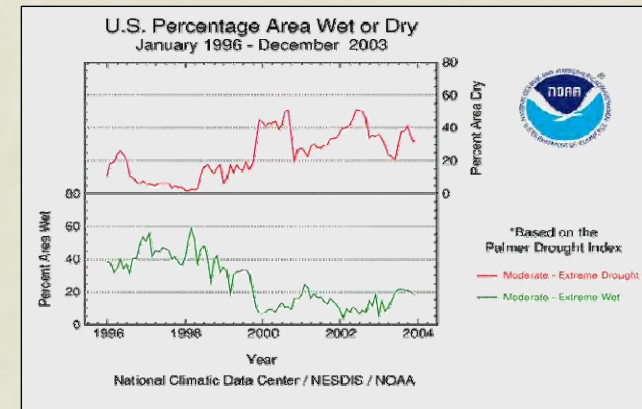
- Chesapeake Bay Initiative: 19 Army Installations; 310,000 Acres of Army Property
- Emerging Army Strategy:
 - Incorporate Low Impact Development projects
 - Contribute to restoring healthy waters and habitats
 - Support stewardship of Chesapeake Bay fisheries and watersheds
 - Nutrient Management Plans
 - Control invasive species





Transform with reduced need for water

- Evaluate the vulnerability of Army installations to potential water shortages over the next 30 years
- Identify policy options and technology advances to minimize potential water shortage impacts on Army missions
- Develop Installation Water Assessment Methodology
- Assist installations in crafting sustainable water use strategies in support of the “triple bottom line – plus”





U.S. ARMY SUSTAINABILITY

Strategic Landpower: RAND Green Warrior Report

- Commanders, Staff and leaders must consider environmental impacts early and often
 - Protect Soldier health/minimize risk
 - Avoid costly clean-up after the fact
 - Save precious and costly resources
 - Achieve operational and strategic goals
- RAND researched Iraq, Afghanistan & Balkans
 - 111 Case Studies compiled
- Recommendations include
 - Update policies and doctrine
 - Better incorporate environmental considerations into planning
 - Improve pre-deployment and field environmental training
 - Carefully select and manage contractors
 - Use “sustainability” model for contingency operations



Green Warriors

Army Environmental Considerations
for Contingency Operations
from Planning Through Post-Conflict

David E. Mosher, Beth E. Lachman, Michael D. Greenberg,
Tiffany Nichols, Brian Rosen, Henry H. Willis





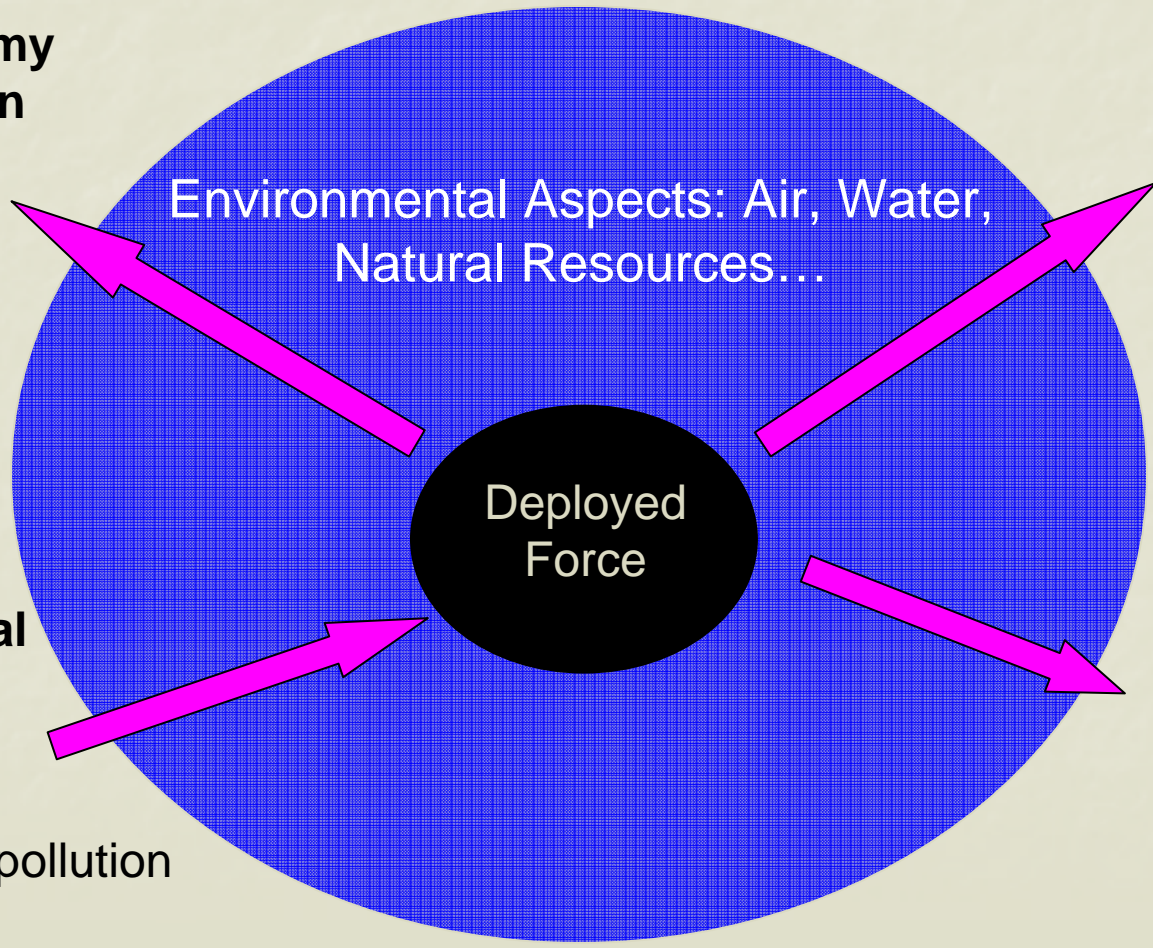
Interaction Between Deployed Forces and the Environment

Effects of Army Operations on Environment

- Combat operations
- Land use
- Waste

Effects of Environmental on Army

- Disease
- Climate
- Exposure to pollution
- Vectors



Army Actions to Secure Environmental Resources

- Dams
- Oil wells
- Infrastructure

Army Actions to Improve Environment

- Stability operations
- Environmental management at base camps



U.S. ARMY SUSTAINABILITY

Strategic Landpower: United States Africa Command



- Tanzania
 - Sustainable Ranges
 - Wildlife Conservation
- Zambezi River Basin
 - Transportation/Hydropower
 - Water Resources Management
- Remnants of War
 - Demining/UXO Removal
 - Munitions Storage





U.S. ARMY SUSTAINABILITY



Army Sustainability: Meeting the Future



Senior Service College

Fellowship Program



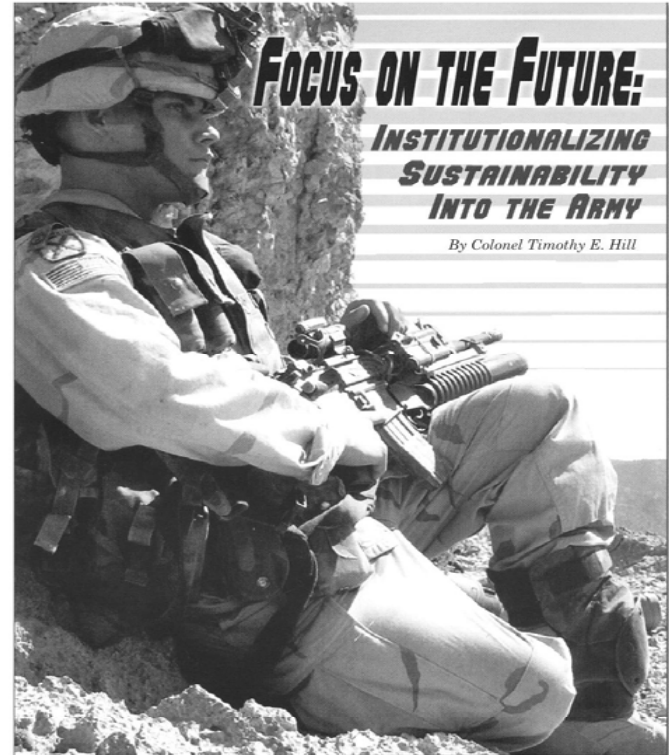
AEPI and USAWC Civilian Research Project

Reducing an Insurgency's Foothold:
Using Army Sustainability Concepts as a
Tool of Security Cooperation for AFRICOM



March 2008

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www.aepi.army.mil



One hundred years from now, when the Army's senior leaders reflect on how well the Army of 2008 coped with its challenges across the globe, will they conclude that the Army succeeded by adopting a strategic vision that included sustainable development? The answer should be in the affirmative.

Sustainable development owes its understanding to the concept of sustainability, which is defined as meeting present needs without compromising the ability of future generations to meet their own needs.² In other words, it means not squandering, depleting, or abusing the earth and its resources, but enhancing, enriching, and preserving them.³ An Army that focuses on sustainability is an

institution that seeks to maintain its organizational vitality and recognizes and values its stewardship responsibilities. Thus, institutionalizing sustainability through education and making it an integral feature of military operations will not only facilitate its introduction into Army culture but makes eminent sense for mission success as well.

Defining Sustainability

The term sustainability can be confusing to some in the Army because it sounds similar to other frequently used Army terms such as sustainment or stability. Sustainment is the provision of logistics and personnel services required to maintain and prolong operations until

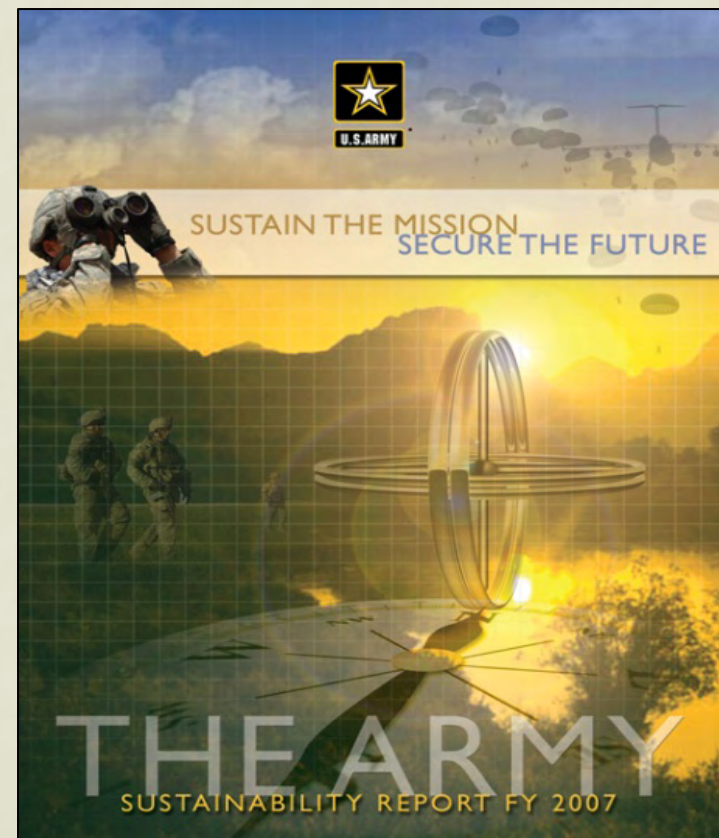


U.S. ARMY SUSTAINABILITY

Moving Sustainability Forward

"By nature, the Army is constantly looking for new ways to promote strength and stability in everyday operations. **The Army 2007 Sustainability Report** outlines what the Army has done to incorporate sustainability in that effort," said GEN Peter W. Chiarelli, Vice Chief of Staff of the Army.

www.AEPI.army.mil





U.S. ARMY SUSTAINABILITY

Gaining Momentum

UNITED STATES ARMY

Enclosure 17 (Army Sustainability - The Army Strategy for the Environment)

We are working aggressively to ensure that our Soldiers of today – and our Soldiers of the future – have the resources they need to accomplish their mission. These include:

- Land, water, and air resources needed to train and test systems;
- A healthy environment in which to live; and,
- Continued support of local communities, government officials, and the American people.

Our effort to institutionalize the concept of sustainability is enabling our Army to meet its current and future needs, while improving our ability to organize, equip, train, and deploy our Soldiers as part of the Joint Force.

The Army Strategy for the Environment – Sustain the Mission, Secure the Future – explains the concept of sustainability. This strategy – a starting point for promoting understanding – guides how we are integrating environmental considerations into each of our four overarching strategies. As we have learned from Army safety and occupational health programs, consideration of environmental factors must be an integral part of our planning – not an afterthought. For this reason, we are accelerating our movement from a traditional, compliance-based approach to environmental stewardship ... to an innovative, mission-oriented, systems-based approach.

Our approach recognizes the growing interdependence among mission, environment, and community that is a key feature of our evolving strategic and operational environment. Put simply, we are working to establish and sustain the environmental foundation required to support our transformation from the current to the future force. In doing so, we are applying all of the principles of our vital business transformation effort, now well under way. In light of the risks and costs that we already face as we reposition our global footprint and realign all of our bases, depots, and arsenals, we cannot afford to do otherwise.

Army Sustainability has six long-term goals:

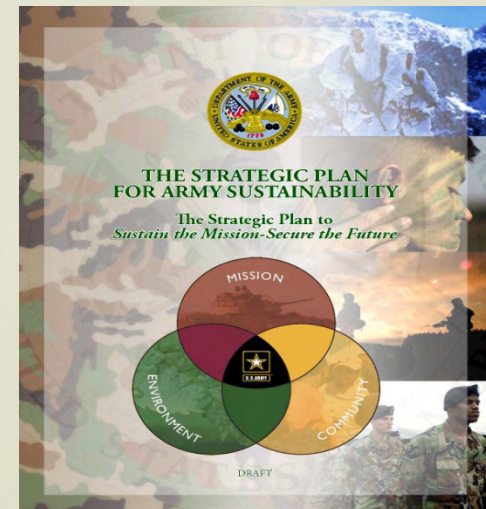
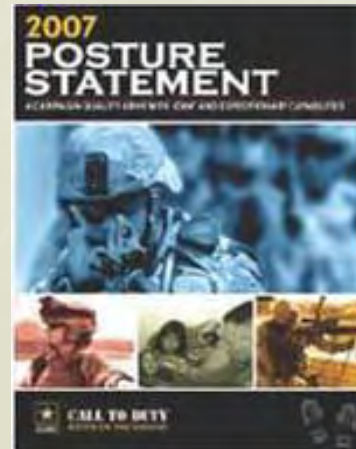
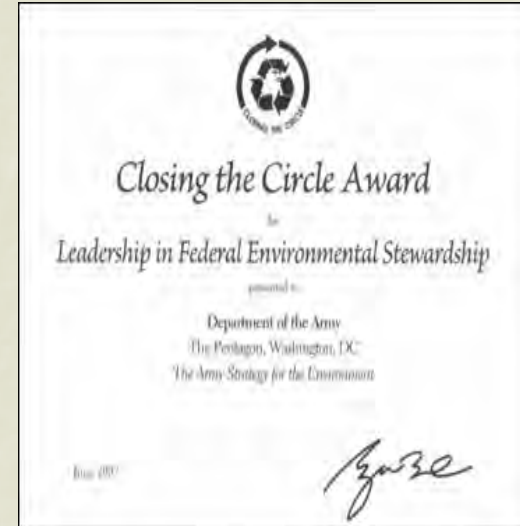
- Foster a sustainability ethic;
- Strengthen Army operations;
- Meet test, training, and mission requirements;
- Minimize impacts and total ownership costs;
- Enhance well-being; and,
- Drive innovation.

We are developing specific objectives to integrate sustainability throughout the Army. Numerous Army-wide initiatives are in development that will:

- Improve our ability to deploy rapidly and to transition seamlessly across the full spectrum of operations;
- Develop people, processes, and tools to provide capabilities for a sustainable future;
- Transform business practices by incorporating the triple bottom line of mission, environment, and community in all of our processes;
- Reinforce a culture of engagement that enhances collaboration with our stakeholders; and,
- Accelerate innovation by employing systems thinking and investing in sustainable technology.

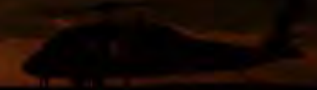


ENCL 17





U.S. ARMY SUSTAINABILITY



Army Values

“I genuinely believe the United States Army is a force of good in this world.”

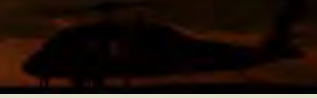
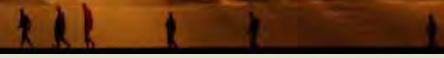
2LT Mark J. Daily
U.S. Army



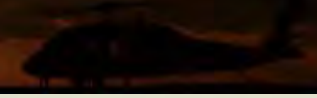
U.S. ARMY



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BACKUP SLIDES



Transform with less Green House Gas (GHG)

Enable Army to continue the mission while tracking and reducing greenhouse gas (GHG) emissions

Fort Carson Demonstration

- Scope 1 – track direct GHG emissions from sources within the boundary of Fort Carson
- Scope 2 – track indirect GHG emissions from purchased electricity, heat, or steam consumed at the Installation, but not generated by sources within the boundary of Fort Carson
- Scope 3 – track other indirect GHG emissions which are a consequence of Installation activities but are emitted from sources not owned or controlled by Fort Carson GHG Reduction Projects – permanent removal or offset of GHG emissions resulting from planned human activity



Conservation Case Study



Tanzanian Brigade 303 Training Area (size of Ft. Hood)

Africa Wildlife Foundation Manyara Ranch conservation area

The case study highlights an opportunity to link a military engagement activity with an existing USG/NGO project at marginal cost.

Animal Migration Paths

- Low use paths
- High use paths
- Wildlife Dispersal Areas



Regional Water Resources Case Study

The Zambezi River Basin demonstrates how the Army can contribute its technical expertise to support a major sustainable development effort with significant implications for several nations in the region.





Explosive Remnants of War Case Study

The case highlights using the basic core competencies of the military: de-mining, UXO disposal and munitions storage; to address the safety and sustainability of civil populations.



Mines kill healthy members of the community, creating a financial and social hardship while denying access to productive lands.



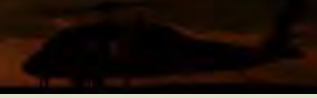
UXO pollute and threaten the safety of the community.

Munitions storage issues undermine the legitimacy of the state and limit the effectiveness of the military to execute basic missions.

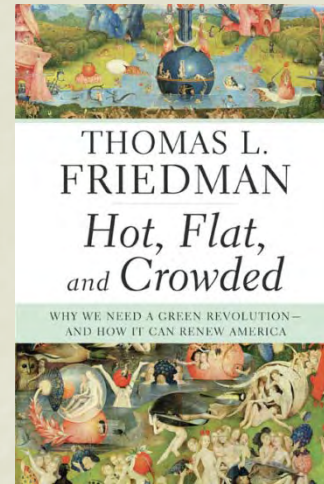
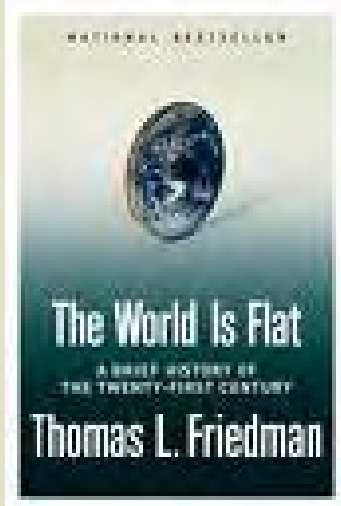
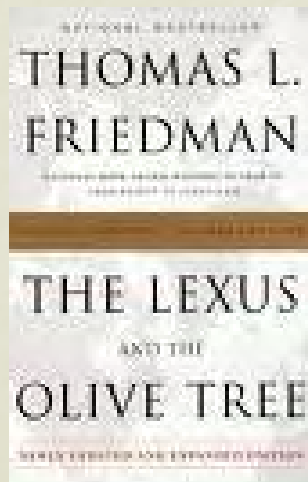




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"You can not make America stronger without making it greener... You can not make America more secure without making it greener... That's why Green is the new Red, White and Blue."



Thomas L. Friedman