U.S. Environmental Security: Understanding And Enabling It To Matter

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By

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ABSTRACT

U.S. ENVIRONMENTAL SECURITY, UNDERSTANDING AND

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This research project develops new knowledge of how U.S. national security and

homeland security practitioners and policymakers understand, define, and could yield

value from the concept of environmental security to meet their mission, policy, and

operational challenges. The project does so by achieving three primary objectives. First,

it captures U.S. national security and homeland security practitioners' and policymakers'

understandings and definitions of environmental security. Second, based upon those

understandings and definitions, it identifies common attributes that conceptually bridge,

operationalize, and could add value to these groups' existing mission, policy, and

operational responsibilities. Finally, based upon these analyses, it develops a better

understanding of current functional capability needs and resources within U.S. national

security and homeland security communities of practice.

LIST OF REFERENCES

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- AC/UNU Millennium Project. 1998. Environmental Security Studies Web Page. Millennium Project of the American Council for the United Nations University (AC/UNU Millennium Project). See http://www.acunu.org/millennium/env sec1.html (accessed 3/3/2007).
- Adams, Gordon. 2008. Smart Power: Rebalancing the Foreign Policy/National Security Toolkit. Hearing on: A Reliance on Smart Power Reforming the Foreign Assistance Bureaucracy (31 July 2008). Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Colombia, Senate Committee on Homeland Security and Governmental Affairs. U.S. Senate. See http://hsgac.senate.gov/public/□files/AdamsTestimony073108.pdf (accessed 10 □26 □08).
- Armitage, D.T. and Moisan, A.M. 2005. Constabulary Forces and Postconflict Transition: The Euro Atlantic Dimension. *Strategic Forum*, No. 218 (November 2005). Institute for National Security Studies, National Defense University. 1 8. See http://www.ndu.edu/inss/strforum/SF218/SF218.pdf (accessed 4/27/07).
- ASR. 2008. Anonymous Survey Respondent (ASR). U.S. Environmental Security: Understanding And Enabling It To Matter. Department of Environmental Science and Policy. George Mason University.
- AWP. 2008. Anonymous Workshop Participant (AWP). U.S. Environmental Security: Understanding And Enabling It To Matter. Department of Environmental Science and Policy. George Mason University.
- Barnett, Thomas, P.M. 2005. <u>Blueprint For Action: A Future Worth Creating</u>. G.P. Putnam's Sons. New York. xxii [327.

- Bartholomees, J. Boone, Jr. (ed). 2008. <u>U.S. Army War College Guide to National</u>
 <u>Security Issues</u>, Vol. I: Theory of War and Strategy, 3rd Edition. Department of National Security and Strategy and The Strategic Studies Institute, US Army War College. 42 51. See
 http://www.strategicstudiesinstitute.army.mil/pubs/display.cfmpubID 870 (accessed 8 6 8).
- Beebe, S.D. 2008a. Solutions Not Yet Sought: The Human Security Paradigm:
 Environmental Security as an Engagement Tool. Transforming National Security:
 AFRICOM □An Emerging Command, National Defense University and Forces
 Transformation and Resources Seminar (February 20, 2008).
- Beebe, S.D. 2008b. Why Climate Change and Environment Don't Matter to National Security (January 29, 2008). Global Strategy Institute, Center for Strategic and International Studies. See http://forums.csis.org/gsi/lpl726 (accessed 10/11/08).
- Belluck, D.A., Hull, R.N., Benjamin, S.L., Alcorn, J., and Linkov, I. 2006. Environmental Security, Critical Infrastructure and Risk Assessment: Definitions and Current Trends. In: Morel, B., Linkov, I. (eds.). Environmental Security and Risk Assessment. NATO Science Program. Kluwer Academic Publishers. 3 15.
- Berg, B. 2006. Qualitative Research Methods for the Social Sciences (Sixth Edition). Pearson, Boston. 222 [227.
- Brock, L. 1991. Peace through Parks: The Environment on the Peace Research Agenda. Journal of Peace Research, Vol. 28, No. 4 (Nov., 1991). 407 423. See http://links.jstor.org/sicisici0022
 3433(199111)28%3A4%3C407%3APTPTEO%3E2.0.CO%3B2 (accessed 3/3/07).
- Bush, G.W. 2002. The Department of Homeland Security (June 2002). President George W. Bush, Office of the President, Executive Branch, U.S. Government. U.S. Department of Homeland Security (DHS). See http://www.dhs.gov/xlibrary/assets/book.pdf (accessed 8/15/08).

- Bush, G.W. 2006. The National Security Strategy (March 2006). President George W. Bush, Office of the President, The White House, Executive Branch, United States Government. See http://www.whitehouse.gov/nsc/nss/2006/ (accessed 8/16/08).
- Butts, K.H. and Turner, C.W. 2004. Building Governmental Legitimacy and Creating Conditions Inhospitable to Terrorism. Environmental Security and Cooperation Workshop. Center for Strategic Leadership, US Army War College. 1 2. See http://www.carlisle.army.mil/usacsl/Publications/08104.pdf (accessed 4/20/07).
- Catarious, D.M., Filadelfo, R., Gaffney, H., Maybee, S., and Morehouse, T. 2007. National Security And The Threat Of Climate Change. The CNA Corporation. 6[8. See http://securityandclimate.cna.org/ (accessed 4/27/07).
- Chaturvedi, Sanjay. 1996. <u>The Polar Regions: A Political Geography</u>. Scott Polar Institute. Wiley Publishers. New York. 1 \(\prec10 \).
- Crate, S.A. 2006. Cows, Kin & Globalization: An Ethnography of Sustainability. Alta Mira Press. Walnut Creek. 251 271.
- Dabelko, G.D. and Simmons P.J. 1997. Environment and Security: Core Ideas and US Government Initiatives. *SAIS Review*, Vol. 17, No. 1, (Winter Spring 1997). 127 \(\pi 46\). See \(\frac{http://mutex.gmu.edu:2158/journals/sais \(\text{Teview/v017/17.1dabelko.html} \) (accessed 3/3/07).
- Dabelko, G. and Matthew, R. 2003. The Last Pocket of Resistance: Environmental Security in the Classroom. In: Maniates, M. (ed.). Encountering Global Environmental Politics: Teaching, Learning, and Empowering Knowledge. Rowman & Littlefield Publishers, Inc. New York. 107 \(\Pi\)28.
- Dalby, S. 2002a. Environmental Security: Ecology or International Relations ☐
 Proceedings of the International Studies Association, New Orleans (March 2002).
 Carleton University, Ottawa, Canada. 1 ☐ 4. See
 http://www.carleton.ca/cove/papers/Security.rtf (accessed 4/22/07).

- Dalby, Simon. 2002b. Security and Ecology in the Age of Globalization. ECSP Report, Issue 8, Summer 2002. 95 \$\preceq\$ 08. Environmental Change and Security Program (ECSP), Woodrow Wilson International Center for Scholars. See http://www.wilsoncenter.org/topics/pubs/Report Dalby.pdf (accessed 10/19/08).
- Dessai, S., Adger, W.N., Hulme, M., Turnpenny, J., K hler, J., and Warren, R. 2004. Defining and Experiencing Dangerous Climate Change. *Journal Climatic Change*, Vol. 64, No. 1 (May 2004). Springer Netherlands. 11 5. See http://mutex.gmu.edu:2276/content/p2lu7x801h7r730k/p0cc58951dcb94d6892929c7cc401721a&pi0 (accessed 3/3/07).
- DHS. 2007. Strategic Plan Securing Our Homeland Web Page. Department of Homeland Security (DHS). See http://www.dhs.gov/xabout/strategicplan/ (accessed 8/15/08).
- DOD. 1996. Department of Defense Directive (DODD) NUMBER 4715.1 (February 24, 1996). U.S. Department of Defense (DOD). See http://www.dtic.mil/whs/directives/corres/pdf/d47151\subseteq022496/d47151p.pdf (accessed 4/22/07).
- DOD. 2005. Department of Defense Directive (DODD) Number 3000.5 (November 28, 2005). Department of Defense (DOD). See http://www.dtic.mil/whs/directives/corres/pdf/300005p.pdf (accessed 9/1/08)
- DOD. 2008. 2008 U.S. National Defense Strategy (NDS). U.S. Department of Defense (DOD). See http://www.defenselink.mil/news/2008%20National%20Defense%20Strategy.pdf (accessed 8/15/08).
- DSB. 2008. Report of the Defense Science Board Task Force on DoD Energy Strategy, More Fight Less Fuel. Defense Science Board (DSB). U.S. Department of Defense (DOD). See http://www.acq.osd.mil/dsb/reports/2008@2ESTF.pdf (accessed 10 [26 [08]).

- European Commission. 2004. Global Monitoring for Environment and Security (GMES): Establishing a GMES capacity by 2008 □(Action Plan (2004 □2008)). Communication From The Commission To The European Parliament And The Council, COM 65, 3.2.2004. Brussels, Belgium. 1 □20. See http://www.envirosecurity.org/conference/background/GMES.pdf (accessed 4/22/07).
- Fingar, Thomas. 2008. National Intelligence Assessment on the National Security Implications of Global Climate Change to 2030 (25 June 2008). House Permanent Select Committee on Intelligence & House Select Committee on Energy Independence and Global Warming. National Intelligence Council (NIC). See http://media.npr.org/documents/2008/jun/warming_intelligence.pdf (accessed 10/26/08).
- Floyd, Rita. 2007a. Human Security and the Copenhagen School's Securitization Approach: Conceptualizing Human Security as a Securitizing Move. *Human Security Journal*, Volume 5, Winter 2007. The Copenhagen School. 38 49. See http://www.peacecenter.sciences.po.fr/journal/issue5pdf/6.Floyd.pdf (access 10 25 07).
- Floyd, Rita. 2007b. Towards a consequentialist evaluation of security: bringing together the Copenhagen and the Welsh Schools of security studies. *Review of International Studies*, 33. British International Studies Association. Cambridge University Press. 327 350.
- Foster, G.D. 2001. Environmental Security: The Search for Strategic Legitimacy. *Armed Forces & Society*, Vol. 27, No. 3, (2001). SAGE Publications. 373 [395. See http://afs.sagepub.com/cgi/reprint/27/3/373 (accessed 3/3/07).
- GAO. 2007. Section 1206 Security Assistance Program Findings on Criteria, Coordination, and Implementation (GAO 107 1416R). Government Accountability Office (GAO). See http://www.gao.gov/new.items/d07416r.pdf (accessed 10 126 108).

- Gates, Robert and Cartwright, James. 2008. DOD News Briefing with Secretary Gates and Gen. Cartwright from the Pentagon, News Transcript (August 14, 2008). Office of the Assistant Secretary of Defense (Public Affairs), U.S. Department of Defense & Federal News Service, Inc. See
 http://www.defenselink.mil/transcripts/transcript.aspx@transcriptid@4275
 (accessed 8/16/08).
- Gleick, P.H. 1993. Water and Conflict: Fresh Water Resources and International Security. *International Security*, Vol. 18, No. 1 (Summer, 1993). The MIT Press. 79 12. See http://links.jstor.org/sici_sici_0162 2889%28199322%2918%3A1%3C79%3AWACFWR%3E2.0.CO%3B2 C (accessed 4/27/07).
- Glenn, J.C., Gordon, T.J., and Perelet, R. 1998. Defining Environmental Security: Implications for the U.S. Army (December 1998). Army Environmental Policy Institute, U.S. Army, Department of Defense. 10 42. See http://www.aepi.army.mil/internet/defining@nv/sec/for/army.pdf (accessed 3/3/2007).
- GlobalSecurity. 2003. The Chain of Command (stand alone chart) (March 25, 2003). GlobalSecurity.org Web Page. Newsday, Inc. See http://www.globalsecurity.org/org/news/2003/030325@hain@f@command01.htm (accessed 8 \$\pi 6 \pi 8).
- GPO. 2007. U.S. Government Manual. U.S. Government Manual: Browse the 2007 08 Edition Web Page. U.S. Government Printing Office (GPO). 21, 87, 88, 92. See http://www.gpoaccess.gov/gmanual/browse@mi07.html (accessed 8 9 08).
- Homer Dixon, T.F. 1994. Environmental Scarcities and Violent Conflict: Evidence from Cases. *International Security*, Vol. 19, No. I (Summer 1994). 5 40. See http://www.library.utoronto.ca/pcs/catalog.htm (accessed 3/3/2007).
- Homer Dixon, T. 1999. <u>Environment, Scarcity, and Violence</u>. Princeton University Press. Princeton, New Jersey. 12 45.

- HSC. 2007. The National Strategy for Homeland Security (October 2007). Homeland Security Council (HSC), Executive Office of the President, The White House, Executive Branch, United States Government. See http://www.whitehouse.gov/infocus/homeland/nshs/2007/index.html (accessed 8/16/08).
- Jablonsky, David. 2008. Why Is Strategy Difficult□ In: Bartholomees, J. Boone, Jr. (ed). 2008. U.S. Army War College Guide to National Security Issues, Vol. I: Theory of War and Strategy, 3rd Edition. Department of National Security and Strategy and The Strategic Studies Institute, US Army War College. 3□2. See http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm□pubID□870 (accessed 8□6□8).
- JCS. 2004. U.S. National Military Strategy. Joint Chiefs of Staff (JCS), Department of Defense (DOD). See http://www.defenselink.mil/news/Mar2005/d20050318nms.pdf (accessed 8/15/08).
- JCS. 2008. Joint Publication 3 ①, Doctrine for Joint Operations (17 September 2006), Incorporating Change 1 (13 February 2008). U.S. Joint Chief of Staff, U.S. Department of Defense (DOD). See http://www.dtic.mil/doctrine/jel/new_pubs/jp3_0.pdf (accessed 8 □ 6 ②8).
- King, W.C. 2000. Understanding International Environmental Security: A Strategic Military Perspective (November 2000), AEPI□FP□100A. Army Environmental Policy Institute, U.S. Army, Department of Defense. xi□08. See http://www.dean.usma.edu/departments/geo/GENEPublications/Security.pdf (accessed 4/27/2007).
- King, W.C. 2008. A Strategic Analytic Approach to Environmental Security for NATO. NATO Security Science Forum On Environmental Security (March 12, 2008). Brussels, Belgium.
- Kingham, R.A. (ed.). 2006. Inventory of Environment and Security Policies and Practices (IESPP): An Overview of Strategies and Initiatives of Selected Governments, International Organisations and Inter Governmental Organisations (Oct. 2006). Institute for Environmental Security (IES). 1 186. See http://www.envirosecurity.org/ges/inventory/ (accessed 3/3/2007).

- Kraft, M.E. and Vig, N.J. 2005. Environmental Policy from the 1970s to the Twenty First Century. In: Vig, N.J., and Kraft, M.E. 2005. <u>Environmental Policy</u>, 6th ed. Washington, DC: CQ Press. 1 33.
- Krause, K. and Williams, M.C. 1996. Broadening the Agenda of Security Studies: Politics and Methods. *Mershon International Studies Review*, Vol. 40, No. 2 (Oct., 1996). 229 254.
- Mansfield, William H. 2004. The evolution of environmental security in a North American policy context. The Poverty & Environmental Times. United Nations Environment Programme GRID Arendal (UNEP/GRID). See http://www.grida.no/res/site/File/publications/environment/times/povertyNo2 section4.pdf (accessed 10 25 08).
- Matthew, R.A. 1999. Introduction: Mapping Contested Grounds. In: Deudney, D. and Matthew R.A. Contested Grounds: Security and Conflict in the New Environmental Politics. SUNY Press. 1 22.
- Matthew, R.A. 2000. The Environment as a National Security Issue. *Journal of Policy History*, Vol. 12, No. 1. Penn State University Press. 101 ☐ 22. See http://muse.jhu.edu/login ☐ policy ☐ policy ☐ history/v012/12.1 matthew.html (accessed 3/3/07).
- Mosher, D.E., Lachman, B.E., Greenberg, M.D., Nichols, T., Rosen, B. Willis, H.H. 2008. Green Warriors: Army Environmental Considerations from Planning through Post Conflict (September 23, 2008). RAND Corporation. See http://www.rand.org/pubs/monographs/2008/RAND MG632.pdf (accessed 10/11/08).
- OECD DAC. 2005. Overview of the Links Between The Environment, Conflict, and Peace. Issue Brief: Mainstreaming Conflict Prevention. Organisation for Economic Cooperation and Development Development Assistance Committee (OECD DAC). See http://www.oecd.org/dataoecd/26/49/35785489.pdf (accessed 4/27/2007)

- Ohlsson, L. 1999. Chapter 1. Environment, scarcity, and conflict − A debate and its origins. Environment, Scarcity, and Conflict □A study of Malthusian concerns. Department of Peace and Development Research, University of G □teborg. 1 □ 32. See http://www.padrigu.gu.se/ohlsson/files/ESC.html (accessed 3/3/2007).
- Pumphrey, C. 2008. Global Climate Change National Security Implications. Strategic Studies Institute, U.S. Army War College. See http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm pubID 862 (accessed 9/26/08).
- Renner, M. 2005. Security Redefined. In: Renner, M., French, H. and Assadourian, E. State of the World 2005: Redefining Global Security (January 2005). Worldwatch Institute. W.W. Norton. New York. 3 19.
- Robb, John. 2007. <u>Brave New War: The Next Stage of Terrorism and the End of Globalization</u>. John Wiley & Sons, Inc. Hoboken, New Jersey.
- Rønnfeldt, Carsten F. 1997. Three Generations of Environment and Security Research. *Journal of Peace Research*, Vol. 34, No. 4. 473 482.
- Taureck, R. and Dabelko, G.D. 2006. Profile of the United States. In: Kingham, R.A. (ed.). 2006. Inventory of Environment and Security Policies and Practices (IESPP): An Overview of Strategies and Initiatives of Selected Governments, International Organisations and Inter Governmental Organisations (Oct. 2006). Institute for Environmental Security (IES). 1 \(\preceq 86. \) See http://www.envirosecurity.org/ges/inventory/ (accessed 3/3/2007).
- UNDP. 1994. UNDP Human Development Report 1994: New Dimensions of Human Security. 1994. United Nations Development Programme (UNDP). Oxford University Press. New York. See http://hdr.undp.org/en/reports/global/hdr1994/ (accessed 10 [25 [08).
- U.S. Army. 2004. Sustain The Mission. Secure The Future. The Army Strategy For The Environment. Office of the Assistant Secretary of the Army for Installations & Environment (ASA□&E), U.S. Army, U.S. Department of Defense. See http://www.asaie.army.mil/Public/ESOH/doc/ArmyEnvStrategy.pdf (accessed 11 □ 15 □8).

- U.S. Army. 2008. U.S. Army/Institution: Organization Web Page (Thursday 19 October, 2006). U.S. Department of the Army, U.S. Department of Defense (DOD). See http://www.army.mil/institution/organization/ (accessed 8 16 08).
- U.S. Congress. 2002. Homeland Security Act of 2002, Public Law 107–296. 107th Congress, U.S. Congress. U.S. Government Printing Office (GPO). 2140. See http://frwebgate.access.gpo.gov/cgi <a href="mailto:bin/getdoc.cgi <a href="mailto:downwedgetdoc.cgi <a href="mailto:downwedge
- U.S. Congress. 2007. National Defense Authorization Act for Fiscal Year 2008, H. R. 1585. 110th Congress, U.S. Congress. U.S. Government Printing Office (GPO). 495. See http://frwebgate.access.gpo.gov/cgi <a href="mailto:bin/getdoc.cgi <a href="mailto:dbname <a href="mailto:bin/getdoc.cgi <a
- U.S. State Department. No Date. National Security Act of 1947. U.S. Department of State Web Page. See http://www.state.gov/r/pa/ho/time/cwr/17603.htm (accessed 8/15/08).
- U.S. State Department. 2007. FY 2007 2012 Department of State and USAID Strategic Plan. U.S. Department of State Web Page. See http://www.state.gov/s/d/rm/rls/dosstrat/2007/ http://www.state.gov/documents/organization/86291.pdf (accessed 8/17/08).
- Vandeveer, S.D. and Dabelko, G.D. 2001. Redefining Security Around The Baltic: Environmental Issues In Regional Context. In: Vincze, A., Petzold Bradley, E., and Carius, A. 2001. Responding to Environmental Conflicts: Implications for Theory and Practice. Kluwer Academic Publishers. Boston. 161 88.
- Vig, N. J. 2005. Presidential Leadership and the Environment. In: Vig, N.J., and Kraft, M.E. (eds). 2005. Environmental Policy, 6th ed. Washington, DC: CQ Press. 100□22.
- White House. No Date (a). Executive Office of the President Web Page. The White House, Executive Branch, United States Government. See http://www.whitehouse.gov/government/ (accessed 8/10/08).

- White House. No Date (b). President Bush's Cabinet Web Page. The White House, Executive Branch, United States Government. See http://www.whitehouse.gov/government/cabinet.html (accessed 8/10/08).
- White House. No Date (c). National Security Council Web Page. The White House, Executive Branch, United States Government. See http://www.whitehouse.gov/nsc/history.html (accessed 8/15/08).
- White House. No Date (d). Homeland Security Council Web Page. The White House, Executive Branch, United States Government. See http://www.whitehouse.gov/hsc/ (accessed 8/15/08).
- White House. No Date (e). Federal Agencies and Commissions Web Page. The White House, Executive Branch, United States Government. See http://www.whitehouse.gov/government/independent@gencies.html (accessed 8/10/08).
- White House. No Date (f). Environment Web Page. The White House, Executive Branch, United States Government. See http://www.whitehouse.gov/infocus/environment/ (accessed 8/17/08).
- Wright, Stephanie. 2000. The Risks of Globalization and a Call for Sustainable Development. *The Brown Journal of World Affairs*, Summer/Fall 2000, Volume VII, Issue 2. 142 \perp 58.
- Yarger, Harry R. 2008. Toward A Theory Of Strategy: Art Lykke And The U.S. Army War College Strategy Model. In: Bartholomees, J. Boone, Jr. (ed). 2008. <u>U.S. Army War College Guide to National Security Issues</u>, Vol. I: Theory of War and Strategy, 3rd Edition. Department of National Security and Strategy and The Strategic Studies Institute, US Army War College. 42 □ 51. See http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm □pubID □ 870 (accessed 8 □ 6 □ 8).

CURRICULUM VITAE

Jeremey M. Alcorn graduated from Southmoreland Senior High School, Alverton, Pennsylvania, in 1995. Later, he earned his Bachelor of Science from Allegheny College in Environmental Science and Political Science with an emphasis on Marine Sciences in 1999. During that course of study, he graduated as a Cum Laude with Honors and studied at both the Duke University, Nicholas School of the Environment and the Bermuda Biological Station for Research. From 1999 2002, Mr. Alcorn worked as a U.S. Peace Corps Volunteer in Central and Eastern Europe within the local and international sustainability, water protection, and waste management fields. Starting in 2003, he was an environmental scientist at Science Applications International Corporation (SAIC) where he performed technical and policy research, environmental management analysis, and technology transfer support in the areas such as: federal agency sustainability, greenhouse gas inventories, institutional risk management, pollution prevention and water security. Since late 2008, he has expanded this hands on federal sector support as a Senior Environmental Engineer with Concurrent Technologies Corporation (CTC). Mr. Alcorn has participated in numerous conferences and has authored publications on community and international public participation, practical sustainability indicators, the risk assessment paradigm for critical infrastructure, and implications of climate change on U.S. access to space.