



Munich Personal RePEc Archive

Climate Change and Sustainable practices: A Case Study of the Resort Industry in Florida

Harold Richins and Janice Scarinci

University of Hawaii, Northwood University

22 January 2009

Online at <https://mpra.ub.uni-muenchen.de/25293/>

MPRA Paper No. 25293, posted 23 September 2010 14:42 UTC

CLIMATE CHANGE AND SUSTAINABLE PRACTICES: A CASE STUDY OF THE RESORT INDUSTRY IN FLORIDA

Harold Richins
University of Hawaii

Janice Scarinci
Northwood University

Climate change and potential global warming has become important in many forums both nationally and internationally. Though there has previously been some opposition to the existence of human caused climate change and resulting global warming as a threat to the earth's population and survival, scientific evidence has more recently been found to be compelling. One of the key industries that may be affected by global warming and climate change is the tourism industry. This is becoming a growing concern in Florida, U.S.A. where potential rising sea levels may have a profound effect. This paper discusses the development, importance and implications of climate change, its relationship to the tourism and hospitality industry and provides a case study of the Florida lodging industry regarding mechanisms and responses that the lodging and resort sector of the industry has been taking in addressing climate change factors.

Keywords: *Climate Change, Global Warming, Lodging, Resorts, Sustainable Practices*

INTRODUCTION

Climate change and potential global warming have become hot topics of many, both within the U.S.A. and internationally - particularly within the developed world. This issue has become important in many forums, especially as is evident from the release of former Vice President Al



Gore's documentary "An Inconvenient truth, A Global Warning" and its publicity through the recent academy award (best documentary), from the recent decision of the U.S. Supreme court that the Environmental Protection Agency was at fault for refusing to regulate greenhouse gas emissions (Barnes & Ellperin, 2007), and with the release of the fourth report of the Intergovernmental Panel on Climate Change (Gore, 2006; Houghton et.al., 2001; IPCC, 2007; McMichael, 2003, Naomi, 2004).

Until the recent advent of the climate change issue, most of the world's population have been reluctant, apathetic, or defensive toward addressing the very long-term impacts humankind has made on the earth and its resources (Brigham-Grette, et. al., 2006; Dessler, & Parson, 2006; Division of Professional Affairs, 2007a & b; Grover, 2004; Romm, 2006; Singer & Avery, 2006; Victor, 2004). This disregard can be attributed to some degree due to the lack of awareness among the general population in terms of causes and potential effects of climate change within the world's environment (Dessler, & Parson, 2006). There previously has been some opposition to the existence of human caused climate change and resulting global warming as a threat to the earth's population and survival, however, scientific evidence has more recently been found to be compelling (Bluemle, Sabel, Sabel, & Karlen, 1999; Claussen, Cochran, & Davis, 2001; Dow & Downing, 2006; Christianson, 1999; Crutzen, & Graedel, 1997; IPCC, 1990, 1992,1996, 2001, 2007; Goudie & Cuff, 2002; Houghton, 2004; McCaffrey, 2006; Naomi, 2004; National Academy of Sciences Committee on the Science of Climate Change, 2001; O'Hare, Sweeney, & Wilby, 2005; Weart, 2003).

Since the late 1980s and particularly since 2000 there have been numerous publications which have brought much more awareness (Crutzen, & Graedel, 1997; Bowen, 2005; Burroughs, 2005; Dow, & Downing, 2006; Gore, 1992; Houghton, 2004; ; Lamb, 1995; McKibben, 1989), an understanding of causes (Gelbspan, 2004; Hardy, 2003), problems and impacts (Ward, 2007; Gore, 2006; Flannery, 2006; Kolbert, 2006; Linden, 2006; Lovelock, & Tickell, 2006; McDonagh, 2007; Pearce, 2007; Sagan, & Turco, 2002; Wall, 1998) and advocacy from the general public of first, the existence of the climate change issue and second the urgency in dealing with, and finding solutions (Helm, 2005; Hoffman, 2005; Hillman, Fawcett, & Rajan, 2007; Miller, & Edwards, 2001; Romm, 2006) to its causes and impacts.

Though there has been for some time, substantial evidence of the global warming/climate change issue, lack of education and awareness,

political dilemmas, industrial, economic and enterprise pressures and uncertainties created by fear and misinformation resulted in a strong reluctance to accept and commit to the challenges in addressing this global problem (Brigham-Grette, et. al., 2006; Council on Environmental Quality, 1980; Division of Professional Affairs, 2007a; Gelbspan, 2004; Hansen, 1988; Singer & Avery, 2006). In very recent years, however, there have been countless attempts both from the scientific community as well as in more public forums to let the public and decision makers know that the lack of focus on potential climate change and its effects may well result in both major and minor catastrophes throughout the world (Burroughs, 2005; Cox, 2005; Hillman, Fawcett, & Rajan, 2007; Gissling, 2006; Flannery, 2006; Lovelock, & Tickell, 2006; Sagan, & Turco, 2002). Within these forums, there has been a focus on both awareness of the major problem as well as communication of potential actions which can be taken in order to stop and possibly even reverse the effects of global warming (Baines & Worden, 2004; Claussen, Cochran, & Davis, 2001; Hardy, 2003; Gore, 2006; Hardy, 2003; Hoffman, 2005; Lomborg, 2004; McMichael, 2003; Romm, 2006; Stowell, 2005; Yamin, 2005).

IMPLICATIONS OF CLIMATE CHANGE ON THE TOURISM AND HOSPITALITY INDUSTRY

Global warming, which refers to the heating of the earth's atmosphere and the increase in global temperatures, is predicted to create climate changes in various parts of the world (IPCC, 2001). These changes may increase the frequency and intensity of extreme weather events, such as floods, droughts, heat waves, hurricanes, and tornados (Emanuel, 2005). Other consequences may include higher or lower agricultural yields, glacier retreat, reduced summer stream flows, species extinctions and increases in the ranges of disease barriers (Bowen, 2005; Braasch, 2007, IPCC, 2001; McCarthy et.al., 2001).

These massive changes can also result in considerable impacts on various industries (Agnew & Viner, 2001; Becken, Simmons & Hart, 2003; Gable, 1990; Harrison, Winterbottom, Sheppard, 1999; Pagnan, 2003; Wall, 1993), which are dependent on weather, natural resources, and in locations which are close to or within areas sensitive to potential climate issues (Agrawala, 2007; Abegg & Froesch, 1994; Braasch, 2007; Brotton & Wall, 1993; Buerki, Elasser, Abegg, 2003; Galloway, 1988;

Harrison, Kinnaird, McBoyle, Quinlan, Wall, 1986; Koenig & Abegg, 1997; McBoyle & Wall, 1987; WTO, 2003).

One of the key economic sectors which will most likely be affected by, and which also may have impact upon global warming and climate change, is the tourism and hospitality industry (Hall & Higham, 2005; Becken, 2007). On an economic scale, changes in climate may have a profound impact on tourism flows between and within various regions throughout the world. This may have dramatic effects on income redistribution, employment and community development or contraction (Berrittella, Bigano, Roson & Tol, 2006; Gissling, 2006; Scott, Jones, & Konopek, 2007).

As the second largest employer in the United States after healthcare and with a total average spending of close to \$1.8 billion a day in the United States and over \$654 billion in domestic airline revenue (AH&LA, 2006), there are currently a number of concerns of the effects of climate change on the tourism industry. This is becoming a growing concern in Florida where potential rising sea levels may have a profound effect. Employment is a key aspect of future concerns. An example on a regional level, climate change has according to the Palm Beach County Hotel and Lodging Association, the potential to affect many jobs where over 40,000 of 600,000 in the workforce are employed in positions related to tourism (PBCH & LA, 2006).

The lodging sector, which represents a large section of the tourism and hospitality industry, purchases many products and services that directly and indirectly affect the environment. The process of production and distribution of these products contribute to energy production and CO₂ emissions, the major contributor to climate change. According to the Environmental Protection Agency (2006C) the average size hotel purchases more products in one week than 100 families buy in one year. Additionally lodging facilities use vast quantities of water and energy, which have a direct impact on local ecological, economic and social environments. Electricity accounts for 60 to 70 percent of a typical hotel's utility costs. This includes lighting (30-45%), heating ventilation and air conditioning (25-40%), laundry and kitchen facilities (5-10%) and general operations (5-10%). A typical room in a lodging facility uses over four times the water consumption of an average home per day. Some of the water consumption areas in a lodging facility include showers and toilets, food and beverage facilities, landscaping, pools and spa services. Hotels and motels also generate large volumes of waste. For example,

paper accounts for 40% to 60% of a property's waste, while over 50% of the paper can be recycled through the use of eco-purchasing and recycling programs (Environmental Protection Agency, 2006C).

With these large consumption and energy use patterns, there has been a need for the lodging industry to explore sustainable practices in order to reduce costs and decrease the negative affects on the environment, resource usage, and resulting contributors to greenhouse gases including carbon dioxide production. The national Green Lodging Program was developed by the Environmental Protection Agency in 2004 with a major objective of encouraging the lodging industry to "become part of the solution and not part of the problem" (Environmental Protection Agency, 2006C: p2).

A number of hotels have committed to improved practices and are becoming more environmentally focused, for example the Doubletree Hotel in Portland, Oregon. This property has reduced its waste disposal volume by over 65 percent. During the first six months of the program in 2006, it redirected more than 126 tons of waste from the landfill with substantial monetary savings. The hotel has addressed most area facilities including public areas, guest rooms, kitchens, and offices within the operation and have instigated recycling bins for paper, glass, aluminum, plastic and recycling methods for printing waste including cartridges. Other current procedures include donation of food to homeless shelters, reupholstering and donating furniture to low-income housing programs, and using environmentally conscious purchasing for food, energy and pest control (McPhee, 2006A; 2006B).

Many hotels within the state of Florida are also taking significant steps in renovating their current hotels to meet the criteria of "Green Lodging" hotels. According to the Florida Energy Office, in 2005, Governor Bush signed an executive initiative to develop a statewide comprehensive energy plan. After analyzing both the current and future demand for energy the office made a number of "...recommendations that provide the basis for a far-reaching energy strategy. The bill created the Florida Renewable Energy Technologies & Energy Efficiency Act and the Florida Energy Commission" (Florida Department of Environmental Protection, 2007: p1).

CASE STUDY OF SUSTAINABLE PRACTICES IN FLORIDA'S LODGING INDUSTRY

Climate change is becoming a growing concern in Florida, U.S.A. where potential rising sea levels and atmospheric disturbances may have a profound effect. Within this context a case study of the Florida lodging industry provides insight regarding mechanisms and responses that the lodging and resort sector of the industry has been taking in addressing climate change factors.

Table 1. Factors, Implications and Initiatives of the Florida Green Lodging Program.

<i>Practice</i>	<i>Description</i>	<i>Implications and initiatives</i>
Communication	<p>Communication is a vital component of the success of any sustainable program. It is essential to ensure that hotel staff are aware of the environmental management practices that are going to be enforced.</p>	<p>The implications are profound, especially since many affected areas are heavily reliant on tourism for economic vitality" (Raleigh, 2006; pg 1). According to the Environmental Protection Agency a critical step in the "Green Lodging" program is to create a "Green Team" including management from all of the departments of the lodging facility in order to ensure that the practices are both communicated and implemented (2006C, p.4).</p>
Water conservation	<p>For every gallon of water that is saved, fewer resources from our reservoirs and aquifers are required. Additionally, less energy is produced to extract, process, and deliver the water, which then leads to less wastewater discharged and treated (Environmental Protection Agency, 2006E). A typical hotel or lodging facility utilizing as much as 218 gallons per person per day.</p>	<p>The Environmental Protection Agency (EPA; 2006E) has created a program that encourages commercial businesses and institutions to decrease their company's water consumption in order to increase profitability, efficiency, and competition within each facility. This program is called WAVE, Water Alliances for Volunteer Efficiency, and it is an effort to reduce demands (up to 30%) on water supply within the U.S. by partnering with hotels, motels, and inns in auditing and installing water efficient devices (Environmental Protection Agency, 2006E). Other methods utilized to initiate water conservation include employee awareness campaigns, completion of water audits, leak detection programs, improvements in water efficient equipment, management in discretionary use of water, sub-metering for more accurate use measurement, discharge reuse processes, and through linen reuse programs (White, 2004).</p>
Energy Efficiency	<p>A large portion of energy is consumed daily in lodging facilities by common ongoing needs. Such energy use comes from key areas including: heating and cooling units, lighting sources, water use, and laundry services.</p>	<p>The EPA has calculated that the cost savings associated with a 10-percent improvement in energy efficiency is equivalent to increasing average daily room rates by between \$0.62 and \$1.35, for limited-service and full-service hotels, respectively (Permafrost, 2006).</p>
Waste Reduction	<p>Waste within the lodging industry has become an important component of management policy. With many accommodation facilities located within resort communities and in close proximity to natural assets, waste recycling, reduction and removal has often become more controlled, regulated and encouraged (Environmental Protection Agency, 2006C).</p>	<p>Many facilities have become more aware of their contribution to waste and by making minor adjustments in daily activities, hotels have found that this can greatly cut down on raw materials, energy, operating, production, and disposal costs. This may increase profitability, enhance public image, conserve natural resources, lessen risks to human health and safety, and reduce liability for environmental issues and insurance needs (Shrivastava, 1995).</p>
Clean Air Practices	<p>A fifth factor identified in the Green Lodging program has been focused on air quality. This includes both internal and external environments. Since 1989 more than two dozen countries have completed research and undergone changes to reverse the effects hazardous chemicals have been having on the O-zone and other air quality impacts (Heilprin, 2006).</p>	<p>With humans spending up to 90 percent of their time within enclosed environments, indoor air quality has become a major concern. These concerns are related to an increasing number of allergies and chemical sensitivities to common air pollutants including mold, smoke and formaldehyde and other volatile organic compounds (Environmental Protection Agency, 2006C). Many businesses, including hotels, are utilizing eco-friendly chemicals and developing allergy-sensitive rooms with new cleaning processes and air purification devices (NewsRX, 2006; Goldbaum, 2007).</p>

A number of major resort properties discussed in this paper reflect commitments to green lodging principles and criteria developed by the Florida Green Lodging Program (FDLP) in its certification program initiated by the Florida Department of Environmental Protection (FDEP, 2007). Key factors in implementation of this program have included: communication, water conservation, energy efficiency, waste reduction, and clean air practices (Environmental Protection Agency, 2006C). These factors are described further below in Table 1 with applicable implications and initiatives.

Three Green Lodging Certified Hotels in Florida

The Environmental Protection Agency defines “Green Lodging” as hotels, motels, bed and breakfasts, etc. that use sound environmental management practices to reduce their impacts on the environment, improve their bottom line and satisfy customer demand for environmentally conscious lodging establishments in USA and world wide (EPA, 2006C).

The Florida Green Lodging Program (FDLP) was developed as a certification program by the Florida Department of Environmental Protection (FDEP) to encourage the lodging industry to conserve and protect Florida’s natural resources. Its key objectives are to acknowledge and promote lodging facilities that demonstrate water and energy conservation, waste minimization, recycling, indoor air quality, environmentally preferable purchasing, program sustainability, and pollution prevention (FDEP, 2007).

From a modest beginning the Florida Green Lodging certification program has grown from one resort in 2004, 21 resorts in 2007 (see Table 2), to close to 170 resorts with at least first level certification in 2008 and now over 350 new applicants (FDEP, 2008).

Table 2. List of Initial Resorts Certified by the Florida Green Lodging Program in 2007.

1. The Steinhatchee River Inn
2. Colony Hotel & Cabana Club
3. The Bridge Water Inn
4. The WaterColor Inn
5. The Breakers Palm Beach

6. The Four Seasons Hotel Miami
7. Tradewinds Island Grand Resort
8. The Inn at Wildwood
9. Holiday Inn Sarasota-Lakewood Ranch
10. Wakulla Springs Lodge
11. Turtle Beach Inn
12. Disney Animal Kingdom
13. Bonita Springs Hotel: Hyatt Regency Coconut Point
14. Palm Plaza Oceanfront Resort in Daytona
15. Disney's Coronado Springs Resort
16. Hilton University of Florida Conference Center in Gainesville
17. Disney's Boardwalk Inn
18. Beachside Motel
19. Disney's Caribbean Beach Resort
20. Disney's Pop Century Resort
21. Disney's Port Orleans Resort

For a property to be certified, the FDEP has established the following guidelines for the Green Lodging Program (FDEP, 2007):

1. Identify an environmental champion.
2. Obtain top management commitment and submit the admission application.
3. Create a Green Team.
4. Conduct an environmental assessment.
5. Establish goals and identify environmental improvement projects.
6. Submit environmental baseline data to the FGLC Program Office.
7. Implement environmental improvement projects.
8. Evaluate and monitor the program.
9. Schedule on-site certifying visit.
10. Practice continual improvement.

The program has three different levels of palm certification. In order to achieve certification of the "One Palm" level a number of minimum best practice standards must be met. These practices are in the areas communications, water conservation, energy efficiency, waste reduction and clean air (FDEP, 2007). In addition, they must have completed steps 1-3 from the FDEP guidelines for green lodging program (stated above).

This includes the identification of an environmental champion in which to learn from and possibly emulate, gaining support from top management within the property, the formation of an active multi-disciplinary ‘Green Team’ to ensure preparation and implementation, and to operate in compliance with all applicable environmental laws and regulations (FDEP, 2007).

In order apply for “Two Palm” Certification, the lodging facility must maintain the One Palm Certification for 12 months consecutively in addition to completing steps 4-5, and 7-9 (FDEP, 2007). This includes the development of goals and identification of environmental improvement projects, submission of environmental baseline data to the FGLC Program office, the implement of environmental improvement projects, having and evaluation and monitoring process in place with on-going reporting, and the completion of a scheduled on-site certifying visit.

In order to motivate the property to continue to work on certification programs, if Two Palm Certification status is not achieved within 24 months of obtaining One Palm certification, the property has a possibility of being moved to inactive status, which would mean that it could be removed from the Green Lodging Locator website (FDEP, 2007).

To achieve “Three Palm Certification level, the facility must have shown its devotion to protecting the environment and demonstrated continual improvement for at least three consecutive years after reaching the level of Two Palm Certification. In addition the property must do step 10, which is to practice continual green lodging improvement and to maintain or improve its high level of commitment to protecting the state’s environment through the Florida Green Lodging program (FDEP, 2007).

As part of this case study of Florida hotels and resorts, the following includes a brief review of three of the 21 hotels listed above and represents the actions in which these lodging facilities are taking to meet the criteria of the Florida Green Lodging Program. These properties include the Breakers Hotel Palm Beach, the Hilton University of Florida Conference Center in Gainesville, and the Hyatt Regency Coconut Point Resort and Spa of Bonita Springs.

The Breakers Palm Beach

The Breakers Palm Beach has a history dating to 1896, when Henry Flagler, a Standard Oil Company magnate facilitated the development of the east coast of Florida through building railroads and hotels along the

previously remote coast. The Breakers was previously a resort destination for early twentieth century nobility (for example, the Rockefellers, Vanderbilts, Astors and Carnegies and a number of U.S. presidents). With a staff of over 1800 set amidst 140 acres of oceanfront property, the resort offers an extensive range of amenities and services and has undergone over \$225 million in expansion and revitalization over the last 15 years. The Breakers has since September, 2006 been certified by the Florida Green Lodging Program.

The Breakers has made many adjustments in their day-to-day activities with the purpose of cutting down costs and addressing environment issues. Examples of key practices in the Green Lodging and the Florida Green Lodging programs are shown below (see Table 3) in areas including communication, water conservation, energy efficiency, waste reduction, and clean air practices.

Table 3. Green Lodging Practices of the Breakers Palm Beach

<i>Practice</i>	<i>Actions</i>
<i>Water Conservation:</i>	To improve water conservation, the Breakers utilizes low flow faucets and toilets in guest rooms and automatic faucets and toilets in public restrooms.
<i>Energy Efficiency:</i>	In order to improve energy efficiency the hotel uses high-energy star-rated equipment, programmable thermostat, sensor and high-energy efficient lighting and has implemented an energy management system for the property.
<i>Waste Reduction:</i>	Waste reduction programs in which the Breakers has implemented include recycling programs for office paper, newspaper, aluminum cans, magazines and corrugated card board, the purchase of post-consumer recycled content for office paper, toilet tissues, paper towels and paper napkins, and the practice of bulk purchasing, manufacturer take-back and reduced packaging.
<i>Clean Air Practices:</i>	Practices include environmentally preferable cleaners, use of high efficient filters, routine cleaning of all air handler units and coils, and following a preventive maintenance schedule for all equipment.
<i>Communication:</i>	Communication programs followed by the Breakers include the following: green lodging applications and the hotel's environmental policy is available to the public, hotel staff are familiar with the hotel's environmental policy, environmental practices are discussed at hotel staff meetings, environmental initiatives are communicated to guests and staff a formal process is available for guests and staff to provide feedback on green practices (FDEP, 2007).

Some specific energy savings activities in which the Breakers has been participating have had a focus on guest areas within the resort, some of which were instigated in the early 1990's. Many of these practices have positive implications for reduction of CO₂ emissions at various stages of the process. An historical perspective on management practices is shown in Table 4 below.

Table 4. Breakers Palm Beach sustainable management practices since 1990

Initiative & benefit	Commenced- implemented
1,800 employees recycle 1.5 million pounds each year of paper, aluminum, glass & plastic operationally throughout resort	1991
Automatic doors throughout property, which conserves energy & keeps cooling costs down.	1992
Incorporate native landscaping which improve wind, drought & salt tolerance & use less water & fertilizer throughout resort's 140 acres.	1996
Low-flow faucets & toilets throughout resort to conserve up to 50% water usage.	1996
Utilize state-of-the-art energy management system, by & over, to control air temperatures & lighting & reduce power plant energy.	1998
Toilet paper, paper towels & tissues contain at least 40% recycled content which helps conserve natural resource usage.	2000
Well & Reverse Osmosis Plant converts undrinkable water to irrigation water for the golf course & conserves over 104 million gal. of water per year.	2000
First hotel in the world to serve Rainforest Alliance-certified coffee which practice sustainable agriculture & provide favorable working conditions.	2003
Main air handlers have UVC light devices that sterilize the air of viruses, bacteria & mold.	2003
Copy paper made up of recycled content.	2003
Implement recycling policy to 1,800 including new & existing employee training & h&bok	2003
Eight recycling containers collect plastic & aluminum at beachfront & clubhouse	2006
Energy-efficient light bulbs in public spaces, which utilizes 25% in electricity.	2006
10,000 energy-efficient light bulbs in 560 guest rooms	2006
20 additional recycling containers in public guest areas	2006
Newspapers are recycled in all 560 guest rooms & sent to a facility in Georgia to make more newspapers	2006
Utilize general-purpose cleaners with "green seal." Examples include ammonia-free glass & peroxide-based cleaners	2006

Hyatt Regency Coconut Point Resort and Spa of Bonita Springs

The Hyatt Regency Coconut Point Resort and Spa is located at Estero Bay on the Gulf of Mexico of Florida. The facility has 450 rooms with 18

floors on a 26 acre property with a championship 18 hole golf course, four tennis courts, full European style Spa, salon and fitness center, numerous restaurants and bars, three swimming pools with corkscrew waterslide and Camp Hyatt children's program.

The Hyatt Regency Coconut Point Resort and Spa of Bonita Springs has been a certified member of the Florida Green Lodging Program since March 25, 2005. In order to have received this certification, the Hyatt Regency completed the requirements of the program, which addressed specific areas of organization and commitment to the program and performance improvement measured over time. The criteria of the program include improvements in energy conservation, waste minimization, recycling, indoor air quality, environmentally preferable purchasing, program sustainability and pollution prevention.

Table 5. Green Lodging Practices of Hyatt Regency Coconut Point Resort

<i>Practice</i>	<i>Actions</i>
<i>Water Conservation:</i>	<p>The key to water conservation is simply to reuse and recycle. The Hyatt recycles water when doing laundry, in the courtyard fountains and waterfalls, in the lawn irrigation system and other non-contact water amenities, as well as landscaping. The courtyard fountains also have wind sensors to lower the flow of water when strong winds occur. The landscaping consists mainly of native plants that are hand watered where this is needed. The toilet valves have been upgraded to prevent any leaking that could occur and the sprinkler system is monitored for leaks as well. The Hyatt has an automated system called ECOSTAR that maximizes water and chemical use while obtaining consumption rates at the same time.</p>
<i>Energy Efficiency:</i>	<p>To control the temperatures in public areas of the hotel, a tracer system has been installed. They have an automated energy management system that collects data and predicts energy needs. The hotel has an automated maintenance plan that lists scheduled daily duties for employees with computerized reported results. In order to keep the hotel cool, they have a thermal system that makes ice at night and is used accordingly throughout the day. Heat that is recovered from areas is recycled to preheat water when needed. For refrigeration needs, the hotel uses "water cooled refrigeration" and uses curtains instead of doors for walk-in coolers. When doing laundry, sheets are weighed before entering the washer in order to maximize the energy being utilized. The resort also uses highly efficient fluorescent light bulbs.</p>
<i>Waste Reduction:</i>	<p>In its attempt to reduce product waste, the Hyatt does a substantial amount of recycling and donating. This includes the recycling of cardboard, newsprint, kitchen grease, office paper, water bottles and other items. The linens are recycled and used as rags or, at times, are donated to local charitable organizations along with unused room amenities. The facility has instigated a take-back program with vendors regarding empty laundry containers and printing supplies. Food leftovers and bread are used in the employee cafeteria to also reduce waist. Landscape wastes are collected into a compost pile for reuse as earth on the property. They Hyatt uses glassware instead of disposable and uses double-sided printing whenever possible.</p>
<i>Clean Air Practices:</i>	<p>The Hyatt changes its air conditioning filters quarterly throughout each year and they wash the coils for the air conditioning biannually. The cleaning products utilized by this hotel are environmentally compatible.</p>

The resort has thus far been awarded both the One Palm and Two Palm Certification. The One Palm Certification was achieved by completion of the core requirements of the program in energy efficiency, communication, conservation of water, reduction of waste and clean air practices. The hotel has also received much support from top management in their practices, initiated an active “green team,” while at the same time, complying with environmental laws and regulations. The following (Table 5) include key initiatives that the Hyatt Regency Coconut Point Resort and Spa of Bonita Springs has been conducting.

The Two Palm Certification required that the hotel maintain the requirements of the One Palm status for one year. While doing so, the Hyatt had to conduct an environmental baseline assessment of its property. It also created and implemented goals to improve their overall productivity and initiated “green” projects with thorough evaluations of the projects.

Table 6. Green Lodging Practices of the Hilton University of Florida Resort

<i>Practice</i>	<i>Actions</i>
<i>Water Conservation:</i>	The Hilton University of Florida Conference Center has installed low flow features for its showerhead, faucets and toilets in every guest room. Moisture content is measured for all sprinklers systems and they are used when evaporation is minimized. A linen/towel reuse program is in place at the property and water efficient appliances are installed. The property is currently assessing the opportunity to recapture rainwater for tower cooling.
<i>Energy Efficiency:</i>	In order to meet energy requirements, Energy Star equipment has been installed at the Hilton University of Florida Conference Center resort and computerized preventive maintenance schedules have been developed to ensure equipment remains efficient. Other energy reduction programs include dimmer switches, window tinting to reduce air conditioning use, installation of compact fluorescent bulbs, and initiating a plan for conference rooms to be shut to allow the thermostat to better regulate temperatures.
<i>Waste Reduction:</i>	The facility has programs to recycle office paper, metals, glass, wooden pallets and phone books. Toner cartridges are donated to Habitat for Humanity. Purchase cleaning chemicals in bulk then dispense in smaller refillable containers. The Hilton property received an award for their waste reduction efforts from Keep Alachua County Beautiful. To address food waste minimization the property is pursuing opportunities to donate quality food to charities (e.g. Gainesville Harvest House) instead of disposing. The property also has an ongoing program of reevaluating waste procedures in all departments to minimize waste generation.
<i>Clean Air Practices:</i>	The Hilton property has a number of programs to address clean air issues. These include replacing air filters used on the facility quarterly, evaluate cleaning chemicals used by vendors on-site, providing spot treatment of pesticides and herbicides on grounds to minimize chemical usage. In addition Hilton is assessing the opportunity to upgrade to a higher quality HEPA filter in air handlers and to use carbon filters in high-use areas like smoking rooms.
<i>Communication:</i>	The Hilton Gainesville property uses a number of methods to communicate environmental messages to its stakeholders. This includes explaining green procedures at new employee training, providing suggestion boxes for improvements to green practices, and communicating the various environmental initiatives in which the property is involved to guests through placards in all guest rooms.

The Hilton University of Florida Conference Center Resort in Gainesville, Florida

Built in 2000, the Hilton University of Florida Conference Center Gainesville is a full service facility located on the Southwest corner of the University of Florida. With 245 rooms and suites, it also has over 25,000 square feet of event and meeting space.

The facility is a certified IACC conference center and has won numerous awards for guest service and customer satisfaction. As of August 19, 2006 the property became one of the most advanced green lodges in Florida. The following (Table 6) depicts the various attributes, which meets the Green Lodging criteria.

CLIMATE CHANGE AND SUSTAINABLE PRACTICES - IMPLICATIONS FOR THE RESORT INDUSTRY

This paper discussed the development, importance and implications of climate change and its relationship to the resort industry. Examples in Florida were then provided of mechanisms and responses that the lodging sector of the industry has been taking in addressing climate change factors.

The environment and climate change have increasingly become of utmost importance as identified by the public in developed countries. With increased consumer awareness, interest and actions on environmental practices in tourism and hospitality, as well as increased media attention on subjects such as global warming and climate change, the environmentally friendly corporate image and actions representing environmental commitment have become increasingly important.

This case study of green certification within the Florida lodging industry provides insight regarding actions that the lodging and resort sector of the tourism and hospitality industry has been taking in addressing climate change factors. The public image created by lodging facilities who show true dedication to environmental practices, especially those that impact on CO₂ emissions and potential climate change, may have very positive implications for consumer purchasing and resulting customer revenues. In addition to achievement of greenhouse gas emission reduction, some benefits of applying these sustainable practices within lodging facilities have been shown to include cost savings, health improvement, liability reduction, conservation and public image.

The growth from one property to potentially over 500 properties in Florida over a period of five years (who have gone through or are in the process of going through the FGLP) suggests strongly that there is a substantial commitment to the process, practices and outcomes expected from the Florida Green Lodging Program. Those Florida based lodging facilities that demonstrate a commitment to such solutions as water and energy conservation, waste minimization, recycling, indoor air quality, environmentally preferable purchasing, program sustainability, and pollution prevention will begin to achieve the important objective of contributing to the significant issues of climate change and global warming on planet earth.

Currently the hotel and resort industry has, more broadly and proportionally, a much higher use of energy and contribution to green house gasses, which has been found to affect climate change. By making commitments to major programs similar to the Florida Green Lodging Program, these can possibly have a very significant impact on reducing ecological footprints and their contribution to climate change within many resort destinations.

REFERENCES

- Abegg, B. & Froesch, R. (1994). Climate Change and Winter Tourism: Impact on Transport Companies in the Swiss Canton of Graubunden. In M. Beniston (Eds). *Mountain Environments in Changing Climates* (pp.328-348), London: Routledge.
- Agnew, M. & Viner, D. (2001). Potential Impact of Climate Change on International Tourism. *Tourism and Hospitality Research*, Vol. 3, pp.37-60.
- Agrawala, S. (2007). *Climate Change in the European Alps: Adapting Winter Tourism and Natural Hazards Management*. OECD publishing.
- American Hotel & Lodging Association (AH&LA). (2006). *2006 lodging industry profile*. [Http://www.ahla.com/products_info_center_lip.asp](http://www.ahla.com/products_info_center_lip.asp). Accessed the 9th of December 2006.
- Baines, S.J. & Worden, R.H. (2004). *Geological storage of carbon dioxide*. Tulsa: Geological Society.
- Barnes, R. & Ellperin, J. (2007). High Court Faults EPA Inaction on Emissions - Critics of Bush Stance on Warming Claim Victory. *Washington Post*, April 3, 2007.
- Beck, R.W. (1997). *Commercial waste prevention training report for the Solid Waste Authority of Palm Beach County*. Solid Waste Authority.

- Becken, S. (2007). *Tourism and Climate Change: Risks and Opportunities (Climate Change, Economies and Society)*. Clevedon, Channel View.
- Becken, S., Simmons, D. & Hart, P. (2003). Tourism and Climate Change - New Zealand Response. In Proceedings of the 1st International Conference on Climate Change and Tourism. 9-11 April, Djerba, Tunisia. Madrid, World Tourism Organization.
- Berritella, M., Bigano, A., Roson, R. & Tol, R.S.J. (2006). A general equilibrium analysis of climate change impacts on tourism. *Tourism Management*, Vol. 27, No.5, pp.913-924.
- Bluemle, J.P., Sabel, J.M. & Karlen, W. (1999). Rate and Magnitude of Past Global Climate Changes. *Environmental Geosciences*, Vol. 6. No.2, pp.63-75.
- Bowen, M. (2005). *Thin Ice: Unlocking the Secrets of Climate in the World's Highest Mountains*. New York, Henry Holt.
- Braasch, G. (2007) Global warming at the extremes of the earth: Habitats and cultures everywhere react to climate's rapid changes. [Http://www.worldviewofglobalwarming.org/](http://www.worldviewofglobalwarming.org/). Accessed the 15th of January 2007.
- Brigham-Grette, J., Anderson, S., Clague, J., Cole, J., Doran, P., Gillespie, A., Grimm, E., Guccione, P., Hughen, K., Jackson, S., Jull, T., Leavitt, S., Mandel, R., Ortiz, J., Rodbell, D., Schweger, C., Smith, A. & Styles, B. (2006). Petroleum Geologists' Award To Novelist Crichton Is Inappropriate. *Eos, Transactions American Geophysical Union*, Vol. 87, No.36, pp.27-29.
- Brotton, J. & Wall, G. (1993). Prospects for Downhill Skiing in a Warmer World. In M. Sanderson (Eds). *The Impact of Climate Change on Water in the Grand River Basin, Ontario* (pp.93-104), Department of Geography Publication Series, No.40, Waterloo, Ontario: University of Waterloo.
- Buerki, R., Elasser, H. & Abegg, B. (2003). Climate Change - Impacts on the Tourism Industry in Mountain Areas. In Proceedings of the 1st International Conference on Climate Change and Tourism. 9-11 April, Djerba, Tunisia. Madrid, World Tourism Organization.
- Burroughs, W.J. (2005). *Climate Change: A Multidisciplinary Approach*. Cambridge, Cambridge University Press.
- Christianson, G.E. (1999). *Greenhouse: The 200-Year Story of Global Warming*. New York, Walker & Co.
- Claussen, E., Cochran, V.A. & Davis, D.P. (2001). *Climate change: science, strategies, & solutions*. Boston, Brill.
- Cole & O'Hara. (2006). *Guidelines for Green Business Practices*. Associated Press.
- Council on Environmental Quality (1980). *The Global 2000 Report to the President of the U.S. Vol. 2, the Technical Report*. Washington, DC: U.S. Govt. Printing Office.

- Cox, J.D. (2005). *Climate Crash: Abrupt Climate Change And What It Means For Our Future*. Washington, DC, Joseph Henry Press.
- Crutzen, P. & Graedel, T. (1997). *Atmosphere, Climate and Change*. New York, WH Freeman and Co.
- Dessler, A.E. & Parson, E.A. (2006). *The Science and Politics of Global Climate Change: A Guide to the Debate*. Cambridge, Cambridge University Press.
- Disney. (2007). *Disney's Animal Kingdom Lodge*. [Http://disneyworld.disney.go.com/wdw/resorts](http://disneyworld.disney.go.com/wdw/resorts) Accessed the 10th February 2007.
- Division of Professional Affairs. (2007a). Climate Change Policy. Division of Professional Affairs, a Division of the American Association of Petroleum Geologists. [Http://dpa.aapg.org/gac/papers/climate_change.cfm](http://dpa.aapg.org/gac/papers/climate_change.cfm). Accessed the 20th of March 2007.
- Division of Professional Affairs. (2007b). Proposed Global Climate Change Statement. Division of Professional Affairs, a Division of the American Association of Petroleum Geologists. [Http://www.aapg.org/proposed_climate.cfm](http://www.aapg.org/proposed_climate.cfm) Accessed the 21th of March 2007.
- Dow, K. & Downing, T.E. (2006). *The Atlas of Climate Change: Mapping the World's Greatest Challenge*. University of California Press.
- Earth 911. (2007). *Florida Green Lodging Certification Program*. [Http://www.earth911.org/usa/master.asp?s=lib&a=greenlodging/](http://www.earth911.org/usa/master.asp?s=lib&a=greenlodging/).
- Earth 911. (2007). Recycling centers, water pollution, and conservation [Http://florida.earth911.org/usa/master.asp?s=lib&a=greenlodging/listings](http://florida.earth911.org/usa/master.asp?s=lib&a=greenlodging/listings). Accessed the 1st February 2007.
- Emanuel, K.A. (2005). Increasing Destructiveness of Tropical Cyclones over the Past 30 Years. *Nature*, Vol. 436, pp.686-688.
- Environmental Protection Agency. (2006A). *Resource Reservation Challenge (RCC)*. Washington, DC, EPA.
- Environmental Protection Agency. (2006B). *Municipal Solid Waste*. Washington, D.C., EPA.
- Environmental Protection Agency. (2006C). *Green Lodging Basics, presentation to Northwood University*. Washington, D.C., EPA.
- Environmental Protection Agency. (2006D). *Municipal Solid Waste*. Washington, D.C., EPA
- Environmental Protection Agency. (2006E). *Introducing WAVE-Water Alliances for Voluntary Efficiency: Hotel water Management for the 21st Century*. Washington, D.C., EPA
- Flannery, T. (2006). *The Weather Makers: How Man Is Changing the Climate and What It Means for Life on Earth*. Boston, Atlantic Monthly Press.
- Florida Department of Environmental Protection. (FDEP). (2007). *Florida green lodging certification program*. Tallahassee, FDEP.

- Florida Department of Environmental Protection. (FDEP). (2008). *Florida green lodging certification program designated properties*. Tallahassee, FDEP. [Http://www.dep.state.fl.us/greenlodging/lodges.htm](http://www.dep.state.fl.us/greenlodging/lodges.htm). Accessed the 14th of July 2008.
- Four Seasons Hotel and Resorts. (2007). *Welcome to Four Seasons*. http://www.fourseasons.com/about_us/ Accessed the 14th of February 2007.
- Gable, F. 1990. Caribbean Coastal and Marine Tourism: Coping with Climate Change and its Associated Effects. In M.L. Mille and J. Auyong (Eds). *Proceedings for the 1990 Congress on Coastal and Marine Tourism Volume 1*, Honolulu, Hawaii.
- Galloway, R.W. 1988. The Potential Impact of Climate Changes on Australian Ski Fields. In Pearman, G.I. (Eds). *Greenhouse Planning for Climate Change*. Melbourne, Australia: CSIRO Publications, pp.428-437.
- Gelbspan, R. (2004). *Boiling Point: How Politicians, Big Oil and Coal, Journalists and Activists Are Fueling the Climate Crisis And What We Can Do to Avert Disaster*. New York, Basic Books.
- Geocities. (2006). The Effects of Global Warming. <Http://www.geocities.com/TimesSquare/1848/global.html>. Accessed the 12th of December 2006.
- Gissling, S. (2006). *Tourism and Global Environmental Change: Ecological, Social, Economic and Political Interrelationships: Contemporary Geographies of Leisure, Tourism and Mobility*. Routledge.
- Goldbaum, E. (2007). *UB Scientists Put "Allergy-Friendly" Hotel Rooms to the Test*. University of Buffalo. Buffalo, State University of New York.
- Gore, A. (1992). *Earth in the Balance: Ecology and the Human Spirit*. Boston, Houghton Mifflin.
- Gore, A. (2006). *An Inconvenient Truth*. New York, Rodale Press .
- Goudie, A.S. & Cuff, D.J. (2002). *Encyclopedia of global change: environmental change and human society*. New York, Oxford University Press.
- Green Lodging News (2006, para 5). *Pineapple Hospitality's Fresh Bulb Saves Energy, Eliminates Odors*. <http://www.greenlodgingnews.com/Content.aspx?id=727>. Accessed the 5th of February 2007.
- Grover, V.I. (2004). *Climate change: five years after Kyoto*. (ed.) Enfield, N.H., Science Publishers.
- Hall, C.M. & Higham, J.E.S. (2005). *Tourism, Recreation, And Climate Change (Aspects of Tourism)*. Clevedon, Channel View.
- Hansen, J.E. (1988). The Greenhouse Effect: Impacts on Current Global Temperature and Regional Heat Waves. In D.E. Abrahamson (Eds). *The Challenge of Global Warming*. Washington D.C., The Island Press.
- Hardy, J.T. (2003). *Climate change: causes, effects, and solutions*. New York, Wiley.

- Harrison S., Winterbottom S. & Sheppard, C. (1999). The Potential Effects of Climate Change on the Scottish Tourist Industry. *Tourism Management*, Vol. 20, pp.203-211.
- Harrison, R., Kinnaird, V., McBoyle, G., Quinlan C. & Wall, G. (1986). Climate Change and Downhill Skiing in Ontario. *Ontario Geographer*, Vol. 28, pp.51-68.
- Heilprin, J. (2006). *Ozone Friendly Chemicals Lead to Warming*. Associated Press.
- Helm, D. (2005). *Climate-change policy*. (ed.) Oxford, Oxford University Press
- Hillman, M., Fawcett, T. & Rajan, S.C. (2007). *The Suicidal Planet: How to Prevent Global Climate Catastrophe*. New York, Thomas Dunne Books.
- Hoffman, M.J. (2005). *Ozone depletion and climate change: constructing a global response*. Albany, State University of New York Press.
- Houghton, J. (2004). *Global Warming: The Complete Briefing*. (3rd ed.). Cambridge, Cambridge University Press.
- Houghton, J.T., Ding, Y., Griggs, D.J., Noguier, M., van der Linden, P.J., Dai, X., Maskell, K. & Johnson, C.A. (2001). *Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change*. Intergovernmental Panel on Climate Change. [Http://www.newsrx.com/article.php?articleID=347069](http://www.newsrx.com/article.php?articleID=347069) Accessed the 22nd of March 2007.
- IPCC (Intergovernmental Panel on Climate Change). (1990). *Climate Change: The IPCC Scientific Assessment. Report Prepared for IPCC by Working Group I*. Cambridge, Cambridge University Press.
- IPCC (Intergovernmental Panel on Climate Change). (1992). *Climate Change 1992: The Supplementary Report to the IPCC Scientific Assessment*. Cambridge, Cambridge University Press.
- IPCC (Intergovernmental Panel on Climate Change). (1996). *Climate Change 1995: The Science of Climate Change*. Cambridge, Cambridge University Press.
- IPCC (Intergovernmental Panel on Climate Change). (1999). *IPCC Special Report: Aviation and the Global Atmosphere*. Cambridge, Cambridge University Press.
- IPCC (Intergovernmental Panel on Climate Change). (2001). *Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the IPCC*. Cambridge, Cambridge University Press.
- IPCC (Intergovernmental Panel on Climate Change). (2007). *Climate Change 2007: The Physical Science Basis – Summary for Policymakers. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, Cambridge University Press.
- Koenig, U. & Abegg, B. (1997). Impacts of Climate Change on Winter Tourism in the Swiss Alps. *Journal of Sustainable Tourism*, Vol. 5, No.1, pp.46-58.

- Kolbert, E. (2006). *Field Notes from a Catastrophe: Man, Nature, and Climate Change*. New York, Bloomsbury.
- Lamb, H.H. (1995). *Climate, History, and the Modern World* (2nd ed.). New York, Routledge.
- Linden, E. (2006). *The Winds of Change: Climate, Weather, and the Destruction of Civilizations*. Simon & Schuster.
- Lomborg, B. (2004). *Global crises, global solutions*. (ed.). Cambridge, Cambridge University Press.
- Lovelock, J.E. & Tickell, C. (2006). *The Revenge of Gaia: Earth's Climate Crisis and the Fate of Humanity*. New York, Basic Books.
- McBoyle, G. & Wall, G. 1987. Impact of CO₂ Induced Warming on Downhill Skiing in the Laurentians. *Cahiers de Géographie du Québec*, Vol. 31, pp.39-50.
- McCaffrey, P. (2006). *Global climate change*. (ed.). H.W. New York, Wilson Company.
- McCarthy, J.J., Canziani, O.F., Leary, N.A., Dokken, D.J. & White, K.S. (2001). *Climate change 2001: impacts, adaptation, and vulnerability*. Intergovernmental Panel on Climate Change. (ed.) New York, Cambridge University Press.
- McDonagh, S. (2007). *Climate Change: The Challenge to All of Us*. Washington D.C., Joseph Henry Press.
- McKibben, B. (1989). *The End of Nature*. New York, Random House.
- McMichael, A.J. (2003). *Climate change and human health: risks and responses*. (ed). Geneva, World Health Organization.
- McPhee, M. (2006A). A room with a very green view. *In Business*, Vol. 28, No.5, pp.10-13.
- McPhee, M. (2006B). Sustainable resource management in the hospitality industry. *BioCycle*, Vol. 47, No.10, pp.40-42.
- Miller, C. & Edwards, P. (2001). *Changing the Atmosphere: Expert Knowledge and Environmental Governance*. Cambridge, MIT Press.
- Moore, P.D., Chaloner, B. & Stott, P. (1996). *Global environmental change*. Oxford, England, Blackwell Science.
- Naomi O. (2004). Essays on Science and Society Beyond The Ivory Tower: The Scientific Consensus on Climate Change. *Science* 3, Vol. 306, No.5702.
- National Academy of Sciences Committee on the Science of Climate Change (2001) *Climate Change Science: An Analysis of Some Key Questions*. Washington, D.C., National Academy Press.
- Natural Resources Canada. (2004). Step 1: Calculate Your Energy Costs and Consumption. [Http://oee.nrcan.gc.ca/publications/infosource/pub/hospitality_y_sector/english/section_02.cf](http://oee.nrcan.gc.ca/publications/infosource/pub/hospitality_y_sector/english/section_02.cf), Accessed the 13th of February 2007.
- NewsRX. (2006) *Researchers conducting air-quality tests of allergy-friendly rooms*.

- O'Hare, G., Sweeney, J. & Wilby, R. (2005). (ed.) *Weather, climate, and climate change: human perspectives*. New York, Pearson Prentice Hall.
- Pagnan, J. (2003). Climate Change Impacts on Arctic Tourism. In Proceedings of the 1st International Conference on Climate Change and Tourism. 9-11 April, Djerba, Tunisia. Madrid, Spain: World Tourism Organization.
- Palm Beach County Hotel & Lodging Association (PBCH&LA). (2006). *The Palm Beach County 2006 Hospitality Workforce Program*. Palm Beach.
- Pearce, F. (2007). *With Speed and Violence: Why Scientists Fear Tipping Points in Climate Change*. Boston, Beacon Press.
- Pederson, M. (2006, para 9). *Is hard water sapping your energy?* [Http://www.greenlodgingnews.com/Content.aspx?id=726](http://www.greenlodgingnews.com/Content.aspx?id=726). Accessed the 5th of February 2007.
- Permafrost. (2006). Hotel Energy Conservation and Efficiency Tips. [Http://www.permafrostonline.com/applications/hotels.php](http://www.permafrostonline.com/applications/hotels.php) Accessed the 8th of May 2007.
- Raleigh, L. (2006). Top Ten Global Issues and Challenges In the Hospitality Industry for 2006. [Http://www.hotel-online.com/News/PR2005_4th/Dec05_TopTenIssues.html](http://www.hotel-online.com/News/PR2005_4th/Dec05_TopTenIssues.html). Accessed the 11th of December 2006.
- Romm, J.J. (2006). *Hell and High Water: Global Warming--the Solution and the Politics and What We Should Do*. William Morrow.
- Sagan, C. & Turco, R.P. (2002). *Earth Under Siege: From Air Pollution to Global Change* (2nd ed.). Oxford, Oxford University Press.
- Scott, D., Jones, B. & Konopek, J. (2007). Implications of climate and environmental change for nature-based tourism in the Canadian Rocky Mountains: A case study of Waterton Lakes National Park: *Tourism Management*, April 1, 2007.
- Shrivastava, P. (1995). Environmental Technologies and Competitive Advantage. *Strategic Management Journal*. Vol. 16, pp.183-200.
- Sierra Club. (2007). Global Warming and Energy: Global warming impacts. [Http://www.sierraclub.org/globalwarming/health/conclusions.asp](http://www.sierraclub.org/globalwarming/health/conclusions.asp). Accessed the 2nd of February 2007.
- Singer, S.F. & Avery, D.T. (2006). *Unstoppable Global Warming: Every 1500 Years*. Lanham, Md., Rowman and Littlefield.
- Stern, N. (2007). *The Economics of Climate Change: The Stern Review*. Cambridge, Cambridge University Press.
- Stowell, D. (2005). *Climate trading: development of greenhouse gas markets*. New York, Palgrave Macmillan.
- U.S. State News. (2006). *Training to Promote Safe Chemical Management*. U.S. State News, HT Media Ltd. August 7, 2006.
- Victor, D. (2004). *Climate Change: Debating America's Policy Options*. Washington, D.C., Council on Foreign Relations Press.

- Wall, G. 1993. The Implications of Climate Change for Tourism in Small Islands. Paper presented at *the International Conference on Sustainable Tourism in Islands and Small States*. Malta.
- Wall, G. 1998. Climate Change, Tourism and the IPCC. *Tourism Recreation Research*, Vol. 23, No.2, pp.65-68.
- Ward, P.D. (2007). *Under a Green Sky: Global Warming, the Mass Extinctions of the Past, and What They Can Tell Us About Our Future*.
- Waste Reduction in Hotels and Motel. (1996). *A Guide for Hotel and Motel Managers*. Georgia, The Georgia Hospitality Environmental Partnership.
- Weart, S. (2003). *The Discovery of Global Warming*. Boston, Harvard University Press.
- White, B.M. (2004). Hotel & Motel Water Conservation: Saving Water by Implementing Conservation Measures. [Http://fl.us.waste/.../P2H&MWaterConservation_Aug032004.pdf](http://fl.us.waste/.../P2H&MWaterConservation_Aug032004.pdf). Accessed the 12th of December 2007.
- WTO (2003). Climate Change and Tourism/Changement Climatique Et Tourisme: In Proceedings of the 1st International Conference on Climate Change and Tourism. Djerba, Tunisia, 9-11 April 2003: World Tourism Organization.
- Yamin, F. (2005). *Climate change and carbon markets: a handbook of emission reduction mechanisms*. (ed.). Earthscan: Sterling, VA.

SUBMITTED: JANUARY 2009

REVISION SUBMITTED: MARCH 2009

ACCEPTED: MAY 2009

REFEREED ANONYMOUSLY

Harold Richins (richins@hawaii.edu) is the Chair of the Graduate Program within the School of Travel Industry Management, University of Hawaii, University of Hawaii, 2560 Campus Road, Honolulu, Hawaii 96822.

Janice Scarinci (scarinci@northwood.edu) is the Chair of the Hotel, Restaurant & Resort Management program, Northwood University, 2600 North Military Trail, West Palm Beach, Florida 33409.