## AT: Seabasing CP

### AT: Seabasing – Fails – Don’t Exist

#### Seabasing fails

Robert E. Harkavy, Professor of Political Science at Pennsylvania State University, 2006, “Thinking about Basing,” http://www.clas.ufl.edu/users/zselden/Course%20Readings/Harkavy.pdf

The CBO report briefly discusses four arguments against sea basing, whether on a modest or major scale. (36) Those arguments are the possible inability of even maximal sea-basing schemes to deal with large-scale military operations, such as in Iraq in 1990-91 and 2003; the vulnerability of sea bases to attack from ballistic and cruise missiles, maybe even greater than that of less concentrated land bases; the seeming unlikelihood that the United States would attempt large scale amphibious operations when it has not done so since the Korean War; and the expense of all the new ships and connectors needed. Though the third argument may be specious--this is what sea basing is all about, the projected lesser availability of land bases in an ambiguously evolving global political climate--but the other three are serious. For instance, the sea-basing force envisioned by the CBO for 2035 could cost seventy to ninety billion dollars over that period. Such numbers would dwarf the current non-Egypt/Israel security assistance budgets, raising the prospect of trade-offs between them and sea basing.

#### Designs for seabasing capabilities don’t even exist-and can’t support full combat operations

Amol M Sabnis, Lt Cdr, Indian Navy, 2004, “Concept of Sea Basing and its Effect on Indo -US Relations: The Way Ahead,” online: http://dodreports.com/pdf/ada520272.pdf

Sea Basing as a concept is bound to develop further and take a more concrete form. At the very least, it will involve the presence of a large number of US ships in various parts of the world. These forward-deployed ships will give the capability for the US to immediately deploy its forces in any region of the world. Sea basing will give the capability to deploy personnel up to brigade strength according to the magnitude of the crisis. It will also speed up the tempo of operations ashore, give the US the capability to sustain operations for a longer duration than present and permit re-constitution and re-deployment of forces. The shortcoming of sea basing is that it will not be able to support a full combat operation of the magnitude of Operation Iraqi Freedom without host nation support. Yet, the current capabilities of ships and aircraft are inadequate to meet the demands of sea basing. Future designs will have to cater for these requirements. Mobile Offshore Bases or semi-submersible platforms may be an integral part of the sea base. However, these concepts will have to further develop before they can turn into reality. Sea Basing is an incremental concept and it does not appear to have any fixed deadlines as of now. Considering the current capabilities vis-à-vis the future capabilities, the concept will take at least fifteen more years to mature into a full-fledged system.

### AT: Seabasing – Freaks Out Allies

#### Transition to seabasing freaks out our allies

Sam Tangredi, regional director of Strategic Insight Ltd. And author of numerous articles on strategy and defense policy, Autumn 2011, “Sea Basing: Concepts, Issues, and Recommendations,” Naval War College Review, Vol. 64, No. 4 http://www.usnwc.edu/getattachment/d49d4281-7790-435d-9b3f-c7df59fb1544/Sea-Basing--Concept,-Issues,-and-Recommendations

Whether sea basing can replace land bases, or at least dependence on land bases, raises bureaucratic issues within DoD that contribute to the reluctance to commit to joint sea basing. For one thing, a greater commitment to sea basing— along with a qualitative or quantitative reduction in overseas land bases—might cause allies and partners to question American commitment to mutual defense. To some extent, however, it is a question of foresight. If the future of American war fighting consists of pacifying terror-supporting insurgent groups within landlocked countries or continuing the use of quick-striking SOF forces supported by land-based tactical aviation (including unmanned aerial vehicles flown from the continental United States), investment in sea basing would not seem a priority. 22 At times this seems to be Secretary Gates’s view, but not always. 23 If future wars are going to be dominated by ever more precise global strike from the continental United States—which would seem to be the U.S. Air Force’s preferred future—sea basing would also seem a low priority.

### AT: Seabasing – Kills Heg

#### Seabasing collapses heg-causes counter-balancing coalitions

Amol M Sabnis, Lt Cdr, Indian Navy, 2004, “Concept of Sea Basing and its Effect on Indo -US Relations: The Way Ahead,” online: http://dodreports.com/pdf/ada520272.pdf

Sea basing will give the US the capability to quickly deploy its forces in any part of the globe. This would give the US the potential to act unilaterally in any crisis. Although the US would not prefer to act without allies, the very fact that it has the potential may be unnerving to many countries including its current allies. 38 The manner in which the US decided to “liberate” Iraq may justify their fears. The capabilities inherent in sea basing may reinforce the perception of the willingness of US to use pre-emptive policy without considering the views of other countries. Taking the effect of this to the extreme, one can imagine a condition in which the majority of the countries are aligned against the US instead of being aligned with the US – a wholly undesirable effect! Of course, in the present circumstances, it is highly improbable and it would not be fair to ascribe such a situation only to the US policy of sea basing. Nevertheless, the possibility will remain and increase if the US relies more on its military power vice other elements of national power.

### AT: Seabasing – Links to Politics – Budgets

#### Causes fights

Sam Tangredi, regional director of Strategic Insight Ltd. And author of numerous articles on strategy and defense policy, Autumn 2011, “Sea Basing: Concepts, Issues, and Recommendations,” Naval War College Review, Vol. 64, No. 4 http://www.usnwc.edu/getattachment/d49d4281-7790-435d-9b3f-c7df59fb1544/Sea-Basing--Concept,-Issues,-and-Recommendations

However, tighter resource constraints usually bring out the worst in organizational rivalries and bureaucratic politics; a clash among sea basing, global strike, planning for future wars like the wars we are in, recapitalizing or “resetting” land forces, and expanding special-operations capabilities seems inevitable. Under the current Pentagon leadership and the economic constraints facing the U.S. government, such a clash would likely find sea basing on the short end.

### AT: Seabasing – PGS Turn

#### Seabasing trades off with PGS

Sam Tangredi, regional director of Strategic Insight Ltd. And author of numerous articles on strategy and defense policy, Autumn 2011, “Sea Basing: Concepts, Issues, and Recommendations,” Naval War College Review, Vol. 64, No. 4 http://www.usnwc.edu/getattachment/d49d4281-7790-435d-9b3f-c7df59fb1544/Sea-Basing--Concept,-Issues,-and-Recommendations

Although the developing planning related to the “Air/Sea Battle” operational concept would seem to be bringing Air Force–Navy cooperation to a peak, the potential for competition for resources between sea basing and global strike in a flat defense budget is obvious. At the same time, the Air Force is not keen to admit the vulnerability of its long-term regional bases, which are presumed to be required if land-based tactical aviation is to be effectively applied to a regional contingency. The Army has an interest in resupplying its forces—presumably already on the ground—by sea, but it has no interest in becoming a second marine corps. Until May 2011, the Army’s focus—with program leadership by the Department of the Navy—was the development of the Joint High Speed Vessel (JHSV), a ferry-based logistics catamaran built by AustalUSA. The JHSV, which is not considered combat survivable, is designed for high-speed insertion of troops in “‘soft power’ missions—responding to natural disasters, providing humanitarian assistance, conducting port visits and training partner military forces, among others.” 24 In May, the Army transferred its share of the JHSV program to the Navy.

#### Solves nuclear war

Dr. Ronald Kerber, Prof @ Virginia, and Dr. Robert Stein, Dir. Advanced Programs @ Raytheon, March 2009, “Time Critical Conventional Strike,” Defense Science Board, http://www.acq.osd.mil/dsb/reports/2009-04-Time\_Critical\_Strike.pdf

The U.S. strategic deterrence and strike environment has changed as our adversaries and their tactics have changed. Terrorists and rogue nations as well as future potential peers are well aware that asymmetric tactics are proving very effective against our forces. In the past, a weapon of mass destruction (WMD) was a weapon of last resort for virtually all of the Nation’s primary adversaries – it now may be moving closer to the weapon of choice, at least for some. Terrorist leaders are more willing to take risks, tend to place much less value on the life of individuals, have much less to lose, and are somewhat protected by “statelessness.” Avowed tactics included massive targeting of innocents, martyrdom of “soldiers,” and operating within a civilian environment. Operational “fuzziness” makes Indications and Warnings (I&W) much more difficult and/or fleeting. WMD technology is broadly available, and the cost of entry is much lower than for traditional, indigenously developed, nuclear weapons. At the same time rogue nations are aggressively pursuing nuclear weapon capability. Deterrence has become more elusive in terms of identifying and locating adversaries, understanding adversary values, and understanding what of the adversaries the United States (U.S.) can hold at risk. Our future global strategic strike capability must recognize today’s realities, be highly effective, quickly and easily usable, yet in many situations inflict minimal collateral damage while maintaining the threshold for nuclear weapons use at the high level we observe today. This all gives rise to the need for a prompt, conventional strike capability, deliverable to almost anyplace on the globe. Time critical conventional strike from long standoff ranges into restricted or denied territory has been an operational, policy, and acquisition challenge for a long time, and this topic appeared in many studies and reports as a hard problem for which no satisfactory solution appeared to be readily available. In situations in which time is not a factor and/or in which sufficient U.S. forces are deployed nearby, the U.S. has demonstrated its ability to strike at identified threats effectively. However, in situations in which time is a factor and no nearby forces are present, if Courses of Action (COA) are requested, only two options are currently available; nuclear Intercontinental Ballistic Missile Systems (ICBMs)/Submarine/Sea-Launched Ballistic Missile (SLBMs) or no military action. Many circumstances have been postulated in which a standoff strike capability could be critical to defeating a threat to U.S. interests; countering terrorism, countering WMD, countering proliferation, countering an emerging disruptive capability to name a few. While a weapon system or systems may be a critical component for a military option, there are also key enablers that must be effective if a time critical strike from standoff is to be successful. Foremost among the enablers is a robust Intelligence, Surveillance, Reconnaissance (ISR) capability that can provide warning, target identification and target location while functioning within the adversary’s decision cycle to provide positive warning, localization and identification that meets the national decision maker’s threshold to proceed with a strike. An integrated Command, Control, and Communication (C3) is a second key enabler that is critical to effectively providing national leadership with a prompt global strike option.

### AT: Seabasing – No Transition – Political Support

#### No support for seabasing

Sam Tangredi, regional director of Strategic Insight Ltd. And author of numerous articles on strategy and defense policy, Autumn 2011, “Sea Basing: Concepts, Issues, and Recommendations,” Naval War College Review, Vol. 64, No. 4 http://www.usnwc.edu/getattachment/d49d4281-7790-435d-9b3f-c7df59fb1544/Sea-Basing--Concept,-Issues,-and-Recommendations

The current Pentagon must deal with a quandary regarding sea basing. Experiences in Iraq and Afghanistan will sour future administrations on extensive commitments of ground forces in crisis-torn states. On the surface, this would seem to refocus DoD on improving naval capabilities, but because sea basing remains associated with putting ashore forces that are larger than SOF units (e.g., Marine expeditionary units), it is unlikely to attract more than incremental investment.

#### Causes fights

Sam Tangredi, regional director of Strategic Insight Ltd. And author of numerous articles on strategy and defense policy, Autumn 2011, “Sea Basing: Concepts, Issues, and Recommendations,” Naval War College Review, Vol. 64, No. 4 http://www.usnwc.edu/getattachment/d49d4281-7790-435d-9b3f-c7df59fb1544/Sea-Basing--Concept,-Issues,-and-Recommendations

However, tighter resource constraints usually bring out the worst in organizational rivalries and bureaucratic politics; a clash among sea basing, global strike, planning for future wars like the wars we are in, recapitalizing or “resetting” land forces, and expanding special-operations capabilities seems inevitable. Under the current Pentagon leadership and the economic constraints facing the U.S. government, such a clash would likely find sea basing on the short end.

### AT: Seabasing – No Transition – Budget Cuts

#### Cuts mean no seabasing

Sam Tangredi, regional director of Strategic Insight Ltd. And author of numerous articles on strategy and defense policy, Autumn 2011, “Sea Basing: Concepts, Issues, and Recommendations,” Naval War College Review, Vol. 64, No. 4 http://www.usnwc.edu/getattachment/d49d4281-7790-435d-9b3f-c7df59fb1544/Sea-Basing--Concept,-Issues,-and-Recommendations

But although the Marines have experimented with incremental improvements and have received partial QDR endorsement, the Defense Department’s “program objective memorandum” for fiscal year 2012 has mandated a drastic cut in the Navy’s prepositioning budget. This could put two-thirds of the current MPF into reserve status or eliminate one of the three maritime prepositioning squadrons —specifically MPS Squadron 1, located in the Mediterranean. 20 The decision reflects OSD’s perception that the U.S. European Command and NATO will most likely not need the equipment in the immediate future. Nonetheless, a two-thirds cut, as opposed to an incremental reduction, does not bode well for the overall concept of sea basing.

### AT: Seabasing – No Transition – Pentagon Opposition

#### The pentagon doesn’t want seabasing

Sam Tangredi, regional director of Strategic Insight Ltd. And author of numerous articles on strategy and defense policy, Autumn 2011, “Sea Basing: Concepts, Issues, and Recommendations,” Naval War College Review, Vol. 64, No. 4 http://www.usnwc.edu/getattachment/d49d4281-7790-435d-9b3f-c7df59fb1544/Sea-Basing--Concept,-Issues,-and-Recommendations

Sea basing is a strategic concept that has been defined in a variety of often contradictory ways. It is officially a joint concept, but it is widely perceived as a parochial tool to justify budget increases for the Department of the Navy. As an activity, sea basing has been described as both traditional and transformational. 1 Many proponents consider it a specific set of hardware—future platforms, such as the mobile offshore base or additional ships for the Maritime Prepositioning Force (MPF), like the proposed Mobile Landing Platform, which would allow for selective off-load of prepositioned material while still at sea. 2 A misperceived exclusive association with amphibious warfare, not currently a priority in the Pentagon, has largely driven sea basing out of policy discussions at the Office of the Secretary of Defense (OSD) level. Ironically, sea basing came to prominence in the past decade under a Chief of Naval Operations (CNO) determined to cut capabilities from the amphibious fleet so as to fund future surface combatants. From 2002 to 2008, it appeared with great frequency and was discussed with great passion in many professional defense journals and reports. But it is not once mentioned in the Quadrennial Defense Review (QDR) 2010 report.

## AT: EB Visas CP

### Backlog Link – EB Visa

#### Can’t solve backlogs – still takes 8 years to get an employment based visa

EAH Immigration, 6-17-2010, “Visa Bulletin for July,” http://eahimmigrationblog.com/?p=46

The U.S. Department of State’s (DOS) Visa Bulletin for July 2010 makes clear that employment-based immigrant visa applicants will have to wait longer and longer. Across all categories with backlogs, there’s been very little movement over the last several months and no movement for unskilled “other workers.” Mexicans, for example, face an especially bleak outlook: visas for the entire employment-based third preference – the classification for professionals, skilled and unskilled workers – have been unavailable since May and will remain so until the next fiscal year, which begins October 1, 2010. When visas do become available, the wait is expected to be at least eight years. DOS also cautions that a cut-off date for religious worker immigrant visas may appear in September.

### Perception Link

#### Expanding visas creates the perception of poor future opportunities – deters students from going into STEM fields

Harold Salzman, PHD, Senior Research Associate, the Urban Institute, 11-6-2007, “Globalization of R&D and Innovation: Implications for U.S. STEM Workforce and Policy,” Submitted to the Subcommittee on Technology and Innovation of the Committee on Science and Technology, http://www.urban.org/UploadedPDF/901129\_salzman\_stem\_workforce.pdf

If, as we argue, there is a sufficient potential workforce and any shortages are due to the inability of firms to induce more of those who are STEM qualified into STEM careers, then it is important to examine other factors that influence career decisions and hiring difficulties. In addition to wages, there is also the impact of perceived career opportunities and uncertainty. The current heated debate about the offshoring of engineering and other high-skill work should be expected to affect students’ career choices. Although some analyses find relatively small numbers of jobs lost to offshoring, the perception about future opportunity is likely to affect a student’s career choices as much as, or more than, tallies of current jobs available. These perceptions are not just the result of inflamed media commentators; even the business community appears to be undecided about the future course of its job location decisions. For example, in a bid to increase visa caps, a number of high-tech CEOs discussed the demand their companies had for U.S.-based science and engineering workers to a Wall Street Journal reporter in June, 2006: Mr. McNealy says Sun does 75% to 80% of its research and development in the U.S. Craig Barrett, chairman of Intel Corp., says his company also employs most of its researchers in the U.S. and wants to keep it that way. The reasons? … “If engineering is happening here in the U.S., I think my children will have a richer work environment.” (Wall Street Journal 2006) However, college graduates might have been influenced by an announcement Sun made to Wall Street analysts in May 2005: Sun Microsystems Inc. has chosen four of its facilities around the world to take the place of its Silicon Valley office as the research and development hub…. “We are over-invested in high-cost geographies like the U.S., and underinvested in low-cost geographies like India,” … the company's senior vice president of global engineering told reporters in Bangalore. [He] said the company will not lay off programmers in the U.S.—but won't hire many, either.… The company has reduced its staff to about 30,000, from roughly 43,000 four years ago. (Associated Press 2005; emphasis added) One can imagine that companies who are offshoring would have hiring problems even with an adequate labor market supply in the United States. Similarly, IT executives calling for greatly increasing, or even completely removing, numerical caps on foreign worker visas (e.g. the H-1B) may be sending strong signals to students and current workers about diminished career opportunities. Human capital is a long-term investment and potential STEM students read all the tea leaves before investing. We have conducted interviews with current managers and engineers who believe that there is little future in entry-level engineering jobs in many industries, and IT in particular. Not only will it be difficult to fill mid-level and higher-level positions from an inexperienced workforce that never had an entry-level position, but several future generations of 12 workers, currently in school, are developing their work interests and career aspirations based on their perceptions about the future state of labor markets. A range of public policies, such as immigration policy and corporate practices such as offshoring R&D, affect the career choices of current workers and future generations as well.

### Dependence Turn

#### Reliance on foreign science makes the US vulnerable – collapses innovation.

Beryl Benderly, staff writer for Science Magazine, 2-22-2010, “Does the U.S. Produce Too Many Scientists?” http://www.scientificamerican.com/article.cfm?id=does-the-us-produce-too-m&page=2

At the same time, however, the U.S. annually admits large numbers of foreign graduate students and postdocs and finds itself increasingly dependent on an inherently unreliable stream of young foreign scientists, mostly in the country on short-term, non-resident visas, to do much of the routine labor that powers American research. The American research enterprise—the indispensable engine of national prosperity and the world’s leading innovation establishment—has therefore become vulnerable, observers say, to conditions beyond its borders and its control. At the same time, experts note that recruiting sufficient amounts of the talent needed for vital defense-oriented scientific and engineering work that requires security clearances has become increasingly difficult. Reversing these trends will require concerted national action, critics say, but not the steps propounded by some highly publicized reports and industry leaders, such as increasing numbers of graduate fellowships and H-1B visas—steps that critics argue will only make matters worse. Rather, these observers call for changes in the way that the U.S. staffs and funds its academic laboratories in order to restore the incentives that formerly attracted many of the brightest young Americans to seek careers in research and contribute to maintaining the nation’s longstanding scientific and technical preeminence.

#### CP provides a disincentive for students – reinforces dependence on foreign talent flow

Beryl Benderly, staff writer for Science Magazine, 2-22-2010, “Does the U.S. Produce Too Many Scientists?” http://www.scientificamerican.com/article.cfm?id=does-the-us-produce-too-m&page=2

Recruiting abroad "benefits the country by tapping a large and relatively inexpensive pool of talent at the cost of reduced incentives for native-born individuals to go into science and engineering,” he writes. His Harvard economics colleague, George Borjas, for example, has demonstrated that inflows of foreign students and scientists do, indeed, depress opportunities and incomes for both Americans and foreigners. Critics argue that the H-1B, furthermore, also depresses pay because under its terms, the visa belongs to the employer, not the worker, who therefore cannot leave the job that provides the permission to be in the country.

#### Dependence on foreign workers guarantees economic failure

Edward Gordon 12-08-2009, President of Imperial Consulting Corporation, Unemployment numbers don’t tell the real jobs crisis story,” Employee Benefit News, http://ebn.benefitnews.com/news/unemployment-numbers-dont-tell-the-real-jobs-crisis-story-2682607-1.html)

Over the past several decades, the United States has muddled through these skilled people shortages using two major talent safety valves: 1) America has imported large numbers of high-skill workers using H1-B visas. 2) U.S. businesses have used outsourcing, not just of low-wage jobs, but also millions of high-skill, high-wage jobs which they have placed in countries with wages either equivalent or higher than the United States, including: Germany, Japan, Singapore, Korea and Canada. But these business talent safety valves are about to fail. As we have seen, many nations are beginning to experience severe yearly population declines. This population shrinkage includes a significant decline in the size of their workforces. And the go-to sources of talent that countries could once easily rely on, such as India and China, are having challenges of their own. Both India and China graduate about 400,000 engineers each year. Yet according to several McKinsey & Company studies and other sources, only about 25% of Indian graduates are considered qualified for employment in international businesses. Worse yet, only 10% of Chinese graduates meet world-class multinational expectations. As India’s and China’s economies have become more sophisticated, they are moving from low-skill to high-skill products and services. To meet these demands, both countries have begun to call home millions of expatriates—engineers, scientists, medical personnel, and others—to fill the large talent gaps growing across their economies. One indication of this change is the change in H-1B visa applications. For the fiscal year 2010 after 211 days there were still thousands of H-1B visa slots available. For 2009 it took one day to fill all the slots and in 2008 two days. Would be immigrants from India and China are finding good career opportunities at home. This is the globalization paradox. In the immediate future, U.S. businesses will fail to import nearly enough high-skill talent. Nor will they be able to export enough high-skill jobs overseas. How will America keep pace with both new job growth and finding the massive amount of talent needed to replace departing boomer workers? The bottom-line answer: the U.S. labor market must begin equipping more Americans with the education and skills to fill these jobs.

### AT: Skills Shortage

#### No skills shortage

Harold Salzman, PHD, Senior Research Associate, the Urban Institute, 11-6-2007, “Globalization of R&D and Innovation: Implications for U.S. STEM Workforce and Policy,” Submitted to the Subcommittee on Technology and Innovation of the Committee on Science and Technology, http://www.urban.org/UploadedPDF/901129\_salzman\_stem\_workforce.pdf

Where’s the Problem? Hiring Difficulties versus Labor Market Shortages and Perceptions about the Future of Science and Engineering It is generally asserted, without much evidence, that education deficits are responsible for the difficulty employers experience in hiring. It is important to distinguish between the problems an employer may have hiring the people he or she wants and an actual shortage of workers or potential workers. Although there may, in fact, be a labor market shortage, all the evidence cited in various policy reports is entirely individual employer accounts of problems in hiring. The industries most vocal about labor market shortages and the need to import workers may be voicing unrealistic expectations of desired work experience more than deficiencies in the skills or education of a new hire, or just dissatisfaction with the cost of labor. In previous research (Lynn and Salzman 2002), we found that managers in engineering and technology firms do not claim a shortage of applicants, nor do they complain about applicants with poor math and science skills or education. They do often note difficulty in finding workers with desired experience, specific technical skills, or a sufficient number of “brilliant” workers in the pool.8 The complaint, quite often, appears to be one of unrealistic expectations, as unwittingly illustrated in a recent BusinessWeek (2007) article on labor shortages. In this article, a company president described the current labor shortage as follows: “There are certain professions where skills are in such demand that even average or below-average people can get hired.” It is difficult to consider an inability to only hire above-average workers a labor market shortage. Complaints also reflect firms’ dissatisfaction about the need to train new entrants; often at issue is whether firms or education institutions should shoulder the costs of training new hires.

### AT: Labor Shortage

#### No labor shortage – flawed data and industry lies.

T. D. Clark, Staff writer for Industry Market Trends, 11-21-2006, “Labor Shortage: Fact or Fiction?” http://news.thomasnet.com/IMT/archives/2006/11/qualified\_labor\_shortage\_debate\_fact\_or\_faction.html

Doomsayers rely on such demographic data, as well as employment projections from the U.S. Bureau of Labor Statistics (BLS), to determine that as early as 2010 there won't be enough workers available to staff the nation's jobs. But such predictions often are flawed or fail to take into account a full view of the facts. Perhaps more intriguing: …by 2012, there will be 3.3 million fewer workers than jobs. But there are numerous flaws with that math. Most significantly, the two data sets involved, both of which are supplied by BLS, are derived from different sources and cannot be compared accurately. To subtract one from the other is to make an apples-and-oranges comparison that is invalid and misleading. There are a slew of other examples in the cover story debunking the BLS, but even without all these mitigating factors, the number of available workers still will exceed the number of jobs, according to the HR Magazine analysis. Then again, a piece from The Seattle Times earlier this month has the ability to send the labor shortage debate into a tailspin once again, with immigration as the catalyst. Stephen Anthony, president of the Fort Worth Building and Construction Trades Council, a network of union groups, said illegal immigrant welders have kept wages down for U.S. workers. Union welders earn on average $23 an hour, while nonunion welders generally earn about $12 an hour in the Fort Worth area, he said. Yet Steven Camarota, director of research for the Center for Immigration Studies, a Washington, D.C.-based group that opposes illegal immigration, is skeptical. "Any industry you care to name, you will generally find that the employer says, 'We can't find anybody,'" he said. "What they really mean is, 'Given what we want to pay, we can't find anybody.' And that's the kicker." Are select employers and the BLS full of, ahem, BS? Are they creating a false sense of panic as it relates to labor shortages in order to acquire workers willing to work for income less than they're worth? Well, perhaps we should toss in some more statistics to complicate the debate further. This month, the Small Business Times had the lowdown on some figures released by the National Federation of Independent Business (NFIB) based on a survey of small businesses. "An historically high 63.3 percent of the adult population has a job, and the unemployment rate [was] 4.4 percent in October," said NFIB chief economist William Dunkelberg. "This does not sound like a labor market with deficient labor demand, but it's showing clear signs of a mismatch between supply and demand, with clear shortages of qualified workers." That's qualified workers. Hmm, so, 1) highly skilled/qualified workers 2) willing to work for less than their worth? Sounds just like the problems IMT hears from engineers on a fairly frequent basis. One of our readers recently touched on both factors: What does exist is a shortage of educated, skilled, motivated people who are willing to work for small dollars, few or no benefits, in positions offering little advancement potential. Employers want to get by very cheaply, so instead of hiring an experienced individual who knows the technology, they'll haul a guy off the plant floor and make do with him, paying him very small dollars. I've seen this done repeatedly in corporations whose names you would recognize. According to The Associated Press (via Leading the Charge), the purported shortage is felt the greatest in the energy and power sector, where there may soon be a shortage of workers who operate power plant equipment and repair power lines. A handful of schools aim to correct the problem by offering power industry training, and utility companies have started "aggressively seeking out colleges to create more." "Every day we delay hiring people, another 40-year veteran is retiring and won't be there to pass along valuable experience," said Jim Hunter, director of the International Brotherhood of Electrical Workers utility department. While labor shortages in the utilities sector might appear more sincere, there is still plenty of other compelling information out there claiming that the labor shortage debate carries little merit and is even a hoax. The news and comments posted at the Inside Recruiting blog, for instance, perpetuate these beliefs; meanwhile, the blog even serves up a recent reader poll, the results of which indicate that not everyone is on board with the labor shortage estimates currently circulating. The most critical piece that has come across our desks on the labor shortage scare is derived from The American Economic Alert in an article entitled "The Labor Shortage Hoax," by Alan Tonelson, a Research Fellow at the U.S. Business & Industry Educational Foundation and the author of "The Race to the Bottom: Why a Worldwide Worker Surplus and Uncontrolled Free Trade are Sinking American Living Standards." In his analysis, Tonelson tears into recent labor shortage stats and studies with the ferocity of a pit bull, even taking on the likes of Deloitte regarding a study the company did for the National Association of Manufacturers (NAM): To put it mildly, NAM should ask for its money back. Only 10 percent of the 8,000 companies contacted by Deloitte replied, and as Wall Street Journal columnist David Wessel noted, lots of self-selection surely was at work. Specifically, employers not perceiving any shortages probably were much less likely to bother responding than those that did. But that's only the beginning of Tonelson's criticism: Deloitte ignored a major irony that practically shouts out from the results: Although the consulting firm recommended that companies spend at least three percent of their payrolls on employee training, it found that fully three-quarters of all respondents fell short of this threshold. Does this sound like the behavior of firms that value trained workers and are desperate to secure them? Clearly, the validity and accuracy of labor shortage data is questionable. And the myriad of factors that play into the debate, whether retiring baby boomers, illegal or even legal immigrants, offshore outsourcing or fewer upcoming engineers all seem to feed the flames of this hot-button topic from different and seemingly unrelated angles. It's a debate that will surely continue — but so long as outspoken pundits and everyday workers continue to voice their displeasure with sloppy data and unnecessary panic, a labor shortage capable of bringing the U.S. economy to its knees is about as likely as John Kerry becoming a successful stand-up comic.

### 1NC AT: Economy – Immigrants Don’t Solve

#### Immigrants cant solve the coming economic crises

Evan Nolan, JD Candidate Georgetown University Law Center, Fall 2009, “Picking Up After The Baby Boomers: Can Immigrants Carry The Load?,” 24 Geo. Immigr. L.J. 77, Lexis

The general suggestion recently put forth by social scientists promotes liberalization of immigration laws as a response to resolving the imminent crises of the Baby Boomer retirement. n110 They believe that an influx of immigrants could fill the void in the U.S. workforce left behind by the retiring Baby Boomers and help pick up part of the tab for the Baby Boomers' Social Security and Medicare benefits. I recognize that the Baby Boomer crises may provide excellent justification for opening the doors to more liberalized immigration policies. However, it is essential to understand how small of an impact these immigrants could make on solving the pending workforce and entitlement crises, and I point out where they fall short. Such policy decisions may help resolve the immigration debate, for now, but they still leave the Baby Boomer retirement issues relatively unresolved. Many hope that immigration reform can be at least one of the answers in resolving, or at least alleviating the pressures of the pending entitlement and workforce crises. Myers insists in the title of his work that "immigration reform can help America prosper in the face of the baby boomer retirement." n111 He points out that immigration reform may help slow the rapidly rising senior ratio and help pay for the Baby Boomers' retirement, because immigrants tend to be younger and have even higher workforce participation rates than native workers. n112 Though Myers refrains from offering specific suggestions for immigration reform, others have suggested loosening the strict requirements for high skill-level visas n113 and withdrawing the harsh restrictions and penalties on "illegal" immigrants. n114 Myers addresses the entitlement crisis by suggesting that immigrants and, over time, their American school-educated children will be able to help bear [\*92] the weight of the Social Security and Medicare burdens. n115 By liberalizing immigration laws, more immigrants could legally join the tax-paying American workforce. The tax payments of these immigrants and their children, once they start working, will help pay for the retirement of the Baby Boomers. However, this approach falls short for three reasons. First, the additional tax revenue that immigrants would produce through their employment would fall drastically short of anything resembling an answer to the entitlement crisis. A quick look at the current immigration situation, which permits a significant number of undocumented workers already, reveals how far off an answer is now. In 2005, undocumented immigrants paid $ 9 billion in Social Security and Medicare taxes. n116 Yet, the federal budget outlays for Social Security and Medicare totaled over $ 800 billion. n117 The undocumented workforce makes up five percent of the American workforce, and anywhere from one-half to three-quarters of the undocumented workforce contributes to Social Security and Medicare taxes. n118 Yet, their tax payments amount to only one percent of the Social Security and Medicare expenditures, and this is before any Baby Boomers have retired. A significant number of illegal immigrants already contribute their income to Social Security taxes, and this revenue still comes no where close to meeting the current needs of Social Security, let alone the future needs of the Baby Boomers. Allowing even more immigrants to enter America and the workforce would be a move in the right direction. But such a policy would require an unrealistic number of immigrants to meet the needs of the Baby Boomers, as demonstrated by the current, vast discrepancy between Social Security revenues and expenditures. Second, growing the U.S. workforce by liberalizing immigration laws would require legalizing the "illegal" immigration. Doing so would just complicate the problem both in the short and long term. Immediately, millions of undocumented workers would be entitled to social benefits to which they currently do not have access. After years of contributing to Social Security and Medicare taxes, as many currently do, they would eventually be able to collect Social Security and Medicare themselves as they reach retirement, exacerbating the problem. The Social Security system is not a Ponzi scheme to which more and more people should be added to help pay others off. This leads to the final shortfall: the creation of disincentives. Because immigration reform is pulled into the Social Security debate, even more Americans may be less likely to favor such immigration reform if it means [\*93] the formerly "illegal" immigrants will suddenly be entitled to benefits they had previously been precluded from collecting. Those who followed the rules will likely oppose liberalizing the immigration laws in favor of those whose "illegal" activity would be instantly rewarded. Next, Myers turns to the workforce crisis. Here, he acknowledges the immigrants' share of the growth in the American workforce. "[Immigration] has accounted for a large share of the growth: 23.8% of workforce growth in the 1980s, 39.6% of the 1990s, and 54.2% of 2000-07." n119 Though the numbers look good, it is merely a present day snapshot, and does not offer much suggestion for the pending workforce crisis. The implication that immigrants are capable of filling the Baby Boomer void again suffers three significant shortfalls. First, the number of immigrants necessary to move to the United States to fill the void is likely unavailable. When the Baby Boomers retire, the workforce demand may increase, but the supply of available immigrants to join the workforce will likely be unable to keep pace. Immigration numbers are still increasing, but at a much lower rate than in previous years. n120 Baby Boomers will be exiting the workforce in much higher numbers. In the last twenty-seven years, the foreign-born workforce increased from seven million to twenty-four million. n121 With more than seventy million Baby Boomers settling into retirement over the next twenty-seven years, the immigration rate would need to triple before it filled any significant part of the void. The home countries of our current immigrants may not have enough people to support such an expansion of emigration. The second problem with invoking immigration reform to fill the workforce void of retiring Baby Boomers involves an age discrepancy. Immigrant workers tend to be young. n122 The Baby Boomers are retiring from more experienced positions. The current workforce lacks the numbers to fill those spots and inexperienced immigrants would need years of work and time for advancement before they were qualified to step into those roles. The final shortfall involves a discrepancy in skill levels, but should not be confused with experience, or the age discrepancy described above. Skill levels, as indicated by education, differ significantly between native workers and most of the immigrants that have been migrating to the United States for work. The immigrants, who include low-skilled workers in high proportions, are being asked to replace the Baby Boomer generation, which includes a relatively high proportion of highly-skilled workers. Overall average skill level across the U.S. workforce would fall, and productivity would likely fall along with it. Certainly, the United States could loosen the restrictions and [\*94] improve the incentives for attracting more highly-skilled foreign workers. Unfortunately, this sub-market is complicated with "natural" restrictions, such as requiring bar passage for lawyers, passing the boards for doctors and nurses, and other kinds of certifications for highly-skilled jobs. Such restrictions might deter an otherwise qualified candidate from immigrating to the United States. And there is likely little support for waiving many of these self-imposed restrictions.

## AT: Warming CP’s

### AT: Ocean Fertilization

#### Iron fertilization doesn’t sequester very much CO2, and there’s no studies to support it

Hugh Powell, Woods Hole Oceanographic Institution, 1-7-2008, “Will Ocean Iron Fertilization Work?” Oceanus, http://www.whoi.edu/oceanus/viewArticle.do?id=35609&sectionid=1000

Twelve experiments so far have not looked so closely at the trickier questions of how much carbon dioxide taken up by a bloom is drawn out of the air and transferred into the deep sea, and how long it remains sequestered there. As yet, scientists have turned up only partial answers. Philip Boyd of the New Zealand National Institute for Water and Atmospheric Research summarized the 12 experiments at an ocean iron fertilization conference convened at Woods Hole Oceanographic Institution (WHOI) in September 2007 and in an article in Science magazine earlier last year. Four took place in the northwest Pacific, two were in the equatorial Pacific, and six were in the Southern Ocean. All 12 reported up to 15-fold increases in the chlorophyll content of surface waters. (Chlorophyll is the sunlight-capturing molecule in photosynthesis and is often measured in lieu of actual plankton counts.) Only a tiny fraction of the carbon drawn down by blooms sinks from the surface into deeper waters, where it is sequestered from the atmosphere. Estimates of the tonnage of carbon sequestered (measured at 200 meters depth) per ton of iron added hover around 200 to 1, a far cry from early experiments in laboratory beakers that yielded estimates around 100,000 to 1, Boyd said.

#### Ocean fertilization isn’t effective

Earth Lab, 2007, “Ocean Fertilization,” http://www.earthlab.com/articles/OceanFertilization.aspx

Research performed at Stanford and Oregon State Universities suggests that ocean fertilization may not be an effective method of reducing carbon dioxide in the atmosphere, a major contributor to global warming. Ocean fertilization, the process of adding iron or other nutrients to the ocean to cause large algal blooms, has been proposed as a possible solution to global warming because the growing algae absorb carbon dioxide as they grow. However, this process, which is analogous to adding fertilizer to a lawn to help the grass grow, only reduces carbon dioxide in the atmosphere if the carbon incorporated into the algae sinks to deeper waters. This process, which scientists call the "Biological Pump", has been thought to be dependent on the abundance of algae in the top layers of the ocean. The more algae in a bloom, the more carbon is transported, or "pumped", from the atmosphere to the deep ocean. To test this theory, researchers compared the abundance of algae in the surface waters of the world's oceans with the amount of carbon actually sinking to deep water. They found clear seasonal patterns in both algal abundance and carbon sinking rates. However, the relationship between the two was surprising: less carbon was transported to deep water during a summertime bloom than during the rest of the year. This analysis has never been done before and required designing specialized mathematical algorithms. "By jumping a mathematical hurdle we found a new globally synchronous signal," said Dr. Lutz. "This discovery is very surprising", said lead author Dr. Michael Lutz, now at the University of Miami's Rosenstiel School of Marine and Atmospheric Science. "If, during natural plankton blooms, less carbon actually sinks to deep water than during the rest of the year, then it suggests that the Biological Pump leaks. More material is recycled in shallow water and less sinks to depth, which makes sense if you consider how this ecosystem has evolved in a way to minimize loss", said Lutz. "Ocean fertilization schemes, which resemble an artificial summer, may not remove as much carbon dioxide from the atmosphere as has been suggested because they ignore the natural processes revealed by this research."

#### Ocean fertilization isn’t verified – can’t solve warming and hurts the environment

Earth Lab, 2007, “Ocean Fertilization,” http://www.earthlab.com/articles/OceanFertilization.aspx

Topics discussed included potential environmental dangers, economic implications, and the uncertain effectiveness of ocean fertilization. To date none of the major ocean fertilization experiments have verified that a significant amount of deep ocean carbon sequestration occurs. Some scientists have suggested that verification may require more massive and more permanent experiments. Together with commercial operators they plan to go ahead with large-scale and more permanent ocean fertilization experiments and note that potential negative environmental consequences must be balanced against the harm expected due to ignoring climate change. During the Ocean Iron Fertilization meeting Dr. Hauke Kite-Powell, of the Marine Policy Center at WHOI, estimated the possible future value of ocean fertilization at $100 billion of the emerging international carbon trading market, which has the goal of mitigating global warming. However, according to Professor Rosemary Rayfuse, an expert in International Law and the Law of the Sea at the University of New South Wales, Australia, who also attended the Woods Hole meeting, ocean fertilization projects are not currently approved under any carbon credit regulatory scheme and the sale of offsets or credits from ocean fertilization on the unregulated voluntary markets is basically nothing short of fraudulent. 'There are too many scientific uncertainties relating both to the efficacy of ocean fertilization and its possible environmental side effects that need to be resolved before even larger experiments should be considered, let alone the process commercialized,' Rayfuse says. 'All States have an obligation to protect and preserve the marine environment and to ensure that all activities carried out under their jurisdiction and control, including marine scientific research and commercial ocean fertilization activities do not cause pollution

#### Ocean fertilization wrecks ocean ecosystems

Earth Lab, 2007, “Ocean Fertilization,” http://www.earthlab.com/articles/OceanFertilization.aspx

Ocean fertilization is 'dumping' which is essentially prohibited under the law of the sea. There is no point trying to ameliorate the effects of climate change by destroying the oceans -- the very cradle of life on earth. Simply doing more and bigger of that which has already been demonstrated to be ineffective and potentially more harmful than good is counter-intuitive at best.' Indeed, the global study of Dr. Lutz and colleagues suggests that greatly enhanced carbon sequestration should not be expected no matter the location or duration of proposed large-scale ocean fertilization experiments. According to Dr Lutz "The limited duration of previous ocean fertilization experiments may not be why carbon sequestration wasn't found during those artificial blooms. This apparent puzzle could actually reflect how marine ecosystems naturally handle blooms and agrees with our findings. A bloom is like ringing the marine ecosystem dinner bell. The microbial and food web dinner guests appear and consume most of the fresh algal food." "Our study highlights the need to understand natural ecosystem processes, especially in a world where change is occurring so rapidly," concluded Dr. Lutz. The findings of Dr. Lutz and colleagues coincide with and affirm this month's decision of the London Convention (the International Maritime Organization body that oversees the dumping of wastes and other matter at sea) to regulate controversial commercial ocean fertilization schemes. This gathering of international maritime parties advised that such schemes are currently not scientifically justified. This research was recently published in the Journal of Geophysical Research.

### AT: Peridotite

#### Peridotite isn’t sufficient to solve warming

MSNBC, 11-7-2008, “Might rock deposit help soak up warming gas?” http://www.msnbc.msn.com/id/27593907/ns/us\_news-environment/t/might-rock-deposit-help-soak-warming-gas/

Many companies are hoping to cut their greenhouse gas emissions by siphoning off large amounts of carbon dioxide from coal-fired power plants and storing it underground. But big greenhouse gas emitters like the United States, China and India — where abundant surface supplies of the rock are not found — would have to come up with other ways of storing or cutting emissions. Using underground caverns could require thousands of miles of pipelines and nobody is sure whether the potentially dangerous gas would leak back out into the atmosphere in the future.

Kelemen cautioned that this discovery alone would not solve the carbon problem.

"We see this as just one of a whole suite of methods to trap carbon," Kelemen said. "It’s a big mistake to think that we should be searching for one thing that will take care of it all."

#### Peridotite fails – too expensive to sequester and tech doesn’t exist yet

Conrad Prabhu, 4-24-2011, “Oman’s answer to global warming,” Oman Daily Observer, http://main.omanobserver.om/node/48514

Two years after the stunning revelation that Oman’s massive peridotite mineral resources hold the key to Planet Earth’s redemption from the catastrophic effects of global warming, efforts to harness the rock’s much-touted potential seems to have run aground.

That sensational disclosure was made by geologist Peter Kelemen and geochemist Juerg Matter, both attached to Columbia University's Lamont-Doherty Earth Observatory in New York. In November 2008, the pair announced that peridotite — a rock found primarily in the Sultanate — has the potential to soak up carbon dioxide at a rate that can slow the pace of global warming.

According to the scientists, carbon dioxide that comes into contact with the rock is converted into solid minerals such as calcite. By accelerating the absorption process, it is theoretically possible to store in excess of 2 billion tonnes of the estimated 30 billion tonnes of carbon dioxide produced annually, they claimed. In the wake of the announcement, Oman basked in the gaze of the world’s scientific community as researchers deliberated on ways to commercialise the capture and sequestration of carbon dioxide with the use of peridotite.

Those efforts have yet to make any headway, in part because of the prohibitive cost of transporting massive quantities of the rock to serve as ‘carbon soaks’ at the site of greenhouse emitting power or industrial plants. Moreover, the technology mooted by the New York pair needs to be suitably developed and refined before it can be put to commercial use, it is pointed out.

### AT: Solar Radiation Management

#### SRM doesn’t solve and wrecks the environment

Vivian Warkentin, VP Agriculture Defense Coalition, 2-4-2010, “Solar Radiation Management,” Berkeley Daily Planet, http://www.berkeleydailyplanet.com/issue/2010-02-04/article/34608?headline=Solar-Radiation-Management-Dr.-Strangelove-s-Fix-for-Global-Warming

In his testimony before Congress, Professor Robock lists seventeen risks that apparently he and his fellow scientists find acceptable: 1) SRM could produce drought in Asia and Africa, threatening the food and water supply for billions of people. 2) It will not halt continued ocean acidification from CO2. 3) It would deplete ozone. 4) It would increase dangerous ultraviolet radiation. 5) With SRM the reduction of direct solar radiation and the increase in diffuse radiation would make the sky less blue and produce much less solar power from systems using focused sunlight. 6) Any system to inject particles or their precursors into the stratosphere at the needed rate would have large local environmental impacts. 7) If discontinued there would be much more rapid warming, much more rapid than would occur without geoengineering. 8) If a series of volcanic eruptions produced unwanted cooling, geoengineering could not be stopped rapidly to compensate. 9) Geoengineering would put permanent pollution above astronomers’ telescopes. 10) There will be unexpected consequences. 11) There will be human error with sophisticated technical systems. 12) Geoengineering would lessen the public will to address climate change with mitigation. 13) Do humans have the right to control the climate of the entire planet to benefit themselves, without consideration of all other species? 14) Potential military use of geoengineering technology raises ethical concerns. 15) What if some benefit from geoengineering technology while others are harmed? 16) Who would control geoengineering systems? 17) The costs of implementing geoengineering would be less than the costs associated with the potential damages of geoengineering.

#### SRM doesn’t work

Richard A. Lovett, 7-18-2010, “Geoengineering model,” Scientific American, http://www.scientificamerican.com/article.cfm?id=geoengineering-tradeoffs

Attempting to offset global warming by injecting sunlight-reflecting gases into the upper atmosphere isn't the quick fix for global climate change that advocates believe it might be, a new study finds. In a paper published July 18 in Nature Geoscience, Kate Ricke, a climate physicist at Carnegie Mellon University in Pittsburgh, Pennsylvania, and her colleagues show, by modeling, that not only could solar-radiation management lead to declines in rainfall in the long term, but its effects will also vary by region. Some places will be over-cooled by atmospheric changes that are too small to be effective for their neighbors.

#### SRM reduces rainfall and is only a short term fix

Richard A. Lovett, 7-18-2010, “Geoengineering model,” Scientific American, http://www.scientificamerican.com/article.cfm?id=geoengineering-tradeoffs

The new study found that it is fairly easy to design sulfate-injection scenarios that keep the temperature stable until 2080. But, unfortunately, the change in sunlight alters other weather patterns. "It changes the distribution of energy in the troposphere so that it becomes more convectively stable," Ricke says. The result: decreasing precipitation. Temporary fix Regional effects are also important. For example, Ricke says, her study found that levels of sulfate that kept China closest to its baseline climate were so high that they made India cold and wet. Those that were best for India caused China to overheat. She notes, however, that both countries fared better either way than under a no-geoengineering policy. The modelers also found that all of these effects get worse with time. "The compensation is imperfect," Ricke says. "The longer you do it, the more imperfect it becomes." Thus, she says, this type of geoengineering is at best a temporary fix--something people working in the field had always known because it does nothing to prevent the accumulation of carbon dioxide and the resulting acidification of the oceans. "But it might be even more temporary than people had expected." Other scientists are impressed. "I think the paper is great," says Ken Caldeira, a climate scientist at the Carnegie Institution for Science's Department of Global Ecology, in Stanford, Calif. "I offered Kate a post-doc based on these results." Alan Robock, a geophysicist at Rutgers University in New Brunswick, N.J., agrees. "It confirms that it is not possible to control both temperature and precipitation using stratospheric geoengineering," he says.

### AT: Trees

#### Trees not enough to solve

Chemistry Daily, 2012, “Carbon dioxide sink,” http://chemistrydaily.com/chemistry/Carbon\_dioxide\_sink

In effect, forests are carbon dioxide stores, and the sink effect exists only when they grow in size: it is thus naturally limited. It seems clear that the use of forests to curb climate change can only be a temporary measure. Even optimistic estimates come to the conclusion that the planting of new forests is not enough to counter-balance the current level of greenhouse gas emissions. Although a forest is a net CO2 sink over time, the plantation of new forests may also initially be a source of carbon dioxide emission when carbon from the soil is released into the atmosphere. Other studies indicate that the cooling effect of removing carbon by forest growth can be counteracted by the effects of the forest on albedo. Mid-to-high latitude forests have a much lower albedo during snow seasons than flat ground, and this contributes to warming. To prevent the stored carbon from being released into the atmosphere when the trees die, there have been suggestions of sinking the trees into the ocean. Such suggestions raise serious questions about feasibility.

#### Sinks alone don’t solve

E.T. Cloyd, 2012, “U.S. Climate Change Science Program,” SOCCR Scientific Coordination Team, http://www.esrl.noaa.gov/gmd/co2conference/pdfs/us\_climate\_change\_abstract.pdf

The large difference between current sources and sinks and the expectation that the difference could become larger if the growth of fossil-fuel emissions continues and land sinks decline suggest that addressing imbalances in the North American carbon budget will likely require actions focused on reducing fossil-fuel emissions. Options to enhance sinks (growing forests or sequestering carbon in agricultural soils) can contribute, but enhancing sinks alone is likely insufficient to deal with either the current or future imbalance. Options to reduce emissions include efficiency improvement, fuel switching, and technologies such as carbon capture and geological storage. Implementing these options will likely require an array of policy instruments at local, regional, national, and international levels, ranging from the encouragement of voluntary actions to economic incentives, tradable emissions permits, and regulations. Meeting the demand for information by decision makers will likely require new modes of research characterized by close collaboration between scientists and carbon management stakeholders.

#### Deforestation is good

Brett Vander Velden and Shawn Nauman, Atmospheric Chemistry & Physics Department of Chemical & Biochemical Engineering The University of Iowa “Reforestation” Fall 2000. http://www.cgrer.uiowa.edu/people/carmichael/atmos\_course/ATMOS\_PROJ\_00/vander/atmos-website.html

Trees use more CO2 through photosynthesis than they release through respiration. CO2 that is not used in the photosynthetic process and is not released by respiration is then stored in the cells of the tree. This CO2 is not released again until the tree decomposes or stops growing. As a matter of fact, one growing tree can consume about 50 pounds of CO2 in one year. For every ton of wood grown, trees uptake about 1.5 tons of carbon dioxide and give off a little more than a ton of oxygen for up to about 40 years. For example, one acre of pine will grow about 3 tons of wood and give off 3.2 tons of oxygen. This means that the trees will consume close to 4.4 tons of CO2 in photosynthetic processes and in their cells in a period of only one year! This surprising statistic is even greater for deciduous trees. So, how much of a volume of air do trees effect? Statistically, a forest growing at the rate of 10 m3 of wood per hectare per year is absorbing the CO2 from 14 million m3 of air. Because of these surprising facts, trees increase the rate at which greenhouse gases are removed from the atmosphere. These facts sound very pleasing on paper, however trees can also release carbon dioxide and uptake oxygen. This happens most commonly in the decay process. Trees will not experience this type of situation until they are much older, stop growing, or are left to rot. The decay process requires oxygen and gives off relatively high levels of methane. Methane is also a greenhouse gas and absorbs almost 20 times more radiation than does carbon dioxide. Therefore, in order to maintain a proper balance and to reduce global warming, steps should be taken to harvest the trees. This harvesting would ensure a continuous cycle of birth, growth, and death. This would also ensure proper reforestation of harvested lands.